The innovation and research center "GeoS"

KZ-COTTAGE

CAD system for modeling of milled log houses

VERSION 7.2

User's Guide

Nizhniy Novgorod, Russia
2015

Contents

1 Introduction

This document describes capabilities of the CAD system for modeling of milled log houses – **K3-Cottage**. The system will help you to develop a 3D house model and prepare the manufacturing documents.

We offer three packages of **K3-Cottage: Basic, Standard and Professional**. They feature different sets of functions and commands. The system is supplied with a detailed user guide. Special marks in the user guide help the user to understand what package the text refers to:

ST·PF **Only for K3-Cottage Standard and Professional Package –** the text marked with this sign and note is intended for users of Standard and Professional Packages of **K3-Cottage.**

PF **Only for K3-Cottage Professional Package -** the text marked with this sign and note is intended for users of Professional Packages of **K3-Cottage.**

Conventional symbols.

7 – reference to the page recommended for reading.

When starting, the program checks for available updates on developer's website. If any updates are available, the program offers the user to download them.

As **K3-Cottage** is being constantly improved in accordance with our clients' wishes, this document may contain differences from the currently supplied package. Therefore, if you have any questions, including the questions related to customized settings, please, feel free to contact us by e-mail:

E-mail: support@k3-cottage.ru
Website: www.k3-cottage.ru

POB 28, Nizhny Novgorod 603024
or by phone: +7 (831) 413-69-43, 415-69-46

2 System Installation and Settings

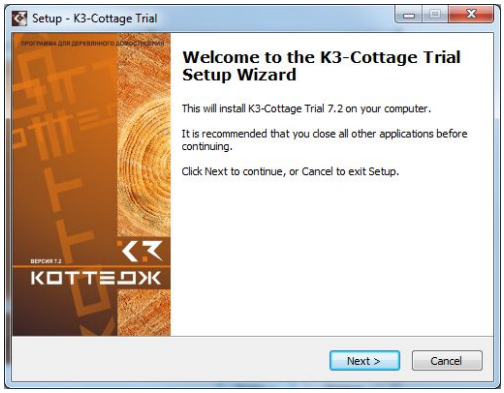
Standard package includes a DVD with distribution kit and a software protection dongle.

Attention! Insert the dongle in the USB port only after installation of the program and dongle driver on your PC.

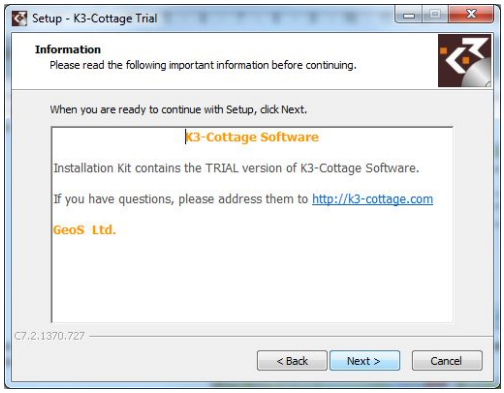
2.1 Installation

To install **K3-Cottage,** insert the DVD into the DVD-ROM drive. Installation will start automatically. Otherwise open the **KIT\disk1** folder on the DVD and run **SETUP.EXE**.

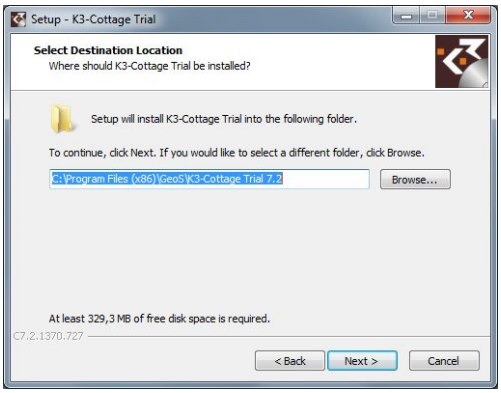
Click the **Next** button in the form:



When the License Agreement appears, please, read it, select **I accept the agreement terms** if you agree to its terms and click the **Next** button. The next form will contain information about the program. Please read it and click **Next** again.

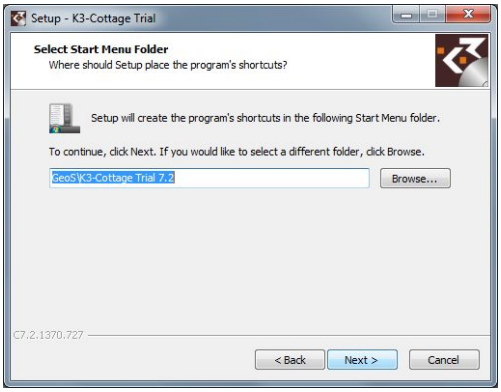


You can change the installation folder in the next form. If you agree to install the program to the offered folder, click **Next**.

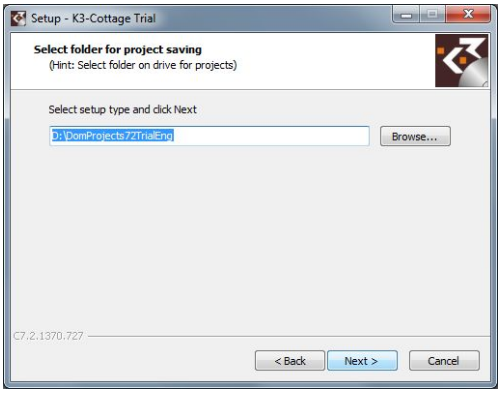


Hint. We recommend new users to install the program to the offered folder.

In the next form, you can select a folder for the **Start** menu:

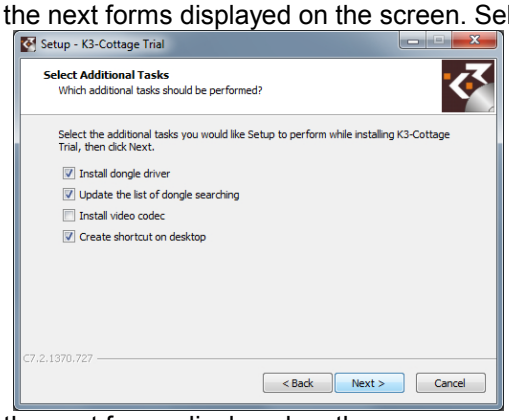


Then, select a folder to save projects to:

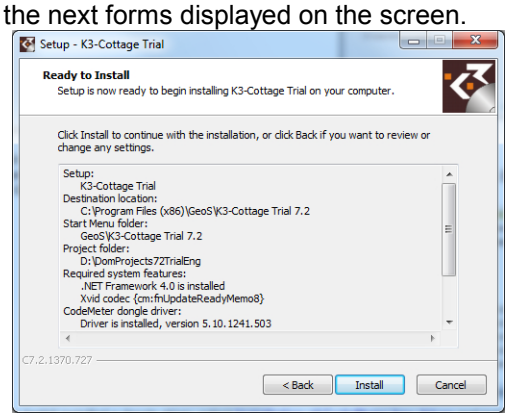


Hint. We recommend you to use different computer hard drives for the program installation and for the project storage.

Click the **Next** button in the next forms displayed on the screen. Select additional tasks.



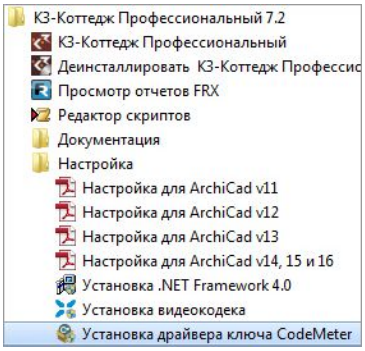
Click the **Next** button in the next forms displayed on the screen.



Click the **Install** button in the form informing that installation is completed.

When installation is completed, the **DomProjects72** folder will appear on the D:\ hard drive, if you have not changed the folder name during installation.

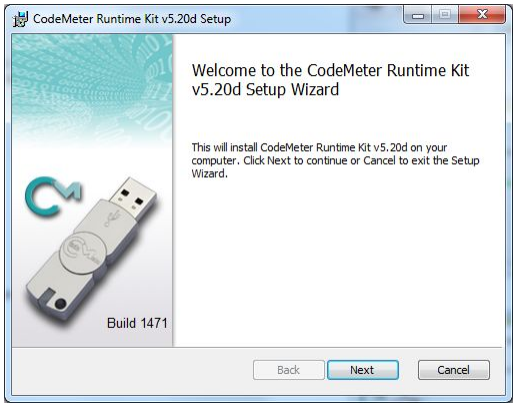
The **GeoS** line with the following menu will appear in the Start menu:



If you hadn't installed a dongle driver, select **CodeMeter driver installation** 11 and install the driver following the guidelines given in the next section.

2.2 Installation of the Dongle Driver

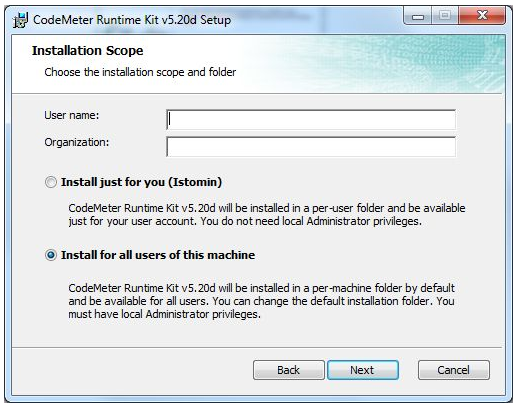
Select **Installation of CodeMeter key driver** in the **Start** menu. The following form will appear:



Click **Next.**

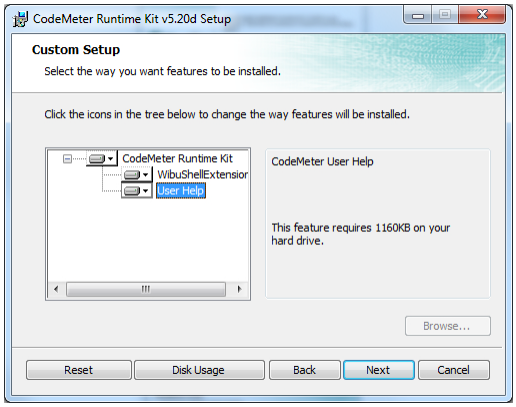
Agree with the licence and click **Next.**

Fill the form:



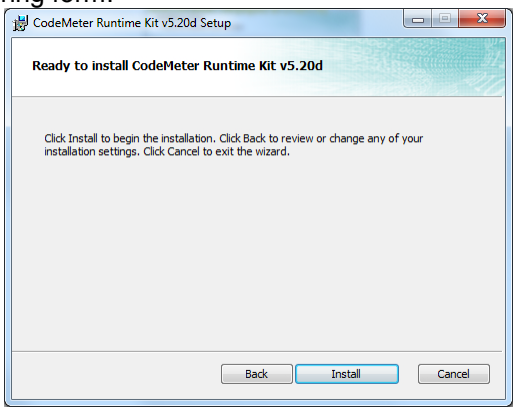
Click **Next.**

Select dongle features to be installed:



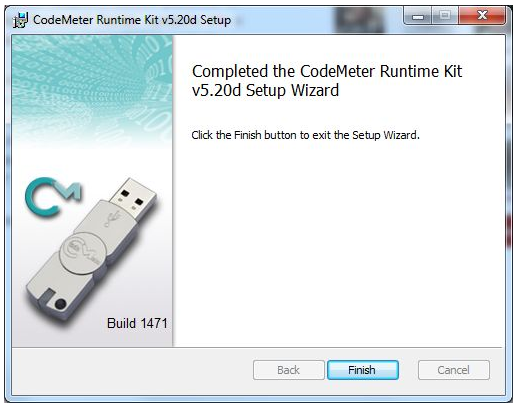
Click **Next.**

Click **Install** in the apearing form:



The following form will appear:

When installation is completed, click **Finish:**



2.3 Protection Dongle Usage

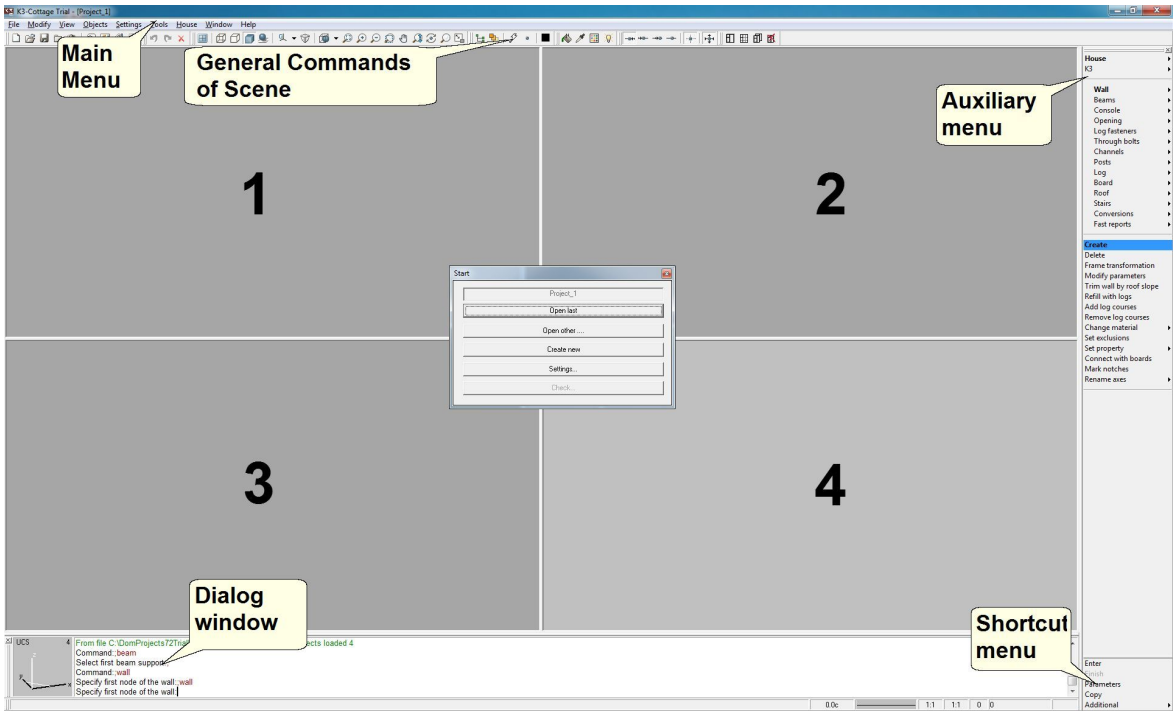
The **K3-Cottage** system is protected by the **CodeMeter** dongle. When installation of the **program** 8 and **dongle driver** 11, is completed, insert the dongle into the USB port.

Extracting the dongle (for example, in order to use it on another PC) shifts the program to the demo mode. You can work with the program, but will not be able to save any changes. If you insert the dongle again, the program will continue running in the demo mode. To exit this mode, you have to restart the program. Therefore, in order to avoid any data loss, save the project and close the program before extracting the dongle from your PC.

3 First Start of the Program

In order to start the program, find the **GeoS** folder in the **Start** menu and run the exe-file from the appropriate subfolder.

The system will be ready to create the first project.



Viewports are numbered in the picture. We recommend you to pay attention to the dialog window at the bottom of the screen, when you work with the program. It shows all system command queries – special instructions for users on further operations. Detailed description of the system screen is given in the **Interactive System Tools** chapter in the **K3** documentation.

As for the **Start** form, the upper line of the form will be empty at the first start of the program. Subsequently, the name of the last project you worked on will be shown in this line. You can open it using the **Open last** button.

Before starting work with projects, click the **Settings** button and introduce required changes in the **Material manufacturers** form, if necessary. Refer to the **Manufacturers** 30 chapter for more details.

Let's return to the **Start** form. In order to create a new project, use the **Create new** line. If you have projects created in **K3-Cottage**, you can open one of them using the **Open other** button. Details of project creating and opening are given in the **New Project Creating** 54 and **Project Opening** 58 sections.

Now, let us consider available operation modes. The system can run in the followings modes:

1. Project is opened: all commands of the **House** and **K3** menu are available; **tables of**

manufacturers are unavailable, user can modify the manufacturer only if it is personal 30.

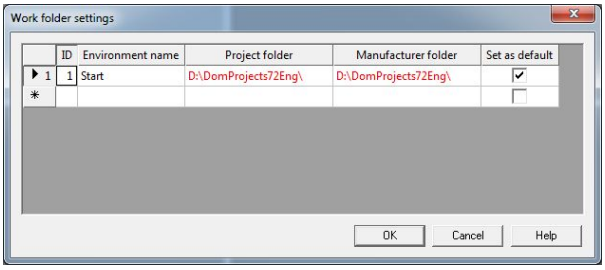
2. Project is closed: all commands of the **House** menu are unavailable, only the **K3** menu commands are available, **tables of manufacturers** are available, the user can modify the manufacturer only if it is common 30.

Now, it is time to define the project 54 and manufacturer 30 terms you have to deal with working in **K3-Cottage**. The Manufacturer represents a set of catalog tables required for project creating. These tables contain all information about materials used by certain manufacturers. The Project represents all information related to one project: reference to the manufacturer, project model and its reports.

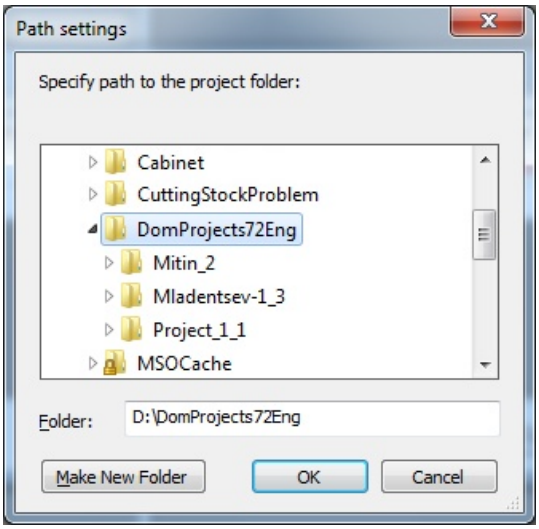
Thus, by using buttons of the **Start** form, you can go to manufacturer settings or create a new project or open any existing project. The buttons of this form are doubled by icons on the toolbar and commands in the main menu of the system (see the table below):

Start form command	**Main menu command**	**Button on the toolbar**
Open last	***File/Open last project***	—
Open other	***File/Open project***	
Create new	***File/New project***	
Settings	***Settings/Setting/Manufacturers***	

Attention! If when starting the program, the **Work folder settings** form appears instead of the **Start** form,



it means that the program failed to find a folder required for further operation. This folder will be highlighted in red. Double-click it. The **Path settings** form will appear. Specify the path to the existing or preliminary created folder to be used in future.



A pair of project folder and manufacturer folder is known as environment. There may be several pairs. To create a new environment go to an empty line, put cursor to the **Environment name** field and specify a new name. Then fill in the **Project folder** and **Manufacturer folder** fields as specified above.

4 Our Recommendations on Working with K3-Cottage

4.1 Recommended Algorithm of Project Development

For our purpose, the process of project development may be divided into several parts:

1. Catalog settings 34.
2. Creating a new project 54.
3. Project parameter settings 68.
4. Creating walls 84, beams 101, openings 111, posts 121 and consoles 108.
5. Creating roofs 131.
6. Adding rafters and lathing 140.
7. Marking notches 145.
8. Marking log fasteners 162, through bolts 166, channels 170 and division of long logs 153.
9. Adding windows and doors into the openings 118.
10. Creating floor, ceiling, stairs and other house elements consisting of boards 173.
11. Preparation of output documents: tables, registers, plans, etc. 186

Position of log fasteners, through bolts, channels and points of long log division depends on position of notches. Position of notches, in its turn, changes with shifting of walls or openings. Therefore, order of these operations is very important.

Detailed description of each section is given below.

Catalog Settings

Detailed description of manufacturer settings is given in the **Catalogs** 34 chapter.

Creating a New Project

See the **Creating a New Project** 54, **Project Opening** 58, **Project Import** chapters for details of creating a new project or opening an existing project.

Project Parameter Settings

Set house parameters using the ***Settings/House Parameters…*** commands of the main menu (see the **System Start** chapter, the **New Project Parameter Settings** 68 section).

Creating Walls, Beams, Openings, Posts, Consoles and Roofs

Action	Commands
Creating walls	***House/Wall/Create*** 84
Changing wall position	***House/Wall/Frame transformation*** 88 ***House/Conversions*** 88

Editing walls	House/Wall/Modify parameters 86 House/Wall/Add log courses 128 House/Wall/Delete log courses 129 House/Wall/Change material 126 House/Wall/Trim wall by roof slope 93
Creating and editing beams	House/Beams/Create 101 House/Beams/Modify 106
Changing beam position	House/Wall/Frame transformation 88 House/Wall/Conversions 88 House/Beams/Shift 106
Adding and editing openings	House/Opening/Create 111 House/Opening/Multiply 115 House/Opening/Copy 115 House/Opening/Modify 115 House/Opening/Multiediting 115 House/Opening/Filling 115 House/Opening/Mounting log 117
Adding and editing posts	House/Post/Create 121 House/Post/Modify 125
Positioning and editing consoles	House/Console/Create 108 House/Console/Copy 110 House/Console/Modify 110 House/Console/Change snap 110
PF Creating roof slopes	House/Roof/Create roof slope 131
PF Changing roof slope position	House/Roof/Shift roof slope 137 House/Roof/Rotate roof slope 137
PF Changing roof slope parameters	House/Roof/Modify roof slope 134
PF Roof slope trimming	House/Roof/Trim slopes 138 House/Roof/Trim slope with wall 138
PF Roof slope display	House/Roof/Display slope 133

Marking Notches

Action	Commands
Setting joint parameters	Settings/House parameters 70
Setting joint exclusions	House/Wall/Set property 149 House/Wall/Set exclusion 149
Marking notches	House/Wall/Mark notches 145

Marking log fasteners, through bolts, channels and long log division

Action	Commands
ST·PF Marking log fasteners	House/Log fasteners/Mark 162 House/Log fasteners/Create 164 House/Log fasteners/Add 162
ST·PF Editing log fasteners	House/Log fasteners/Modify 164 House/Log fasteners/Multiply 164 House/Log fasteners/Copy 164
ST·PF Marking through bolts	House/Through bolts/Mark 166 House/Through bolts/Create 168
ST·PF Editing through bolts	House/Through bolts/Modify 168 House/Through bolts/Copy 168
ST·PF Adding channels	House/Channels/Create 170
ST·PF Editing channels	House/Channels/Modify 171 House/Channels/Copy 171
Long log division	House/Log/Divide 153 House/Log/Unite 153 House/Log/Shift of division point 153

Creating boards

Action	Commands
ST·PF Creating boards	House/Board/Create 173 House/Board/Fill in 181 House/Board/Create board 175
ST·PF Editing boards	House/Board/Modify 176 House/Board/Change material 179
ST·PF Joining boards	House/Board/Join 175
ST·PF Dividing boards	House/Board/Divide 177
ST·PF Deleting boards	House/Board/Delete 182

Reports

Preparation of all output documents is the last thing. They should be prepared when position of walls, openings and consoles is defined, long logs and boards are divided, and log fasteners, through bolts and channels are marked.

Action	Commands
Creating reports	***Settings/Project reports*** 186

4.2 Object Selection

When executing some command (for example, editing), the system may request to select some already built objects: walls, beams, posts, through bolts, log fasteners, etc. You can select them by using several methods:

- using the mouse cursor taking the form of a trap when selecting the objects. To select an object, position the trap so that at least some part of the object image is inside it. The selected object will be highlighted and its name will be displayed on the screen, for example, Wall A, if a wall is selected. Upon selection of the object, click it with the left mouse button. The selected object will start blinking;
- by wall or beam name (to select walls and beams only):
  - wall selection:
    When the "*Select wall*" request is displayed, type ***Getwall("***Wall name***")*** in the dialog window. Specify the name of selected wall in double-quotes: figure or letter. The letter should be capital and typed in the language (Russian or English) selected for the axes;
  - beam selection:
    When the "*Select beam*" request is displayed, type ***Getbeam(***Beam number***)*** in the dialog window. The beam number should not be quoted.
- using commands of the shortcut menu displayed in the bottom-right corner of the screen or when pressing the right mouse button:

Finish – finish selection;
All – select all available objects (hidden objects will not be selected);
Undo – cancel the last selection;
Exclude – enable the mode of object exclusion from the set of selected objects. You can select ***All*** in the shortcut menu, ***Exclude*** and specify the objects you do not want to select;
Last – last created, but not selected object. If you select this element several times, the objects

will be selected in the reverse order, i.e. the last created object will be selected first;
Frame/With crossing – select all objects fully covered by the frame / select all objects partially covered by the frame;
Many/One – select all objects at least partially covered by the trap / select only one object at least partially covered by the trap; if several objects are covered by the trap, the first created object will be selected;
From attributes – select objects using values of their attributes;
TypeFilter – select objects using their type, these are the objects created using the **K3** menu;
LayerFilter – determine the layer the selected objects belong to;
FilterByColor – select objects by their color;
ObjectParameterFilter – select objects using their parametric property. For example, you need to delete all project boards. For this purpose, click **Reset** in the **Parametric object filter** form in order to cancel the current selection, then select the **Boards** line and click **OK**. Select **All** in the shortcut menu. The system will select all project boards and delete them. If you need to delete not only the parametric objects, in the **Parametric object filter** form select the **Not parametric object** line;

This procedure is described in more detail in the **K3** documents, the **Standard Scenarios** and **System Commands Included in the Main Menu** chapters.

4.3 House Element Display

When working with a large project, the user often needs to make some of its elements invisible. There is an opportunity to “hide” walls, beams, posts, through bolts, openings and other house elements, i.e. to make them invisible.

Hidden objects cannot be selected for editing or deleting, however, some commands can modify these objects (***House/Wall/Frame transformation, Refill with logs, Add log courses, Delete log courses, Notches***). All hidden objects are always visible in the reports.

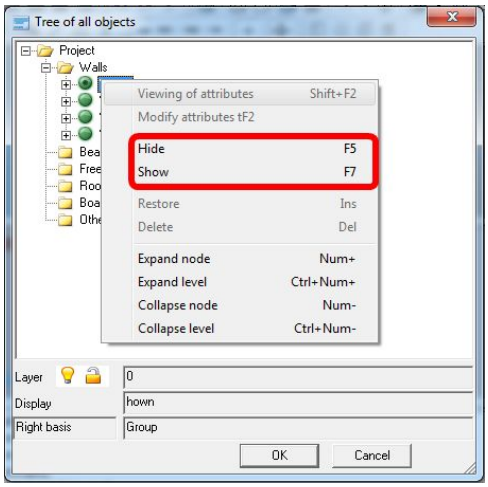
There are several ways to make an object invisible.

First method: uncheck the respective elements in the **Display** 68 tab in the **House parameters** form. Thus, you will hide all similar elements of the project at once. Check the respective elements in order to show them again.

Second method: open the object tree using the  icon. The **Tree of all objects** form will appear. The user will see in this form whether one or another object is currently displayed or not. Red circle means that the object is hidden, green circle means that the object is shown.

Note. When calling the **Tree of all objects** form, the folder of the objects the user is working with will be opened automatically. For example, if you call the form when creating walls, the **Walls** folder will be opened, when working with beams – the **Beams** folder, with roof slopes – the **Roof slopes** folder, etc.

Find the object and select it by the left mouse button. The selected object will be highlighted and will start blinking. Right-click the selected line to open the following menu:

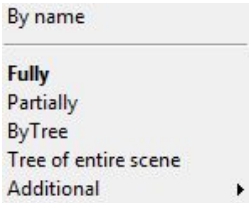


Use the ***Hide*** or ***Show*** command depending on the object status – hidden or shown. Use **Hide on halftone** to hide the image of the selected object not in all viewports, but only in the viewports where the mode of halftone (color) display is enabled using the  button. Also, you can maximize and minimize nodes and levels of the object tree, if necessary.

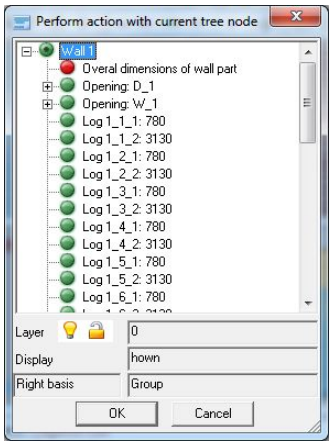
Note:
- it is possible to hide both an individual object and its components as well as groups of similar objects: it is necessary to select the respective level of elements in the tree;
- if roof slopes and boards of the project have group names, these objects in the scene tree will be included into separate groups;
- if an object lies in hidden layer, it will remain hidden until the layer is displayed;

Third method: use commands from the ***K3/Display*** menu.

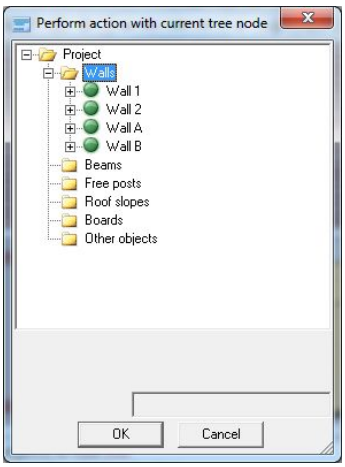
To hide an object, select ***K3/Display/Hide*** and then choose the method of object selection in the shortcut menu:



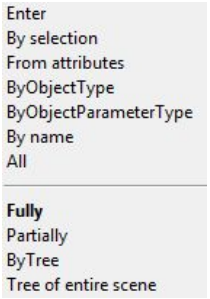
By name – selection by name, if there are named objects in the scene. The name is assigned to objects using ***K3/Information/Object name***;
Fully – selection of entire object. If the objects are joined in a group, the entire group is selected, for example, an entire wall;
Partially – objects included in the group are selected, for example, wall logs;
By tree – selection of objects by structural tree of selected object, for example, of wall **A**:



You can hide an object by right-clicking the circle (the menu will not be displayed).
Tree of entire scene – selection of objects by structural tree of entire project.



Similarly, you can hide an object by right-clicking the circle.
Additional – opens the menu of object selection described in the **Object Selection** 20 section (Also, we recommend to read the ***K3*** documents, the ***Selection of Geometric Objects*** and ***How to Control Display of Objects*** sections). In particular, ***Additional/ObjectParamFilter*** 21 enables the mode of selection of certain object types. For example, you need to hide walls **A** and **1** only. Select the **Walls** line in the **Parametric object filter** form and click **OK**. Upon that, the system will allow selection of walls only. Other project objects will be unavailable for selection.
When selection of objects is completed, click **Finish** in the shortcut menu (in the bottom right corner of the screen). All selected objects will be hidden on the screen.
Select ***K3/Display/Show*** to show the previously hidden objects. Then, select a method of object selection in the shortcut menu:



All – all objects of the hidden layer will be shown;
Optional – program will highlight the hidden objects. Click the objects to show them on the screen;
The ***By name, Fully, Partially, By tree*** and ***Tree of entire scene*** elements of the shortcut menu are used in the same way as when "hiding" an object. ***ByObjectParamType*** enables the mode of selection of certain object types in the same way as the ***Additional/ObjectParamType*** function in case of object "hiding".

When working with **K3-Cottage**, the display of hidden objects is enabled by the system automatically as a result of using some senior commands. For example, when you hide several logs in the wall, and then change the color of long logs in the **House parameters** form. The hidden logs will be shown on the screen again as the command of long log color modification assigns the status of shown objects to all project logs automatically. To hide the shown logs again, you will have to make these objects invisible again.

Attention! When saving objects, the status of object displaying is saved as well. When loading a file, the hidden objects will be loaded too. To obtain information about the scene object status, use the ***Settings/Status*** command of the main menu or object tree called by the  icon.
In order to detect the hidden objects in the scene, you can use the ***K3/Display/Show*** command and the ***Optional*** element of the shortcut menu (see above). All hidden objects of the scene will be highlighted.

4.4 Useful Icons and Commands

For ease of project development, you can use the following buttons on the **General Commands of Scene** toolbar:

Toolbar button	Action	Purpose
	New project	
	Open the project	

	Save the project	
	Close the project	
	Save selected	Saves only the objects created using the **K3** menu.
	Call the **Material manufacturers** 34 form.	
	Information 62 on current project.	
	Call the **House parameters** 68 form.	
	Left mouse button – call the **Project reports** 183 form. Right button – review project reports (without editing)	
	Undo the last operation	
	Redo the cancelled operation (cancel cancelation)	
	Delete an object	
	Left button – redraw an image in all viewports Right button – recreate an image in all viewports	Used immediately after object deletion in order to update all lines in the image
	Left button – show in current viewport as frame Right button – regenerate (recreate) an image in current viewport	
	Left button – show without hidden lines in current viewport Right button – delete hidden lines in current viewport	Used for convenience when adding and creating objects
	Left button – show halftone image in current viewport Right button – halftone display settings	

	Left button – extended photorealistic image Right button – photorealistic images of photographic quality	
	Selection of projection in current viewport	Menu with projection variants appears when clicking the icon
	Enable/disable display in perspective in current viewport	
	Enable the mode of operating with a viewport	
	Left button – set the maximum possible scale in current viewport showing the entire image Right button – the maximum possible scale in all viewports	Used after clicking the button to show the entire project in current viewport
	Left button – double image scale in current viewport Right button – double image scale in all viewports	
	Left button – halve image scale in current viewport Right button – halve image scale in all viewports	
	Set the square area to zoom in using the frame. Enlargement ratio allows displaying the entire selected area in the viewport.	Used for quicker and more accurate selection of required point or line
	Move the scene in any direction without changing its scale (so called “dynamic panorama”)	
	Scale the image in real-time mode (so called “dynamic scaling”)	
	Rotate the image in real-time mode (so called “dynamic rotation”)	
	Zoom in the part of the scene which is under magnifier	
	Maximize the current viewport. Repeated click will make all viewports visible	Used to make all object views available

	Left button – fill the object with the material selected from the material table Right button – fill the object with the color selected from the color palette	
	Fill the object with the material selected on one of the scene objects	
	Call the material library editor	
	Call the light source editor	
	Snapping 85 from the beginning	
	Snapping from the end	
	Snapping from the middle	
	Free snapping	
	Enable/disable snapping to virtual axes	
	Enable/disable automatic breaking and snapping of nodes for frame transformation 88	
	Show the tree of all scene objects	Used to hide and show objects
	Create layers and place selected scene objects on them Left mouse button – change of current layer Right button – layer editing	
	Left button – enable/disable autosnapping Right button – autosnapping settings	
	Set the reference point	
	Set the current color	
	Add a window/door to the opening 118.	

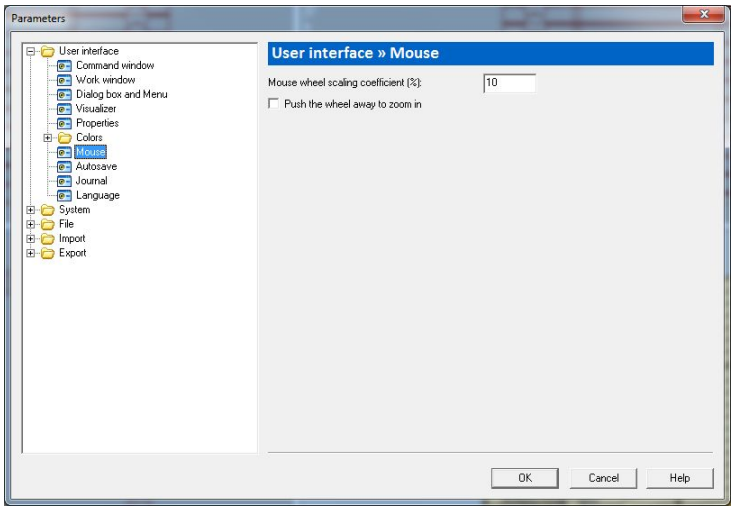
	Modify the filling 115.	
	Copy the filling 119.	
	Delete the filling 119.	

See detailed description of buttons on the **General commands of scene** toolbar in the **K3** documents.

If you have a wheel mouse, you can:

- make dynamic scaling of image. Put the mouse cursor to the area to zoom in (zoom out) and rotate the mouse wheel;
- make dynamic panorama of image. Move the mouse with the wheel pressed.

Scaling ratio and direction may be modified in the **Settings/Parameters** form, in the **Mouse** node:



Description of some frequent system commands when adding and creating objects:

1. Select ***Finish*** in the shortcut menu and click **Enter** to complete command execution.
2. Select ***<Esc>*** or any other command to cancel selected command.
3. When working in forms, use the **Enter** button to go to the next cell to be filled in. You can press **Ctrl+Enter** instead of the **OK** button to close the form with saving changes.

4.5 Calculator

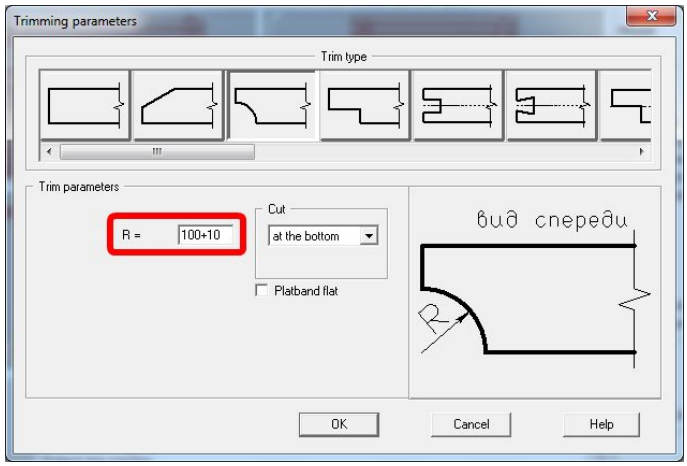
You can use the **calculator** provided in the **K3-Cottage** system to make calculations in all forms in the fields requiring input of numbers.

Example

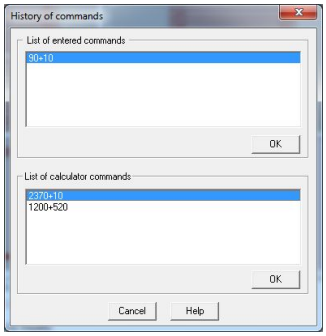
You need to increase the value of the **Radius** parameter by 10 mm. Enter 100+10 in the

Radius field. When you go to another field, the system will calculate the amount automatically and replace the old value with the new one equal to 110 mm.

You can make the same operation using a variable. In the beginning of work assign a value of necessary number to the variable, for example, **X**. Enter **X=***10* in the form. Then, enter 100+**X** in the **Radius** field. The system will calculate the amount automatically replacing **X** with the specified value.



All calculator commands for one work session in K3-Cottage are saved to the buffer. You can view entered expressions at anytime by right-clicking the dialog window 14 or any numeric field of the dialogue windows:



5 Manufacturers

The **Manufacturer** in the **K3-Cottage** program is a set of catalogs connected to the project and containing information on materials and reports, which may be used in the project.

The scope of program supply includes two standard manufacturers – samples. You are supposed to reate your own manufacturer file basing on one of them. Use your company name to name the file. Add your materials and delete all the unnecessary items. It will be your template manufacturer. You will work with it.

You can create several template manufacturers. It is convenient if you work with several manufacturing enterprises. In this case, you can create as many manufacturers as many manufacturing enterprises you deal with. You can name and set them accordingly and select the required manufacturer when creating a new project. We recommend to set all manufacturers first and then to start working with projects. In this case you will be able to organize your work properly as you won't have to set any parameters every time, when you need it.

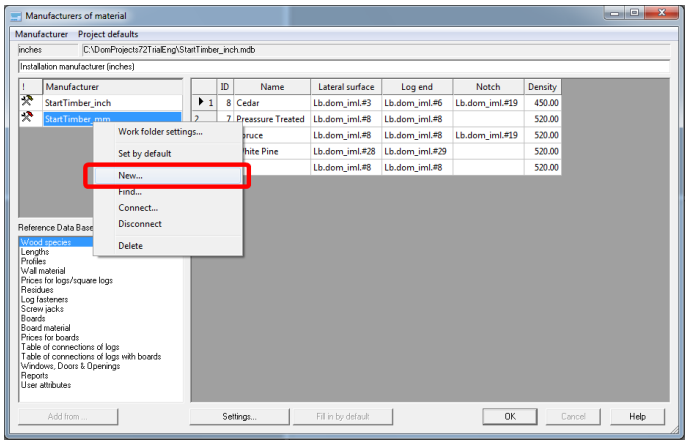
The Manufacturer is the basis of the project. It contains all the materials used in the project.

At first start, the program offers to select **StartTimber_mm** (for measurements in millimeters) or **StartTimber_inch** (for measurements in inches). Hereinafter, we will call these manufacturers as standard manufacturers as they are taken as a sample for creating all other manufacturers in the program. In subsequent program starts, the list of manufacturers offered for selection will be added with created manufacturers, including manufacturers from projects.

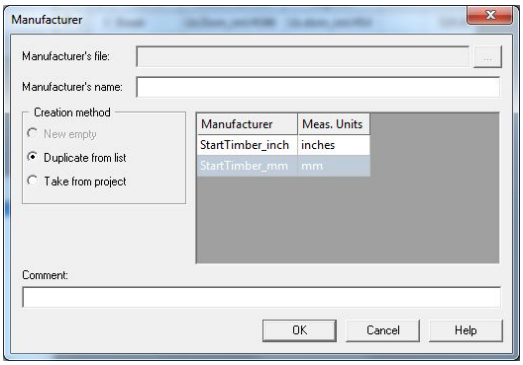
Important! When creating a project, you should select the manufacturer and, therefore, measurement units. Upon creation of project, you won't be able to change the manufacturer and measurement units.

5.1 Creating Manufacturers

Close all projects and select ***Settings/Setting/Manufacturers.*** Click **Manufacturer** in the upper left corner of the **Material manufacturers** 32 form and select **New.**



The **Manufacturer** form will appear on the screen:

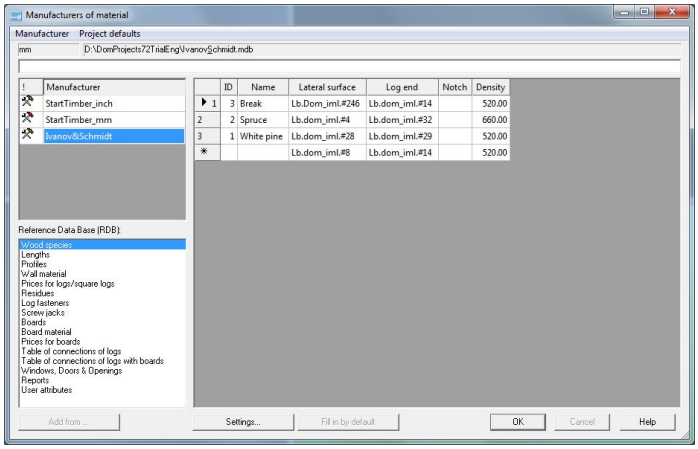


Enter your company's name or the name of the company implementing the future project in the **Manufacturer's name** field. Enable the **Duplicate from the list** parameter and select the required manufacturer from the list on the right.

Note. Remember that selecting the manufacturer, you will select measurement units: **StartTimber_mm** – in millimeters, **StartTimber_inch –** in inches. For example, if you select **StartTimber_mm** and click **OK**, you won't be able to enable measurements in inches.

If you wish to take a manufacturer from any ready project as the basis for your new manufacturer, enable the **Take from project** parameter, click dots in the upper field and select the respective project.

Upon creation of the manufacturer, the manufacturer's name will be shown in the upper left table of the **Material manufacturers** form. Click it with the left mouse button. A list of catalog tables of the new manufacturer will be shown in the lower table:



Then, you can select and edit catalogs. For this purpose, you need to know what each parameter means in each table. See the **Catalogs** 34 chapter.

Attention! When creating a new manufacturer on the basis of previously created one it is recommended:

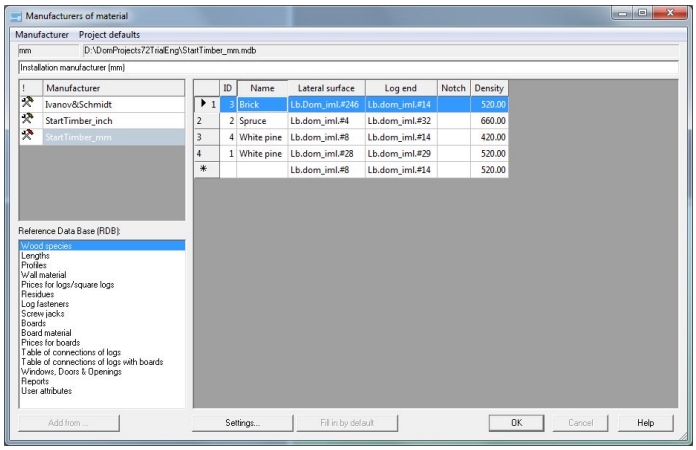
– to delete all materials you are not going to use in future;

– to add new materials, if necessary, instead of editing existing materials.

Hint. If you work with one manufacturer more frequently than with other ones, you can set it as default. When creating a new project, the system will offer this manufacturer. Right-click the manufacturer's name and select ***Set as default***. A hammer to the left of the manufacturer's name will become red.

5.2 Manufacturer Settings

Make sure that all projects are closed and click the  icon or select ***Settings/Setting/Manufacturers*** in the main menu. The **Material manufacturers** form will appear on the screen:



This form consists of three parts: upper left, lower left and right. The upper left part contains a list of general 30 manufacturers you work with. The lower left part contains a list of current manufacturer catalogs. The right part shows content of current catalog.

Note. If the manufacturer is unavailable, it means that you can't edit it because one more **K3-Cottage** is run on your PC with opened project referring to this manufacturer.

In the very beginning of work you will see two manufacturers in the upper part of the form – **StartTimber_mm** (for measurements in millimeters) and **StartTimber_inch** (for measurements in inches). They are prepared by developers of **K3-Cottage** as samples for all other manufacturers. It means that each new created manufacturer will consist of the same tables as StartTimber_mm or StartTimber_inch. You can't delete the tables, but can edit them in accordance with requirements of certain manufacturer. At least one filled line should be present in all tables, and it cannot be deleted. The only exception is the **Residues**.

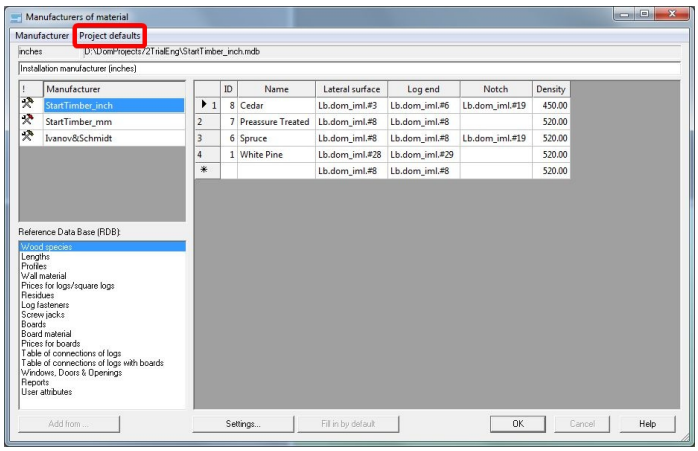
5.3 Project Default Settings

Set the defaults for project parameters in the manufacturer. These settings will be taken as the values of house parameters when creating a new project with this manufacturer.

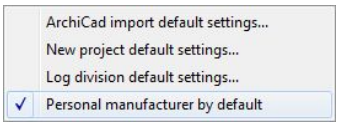
The same operation can be made with the parameters of import from **ArchiCAD** and log

division.

In order to set the defaults, click the **Project defaults** button in the **Material manufacturers** form**:**



Then select one line and set your parameter values in the drop-down menu:



Parameters of import from **ArchiCAD** are described in detail in the **Import and Export of ArchiCad Projects** section.
Project parameters are described in detail in the **New Project Parameter Settings** 68 section.
Parameters of log division are described in detail in the **Long Log Division** 153 section.

A checkmark in the **Personal manufacturer by default** line means that when creating a new project, the manufacturer is copied into the project folder and the user can work with this manufacturer only when the project is opened.

6 Catalogs

Click the **Settings** 14 button, the  icon or select the ***Settings/Setting/Manufacturers*** command to open the **Material manufacturers** 32 form. Here, you can set the catalogs of manufacturers.

How to work with catalogs:

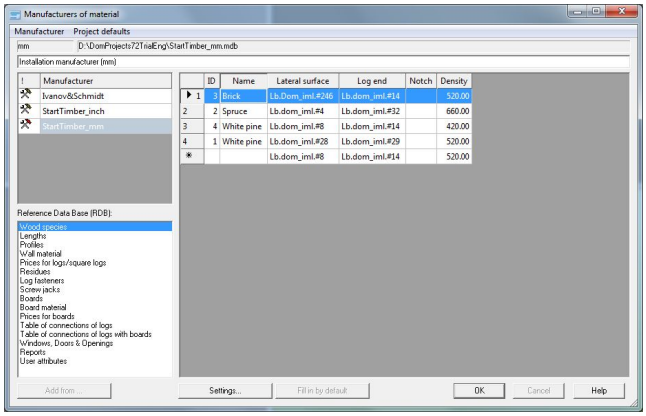
– **adding a new line** – double-click the last line and fill in all its fields;
– **saving** – status of current line is saved automatically when going to another line of the table, then, the user cannot undo the introduced changes;
– **editing cell content** – double-click the cell you want to modify and enter a new value or select it from the drop-down list;
– **deleting a line** – select the line to be deleted and press **Delete**.

Attention! You can delete lines only if they are not used by other catalogs.

Note. Operation principle of the program does not depend on selected measurement units: millimeters or inches. Therefore, let's assume that all further operations will be described by the example of **StartTimber_mm**, bearing in mind that operations with inches, i.e. with **StartTimber_inch**, are made by analogy with millimeters.

6.1 Wood Species Catalog

The catalog contains a list of wood species used by the manufacturer.



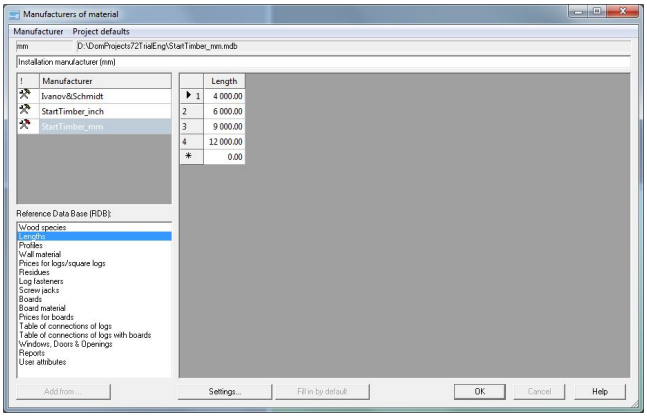
Name (text field) is a name of wood species, the user will see it in the forms in the **Wood Species** field.
Lateral surface, Log end, Notch (text fields) are numbers of materials from the material library (for color image); if you enable the halftone image mode using the  icon, the system will "take" materials with these numbers in the library and "paint" lateral surfaces, log ends and notches of the logs with them in your project.

Note. Due to the opportunity to select a material **for notches**, if necessary, the user can highlight all notches in all project logs. If the user fails to set the number of the **Notch** material, the system will "paint" the notch with the material intended for the lateral surface or log end depending on notch position and shape.

Material density (kg/m3) is used to calculate project material mass as well as for calculation of structural strength.

6.2 Lengths Catalog

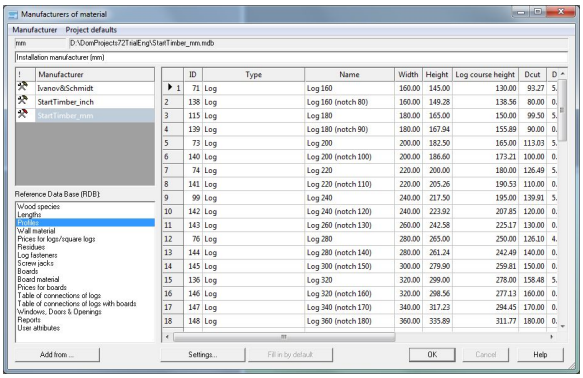
The catalog contains a list of workpieces of logs and boards used by the manufacturer.



Length (numeric field) is a length of log or board workpiece.

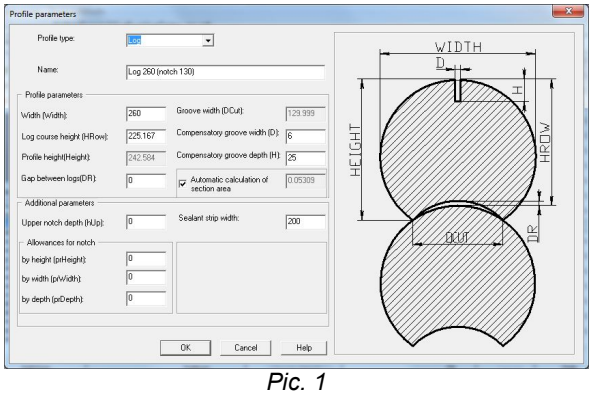
6.3 Profile Catalog

The catalog contains a list of profiles used by the manufacturer.
The **Add from DBF** button is used to make current version compatible with versions 5.x 57. By using this button, the user can add data from the **Logstd.dbf** table to the catalog.

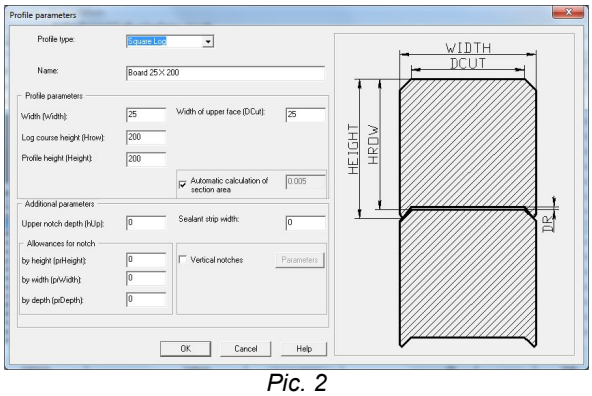


In order to modify the table, double-click the line to be modified or click the **Settings...** button. The form of selected profile parameters will appear on the screen. You can select round log, square log or Swedish Cope square log in the **Profile type** field. Depending on your selection,

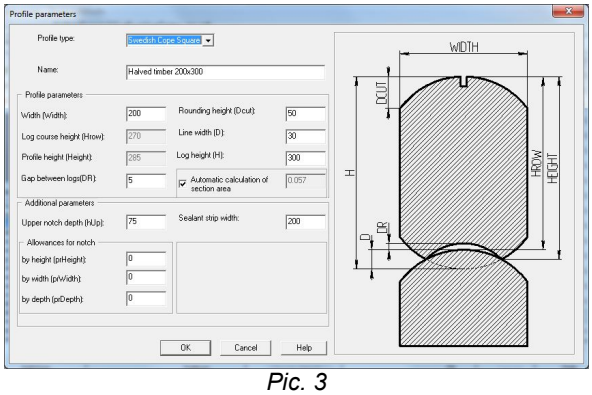
drawing of the round log, square log or Swedish Cope square log profile will be displayed in the right part of the form and its parameters – in the left part.



Pic. 1



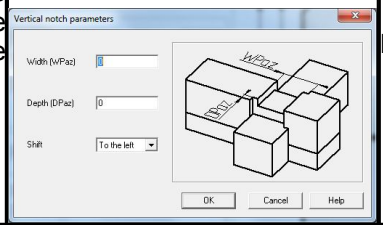
Pic. 2



Pic. 3

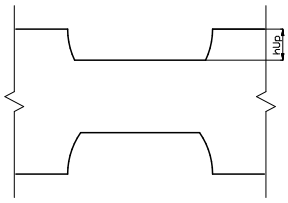
Name (text field) is a name of certain profile used by this manufacturer; the user will see it in all forms when selecting material and in all reports.

Profile Parameters:

Round log (Pic. 1)	Square log (Pic. 2)	Swedish Cope square log (Pic. 3)
Width (Width) is a log diameter; **Log course height (HRow)** is a height of log course; Note. This is the key parameter for calculation of all values set in the log courses. **Profile height (Height)** is a height of log profile, this is the information parameter calculated by the system; **Gap between logs (DR)** is a gap between logs; **Groove width (DCut)** is a groove width, this is an information parameter calculated by the system; **Compensatory groove width (D)** is a width of compensatory groove; **Compensatory groove depth (H)** is a height of compensatory groove; Note. The user can see an image of the compensatory groove only in the log drawing in the log table.	**Width (Width)** is a width of log profile; **Log course height (HRow)** is a height of log course; Note. This is the key parameter for calculation of all values set in the log courses. **Profile height (Height)** is a height of log profile; **Width of upper face (Dcut)** is a width of the upper log face between chamfered corners. **Vertical notches**. A check mark in front of this parameter enables the mode of marking vertical notches on the log. The **Parameters** button is used to open the form of vertical notch parameters:  	**Width (Width)** is a width of Swedish Cope square log; **Log course height (HRow)** (information field) is a log course height; this parameter is calculated by the system; Note. The **Log course height** parameter is the key parameter for calculation of all values set in the log courses. **Profile height (Height)** (information field) is a height of Swedish Cope square log profile; this parameter is calculated by the system; **Gap between logs (DR)** is a gap between logs; **Rounding height (DCut)** is a height of profile rounding; **Log height (H)** is a log diameter; **Line width (D)** is a line width.

Automatic calculation of profile area parameter enables the mode of profile area calculation by the system. In case of round log, profile area is equal to circle area. In case of square log and Swedish Cope square log, profile area is equal to the product of profile height by width. If you uncheck this parameter and enter your own value of profile area in the next field, this value will be used in calculation of cubage without taking into account the notches.

Additional parameters:
Upper notch depth (hUp) is a height of the upper notch cut (see the picture).



A notch may be cut in different ways: either only on the top or only on the bottom or both on the top and on the bottom. It depends on the value of **Upper notch depth (hUp)**:

- if **hUp = 0**, the notch should be cut fully on the bottom;
- if **hUp = Height – HRow/2**, the notch should be cut fully on the top;
- if **0 < hUp < Height – HRow/2**, the notch should be cut both on the top and on the bottom; in this case depth of the upper part of the notch = **hUp**, depth of the lower part of the notch = **Height – HRow/2 – hUp**. If allowance for notch (see below) is not equal zero, it should be added to or deducted from both the notch parts, depending on the sign.

Example of calculation of hUp and allowance for notch by height prHEIGHT

Task. You need to cut a notch both on the top and on the bottom, with depth of the upper notch part = 48, and depth of the lower notch part = 50.

Profile height: **Height** = 190.

Log course height: **HRow** = 180.

Find: **hUp** and allowance for notch by height **prHEIGHT**.

Solution. Let us assume that **hUp** = 48, then the depth of the lower notch part = **Height – HRow/2 – hUp** = 190 – 180/2 – 48 = 52, but according to the conditions we need 50. Let us find a difference between the required depth of the lower notch part and the result: 50 – 52 = -2. We divide the value into two and receive -1. This is the value of allowance for notch by height. Its sign may be both positive and negative.

Then, let us find **hUp**. As the allowance for notch is a negative value, in order to maintain the depth of the upper notch part equal to 48, let us increase it by the value of calculated allowance: 48 + 1 = 49. So, **hUp** = 49. Together with the allowance we will obtain the required value: 49 – 1 = 48. Depth of the lower notch part will be equal to: 190 – 180/2 – 49 = 51. Together with the allowance: 51 – 1 = 50.

Answer: **hUp** = 49, **prHEIGHT** = -1.

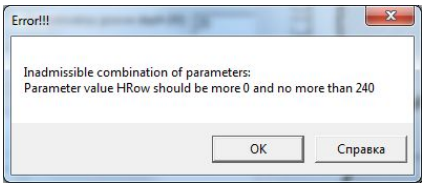
Allowances for notch:

By width (prWIDTH) and **By height (prHEIGHT)** are values of allowances for standard notch by width and height. They are used in drawings of the **Notches and log ends** table included in the **Log table** 197 report. Dimension of any notch is determined by profile parameters of the log forming that notch. In the drawing, dimensions of the notch will be increased by values of the **prWIDTH** and **prHEIGHT** allowances.

By depth (prDepth) is a value of allowance by depth. It is used in drawings of the **Notches and log ends** table included in the **Log table** report.

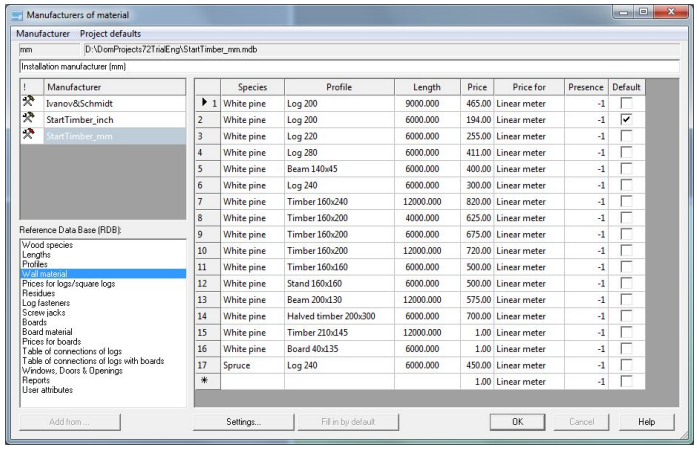
Sealant strip width is a sealant strip width for the profile; this value is used for calculation of sealant strip material consumption in **Material register** 203 and **Log table** 197.

When setting profile parameters in the **Profile** catalog, the system checks admissibility of set parameter values. If it is impossible to create a profile with the specified parameter values, the system generates a detailed error message, for example:

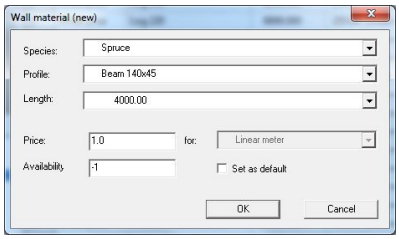


6.4 Wall Material Catalog

The catalog contains a list of log workpieces used by this manufacturer. This is the main catalog as its information is used for selection of material of walls, beams, posts, for cutout, etc. The **Wall material** catalog is connected with other catalogs: **Wood species, Lengths, Profiles**. Values of its fields: **Wood species, Profile, Length** are taken from the above mentioned catalogs. If there is a reference to any record in the **Wall material** table, this record cannot be deleted from the **Wood species, Lengths, Profiles** catalogs. For example, you cannot delete the **Larch** record from the **Wood species** catalog as long as this material is used in the **Wood species** field in the **Wall material** catalog.



In order to add a new line to the table, double-click the empty lower line or the **Settings…** button. The **Wall material** form will appear on the screen:



Wood species (dropdown field) is a name of workpiece wood species taken from the **Wood species** catalog.

Profile (dropdown field) is a name of workpiece profile taken from the **Profiles** catalog.

Attention!
If there are several elements with the same name in the dropdown list of **Wood species** and **Profiles**, pay attention to the number in brackets.

This is the identification number (ID) assigned to the wood species (profile) automatically in the **Wood species** 34 catalog (**Profiles** 35 catalog). The main quality of this parameter is a unique character. Even if the names of wood species (profiles) coincide, their IDs are different. Therefore, it is possible to make a clear choice of wood species (profiles) of materials.

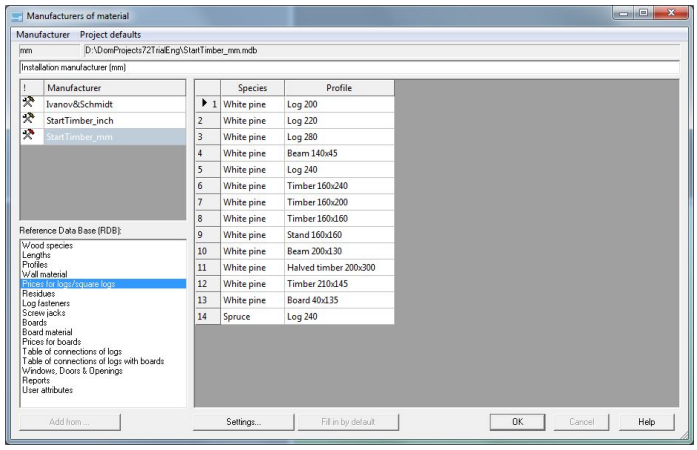
Length (dropdown field) is a workpiece length taken from the **Lengths** catalog.
Price (numeric field) is a price for linear meter, it should be always more than zero. It is used for house cost calculation and cutout.
This field will be very useful for those who use in production material workpieces of different length, as they will have an opportunity to save on difference in their prices. Set all workpieces in the catalog. Assign prices to their lengths assuming that one linear meter of a shorter workpiece is cheaper. The program will cut out the material in the most optimal way using your data and minimizing both the price and residues.
Availability (numeric field) is a number equal to quantity of material workpieces in stock. If there are no workpieces of such material in stock, enter zero in this field. If the amount of such material in stock is unlimited, enter minus one in this field.
Set as default is a sign of using this material for each new project 54; as a rule, this material is used more frequently than other materials.

Fill in the form fields and click **OK**. A new record will appear in the catalog.

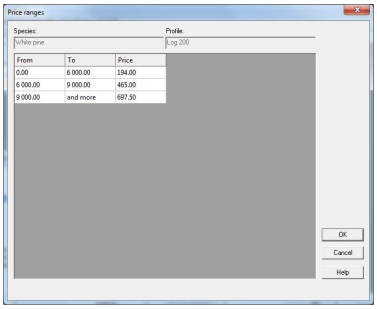
6.5 Log Prices Catalog

The catalog contains ranges of log prices used for calculation of house **estimated cost** in the **Material register** 203 report.
Note. Run the cutout module 219 to calculate the accurate price of the house.

Data of the **Wall material** catalog is used in the **Log prices** catalog. The number of lines in the catalog is equal to the number of types of wall material, i.e. different pairs of wood species-profile in the **Wall material** table.



Double-click the respective table line to view wall material prices in the **Log prices** catalog. The form of material cost ranges will appear on the screen. Number of ranges depends on the number of lengths of the workpieces of selected wall material type in the **Wall material** catalog. The range limits and prices are taken from the same catalog, from the **Length** and **Price** columns. For example, if there are three lines with the same type of wall material: **Pine – Log 200** (**Profile** column) and there are different workpiece lengths: 4000, 6000 and 12000 mm in the **Wall material** table, the cost limits in the **Log prices** catalog are determined as follows:



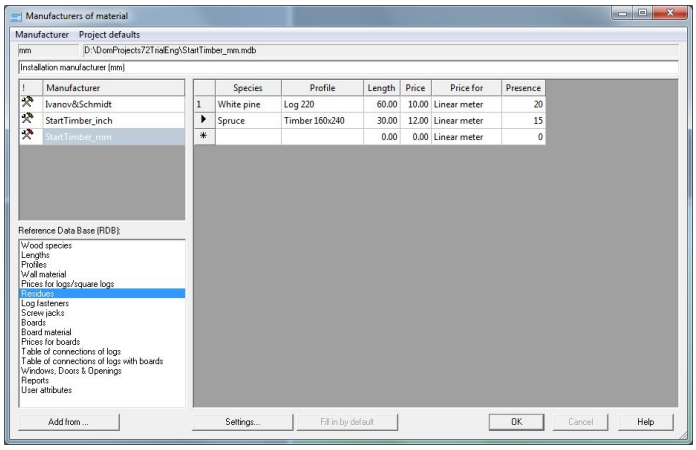
Note. The right length range limit in the range table of the **Log price** catalog is included in the price range. It means that the price for the logs with the length equal to the upper range limit (**To** column) is taken from the range where the length of interest is the upper range limit. For example, a log 4000 mm long costs 625 rubles, a log 6000 mm long costs 675 rubles, etc. (see the picture above).

The ranges change automatically upon adding or deleting lines with selected type of wall material to the **Wall material** catalog.

You may change prices in the **Cost ranges** form. Click the respective cell in the **Price** column and enter the new value.

6.6 Residues Catalog

The catalog contains a list of log residues in stock. It is used for log cutout. Residues are added and deleted manually.



Wood species (dropdown field) is a name of wood species used by the manufacturer taken from the **Wood species** catalog;

Profile (dropdown field) is a name of profile taken from the **Profiles** catalog;

Length (numeric field) is a residue length;

Price (numeric field) is a price for residue measurement unit specified in the **Price for** column; it should always be more than zero;

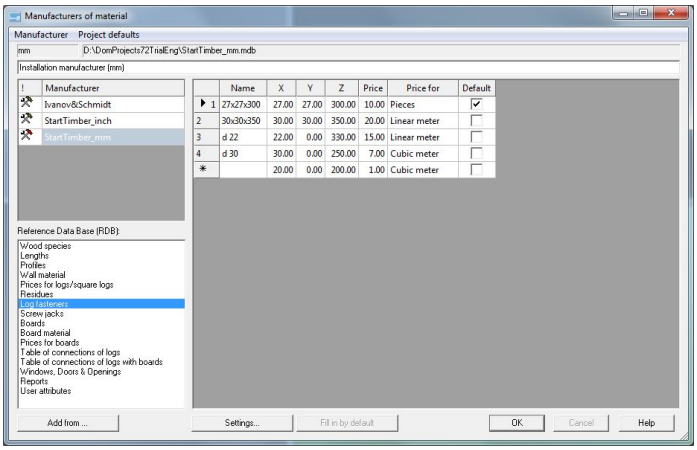
Price for (numeric field) is a residue measurement unit;

Availability (numeric field) is a number of such residues in stock.

6.7 Log Fasteners Catalog

ST·PF Only for K3-Cottage Standard and Professional Packages

The catalog contains a list of log fasteners used by the manufacturer.



Name (text field) is a log fastener name shown in all forms for operations with log fasteners and in reports;

X and **Y** (numeric fields) are dimensions of the log fastener section; if **Y** = 0, the log fastener is

round, and **X** is its diameter;

Z (numeric field) is a height of one log fastener;

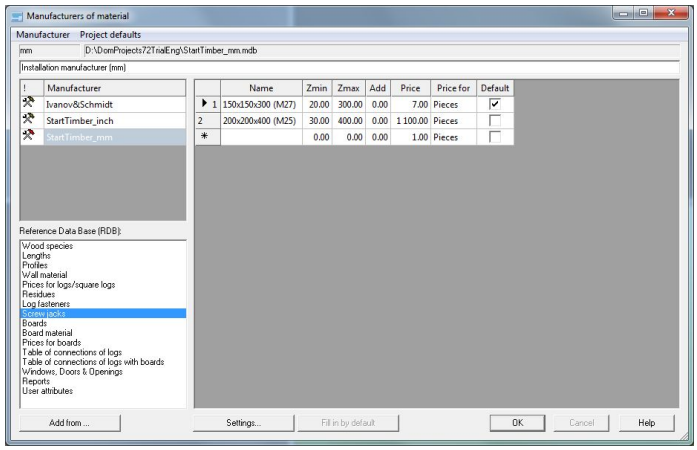
Price (numeric field) is a price for log fastener measurement unit specified in the **Price for** column; it should be always more than zero;

Price for (numeric field) is a log fastener measurement unit;

Default is a sign of using this log fastener type for new projects; for the material, which is used more frequently than other materials.

6.8 Screw Jacks Catalog

The catalog contains a list of screw jacks used by the manufacturer.



Name (text field) is a name of screw jack type;

Zmin (numeric field) is the minimal height of screw jack (fully tightened);

Zmax (numeric field) is the maximal height of screw jack (fully loosened);

Attention! Difference of **Zmax** – **Zmin** should exceed the value of the expression: (height of the space for a post + vertical dimension of free end trimming) x (% of sealant strip shrinkage + % of wall shrinkage).

Add (numeric field) is a value of allowance for post height with this screw jack;

Price (numeric field) is a price for screw jack measurement unit specified in the **Price for** column; it should be always more than zero;

Price for (numeric field) is a screw jack measurement unit;

Default is a sign of using this screw jack type for new projects; it is used for the screw jack, which is used more frequently than other.

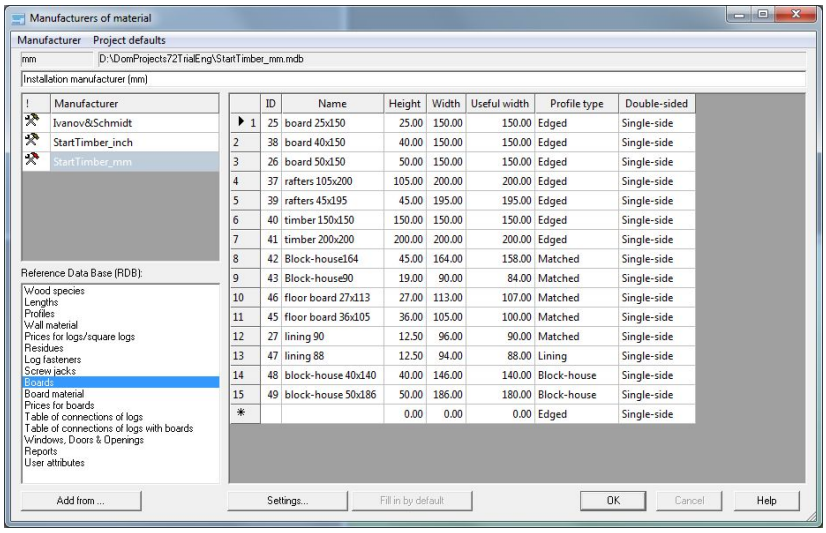
6.9 Boards Catalog

ST·PF **Only for K3-Cottage Standard and Professional Packages**

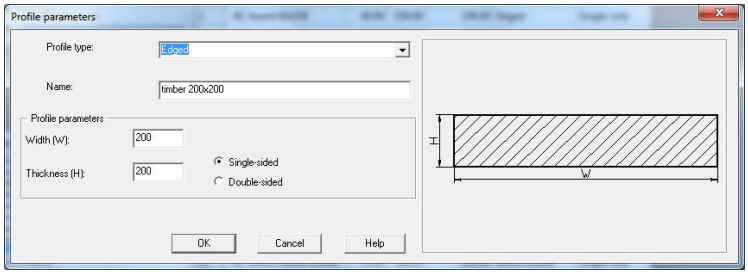
The catalog contains a list of board profiles used by the manufacturer.

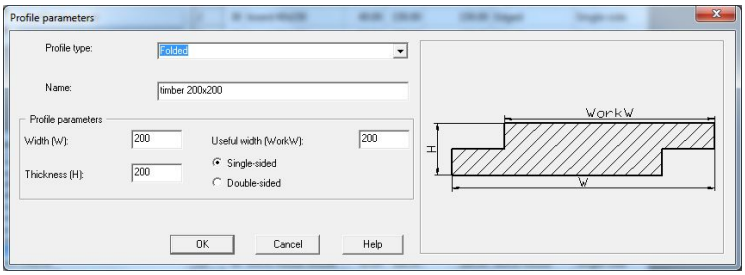
The **Add from DBF** button is used for compatibility of the **K3-Cottage** versions. Use this button to add data into the catalog from the board.dbf. table. It is convenient for reading the projects of K3-

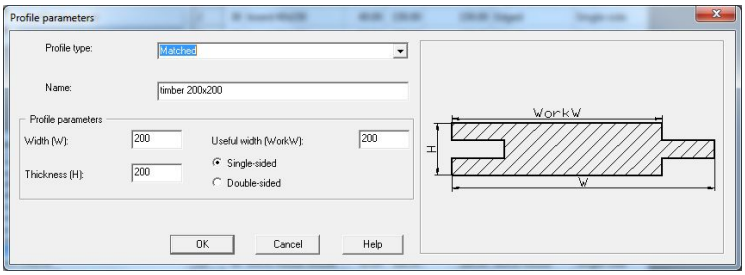
Cottage versions 5.x 57.

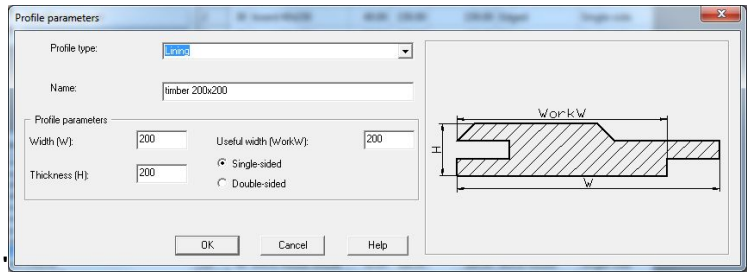


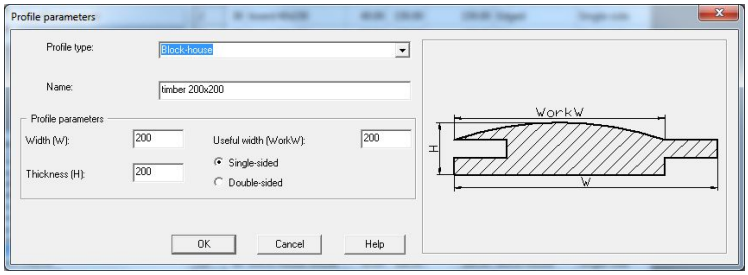
Double-click the respective line and select **Settings…** to make changes in the table. The form of selected board parameters will appear on the screen. You can select an edged, folded or matched board as well as lining and block-house in the **Profile type** field. Drawing of the selected board profile will be shown in the right part of the form and its parameters – in the left.











Name (text field) is a board name shown in the form for operations with boards 173;

Thickness (numeric field) is a board thickness;

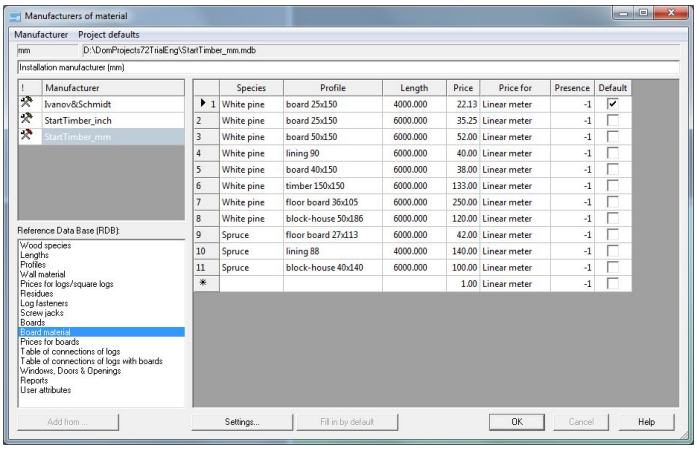
Width (numeric field) is an overall width of the board used for calculation of cubic volume;

Useful width (numeric field) is a width of the board part which will be visible when filling 181.

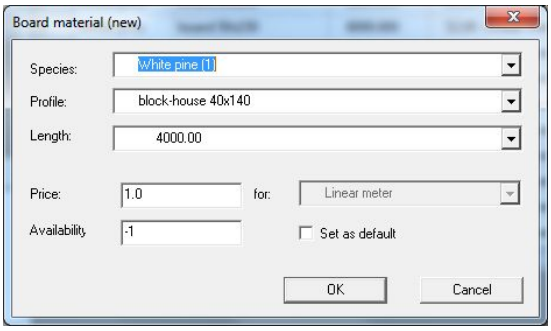
6.10 Board Material Catalog

ST·PF **Only for K3-Cottage Standard and Professional Packages**

The catalog contains a list of board workpieces used by the manufacturer. This catalog is connected with other catalogs: **Wood species, Lengths, Boards**. Values of the **Species, Board type, Length** fields are taken from the above mentioned catalogs. The user cannot delete the record referred to in the **Board material** table from the **Wood species, Lengths, Boards** catalogs. For example, the user cannot delete the **Larch** record from the **Wood species** catalog, if such material is used in the **Board material** catalog in the **Species** field.



Double-click the empty lower line and select **Settings…** to add a new line to the table. The **Board material** form will appear on the screen:



Species (dropdown field) is a name of wood species of board workpieces taken from the **Wood species** catalog;

Profile (dropdown field) is a name of the board workpiece profile taken from the **Boards** catalog;

Length (dropdown field) is a length of board workpiece taken from the **Lengths** catalog;

Price (numeric field) is a price for a linear meter; it should be always more than zero; it is used for calculation of house cost when making cutout;

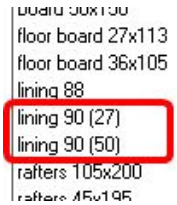
Price for (numeric field) is a board measurement unit;

Availability (numeric field) is a number of workpieces of this material in stock; if there is no such material in stock, enter zero in the field; if there is an unlimited number of this material in stock, enter -1 in this field;

Set as default is a sign of using this material for each new project 54; as a rule, this material is used more frequently than other materials.

Fill in the form fields and click **OK**. A new record will appear in the catalog.

Attention! If there are several elements with the same name in the dropdown list of **Species** and **Profiles**, pay attention to the number in brackets.

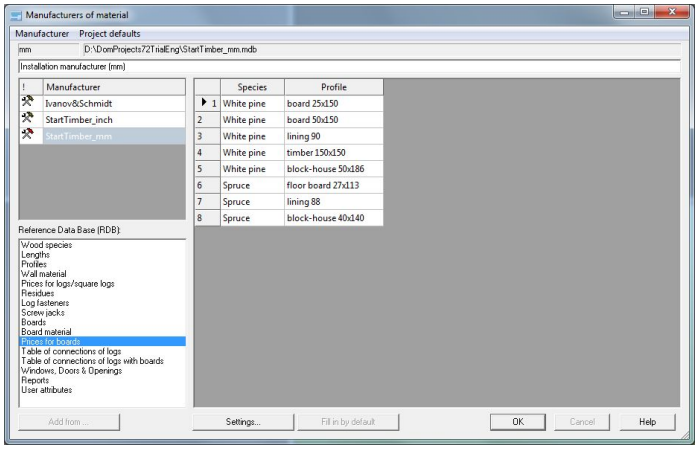


This is an identification number (ID) assigned to the wood species (profile) in the **Wood species** 34 catalog (**Profiles** 43 catalog). The main quality of this parameter is a unique character. Even if the names of wood species (profiles) coincide, their IDs are different. Therefore, it is possible to make a clear choice of wood species (profiles) of materials.

6.11 Board Prices Catalog

ST·PF Only for K3-Cottage Standard and Professional Packages

The catalog contains ranges of board cost used to calculate an **estimated cost** of the house in the **Material register** 203 report. Run the cutout module to calculate the **accurate cost** of the house. The module uses prices from the **Board material** 45 catalog.

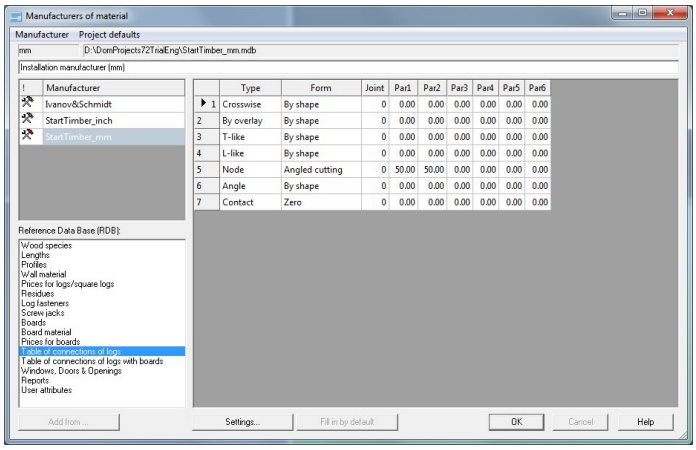


The Board price catalog is based on data from the **Board material** catalog. Its structure is similar to the **Log prices** 40 catalog.

6.12 Joint Table Catalog

The catalog contains a list of joint types for each log crossing type provided by the system. This information is used by the system as default when creating a new project.

The user cannot delete or add lines to the table, but may set a joint type and parameters for each crossing type.

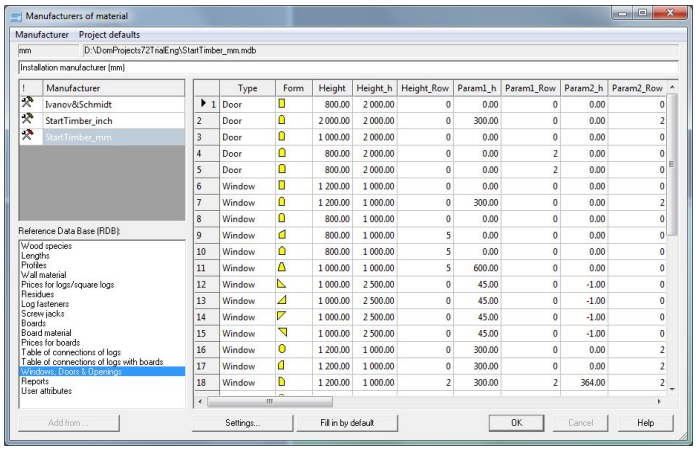


Double-click any line and select **Settings…** to make changes in the table. The table of log crossing types (top view) at the points of wall and beam crossing in the house nodes will appear on the screen. You can select a log joint type for each crossing type. Click **Modify** in the **Joint type settings** form, select the necessary joint type, modify its parameters, if necessary, and click **OK**. The detailed description of all available crossing and joint types is given in the **Notch Marking** 145 section.

6.13 Windows, Door and Openings Catalog

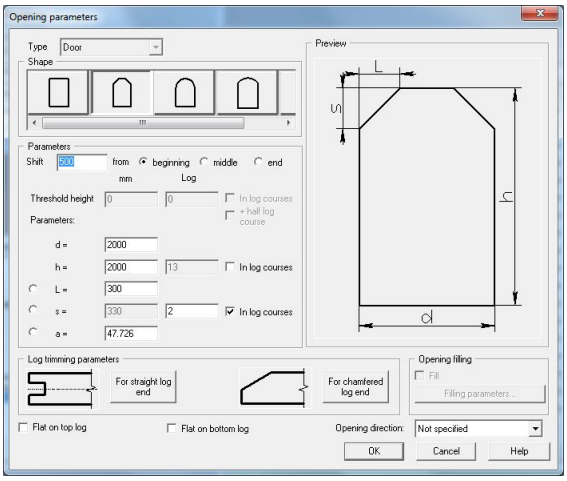
The catalog contains a list of openings provided in the system. In the **K3-Cottage** program, the opening term implies two components: opening **Type** and its **Kind**. The list of available **Types** is the following: a door, window and opening. The list of **Kinds** is given in the end of this section. The number of lines in the table corresponds to the number of available **Type-Kind** combinations.

The user cannot delete or add lines to the table, but may set parameters for each opening. They are used by the system as default.



Double-click the respective opening and select **Settings…** in order to modify its parameters. The form of selected opening will appear on the screen.

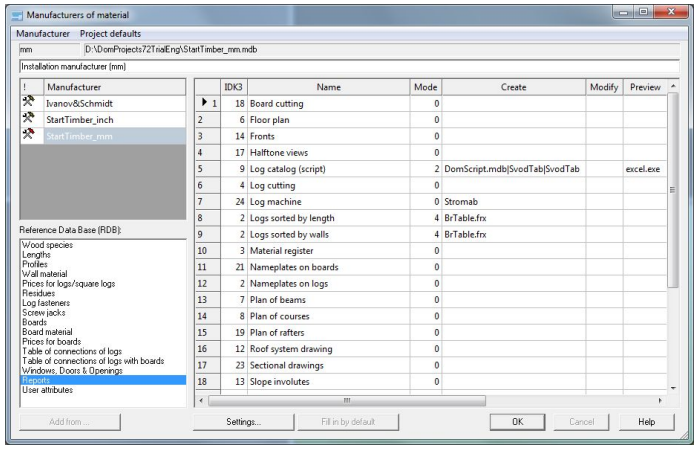
Example:



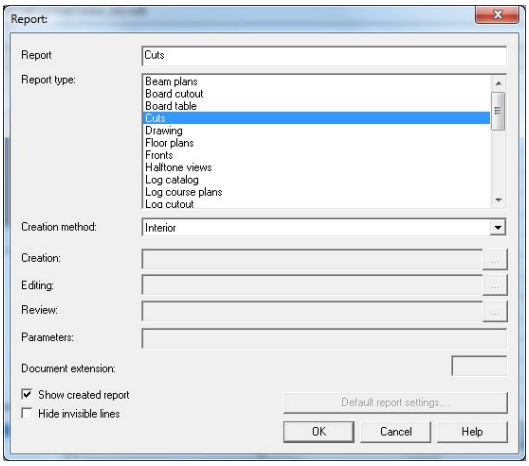
You can set the new parameters of opening in this form, except for **Type** and **Shape**. All parameters are described in the **Opening Marking** 111 section in detail.

6.14 Reports Catalog

The catalog contains a list of reports used by this manufacturer. You will see this list, if you open the **Project reports** 183 form. Let us call such reports the registered reports.



If you want to register a new report, double-click an empty line of the table and select **Settings** at the bottom of the screen. Then fill in the form appearing on the screen:



Select the report type in the **Report type** field.

Enter the report name in the **Report name** field. This parameter is useful when you have several reports creating log tables, which are different in terms of their structure.

Select the **Internal** line in the **Creation method** field. In this case, you do not have to make any settings: the system will create a report automatically.

PF Only for K3-Cottage Professional Package

Besides the internal reports, the user can create his personal reports. There are three methods for creating reports:

- **external executable (exe)** – the system runs your external application and transfers control to this application;
- **script** – the system transfers control to the program written in the VBScript language. Description of scripts is given in the **K3** User Guide;
- **table (FastReport)** – the system runs the FastReport application and transfers control to this application.

Select programs for creating, editing and viewing the report in the **Creating, Editing** and **Preview** fields.

You can specify the line of additional parameters in the **Parameters** field, which will be transferred to the program creating a report at program start.

Select the format of the report file in the **Document extension** field.

Check the **Show created report** field, if you want to preview the report immediately after its creation and different programs are specified in the **Creation** and **Preview** fields.

Attention! It is recommended to check the **Show created report** field for all reports with **Internal Creation method**!

Checking the **Hide invisible lines** field is useful for the drawing reports 187. It enables hiding the internal lines. For example, in this mode, notches on the log end will be invisible in the **Wall involute** report.

Click the **Default report settings** button to open forms for setting parameters of future reports. Parameters of all reports created in **K3-Cottage** are described in the **Report Parameters** 197 section in detail.

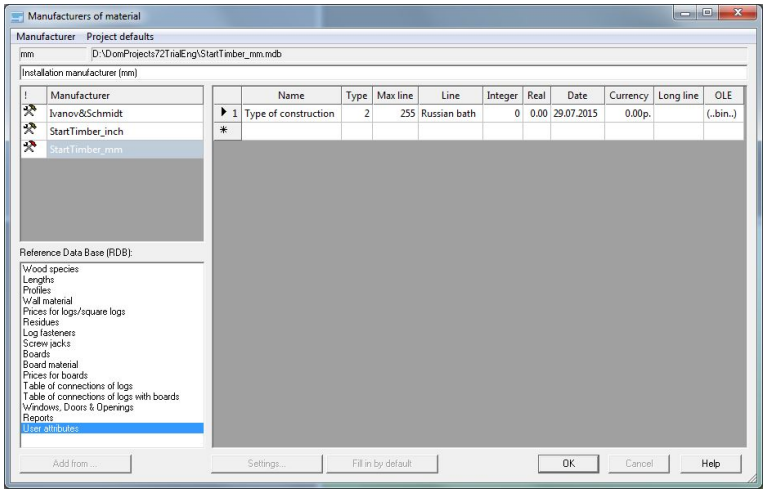
If you want to modify settings of one of the reports, click it and select **Settings…** or double-click the report name. The form of the selected report will appear on the screen (see above). Introduce changes and click **OK**.

When creating a new report, all registered reports appear in the report tree. If you add new reports to the catalog after project creation, you need to open the project, select the upper line in the report list in the **Project reports** 183 form and click **Add**. Then, using these > , < , >> and << buttons, create a list of **Reports used in the project** in the list appearing on the screen. This procedure is described in the **Project reports** 186 section in detail. As a result, newly registered reports will appear in the report tree.

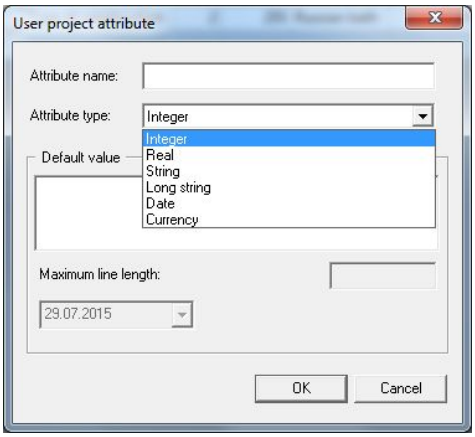
6.15 User Attributes Catalog

The *User Attributes* parameter is an opportunity to keep the additional project data not provided in the standard set of parameters (additional information about material, prices, dates, etc.) in the project. These fields are transferred to the project database (**DomOutTbl.mdb**) and may be used in the reports.

All attributes used in the Manufacturer 30 will be added automatically to the new projects created basing on that manufacturer.



If necessary, you can modify the set attributes for a certain project in the property form 54. **Attribute name** is set by the user at its own discretion. There are six available **attribute types** (see the picture):

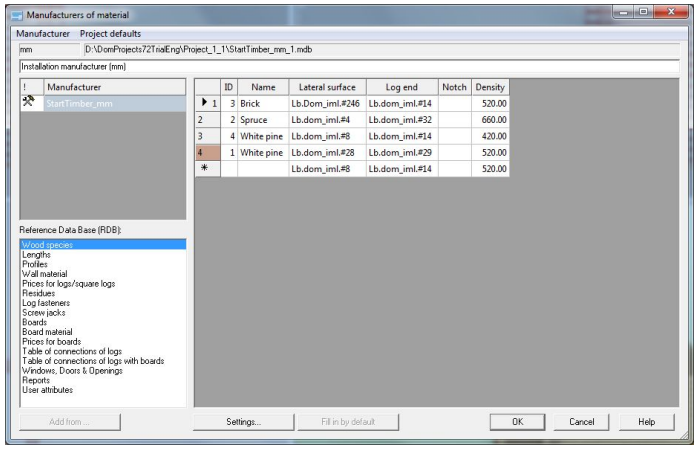


- **Integer number**. If this attribute type is selected, you can enter only figures in the **Default values** field;
- **Real number**. This attribute type allows entering noninteger values;
- **Currency**. By analogy with the previous type, here the user may enter values containing figures and some signs;
- **Line**. This attribute allows to enter text information. Maximal number of characters in **Line** is 255 characters.
- **Very long line**. In contrast to the **Line**, maximal length is 64 Kb.
- **Date**. Specified in the lower field for date.

7 Settings of Personal Manufacturer

You can work with the personal manufacturer 32 only if the project is opened.

You cannot delete wood species, log and board profiles, log fasteners and screw jacks used in the project from the catalogs of personal manufacturer! They are highlighted in pink in the tables.



If you need to modify the current material of the project, then:

– add a new material to the **Wood species, Lengths, Profiles, Wall material** catalogs;
– select ***House/Wall/Change material***;
– delete old material from the **Wood species, Lengths, Profiles, Wall material** catalogs.

If you need to modify the current material of the boards, then:

– add a new material to the **Wood species, Lengths, Boards, Board material** catalogs;
– select ***House/Board/Modify***;
– delete the old material from the **Wood species, Lengths, Boards, Board material** catalogs.

Wall Material Catalog

You can delete wall material of the project as long as at least one record corresponding to the project material remains in the list. For example, there are three records of Pine-Log 200 of different workpiece length: 4000, 6000 and 9000 mm in the catalog. The system will not allow deleting the last remaining record.

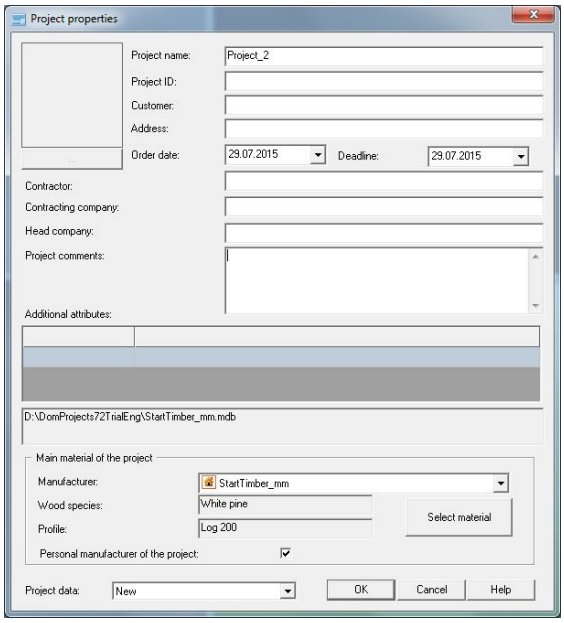
8 Project Development

8.1 Creating Projects

Project 54 is all information relating to one order: **manufacturer** 32 or reference to manufacturer, three-dimensional project model and project reports 186.

8.1.1 Creating a New Project

To create a new project, select ***File/New project*** in the main menu or the icon. The **Project properties** form will appear on the screen:



Fill in the following fields: **Project name, Project number, Customer, Address, Order date, Contractor, Contracting company, Head company, Project comments**. Content of these fields will be used in the reports.
There is a space for the project image in the upper left corner. You will be able to create it at a later stage 62. When searching for a project in the list of existing projects, this image will help you to find the project you are looking for.

Fields for **Additional attributes** set by user are located below the mandatory fields. If additional attributes are registered in some catalog for the manufacturer 51, they appear in the new project automatically. You can delete or modify them or add new attributes. In order to create a new additional attribute, double-click an empty item in the project property form and set the parameters of the new attribute in the next form appearing on the screen. Operations with attributes are described in the **User Attributes** 51 section in detail.

Select a manufacturer in the **Manufacturer** field. You can select a manufacturer from the

general list as well as from a ready project (**Take from project** line). Remember that selecting a manufacturer, you select measurement units: millimeters or inches. The manufacturer determines parameters of house and reports taken from it. The list of reports created by the project is also "determined" by the manufacturer.

Important! The selected manufacturer may be set to be the personal manufacturer of the project or not by using the **Personal manufacturer of the project.**

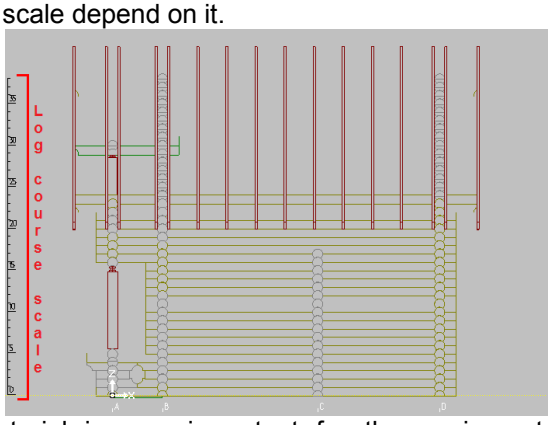
In the first case, copy the selected manufacturer and paste it into the project folder. We will call it the **personal** manufacturer as it is the personal manufacturer created for the project. It will be unavailable for other projects. We recommend you to use this procedure because it ensures safety of your data and independence from other projects.

In the second case, the manufacturer is kept separately from the project (in the DomProjects root folder) and the project refers to it. Similarly, the manufacturer may be selected for other projects and they will refer to it as well. Subsequently, we will call such manufacturers as the **common** manufacturers as they are available for all projects. All projects referring to some manufacturer reflect all changes introduced to the manufacturer.

As for the settings of the **personal** and **common** manufacturer, their main difference is that they are made in different project conditions. The **common** manufacturer is set when the project is **closed**, and the **personal** manufacturer is set when the project is **opened**.

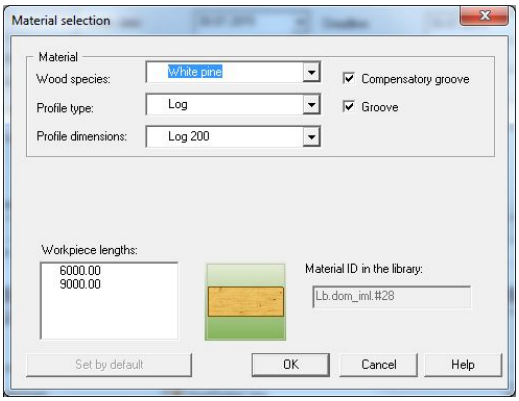
Attention! You cannot change the manufacturer type after saving the project properties.

Let us speak about the main material of the project. It is used to create walls. Log course height and, therefore, log course scale depend on it.



Attention! The main material is very important for the equipment, as machinery data are determined basing on the main material.

If you do not want to use the main material of the project set as default, click **Select material**. The **Material selection** form will appear on the screen:



Fill in the form from the top to the bottom. It is important as the content of a dropdown list of each subsequent field depends on the value selected in the previous field.
Select species from the dropdown list in the **Wood species** field (it is taken from the **Wood species** catalog of current manufacturer). Select the project material in the **Profile type** field: round log, square log or Swedish Cope square log. Then, select the proper element in the **Profile dimensions** field.

Attention! If there are several elements with the same name in the dropdown lists of **Wood species** and **Profile dimensions**, pay attention to the number in brackets. This is the unique identification number (ID) assigned to the wood species (profile) in the **Wood species** 34 catalog (**Profiles** 35**Profiles** catalog). It allows you to make a clear choice of wood species (profiles) of materials.

The **Workpiece lengths** and **Material ID in the library** fields are information fields, i.e. you can't modify them directly in the form. Their values depend on the content of the **Profile dimensions** and **Wood species** fields and update automatically when these fields are modified. Depending on selected profile type: round log or square log, such parameters as **Compensatory groove, Groove** or **Upper profile, Lower profile** appear in the form, respectively. Checkmarks in front of these parameters mean that there are grooves of that type in the house material. This information is used for cutout and in drawings. Set all necessary values, click **OK** and continue to fill in the **Project properties** form.
Attention! If necessary, subsequently, you can modify content of the **Project name, Project number, Customer, Address, Order date, Contractor, Contracting company, Head company, Project comments, Wood species, Profile** fields using the ***Settings/Current project*** 62 command. You won't be able to select another manufacturer!

Select one of three lines in the **Project data** field depending on your task:

- to create a project from scratch;
  - read the models created in previous versions of K3-Cottage 57;
  - to import data from ArchiCAD.

Fill in the form and start working on the project, to be more exact, set the parameters of your new project (see the **New Project Parameter Setting** 68 section).

8.1.2 Reading Projects of Previous K3-Cottage Versions

You can read the projects created in **K3-Cottage** versions **5.x** and **6.x**.

Projects created in versions **6.x** can be opened in versions **7.2**. But remember that it is impossible to open projects created in versions **7.2** by using versions **6.x.**

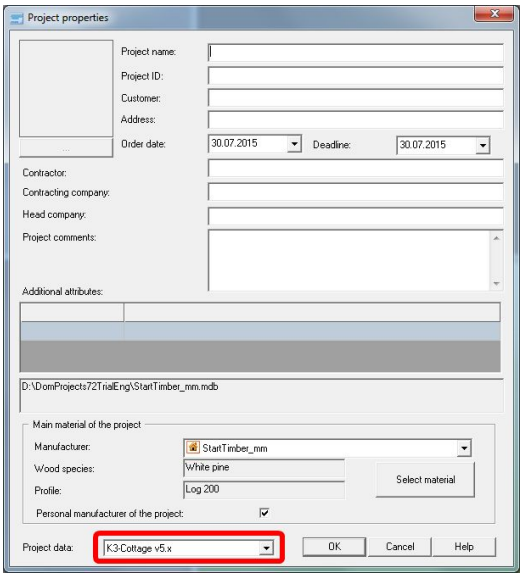
There are some special features when reading projects from versions **5.x**.

Attention! When reading a project from versions 5.x, walls and beams will be made of 'native' material (i.e. from the material used for project creation in K3-Cottage version 5.x), only if there is such material in the standard **Manufacturer**. If there is no 'native' material, the walls and beams will be recreated using the material set for the project in the **Project properties** form (see the below picture) in current version.

In order to avoid problems of project reading, first, open the project in the program used to create it and remember its materials. Then, in current program version, add these materials to the **Manufacturer** or make sure that they are available in the **Manufacturer**:

– open the **Material manufacturers** form using the  icon or the ***Settings/Setting/Manufacturers*** command of the main menu;
– open the **Profiles, Log fasteners, Screw jacks** and **Boards** catalogs; click the **Add from DBF** button to read the tables created in previous version;
– open the **Wood species, Lengths** catalogs and add additional lines, if necessary;
– open the **Wall material** catalog and create new wall materials using the new data entered from the **Wood species, Lengths, Profiles** catalogs, if necessary.

Upon selection of the material, select ***File/New project*** in the main menu. The **Project properties** form will appear on the screen. Select the **K3-Cottage v5.x** line in the **Project data** field:



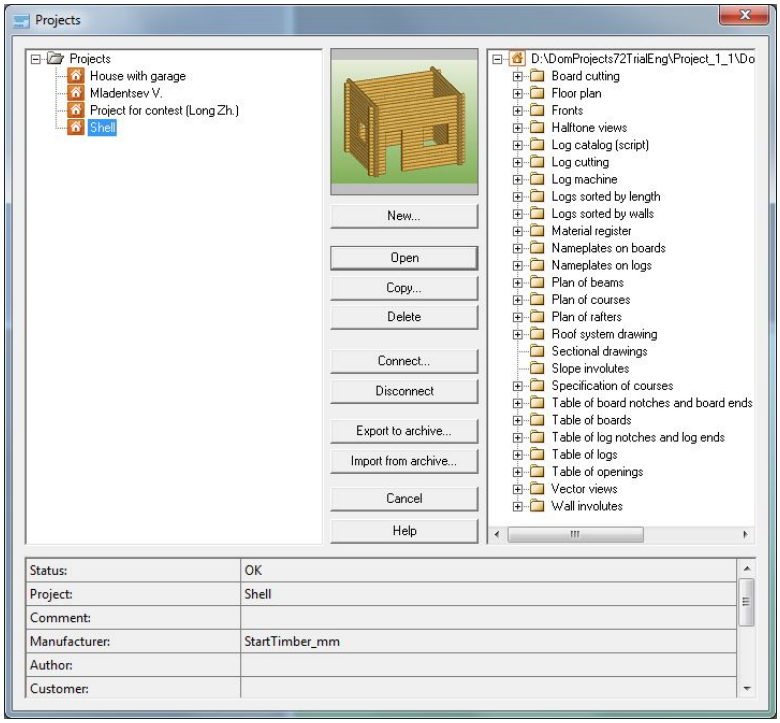
Then, fill in all fields of the form as described in the Creating a New Project 54 Project section. Set the material, which you remembered when opened the project in previous version. Click **OK**

and specify the path to the project to be opened in the form appearing on the screen.

Attention! When importing projects from **K3-Cottage** version **6.3** and lower, the program reads all project data except for the notches. **You will have to mark the notches again.** If you want to use all benefits of the new version, select ***House/Wall/Refill_with_logs*** 152 before marking notches.

8.2 Project Opening

If you need to open one of previously created projects, select ***File/Open project*** in the main menu or click the  icon. The **Projects** form will appear on the screen.



The list of projects included in the **Project** folder will be shown in the left part of the form. You can create new folders and delete the folders you do not need. For this purpose right-click the **Projects** folder and select the **Create section** or **Delete section** line.

To move a project from one folder to another one, click the file and, holding the mouse button pressed, drag the project to the destination folder, until the green arrow appears.

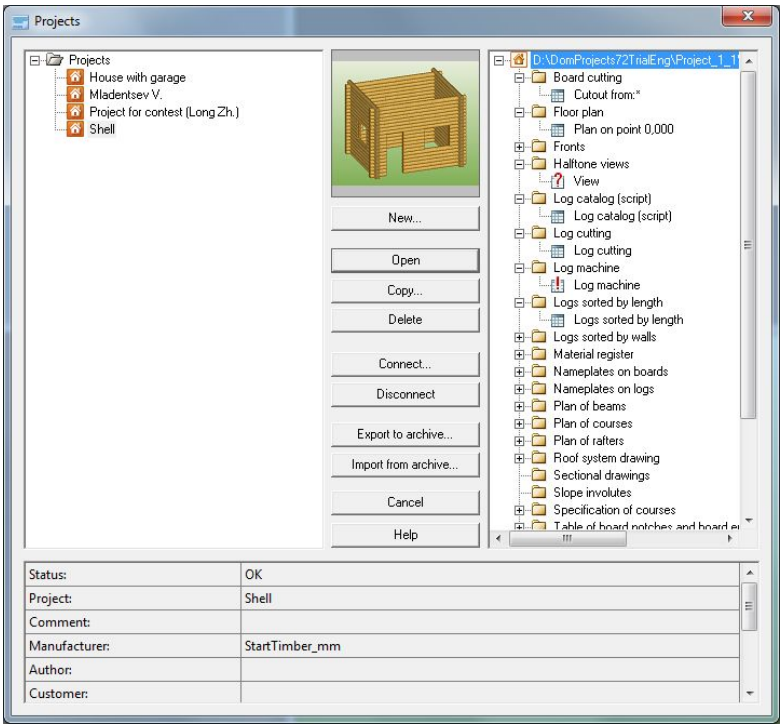
The icon with certain information about the project is located to the left of the project name:

– it means that the program fails to find the required file: it has been deleted or renamed. To solve the problem, double-click the name of the required project and specify the path to the necessary file in the form appearing on the screen, if it exists;

– it means that the project has the common 30 manufacturer;

– it means that the project has the personal 30 manufacturer;

Click the project to view information about it. All necessary information about the project will be shown at the bottom of the form. The list of reports of this project will be shown in the right part of the form.



There are icons inside the folder in front of each report. There are five types of the icons:

– the report is created and complies with current project condition;

– the report is created, but should be recreated due to some changes in the project;

– the report has been modified manually;

– the report has been modified manually, but it should be recreated due to some changes in the project;

– the report has not been created.

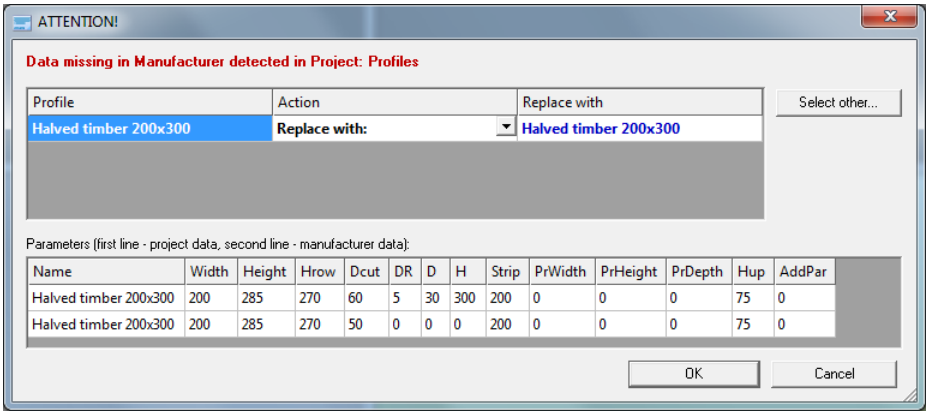
If the report has been created, you can view it without opening the project. To view it, double-click the report name.

Click **New** 54 to create a new project. Click **Open** to open any existing project.

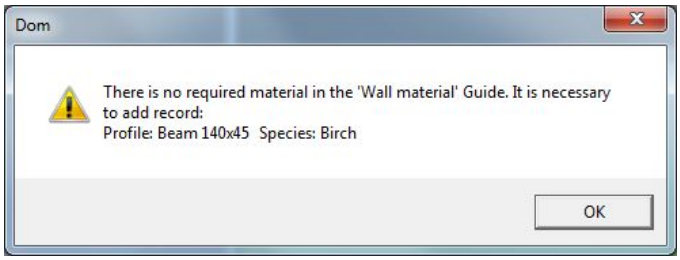
When opening a project, the manufacturer may lack the material profile used in the project or may have such profile but with different parameters. In this case, the form will appear on the screen:

– a form with the message that the profile required for the project is not detected in the manufacturer catalogs;
– a form with the information of parameters of the required profile – project profile;

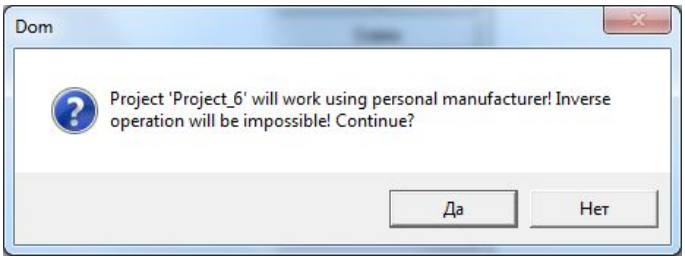
– a form offering to replace the project profile with the profile available in the manufacturer or to add a new profile into the manufacturer (**Profiles** or **Boards** catalog):



If you select **Replace with**, the project will be recreated in accordance with new values of new profile parameter. Then, you will have to mark notches 145 again.
When opening a project, the manufacturer may lack the material for its walls or boards. In this case, the message informing that there is no required material for the project in the manufacturer catalogs appears on the screen. The system provides information about wood species and profile of required material and offers to add the respective record to the manufacturer (**Wall material** and **Board material** catalog):

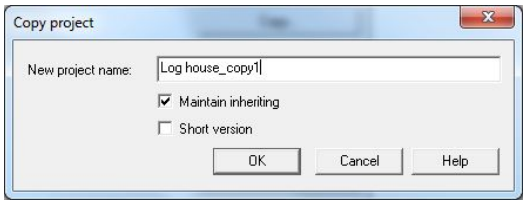


When opening a project, you can set its manufacturer as the **personal** 30 manufacturer of the project. Right-click the project and select **Personal manufacturer**. The system will warn you that you won't be able to replace the personal manufacturer with the common one:

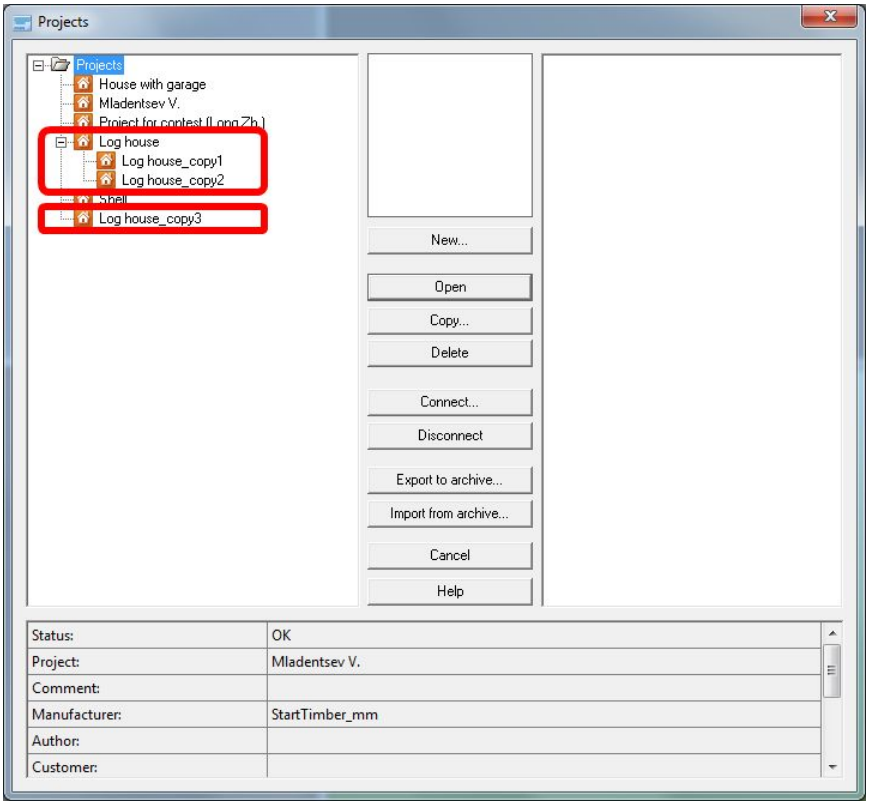


8.3 Project Copying and Connection

You can copy projects. For this purpose, in the **Projects** 58 form, highlight some project, for example, **Log house**, and click **Copy**. Specify a new name of the project in the form displayed on the screen:



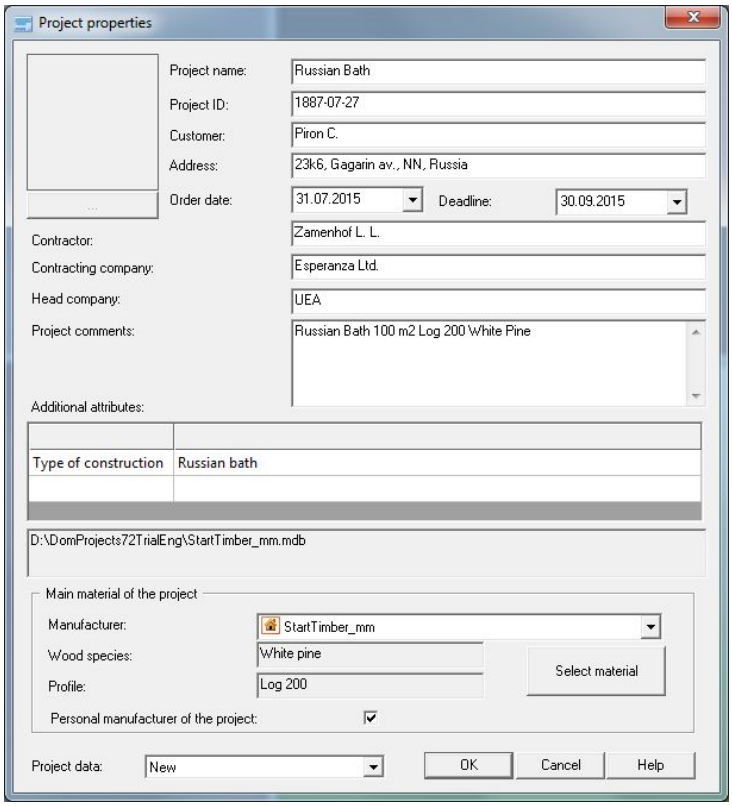
If you want to view and calculate several variants of the same project and to select the best one, check the **Maintain inheriting** parameter. All new projects created with maintenance of inheriting will be added to the folder of the copied one (see the form below: **Log house_copy1, Log house_copy2**). If you want to create a new independent project based on the copied project, do not check the **Maintain inheriting** parameter. The new project will be added to the form as the next project (see the form: **Log house_copy3**). If you need a copy of the project without reports, check the **Short version** field.



If you need to hide some projects from the list in the left part of the **Projects** form, click the **Disconnect** button.
If you want to add a project to the list, click the **Connect** button and select the appropriate folder.

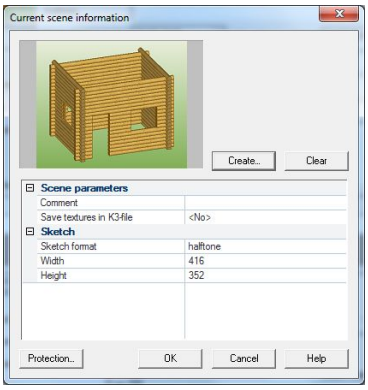
8.4 Project Properties

When a project is opened, select ***Settings/Current project*** or click the icon to open the **Project Properties** form and to view its properties:



You can modify information about the project (**Project name, Project number, Customer, Address, Order date, Contractor, Contracting company, Head company, Project comment, Additional attributes**) and the main material of the project (**Wood species** and **Profile)** in the same manner as when **creating a new project** 54.

Click the button with dots in the top left corner of the form with the project image and fill in the form displayed on the screen in order to create or introduce changes:



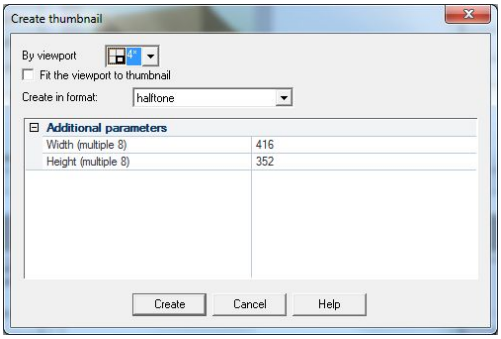
Fit. Check this parameter to enable automatic calculation of picture scale and to fit the entire picture into the set form format considering margins;

Comment is used to add a comment on the picture;

Save textures to K3-file. Check this parameter to enable saving textures used for model painting directly to the file. It means that the scene will not depend on the material libraries and will be painted properly, even if none of the libraries is connected.

Properties of the **Sketch** node are modified when creating a picture (see below).

If there is no project picture yet, click the **Create** button.



By view No. Select number of the viewport for converting current project view into the sketch picture;

Fit the viewport to the sketch. Check to fit the entire scene object into the sketch. Otherwise, only the image displayed in the viewport will be used as a sketch.

Create in format. Select the sketch format: monochrome, color (with line colors on the frame image), halftone, photorealistic, sketch reference (if you select the picture from another source).

Sketch **width** and **height** are set as multiple of eight pixels.

After setting all parameters, click **Create**.

Attention! Click the  icon on the toolbar or select ***File/Save project*** to display the created picture every time you open the project.

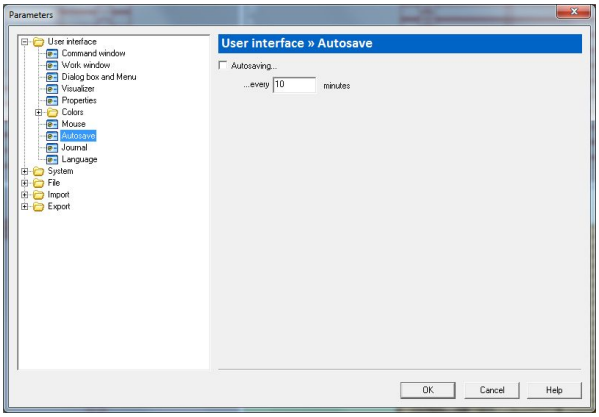
8.5 Saving and Closing a Project

To save your project, select ***File/Save project*** or click the icon on the toolbar.

To close the project, select ***File/Close project*** or click the icon. If the project has been modified, the system will ask whether you want to save the changes.
When opening the **Project reports** 183 form, the system saves the project automatically and flushes the undo buffer.

Select ***File/Save selected*** or click the icon to create a *.K3 file and save the objects created using the **K3** menu commands to it.

Sometimes the program closes abruptly before the user saves changes in the project. It may happen due to different reasons: power outage, system failure caused by other programs, program errors, etc. You cannot avoid such events, but can take some measures to save your work in case of abnormal program termination. You can enable automatic saving mode and set its time interval. Select ***Settings/Parameters*** in the main menu or press the **F9** key on the keyboard to open the **Parameters** form. Select the **User interface** node and the **Autosaving** tab:



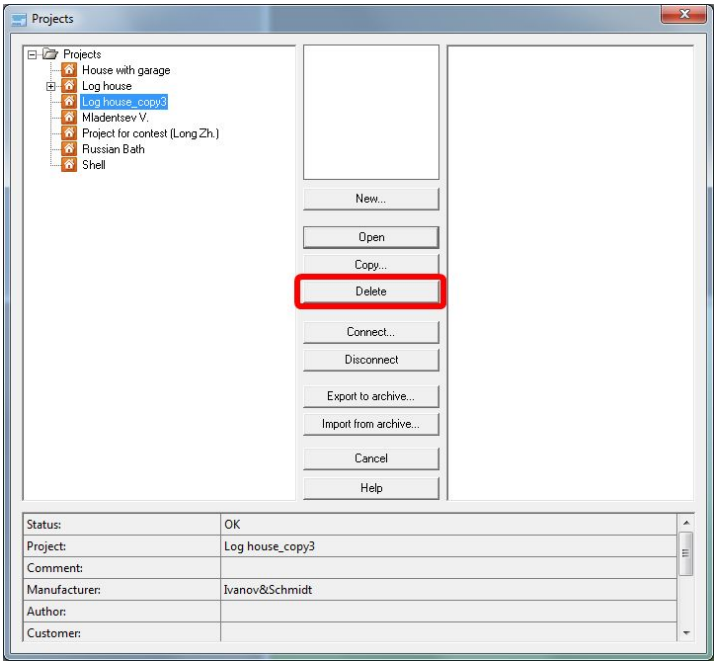
The autosaving function does not supersede manual saving of the work performed by selecting the ***Save project***. Regular saving of the project is the most reliable way to save the work done. However, the automatic saving function helps a lot not to lose the work done in case of unforeseen circumstances. It ensures:

- regular automatic saving of user data. While you are working with a *.K3 project file, it is saved as many times as specified in the **Parameters** form. It is saved not to the project file, but to a temporary file created by the system. Thus, if the user works for a long time and forgets to save the project, in case of computer failure or power outage, the system saves a project file containing all or at least some changes introduced after the last “manual” saving automatically. When you restart the program after abnormal program termination, the program will offer you to recover the project file. If you agree, the last autosaved file will be saved to the “native” project file. If you refuse, the file won’t be replaced and the autosaved file will be deleted.
- automatic saving of the program status. When you restart the program after abnormal program termination, some parameters of program status will be recovered as well.

Remember! The autosaving function does not supersede the ***Save project*** command. Do not forget to save your project when working with it and before closing the program.

8.6 Deleting a Project

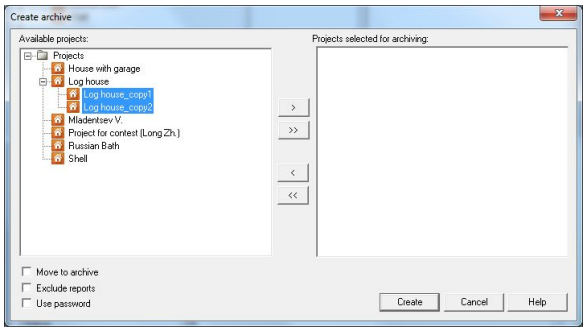
If you need to delete one of the projects, select ***File/Open project*** in the main menu or click the icon to open the **Projects** form:

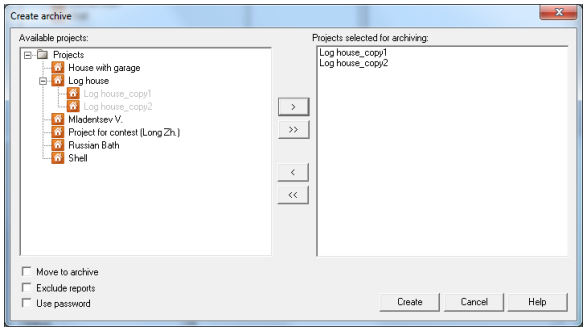


Select a project in the left part of the form and click **Delete**. The project folder and its reports will be deleted from your computer. The manufacturer will be deleted only if it is the personal manufacturer . If the manufacturer is common, it won't be deleted. If necessary, you can delete it manually in the **Material manufacturers** 32 form. Right-click the manufacturer and select the **Delete** line in the next form.

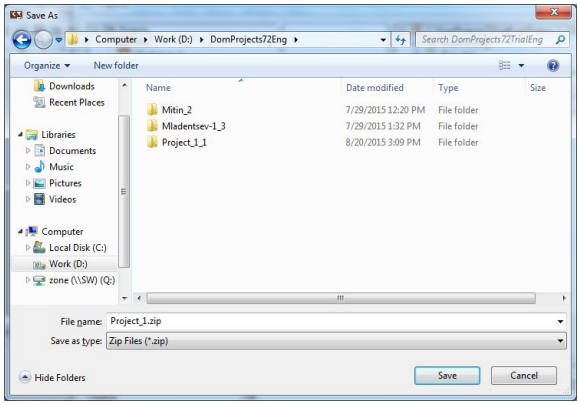
8.7 Project Archives

If you have a lot of projects and some of them are completed, you can archive such projects and keep them in a space-saving format. Click the **Export to archive…** button in the **Projects** 58 form. In the next form, move exported projects to the **Projects selected for archiving** field using the arrow buttons (use single arrow to move one project; and double arrow to move all projects at once). Then check the required projects at the bottom of the form.





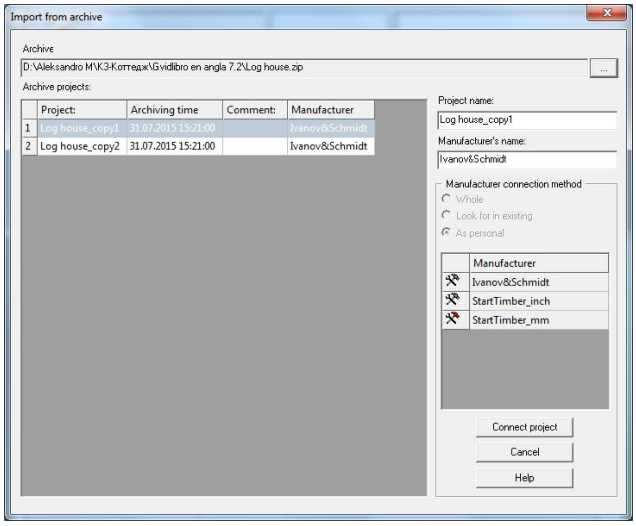
If you check **Move to archive**, all archived projects will disappear from the form and folders with the projects will be deleted. You can return the projects to the program only using **Import from archive** 67.
Check **Exclude reports** if you want to archive the project without reports. If you want to protect the created archive with a password, check the **Use password** parameter. After checking, click **Create.**



Select the future archive file in the next form. Then enter a password, if necessary.

8.8 Transferring a Project to Another PC

You can use the created archive 65 to transfer the project to another PC. Transfer the *.Zip archive file to the PC, where you are going to work with the project. Select ***File/Open project*** in the main menu and click **Import from archive** in the **Projects** 58 form.



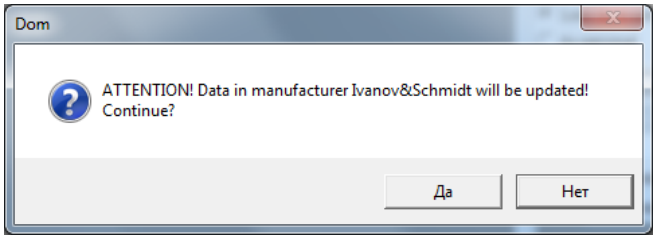
Click the ... button and select the archive file. Select the project and the manufacturer connection method:

Whole. The manufacturer of connected project is added to the list of common manufacturers existing in the program;

Look for in existing. The manufacturer of the connected project is selected from the list of manufacturers existing in the program;

As personal. The manufacturer of connected project is set as **personal** 55 manufacturer.

Click the **Connect project** button. If you selected **Look for in existing**, the manufacturer of connected project is compared with the selected manufacturer. If the manufacturers coincide, the connected project will refer to the existing manufacturer. If there are differences between compared manufacturers, the system will generate the message that the existing manufacturer will be modified:

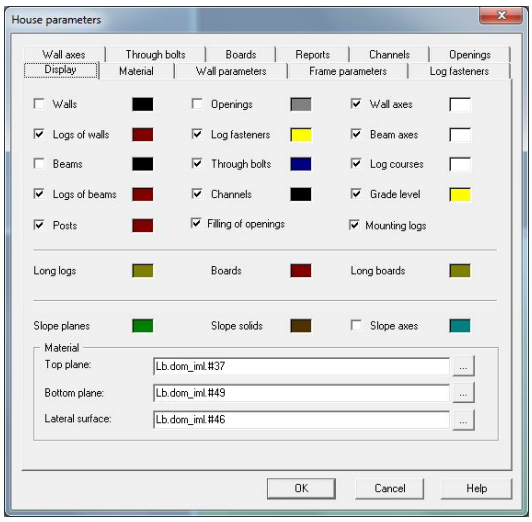


9 Setting new project parameters

Upon setting the new project properties, proceed to setting its parameters. Select ***Settings/House parameters…*** in the main menu or the icon. Fill in the **House parameters** form.
All default values for house parameters are taken from the manufacturer 54 selected for the project when setting its properties. Read more about house parameters below.

9.1 Display Tab

Besides the basic geometric objects, such as interval, arc, solid or surface, there are special parametric objects in the **K3-Cottage** system. These are walls, beams, openings, logs, posts, log fasteners, through bolts, channels, boards, and roof slopes. Moreover, there are auxiliary elements introduced to facilitate working in the system, such as axes, log courses and grade level. The axes of walls and beams are signed only in the orthographic views and only for the walls with axes parallel to the coordinate axes.
In the **Display** tab of the **House parameters** form, each line contains a project element type, color for its drawing and display sign (the objects of unchecked type will not be shown on the screen, in other words, they will be hidden). To change the drawing color, click the color box to the right of the element and select a new color from the palette appearing on the screen.

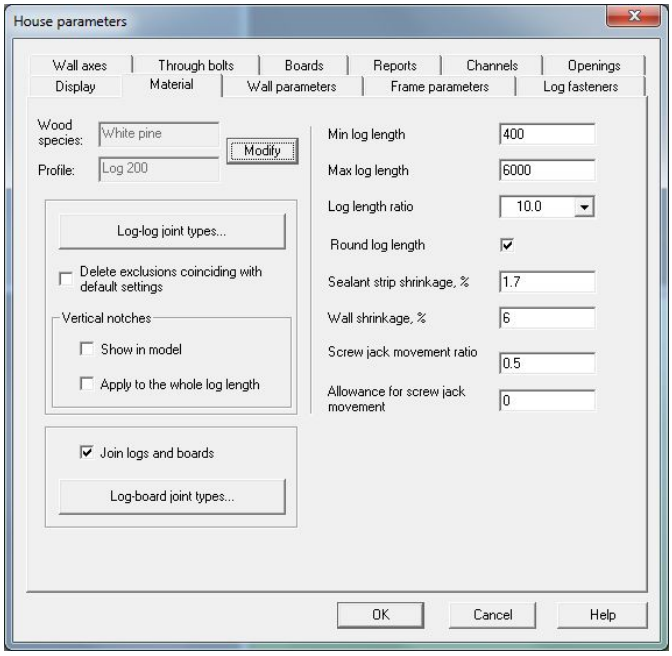


Note. You cannot disable display of boards and roof slopes in this form. For this purpose, select ***K3/Display/Hide*** 21 on the auxiliary toolbar.

Material numbers selected from the material library are set in the fields of the **Material** parameter group (for color images); if you enable the halftone display mode using the icon, the system will "take" materials with these numbers from the library and "paint" the lateral surface of the roof slopes and their upper and lower planes with them. If you want to change the material, click the button with dots and select a new material in the next tab.

9.2 Material Tab

The **Material** tab in the **House parameters** form looks like this:



The system fills in the **Wood species** and **Profile** fields with the values specified in the **Project properties** form in the **Main material of the project** 55 field. Subsequently, let us call their content as current material of the project. It will be used to create walls.

Note! If you change current material of the project, the scale of log courses remains the same. If you want to create it again and make it compliant with the new current material, set it as the main material in the **Project properties** 55 form, in the **Wood species** and/or **Profile** fields.

Min log length. The system does not create logs shorter than the set value. For example, if you set a pier of 300 mm between two openings with minimal log length equal to 400 mm, there will be no logs between these openings.

Max log length. The logs longer than this value will be divided automatically, when you select ***House/Log/Divide***. The system warns about presence of such logs when you open the report manager. They are highlighted on the screen by the color 68 different from the color of all other project logs.

Log length ratio. Is a value equal to operating accuracy of the equipment used to manufacture the log. Log lengths and all dimensions specified in the drawing should be divisible by this value.

Attention! When creating a project, the following parameters should be adjusted to ensure the project accuracy:

– **Log length ratio** in the **Material** tab;
– **Min. distance between frame nodes** and **Min. distance from frame node to edge** in the **Frame parameters** tab;

– **Coordinate rounding increment** in the **Parameters** form. To open it, select folder ***System/Snaps*** in the form opening by the command ***Settings/Parameters*.**
For example, if you create a project with up to 5 mm accuracy, i.e. Log length ratio is set 5 mm, other above-mentioned parameters should be divisible by five.

Note. When creating walls (openings, log fasteners, through bolts, etc.) by a mouse, the mouse cursor will move with the interval equal to the **Log length ratio**. All dimensions set in the command line or dialog window will not be rounded.

Round log length. This parameter is applied only to the walls if the distance between their reference points is divisible by the value of the **Log length ratio** (see above). Checking the parameter enables length rounding up to the values divisible by the **Log length ratio** value for the logs related to the console or the logs with log ends going out to the opening. Values are rounded upward. For example, if when creating a wall, the log end of one log is on the opening border and log length is not divisible by the set value, the system will increase the log length up to the nearest multiple value. In the wall model, such log will project into the interior of the opening.

Sealant strip shrinkage, %. Percent of sealant strip shrinkage is used to calculate the length of through bolts and posts.

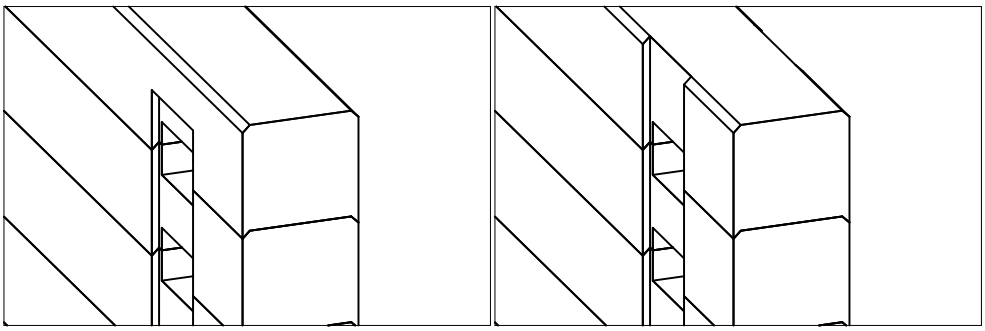
Wall shrinkage, %. Percent of wall shrinkage is used to calculate the length of posts and holes in the logs for through bolts.

Screw jack movement ratio and **Allowance for screw jack movement** are used to calculate the post height 122.

Delete exclusions coinciding with default. Read more about this parameter in the **Notch Marking** 145 section**.**

Joint types. This parameter is used to select joint type 145 for current project.

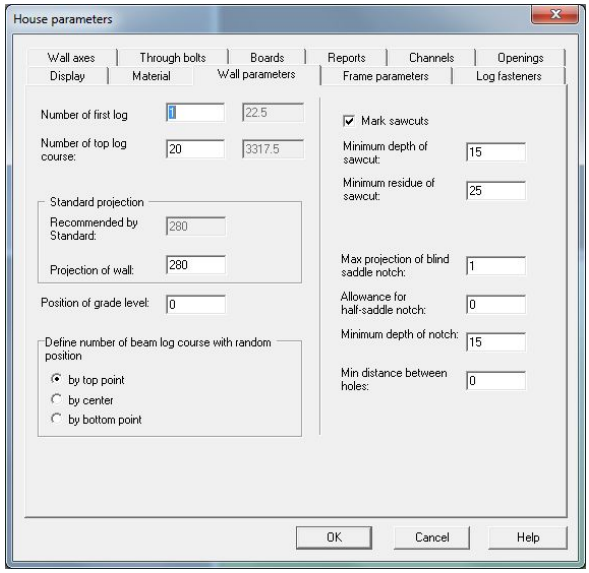
Vertical notches. Check this parameter to mark vertical notches 145 in the project logs. This parameter is applied only to square logs. Such square log should be checked in the **Vertical notches** field in the parameter form of the **Profile** catalog. You can enable/disable drawing of vertical notches on the screen by using the **Show in model** parameter. If you select **Apply to the whole log length**, the notch will be cut throughout the height of the square log, even if the notch should be cut only halfway, for simulation of log machining.



Apply to the whole log length is disabled in the left picture and enabled in the right picture.

9.3 Wall Parameters Tab

The elements for setting default values used to create walls are presented in the **Wall parameters** tab in the **House parameters** form.



First log course number and **Last log course number.** These parameters are used to set the wall position. In information fields on the right the values of these parameters in millimeters are calculated automatically.

Recommended by Standard (information field) is the standard projection recommended by the State Union Standard (GOST) and equal to 1.4 of width of the main material of the project.

Wall projection. The value of wall projection outside their beginning and end (outside the axes crossing points). You can set your own value for this parameter or use the values specified in the **Recommended by Standard** field.

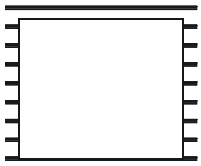
Position of grade level. This parameter sets the height (level by Z axis) for measuring of all height marks in the reports. As a rule, the grade level corresponds to the finished floor level on the first floor. It is displayed in the front and side views. You can enable displaying the grade level in the **Display** tab using the **Grade level** parameter.

Define number of beam log course with random position. This parameter sets the rule defining the number of the beam log course with random position: by the top, central or bottom beam point. If the rule is changed, the log course numbers are updated automatically in accordance with the selected rule.

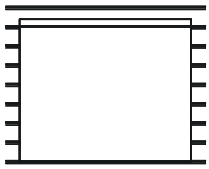
Mark sawcuts. Check this line to display the sawcuts created in the logs.

A sawcut is a cut in the log for an opening. If opening height is not divisible by integer number of the log courses or the lower point of the opening is not on the log surface, the sawcuts will be added to the logs framing the opening.

The difference between creating logs with and without sawcuts is shown in the pictures below.



Opening with sawcuts



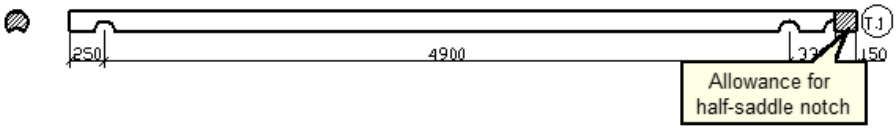
Opening without sawcuts

The **Minimum sawcut depth** and **Minimum residue of sawcut** parameters are used to control the process of marking sawcuts in the logs. If the opening does not overlap the log more than by **Minimum sawcut depth**, the sawcut is not created. If the opening overlaps the log so that the thickness of the remaining part is less than **Minimum residue of sawcut**, the log will be cut by this opening into two parts.

Maximal projection of blind saddle notch. This parameter is used for the T-joint of the logs, i.e. when the end of the log related to one wall is inside the log of the other wall. If the log end of the first log overlaps the axis of the second log by any value, which does not exceed this parameter, then the set joint 145 will be used. Otherwise, the second log will be cut through, and the log end of the first log will be straight. See the picture:

T-joint of logs. Top view.

Allowance for half-saddle notch. This parameter is used for the logs where half-saddle notch should be cut or the ***Cut by arc*** parameter is set as **Trimming type**. The value of log extension in this case is named as **Allowance for half-saddle notch.** In the house model, this parameter is not displayed. You can see it in the **Log parameters** form or **Log table** report, **Wall element specification** table (see the **Creating Reports** chapter, **Log table** section), where this allowance is displayed as a hatched rectangle at the end of the log.

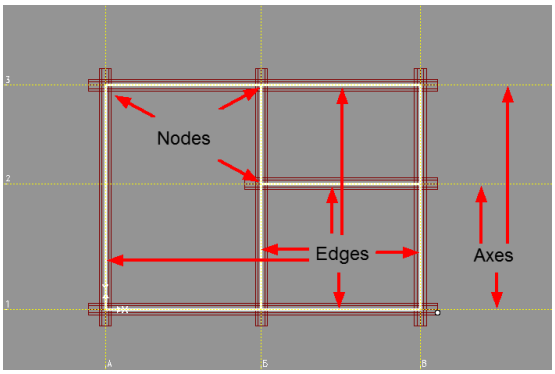


If crossing walls overlap each other by the value not exceeding the **Minimum notch depth**, the notch is not created.

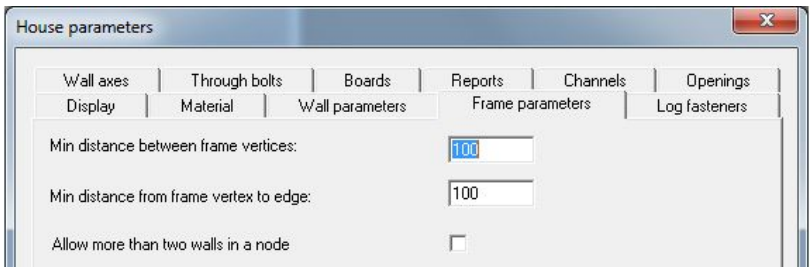
Min. distance between holes. This parameter is used to add holes (through bolts, log fasteners, channels) to a wall or beam. The distance between holes cannot be less than this value.

9.4 Frame Parameters Tab

A frame is the basis of any structure. In **K3-Cottage**, the **frame** is a set of edges, nodes and axes of walls and beams:



You can set the minimum permissible distances between frame elements in the **Frame parameters** tab of the **House parameters** form.



If when creating walls and beams, the mouse trap is located at a shorter distance from the node of frame or edge than the value specified in the form, the trap is drawn to the node or edge automatically.

Check the **Allow more than two walls in a node** field to allow crossing of random amount of walls in one node.

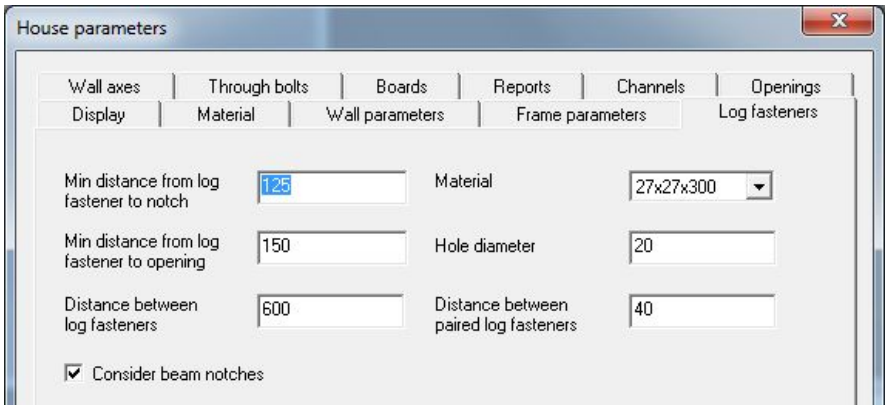
Attention!

- If more than two walls cross in one node, it is impossible to shift them all at once. You will have to shift them in pairs.
- The system warrants correct marking of notches only if no more than two logs cross at the same height.

9.5 Log Fasteners Tab

ST·PF **Only for K3-Cottage Standard and Professional Packages**

The parameters used for marking log fasteners are presented in the **Log fasteners** tab of the **House parameters** form.



Three parameters in the left part of the form are used to mark the log fasteners automatically. Select a log fastener type from the dropdown list in the **Material** field. The list is created using the **Name** column in the **Log fasteners** 42 catalog.

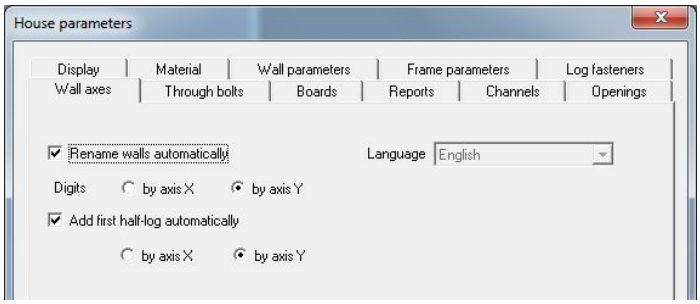
Set dimension of a hole for the log fastener in the **Hole diameter** field. This value will be used in the output documents.

If you uncheck the **Consider beam notches** field, only wall notches will be considered in the standard diagram of log fasteners. Read more about the diagram of log fasteners in the **Marking log fasteners** 163 section.

Distance between paired log fasteners is a distance between two log fasteners. This parameter is used to mark or add log fasteners automatically in the **Paired** 162 mode.

9.6 Wall Axes Tab

The **Wall axes** tab in the **House parameters** form contains control elements for wall axes names.



Here, we will use such terms as the **Wall edge** and **Wall axis**.

Wall edge is an interval connecting its reference points (beginning and end).

Wall axis. The wall edge lies on a straight line named as the wall axis.

When you create a wall, the axis is created automatically. It can be marked automatically or manually.

For automatic marking, check the **Rename walls automatically** field. In this case, all newly created walls will get new names: by one of the axes – figures, by the other – letters. If the letters to

name the axes are not enough, the next axes are named by two letters, for example, AA, BB, CC, etc. None of the axes must be skipped.

The axes are named in the ascending order of wall beginning coordinates. The X coordinate is for letters and the Y coordinate is for figures or vice versa. When you add a new wall to the project, the axes are marked again in accordance with the above-mentioned rule.

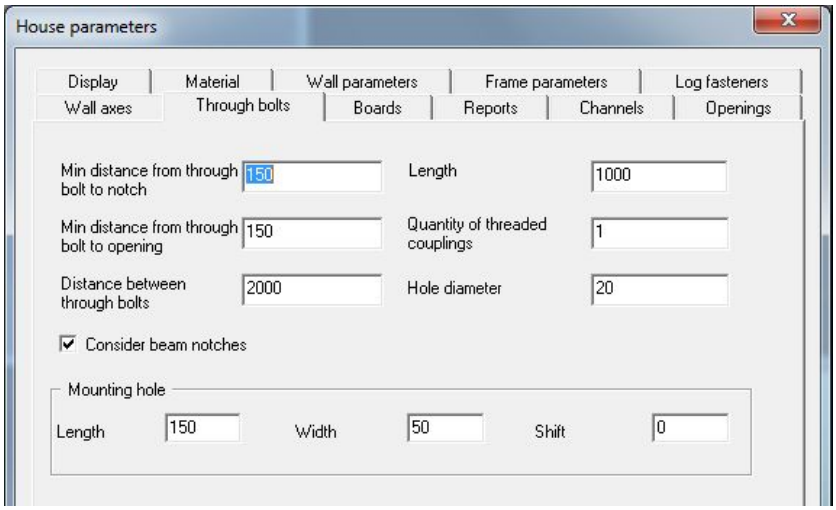
In the manual mode, i.e. when the **Rename walls automatically** parameter is disabled, names are not assigned to newly created walls. The user should select ***Wall/Rename axes/Automatically*** (see the rule of automatic marking above) or ***Wall/Rename axes/Manually*** to name them. The name length should not exceed three characters. The beams are renamed in the same manner.

If you check the **Add first half-log automatically** field, all newly created walls located along the X axis (or the Y axis) will begin with a half-log. If this field is unchecked, all walls will begin with a whole log. Select ***House/Wall/Modify parameters*** to set the walls, which should begin with half-logs.

9.7 Through Bolts Tab

ST·PF **Only for K3-Cottage Standard and Professional Packages**

The **Through bolts** tab in the **House parameters** form contains parameters used to add through bolts by default.



The **Min. distance from through bolt to notch, Min. distance from through bolt to opening, Distance between through bolts** parameters are used for automatic marking through bolts in the walls.

Length is length of *standard* through bolts used to make an assembled through bolt using threaded couplings.

Quantity of threaded couplings is a quantity of couplings used for joining two *standard* through bolts.

The **Mounting hole** parameters are used to set **Length, Width** and **Shift** of the hole providing access to the nut.

The length of the assembled through bolt is calculated taking into account **Sealant strip shrinkage, %** 70. This parameter sets the value of extension of the through bolt required to fasten a certain amount of logs.

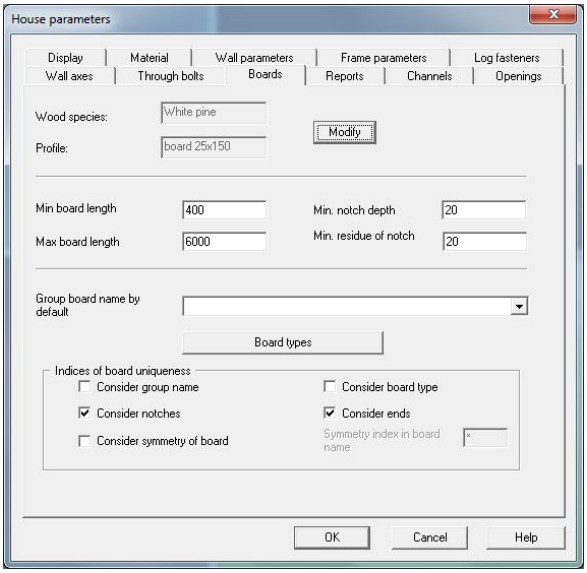
The length of the hole in the wall for an assembled through bolt is calculated taking into account **Wall shrinkage, %** 70. This parameter sets the value for extension of a hole in the logs for assembled through bolts so that the through bolt could move during the shrinkage process.

You can use the **Consider beam notches** parameter in the same manner as for the log fasteners 73.

9.8 Boards Tab

ST·PF Only for K3-Cottage Standard and Professional Packages

The default parameters of creating boards are presented in the **Boards** tab of the **House parameters** form.



The material offered for creating a new board is shown in the **Wood species** and **Profile** fields. Initially, these fields are filled in with the default values from the **Board material** 45 catalog. Then, you can change them depending on the material you are going to work with. In order to modify these fields, click **Modify**. The above-mentioned **Material selection** form will appear on the screen (see previous chapter **Creating a New Project** 55**).**

Min. board length (mm). The system will not create boards shorter than the set value.
Max. board length (mm). If the lengths of some boards exceed this value, such boards in the frame images will be highlighted by a color different from the color of other boards. You can divide these boards automatically. For this purpose, select ***Board/Divide*** 177 when selecting

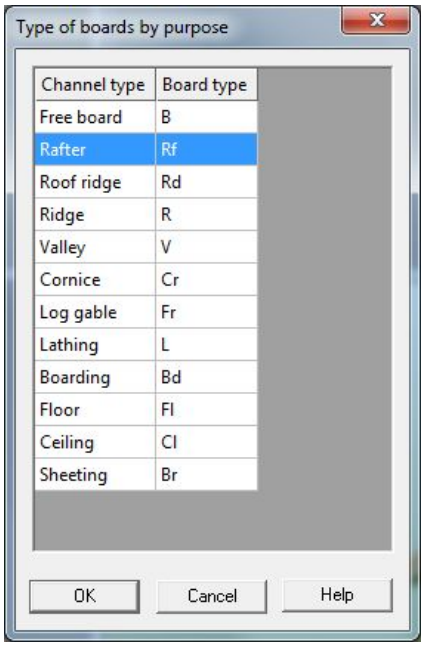
Additional/All in the shortcut menu.

Min. notch depth. If there is a cut on the board and it does not overlap it more than by **Min notch depth**, the notch is not created.

Min. residue of notch. If the cut overlaps the board so that the thickness of the remaining part is less than **Min residue of notch**, the board will be cut into two parts.

Group board name by default is a name assigned to the boards created in the project. If you change this name, all subsequently created boards will have a newly set group name. If this parameter is not defined, the boards do not have a group name. Select ***House/Board/Define group*** 180 to change or assign group board names.

Click the **Board types** button to open the list of board types:

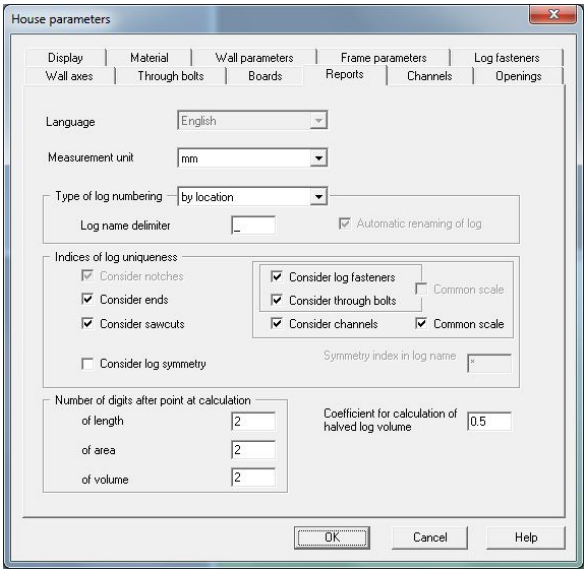


The **Board types** are set by the system: you cannot change their quantity. The user can assign the board type by selecting ***House/Board/Modify type***. The board type is used in the reports containing boards. For example, boards are selected by type for the **Rafter plan**. The **Rafter plan** may contain only boards of the following types: **Rafter, Ridge, Roof ridge, Valley, Cornice, Lathing, Boarding. Prefix in the name** is used to identify boards in the reports. It should contain three characters maximum. The user can change them, if necessary. For example, if you assigned the **C** prefix to the **Rafter** type, rafters in the drawing will be identified as follows: C_1, C_2, C_3, etc.

Indices of board uniqueness influence board numbering in the reports. Check the elements to be taken into account every time when the system detects the same boards (like with logs 79). For example, if you do not check **Consider log ends**, two boards differing from each other only by the log ends, will have the same number.

9.9 Reports Tab

The **Reports** tab of the **House Parameters** form looks like this:



You can create reports in Russian or English depending on your selection in the **Language** field.

If you selected the manufacturer 32 with millimeters as measurement units when creating your project, you can select *millimeters* or *centimeters* as the **Measurement unit** for dimensions in the drawings and lengths in tables.

Note: This parameter is related only to preparation of output documents. All objects should be created in **millimeters**. If the objects are created in **inches**, the menu will be different.

Select one of three existing methods of log name creation in the **Type of log numbering** field: ***By location, By unique number*** or ***Combined***. The log name will be used for creation of all reports: wall involutes, plans, drawings, etc.

If you select numbering ***By location***, a unique number will be assigned to each log. The number will consist of:

- name of wall (axis) the log relates to;
- log course number;
- log number in the log course.

Examples of unique numbers of logs located in different project objects: walls, beams and posts, are given below.

Name of log in the wall:

1_7_1 Wall1_Log course No.7_Log No.1

B_15_2 WallB_Log course No.15_Log No.2

Name of log in the beam:

Bm1_20_1 Beam1_Log course No.20_Log No.1
Name of post in the wall or beam:
P_1_1 Post_Wall1_Post No.1
P_Bm1_1 Post_Beam1_Post No.1
Name of free post:
P_1 Post_Post No.1

In this case, the **Wall element specification** 197 table contains a list of all project logs grouped by walls, beams and posts. Each line of the report contains information about the log length and its detailed drawing.

If you select numbering ***By unique number***, the log name will be created as follows: the same unique number will be assigned to the same project logs. In the **Wall element specification**, the logs will be grouped not by walls (as in first case), but by the number assigned in the order of log length decreasing. Each number has one corresponding line in the table containing log length, number of such logs in the house and detailed drawing.

If you select ***Combined*** numbering, each project log will be assigned a number containing:

- name of the wall (axis) the log relates to;
- unique log number in the project.

Spacer in the log name should not exceed two characters. It is used to create the log “name”.

If you select numbering ***By unique number*** or ***Combined*** numbering, the **Automatic renaming of log** parameter becomes available. If you check it, the logs will be renumbered after each operation with walls, wall logs, posts, consoles or openings.

Check the elements to be taken into account when detecting the same logs in the **Indices of log uniqueness** parameter group. Let us consider the following example. Assume that the **Consider sawcuts** parameter is unchecked. In this case, two logs differing from each other only by location and/or dimensions of sawcuts will be considered as the same logs and, therefore, will have the same number.

The upper parameter of **General scale** enables the mode when the system does not consider the fastener for the hole: through bolt or log fastener, when detecting the same logs. For example, two logs with similarly located holes, with holes for through bolts in the first log and for channels in the other, will be considered as the same logs. The lower parameter of **General scale** functions like the upper one, but, besides through bolts and log fasteners, it takes into account channels as well.

If you disable both the scales, the fastener for the hole will be taken into account when detecting the same logs: a through bolt, log fastener or channel.

Note. Only checked elements of the **Indices of log uniqueness** group are displayed in the report drawings. For example, if you do not check the **Consider sawcuts** parameter, the sawcuts won’t be shown in the drawing. In order to show them, you need to open the **House parameters** form, to enable the **Consider sawcuts** parameter and to create the report with new available parameters again. As for the scales, if the lower parameter of **General scale** is enabled, a single dimension scale is formed in the drawings for through bolts, log fasteners and channels. If the upper parameter of **General scale** is enabled, a single scale is formed only for through bolts and log fasteners, and another one for channels. If both the scales are

disabled, a separate dimension scale is formed for each type of the elements.

Check the **Consider log symmetry** field to enable the mode in which symmetric logs are considered as the same logs in the **Wall element specification**. In reports they are marked with a symbol set in the **Index of symmetry in log name** field.

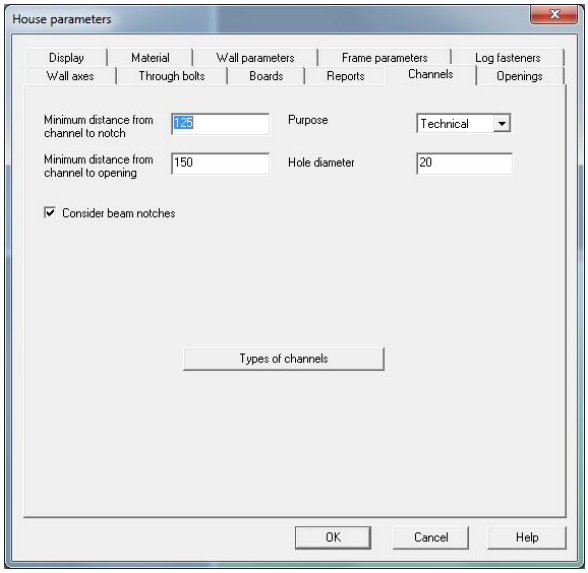
Number of digits after point at calculation determines the number of characters after point in the values of lengths, areas and volumes specified in reports.

Coefficient for calculation of halved log volume is used only for halved logs included in the project. For example, if the ratio is equal to 1, half-log volume is calculated as the volume of a whole log. If it is equal to 0.5, half-log volume is calculated as the volume of a half-log.

9.10 Channels Tab

ST·PF Only for K3-Cottage Standard and Professional Packages

The parameters used for marking channels are presented in the **Channels** tab of the **House parameters** form.



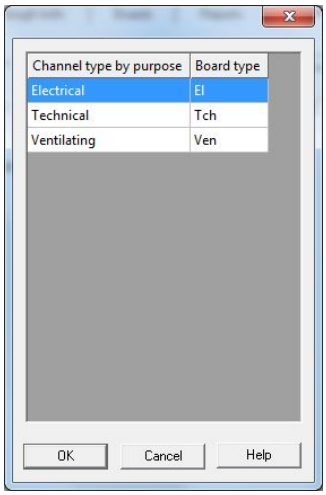
The **Min. distance from channel to notch** and **Min. distance from channel to opening** parameters are used when adding channels to the walls.

Select the channel type in the **Purpose** field.

Set the dimension for drilling a hole for the channel in the **Hole diameter** field.

If you check the **Consider beam notches** field, not only wall notches, but beam notches will be considered, when you add channels.

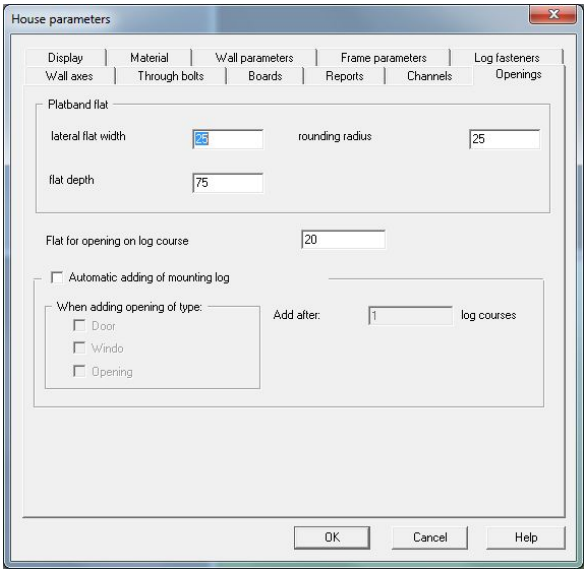
Click the **Channel types** button to open the list of channel types:



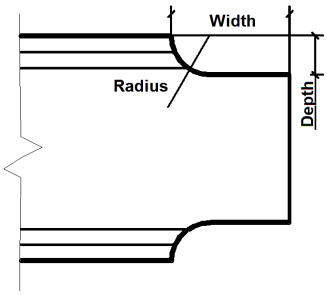
Channel types are set by the system: you cannot change their quantity. **Prefix in the name** is used to identify channels in the drawings. It should contain no more than three characters. The user can change them, if necessary. The type is assigned to the channel when you add it to the wall (beam). If you need to change the channel type, select ***House/Channels/Modify***.
Read more about operations with channels in the **Marking Channels** 170 section.

9.11 Openings Tab

The parameters used to add openings are presented in the **Openings** tab in the **House parameters** form.



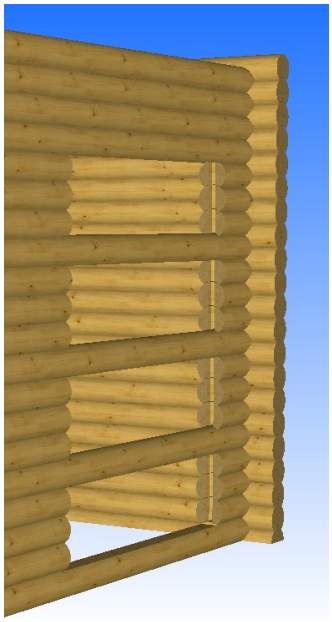
The **Platband flat** parameters (see the picture) are used to set the **depth, width** and **radius** of cuts made in the log for openings. They are permanent for the entire house.



Platband flat (top view).

Flat for opening on log course is a value of embedding the opening in the log (see the **Opening parameters** 113 form).

In this form you can set automatic adding of a **mounting log** 117 when an opening is added. Check the **Automatic adding of mounting log** field, then select the opening types requiring installation of a mounting log and specify the number of log courses separating two neighboring mounting logs.



Position of mounting logs with the interval of 3 logs

10 Creating, Editing and Deleting Walls

In this section, we will use the following terms:
Reference points of walls are the wall beginning and the wall end; projections, openings, consoles are measured from these points;
Wall edge is an interval connecting its reference points (beginning and end);
Wall axis is a straight line. The wall edge lies on this line;
Node is a wall crossing point.

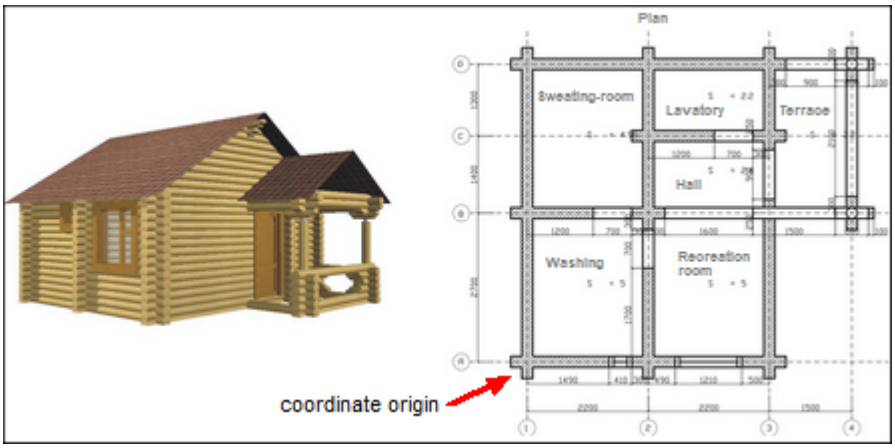
Attention! Crossing of random number of walls 73 is allowed in one node, **but: for correct marking of notches, the number of crossing logs at the same height should not exceed two.**

As for location, all walls are divided into two groups:

1. Walls with the axis parallel or close to the OX axis (the angle between OX and the wall axis is less than 45 degrees).
2. Walls with the axis parallel or close to the OY axis (the angle between OY axis and the wall axis is less or equal to 45 degrees).

Beginning of the walls of the first group is the point with the lowest X coordinate, and beginning of the walls of the second group is the point with the lowest Y coordinate. The wall axes are named in the order of increasing of wall beginning coordinates. As default, letters are set by the OX axis, and figures – by the OY axis. You can exchange the letters and figures, if you enable **Figures by X axis** in the **House parameters/Wall axes** 74 form. If you do not check the **Rename walls automatically** field, names will not be assigned to newly created walls.

Attention! It is important to specify the correct position of the **first node** when you create the **first wall**. It is necessary to make easier your future work on the project. Therefore, first look at the house plan and select the convenient position of the project "zero". For example, you need to design the following house:



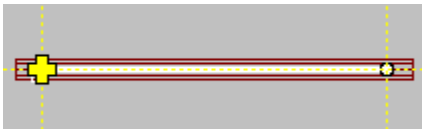
Pic. 1

It is clear from the plan that it is better to locate the coordinate origin at the crossing point of **wall A** and **wall 1** axes. The **OX** axis lies along **wall A**, and the **OY** axis - along **wall 1**. In this case, all

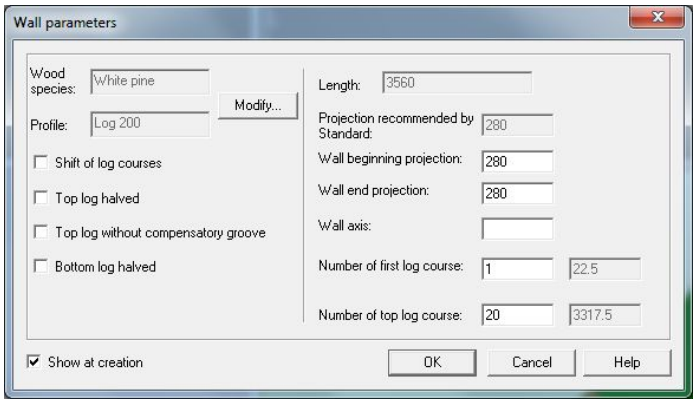
coordinates will be positive.

10.1 Creating Walls

To create a wall, select ***House/Wall/Create***. Set two reference points (beginning and end). The wall axis will pass through these points.



When creating the first wall, the form appears on the screen.



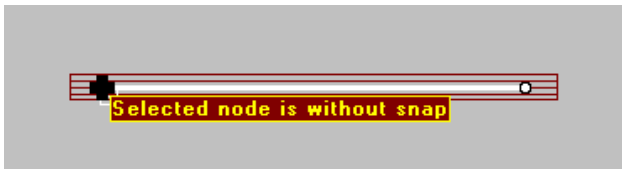
Default rules for a new wall creation are:

- material is selected from the **House parameters** form, the **Material** 69 tab;
- log courses and projections are selected from the **House parameters** form, the **Wall parameters** 71 tab;
- whole or halved lower log is selected automatically, depending on the checkmark in the **Add first half-log automatically** field in the **House parameters** form, the **Wall axis** 74 tab and on location of the wall axis (along the X axis or the Y axis);
- shift of log courses. This status is assigned automatically to all walls with lower half-log;
- axis name is added automatically depending on the checkmark in the **Rename walls automatically** field in the **House parameters** form, the **Wall axis** 74 tab and on location of the wall axis (along the X axis or the Y axis);
- length is a distance between the wall endpoints, i.e. the distance between the reference points of walls + projections.

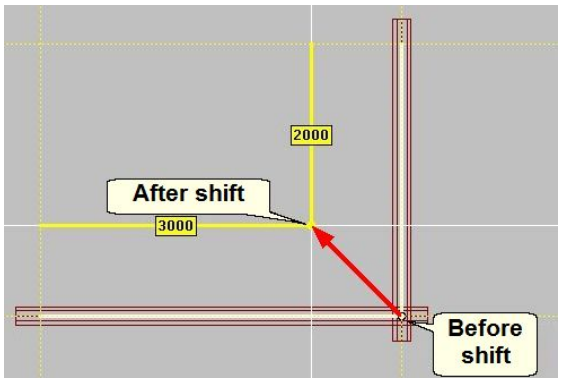
This form will be displayed when creating a new wall until you uncheck the “Show at creation” parameter.
Read more about the wall parameters in the next section 86.

Let’s return to wall creation. As a reference point, you can select:

- a random point lying in the OXY plane. It is called **Node without snap**.



- one of the reference points of the existing wall. It will lie at the crossing point of axes of two walls and will be common for both of them. It is shown as a cross in the viewport and called as **Node without snap** like the previous point. If this node is shifted, both the walls, which are outside of it, will change their position and/or length.



- any point on the edge of existing wall:
  - this point will always move together with the edge it lies on;
  - this point may be snapped to the beginning, end or middle of the selected edge;

    Remember that **K3-Cottage** is a parametric system. It means that the reference points set not only the wall position, but the rules of wall rebuild as well, if the neighboring walls are shifted. **Snaps** fulfill this function. For example (see pic. 1 in the previous section), assume that the beginning of **Wall 2** coincides with the middle of **Wall A** – the **center-**snap. If **Wall A** is modified, **Wall 2** will be created again, so that its beginning coincides with the middle of **Wall A**.

As for snap defaults, the **beginning-**snap is assigned to each new reference point by default. If the wall length is modified, such node will be always located at the set distance from the beginning of the wall edge. You can modify default settings. Click one of the buttons on the scene general commands toolbar: , , , to set an active snap (the end or center-snap). If the wall length is modified, such nodes will be always located at the set distance from the snap point;

  - this point may be snapped to neither point of the wall edge. For this purpose, when creating the point, click the button on the scene general commands toolbar to select the **Free on the axis** snap as active. For example (see pic. 1), if the **Free on the axis** snap is selected for the beginning point of **Wall 2**, it will remain at the same place if the wall length is modified.

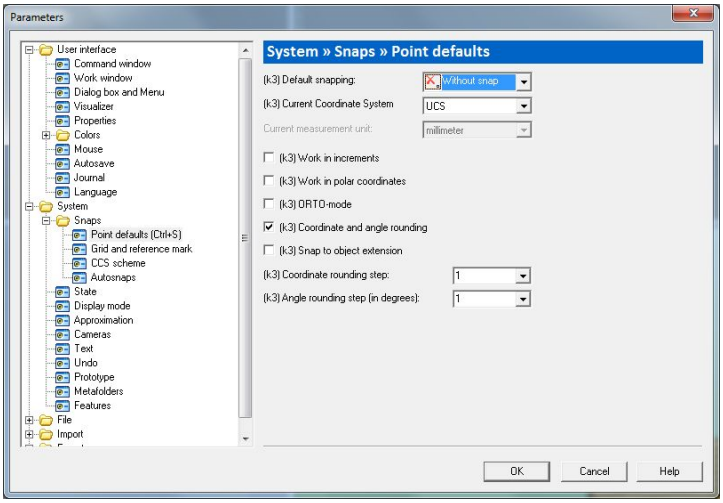
Note. You can use the *Increment mode* to select reference points of the wall. Having selected the beginning of the wall by using the mouse, you can set the coordinates of the wall end in the

dialog window by typing @ and then values for increasing or decreasing the wall beginning coordinates, the so-called “increments”.
For example, you are creating a wall at the point with 0,0,0 coordinates. Your wall should be parallel to the OX axis and should be 6000 mm. To create such wall, you should type @6000 0 0 in the dialog window and click **Enter**.

 – this button enables/disables the mode of snapping to virtual axes. Virtual axes are the lines passing through the reference points of wall and are parallel to the OX and OY axes of the coordinate system. If this mode is enabled, the nodes of newly created walls “*adhere*” to the crossing points of vertical axes falling within their area. Parameters of the “*adhering*” area are set in the **House parameters** form, in the **Frame parameters** tab.

You can view or change the snap type for any reference point by selecting ***House/Wall/Frame transformation*** 88.

Hint. Besides the above-mentioned snaps, there are general settings of snaps in the system. The **Autosnapping** mode is enabled as default. To change the mode, open the **Parameters** form by selecting ***Settings/Parameters*** in the main menu. Select the **Snaps** element in the parameter tree and select a mode in the **Default snap** field, for example, **Without snap**.



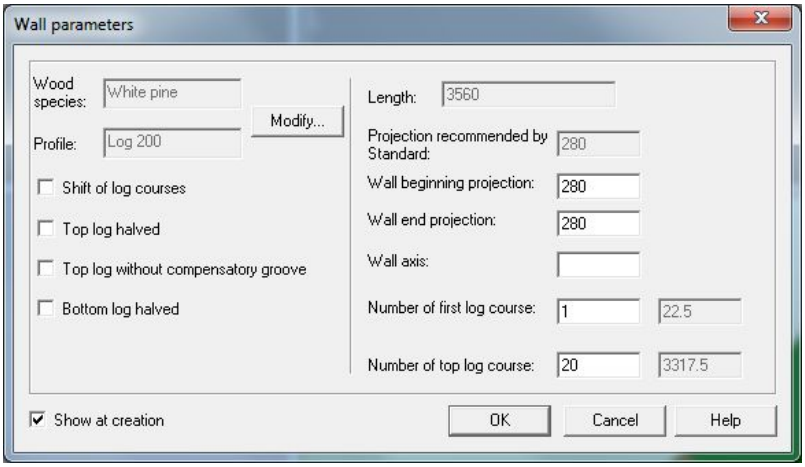
Important! **Autosnapping** is disabled automatically when you create walls. When you exit ***House/Wall/Create***, it is enabled again..

Note: If there are no logs in the wall (for example, the added opening is of the same dimension as the wall), it is displayed as a rectangle created in accordance with overall dimensions of the wall and lying in the XOY plane. All reports for such walls contain only their names.

10.2 Wall Parameters

The **Wall parameters** form appears upon selection of two reference points of the wall. If you do not want it to appear when creating each wall, you can uncheck the **Show at creation** note. Subsequently, if you want to open this form, select the ***Parameters*** element in the shortcut menu

before setting the second reference point of the wall:



The program fills in the **Wood species, Profile** fields with the values set in the **Project parameters** 55**.** If you want to modify these fields, click the **Modify** button. The **Material selection** form will appear on the screen (see the previous chapter: **Creating a New Project** 55**).**

Top log halved. The last log course of the wall will be made of a half-log;
Bottom log halved. The wall will begin with a half-log.

Note. The bottom half-log is set automatically when you create walls. It depends on wall position and checkmark in the **House parameters** form, in the **Wall axes** tab, in the **Add first half-log automatically** 74 field. If this field is checked, all newly created walls located along the X axis (or the Y axis) will begin with a half-log. Otherwise, all walls will begin with a whole log.

Shift of log courses. Check this parameter to shift the modified wall by a half of log course in relation to the wall with this parameter disabled.

If **Shift of log courses** is disabled, log numbering will be started from 1, if enabled – from zero.

If **Number of first log course** of wall exceeds 1, the **Bottom log without groove** parameter appears in the form.

Length is an information field. If you need to modify the wall length, select ***House/Wall/Shift***.

Projection recommended by Standard (information field) is a standard projection recommended by the State Union Standard (GOST) and equal to 1.4 of width of the main project material.

Wall beginning projection and **Wall end projection** are measured from the wall beginning and end points (reference points of the wall). You can set your own values for this parameter or values equal to the value specified in the **Projection recommended by Standard** field.

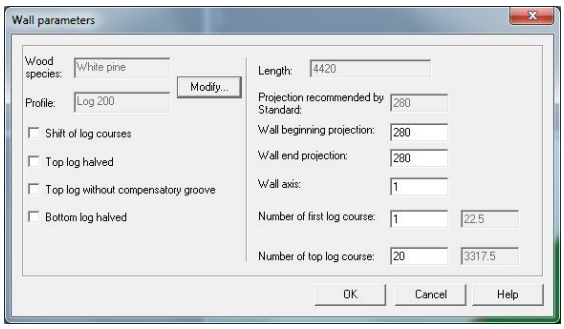
Wall axis is a text field. It may be set manually or automatically. The rules of axes name defining are given in the **Setting of New Project Parameters** chapter, the **Wall axes** 74 tab.

The **Number of first log course** and **Number of last log course** parameters are used to set the first and last log courses of wall. Values of these parameters in millimeters are displayed automatically on the right in hidden fields.

10.3 Editing Walls

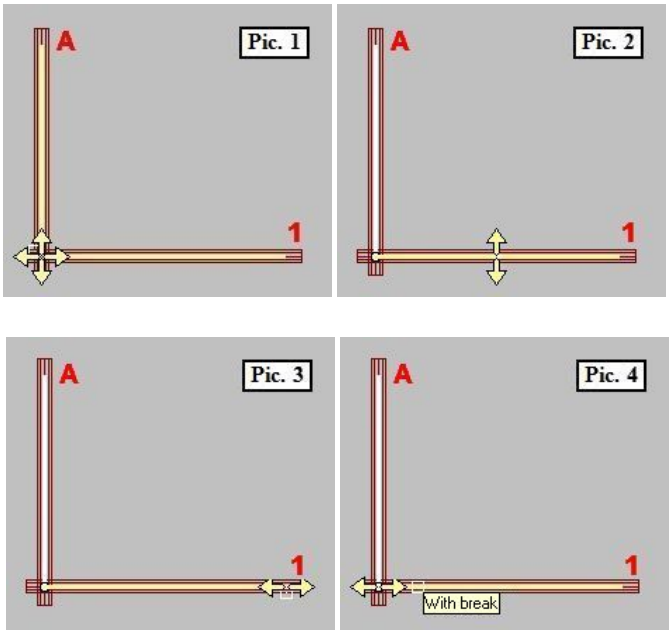
You can modify position, length and creation parameters of any created wall.

In order to modify the wall parameters, select ***House/Wall/Modify parameters*** and select the wall to be modified. Set the new values in the respective fields of the **Wall parameter settings** form and click **OK.**



You can modify wall position and length by two methods: select ***House/Wall/Frame transformation*** or ***House/Conversions.***

The ***House/Wall/Frame transformation*** command is used to modify wall position with preservation of snaps 84, to change wall length or to shift it along the neighboring walls. When you place the mouse cursor on the edge or node of the modified wall, a prompt in the arrows showing available movement direction appears on the screen.

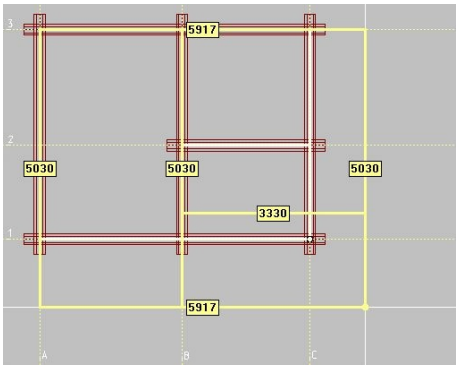


- If you select the node as shown in Pic. 1 (the mouse cursor is exactly at the wall crossing),

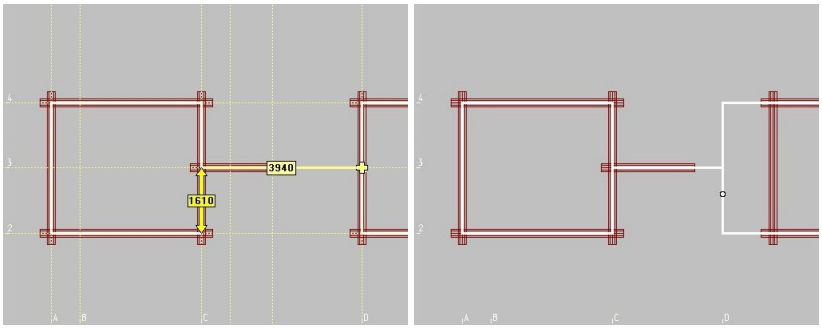
position and length of walls **A** and **1** will be changed, but the joint will be maintained;

- If you select the point near the wall center on wall **1** (Pic. 2), only position of wall **1** and length of wall **A** will be modified;
- If you select the free end of wall **1** (Pic. 3), only length of this wall will be modified;
- If you place the mouse cursor to the area around the node and shift it a little along wall **1** (Pic. 4), the **With break** prompt will appear on the screen. It means that if you select the snapped end of the wall, you can break the joint of two walls. The length of wall **1** will be modified, and position of wall **A** will remain the same.

As **K3-Cottage** is a parametric system, when one wall is shifted, all neighboring walls will be modified according to the above-mentioned rules. When you shift a wall, the modified dimensions of all walls changing their length are displayed on the screen.



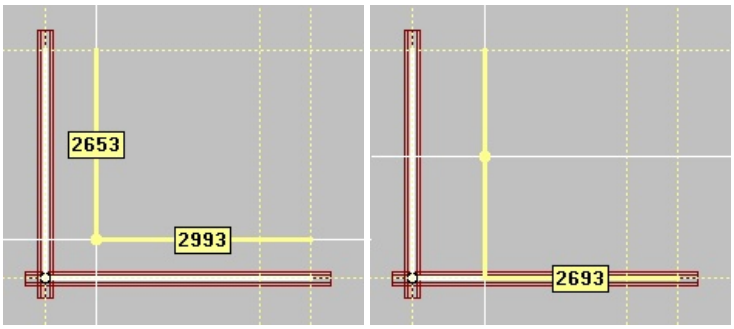
 – this button is used to enable/disable automatic breaking and connecting nodes. If this mode is enabled, you can “snap” the wall to another wall by selecting ***House/Wall/Frame transformation*** :



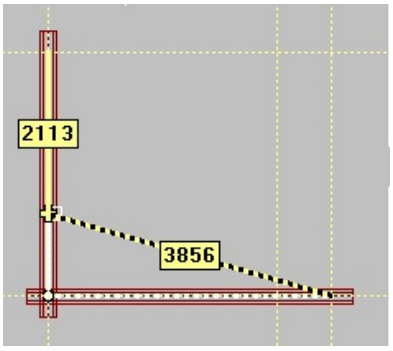
Left – “snapping” of one wall to another. Right – the interconnected walls are shifted synchronically.

If this mode is disabled, the wall will act as unsnapped when you select the command.

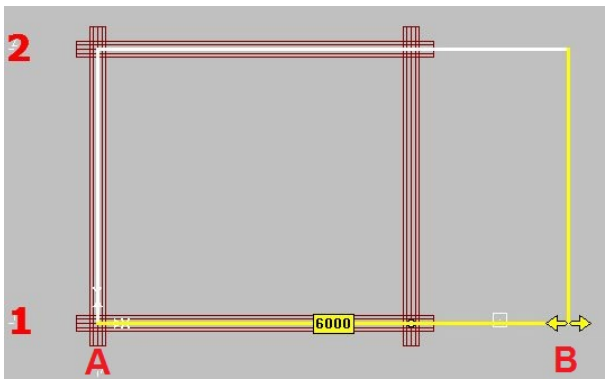
The **Parallelism** property is assigned to all created walls as default. It means that the wall will be shifted parallel to its initial position only, and the wall nodes – only along its edge.



For random shifting, it is necessary to cancel this property. Click the **Parallelism** line in the shortcut menu and select the wall to be modified. The selected wall will be displayed as a dashed line and the system will allow shifting the wall ends randomly.

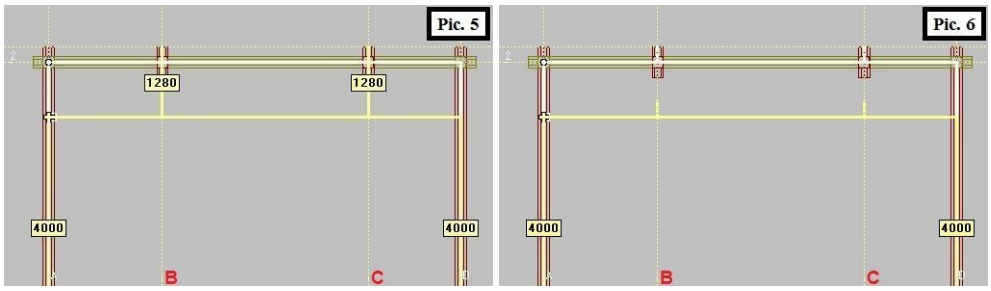


In case of frame transformation, the lengths of all walls are determined automatically. If you want to set the length of a certain wall, select ***Wall length*** in the shortcut menu and click the reference point of the wall you are going to shift. Then, in the dialog window type the length in mm (or in inches if you work with inches) responding to the system query **New length of wall.** All neighboring walls will be created again automatically.



Length of wall 1 has been modified by command. Length of wall 2 has been modified automatically, wall B has been shifted automatically.

Length fixing in the shortcut menu is applied to walls with a free end. This property is useful for working with overcuts.
The free end point of this wall remains fixed by default when the frame is shifted. It is clear from Pic. 5 that the length of two overcuts (walls B and C) is changed together with the length of the lateral walls. However, upon selection of the transformation command you can select **Length fixing** in the shortcut menu and then select the walls with permanent length. Upon selection, wall length will not change and the entire wall will be shifted. As shown in Pic. 6, overcuts are shifted together with the shifting wall:



If you need to change the type of node snapping, select ***Snap type*** in the shortcut menu. Select the node and line in the menu displayed on the screen.

If you need to change the “snapped” node position, select ***Snap value*** in the shortcut menu. Click the wall node to change the snap value. A prompt specifying the snap type of the selected node and the distance from the snap point to the node will appear on the screen. Type a new value of the snap in the dialog window.

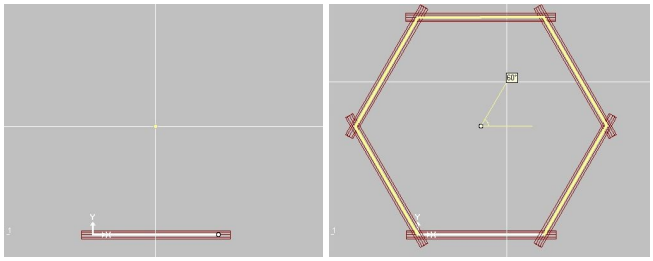
Attention! If more than two walls cross in the same node, you cannot shift all of them at once. You will have to shift them in pairs.

Thus, by selecting ***House/Wall/Frame transformation***, you can:

- change wall length;
- change wall position;
- change snap type and its value.

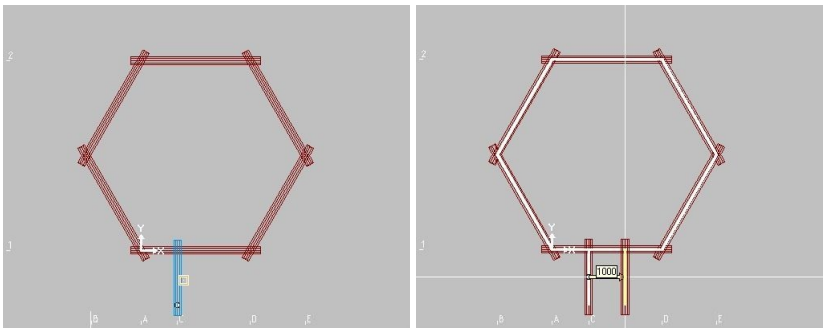
The ***House/Conversions*** commands are used for random change of wall position. The group includes three commands:

- ***Rotation*** – for wall rotation by a certain angle around the vertical axis:



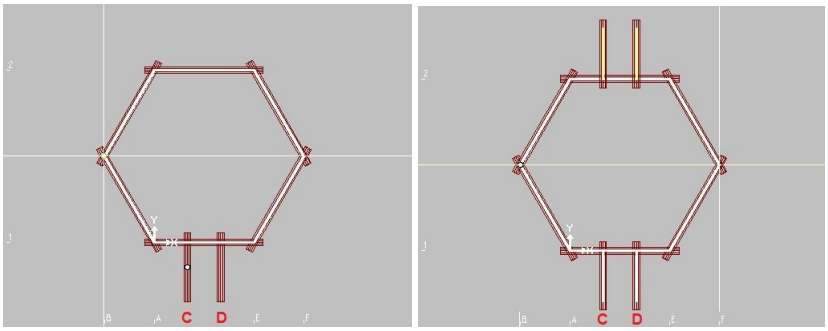
Left – selection of the wall rotation point with multiple duplication (see below), ratio = 5. Right – setting of rotation angle (60°).

- ***Shift***– for movement or copying one or several walls in the XOY plane:



Left – selection of object to copy. Right – setting the distance to the new object.

- ***Symmetry*** – for wall display in relation to the vertical plane.



Walls C and D are selected for symmetry with duplication.

Left – selection of the first point of line for creating vertical plane. Right – selection of the second point.

The commands may be used in the following modes:

- ***Without duplication***. It is used for moving the wall. As compared with ***Frame transformation***, this command breaks snaps of the moved wall with other objects;
- ***With duplication***. It is used to create a copy of wall in the specified location;
- ***With multiple duplication*** (except for ***Symmetry***). **Ratio** should be specified upon selection of this command. When executing the command:
  shift – if ratio is **n**, n walls appear in the scene at the selected distance from each other. For example, if ratio is **3** and the selected distance is **1000**, three walls will appear at the distance of 1000, 2000 and 3000 from the initial one.
  rotation – if ratio is **n**, n walls rotated by the selected angle in relation to the neighboring wall will appear. Thus, if ratio is **4** and the selected angle is **45**, walls rotated by 45, 90, 135 and 180 degrees in relation to the initial one will appear.

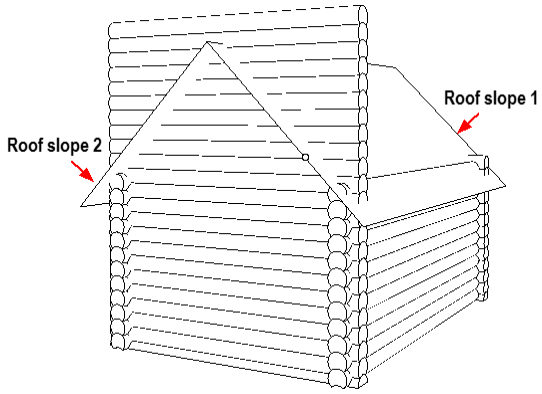
The above-mentioned commands are available not only for one wall, but for a group of walls/beams as well. When selecting several snapped elements for shift, rotation or symmetry, all snaps in the

selected group remain unchanged.

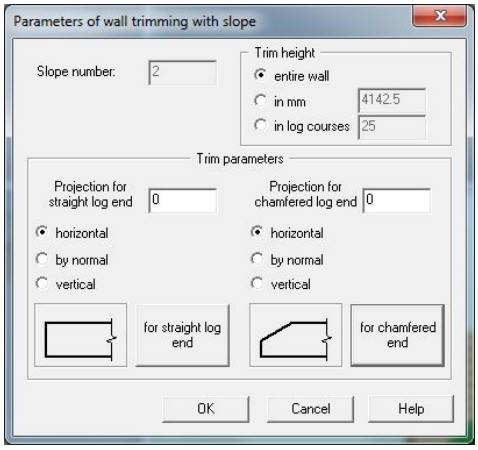
10.4 Wall Trimming by Roof Slope

PF Only for K3-Cottage Professional Package

There is a special command used to trim walls by roof slopes: ***House/Wall/Trim wall by roof slope***. Let us consider this command by the example of creating log gables. For example, you have two roof slopes and a wall to be trimmed:



Select ***House/Wall/Trim wall by roof slope***. The system will ask you: *Select the wall to trim by roof slope*. Select the wall. The system will ask you: *Select the roof slope to trim the wall*. Select **Roof slope 1**. Upon roof slope selection, the **Parameters of wall trimming by roof slope** form will appear on the screen:



Roof slope number (specified in reports) is an information field showing the number of the selected roof slope.

Trimming height parameters:

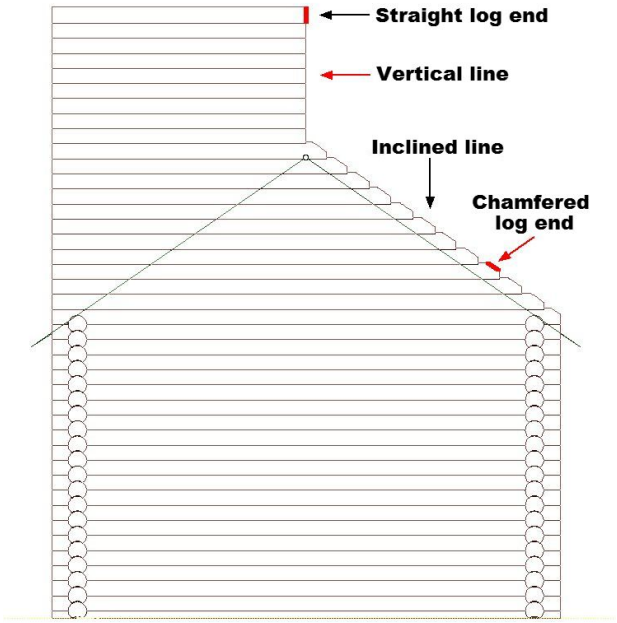
To the whole wall. This parameter enables wall trimming according to the roof slope shape. The wall part above the roof slope is cut.

In mm. This parameter enables wall trimming when the wall is cut partly above the roof slope, but lower than the specified value in millimeters.

In log courses. This parameter enables wall trimming when the wall is cut party above the roof slope, but lower than the specified value in log courses.

Note.

When trimming, the wall part above the roof slope is cut in vertical line. The wall part below the roof slope is cut in inclined line:



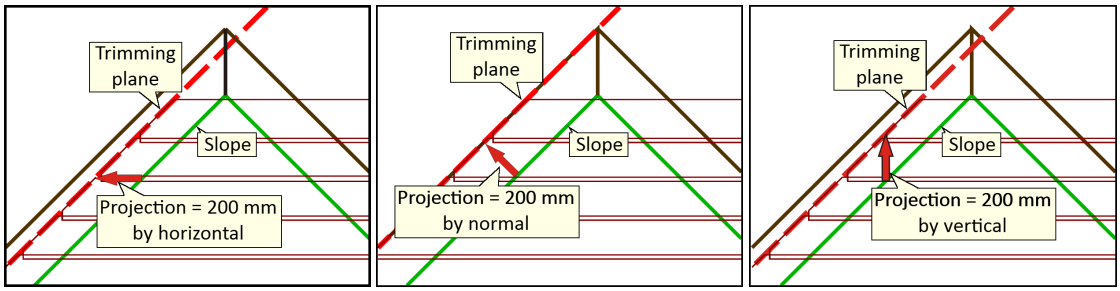
Ends of the logs cut in vertical line are named as **straight log ends**. Ends of logs cut in inclined line are named as **chamfered log ends**.

You can set the values of projection of the straight and chamfered logs over the vertical and inclined straight lines in the **Projection for straight log end** and **Projection for chamfered log end** fields, respectively. The projections may be as follows:

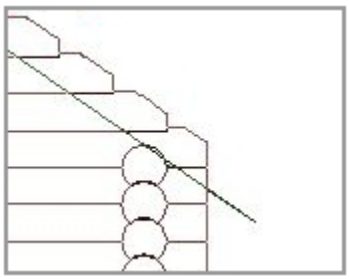
horizontal – the wall is trimmed by the plane created by parallel shift of the roof slope horizontally (parallel to the XOY plane) by the value of selected projection;

by normal – the wall is trimmed by the plane created by parallel shift of the trimming roof slope in normal line to the roof slope by the projection value;

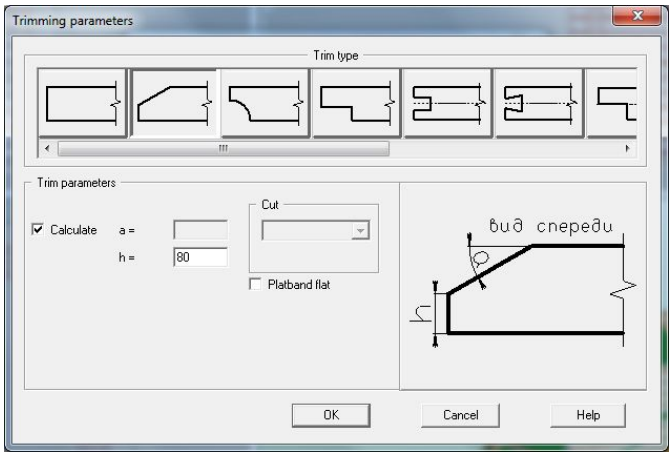
vertical – the wall is trimmed by the plane created by parallel shift of the cutting roof slope vertically (parallel to the OZ axis) by the projection value.



Note. In case of nonzero projections, the logs are extended by the value not exceeding the standard wall projection.

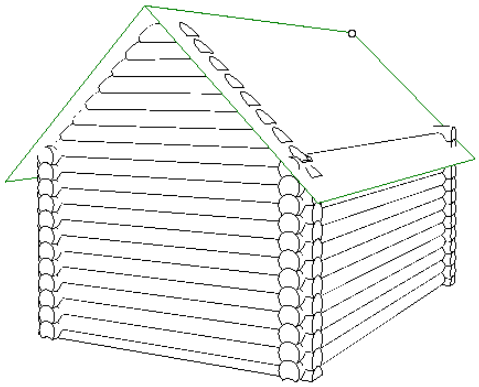


Use the **For straight log end** and **For chamfered log end** buttons to open the form and to select **Log trimming type** 157 for each log end:



Fill in the form, if necessary, and click **OK**. The **Angle** field can be left empty. The system will calculate the angle automatically basing on the roof slope angle.

Then, trim the wall by **Roof slope 2** in the same manner as by **Roof slope 1**.
Click the **Finish** line in the shortcut menu to finish the operation. You will see the following picture on the screen:



Let's state the rule of log behavior when the walls are trimmed by roof slopes (throughout the length):
– a log is not created, if the height of its residue in the wall is less than the **Minimum residue of sawcut** 71 parameter;
– a half-log is created, if the log residue in the wall is entirely in one of the log course half;
– in all other cases a whole log is created.

If necessary, you can change the rules of wall trimming by roof slopes. Select ***House/Wall/Trim wall by roof slope*** and select the trimmed wall.

To delete trimmings, select **Delete** in the shortcut menu, select the roof slope to exclude from trimming roof slopes and click **Finish**.

To modify parameters, select **Parameters**, select the wall, set the new values in respective fields and click **OK**.

Attention!
- When editing walls, trimmed walls "see" the roof slopes and are trimmed automatically.
- When editing roof slopes, walls are not created again in acordance with new parameters of roof slopes. In this case, select ***House/Wall/Modify parameters*** or ***House/Wall/Fill with logs*** to create the walls again.
- If a wall trimmed by roof slopes falls outside the roof boundaries as a result of shift, such wall becomes "untrimmed" again. In this case, firstly, you should modify the roof slope (for example, to modify overhangs) and then apply ***House/Wall/Modify parameters*** or ***House/Wall/Fill wil logs*** to the moved wall.

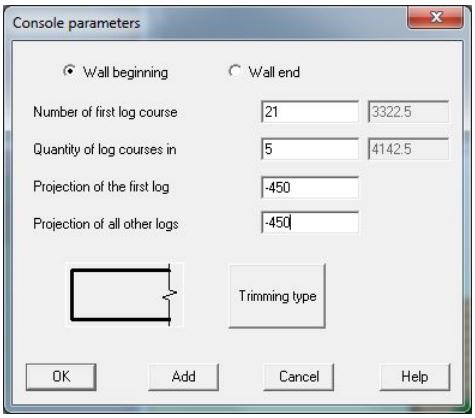
10.5 Creating a Log Gable Using Consoles and Openings

Attention! This section is intended for users of the basic or standard package of **K3-Cottage**, i.e. for those who hasn't acquired the **Roof** module.

You can create the log gables by using consoles or openings.

Creating a Log Gable Using Console

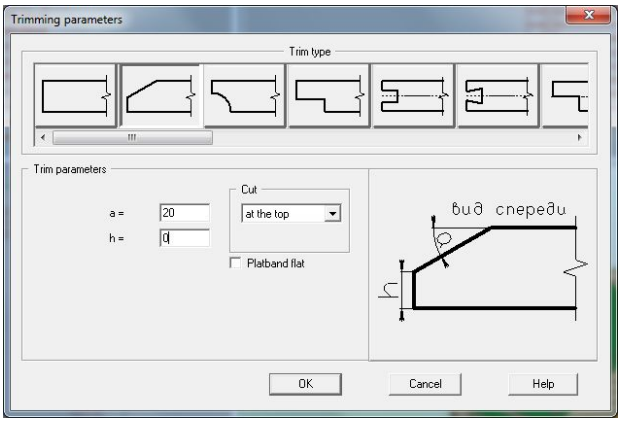
Let's consider the method of creating a log gable by the next example. Assume that we have a wall 20 log courses high, the wall length is 4500 mm. Starting from the 21st log course we need to add a log gable 5 log courses high. First, let's modify wall parameters: Number of the last log course will be 25. Then, let's add two consoles to the wall beginning and end. Select ***House/Console/Create***, select the wall to add a console and fill in the **Console parameters** form on the screen.



Values of **Projection of first log** and **Projection of all other logs** are calculated according to the formula:

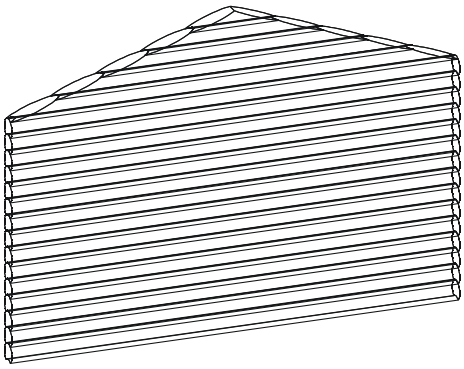
$$\frac{\textit{Wall length}}{2 \times \textit{Number of log courses in the console}}$$

Click **Trimming type** and fill in the **Trimming parameters** form as follows:



You should calculate the **Angle** parameter using the right triangle rule.
Thus, you created a bevel on one side of the wall. Then, repeat the same operations, but select

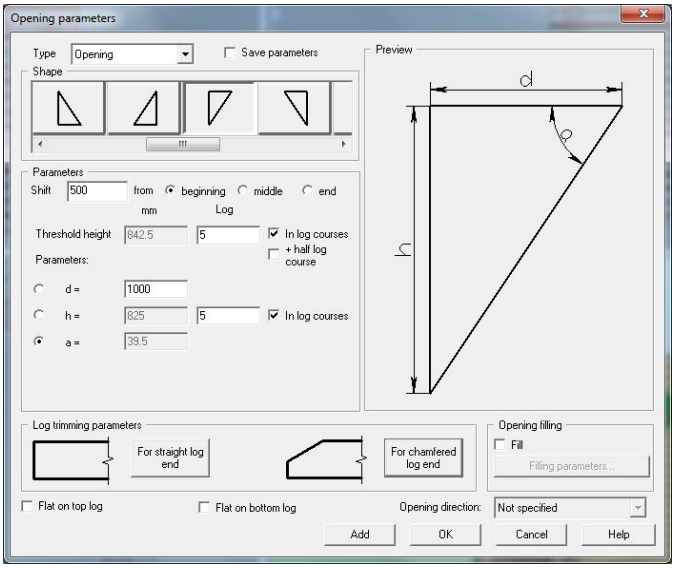
the **Wall end** button in the **Console parameters** form. As a result, you will obtain the wall with bevels for the roof:



Creating a Log Gable Using Triangle Opening

Let's consider another method of creating a log gable in the wall with the same parameters as in the previous example.

Select ***House/Opening/Create*** on the auxiliary toolbar, select the wall to add an opening to and fill in the **Opening parameters** form as shown in the picture.



Select **Opening** in the **Type** field.

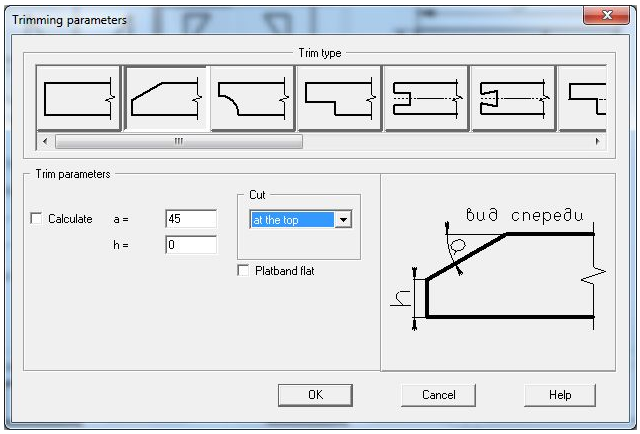
The value of **Shift** is equal to the value of **Projection of wall beginning**, but with the opposite sign.

The value of **Threshold height** is equal to the number of the last wall log course before the bevel.

The value of parameter **d** is calculated as a half of wall length. $\frac{\text{Wall length}}{2}$

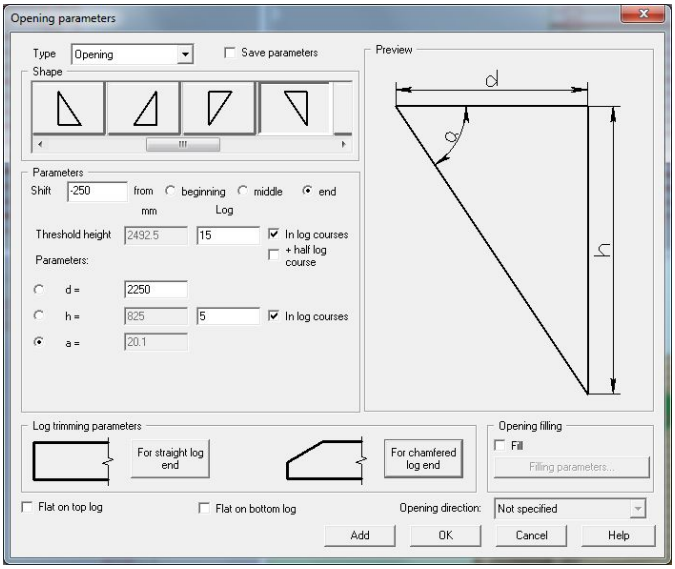
You can set the angle of the triangular opening instead of height. Make element **a** active by putting a point in front of parameters **d** and **h** and then set the angle value.

Then, click the **For chamfered log end** button and fill in the **Log end type settings** form as follows:

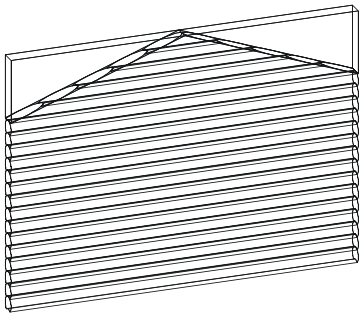


You do not need to fill in the **Angle** field. The system will calculate the angle basing on the specified opening parameters. Thus, you have created a bevel on one side of the wall.

Open the **Opening parameters** form again. Check the **Parameter saving** element, change **Type** into  and put a point in front of **from the end:**



As a result, you will obtain a wall with bevels for the roof:



10.6 Deleting Walls

To delete a wall, select ***House/Wall/Delete*** and one of the elements of the shortcut menu: ***By edge*** or ***By object***. If the **By edge** mode is enabled, it is necessary to select the edge. If **By object** is selected, you should specify any part of the wall image to delete the wall.

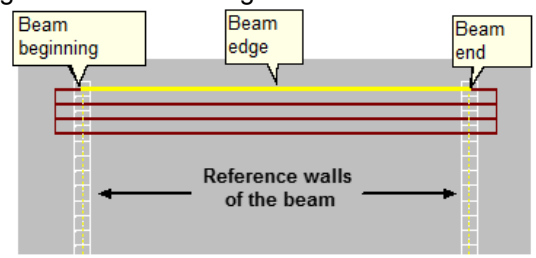
Note. It is more convenient to create, move and delete walls on the plan view.

11 Creating, editing and deleting Beams

The beams are created according to the same rules as the walls, but the log courses are counted from the top to the bottom.

In this section, we will use the following terms:

– **reference objects** are walls or beams on which the created beam rests;
– **reference points of the beam** are the beam beginning and the end;
– **beam edge is** an interval that connects its reference points (beginning and end);
– **beam axis is** a straight line the beam edge lies on.

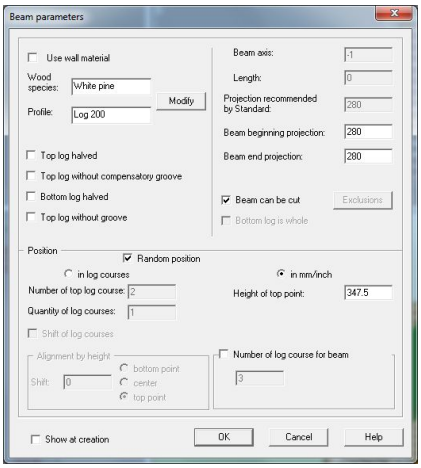


Front view

11.1 Creating Beams

Select ***House/Beams/Create*** to create beams. In reply to the system query, specify two reference objects for the beam: they may be **walls**, other **beams** or a random point (in this case, first select the **Point** key in the shortcut menu or press **Enter** on the keyboard and then specify a point).

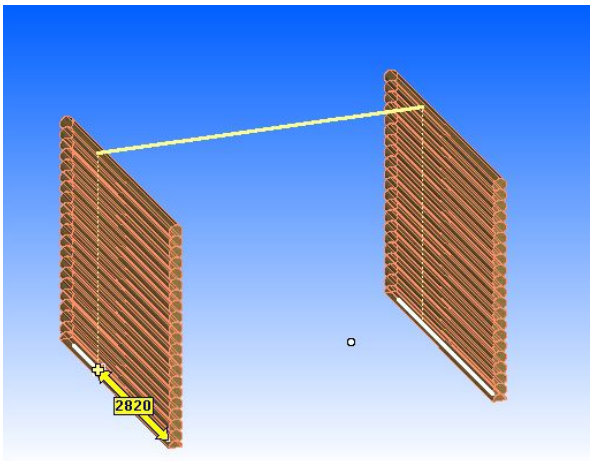
Upon selection of the reference objects by default, the form of beam parameters 103 will appear on the screen:



If you do not want it to appear each time, you can uncheck the **Show at creation** note in the left bottom corner. Subsequently, if you want to open this form, select the ***Parameters*** element in

the shortcut menu when creating beams.

When the beam parameters are entered, click **OK**. If at least one wall or beam is selected as the reference object, place the mouse cursor to its edge. At this time, the edge of the future beam and the distance from the beam to the wall beginning (see the picture) will be displayed in yellow color. You can change the base point of a distance to the beam using the systems snaps (see the **Creating Walls** 85 section).

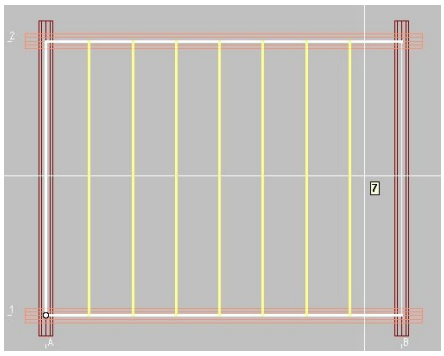


Specify position of the future beam on the wall edge. Click ***Finish*** in the shortcut menu to finish this operation.

If random space points are selected as the reference points, the beam will be created immediately after you set the parameters 103 (if automatic display of the form is disabled – immediately after selection of the reference points).

If both of the reference points are walls or other beams, the beam is placed orthogonally to the object which edge is selected. If you want to add a beam randomly, upon selection of the reference objects and setting parameters, select **2 points** in the shortcut menu and specify the beginning and the end of the future beam in reply to the system query.

If you need to create a beam at a certain distance from some wall or beam of the project, select the ***With setback*** element in the shortcut menu. Then in reply to the system query specify the wall or beam to measure the **setback** from. Subsequently, we will call them as the reference wall or beam. Then, select the beam location by clicking the respective area or set the setback value in the dialog window by typing the necessary value. Then, specify the number of beams you want to create in the dialog window and click **Enter**. As a result, the required number of beams will be created at a distance of the set setback from each other. You can create the necessary number of beams using another method: move the mouse cursor along the reference walls until the required number of beams appear on the screen. The beams will be highlighted in yellow, and their number will be specified in the white rectangle.

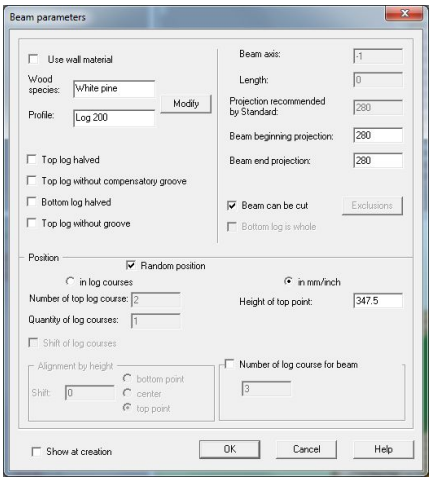


Upon selecting the number and position of beams, click the last beam.

11.2 Beam Parameters

The first beam is created with the following default parameters:
– material of the main material of the project;
– projections at the beam ends are standard, i.e. projections set in the **House parameters** form, in the **Wall parameters** 71 tab;
– beam can be cut;
– random position in millimeters;
– number of log courses in the beam is equal to one.

You can change the current settings in the form displayed when you create a beam. Also, you can open it by selecting the ***Parameters*** element in the shortcut menu prior to selection of the second reference point of the beam.
The next beam will be created in accordance with the parameters of the last created beam. If the **Material by wall** parameter is not selected for a new beam, the new beam inherits the material and parameters of random position of the previous beam, if they are set.



The **Material by wall** parameter enables creating a beam using the material of the wall it rests on. Such beam can be considered as snapped to the wall. You can modify its position only by changing

the log course number. If it is insufficient, disable the Material by wall parameter, enable Random position and fill in the available lower fields. If you need a beam of material different from the wall material, leave the **Material by wall** parameter enabled, click the **Modify** button and select the new material in the next form. Read more in the **Creating a New Project** 54 section.

Two options are available when you create a beam using other material:

1. Beam and wall materials have the same log course height.
2. Beam and wall materials have different log course height.

In the first case, two mutually exclusive positions of the beam are available:

– shift in relation to the wall – adjusted by the **Shift of log courses** and **Number of top log course** parameters.
– random position – enabled by the **Random position** parameter.

Such beam always consists of one log. Initially, its position is set in log courses or mm. Then, you can modify it using the **Alignment by height** parameters:

– The **Bottom point, Center, Upper point** parameters are used to align the top, bottom and center of the beam with the upper edge of the wall log course the beam begins with;
– The **Shift** parameter is used to set the value of vertical shift of the beam in relation to the reference point of alignment.

Number of log course of the beam with random position is calculated automatically depending on the selected rule in the **House parameters** form, the **Wall parameters** tab, the **Define number of beam log course with random position** 71 field. The beam will be attributed to that log course in reports. In order to set the number of the beam log course manually, use the **Setting of beam log number** parameter. It will be displayed in reports. The beam will appear in the drawing of the log course the number of which you have specified in the field of this parameter.

In the second case, when the log course height of the beam and wall is different, only random position of the beam is available.

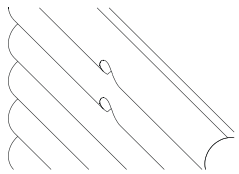
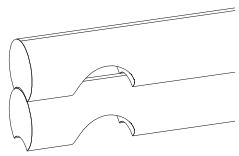
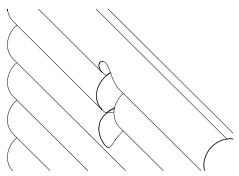
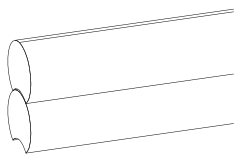
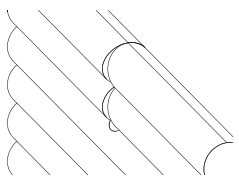
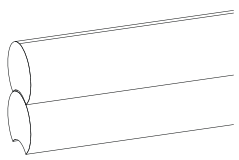
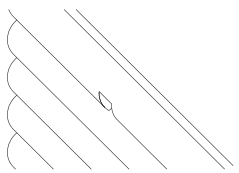
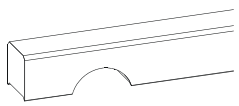
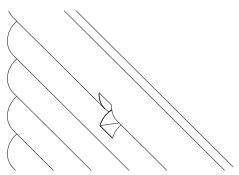
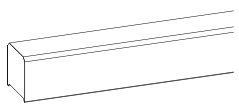
The **Top log halved** and **Bottom log halved** parameters are used to cut the top and bottom log lengthwise in halves, so that their thicknesses will be equal to a half of section. Also, this function is applied to the beams of log course: if you need to cut the upper part, check the **Top log halved** parameter, if the lower part – select **Bottom log halved**.

Beam can be cut. Check this parameter to enable marking notches at the points of wall and beam joint in the same manner as at the points of wall crossing. In case of the same log courses (log courses of beam and wall are not shifted in relation to each other), the beam remains the same, and the logs are to be divided. If you uncheck the **Beam can be cut** parameter, notches will be cut at the point of wall and beam joint only in the wall logs according to the beam shape.

If the beam cannot be cut, but you need to make a notch in a certain part, click the **Exclusion** button and select the walls to cut the beam.

If two beams which cannot be cut cross, the system will generate a message about conflict of notch marking when you select ***House/Wall/Notches***.

The notches created by the system at the points of wall and beam crossing according to different parameters and their values are shown in the pictures below.

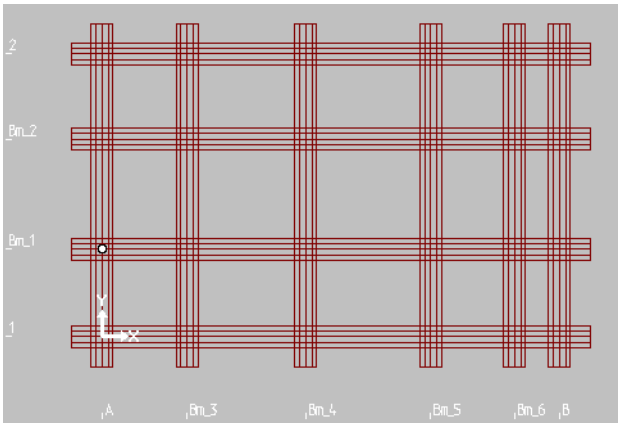
		*Notches in the wall and beam where the beam and wall log courses are shifted relatively each other and the checkmarks are put as follows:* ✓ **Beam can be cut** ✓ **Material by wall**
		*Notches in the wall and beam where the beam and wall log courses are shifted relatively each other and the checkmarks are put as follows:* **Beam can be cut** ✓ **Material by wall**
		*Notches in the wall and beam where the beam and wall log courses are not shifted relatively each other and the checkmarks are put as follows:* ✓ **Beam can be cut** ✓ **Material by wall**
		*Notches in the wall and beam where the center of beam section height is snapped to the upper point of the wall log course and the checkmarks are put as follows:* ✓ **Beam can be cut** **Material by wall**
		*Notches in the wall and beam, if the center of beam section height is snapped to the upper point of the wall log course and the checkmarks are put as follows:* **Beam can be cut** **Material by wall**

Notches in the wall and beam where beam and wall log courses are not shifted in relation to each other

Shift of log courses. Check this parameter to enable creation of a beam shifted by a log half in relation to the beam with this parameter disabled.
Beam axis is the beam axis number. If the **Rename walls automatically** 74 mode is enabled, there is no need to edit this field because the system will put the numbers automatically. If this mode is disabled, you can assign a number to the beam.

The rules of beam axes numbering are the following: first, the axes of beams parallel to the OX axis are numbered from the lowest to the highest one; then, numbering is continued for the axes of

beams parallel to the OY axis. See the picture:



If two beams are on the same coordinate of OX or OY, but at different heights ("one exactly above the other"; for example, in multistory houses); the minor number will be assigned to the beam located above.

You can rename the beams manually, in the same way as the walls 75.

Projection of beam beginning and **Projection of beam end** are the values of beam projection over its beginning or end.

Length is an information field displaying the length of the beam with projections.

Number of top log course is the number of the wall log course (beam support) used to start creating the beam.

Number of log courses is the number of log courses in the beam: one – in case of random position of the beam, random – in all other cases; log courses in the beam are counted from the top to the bottom.

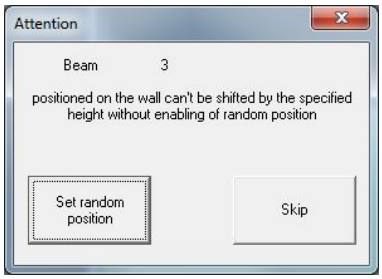
Bottom log is whole. Check this parameter to enable the mode when only bottom log of the beam cannot be cut.

In order to modify the beams, select ***House/Beams/Modify*** 106 and select the beam. Set the new values in the **Beam parameter settings** form (see above) and click **OK.**

11.3 Moving Beams

We have described the unique parameters of the beams in the **Beam Parameters** 103 section. In all other cases, operations with beams are the same as the operations with walls. You can move the beam horizontally by using ***wall_editing_commands*** 88**.Log fasteners, through bolts, consoles** are marked on the beam according to the rules set for the walls (see respective sections). If the beam can be cut, the notches are marked by selecting ***House/Wall/Notches*** 145**.**

Select ***House/Beams/Shift*** to move beams vertically. Select the method of movement: **in log courses** (shift vector is set in log courses) or **in mm** (shift vector is set in millimeters). Then, select the beams to be moved. Click **Finish** in the shortcut menu to finish the operation. Specify the number of log courses or millimeters for beam movement in reply to the system query. If a beam with material by wall should be shifted by a value **in mm** and the shift value is not divisible by the height of log course of the reference wall, the following message will appear on the screen:



In this case, you can cancel the beam shift and set its position manually.

When moving the beams vertically, you can duplicate them. For this purpose, select ***House/Beams/Move***, select the beam to be moved and enable the ***Duplicate*** mode.

11.4 Deleting Beams

Select ***House/Beams/Delete*** and one of the shortcut menu elements: ***By edge*** or ***By object***, to delete a beam. If the ***By edge*** mode is enabled, you should select the edge of the beam to be deleted. If ***By object*** is selected, you should select any part of the beam image to delete the beam.

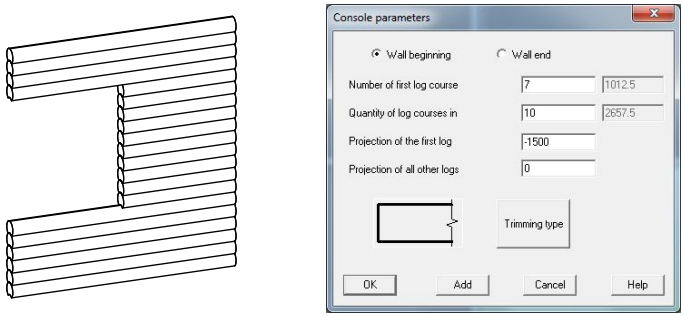
12 Adding and deleting Consoles

12.1 Adding Consoles

Besides default projections, you can add additional projections to one or several log courses of walls and beams. Such projections are named **consoles**.

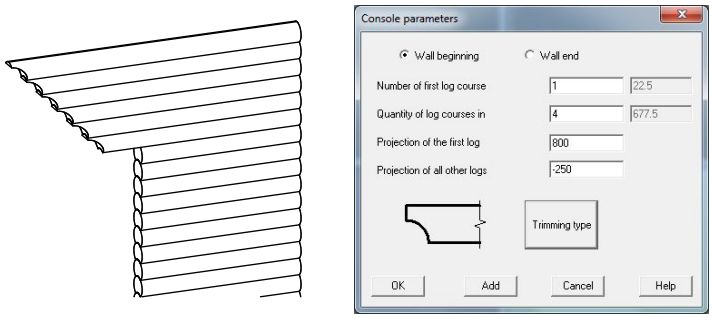
By using a console, you can:

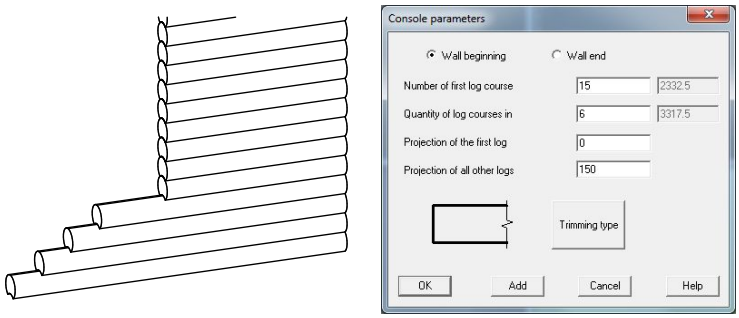
– make hollow spaces on the wall side without making an opening:



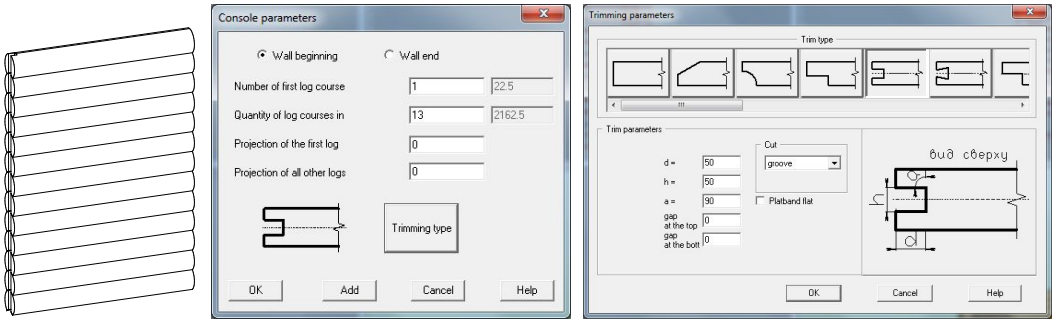
Parameters of the console shown on the left are specified in the form.

– create decorative projections:





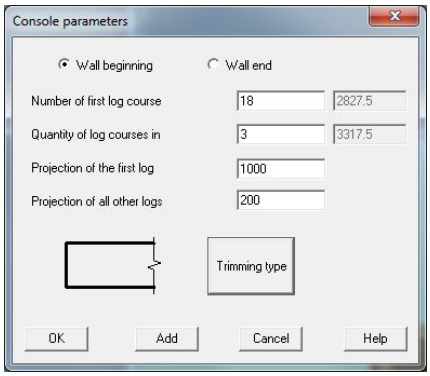
– change trimming of the log ends without changing projection value:



The type and parameters of the console log end – to the right.

– create log gables for the roof 97, etc.

Let's consider the procedure of adding a console by the example of walls. In order to add a console to the wall or beam, select ***House/Console/Create*** on the auxiliary toolbar, select the wall (beam) to add a console to, and fill in the **Console parameters** form.



In the form specify:

- **Wall beginning** or **Wall end** – position of the console;
- **Number of first log course** – number of the botttom log of the console;

Note. You cannot set the number of the first log course and the number of log courses for the consoles created in the beams with random position 103. The log course is always one and it is the same as the beam.

- **Number of log courses in console –** number of logs in the console.

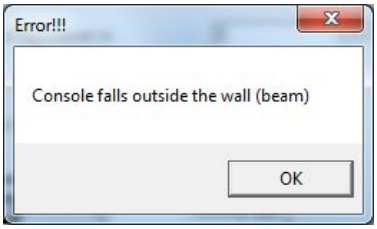
Projection of first log is used to set the value (in mm) for extending or shortening the console log in relation to the wall projection.

Projection of all other logs is used to set the value for extension of each subsequent console log in relation to the previous log (or for shortening, if the Projection value is negative).

Click **Type and parameters of log end** to select the type of trimming log ends included in the console (see the **Log Parameter Editing** 157 section).

When setting the console parameters, the system does a reasonability check.

If the parameters imply log courses not existing in a certain wall or beam, the system will generate an error message:



If other consoles already exist in selected areas, the system will generate the following message:

The **OK** button in the **Console parameters** form is used to create a console and to close the form. The Add button is used to add a console without closing the form, so you can add several projections at once.

12.2 Editing Consoles

In order to edit a previously created console, select ***Console/Modify*** on the auxiliary toolbar, select the wall and the console. Modify the console parameters in the **Console parameters** form (see above).

If you want to place identic consoles on different walls (beams), you can select ***House/Console/Copy.*** This command allows you to copy one or several consoles from one wall to another or to several walls at once. Select the wall and consoles to copy. Upon selection of consoles, select **Finish** in the shortcut menu (or press **Enter** on the keyboard). Then specify the wall or several walls to add the same consoles. Then, select **Finish** in the shortcut menu again.

Working with one wall (beam) use the ***House/Console/Change snap*** command to move or duplicate the console. This command allows:

- move the console to the other end of wall or beam in the ***Without duplication*** mode;
- create the same console on the other end of wall or beam in the **Duplicate** mode.

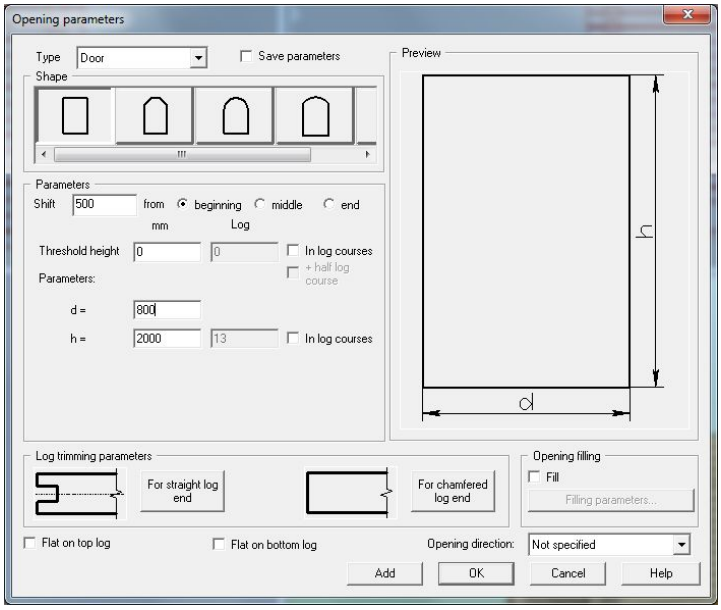
12.3 Deleting Consoles

In order to delete a console, select ***Console/Delete*** on the auxiliary toolbar, select the wall and then the console – one or several consoles on the wall. Then, click ***Finish*** in the shortcut menu.

13 Adding Openings for Windows, Doors, their editing and deleting

13.1 Adding Openings

Select ***House/Opening/Create*** to add an opening to the wall. There are three types of openings: a door, a window and an opening itself. The **Opening parameters** form will appear:



You can set the parameters of each opening in the **Opening Settings** 48 catalog of current manufacturer. When creating a new project, these settings will be used by default.

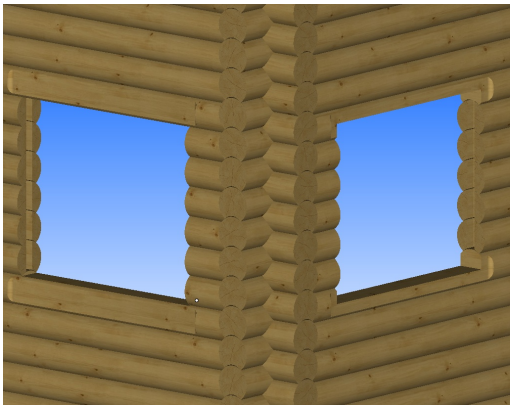
The **Type** parameter is important for creating reports. Having selected the opening type, select its shape and modify the shape parameters and the opening position, if necessary.

Opening position in the wall is defined by two parameters – a shift from the reference point of the wall (***beginning, end*** or ***middle***) and height of its bottom point (***Threshold height***).

Shift is a distance from the beginning or end point of the wall to the nearest overall dimension of the opening. If the shift from the middle is set, the distance is calculated between the middle points of the wall and opening. If the wall length is changed, the opening will be shifted with the wall point set as the reference point for calculation.

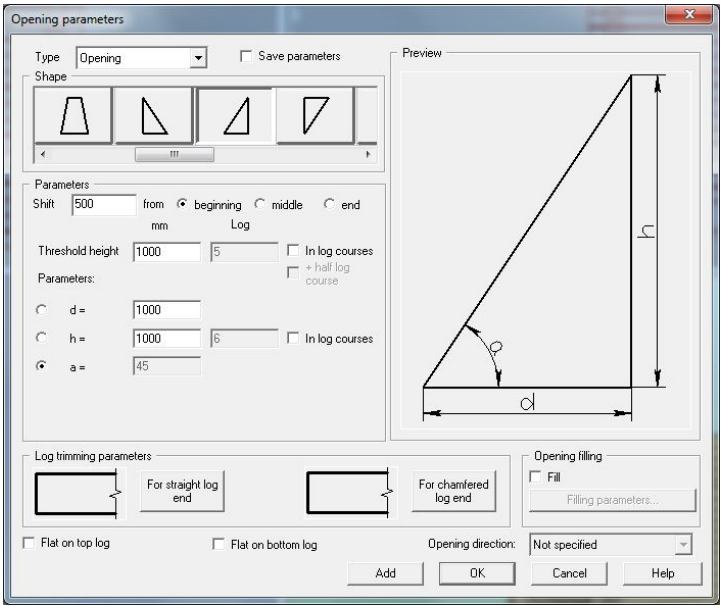
Threshold height is a position of the bottom point of the opening. It can be set in log courses or in millimeters/inches. If you set the number of log courses, height in mm/inch will be shown in the next edit box, and vice versa.
When you add an opening in log courses, the **+ half log course** function is activated. If you check the respective cell, the bottom point of the opening will be located a half log course higher than the

set number of log courses. This function is used to maintain the windows in the neighboring walls at the same height as shown in the picture:



Pic. 1.

When creating openings with bevel edges, you can choose the perfect set of parameters that will define the opening dimensions. For example, for a triangular opening you can set the lengths of two sides (d and h) or the length of one side (d or h) and angle at the base of the triangle (a). In order to select the required variant, exclude one parameter (put a point in front of it).

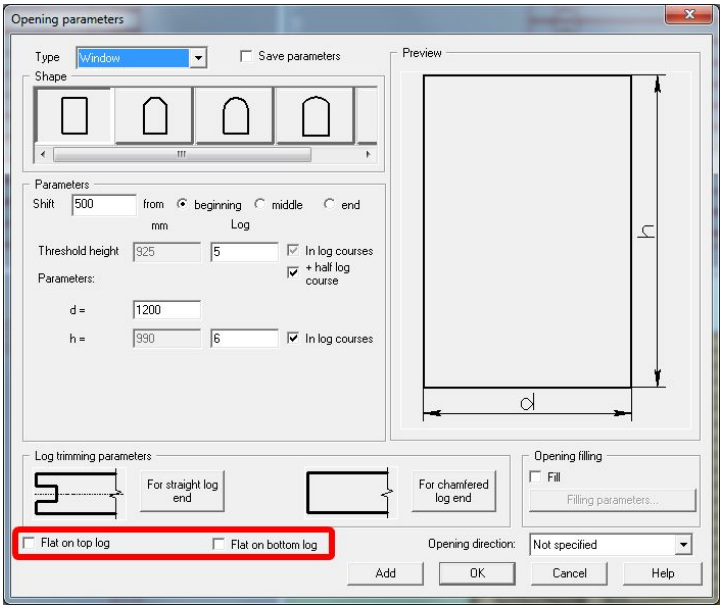


The element with an unknown value will be calculated automatically depending on the set values of other parameters.

The **For straight log end** and **For chamfered log end** buttons are used to open the form for setting log end type and parameters of the logs cut by this opening. (See **Log Parameter Editing**

157**).** In particular, you can set parameters of adding **platband flats** to the log ends (on each side of the opening).

A flat above and under the opening is added in the form:



If the opening height is equal to integer number of logs, the flat is added to the log, which is nearest to the opening. If the number of logs is not integer, the flat is added to the log cut by the opening (see Pic. 1).

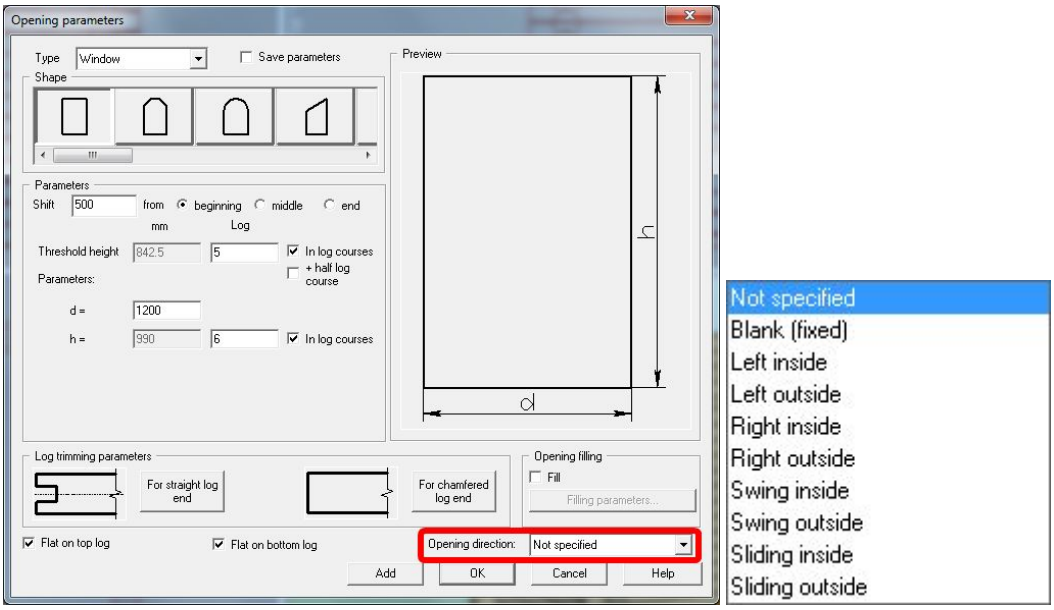
If you have set all parameters and then found out that the opening type is not correct, check the **Parameter saving** element and change the **Type.** In this case, you will save the snap type and shift, threshold height and overall dimensions of the opening. If this mode is disabled, then when changing the opening type, the system will offer parameters of the last created opening of the selected type.

If you click **Add** after selection of the opening type and setting its parameters, the image of the opening will appear in all views of that wall and this form will appear on the screen again. You can add several windows and doors to the wall by one command. Click **OK** to finish this operation.

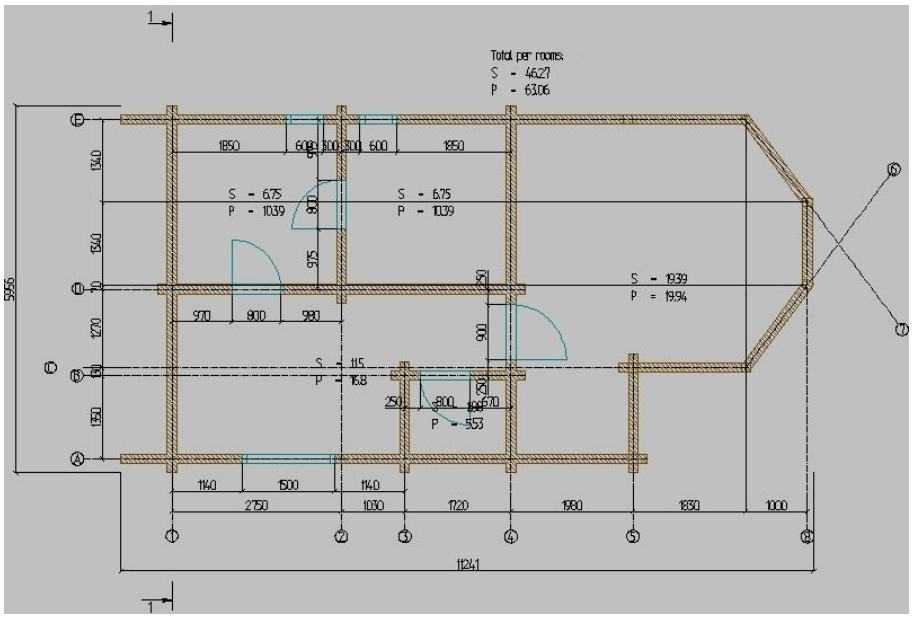
If the opening is of the **Window** or **Door** type and you want to cut it in the log, set the nonzero value of **Flat** 82 when adding the opening to the log course. In this case:

- if opening height (see the **Parameters** group) is set in mm/inch and **Threshold height** – in log courses, the entire opening will move down by the flat value. The opening height will remain the same;
- if opening height and **Threshold height** are set in log courses, the opening top will remain at the same place and its bottom will move down by the flat value. The opening height will be increased by the flat value.

You can set **Opening direction** for the opening, which will be shown on the **floor plan** 209**.**



Opening directions are shown on the right.



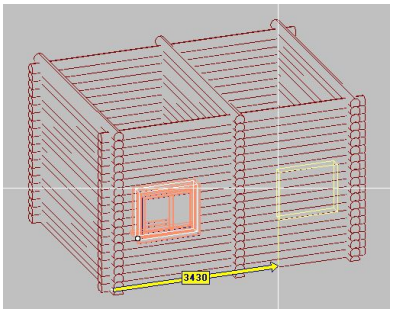
Opening directions are shown on the plan by cyan lines.

The ***Opening filling*** function (right lower corner of the form) is described in **respective section.** 118

13.2 Editing Openings

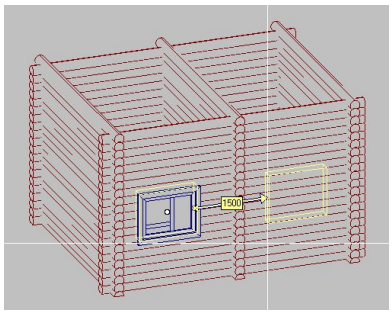
Select ***House/Opening/Modify*** to change the opening position or its parameters. Specify the wall where the opening is located. Then, you can:

- select ***All*** in the shortcut menu and enter the necessary changes in the opening forms appearing on the screen in succession;
- select one opening on the selected wall and:
  - change its position using the mouse;
  - change its snap point by selecting ***Beginning, Middle*** or ***End*** in the shortcut menu;
  - change its parameters by selecting the ***Parameters*** line in the shortcut menu.



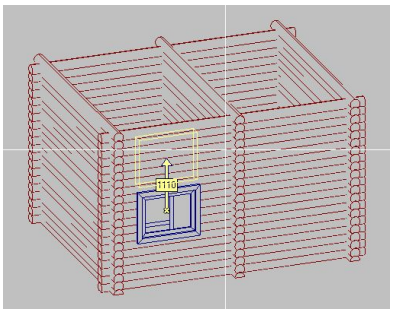
Change of the opening position in axonometric view

If you need to add several similar windows one by one to the wall, select ***House/Opening/Multiply***. Specify the wall you are going to work with in reply to the system query. Then select one or several openings to multiply. When the opening is selected, press **Enter**. Set the position of new openings. The ***Shift along wall*** element in the shortcut menu is used to set the distance for shifting the selected group of openings along the wall. The ***Pier*** element in the shortcut menu is used to set the distance between overall dimensions of these groups of openings.



Pier *element*

Select ***Shift by log course*** or ***Shift by height*** and set the shift value in log courses or mm/inch respectively in order to multiply the selected openings by height.

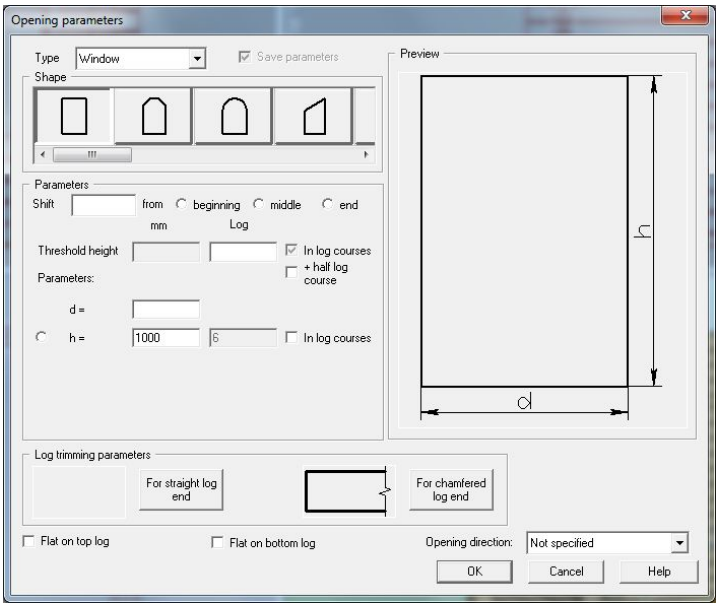


When you set the position of new openings, specify how many times the selected openings will be added.

If the same openings should be on different walls of the house, select ***House/Opening/Copy*** to copy one or several openings from one wall to another.

PF Only for K3-Cottage Professional Package

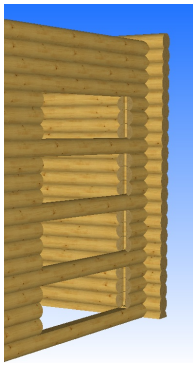
Users of Professional Package can use the Multiediting command to modify one or several parameters of openings to make them equal. An example for width parameter is shown on the picture. Other parameters will remain unchanged. Select the openings to be modified. Press ***Enter*** (or select ***Finish*** in the shortcut menu) to open the **Opening parameters** form and to set common properties for two openings. In the picture below, these parameters are: opening type, shape, height and trimming parameters for the chamfered log end. Other properties are not set (their values are not specified).



Set the necessary parameters and click **OK.**

13.3 Mounting Log

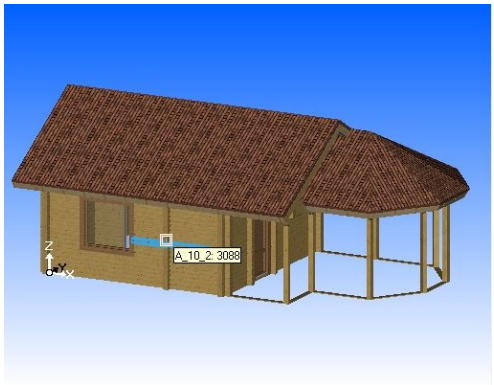
A **mounting log** is a whole log, which is left in the opening when the house is being assembled. This log is cut later when installing a window or a door. It ensures wall stiffness when the house is being assembled.



Mounting logs can be added to the opening automatically or manually.

Check the **Automatic adding of mounting log** field in the **Openings** 81 tab of the **House parameters** form, select opening types 111 to add mounting logs and set the interval between neighboring mounting logs, for example, **3**, to enable automatic adding of mounting logs. In this case, in all newly created openings each forth log will be a mounting log.

In the manual mode, select ***House/Opening/Mounting log/Create*** to add mounting logs to the opening. Upon selection, select the logs to perform the function of mounting logs.

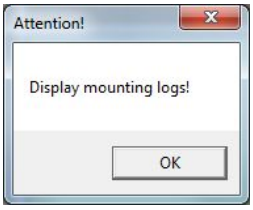


In order to delete mounting logs, select ***House/Opening/Mounting log/Delete*** and select the mounting logs to be deleted.

Note. If a log is a mounting log, you cannot divide it within the opening nor outside the opening within the interval equal to the minimal distance from the notch.

Note. Openings are moved and copied together with mounting logs.

You can hide mounting logs in the program. If you use this function, when you select ***House/Opening/Mounting log/Create,*** the system will generate the following message:



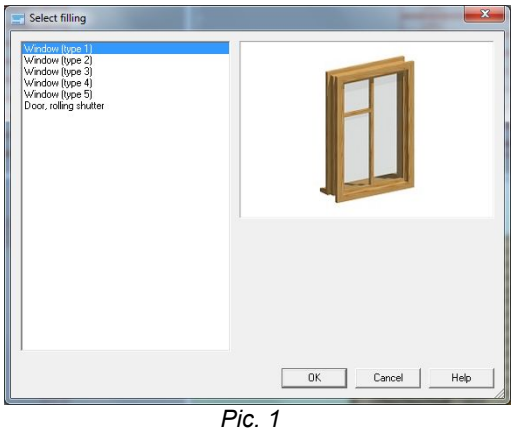
In this case, you should enable display of mounting logs in the **House parameters** form, and check **Mounting logs** in the **Display** 68 tab.

13.4 Filling Openings

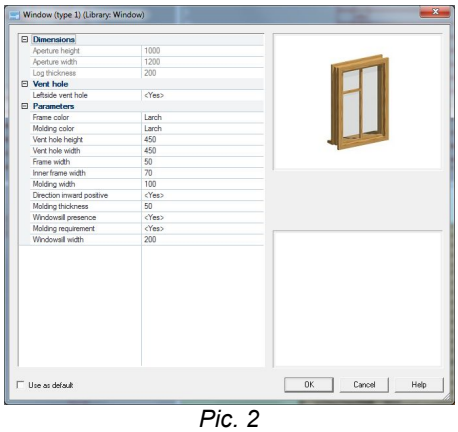
You can **fill** the created openings, i.e. “insert” a door or window in the opening.

In the program, windows and doors are provided in the **Opening filling** object. They are inseparably associated with the opening and depend directly on its current state. In other words, if you edit the opening (shift, change of parameters, etc.), its filling will be created again as well.

Select ***House/Opening/Filling/Create*** or the  icon to fill the openings. The program will offer you to select a model of window or door depending on the opening type and to set its parameters.



Pic. 1



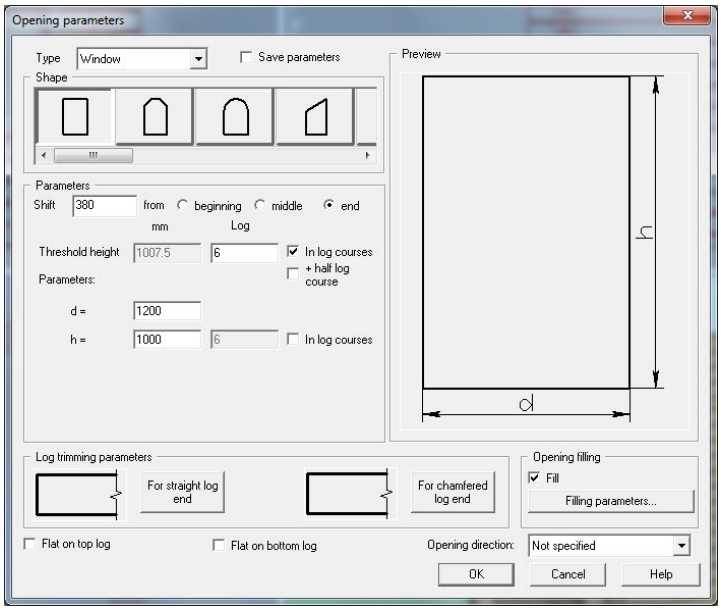
Pic. 2

Select ***House/Opening/Filling/Modify*** or the icon to edit opening filling. Upon selection, select the filled opening and introduce changes in the forms (see Pic. 1 and 2).

The system offers two more commands to fill the openings:

- Select ***House/Opening/Filling/Duplicate*** (icon) to copy filling of one opening to another unfilled opening;
- Select ***House/Opening/Filling/Delete*** (icon) to delete filling of the opening.

Besides, you can fill or edit opening in the opening parameter form.

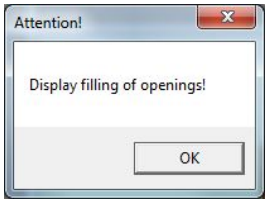


Check the **Fill** cell and click **Filling parameters**. Select the filling type (pic. 1) and set filling

parameters (pic. 2) in the next forms.

Note. The method you use to edit opening filling is important. If you edit it in the **Opening parameters** form, the wall is refilled with logs and you have to mark notches and create reports again. If you use ***House/Opening/Filling/Create*** or ***House/Opening/Filling/Modify,*** the wall is not created again and, therefore, you do not have to perform additional operations.

You can hide opening filling 68 in the program. If you use this function, when you select ***House/Opening/Filling/Create,*** the system will generate the following message:



In this case, you should enable display of windows and doors: check **Opening filling** in the **Display** 68 tab of the **House parameters** form.

13.5 Deleting Openings

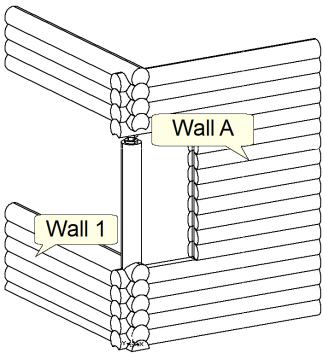
In order to delete an opening, select ***House/Opening/Delete***, then select the wall and the opening to delete.

Opening filling will be deleted together with the opening.

14 Adding and editing Posts

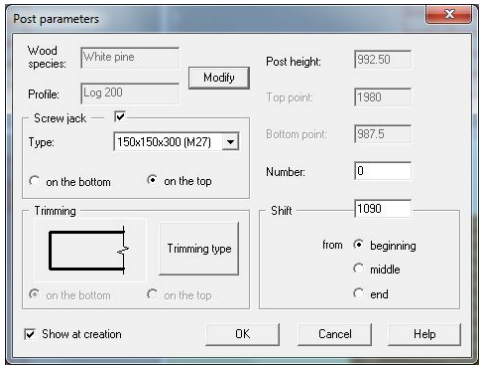
14.1 Adding Posts

A post is a special object provided in the system. Select ***House/Posts/Create*** to add a post. The posts can support walls, beams and can stand separately. If a post is located at the crossing point of two walls, this post will relate to the wall it supports, as it shown on the picture:



The post relates to Wall A.

Upon selection, specify the wall or beam to be supported by the post in reply to the system query. A new post and the distance between the post and the wall beginning (end or middle) will be shown in the image in light-yellow. The system calculates the height of the space where the post will be located automatically depending on the mutual position of walls, beams and openings. Click the post upon final selection of its position. The post will be added to the wall. The **Post parameters** form will appear upon its creation by default. Also, you can call it by selecting ***Parameters*** in the shortcut menu. You can disable automatic opening of this form in the same way as for the wall and beam forms: uncheck the **Show at creation**.



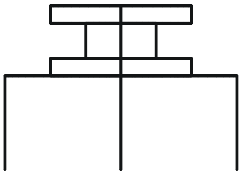
Post material is specified in the **Wood species** and **Profile** fields. By default, it coincides with the material of the wall where the post is located. If you want to select another material, click **Modify**. The **Material selection** form will appear on the screen (see previous chapter: **Creating a New Project** 55**).**

Post position in the wall is characterized by **Shift** from the **beginning, middle** or **end** of the wall. If the post is in the opening, the **Shift** is calculated from the beginning, middle or end of the ***opening***.

If you edit the project, the post will be moved with the reference point for calculation.

The **Post height, Top** and **Bottom point** fields are information fields specifying height of the space for the post.

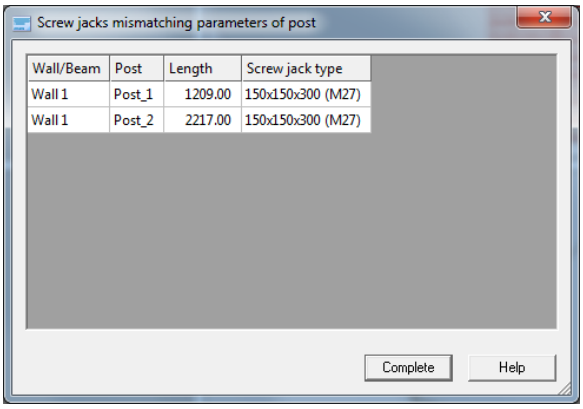
Screw jack. Switch on this parameter to enable creation of a post with a post height adjustment device in the case of sealant strip or wall shrinkage. A screw jack is displayed in the project reports as:



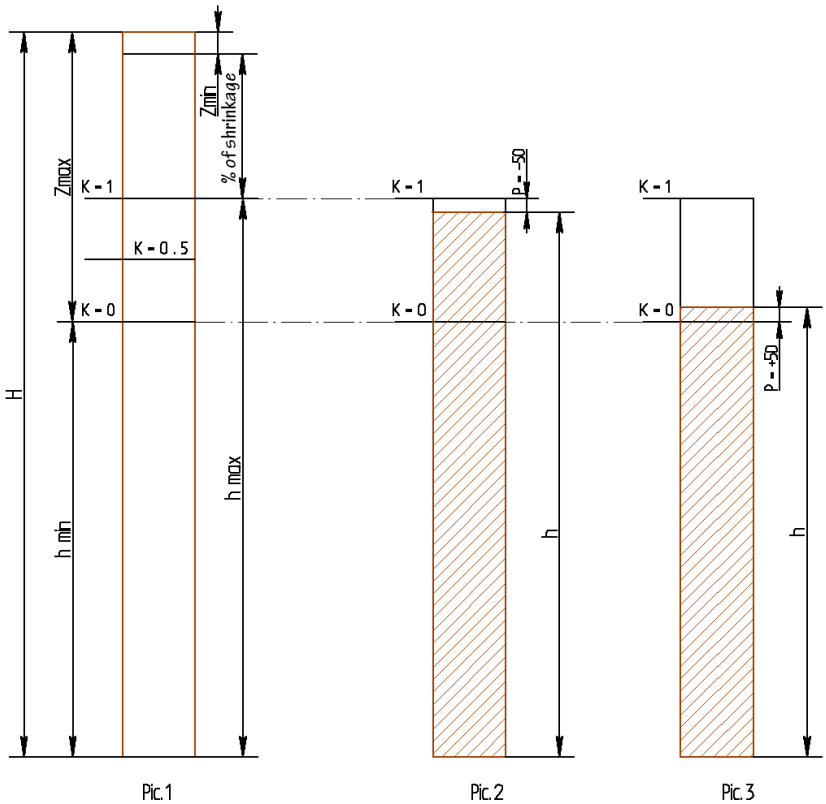
If the post is provided with a screw jack, you can select its **Type** and position: **On the top** or **On the bottom**.

Note. Table of parameters of all available screw jack types is kept in the **Screw jacks** 43 catalog of current manufacturer.

If the wall is created anew, the system will check compliance of the post length (together with a screw jack) with the height of the opening for the post automatically. The system takes into account the sealant and wall shrinkage. The screw jack height in screwed and unscrewed state is verified for the proper behavior of the post in relation to the house before and after the shrinkage. If incorrect screw jack is selected for the post, the system will generate the following message:



Let's consider calculation of post height in detail. The values required for calculation of post height are shown in the pictures:



The following values are shown in **Pic. 1**:
H is the height of space for the post with a screw jack prior to shrinkage (at the time of house construction); **H = niche height + sealant strip shrinkage**;
h min is the minimum permissible height of post before the wall shrinkage; **h min = H – Zmax**, where Zmax is the maximum height of screw jack (maximum unscrewed state);
h max is the maximum permissible height of post after wall shrinkage; **h max** = **H – wall shrinkage – Zmin**, where Zmin is the minimum height of screw jack (maximum screwed state);
h is the post height taking into account coefficients and allowances.

It is clear from the picture that for successful mounting of the wall the post should not be shorter than **h min** and longer than **h max**.

If values of shrinkages and screw jack movement are such that **h min** exceeds **h max**, the program warns that the selected screw jack movement is insufficient for wall mounting, and **h min** is selected as the post height.

If **h min** is less than **h max**, the post height should be within the range of these values. You can set it by selecting **Screw jack movement coefficient (K)** and **Allowance for screw jack movement (P).**

Screw jack movement coefficient (K) can be from zero to one. Three variants are shown in

Pic. 1:

- if you set **K=0**, post height will be equal to **h min**;
- if you set **K=1**, post height will be equal to **h max**;
- if you set **K=0.5**, post height will be equal to **h min + 0.5 (h max – h min)**.

Allowance for screw jack movement (P) is applied for more flexible determination of post height. It allows you to decrease or increase it by necessary value. See **Pic. 2** and **Pic. 3**:

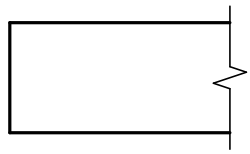
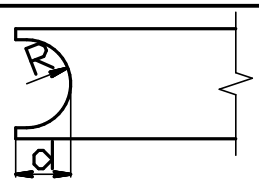
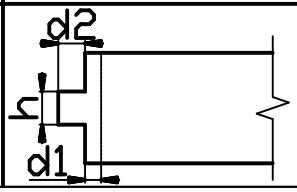
- post with **K=1** and **P=-50** mm is shown in **Pic. 2**. The top point of the post is within **h max**, as K=1, and is shifted down by 50 mm as allowance (P) is equal to 50 mm and has a negative sign;
- post with **K=0** and **P=-50** mm is shown in **Pic. 3**. The top point of the post is within **h min**, as K=0, and is shifted up by 50 mm as allowance (P) is equal to 50 mm and has a positive sign.

If when adding an allowance the post height becomes inadmissible, i.e. less than **h min** or higher than **h max**, then the top point of post is selected from the nearest of points **h min** and **h max**.

In summary, the formula for post height calculation is:

h = h min + K · (h max + h min) + P + vertical dimension of post trimming

Vertical dimension of post trimming depends on **trimming type** of one of log ends of the log (without a screw jack). Trimming types are given in the table:

Type	Picture	Vertical dimension of trimming
Type 1 **Without trimming**		**0**
Type 2 **For log**		**d**
Type 3 **Tongue**		**d1+d2**

If you want to add a post relating to neither wall nor beam, select **Free post** in the shortcut menu and specify the post position. You can set its material (**Wood species** and **Profile**), **Top** and

Bottom points. For this purpose, prior to adding the post, select **Parameters** in the shortcut menu and fill in the form displayed on the screen.

All commands modifying position or pattern of the wall automatically cause the repeated creation of posts in all neighboring walls and beams. Free posts are modified manually.

14.2 Editing Posts

Select ***House/Posts/Modify*** to modify the post position or its parameters. Select the wall the post relates to and, then, select the post in reply to the system query. Remember that the post relates to the wall it supports. **Do not confuse** it with the wall, which the post rests on!

You can:

- move the post using the mouse in any view;
- change its snap point by selecting ***Beginning, Middle*** or ***End*** in the shortcut menu;
- change post parameters by selecting ***Parameters*** in the shortcut menu;

Besides, the posts are created anew automatically, when you use commands that modify the position or pattern of walls and beams:

- If height of walls, beams or openings is modified, the post limited by them is shortened or extended automatically in accordance with introduced changes of wall, beam or opening parameters.
- In the case of wall, beam or opening shift, the post related to the shifting element is moving together with it.

  Free posts are modified manually.

14.3 Deleting Posts

If you want to delete a post, select ***House/Posts/Delete***, specify the wall where the post is located and the post you are going to delete. Select **All** 20 in the shortcut menu if you want to delete all posts.

Use the  icon to delete free posts.

15 Changing Wall, Beam and Post Material

Only for K3-Cottage Professional Package

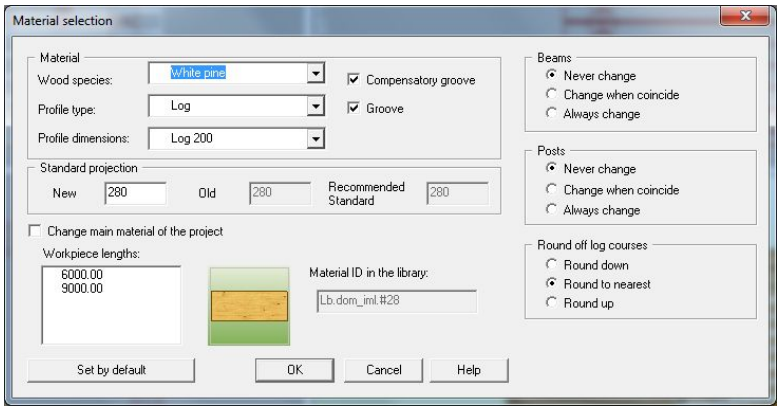
You can change the material of all walls, beams and posts at once or selectively in a completed project by selecting ***House/Wall/Change material***.

If you replace the material with other material of different size (for example, log diameter is increased from 200 to 280), it is necessary to recalculate object heights. There are two variants of execution of material change command: **Save heights** and **Safe log courses**.

Remember that height can be set in millimeters/inches or in log courses. Heights initially set in millimeters/inches will maintain their values in both variants of command execution. In the case of parameters set in log courses there are differences:

- ***Save heights***: values set in log courses are recalculated as follows: the former number of log courses is converted into millimeters and the obtained value in millimeters is converted into a new height value in log courses. If obtained number of log courses is non-integral, the value is rounded.
  You can select the rounding rule in the **Material selection** 55 form, in the **Round off log courses** parameter group (see below): **Round down** – to the lower log course, **Round up** – to the upper log course, **Round to the nearest** – to the log nearest to the former height.
- ***Save log courses***: the values of all parameters set in log courses are maintained, but their millimeter values are changed.

Upon selection of the material change method, select the objects and click **Finish** in the shortcut menu to open the next form:



Select the new material in the **Material** group of parameters. If you change material of the whole project, this material should be set as the main material of the project. For this purpose, check the **Replace main material of the project** field. Scales of log courses 55 will be created again in accordance with log course height of new material. All newly created walls will be created of new material.

The value of wall projection for the last main material of the project and standard value recommended by the State Union Standard (GOST) for current material (it is equal to 1.4 of width of wall material) are specified in the **Old** and **Recommended by Standard** information fields. In the **New** field, you can set your own value of wall projection for new material or value equal to the value specified in the **Recommended by Standard** field. In this case, projection of all walls and

beams will be changed if it coincides with the “old” one. If projection of wall or beam differs from the “old” one, it won’t be changed.

Settings of the group of parameters Beams are applied when you change the material of beams that are not selected directly, but belonged to the selected walls. In this case, one of proposed variants is possible:

Never change. Beam material is not changed under any circumstances;

Change if coincides. Beam material is changed only if the **Material by wall** parameter is enabled when creating a beam;

Always change. Beam material is always changed regardless of a checkmark in **Material by wall** field.

The **Posts** group of parameters is applied only to the posts included in the walls selected for material changing. In this case, one of proposed variants is possible:

Never change. Post material is not changed under any circumstances;

Change if coincides. Post material is changed only if material of the post and material of the wall it supports coincide;

Always change. Post material is always changed.

Fill in the form and click **OK.**

*The **House/Wall/Change material*** command maintains all the rules set for the walls: snaps, joint types, exclusions. But, you will have to mark notches and divide long logs again.

16 Adding Log Courses to the Project

PF Only for K3-Cottage Professional Package

For example, if you want to increase the height of the second floor in the project, select ***House/Wall/Add log courses***. Specify the number of log course to be added **i** and number of added log courses **n**. Project changes in case of adding several log courses are described below:

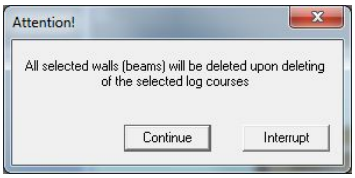
Walls	Position of the first and last log course in relation to log course **i** is analyzed for each wall independently of one another: – if the first (last) log course of the wall is lower than log course **i,** it remains at its place; – if the first (last) log course of the wall is higher than log course **i,** it is moved up by **n** log courses.
Openings	– if mounting height of the opening is lower than log course **i,** the opening remains unchanged; – if mounting height of the opening is higher than log course **i,** the opening is moved up by **n** log courses.
Consoles	– if the bottom log of the console is lower than log course **i,** the console remains unchanged; – if the bottom log of the console is higher than log course **i,** the console is moved up by **n** log courses.
Through bolts, log fasteners, channels	Position of the top and bottom log course is analyzed for each through bolt (log fastener, channel) independently of one another: – if the bottom (top) log course for installation of through bolt (log fastener, channel) is lower than log course **i,** it remains at its place; – if the bottom (top) log course for installation of through bolt (log fastener, channel) is higher than log course **i,** it is moved up by **n** log courses.
Posts	Positions and lengths of posts are recalculated in accordance with the new positions of openings and consoles.
Beams	– if the top log of the beam is lower than log course **i,** the beam remains unchanged; – if the top log of the beam is higher than log course **i,** the beam is moved up by **n** log courses.
Roof slopes	– if the roof slope axis is lower than log course **i,** the roof slope remains unchanged; – if the roof slope axis is higher than log course **i,** the roof slope is moved up by **n** log courses.
Boards	Remain unchanged. Modify them manually.

17 Removing Log Courses to the Project

Only for K3-Cottage Professional Package

If you need to reduce the height of the second floor in the project, select ***House/Wall/Remove log courses.*** Specify numbers of the first and last log course (**i** and **j**) to be deleted. The log course with a smaller number will be removed first and the log course with a greater number will be removed last, regardless of which number is greater – **i** or **j.**
Upon specifying the numbers of the log courses to be deleted, the next form will appear on the screen – **Parameters of deleting log courses:**

You can select parameters of log course removal for beams and consoles in this form. If you select **without removing log courses**, the number of log courses in the beams and consoles will not be changed when removing log courses from the project walls. If you select **with removing log courses**, the log courses included in the range to be removed will be deleted from the beams and consoles.
If a whole wall or beam falls within the range of the log courses to be removed, the following message will appear:



Click **Continue** to delete the respective walls from the project. The beams will be deleted only if you select **With removing log courses**. Click **Break** to exit from the command and to return to the previous state.
The changes of project elements caused by removal of several log courses are described below:

Walls	Location of the first and last log course in relation to the lower deleted log course is analyzed for each wall independently of one another. The wall is reduced by the number of log courses corresponding to the number of log courses to be removed under the upper log course of that wall.
Openings	– if the mounting point of opening is lower than the lower log course to be deleted, the opening position remains unchanged; – if the mounting point of opening is not lower than the lower log course to be

	deleted, the opening is moved down by the number of deleted log courses located below the mounting point. Note. When deleting log courses, the height is corrected only for the openings of **Opening** type. It is reduced by the number of log courses corresponding to the number of opening log courses to be deleted.
Consoles	– if the upper log of the console is lower than the lower log course to be deleted, the console remains unchanged; – if the lower log of the console is higher than the lower log course to be deleted, it is moved down by the number of log courses subject to deleting and located below the lower console log. In this case: • if correction **with removing log courses** is enabled, console height is reduced by the number of its log courses selected for deleting; • if correction **without removing log courses** is enabled, console height remains unchanged. In this case the following situations are possible: – several consoles are located in the wall on the same side ➔ neighboring consoles overlap each other ➔ the upper console is deleted; – console is higher than the wall ➔ the whole console is deleted.
Through bolts, log fasteners, channels	Location of the upper and lower log courses is analyzed for each through bolt (log fastener, channel) independently of one another. They are moved down by the number of log courses selected for deleting and located below them. Height of through bolt (log fastener, channel) is reduced by the log courses it passes through. Note. If less than two log courses remain in through bolt (log fastener) as a result of log course deleting, such through bolt (log fastener) is deleted from the project.
Posts	Positions and lengths of posts are calculated repeatedly in accordance with the new position of openings and consoles.
Beams	– if the top log of the beam is lower than the lower log course to be deleted, the beam remains unchanged; – if the top log of the beam is higher than the lower log course to be deleted, it is moved down by the number of log courses selected for deleting and located below the top log of the beam. In this case: • if correction **with removing log courses** is enabled, beam height is reduced by the number of its log courses selected for deleting; • if correction **without removing log courses** is enabled, beam height remains unchanged.
Roof slopes	– if the roof slope axis is below the lower log course to be deleted, the roof slope remains unchanged; – if the roof slope axis is at the level of the lower log course to be deleted or above it, the roof slope is moved down by the number of all log courses to be deleted.
Boards	Remain unchanged. Modify them manually.

18 Creating, editing and deleting Roofs

Only for K3-Cottage Professional Package

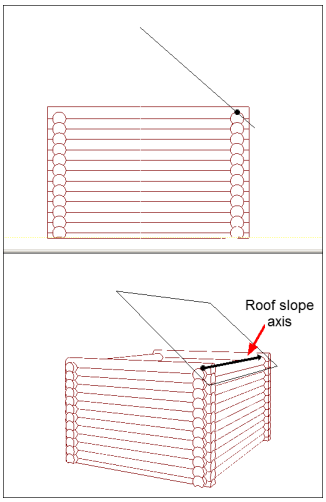
The roof consists of **roof slopes**. **A roof slope** is defined by the **plane** and **boundary** lying in that plane. Initially, the **roof slope boundary** is a rectangle, but you can change its shape in the work process.

The **roof slope plane** (hereinafter referred to as the **working** or **lower plane)** can be modified: you can change its slope angle.

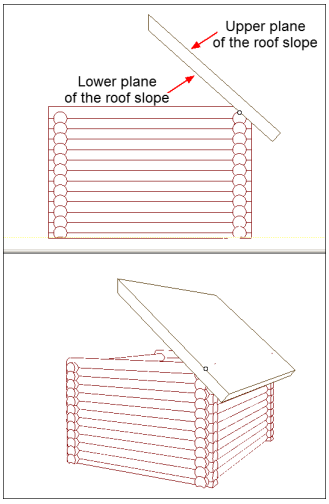
The **roof slope axis** coincides with the edge of the top log of the reference wall or it is set by two points.

The **slope angle** is set within the range from 0 to 90 degrees. The slope side is determined by the third specified point.

There are two modes of roof slope display: **Plane** and **Solid**. In the **Plane** mode, only the lower roof slope plane is shown on the screen. In the **Solid** mode, you can see roof slope thickness as well as its lateral faces and upper plane.



Roof slope in the Plane mode. Only lower plane of the roof slope is shown on the screen.



Roof slope in the Solid mode. Lower and upper planes of the roof slopes are shown on the screen.

18.1 Creating Roof Slopes and their Parameters

Only for K3-Cottage Professional Package

Select ***House/Roof/Create roof slope*** to create a roof slope. Then, select one of creating methods: **By parameters** or **By polyline.**

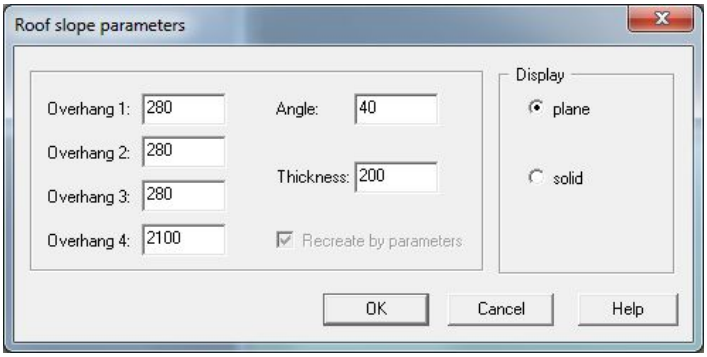
By parameters:

Rectangular roof slope is created in accordance with the dimensions specified in the form. You

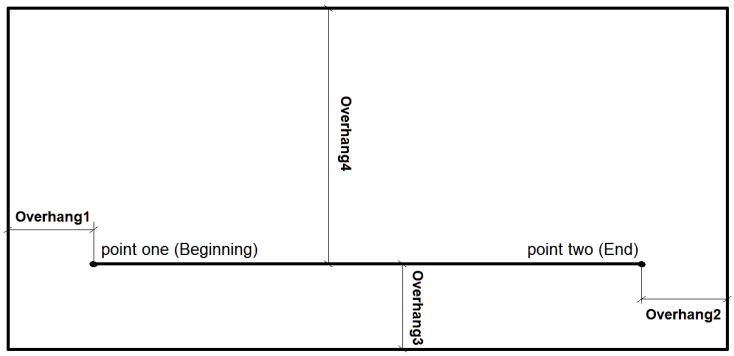
can set roof slope plane using one of three methods provided in the shortcut menu: ***Wall, Two points, Three points***.

- If you select ***Wall*** in the shortcut menu, select the wall for creating a roof slope. Thus, you will set the **roof slope axis**: it will coincide with the edge of the selected wall moved up by its height. Then click on the viewport where the created roof slope is displayed sidewise and specify the third point, which sets the **slope angle** of the roof slope plane and value of **Overhang 4** (see below). If you need to put the roof slope to the top log course of the wall, select **Shift by log course** in the shortcut menu and specify the log course.
- If you select ***Two points***, specify two random points lying at the same height. Thus, you will set the roof slope axis. Then specify the third point like in the ***Wall*** mode.
- If you select ***Three points*** in the shortcut menu, specify three random points. Thus, you will set the roof slope plane. The roof slope axis will go through the first specified point parallel to the XOY plane.

After setting the plane, the **Roof slope parameters** form will appear on the screen.



Set values of roof slope overhang projections to the XOY plane in the **Overhang1, Overhang2, Overhang3** and **Overhang4** fields. Real (slope) values of the overhangs are calculated by the system automatically:



Top view

Note. Subsequently, you may need to modify the beginning and the end of the roof slope axis. In this case, select ***House/Roof/Modify roof slope***. When you run the command, the roof

slope axis is shown on the screen in the arrow form. Arrow beginning is **point one (Beginning)** of the roof slope. Arrow end is **point two (End)** of the roof slope.

Set the roof slope angle in relation to the horizon in the **Angle** field. The angle value should be more than zero and less than 90 degrees.
Set the distance from the lower plane of the roof slope to the upper plane in the **Thickness** field. It is always defined by normal line to the lower plane of the roof slope.

The **Display** parameter group**:**

- **Plane** – only the lower plane of the roof slope is displayed;
- **Solid** – lateral surface, the lower and the upper plane of the roof slope are displayed.

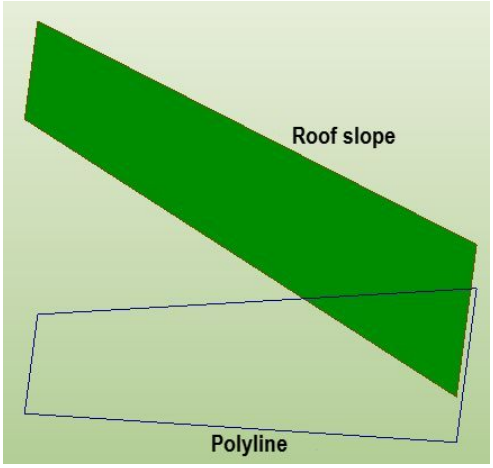
You can select **Recreate by parameters** to modify trimmed 138 roof slopes. Check this parameter to restore dimensions of the roof slope and its rectangular shape.
After changing the roof slope parameters, click **OK.** A rectangular roof slope will be created.

By polyline:

First, create a polyline by selecting ***K3/Create/Lines/Polyline***. It should consist only of intervals. Then, run the command for roof slope creating and:

1. specify polyline – external contour of the roof slope;
2. if there should be a hole in the roof slope, specify its contour in reply to the system query: " *Specify hole contour in generatrix"*. Otherwise select ***Finish*** in the shortcut menu or press **Enter**;
3. specify three points defining the roof slope plane. You can do it using one of three methods, which we have used to create a rectangular roof slope by parameters: ***Wall, 2 points, 3 points***.

Roof slope is created by polyline projection to the selected plane.



18.2 Roof Slope Display

If you want to change the mode of roof slope display 133 from plane to solid or vice versa, select ***House/Roof/Display slope***. Then, select the display mode: ***Plane*** or ***Solid***. Select one or several roof slopes in the viewports or use the shortcut menu. Use the key **All** to select all roof slopes at once. Click **Finish**.

Also, you can change the mode of display when editing 134 roof slope parameters.

18.3 Editing Roof Slopes

Only for K3-Cottage Professional Package

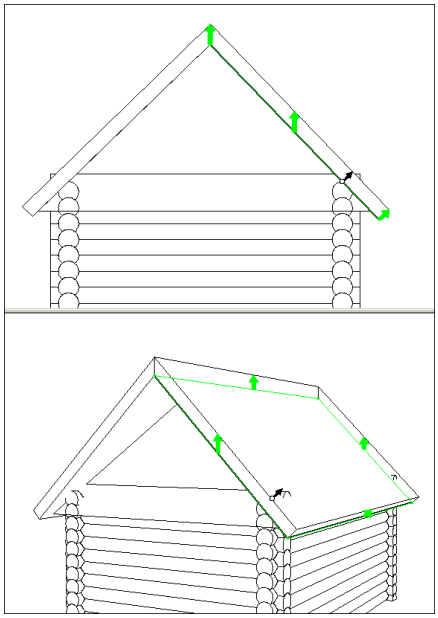
You can modify the shape, slope angle, parameters of the roof slope, etc. Select ***House/Roof/Modify roof slope*** and then select the roof slope. Use the shortcut menu for further editing:

The **Plane** option (by default) is used to change the slope angle of the roof slope plane. Modify the slope angle and fix it by clicking. Then, click **OK** in the **Roof slope parameters** form if you accept the changes.

The **Parameters** option is used to change the roof slope parameters. The **Roof slope parameters** 132 form will appear. Set the new values in the respective fields and click **OK.**

Note. When editing the slope angle, the roof slope is created again automatically so that projection of its boundary in the plan (horizontal plane XOY) remains unchanged.

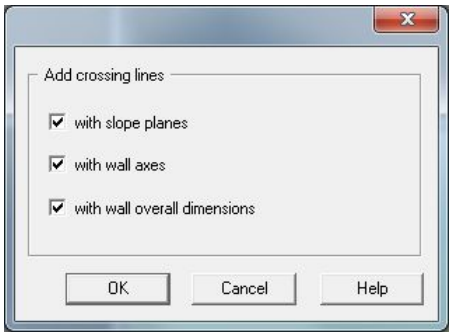
The **Upper plane** option is used to change the rule of creating the upper plane of the roof slope. Execution of this command is easy-to-see in the **Solid** mode when the lateral surface of the roof slope is shown on the screen. Each element (interval) of the roof slope boundary located in its lower plane has a defined vector. The lateral surface of the roof slope is created in accordance with direction of this vector. Default vector settings are:



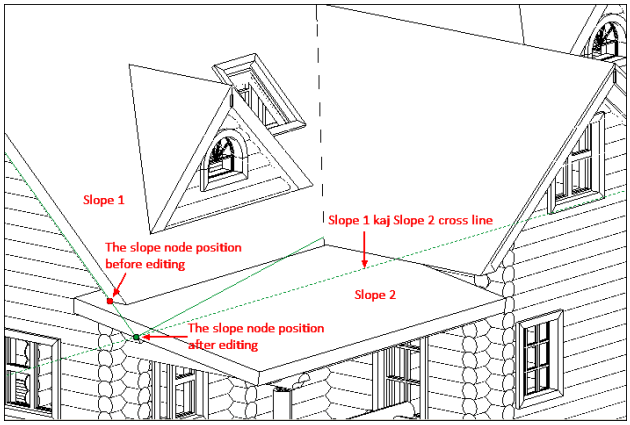
You can modify the direction of each element of the roof slope boundary. Select direction in the shortcut menu: ***Vertical, By normal*** or ***Horizontal***. Then select the roof slope elements to change the direction. Click ***Finish***. Faces of the lateral surface will be created again in accordance with

selected directions.

The **Manually** option is used to change the roof slope boundary by shifting its nodes and elements. Shifting is available only in the roof slope plane.
In the manual mode, you can use auxiliary objects: lines and crossing points of the plane and roof slope boundary with other roof slopes, axes and overall dimensions of walls. For this purpose in the next form:



check the lines you want to see on the screen as auxiliary objects. When editing, the selected lines will be drawn and become available to snapping.



The roof slope editing modes are:

– **Lengthwise node shift** is a shift of the roof slope node along one of the elements (intervals) of its boundary. The node is shifted along the highlighted interval;
– **Free node shift** is a random shift of the roof slope boundary node in the roof slope plane;

Note. You can use snaps when selecting a new position of the node. If the snap point falls outside the roof slope plane, the node will be shifted not to the snap point, but to its projection to the roof slope plane. By default, projection is created by normal to the roof slope plane, but you can change vector direction. For this purpose, select **Projection vector** in the shortcut menu and click one of the elements in the menu on the screen. Vector direction can be set visually by setting a new position of its end directly in the program window;

– **Element shift** is a random shift of the roof slope boundary element in the roof slope plane. In

this case, neighboring intervals of the selected elements are shifted as well in order to maintain the roof slope boundary closed. If neighboring intervals are parallel, they remain parallel in case of shift;

– **Element division** is adding one more node to the center of the element.

Also, you can make holes and cuts in the roof slope in the manual editing mode. Read more in the next section 136.

Shift is changing the roof slope length due to changing the length of its axis. In reply to the system query: *Select point*, select beginning (or end) of the roof slope axis and move it until you see the required value of distance between final points of the roof slope axis in the **New position** field in the bottom of the screen. You can set this distance in the dialog window using the keyboard.

18.4 Adding Holes to the Roof Slope

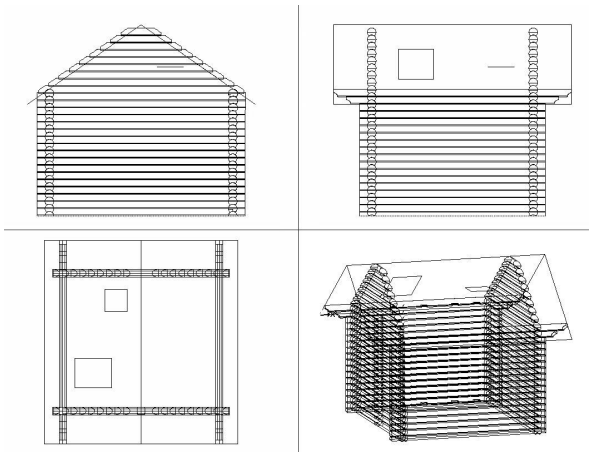
PF Only for K3-Cottage Professional Package

You can add holes to the roof slope and make cuts in it according to random closed lines preliminary created in **K3**. The procedure of adding holes to the roof slope is described in the following example. Assume that you need to make two holes in the roof slope: for a chimney pipe and a dormer window. You know dimensions of the holes. Then, you should create rectangles by selecting ***K3/Create/Primitives/Rectangle***.

As a rule, the contractor knows the linear dimensions of the chimney pipe; therefore, we create a hole for the chimney pipe in horizontal plane.

It is better to make a hole for a dormer window in the roof slope plane (lower) because linear dimensions of the window are usually known. Let's set **Roof slope display** 133 **as plane**. Then, we change the user coordinate system (UCS) into LCS of the roof slope by selecting ***K3/Conversions/UCS***. Then, we specify coordinates of the rectangle nodes. Upon creation of the rectangle, we enable UCS again by selecting ***K3/Conversions/UCS/GCS***.

See approximate location of the rectangles in the picture:

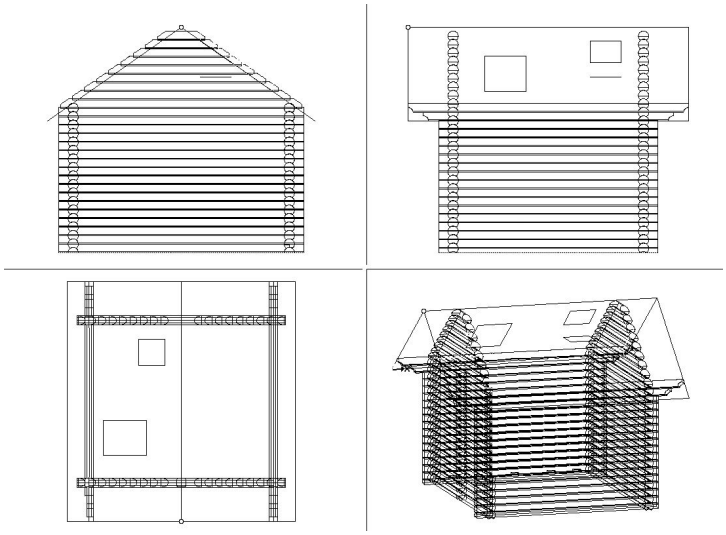


Further procedure:

1. Select ***House/Roof/Modify roof slope***.
2. Select the roof slope.

3. Select ***Manually*** in the shortcut menu. Click **OK.**
4. Select ***Add hole***.
5. Select the rectangle as the contour for window.
6. Select ***Projection vector*** in the shortcut menu.
7. Select ***Projection XY GCS***.
8. Select ***Add hole***.
9. Select the rectangle as the contour for chimney pipe.
10. Select ***Finish***.

Two holes will appear on the selected roof slope:



Then, if necessary, you can copy, move and delete added holes.

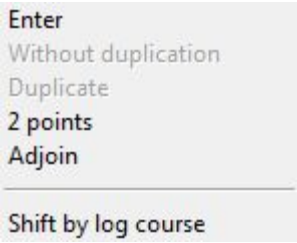
The ***Extract contour*** element in the shortcut menu allows you to extract contours of external and internal boundaries from the roof slope, which you may need, for example, when filling the roof slope with boards.

You can create cuts in the same way as creating holes by selecting ***Add cut***. The only difference is that the cut line, in contrast to the hole, can lie inside the roof slope contour only partially. Upon completion of editing, the cut will be deducted from the roof slope boundaries and you won't be able to edit it.

18.5 Roof Slope Shift and Rotation

PF Only for K3-Cottage Professional Package

Select ***House/Roof/Shift roof slope/Without duplication*** to shift the slope. Select the slopes you want to shift. Click ***Finish*** in the shortcut menu to confirm selection. Upon selection of slopes to be shifted, set vector or select an element from the following shortcut menu in reply to the system query: *Shift vector*:



If you select ***2 points***, the system will generate two queries in succession: *Beginning point of shift vector, End point of shift vector*. Upon selection of the shift vector, all selected slopes are shifted.

The ***Adjoin*** element allows to place the shifted slope in relation to overall dimensions of previously placed object.

The ***Shift by log course*** element allows you to move the slope up and down by a set number of log courses. You can set the number of log courses using the keyboard or visually using the mouse and shift scale showing current position of the slope in the shift log courses.

Select ***House/Roof/Rotate roof slope/Without duplication*** to rotate one or several slopes. Select the slopes you want to rotate. Click ***Finish*** in the shortcut menu to confirm selection. Then specify the point in reply to the system query: *Rotation point*. The vertical axis passing through the specified point will be used as the rotation axis. Positive value of rotation angle corresponds to the counterclockwise rotation around the specified axis. Rotation angle is set in degrees.

Select ***House/Roof/Shift roof slope/With duplication*** or ***House/Roof/Rotate roof slope/With duplication*** for single duplication with shift or rotation. Selected slopes will remain in the initial position and their copies will be shifted or rotated.

Select ***House/Roof/Shift roof slope/With multiple duplication*** or ***House/Roof/Rotate roof slope/With multiple duplication*** for multiple duplication with shift or rotation. Upon selection of duplicated slopes and shift vector, the system generates query: *Shift ratio.* Set the number of copies to be created. Selected slopes will remain in the initial position, and each i copy will be shifted (rotated) by the set shift vector (angle) in relation to i-1.

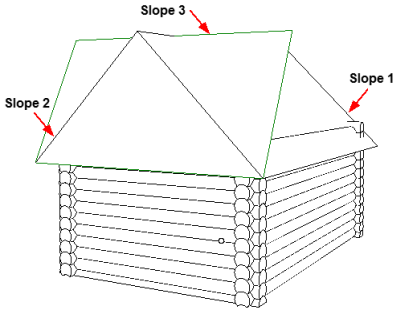
Shift ratio should be an integer number. If the set value is not integer, the system will use its integer part.

If *Shift ratio* is equal to zero, no operations will be performed.

18.6 Trimming Slopes with Other Slopes

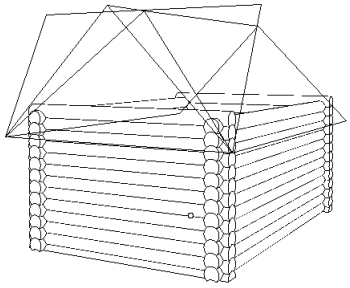
PF Only for K3-Cottage Professional Package

You can make a slope of necessary shape by selecting ***House/Roof/Trim slopes***. This command is described below by the example of creating a build hip. Assume that you have created three slopes according to the rules specified in the **Creating Slopes** 131 section:



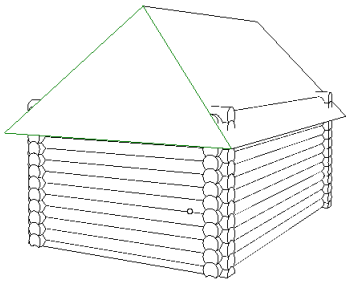
Note. It is more convenient to create **Slope 3** in the mode of ***Two points*** using the **To end** and **On object** snaps. Set **Overhang1, Overhang2, Overhang3** as equal to zero in the **Roof slope parameters** form.

To trim the slopes with each other, select ***House/Roof/Trim slopes***. Specify slopes 1, 2 and 3 in reply to the system query: *Select roof slopes to trim*. Click ***Finish*** in the shortcut menu to confirm selection. The system will find all roof slope crossing lines and cut the roof slopes with them into fragments. You will see the following on the screen:



Then, use the shortcut menu:

Delete fragment. Select the roof slope fragments to be deleted and click ***Finish*** in the shortcut menu. The fragments will be deleted:



Highlight fragment. Select one fragment of each trimmed roof slope and click ***Finish*** in the shortcut menu. Selected fragment will remain, and the other will be deleted.

If you want to restore a rectangular shape of the trimmed slope, select ***House/Roof/Modify roof slope*** and select **Parameters** in the shortcut menu. Check **Recreate by parameters** and click **OK**. Also, you can set the new values of overhangs in the **Overhang1, Overhang2, Overhang3** and **Overhang4** fields. In this case, the roof slope will be created with new dimensions, but it will maintain its rectangular shape. Upon such editing, you can make the roof slope trimmed again by selecting ***House/Roof/Trim slopes.***

18.7 Roof Slope Trimming by Wall

PF Only for K3-Cottage Professional Package

You can create a roof slope of necessary shape by selecting ***House/Roof/Trim slope by wall***. It is convenient when you work with bow window structures. Select a roof slope and a wall in reply to the system query. Click ***Finish*** in the shortcut menu. The roof slope will be split into fragments by the wall body. Delete the unnecessary fragments.

18.8 Adding Rafters and Lathing

PF Only for K3-Cottage Professional Package

You can fill the roof slopes with rafter boards and lathing automatically with intervals preferred by the user. Filling is made with all elements of the roof located in the roof slope (dormer windows, build hips, flashlights, etc.) taking into account. Essential condition: when creating a rafter structure, the first and the last boards are always placed to the roof slope boundaries.

Select ***House/Roof/Create rafters*** to create rafters. Select the roof slope to fill with rafters. Then, select a material of future rafters using **Parameters** 173 in the shortcut menu. Select one of the modes of roof slope filling with rafters:

Regularly – rafters are added to the whole area of the roof slope, on both the sides of the first created rafter, with a set step or gap. You can set a position of the first rafter using elements of the shortcut menu: ***From beginning*** or ***From end*** of the roof slope or ***Towards*** (one “first” rafter on each side) and modify them, if necessary, by selecting **Shift**;

Consider walls – rafters are created according to the following principle:

- two rafters with a set **setback** are placed on both the sides of each wall trimmed with the roof slope;
- other – with a set step or gap depending on the selected mode from the beginning to the end (***From beginning***) or from the end of the roof slope to the beginning (***From end***) or towards each other (***Towards***).

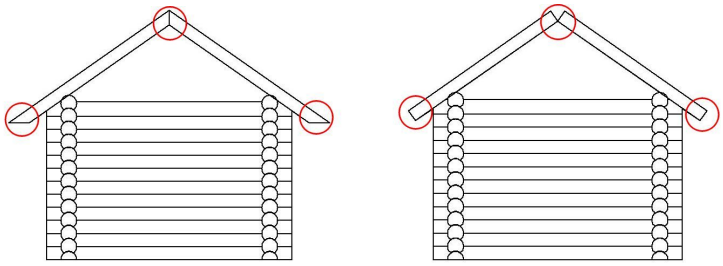
Between walls – rafters are added not to the whole roof slope, but only between selected walls. Upon selection of the roof slope and this parameter, selection of walls becomes available. Upon selection of two walls, the rafter adding command is enabled and the system asks you to set a step or gap.

Then, select the method for creating rafter ends:

TrimByContour – the rafter length and its trimming parameters are defined by the roof slope geometry;

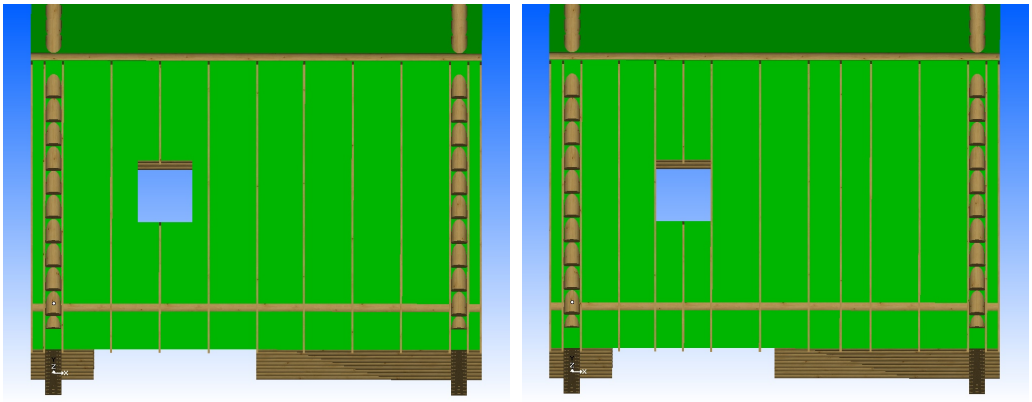
TrimByParameters – the rafter length is defined by the roof slope geometry, and the parameters of its end trimming are taken from the form, which you can call by using the **Parameters** element in the shortcut menu.

Trim by Roof Slope – the rafter length is defined by the roof slope geometry and the ends are trimmed in accordance with the rules of creating the lateral faces of roof slope 134. For example, if the upper lateral face of the roof slope should be created vertical according to the rule and the lower face should be horizontal, the rafters are trimmed as shown in **Pic. 1** in the mode of **Trimming by roof slope**. If the upper and lower faces of the roof slope should be created by normal to the roof slope plane according to the rule, the raters are trimmed as shown in **Pic. 2.**



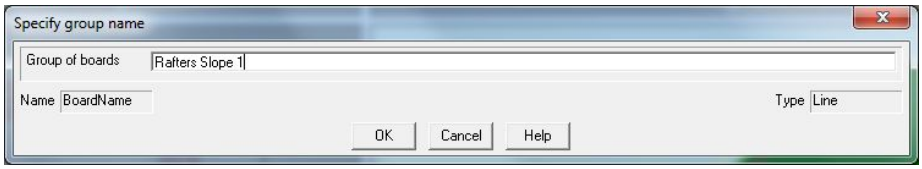
Pic. 1 *Pic. 2*

If you enable **Consider openings**, the rafters framing the opening are added to the roof slope. Next rafters are created at a set distance of the additional rafters added for the opening. The rafter diagram with a step of **600** mm and enabled **Consider walls** and **Towards** parameters is shown in the left picture. The **Consider openings** parameter is disabled. In the right picture, the **Consider openings** parameter is enabled:



Upon selection of the method of rafter end creation, you can modify the filling **Step**, if you do not want to use the value set in the dialog window. If it is more convenient for you to work with the interval between boards instead of the step (a distance between initial points of neighboring boards), select **Gap** in the shortcut menu and specify its value in the dialog window.

Click **Finish** in the shortcut menu to confirm parameters of the rafters. The system will offer you to specify the group name for created boards. This name will be shown in reports 186 and in object tree 21.



Click **OK** to finish the settings.

Note. When adding a rafter to adjoining roof slopes, do not forget to change the mode of creation for joining their ends: if rafters are created ***From beginning*** on one roof slope, they should be created ***From end*** on the adjoining roof slope.

Select ***House/Roof/Create lathing*** to create lathing. Select the mode:
At the bottom – boards are created directly under the roof slope plane;
At the top – boards are created above the roof slope plane. In this case, boards can lie not only on the roof slope plane, but at some distance from it. You can set this distance in the dialog window in reply to the system query: *Specify setback*. The setback value should not exceed the roof slope thickness 132.

Then, select the roof slope. Set parameters of lathing by using elements of the shortcut menu. In order to understand the parameters of lathing, see similar parameters of rafters. Click **Finish** to confirm the selected parameters. You can set a group name of the lathing boards like for the rafter boards.

Note. You can join rafters of different roof slopes by selecting ***House/Board/Join*** 175.

18.9 Roof Slope Boarding

PF Only for K3-Cottage Professional Package

You can sheathe the roof slope with boards not entirely, but by separately selected areas, bypassing walls crossing the roof slope. Select ***House/Roof/Lag slope with boards.*** Select the roof slope and the crossing walls, which you want to consider when sheathing the roof slope with boards. Click ***Finish*** to confirm selection. Then, select the mode:

- **At the bottom** – boards are created directly under the roof slope plane;
- **At the top** – boards are created above the roof slope plane. In this case, boards can lie not only on the roof slope plane, but at some distance from it. You can set this distance visually on the screen or in the dialog window in reply to the system query: *Specify setback*. The setback value should not exceed the roof slope thickness 132.

Upon mode selection, in reply to the system query: *What to do with created areas?* select one of the following elements of the shortcut menu:

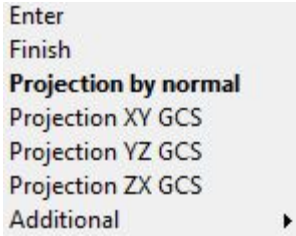
- ***Save*** – all or selected areas will be saved as independent objects. Sheathing with boards is not performed. You can sheathe saved areas with boards at anytime by selecting ***House/Board/Fill in;***
- ***Selection*** – all or selected areas are filled with boards. Select the area to sheathe with boards. Click ***Finish*** to confirm selection. Selected areas are highlighted in succession. Board image appears in them showing the direction and the beginning point of filling with boards. You can introduce changes by selecting one of the elements of the shortcut menu:

– variants of board direction:

***Horizontal* –** along the roof slope axis;

Vertical – across the roof slope axis;

Random – parallel to the set vector. You can specify any point, including points falling outside the area plane, to set the vector beginning. In this case, the specified point will be projected to the area plane. By default, the projection is created by normal to area plane, but you can change the direction of projection vector. For this purpose, click one of the elements of the shortcut menu:



The second point accomplishes creating the vector for parallel placing of all area boards;

– ***Parameters* –** opens the **Board parameter settings** 173 form. You can modify parameters of the filling board in this form;

– ***Shift*** – you can modify position of the first filling board visually using the mouse or in the dialog window using the keyboard;

– method of board trimming:

– **TrimByContour –** the board length and the parameters of trimming its ends are defined by the contour geometry;

– **TrimByParameters** – the board length is defined by the contour geometry and the parameters of trimming its ends are taken from the **Board parameter settings** form.

Then, you can modify the filling **step** – a distance from the beginning of one board to the beginning of the other board, if you do not want to use the value set in the dialog window. By default, the system offers the step value for creating immediately adjacent boards. If it is more convenient to set a distance between boards, select **Gap** in the shortcut menu and specify its value in the dialog window.

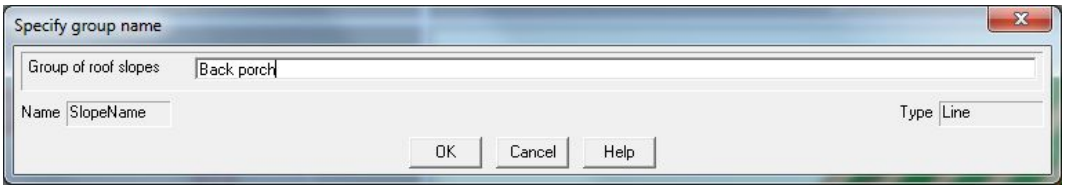
Click **Finish** to confirm selected parameters of filling. The system will ask you to set a group name for the created boards. This name will be shown in reports 186 and object tree 21.

18.10 Group of Roof Slopes

PF Only for K3-Cottage Professional Package

You can assign group names to the roof slopes. All roof slopes with the same name will be grouped in one report in the **Project reports** form, in the **Roof plan** folder. The number of names corresponds to the number of reports.

Select ***House/Roof/Define group***. Select the roof slopes and click **Finish** in the shortcut menu. The following form will appear on the screen:



Specify a group name of selected roof slopes in the **Roof slope group** field or select it from the list of existing names. All roof slopes attributed, for example, to the **Antium** group, will be included in a separate report called **Antium** in the **Roof plan** report.

18.11 Deleting Roof Slopes

PF Only for K3-Cottage Professional Package

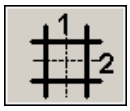
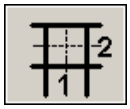
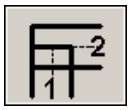
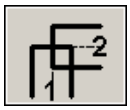
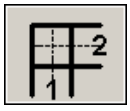
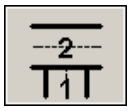
Select ***House/Roof/Delete slope*** to delete a roof slope. Select the roof slope you want to delete. Click the ***Finish*** line in the shortcut menu (right bottom corner).

19 Marking Notches

Upon creating walls and openings, select ***House/Wall/Notches*** in the auxiliary menu. This command will mark notches on all logs according to your settings in the table of joints (see below). If you use this command not for the first time, it will delete old notches from all logs and will mark them again.

A **notch** is a cut in the log at the wall crossing point. In **K3-Cottage** we use such term as **standard notch**. It is a notch at the crossing point of two logs of the same material with a shift of log courses, which is cut through at an angle of 90 degrees. All other notches are considered as non-standard. Shape, type and method of notch jointing depend on the type of log crossing and your settings for that type.

The following types of log crossing are available in **K3-Cottage**:

	**Type 1**: Logs **1** and **2** cross each other all the way through.
	**Type 2**: Log end of log **1** is inside log **2** and overlaps its axis.
	**Type 3**: Log end of log **1** is inside log **2** and does not reach its axis or overlaps its axis.
	**Type 4**: Log end of log **1** is inside log **2** and does not reach its axis or overlaps its axis. Log end of log **2** is inside log **1** and overlaps its axis.
	**Type 5**: Log end of log **1** does not reach axis of log **2** or overlaps its axis. Log end of log **2** does not reach axis of log **1** or overlaps its axis.
	**Type 6**: Log ends of logs **1** and **2** are inside each other and overlap the axes.
	**Type 7**: Logs **1** and **2** do not cross or are tangent to each other.

Attention!

Log end of log **1** overlaps axis of log **2**:

– in crossings of **Type 3, Type 4, Type 4** by the value not exceeding **Maximum projection of blind saddle notch** 72**;**

– in crossings of **Type 2, Type 6** by the value exceeding **Maximum projection of blind saddle notch.**

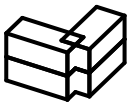
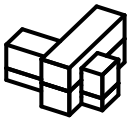
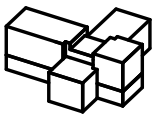
Log end of log **2** overlaps axis of log **1**:

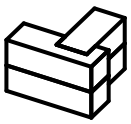
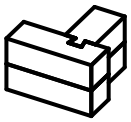
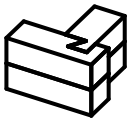
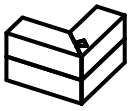
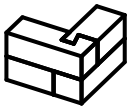
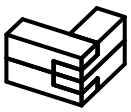
– in crossings of **Type 5** by the value not exceeding **Maximum projection of blind saddle notch**;

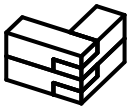
– in crossings of **Type 4**, **Type 6** by the value exceeding **Maximum projection of blind saddle notch**.

You can select a type of log joining for each crossing type or, in other words, the notch type.

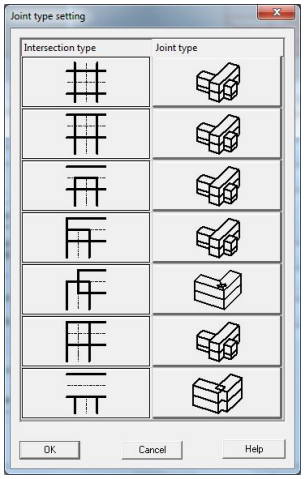
All joint types available in **K3-Cottage** are given in the table below:

	**Type 0**: without joint.
	**Type 1**: by shape. Crossing logs are cut according to the shape of each other. The size of the upper and lower notches is defined by the parameters set in the **Profiles** 35 catalog. **Purpose:** for walls and beams of any material. **Conditions for notch:** – If crossing walls (beams) are shifted in relation to each other by a half log course and their materials coincide by the log course height, the joint is created for any crossings: wall-wall, wall-beam and beam-beam. – If crossing walls (beams) are not shifted in relation to each other and their materials coincide by the log course height, the joint is created only for such crossings as wall-beam and the wall is cut. – If materials of crossing walls (beams) do not coincide by the log course height, the joint is created only for such crossings as wall-beam and beam-beam. The **Trim by shape** parameter is available only if the wall projections do not exceed the standard projections set in the **House parameters** 71 form.
	***Vertical notch*** 37 is a supplement to the notch by shape. **Purpose:** for walls and beams of square logs. **Conditions for notch:** – the **Vertical notches** field in the **Square log parameters** form in the **Profiles** catalog should be checked; – the **Vertical notches** field in **Material** tab of the **Project parameters** form should be checked. **Additional conditions:** – If crossing walls (beams) are made of different square logs, vertical notches are created only if the same values of **Shift** are selected in the form of the

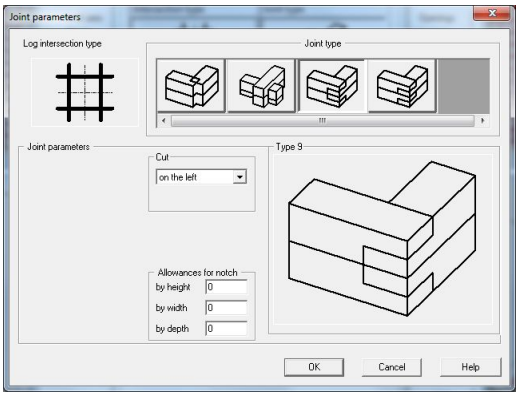
	Profiles catalog for both the materials. – If crossing walls (beams) are not orthogonal, vertical notches are created only if **By center** is selected in the **Shift** field in the **Vertical notch parameter** form of the **Profiles** catalog for the square log.
	**Type 2**: insert. Notch size is determined automatically basing on the dimension of incut log. **Purpose:** for walls and beams of any material.
	**Type 3**: dovetail. Notch parameters should be set. **Purpose:** for walls and beams of any material.
	**Type 4**: lock. Notch parameters should be set. **Purpose:** for walls and beams of any material.
	**Type 5**: inclined trimming – straight tongue. Notch parameters should be set. **Purpose:** for walls of similar material: round logs or square logs. **Conditions for notch:** materials of crossing walls coincide by height and width of profile.
	**Type 6**: inclined trimming – trapezium tongue. Notch parameters should be set. **Purpose:** for walls of similar material: round logs or square logs. **Conditions for notch:** materials of crossing walls coincide by height and width of profile.
	**Type 7**: bond with root tongue. Notch parameters should be set. Notch is cut only if values of all its parameters are higher than zero. **Purpose:** for walls and beams of square logs. **Conditions for notch:** – Tongue is cut only if crossing is at right angle. – Materials of crossing walls (beams) coincide by profile height. – In case of walls (beams) with shift of log courses the notches are cut in one and the same wall. – In case of walls (beams) without shift of log courses the notches are cut in each crossing wall (beam) in succession.
	**Type 8**: half log with alternate arrangement. Notch is cut by a half of the log course height. **Purpose:** for walls of square logs. **Conditions for notch:** – Materials of crossing walls (beams) coincide by profile height.

	– Crossing walls are without shift of log courses.
	**Type 9**: half log without alternate arrangement. Notch is cut by a half of the log course height. **Purpose:** for walls of square logs. **Conditions for notch:** – Materials of crossing walls (beams) coincide by profile height. – Crossing walls are without shift of log courses.

The joint type for each crossing type is set in the catalog of current manufacturer: **Table of joints** 47. When a new project is created, these settings are used. You can modify them, if necessary. Click **Log-log joint types** in the **House parameters** form, in the **Material** 69 tab. A table of log joint types at the crossing points of walls and beams will appear on the screen. Introduce changes and click **OK.**



You can set parameters for each joint type. Double click the type. The following form will appear on the screen:



Fill in the form and click **OK.**

These settings of the tables of log joint types will be used in the current project.

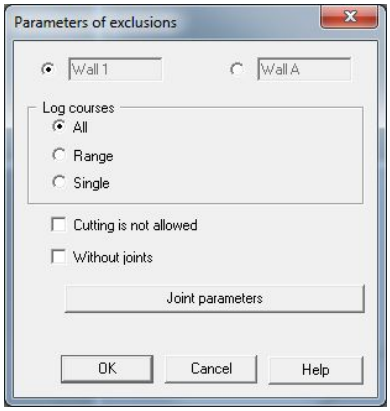
If you work with square log! If vertical notches are enabled (see the above table), only the **Allowance for height** 38 value is considered when calculating height of the upper notch **(hUp).**

Recommendation! Upon enabling the **Vertical notches** 35 parameter and setting the **allowance for height**, mark notches again and create the **Table of logs** 197 report. Examine the log drawings thoroughly to make sure that notch sizes meet your requirements.

You can cancel marking notches for certain beams and walls. Select ***Wall/Set property*** to assign the **Without joint** property to a certain wall or beam. Then, select **assign** or **cancel** or **show** already assigned in the shortcut menu.
If you assign or cancel the property, upon selection of the shortcut menu parameter, select the object to be modified.

PF Only for K3-Cottage Professional Package

You can set the joint types not only for the whole project, but for certain pairs of wall/beams and certain log courses. Select ***House/Wall/Set exclusions*** and select the pair of wall-wall, beam-beam or wall-beam. Set the necessary parameters in the **Joint type settings** form.



Select the log courses to set exclusions in the **Log courses** group. If you select **All**, all log courses of selected wall will be excluded. Select **Range** to exclude several log courses in succession: when you click **OK**, the system will ask you to set the initial and final log course of the range. Select **Individual** to select one or several log courses located not in succession, click **OK** and select the log course to be excluded.

When using two last modes, you need to select a wall in the upper part of the form: you should select log courses of active wall or beam (that is selected).

The **Cutting is not allowed** parameter prohibits marking notches even on the active wall (beam). In this case, all notches (both upper and lower) will be cut on the remaining wall (beam).

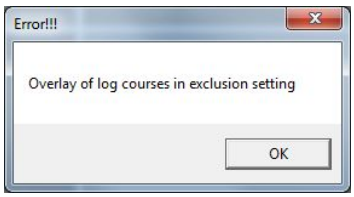
If you enable the **Without joint** mode, the notches will not be marked on any selected wall/beam.

If both the modes are disabled, the **Joint parameters** button becomes available. Using this button,

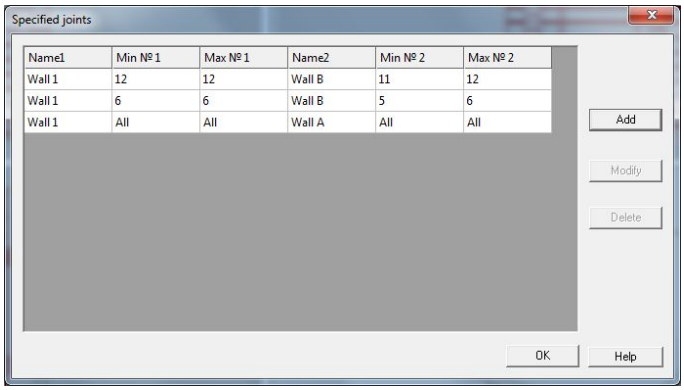
you can select the required notch type for a certain crossing type. Then, exit from the forms, select the logs (in the **Range** and **Individual** modes) as described above and click ***Finish*** in the shortcut menu.

Then, mark notches again by selecting ***House/Wall/Notches***.

Note. When you set exclusions, the program checks whether two different exclusions are set for one and the same log course. If an exclusion has been already set for a certain log course at its joint with a certain wall, the program will generate the following message:



You can view the set exclusions in the **Set joint** form, which opens when you select ***Show*** in the shortcut menu:



Min is a number of the lower log course in the exclusion range. **Max** is a number of the upper log course.

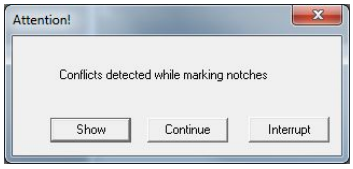
You can modify the set exclusions. For this purpose, select one of them. The selected pair of walls or beams will start blinking on the screen. Click the **Modify** button and introduce your changes in the form appearing on the screen. You can add a new exclusion. Click the **Add** button and select the pair to set a new joint. If you want to delete any existing exclusion, click the **Delete** button.

Note. If you modified one of exceptions and it coincided with the project settings, the respective line can be deleted from the list of exclusions automatically, if you check the **Delete exclusions coinciding with default settings** field in the **Material** 69, tab of the **House parameters** form.

You can copy the set exclusions to another pair of walls (beams) by selecting ***Copy*** in the shortcut menu. Select the pair of walls (beams) in the form, click **Finish** and select a new pair of walls (beams) to be joined in the same way.

In case of crossing of two logs, one of which cannot be cut, the notch is marked on the log, which can be cut. Notch shape is defined by profile of the first log and replicates the shape of the second log.

If neither crossing log can be cut or set joint cannot be created, the system will generate the error message: “Conflict detected when adding notches to the walls (beams)…” and will exit to the form:

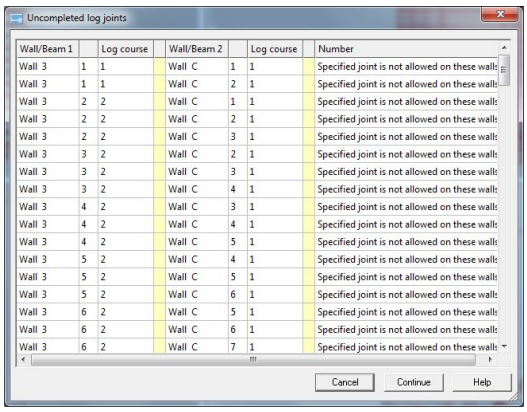


The **Show** button is used to view the list of unexecuted log joints.

The **Continue** button is used to ignore the conflict situation and to continue execution of the ***House/Wall/Notches*** command. Notches will be marked everywhere, except for the conflict situations.

The **Abort** button is used to finish execution of the ***House/Wall/Notches*** command.

In other cases, the following form can be displayed after marking the notches:



Wall/Beam 1		Log course	Wall/Beam 2		Log course	Number
Wall 3	1	1	Wall C	1	1	Specified joint is not allowed on these walls
Wall 3	1	1	Wall C	2	1	Specified joint is not allowed on these walls
Wall 3	2	2	Wall C	1	1	Specified joint is not allowed on these walls
Wall 3	2	2	Wall C	2	1	Specified joint is not allowed on these walls
Wall 3	2	2	Wall C	3	1	Specified joint is not allowed on these walls
Wall 3	3	2	Wall C	2	1	Specified joint is not allowed on these walls
Wall 3	3	2	Wall C	3	1	Specified joint is not allowed on these walls
Wall 3	3	2	Wall C	4	1	Specified joint is not allowed on these walls
Wall 3	4	2	Wall C	3	1	Specified joint is not allowed on these walls
Wall 3	4	2	Wall C	4	1	Specified joint is not allowed on these walls
Wall 3	4	2	Wall C	5	1	Specified joint is not allowed on these walls
Wall 3	5	2	Wall C	4	1	Specified joint is not allowed on these walls
Wall 3	5	2	Wall C	5	1	Specified joint is not allowed on these walls
Wall 3	5	2	Wall C	6	1	Specified joint is not allowed on these walls
Wall 3	6	2	Wall C	5	1	Specified joint is not allowed on these walls
Wall 3	6	2	Wall C	6	1	Specified joint is not allowed on these walls
Wall 3	6	2	Wall C	7	1	Specified joint is not allowed on these walls

It means physical impossibility to mark notches at the specified points, for example, when a notch divides the log into two parts. It often happens when a half-log without a notch is cut by a roof slope, opening, etc. at the selected point. In this case, the user should recheck all specified objects and recreate them at his own discretion. Some notches are deleted automatically.

Attention! Commands for editing walls and beams delete notches in the walls they edit. Therefore, upon editing the wall or beam, select ***House/Wall/Notches*** again. There is no need to do it after each editing. It is enough to recreate the notches before dividing long logs and adding log fasteners and through bolts as well as before creating reports.

20 Deleting Notches

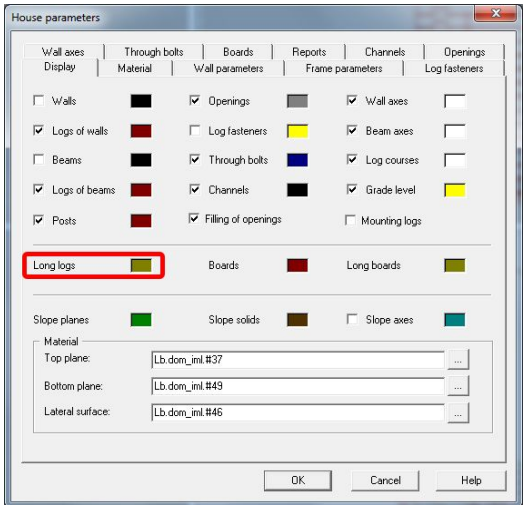
When executing commands that modify geometry and position of walls and beams (***House/Wall/Frame transformation, House/Wall/Conversions, House/Wall/Modify parameters, House/Beam/Modify, House/Opening/Create, House/Opening/Modify, House/Console/Create,*** etc.), notches as well as results of log division and manual editing are deleted in the walls and beams modified by these commands. Upon execution of these commands, you will have to mark notches, divide and edit logs again.

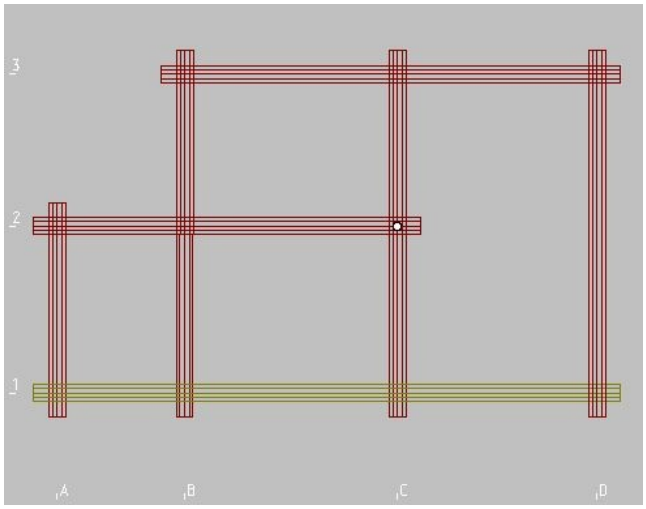
The ***House/Wall/Refill with logs*** command deletes notches and results of log division and manual editing not in a certain wall (beam), but in all walls (beams) of the project. This command is required if you have modified the house parameters 68 or, for example, modified the roof and you need to recreate the house in accordance with introduced changes. If you are not satisfied with the results of log division and you want to divide them in other way, this command is still actual: it will refill the house with whole logs.

21 Dividing Long Logs and editing Log Parameters

21.1 Dividing Long Logs

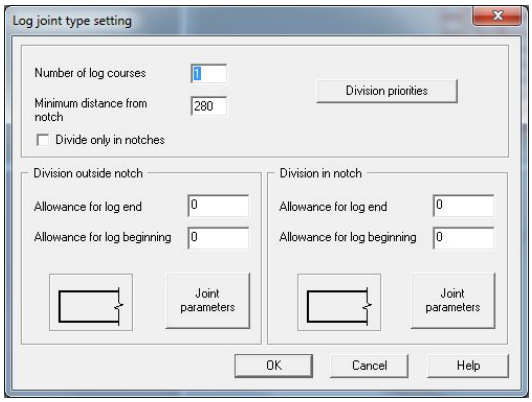
The logs of the length exceeding maximum permissible value are highlighted in a different color in the frame view:





Maximal length is set in the **House parameters** form in the **Material** 69 tab.

You can divide such logs. Select ***House/Log/Divide***.
In order to the set parameters of log division, prior to selection of the log, select **Parameters** in the shortcut menu and fill in the **Log joint type settings** form:



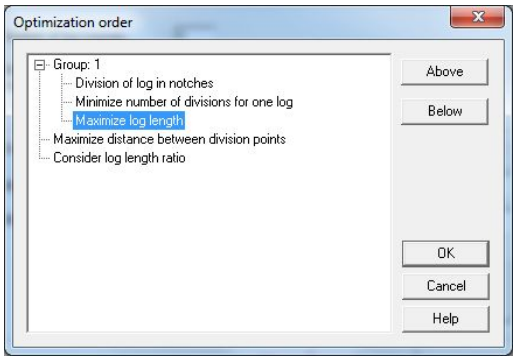
Specify maximal number of neighboring log courses with division points located above each other in the **Number of log courses** field. If this parameter is equal to 1, the logs will be divided in such a way that the division points of neighboring logs be mutually spaced.

Minimal distance from notch - a distance from the notch center to the division point should

not be less than this value.

The **Divide only in notches** parameter enables the mode of making division points solely in the notches. If the system fails to find the notches where the logs can be divided, the log remains long.

If the **Divide only in notches** mode is disabled, you can set the criteria for detecting points of log division in required order using the **Division priorities** button.



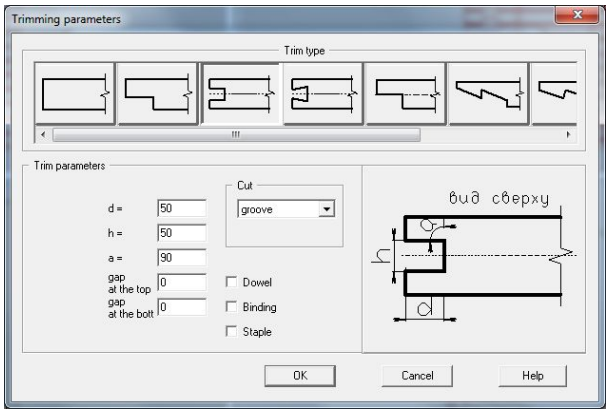
The system divides logs one by one, starting from the lower log. When dividing logs, the system considers the lower log, which is already divided. Optimization criteria are applied to each log in the order specified in the form. First, the program uses the optimization rule specified first in the list – **Log division in notches**. If there are notches in the log, the system will “try” to mark division points in them. If the system fails to divide a log using the first criterion due to any reason, it continues searching for division points using the next rule – **Minimize number of divisions for one log**, and so on:

- **Maximize log length** – divide logs to obtain the log length approximate to the **Max.log length** value as much as possible.
- **Maximize distance between division points** – divide logs to obtain the maximum possible distance between the nearest division points in the logs related to two neighboring log courses.
- **Consider log length ratio** – divide logs to obtain the log length divisible by **Length ratio**, if possible (see the **Setting Parameters of New Project** chapter, the **Material** 69 tab).

You can set your own order of optimization of log division. For this purpose, select the line in the list and move it using the **Above** and **Below** buttons. You can move only elements of one level within one group.

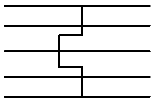
Division points can be located both **in the notch** and **outside the notch**. Values for extension of divided logs at the division point should be set for each case. **Allowance for log end** and **Allowance for log beginning** are used for this purpose. Allowances are not shown in the geometrical model. You can see them in the **Log parameters** 157 form and in any log drawing in reports in the form of hatched rectangles at the log ends.

Use the **Joint parameters** button to open the **Trimming parameters** form:



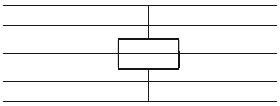
You should not set **Joint parameters** in case of division in the notch. A half-notch will be cut at the long end of both the logs.
You can trim the log ends as required in case of division outside the notch.
Using **Trim type**, you can select the type of log joint at the division points (see **Table of log end trim types** 158**).**

- If you check the **Staple** field, metall staples will be used for log joining at the division points. Staples are not shown in the drawing. They are specified in the **Material register** 203**.**
- If you check the **Binding** field, the system will join the logs at the division point as tight as possible. For example, if the **Notch** trim type is set and **Binding** is enabled, the tongue-notch joint will be at the division point:



Top view.

- For such trim types as *Straight tongue* or *Notch*, the **Dowel** paramater is available. If you check the **Dowel** field, the logs will be joined as follows:



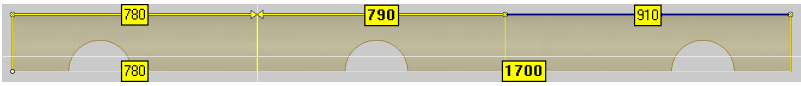
Top view.

The system will count all project dowels and their quantity will be specified in the **Material register** report (see the **Creating Reports** chapter, the **Material Register** section).

When parameters are set, proceed to log dividing. As default, the system operates in the **Log** manual mode: logs are divided one by one. Select the log to be divided in reply to the system query. It will be highlighted in yellow on the screen. Then, select the position of the division point by the mouse or in the command line. Current log lengths obtained after division are shown on the screen when selecting the division point. The length set by the user is in bold type. Length of the remaining log part is calculated by the program and is shown in thin type. See the picture.

If there are notches in the log, the mouse will “stick” to the notch center, if the distance between the mouse cursor and the notch center is less than the **Minimal distance from notch** 153 parameter.
You can meter the length from the end or beginning of the log depending on the selected element in the shortcut menu: **End** or **Beginning.** If you see only the **Beginning** line in the shortcut menu, it means that the mode of length setting from the log **End** is enabled. To change the mode, select **Beginning** in the shortcut menu.

When you click the division point, a dimension scale will appear above the log. When you move the mouse cursor to the next division point, it shows the distance between the point of next cut and ends of the new log obtained after division. At this time, the distances between the new division point and initial log ends are shown under the log.



You cannot divide the logs if their length is less than two minimal ones (see the **House parameters** form, the **Minimal log length** parameter) and the system will warn you about it.
If you need to delete an internal part of the log, add an opening of the ***Opening*** type with a height of one log course and of required length to that wall, to the respective log course.

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If you want to divide all long logs of one wall, set the necessary parameters and select **Wall** in the shortcut menu.
If you want to divide all long logs of the project, set the necessary parameters and select **All** in the shortcut menu.

In automatic mode, the following objects are not divided:

- logs of the beams which cannot be cut;
- lower logs of the beams and walls without a bearing (if the lower log course is not at the ground level). If the log course rests on beams or posts, division is possible only at bearing points;
- log parts above the openings;
- parts of mounting logs inside the openings.

When dividing is completed, the system will show a list of undivided logs and will offer to divide them manually. The logs of the beams marked as **Beam can be cut** 104 are not divided. They are added to the list of long logs.

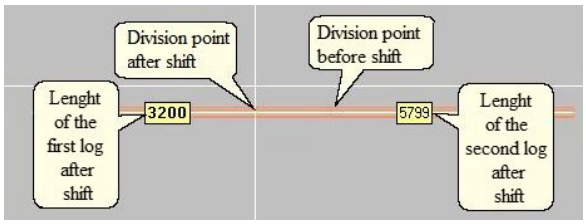
Note. When dividing logs, you can hide all walls (beams), except for those where the log you are working with is located. This procedure is described in the **Display of House Elements** 21 section.

In view of the above, the recommended procedure for log division is the following:

1. Select ***House/Log/Divide.***

2. Select **Parameters** in the shortcut menu.
3. Set the division parameters.
4. Select **All** in the shortcut menu.
5. Check division result: hide all walls and show them one by one. It is better to see the work results in doing so. The procedure for hiding/showing walls is described in the **Display of House Elements** 21 section.
6. Edit division results using the following commands: ***House/Log/Modify, House/Log/Shift of division point, House/Log/Unite.***

In order to shift a division point, select ***House/Log/Shift of division point***. In reply to the system query, select the first and second logs to move a division point between them. Select the new position of the division point in the command line or using the mouse. Current lengths of the first and second logs will be shown on the screen when selecting the division point. See the picture.



You can change the joint type of divided logs in this command. Select **Parameters** in the shortcut menu and set the new values in the **Log joint type** form. There is no need to shift the division point.

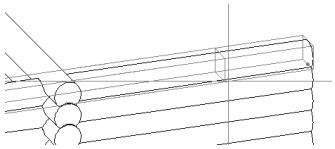
Select ***House/Log/Unite*** to join two divided logs. You can join only the logs located in one log course. If you need to join a large number of logs, select ***Wall/Fill with logs***. New logs will be created in all walls – without notches and divisions. Mark notches and start dividing logs again.

21.2 Editing Log Parameters

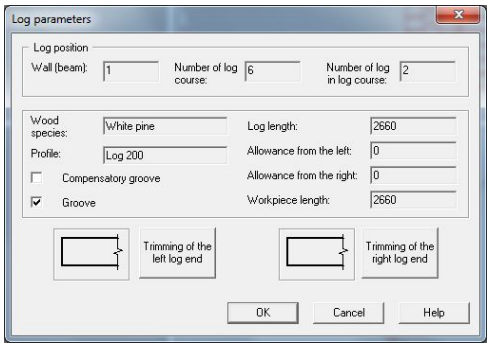
You can modify any log located in the wall without taking it out from the wall. For this purpose, select ***House/Log/Modify***.

Attention! The ***House/Wall/Frame transformation, House/Wall/Conversions, House/Wall Modify parameters*** and ***House/Opening*** commands delete all changes made manually. Therefore, we recommend you to use the ***House/Log/Modify*** command upon final approval of wall and opening position.

You can modify the log length by changing its beginning or end position (see the shortcut menu).



In order to modify the log end type, select ***Parameters*** in the shortcut menu. The following form will appear on the screen:



In fields of the **Log position** parameter group, you will see the following parameters:

- name of the wall that the log relates to;
- log course number;
- log number in the log course.

Log material is specified in the **Wood species** and **Profile** fields. It coincides with the material of the wall or beam that the modified log relates to.

The **Compensatory groove** and **Groove** elements appear in the form, only if current profile type is the round log. The **Bottom profile** and **Top profile** elements are for the square log.

Log length is specified in the **Length** field.

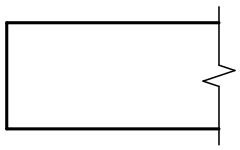
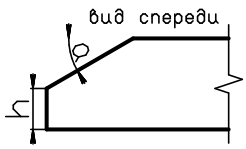
Value of maximal allowance set for that log is shown in the **Allowance from the left** and **Allowance from the right** information fields. Remember that the log can have:

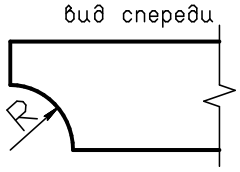
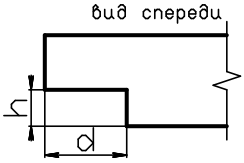
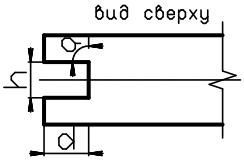
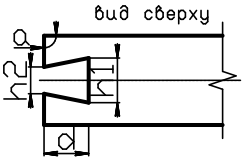
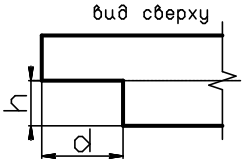
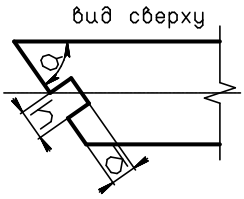
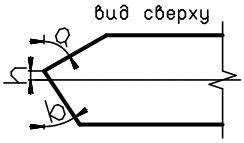
- allowance for half-saddle notch 72,
- allowance at the log division point 154.

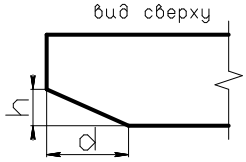
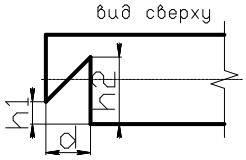
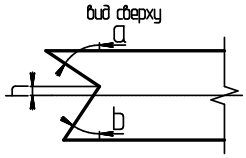
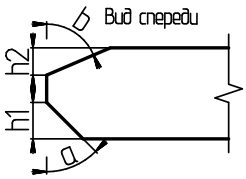
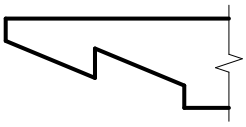
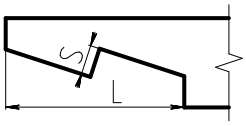
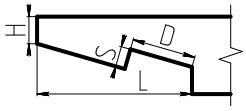
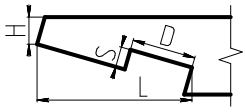
Value of the **Workpiece length** field is equal to the sum of the **Log length, Allowance from the left** and **Allowance from the right** fields.

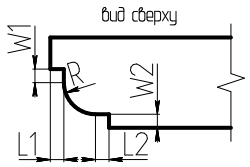
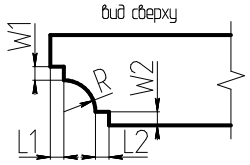
Use the **Left log end trimming** and **Right log end trimming** buttons to open the **Trim parameter settings** form. Here, you can select a trim type for each log end of the modified log.

Table of Log End Trimming Types

Name	Picture
Without trim	
Bevel	

Cut by arc	
Simple cut	
Tongue – notch, straight	
Tongue – notch, trapezium	
Cut-in	
Inclined	
Double bevel, convex	

Chamfer	
Lock	
Double bevel, concave	
Double bevel, vertical	
Gerber's joint with ratios according to the State Union Standard (GOST)	
Gerber's joint No.1	
Gerber's joint No.2	
Gerber's joint No.3	

Step, convex	
Step, concave	

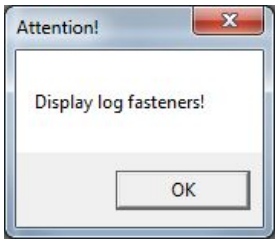
If you check the **Platband flat** field, cuts for platbands will be made in the respective log end. Flat parameters are set for the whole project in the **House parameters** 69 form, in the **Openings** tab.

22 Adding and editing Log Fasteners

22.1 Adding Log Fasteners

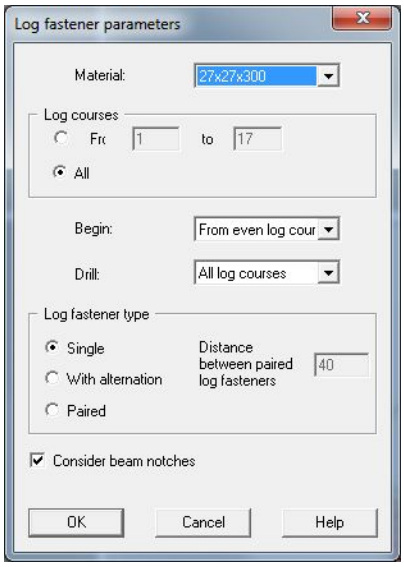
ST·PF Only for K3-Cottage Standard and Professional Packages

In order to execute the command for adding log fasteners, make sure that their display is enabled 68. Otherwise, when you try to add log fasteners, the following message will appear on the screen:



Select ***House/Log fasteners/Mark*** on the auxiliary toolbar to add log fasteners and select one of the elements of the shortcut menu:

- The ***Many*** element of the shortcut menu enables the mode of adding log fasteners to several or all walls with the same parameters. Select the wall you want to add log fasteners to using the mouse or use the standard procedure for object selection 20. Set parameters of log fasteners in the **Log fastener parameters** form (see below) and click **OK.**
- The ***With search*** element of the shortcut menu enables the mode of adding log fasteners to each wall in succession. The system checks walls one by one and offers to set parameters for each next wall in the **Log fastener parameters** form displayed on the screen.



Numbers of the log courses where log fasteners will be located are set in the **Log courses** parameters:

- if you select **All**, log fasteners willl be added along the whole height of the wall;
- if you want to add log fasteners only to certain log courses, select the first line in the **Log courses** group and set numbers of the log courses for adding log fasteners in the **From** and **To** fields.

Specify parity of the log fastener in the **Begin** field to add the first log fastener. Log fasteners are added from the top to the bottom.

The **Drill** field is for drawings. Here, you can select one of the methods of hole drilling for log fasteners:

- **All log courses –** location of the holes for the log fasteners joining the logs will be shown in the drawing of the upper and lower log;
- **Upper log course –** a hole for the log fastener will be shown in the drawing of the upper log; the lower log will be drilled at the site of house construction.

Location points of log fasteners are shown in the wall involute in the form of intervals starting on the upper log and ending in the middle of the lower log. The drilling point will be shown by a dashed line in the log drawing.

The **Consider notches of beams** parameter enables a mode that allows considering beams crossing the wall when adding log fasteners.

The method of log fastener adding is selected in the **Log fastener type** group:

Single – log fasteners are added one by one, with the same parity;

With alternation – log fasteners are added one by one, neighboring log fasteners have different parity;

Paired – log fasteners are added by pairs at a set distance (**Distance between paired log fasteners**); parity of paired log fasteners is different.

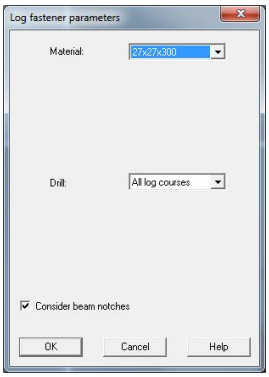
Click **OK** to add log fasteners to the selected wall. They will be added according to the following rule:

- location points of notches are in the wall (if notches have been already marked). The beam notches are considered only if you check the **Consider notches of beams** field;
- two log fasteners are added at a set distance from each of these points; the log fasteners, regardless of their type, have the same parity taken from the **Begin** field;
- other – with a set step, towards each other. As a result, there may be a distance indivisible by the set value in the center of the space between two neighboring notches.

You can set the distance for log fastener adding from the notch or opening and distances between log fasteners in the **Log fasteners** 73 tab of the form opening by the command ***Settings/House parameters:*** **Min. distance from log fastener to notch, Min. distance from log fastener to opening** and **Distance between log fasteners**.

You can add one short log fastener to join only two logs. Select ***House/Log fasteners/Add.*** Select the wall to add the log fastener and select one of the elements of the shortcut menu:

- The **Parameters** element is used to set parameters of future log fastener (see above):



- The **Distance** element is used to set location of future log fasteners in relation to the log ends. In this case the system considers minimal distances from the log fastener to the notch and to the opening set in the **House paramaters** form, in the **Log fasteners** 73 tab. The system will not allow adding a log fastener in relation to the notch or opening at a shorter distance than these values;
- The **Upper log** element enables the mode of adding a log fastener to the log you select and to the neighboring lower log;
- The **Lower log** element enables the mode of adding a log fastener to the log you select and to the neighboring upper log.

Upon setting the parameters in the shortcut menu, select a log in the wall. When selecting the log, place the mouse trap closer to that log end, from which the distance to the log fastener is calculated.

Notes:

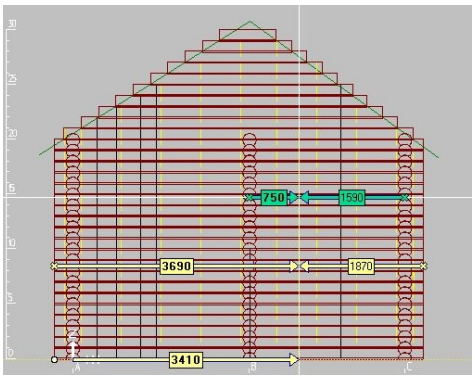
1. Command ***House/Log fasteners/Mark*** deletes all previously added log fasteners.
2. When adding log fasteners, we recommend you to hide all walls (beams), except for the wall (beam) you are working with. This procedure is described in the **Display of House Elements** 21 section.

22.2 Creating and Editing Log Fasteners

ST·PF **Only for K3-Cottage Standard and Professional Packages**

You can edit added log fasteners or add them manually using ***House/Log fasteners/Create, Delete, Modify, Copy*** and ***Multiply***. First, select the wall to edit log fasteners:

- in the ***Create*** mode:
  - set parameters of a new log fastener in the **Log fastener parameters** form by selecting the ***Parameters*** line in the shortcut menu (if you do not set them, parameters of new log fasteners will coincide with the parameters of previously added log fastener);
  - select one of the elements of the shortcut menu: ***From beginning*** of the wall, ***From end*** of the wall or ***With setback***, depending on the point from which you are going to set the distance to the new log fastener. Select a log fastener, through bolt or channel as the reference point in the ***With setback*** mode.
  - select the points of location of new log fasteners. For this purpose, use three dimension scales displayed on the wall:



Upper scale shows distances from the new log fastener to the nearest openings or notches. **Middle scale** shows distances between all log fasteners of the wall as well as distances from the new log fastener to the two nearest ones. **Lower scale** shows a distance from the preliminary selected reference point (***From beginning, From end*** or ***With setback*** (see above)) to the new log fastener. Restrictions set in the ***Settings/House parameters*** 75 form are considered when adding log fasteners:

- **Min. distance from log fastener to notch** and **Min. distance from log fastener to opening** in the **Log fasteners** 73 tab;
- **Min. distance between holes** in the **Wall parameters** 71 tab;
- Select **Finish** in the shortcut menu to finish the command;

- Upon selecting the wall and log fastener in it in the ***Modify*** mode:
  - set the new parameters of the modified log fastener in the **Log fastener parameters** form by selecting the **Parameters** line in the shortcut menu;
  - select one of the elements of the shortcut menu: ***From beginning, From end, With setback*** or ***Shift*** depending on the point of new location of modified log fastener. Select a log fastener, through bolt or channel as the reference point in the ***With setback*** mode;
  - select a new location of the modified log fasteners. Use dimension scales (see above);
  - click **Finish** in the shortcut menu to finish editing;
- In the ***Multiply*** mode select one or several log fasteners you want to multiply, select their new position when shifted and shift ratio. Using this command, you can add log fasteners to the same wall where the selected ones are located;
- In the ***Copy*** mode you can copy log fasteners to another wall. Select the wall and log fasteners you want to copy, then, select one or several walls to which you are going to copy the log fasteners;
- In the ***Delete*** mode select the log fasteners you want to delete.

The system considers restrictions set in the ***Settings/House parameters*** 75 when working with log fasteners:

- **Min. distance from log fastener to notch** and **Min. distance from log fastener to opening** in the **Log fasteners** 73 tab;
- **Min. distance between holes** in the **Wall parameters** 71 tab;

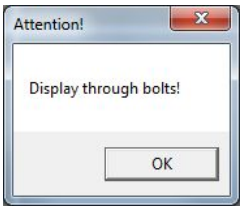
Note: Use the standard scenario of **Selection of geometric objects** 20 (see the **K3** documents, the **Standard Scenarios** chapter) to select objects in the ***Log fasteners/Multiply*** and ***Log fasteners/Copy*** commands.

23 Adding and editing Through Bolts

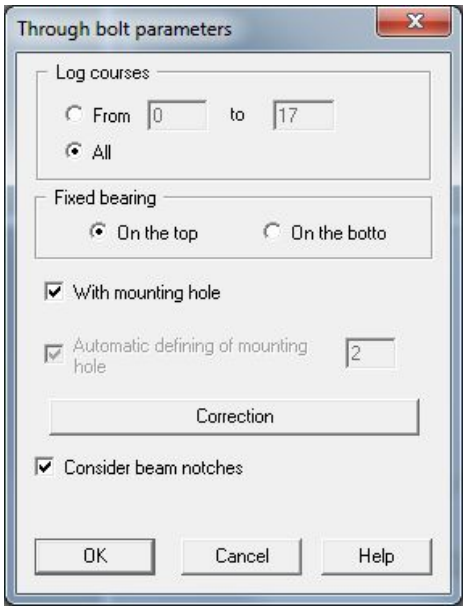
23.1 Adding Through Bolts

ST·PF Only for K3-Cottage Standard and Professional Packages

In order to execute the command for adding through bolts, make sure that their display is enabled 68. Otherwise, when you try to add through bolts, the following message will appear on the screen:



Select ***House/Through bolts/Mark*** to add through bolts. The **Through bolt parameters** form will appear on the screen:



The through bolt height is set in the **Log courses** group of parameters:

- if you select the **All** parameter, the through bolt will stitch all logs of the selected wall (the first and last log course is determined automatically);
- if you want to add a throught bolt of height less than the wall height, select the first line in the **Log course** group and set numbers of the log courses limiting the throught bolt in the **From** and **To** fields.

The **Fixed bearing** group of parameters defines position of nonmovable end of the through bolt: on the top or on the bottom.

Check the **With mounting hole** line to enable the mode of creating a through bolt with free end located not in the end log course of the wall. In this case, three parameters of the through bolt are defined:

- number of the log course where the fixed bearing is located;
- number of the log course where the mounting hole is located;
- number of the log course where the hole for through bolt ends up taking into account future wall shrinkage.

In the **All** mode, location of the mounting hole is always determined automatically.

Number of the log course where the mounting hole is located can be set manually only if the first and last log courses of the through bolt are clearly set. For this purpose uncheck the **Automatic defining of mounting hole** and specify a number of the log course. In the **Log course** group, one of the parameters of the first line is hid or corrected depending on the parameter selected in the **Fixed bearing** group: **On the top** or **On the bottom**. It happens because the **From, To** and **Automatic defining of mounting hole** parameters depend on each other.

Parameters of a **through bolt** depend on each other and on other system parameters (for example, the through bolt length cannot exceed the wall length, the through bolt length depends on **Sealant strip shrinkage, Wall shrinkage,** and **Position of fixed bearing** influence position of the mounting hole, etc.). Filling in the **Through bolt parameters** form, you can set parameters without taking into account some conditions. In order to detect any errors, use the **Correction** button. The system will check the set parameters for compliance with the rules of adding through bolts in the system. If all parameters are correct, the **Through bolt parameters** form will remain unchanged. If something is wrong, the system will correct the set parameters and show them in the form. Then, click **OK**.

You do not have to use the **Correction** button. You can click **OK** at once. In this case, if parameters in the **Through bolt parameters** form meet the rules of adding through bolts, the system will add the through bolts at once. If something is wrong, the system will correct them and show the corrections in the form. You can modify the parameters again or click **OK** if you agree to the corrected parameters.

When you click **OK**, the system will add through bolts to the selected wall according to the following rule:

- there are points of location of notches and openings in the wall;
- through bolts are added at a set distance from these points;
- other – with a set step towards each other until the distance between through bolts becomes less than the set value.

The distance form a notch or opening for adding through bolts and the distances between through bolts are set in the **Through bolts** 73 tab of form opening by the command ***Settings/House parameters:*** **Min. distance from through bolt to notch, Min. distance from through bolt to opening** and **Distance between through bolts.**

Note:

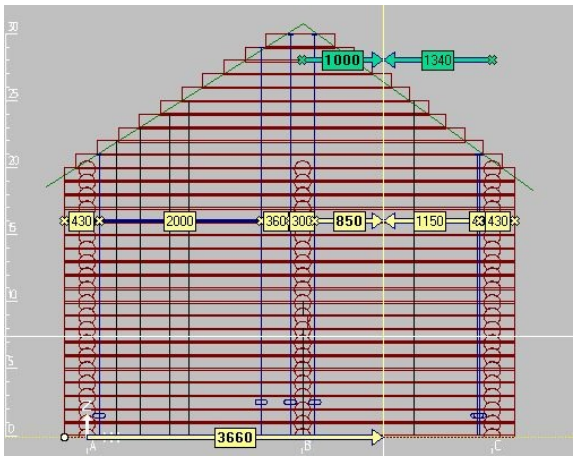
1. If you select ***House/Through bolts/Mark,*** all previously added through bolts will be deleted.
2. When adding through bolts, we recommend you to hide all walls (beams), except for the wall (beam) you will work with. This procedure is described in the **Display of House Elements** 21 chapter.

23.2 Editing Through Bolts

Only for K3-Cottage Standard and Professional Packages

Select ***House/Through bolts/Delete, Create, Copy*** and ***Modify*** to edit added through bolts or to add them manually. First, select the scene for working with through bolts, then:

- in the ***Add*** mode:
  - set parameters of the new through bolt in the **Through bolt parameters** form by selecting the ***Parameters*** line in the shortcut menu (if you do not set the parameters, the parameters of the new through bolt will coincide with the parameters of the last added through bolt);
  - select one of the elements of the shortcut menu: ***From beginning*** of the wall, ***From end*** of the wall or ***With setback*** depending on the reference point for setting a position of the new through bolt. Select log fastener, through bolt or channel as the reference point, if you have selected ***With setback*** mode.
  - specify location points for new through bolts. For this purpose, use three dimension scales displayed in the wall:



Upper scale shows distances from the new through bolt to the nearest openings or notches. **Middle scale** shows distances between all through bolts of the wall as well as distances from the new through bolt to two nearest ones. **Lower scale** shows the distance from the preliminary selected reference point (***From beginning, From end*** or ***With setback*** (see above)) to the new through bolt. Restrictions set in the ***Settings/House parameters*** 75 form are considered when adding through bolts:
  - **Min. distance from through bolt to notch** and **Min. distance from through bolt to opening** in the **Through bolts** 75 tab;
  - **Min. distance between holes** in the **Wall parameters** 71 tab;
  - Select **Finish** in the shortcut menu to finish the command;
- In the ***Modify*** mode:
  - set the new parameters of the modified through bolt in the **Through bolt parameters** form by selecting the **Parameters** line in the shortcut menu;
  - select one of the elements of the shortcut menu: ***From beginning, From end, With setback*** or ***Shift*** depending on the reference point for new location of the modified through bolt.

Select log fastener, through bolt or channel as a reference point in the ***With setback*** mode;
  – select the new location of the modified through bolts. Use dimension scales (see above);
  – click **Finish** in the shortcut menu to finish editing;
- In the ***Copy*** mode select the walls and through bolts you want to copy and the walls to which you are going to copy the through bolts;
- In the ***Delete*** mode select the through bolts you want to delete.

Note: Use the standard scenario of **Selection of geometric objects** 20 (see the **K3** documents, the **Standard Scenarios** chapter) to select objects.

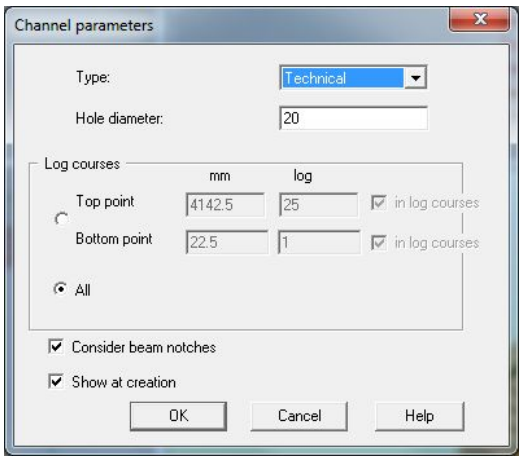
24 Adding and editing Channels

24.1 Adding Channels

ST·PF Only for K3-Cottage Standard and Professional Packages

Prior to adding channels, make sure that their display 68 is enabled. If it is disabled, the next form will appear when you try to add channels:

In order to add channels – holes in walls and beams – select ***House/Channels/Create.*** Select a wall (beam). Select ***Parameters*** in the shortcut menu to open the **Channel parameters** form:



Select a channel type from the dropdown list in the **Type** field.

Set dimension of the hole to be drilled for the channel in the **Hole diameter** field. This value will be used in the output documents.

The channel height is set by the **Log courses** group of parameters:

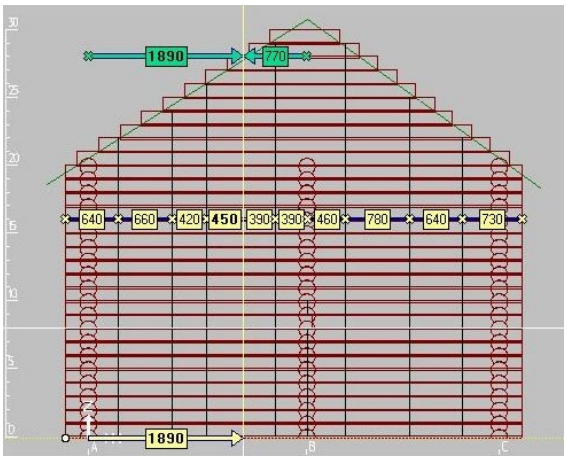
- if you select **All**, the channel will pass through all logs of the selected wall;
- If you want to drill a channel, but its height is less than the wall height, select the first line in the **Log courses** group of paramaters and set the channel beginning and end in mm or log courses in the **Top point** and **Bottom point** fields.

Check the **Consider notches of beams** parameter in order to consider the beams crossing the wall when adding channels.

Upon selection of the channel parameters, click **OK**. Then:

- select one of the elements in the shortcut menu: ***From beginning. From end*** or ***With***

setback depending on the reference point for setting a position of a new channel. Select log fastener, through bolt or channel as a reference point if you select the ***With setback*** mode. Three dimension scales will appear on the screen. They are the same as in case of editing log fasteners 164 and through bolts 168:



- set locations of new channels. For this purpose use the three dimension scales on the screen which are similar to the scales used for adding through bolts and log fasteners. They are described in the **Editing Log Fasteners** 164 or **Editing Through Bolts** 168 sections. When adding channels, the system considers the restrictions preliminary set in the ***Settings/House parameters*** 75 form:
  - In the **Channels** tab: **Min. distance from channel to notch** and **Min. distance from channel to opening**;
  - In the **Wall parameters** 71 tab: **Min. distance between holes**;
- select **Finish** in the shorcut menu to finish the command.

Note: When adding channels, we recommend you to hide all walls (beams), except for the wall (beam) you work with. This procedure is described in the **Display of House Elements** 21 section.

24.2 Editing Channels

ST·PF **Only for K3-Cottage Standard and Professional Packages**

Select ***House/Channels/Modify, Copy*** or ***Delete*** to edit existing channels. First, select a wall, then:

- In the **Modify** mode:
  - select **Parameters** in the shortcut menu and set the new parameters of the edited channels in the **Channel parameters** form, if necessary;
  - select one of the elements of the shortcut menu: ***From beginning, From end, With setback*** or ***Shift*** depending on the reference point for setting a new position of the edited channel. Select log fastener, through bolt or channel as a reference point if you select the ***With setback*** mode.
  - set the new position of the edited channel. For this purpose use the dimension scales (see the **Editing Log Fasteners** 164 or **Editing Through Bolts** 168 sections);

  – select **Finish** in the shortcut menu to finish the command;
- In the ***Copy*** mode, select the walls (beams) and channels in them you want to copy and the walls (beams) you are going to copy the channels to;
- In the ***Delete*** mode, select the channels to be deleted;

Note: Use the standard scenario of **Selection of geometric objects** 20 (see the **K3 3D modeling software** documents, the **Standard Scenarios** chapter).

25 Creating, editing and deleting boards

All boards in the program are divided into two groups depending on their location:

1. **Horizontal boards**: with the same values of the Z coordinate of beginning and end.
2. **Inclined boards**: with different values of the Z coordinate of beginning and end.

When creating a board, the program sets its beginning point automatically:

- for **horizontal boards**:
  - parallel to or close to the OX axis (at the maximum angle of 45 degrees), the point with the least X coordinate is set as the beginning;
  - parallel to or close to the OY axis (at the maximum angle of 45 degrees), the point with the least Y coordinate is set as the beginning.
- for **inclined boards**, the point with the least Z coordinate is set as the beginning.

25.1 Creating Boards

ST·PF **Only for K3-Cottage Standard and Professional Packages**

Select ***House/Board/Create*** or ***House/Board/Create board*** to create boards.

If you select ***House/Board/Create***, the board can be created by two methods:

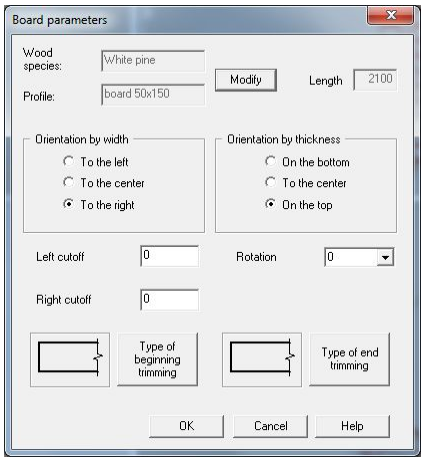
– The ***2 points*** mode for creating boards is enabled by default. Specify two final points of the board in reply to the system query. Thus, you will set a interval, which subsequently will be used as the **reference** interval. Then, select ***Finish*** in the shortcut menu (bottom-right corner of the screen). The board will be created in the plane perpendicular to the plane of current window by default; by width – to the left of the board beginning; by thickness – downward from the board beginning. The board length will be equal to the length of the reference interval.

– In order to create a board using three points, select ***3 points*** in the shortcut menu (bottom-right corner of the screen). Specify the board beginning and end in reply to the system query and then the point defining the board plane. Then, select ***Finish*** in the shortcut menu (bottom-right corner of the screen).

Such elements of the shortcut menu as ***Shift by thickness*** and ***Shift by width*** are used for the parallel shift of the board in relation to its beginning by a half of its width and thickness, respectively.

The ***Rotation*** element is used to rotate the board around the reference interval by 90 degrees.

Select the ***Parameters*** line to open the **Board parameter settings** form where you can set parameters of a new board. This form appears on the screen by default upon setting the board points:



You can set one of the materials set in the **Board material** 45 catalog of the current manufacturer in the **Material** field.

Length is an information field specifying the board length.

Parameters of the **Orientation by width** group are used to set the rules of positioning the board by width:

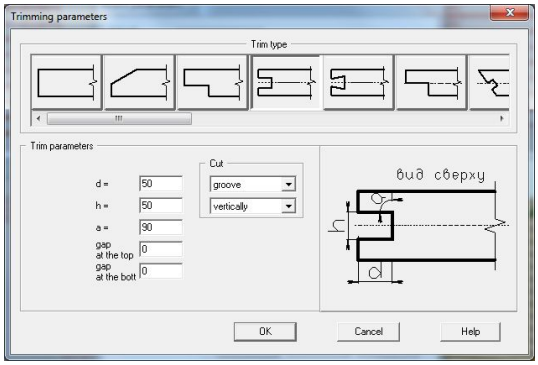
– **To the left –** a shift to the left in relation to the reference interval by a half of the board width;
– **To the center –** the reference interval passes through the center of board width, along its length;
– **To the right –** a shift to the right in relation to the reference interval by a half of the board width.

Similarly, parameters of the **Orientation by thickness** group are used to set the rules of positioning the board by thickness.

The **Left cutoff** and **Right cutoff** parameters are used to set the value of cutoff throughout the length of the board.

The **Rotation** parameter is used to set the value of board rotation around its reference interval.

In order to set the trimming type for the board beginning or end, use the **Type of beginning trimming** or **Type of end trimming** button, respectively. The next form will appear on the screen:



Select the required type of board trimming from the dropdown list in the **Trimming type** field. Available trimming types are described in detail in the **Log Parameter Editing** 157 section.

If you do not want this form to appear upon creating of each board, uncheck the **Show at**

creation.

You can create a board snapping to some interval by selecting ***House/Board/Create board.*** The interval can be a log edge, element of the roof slope contour, random interval, etc. Upon running the command, select the ***Parameters*** line in the shortcut menu and introduce changes in the form appearing on the screen, if necessary (when you use the ***Create board*** command, the form is not displayed automatically).

Then, select in the shortcut menu:

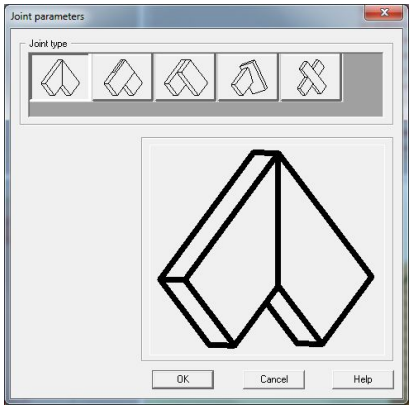
– a method of adding – ***To the top*** or ***To the bottom*** from the interval;
– a number of boards to be added – ***One board*** or ***Two boards*** (on both sides of the interval).

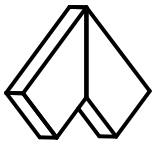
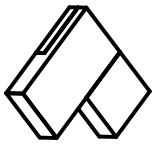
Then, select an interval for adding a board. The board (boards) will be created vertically to the top (to the bottom) from the interval. Its (their) reference interval will coincide with the selected interval. Press the **Esc** button to finish the command.

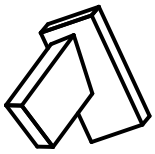
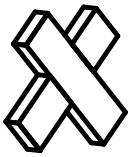
25.2 Joining Boards

ST·PF **Only for K3-Cottage Standard and Professional Packages**

To join the boards, select ***House/Board/Join.*** The **Board joint type setting** form will appear:



	**Type 1**: by bisectrix.
	**Type 2**: half log with trimming.

	**Type 3**: lapped.
	**Type 4**: trimming by plane.
	**Type 5**: half log without trimming.

The joints of **Type 1, Type 2, Type 3** and **Type 5** may be used only for the boards of the same material. Such boards should lie in parallel planes. The distance between the planes should not exceed the board thickness. If you use these types for other boards, the system will generate the following message: *Failed to make a joint due to position parameters*.

The **Type 4** joint is cutting by a random plane. The first selected board sets the plane to cut the boards.

Select one of the joints and click **OK**. The system will pull the second selected board to the plane of the first board and shorten/expand the board length to the joint line, if necessary (for **Types 1, 2** and **3**).

25.3 Editing Boards

ST·PF **Only for K3-Cottage Standard and Professional Packages**

To edit the boards, select ***House/Board/Modify*** and select the board to be modified.

You can:

- **change the board length**. In the shortcut menu, select the ***Beginning*** or ***End*** element depending on the board end to be shortened or expanded. Then, select **Length** or **Modify**:
  - The **Length** element enables changing the absolute length of the board;
  - The **Modify** element enables changing the relative length of the board;
- **change the board position** by selecting ***Shift by width, Shift by thickness, Rotation*** 173 in the shortcut menu;
- **change the board parameters** by selecting the ***Parameters*** 173 line in the shortcut menu.

You can move, copy and rotate the boards by selecting the ***K3/Conversions/Shift*** and ***K3/Conversions/Rotation*** commands. Refer to the **K3** documents to learn more about these commands.

Select ***House/Board/Delete notches*** to delete the notches from the boards, which appear upon joining and filling. You can delete all notches at once (**Many**) or on a selective basis (**Board**

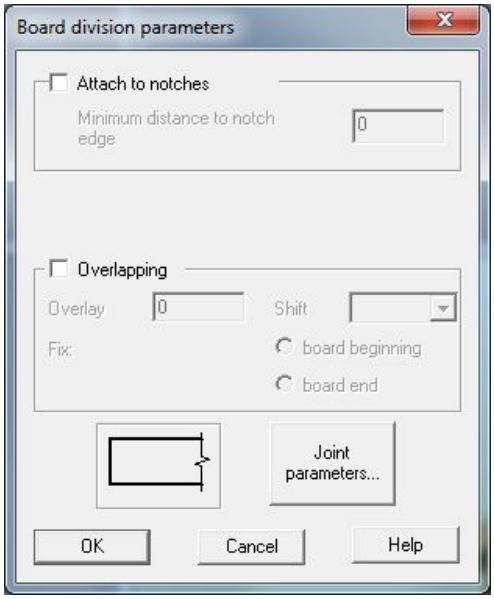
and **With search**):

– Select ***Board*** in the shortcut menu to enable selective removal of notches from one board. Upon board selection, the notches will be displayed on the screen. They will be marked with yellow crosses. If you select a notch, the cross will become white;
– Select ***With search*** in the shortcut menu to enable selective removal of notches from several boards. First, select the boards. Then, the notches will be deleted one by one from each board on a selective basis. The system will highlight the selected boards and notches in them one by one;
  – Select ***Many*** in the shortcut menu to enable automatic removal of all notches from one or several selected boards. When the mode is selected, select the required boards or use the standard scenario of object selection 20. Then, click ***Finish.***

25.4 Dividing and Uniting Boards

ST·PF Only for K3-Cottage Standard and Professional Packages

You can divide a board if its length exceeds two minimal values (see the **House parameters** form, the **Minimal board length** 76**).**
Select ***House/Board/Divide*** to divide the boards. Select ***Parameters*** in the shortcut menu and fill in the **Board division parameters** form to set parameters of board division:

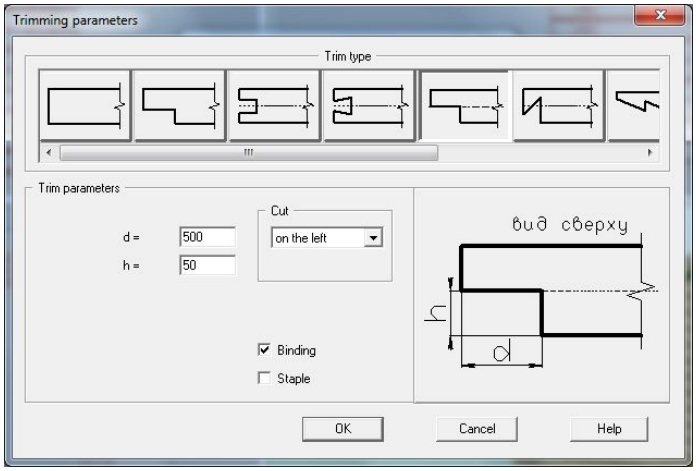


Check the **Attach to notches** field to enable adding the division points taking into account existing triangular and rectangular notches on the boards.
Minimal distance to notch edge. The distance from the edge of the notch on the board to the division point should not be less than this value.

Check the **Lapped** field to lap the boards at the division points instead of uniting them edge-to-edge. Select the **Overlay** parameter to set the value of board overlapping in millimeters. Select the **Shift** parameter to set the shift direction for one part of the divided board (near the end)

in relation to the other one (near the beginning).

Click **Joint parameters** to open the next form and to select the joint type for the divided boards:



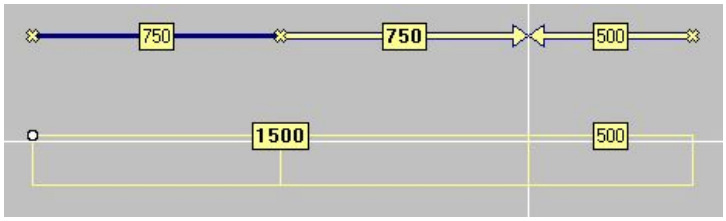
Upon selecting the joint parameters, select the command mode: ***Board, Many, With search*** or ***By sample***.

By default, the system is in ***Board*** mode: the boards are divided one by one. Select the board to be divided in reply to the system query. It will be highlighted in yellow. Specify the division point in the command line or using the mouse. Current board lengths resulted from division are displayed when selecting the division point. The length you set is in bold type. The program calculates the length of the remaining board part.

If there are notches on the board, the mouse will “stick” to them when the distance between the mouse cursor and the notches is less than the **Minimal distance to notch edge** parameter.

You can meter the length from the end or beginning of the board depending on the selected element in the shortcut menu: **End** or **Beginning.**

Click the division point to display the dimension scale.



It shows distances between the next cut point and the new board ends. Besides, the distances between the new division point and initial ends of the board are shown on the board as well.

The ***Many*** and ***With search*** modes are intended only for long boards. Length of such boards exceeds the maximum permissible value. The maximal length is set in the **House parameters** form, in the **Boards** 76 tab.

– Select ***Many*** in the shortcut menu to enable automatic division of several boards at once. The boards are divided into equal parts of maximum permissible length. When the mode is

selected, select the boards to be divided or use the standard scenario of object selection 20. Then, click ***Finish***. Set division parameters in the **Board division parameters** form and click **OK;**

– Select ***With search*** in the shortcut menu to enable consecutive division of several selected boards. The system highlights selected boards one by one and offers the user to mark division points in each board.

The ***By sample*** mode is an original combination of the ***Board*** and ***Many*** modes. In this mode, you can divide several boards at once (the boards do not need to be long) into parts of random length at the same points. This mode can be named multiple duplication of division points in one board. First, select all boards to be divided. Click ***Finish*** to confirm your selection. Then, select one of the selected boards as the "sample board" and set the division points in it in the same way as in the ***Board*** mode. Select ***Finish*** to finish the command. Prior to dividing, select the starting point – ***Beginning*** or ***End***. This mode is useful if you need to divide all flooring boards at the points where they are secured to the flooring beams.

Dividing boards By sample. Reference point of the sawcut is 1000 mm. The Beginning mode is selected for the lower boards, and the End mode is selected for the upper boards.

You cannot divide the board if its length is less than two minimal values (see the **House parameters** form, the **Minimal board length** parameter).

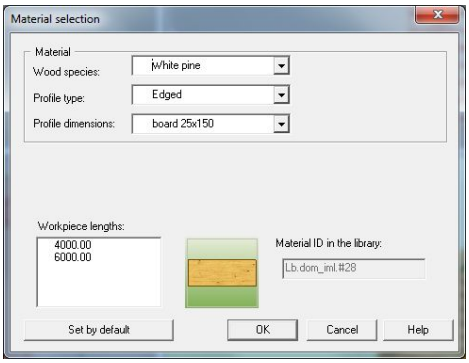
If you want to unite divided boards, select ***House/Board/Unite.*** You can use this command to unite not only divided boards, but any boards made of the same material and lying on the same straight line.

25.5 Changing Board Material

Select ***House/Board/Change material*** to change material of one or several boards in the finished project. You can save or delete the notches and trims marked on the boards. For this purpose, select the mode in the shortcut menu: ***Save notches*** or ***Delete notches*** and ***Save trims*** or ***Delete trims***.

Attention! If you select ***Save notches***, the notches will be saved only if the section of the new material has the same dimensions as the previous one. Otherwise, the notches will be deleted.

When the mode of changing the board material is selected in the shortcut menu, select the boards to change their material. The next form will appear on the screen:



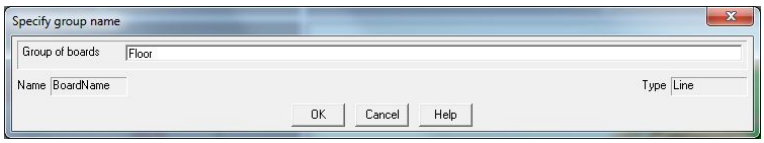
Select a new material in the fields of the **Material** parameters. You can select any material present in the **Manufacturer** 30.

25.6 Board Groups

ST·PF Only for K3-Cottage Standard and Professional Packages

You can assign group names to the boards. All boards with the same group name will be included in a separate table in the **Board Table** 231 report.
The group names assigned to all created project boards are set in the parameters of a new project using the **Group board name by default** 76 parameter. If this parameter is not set, the boards do not have a group name.

Select ***House/Board/Define group*** to change or assign a group name. Run the command and select the boards to assign a group name. Then, click **Finish** to open the next form:

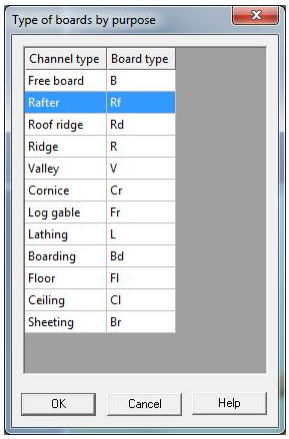


Specify a group name for the selected boards or select it from the list of existing group names. For example, all boards attributed to the **Floor** group will be included in a separate table named **Floor** in the **Board Table** 231 report.

You can assign group names to the boards when filling a plane domain or creating rafters and lathing. When you select ***House/Board/Fill in***, ***House/Roof/Create rafters*** and ***House/Roof/Create lathing***, the system offers you to set a group name in the **Specify group name** form.

25.7 Board Types

The **board type** term is used in **K3-Cottage**. Number of **types** is set in the system and you cannot change it.



You can assign one of the types to the board by selecting ***House/Board/Change type***. This type will be used in the reports containing boards. For example, only the **Rafter, Roof ridge, Ridge, Valley, Cornice, Lathing, Boarding** boards are shown in the **Rafter plan**. If there are no such boards in the project, the rafter plan will be blank. The **Prefix in the name** parameter (see the picture) contains three characters maximum. It is used to identify the boards in the drawings. You can change it, if necessary. For example, if you have assigned the **C** prefix to the **Rafter** type, the rafters will be identified as C_1, C_2, C_3, etc. in the drawing.

25.8 Filling with Boards

ST·PF **Only for K3-Cottage Standard and Professional Packages**

Select ***House/Board/Fill in*** to cover a plane domain with boards. This command is useful when you create the floor.

First, create the contours of the domain to be filled using the **K3** menu commands. There are different methods to set domains in the system. Read more in the **K3** documents.

When the contours are created, select ***House/Board/Fill in***. First, select the outer boundary of the filling domain, then select the inner boundary and click the **Finish** line. Then, you can select the following elements in the shortcut menu:

- **Parameters**. Set parameters of the future boards in the **Board parameter setting** 173 form;
- mode of trimming the boards:
- **TrimByContour** – the board length and board end trimming parameters are defined by the contour geometry;
- **TrimByParameters** – the board length is defined by the contour geometry and the end trimming parameters correspond to those specified in the **Board parameter setting** form.

Then, specify two points to set the direction. All boards of the domain will be parallel to this directing interval. A board passing through the directing interval will appear on the screen.

Note. We recommend you to use the snaps described in the **K3** documents in detail when you specify the points.

Then, you can move the board across the width or thickness using the board positioning 173

elements in the shortcut menu: **Width shift, Thickness shift** and **Rotation**. Besides, you can change the filling **step** (a distance from the beginning of one board to the beginning of the next board), if you do not want to use the step value set in the dialog window. By default, the step value offered by the system implies that the created boards adjoin closely to each other. If you need to set a distance between the boards, select **Gap** in the shortcut menu and specify its value in the dialog window.

If you do not want to fill in the whole area, but need to make a setback from each boundary of the contour, select **With setback** and specify its value in the dialog window.
When all filling parameters are set, click **Finish**. The system will offer you to set a group name for the created boards. This name will be shown in the reports 186 and object tree 21.

Click **OK** to fill in the domain as follows:

– the boards will be created on both sides starting from the first board;
– the boards will be cut taking into account the outer and inner boundaries of the domain, types of trimming the board beginning and end.

For example, you need to fill a half of the first floor with boards using the contours from the **Floor plan** report:

1. In **K3-Cottage**, select the created plan of the first floor in the **Project reports** form and click **Modify**.
2. Select ***File/Save selected*** in the **K3** geometry editor window.
3. Select ***FilterByType*** in the shortcut menu.
4. Click **Reset** in the **Filter by object type** form, select **Contour** and click **OK**.
5. Select the contours in the floor plan, click ***Finish*** to confirm your selection and specify the **Contour1floor** file name in the **Name of file for saving** form.
6. Close **K3**.
7. In **K3-Cottage**, select ***File/Add***, open the **Contour1floor** file and press **Enter**.
8. Select ***House/Board/Fill in.***
9. Select the added contours one by one in the top view and set filling parameters for each contour.

25.9 Deleting Boards

ST·PF **Only for K3-Cottage Standard and Professional Packages**

To delete a board, select ***House/Board/Delete*** and select the boards to be deleted.

You can delete individual boards or all boards at once, if they have been created using the ***House/Board/Fill in, House/Roof/Create rafters*** and ***House/Roof/Create lathing*** commands. For this purpose, select ***Fully*** or ***Partially*** in the shortcut menu:

Fully is used to select the whole object;

Note. If the objects are combined in a group, the whole group is selected, for example, the whole rafter structure of one roof slope.

Partially is used to select some objects from the group, for example, certain rafters;
If you want to delete all project boards, select **All** in the shortcut menu. Read more in the **Object Selection** 20 section.

26 Reports

26.1 Report Manager

The report manager is responsible for creating reports in **K3-Cottage**. Due to the report manager, the reports present the current state of the project. The manager uses special icons (pictograms):

– the report is created and corresponds to the current state of the project;

– the report is created, but it should be recreated as the project has been changed;

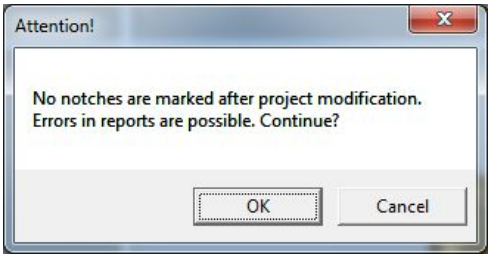
– the report has been modified manually and corresponds to the current state of the project;

– the report has been modified manually, but it should be recreated as the project has been changed;

– the report is not created.

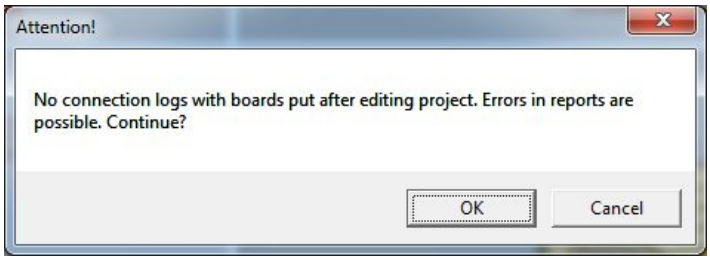
Select ***Settings/Project reports*** in the main menu or click the icon to run the report manager. Upon running this command, the project is saved automatically and the undo buffer is flushed.

Prior to creating any reports, the manager checks the project for notches. If the notches are missing or marked partially, you will see the following message:



You can click **Cancel** to cancel the operation of the report manager. Also, you can ignore this warning and continue creating the report. In this case, the notches will be shown incorrectly or will not be shown in the log drawings.

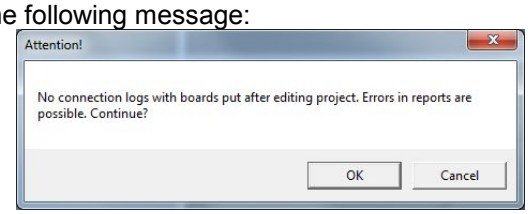
Then, the system checks whether there are the same names (including blank names) of the project walls or beams. If the system detects them, you will see the following message on the screen:



This situation may occur if the manual mode of setting names is enabled. You can click **OK** to save

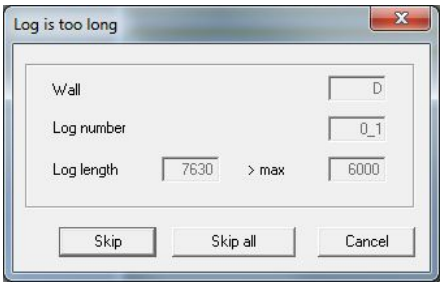
the existing names or click **Cancel** and assign other names to the walls (beams). You can click the icon to search for the walls (beams) in the scene object tree 21.

Then, the system checks whether there are connections logs with boards. If the connections are missing, you will see the following message:



You can click **Cancel** to cancel the operation of the report manager. Also, you can ignore this warning and continue creating the report.

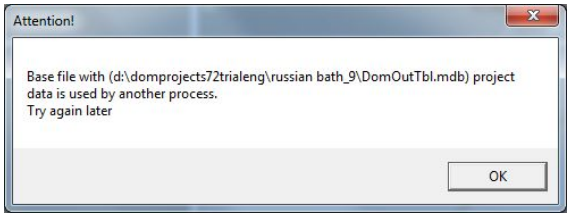
Then, the system checks whether the length of any project logs exceeds the maximum permissible value (see the **New Project Parameter Setting** 69 section). You will see the following message if there are such logs in the project:



In this case, you can:

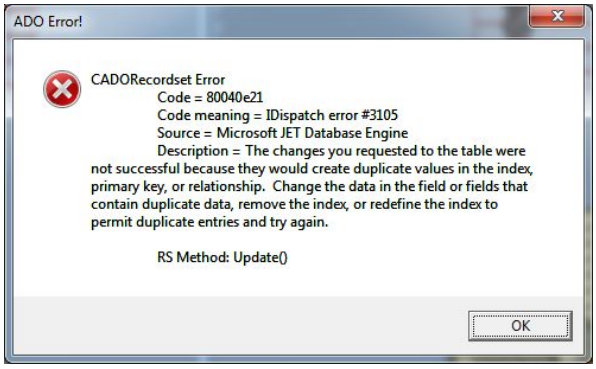
– click the **Skip all** button to skip all long logs at once;
– click the **Skip** button to skip long logs one by one; in this mode, you can view their lengths and names;
– click the **Cancel** button to cancel operation of the report manager.

Attention! When creating reports, the system takes all information from the DomOutTbl.mdb file. This file is updated every time you select the ***Settings/Project reports*** command. When running this command, the system may generate the following message:



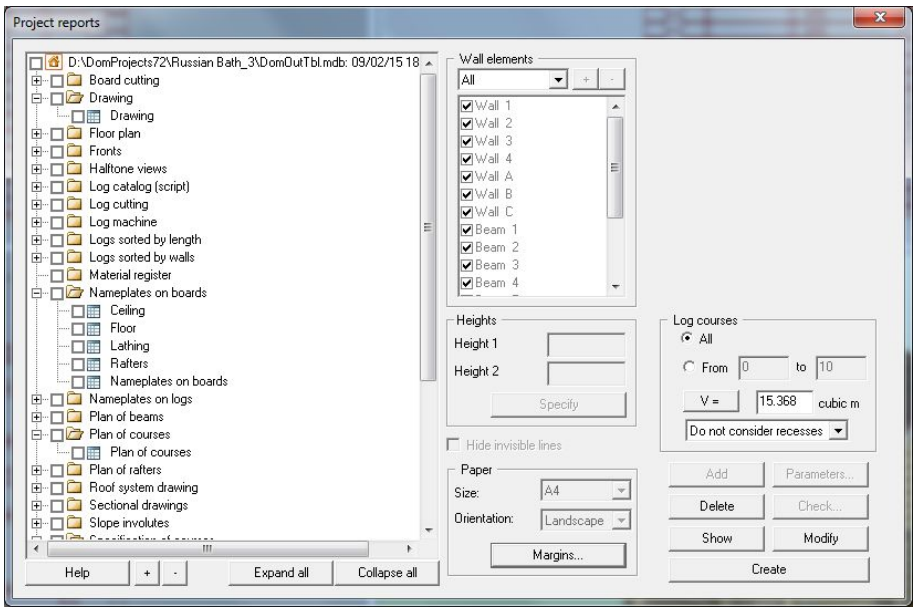
It means that some application on your PC is using the DomOutTbl.mdb file. For example, Microsoft Access can use it. Close this application and select ***Settings/Project reports*** again to continue.

Attention! If the **KSAdo** message (like the message below) appears on the screen when you run the report manager:



it means that there are some errors in the project. The created reports will be incorrect! Please, contact the Support Service of the software producer.

When all checks are completed, the **Project reports** form appears on the screen. You can make all operations with reports in this form: setting, creating, editing, viewing, deleting, etc.



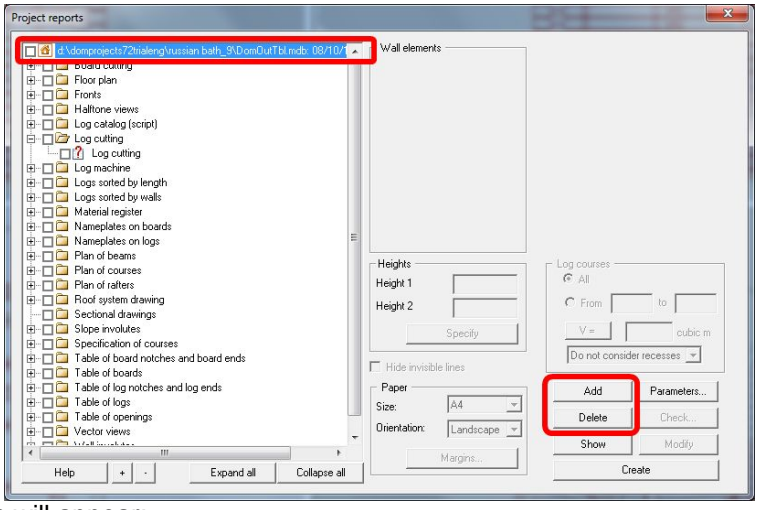
The list of folders with the projects registered 49 for the project manufacturer is in the left part of the form. Parameters of the report selected in the left part are displayed in the right part of the form. Default values of these parameters 49 are set in the project manufacturer.

Read more about parameters of each report in the sections dedicated to these reports. The procedure for setting a project, adding and deleting certain report types from the projects is

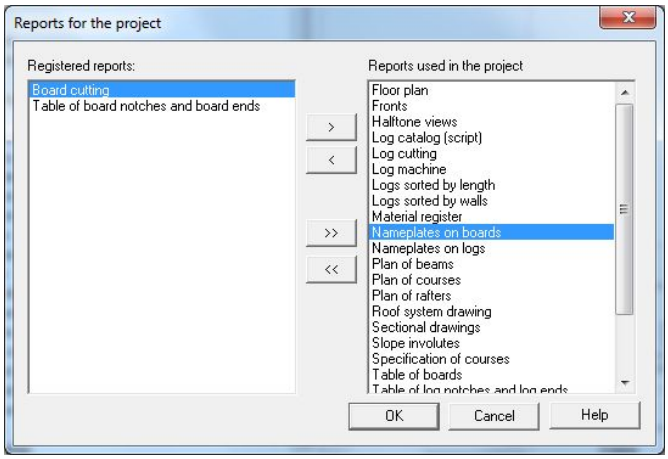
described in the **Report Setting** 186 section. The procedure for creating a report is described in the **Creating Reports** 189 section, the procedure for editing a report is described in the **Editing Reports** 195 section, and the procedure for printing reports is described in the **Viewing and Printing Reports** 189 section.

26.1.1 Report Setting

If you do not need any reports in the current project, you can hide them. If some reports are missing, you can add them. Select the upper line in the list of the **Project reports** 183 form and click **Add** or **Delete**.



The next form will appear:



Registered reports are reports registered in the manufacturer: in the **Reports** 49 catalogue.

Reports used in the project are reports created for this project.

You can create the **Reports used in the project** list using the >, <, >> and << buttons.

Attention! If you have registered a new report in the **Reports** 49 catalogue, use the **Add** or **Delete**

buttons to add this report to the **Project reports** form.

There are two report types: tables and drawings. Plans, involutes, views, fronts and sectional drawings are attributed to the drawings, and all other reports are attributed to the tables.

The number of reports in the **Wall involutes** and **Slope involutes** folders is equal to the number of project walls and slopes. It cannot be changed. The number of reports in the **Board table** and **Roof system drawing** folders cannot be changed either. It depends on the number of group names of boards and slopes in the project.

The number of reports in other folders may be random. It depends on your selection: you select the folders one by one and change the number of reports in the folder using the **Add** and **Delete** buttons.

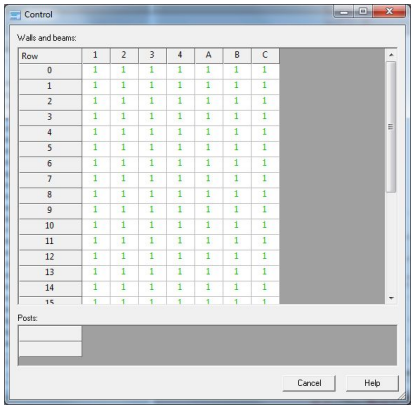
You can divide the table report into several parts. For this purpose, in the left part of the **Project reports** form, select the lines in the project folder and divide it:

– by log courses – set the required range of log courses in the **Log courses** parameters. In this case, the volume of wall material of selected log courses is calculated in the **V=** field. It can be calculated roughly – **Do not consider recesses** and accurately – **Consider recesses** (of grooves, notches and cuts);
– by walls – select **Selectively** in the upper field of the **Wall elements** parameters and select the walls.

Note. When dividing the reports by log courses, through bolts are included in the report containing the log course they start from; posts are included in the reports containing the log courses their upper points lie on; free posts are included in the report containing the log courses corresponding to their lower points. If the lower point of a free post is lower than the first log course, the post is attributed to the first log course, if it is higher than the upper log course, the post is attributed to the upper log course.

You can divide the **Plan of courses** drawing reports into several parts, but only by log courses.

Click the **Check** button to check whether the report is divided correctly. This button is available, when you select the report folder. The “1” digit should be shown in each cell of the **Control** form if the division is correct. It means that each log course or wall of the project is included in one of the parts of the divided project.

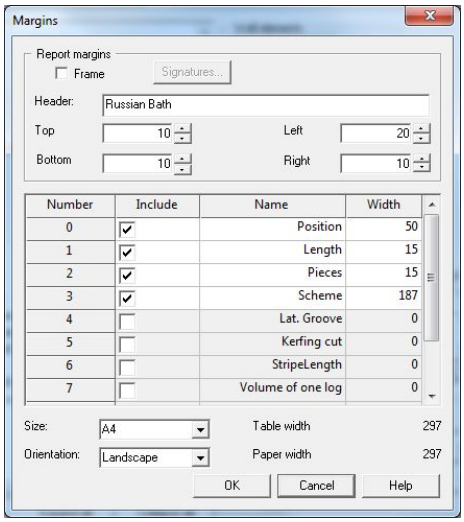


As for the drawing report, you can:

- enable hiding the internal lines by selecting **Hide invisible lines**. In this mode, for example, notches of the log end will be invisible in the **Wall involutes** report;
- select format and sheet orientation.

Each report type has its parameters. These parameters are set for the whole folder or for each report individually depending on the report type. Read more in the **Report Parameters** 197 chapter.

Now, let's speak about appearance of the reports. You can set appearance of the table reports: set the page parameters and table form. For this purpose, select a report and click the **Margins** button. The **Margins** form will appear on the screen:



Page Parameters

The text typed in the **Header** field will be shown in each page of the project. By default, it is the name of the project. You can add any text to it, for example, a batch name, log course numbers, etc.

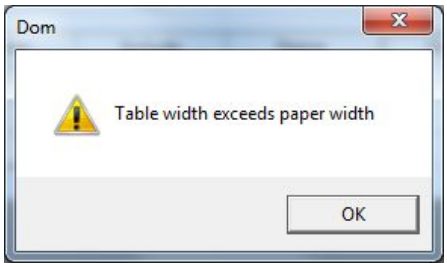
If you check the **Frame** field, the fields for setting the page header/footer and indents will be unavailable, but you can create a report with a frame and general note. Click the **Signatures** button and fill in the form on the screen to set the general note text.

Set the page size in the **Size** field: A0, A1, A2, A3, A4 or Letter. Select portrait of landscape in the **Orientation** field. The **Paper width** field is filled in automatically depending on the selected size.

Table Parameters

Check the columns to be shown in the table. You can also set the width of the table cell corresponding to the selected field. All values should be set in the units you use in the project: mm or inches. The values set in inches should be multiplied by 100.

When the cell widths are set, they are summed up automatically and displayed in the **Table width** field. The result should be less or equal to the value specified in the **Paper width** field. Otherwise, the system will not allow creating a report and you will see the following message on the screen:

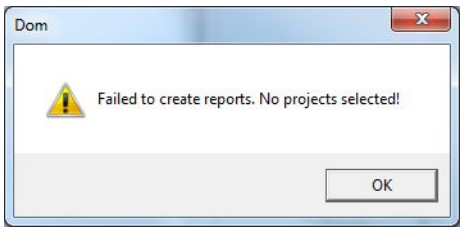


If the **Table width** is less than the **Paper width**, the extra millimeters will be added to the drawing field.

26.1.2 Creating Reports

Upon selecting the project settings and parameters, you can proceed to creating the reports. Check the reports you want to create and click **Create**. When the reports are created, the system will delete the checkmarks automatically.

Some simple methods of marking the reports to be created are described below. If you need to create one report, just select it. You do not have to check it. In this case, you should work only with the reports in the folder. If you select the folder, the system will generate the following message:



To select the reports in one folder, just check the folder. To create all reports at once, check the upper line of the list. All reports will be checked automatically.

Multiple choice is available in the report tree. For this purpose, use the **Shift** and **Ctrl** buttons. You can check the reports selected using the **Shift** and **Ctrl** buttons by pressing the “+” button. Press the “-“ button to uncheck them.

The system “remembers” the condition of the report tree: displayed and hidden reports. When you open the form again, the tree will look in the same way as it was when you closed the form.

You can preview the created reports by clicking the **Show** button. Select the reports to preview in the same way as when creating the reports.

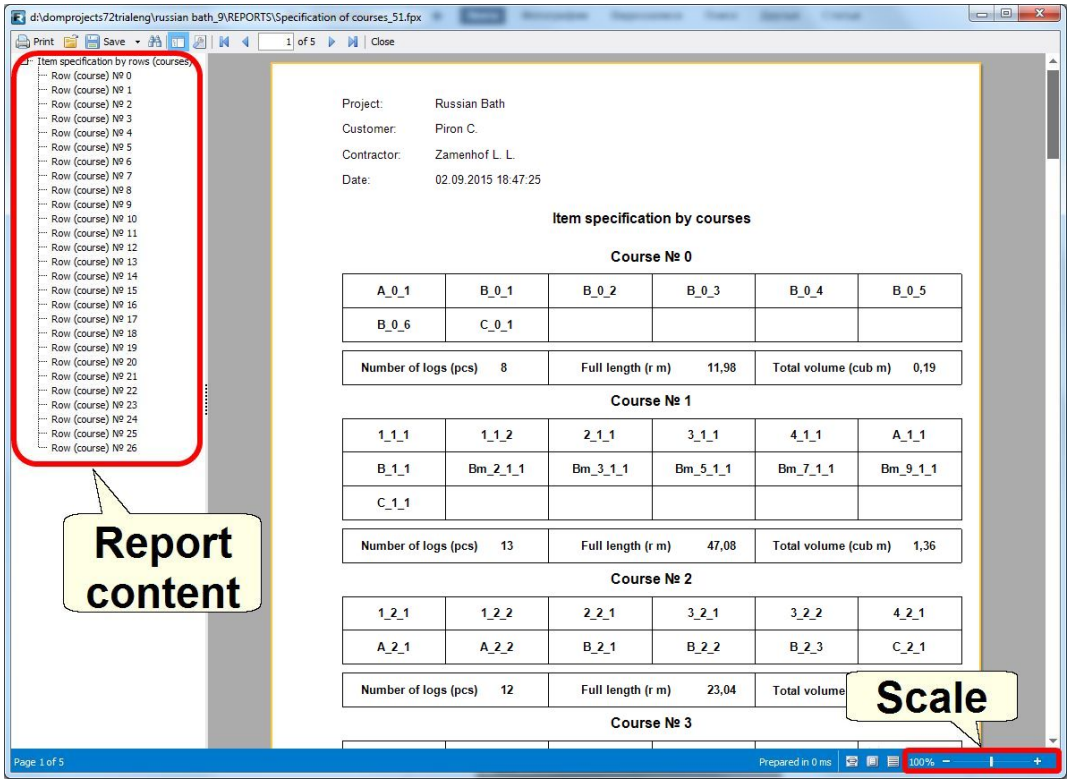
26.1.3 Previewing and Printing Reports

You can preview the created drawings and tables of the current report on the screen and print them.

Note. At least one printer driver should be installed on the PC for correct display of the table reports on the screen.

Previewing and Printing the Table Reports

You can preview the table reports in the **Preview** window. You can set the parameters of report display in this window: move, zoom in/out, scroll, etc. Use the buttons of the toolbar:



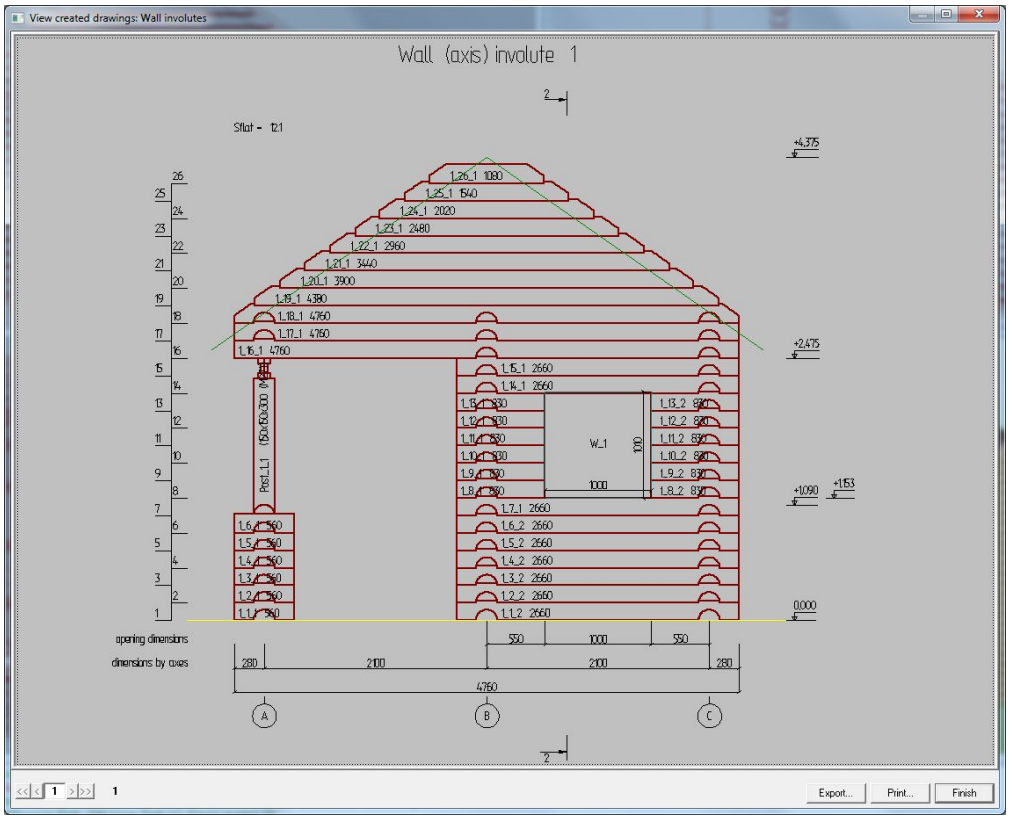
Use the button to find any text in the reports. For example, you can find the log with a certain name.

The **Preview** window allows only previewing the report. You cannot modify the report in this window. But you can convert the report into any format offered by the system using the Save export button and introduce changes in it.

If there is no need to modify the tables, you can print them by clicking the Print button. Set the printing parameters in the next window and click **OK.**

Previewing and Printing the Drawing Reports

You can preview the drawing reports in the **View create drawings** window. You will see the created drawings in this window:



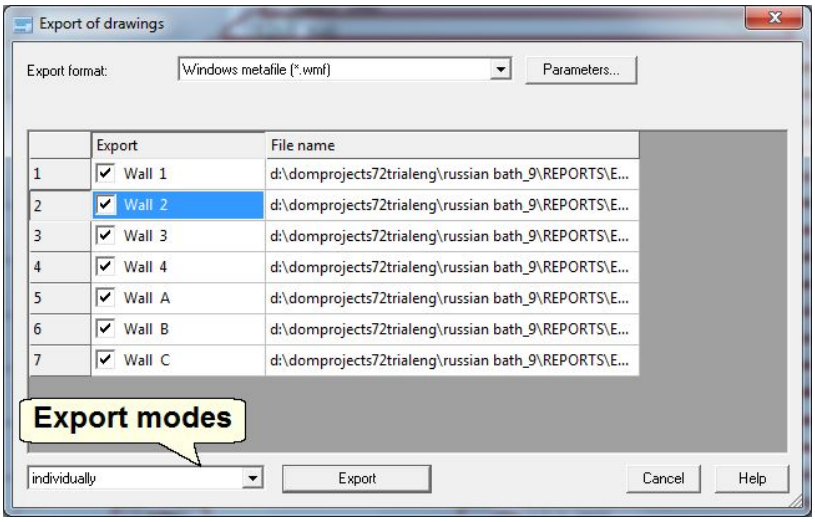
Example: the Wall Involutes report

The **View created drawings** window allows only previewing the drawings. You cannot modify the drawings in this window. For this purpose, click the **Modify** button in the **Project reports** 183 form.

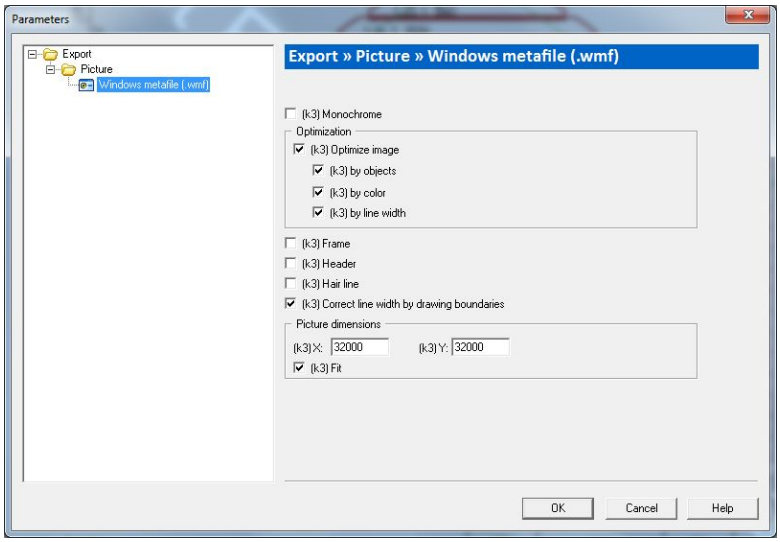
In the **View created drawings** window, you can:

- move the image in any direction. Trap the drawing by the mouse cursor and drag it together with cursor in any direction;
- make dynamic scaling of the image. Put the mouse cursor to any drawing fragment and rotate the mouse wheel to zoom in or to zoom out the image;
- fit the image to the viewport. For this purpose, double-click the drawing.

Click the **Export** button to save the drawing in one of the formats offered by the system: wmf, bmp, gif, pdf, etc. Select a format in the **Export format** field in the **Drawing export** form. Then, select a mode in the **Export modes** field and put checkmarks, if necessary. The export modes are similar to the print modes described below.



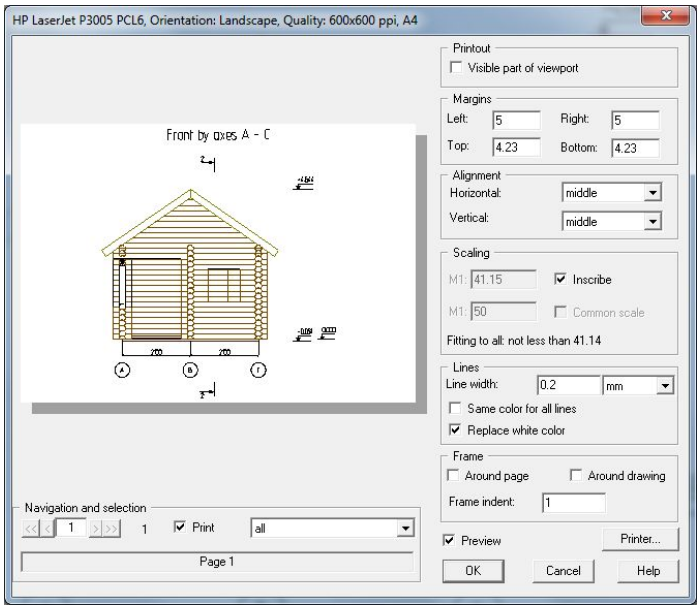
You can set the export parameters by clicking the **Parameters** button:



Example of the form for setting parameters of export into the bitmap format

The *.pdf file created when exporting may be multi-page. Therefore, if you have ten wall involutes and click the **Export** button, you will create one *.pdf file. Each page of the file will contain one of the exported involutes. This option is convenient for sending the documents to you customers for approval by e-mail.

If there is no need to modify the drawings, you can print them by clicking the **Print** button in the **View created drawings** window. The preview form will appear on the screen:



The form title will contain information about the printer used to print the drawings: printer name, paper orientation (portrait or landscape) and print quality. If you want to use another printer or to modify the print parameters, click the **Printer…** button and make your choice. Check the **Preview** field to show the preview form.

The **print area** is shown in the left part of the form. Here, you can see how the printed pages will look like taking into account your settings, if the ***Preview*** element is enabled.

Use the buttons on the left and on the right of the **navigation field** to view other pages of the reports.

The range of pages to be printed is set in the **print modes** field (see the picture above). The **All** mode is set by default: all report pages are printed. The print modes are described in detail in the table below:

Mode	Purpose
All	Print all report pages. When you select this mode, all pages in the **Print** field are checked automatically.
Individually	Print only the pages, which are checked in the **Print** field.
Neither	Do not print any page of the report. When you select this mode, all pages will be unchecked in the **Print** field.
To current	Print the pages from the first one to the current one, i.e. the page shown on the screen at the moment.
From current	Print all pages from the current one to the last one.

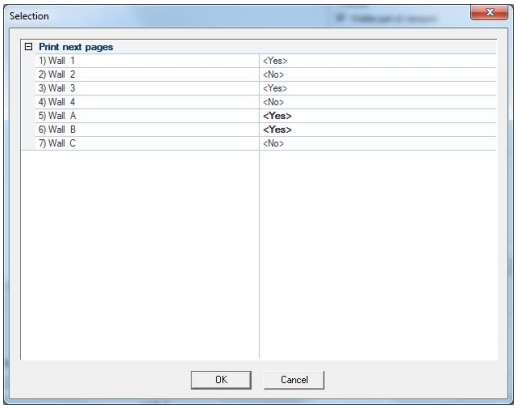
Current	Print only one page shown on the screen at the moment.
Except for current	Print all pages, except for the current one.
One-page	Print only the pages, which fit to one page in the set scale.
Selectively	The pages are printed, if **Yes** is specified in front of them in the **Selection** form. The **Selection** form appears upon clicking the **Selectively** line.

The controls used to change the print parameters are in the right part of the **View created drawings** window.

If you check the **Visible part of viewport** field, only the drawing part visible in the **print area** will be printed instead of the whole drawing.

Enter values in the **Left, Right, Top, Bottom** fields in the **Margins** parameters to set the margins of the image. You can align the drawing in the page using the **Alignment** parameters.

The **Scaling** elements are used to scale the drawing. The default mote is the **Fit** mode. In this mode, the system calculates the scale of each page automatically to fit the whole drawing to the set paper size with the set margins. If the **Fit** mode is disabled, you can set a common scale for all pages by checking the **Common scale** field. The system will calculate the common scale automatically to fit all drawings to the set paper size. If both the modes described above are disabled, you can set any scale in the remaining available field. But in this case, the system will not fit the drawing to the set paper size. To check correspondence of the drawing and paper size, select the **Selectively** line in the **print modes** field.



Let's consider other elements of the **View created drawing** window. The **Lines** elements are used to set display of lines.

In the **Line width** field, you can set line width for objects with zero value of this parameter. Other objects will be printed with their set line width. You can set line width in any measurement units.

The **Same color for all lines** sets whether the color is used when printing the image. If this element is not selected, color is replaced with gray shades for monochrome printers.

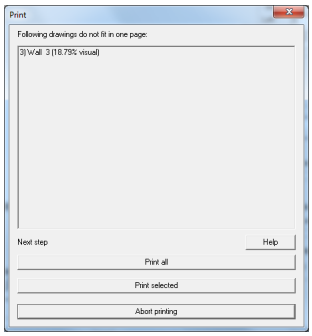
The **Replace white color** field is used to set whether white lines of the image should be

replaced with light-gray lines. Otherwise, such lines will be invisible on white paper.

If you select **Around page** or **Around drawing** in the **Frame** parameter group, one or two frames will be added to the picture, respectively. The frame indent from the drawing is set in the **Frame indent** field. You can set this parameter to place all drawing notes inside the frame.

Note. Press the **Tab** button to view the changes in the drawing.

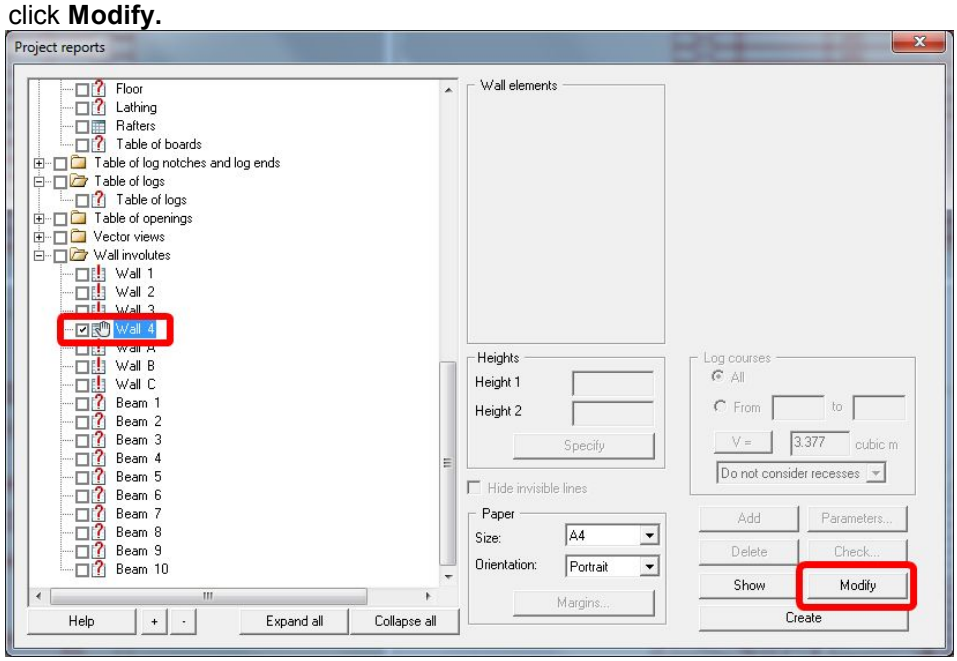
Upon setting the print parameters, click **OK**. The information about the drawings unfitting to the page size and respective values will appear on the screen:



You can cancel printing, print all drawings or print only 100 % visible drawings.

26.1.4 Editing Reports

You can modify any created report manually. For this purpose, select it in the **Project reports** 183 form and click **Modify.**



The **K3** geometry editor is used to edit the *drawing reports*. You can introduce the necessary changes using the **K3** menu elements.

You can add notes, necessary lines, change text or size of existing text, etc. in the editor. Read more about the **K3** geometry editor and its settings in the **K3** documents.

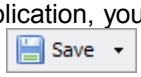
To mark additional dimensions in the drawing, use the  icons. First, specify one or several points for measurement and, then, position of the note. Click the  icon to add necessary height marks. There are three types of them, depending on the drawing type: **Wall involute, Roof plan** and **Front**. Upon selection of the icon, you should specify the mark type used in that drawing:

Then, specify the point to be measured and the point where the mark will be located. Then, if the drawing type is **Wall involute** or **Front**, you can specify some more points to be measured and the marks will appear on the preselected vertical line (or move automatically at a set distance, if one mark overlaps another one). To add the next height mark in other place, for example, in the opposite side of the drawing, you should run the command again. If the drawing type is **Roof plan**, you have to specify the place of the height mark again every time.

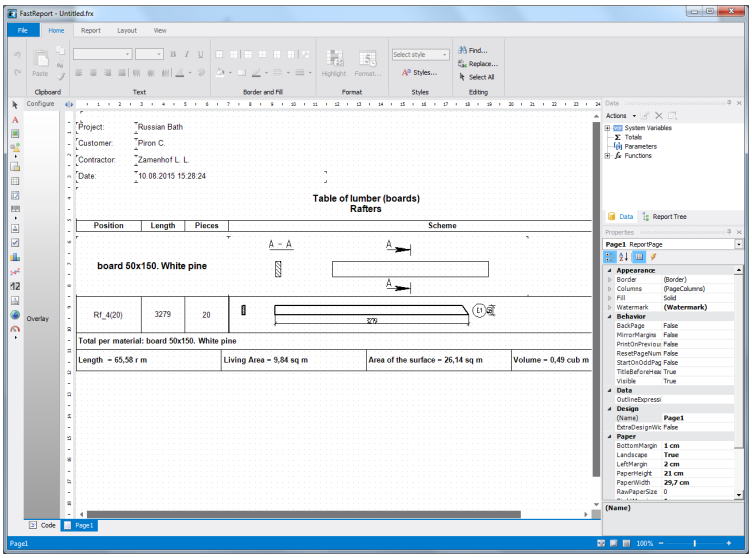
If you want to recreate the report modified manually, upon clicking the **Create** button, the following message will appear on the screen:

Click **Yes** to recreate the report or **No** to cancel the command. To recreate all modified reports, click **Yes, for all**. To cancel the command, click **No, for all**.

As for the **Log course plan**, when editing this report, you will see a log course plan in the **K3** window. This plan will not look like the plan you have seen in the preview form. The reason is that the plans of all log courses are displayed simultaneously on the screen. The drawings are located one under another. One layer corresponds to one log course. You can leave one layer visible and hide all other layers. Operations with layers are described in detail in the **K3** documents.

As for the table reports, click the **Modify** button to run the **FastReport** application. In this application, you can preview the report and save it in the formats offered by the system by clicking the 

export button. If you need to modify the report, select the pages to be modified one by one and click the  button. Selected pages will be opened in the edit window. You can change dimensions and position of pictures, correct, delete or add a text.



Attention! If you change length of any log, other data (including, total length) **will not** be recalculated!

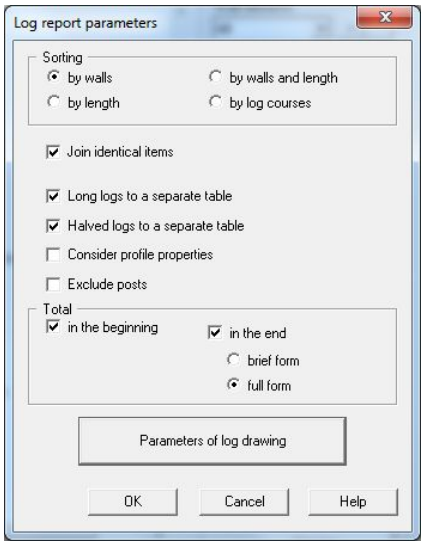
All edited reports are marked with the icon in the report form.

26.1.5 Report Parameters

Each report folder has its form. In this form, you can set parameters for all folder reports: dimensions shown in the drawing, colors, line width, etc. To open this form, select the folder of the report in the left part of the **Project reports** 183 form and click **Parameters**.
You should set the parameters for each report instead of the whole folder for such reports as **Vector views, Halftone views, Cuts, Table of notches and log ends, Table of notches and board ends** and **Drawing**. For this purpose, select the report in the folder and click **Parameters.**

26.1.5.1 Table of Logs

The **Table of logs** report is the **Wall element specification** table containing a list of all project logs grouped in a certain manner. There is name, length and detail drawing for each log.
Prior to setting the report parameters, decide whether your report should include all project walls and log courses or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the walls and log courses to be included in the log table in the right part of the form.
Then, select the report folder and click **Parameters**. The **Parameters of log report** form will appear:



You can set the order of logs in the table in the **Sorting** parameter group:

By walls – all project logs will be grouped by walls and in each wall the logs will be grouped in log ascending order;

By length – all project logs will be sorted by materials and in each material they will be sorted in length descending order;

By walls and length – all project logs will be grouped by walls and in each wall they will be grouped in length descending order;

By log courses – all project logs will be grouped by materials and in each material, they will be grouped in log course ascending order.

Only sorting by length and log courses is available for the logs with the **By unique number** 79 numbering type.

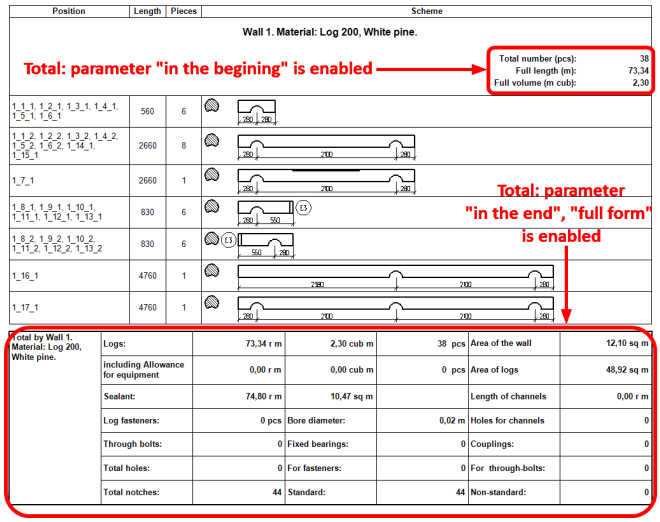
The log table can be created in two modes: with adding similar logs to one line of the table or without joining such logs in one line. The **Join identical items** parameter is used for this purpose. If sorting **by walls** is selected, the logs with identical parameters are searched within one wall. If sorting by wall is disabled, all project logs will be sorted by material in length descending order.

Check **Long logs to a separate table** and **Halved logs to a separate table** to enable creating separate tables for long logs and halved logs, respectively. In this case, such logs will not be included in the **Wall element specification** table created by walls or materials.

If you check the **Consider profile properties** parameter, the logs with profile properties, including long logs and halved logs, will be included in separate tables. The number of tables will correspond to the number of properties.

The **Exclude posts** parameter is used to include or exclude the post drawings from the report.

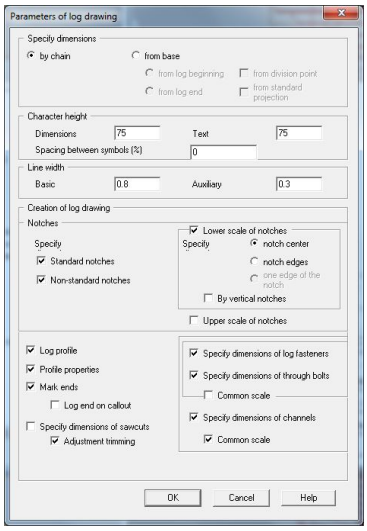
Position and appearance of the total data and calculation of the materials used in the project are set in the **Total** parameter group.



Position	Length	Pieces	Scheme
Wall 1. Material: Log 200, White pine.			
1_1_1, 1_2_1, 1_3_1, 1_4_1, 1_5_1, 1_6_1	560	6	
1_1_2, 1_2_2, 1_3_2, 1_4_2, 1_5_2, 1_6_2, 1_14_1, 1_15_1	2660	8	
1_7_1	2660	1	
1_8_1, 1_9_1, 1_10_1, 1_11_1, 1_12_1, 1_13_1	830	6	
1_8_2, 1_9_2, 1_10_2, 1_11_2, 1_12_2, 1_13_2	830	6	
1_16_1	4760	1	
1_17_1	4760	1	

Total by Wall 1. Material: Log 200, White pine.						
	Logs:	73,34 r m	2,30 cub m	38 pcs	Area of the wall	12,10 sq m
	including Allowance for equipment	0,00 r m	0,00 cub m	0 pcs	Area of logs	48,92 sq m
	Sealant:	74,80 r m	10,47 sq m		Length of channels	0,00 r m
	Log fasteners:	0 pcs	Bore diameter:	0,02 m	Holes for channels	0
	Through bolts:	0	Fixed bearings:	0	Couplings:	0
	Total holes:	0	For fasteners:	0	For through-bolts:	0
	Total notches:	44	Standard:	44	Non-standard:	0

Having set the report parameters, click **Drawing parameters** and set the log drawings.



Dimensions in the log drawing can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the log end to consider as the base. The **From division point** parameter changes the base on the logs having only one division point. If a notch on the log is located at the distance of the wall projection, you can mark dimensions on such logs from the log end by enabling the **From standard projection** parameter.

Height of the dimension characters and text notes is set in the **Character height** parameter group taking into account actual dimensions of the logs. For example, if diameter of the project log is 200 mm and the character height is set 75 mm, the height of the characters in the drawing will be equal to about one third of the log height.

Making log drawing

The **Standard notches** and **Non-standard notches** parameters are used to show/hide dimensions of respective notches in the project. For example, if you uncheck the **Standard notches** parameter, dimensions of standard notches will not be shown in the drawings.
Check the **Lower scale of notches** or **Upper scale of notches** field to add the respective chain of notch sizes. The lower notch scale is created in accordance with the selected mode of dimension setting: **in chain** or **from base.** Dimensions of the upper scale will be marked as follows: in case of the lower scale – from base, in case of the upper scale – in chain and vice versa. The **Notch center** and **Notch edges** in the **Lower scale of notches** parameter group is available only for rectangular notches.

Check the **Log profile** field to display the log profile in the drawing.

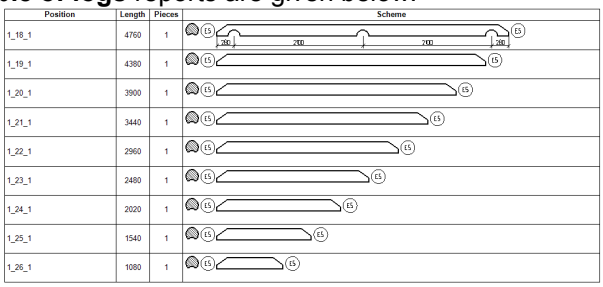
The **Profile properties** parameter is used to set notes on the log drawing defining the log properties: without a compensatory groove or longitudinal groove, a half-log or a whole log, etc.
You can check the **Mark log ends** parameter to display the LE1, LE2 and other markers near the log ends in the drawing. Using these markers, you can find the drawings for each type of the log end in the project in the **Table of notches and log ends** 201 report. You can use the **Log end on callout** parameter to place the markers at a distance (on callout) from the log ends, but not near them.

If you enable the **Specify sawcut dimensions** parameter, the sawcuts and their dimensions (position and depth) will be shown in the drawings. If you disable this parameter, you can select the **Adjustment cutting** mode. In this mode, the sawcuts are marked in the drawing with a dashed line, but the dimensions will not be specified. If you disable both the parameters, the sawcuts will not be shown.

Check **Specify dimensions of log fasteners, Specify dimensions o through bolts** or **Specify dimensions of channels** to show dimensions of the log fasteners, through bolts and channels in the drawings. The unchecked log fasteners, through bolts or channels will not be shown in the drawing.

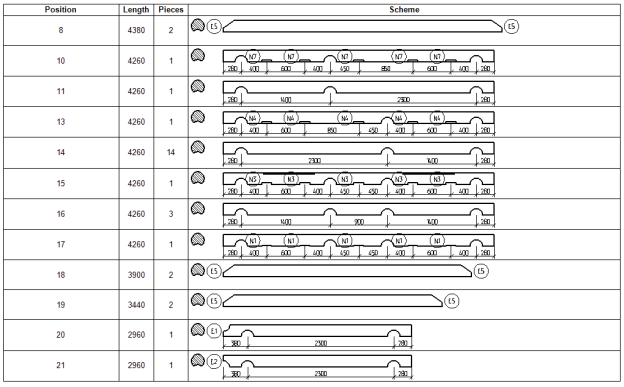
Note. Parameters of specifying dimensions are available only if the respective elements are included in the **Indices of log uniqueness** in the **Repots** 78 tab. It means that the checkmarks here should not be in conflict with the checkmarks there. For example, if the **Common scale** is enabled for all parameters in the house parameters, you cannot switch to the **Common scale** only for through bolts and log fasteners. For this purpose, you have to open the **House parameters** form and enable the **Common scale** parameter.

Examples of the **Table of logs** reports are given below:



Position	Length	Pieces	Scheme
1_18_1	4760	1	
1_19_1	4380	1	
1_20_1	3900	1	
1_21_1	3440	1	
1_22_1	2960	1	
1_23_1	2480	1	
1_24_1	2020	1	
1_25_1	1540	1	
1_26_1	1080	1	

A page of the Table of logs report for numbering By location 78



Position	Length	Pieces	Scheme
8	4380	2	
10	4260	1	
11	4260	1	
13	4260	1	
14	4260	14	
15	4260	1	
16	4260	3	
17	4260	1	
18	3900	2	
19	3440	2	
20	2960	1	
21	2960	1	

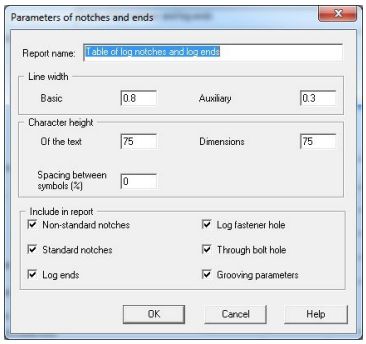
A page of the Table of logs report for numbering *By unique number* 79

26.1.5.2 Table of Log Notches and Log Ends

The **Table of log notches and log ends** report is a table containing the notch and log end drawings similar to the drawings of the project logs, including drawings of all standard project notches. Remember that the standard notch is a notch at the cross point of two logs made of the same material, with a shift of log courses. This notch is cut through at the angle of 90 degrees.

All other reports containing marked log ends and notches refer to the **Table of log notches and log ends** report.

The **Table of log notches and log ends** can contain several reports for one project, for example, one report for the notches and one report for the log ends. You can add them to the folder by clicking the **Add** button. You can select a set of parameter values for each report. For this purpose select a report in the folder and click **Parameters** to open the next form:



Set the line width and character height for the drawing.

Check the elements in the **Include in report** group, if you want to include their drawings in the table:

Non-standard notches are all notches which differ from the standard ones;

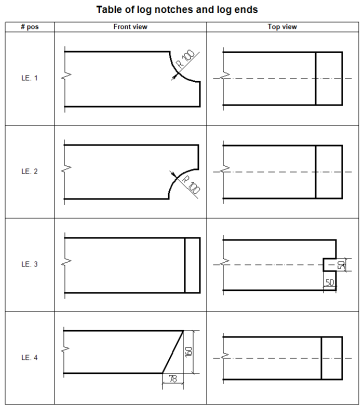
Standard notches are all standard notches. Remember that the standard notch is a notch at the cross point of two logs made of the same material, with a shift of log courses. This notch is cut through at an angle of 90 degrees.

Log ends line presents are all log ends;

Log fastener hole line presents parameters of a hole for log fasteners;

Through bolt hole line presents parameters of a hole for through bolts;

Grooving parameters line presents parameters of the platband flat.

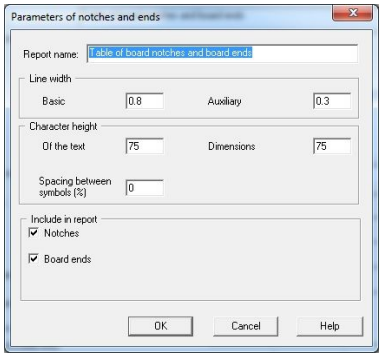


A fragment of the Table of log notches and log ends report

26.1.5.3 Table of Board Notches and Board Ends

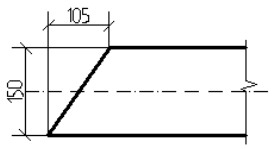
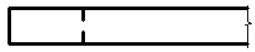
The **Table of board notches and board ends** report is a table containing detail drawings of all notches and ends of the project boards. All other drawings containing marked board ends and notches refer to this report.

The **Table of board notches and board ends** can contain several reports for one project, for example, one report for the notches and one report for the board ends. You can add them to the folder by clicking the **Add** button. You can select a set of parameter values for each report. For this purpose select a report in the folder and click **Parameters** to open the next form:



Fill in the form and click **OK.**

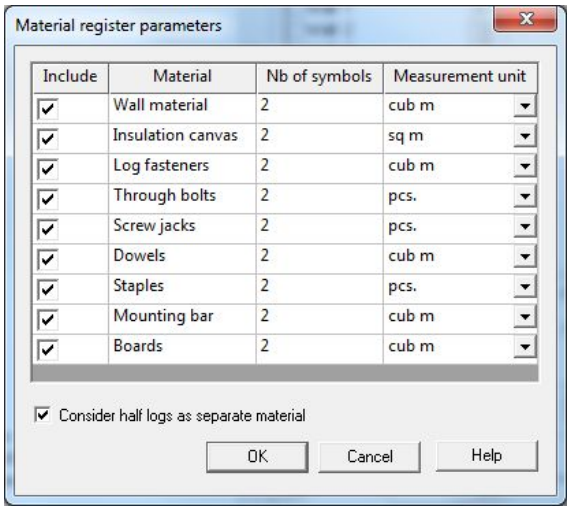
Table of notches and board ends

# pos	Top view	Front view
LE. 1		

A fragment of the Table of board notches and board ends report

26.1.5.4 Material Register

The **Material register** report is a table containing a list of the materials used in the project and their quantity.
Prior to setting the report parameters, decide whether your report should cover the whole project or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 183 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the walls and log courses to be included in it as well as the beams and boards.
Then, select the report folder and click **Parameters**. The **Material register parameters** form will appear:



Check the material to be included in the register. Select the measurement units and set the accuracy of material calculation in the following columns. The wall material is calculated with or without regard to the notches in the house logs depending on the mode selected in the **Project reports** 183 form.

Russian Bath

Project: Russian Bath
Customer: Piron C.
Contractor: Zamenhof L. L.
Date: 01.09.2015 16:40:56

Material register

pos nb	Name	Measurement unit	Number	Cost	Note
1	Wall material Log 200, White pine	cub m	14,11	87 116,67	
2	Wall material. Upper half-logs. Log 200, White pine	cub m	0,19	2 324,12	
3	Wall material Stand 160x160, White pine	cub m	1,07	20 889,00	
4	Insulation canvas	sq m	65,95	0,00	
5	Screw jacks 150x150x300 (M27)	pcs.	1	7,00	
6	Bar 50X50	cub m	0,03	0,00	
7	board 50x150, White pine	cub m	2,93	20 283,12	

Now, let's speak about each material of the register and the methods used to calculate material quantity.

Wall material is a round or square log used to construct walls and beams.

Measurement units: *cubic meters* or *linear meters.*
Arithmetic formula:
Without notches:
Material cubage = Total cubage of all house logs
Cubage of one log = Round (square) log section area x Round (square) log length
In case of the round log, the section area is equal to the circle area.
In case of the square and Swedish cope square logs, the section area is equal to the product of section height by width.
With notches:
Material cubage = Total cubage of all house logs – Total cubage of all log notches

Jute is a sealant laid between logs.

Measurement units: *square meters* or *linear meters.*
Arithmetic formula:
Jute area = Jute length x Jute width
Jute length = Log length (with notches) x Number of logs
Jute width is the value specified in the **Profiles** 35 catalog.

Bar is material for log fasteners and mounting bars.

Measurement units: *cubic meters*
Arithmetic formula:
Cubage of log fasteners = Cubage of one log fastener x Number of log fasteners
If the log fastener is square, then
Cubage of one log fastener = **X** x **Y** x **Z**, where **X** and **Y** are length and width of the log fastener section; **Z** is length of one standard (short) log fastener. Values of these parameters are the values specified in the **Log fasteners** 42 catalog.
If the log fastener is round, then
Cubage of one log fastener = (3.14 x $\mathbf{X}^2$ / 4) x **Z**, where **X** is diameter of the log fastener section; **Z** is length of one standard (short) log fastener. Values of these parameters are the values specified in the **Log fasteners** catalog.

Notch area = **Notch depth** x **Notch width**, where the **Notch depth** and **Notch width** parameters are the parameters specified in the **Log end type settings** form. You can open this form by clicking the **For straight log end** button in the **Opening parameters** 111 form.

Opening height is equal to the h parameter value with account of log course integrity specified in the **Opening parameters** form.

Cubage of mounting bar = Notch area x Opening height in m (only whole log courses are taken into account).

Quantity of through bolts, Quantity of fixed bearings, Quantity of threaded couplings are the parts of an assembled through bolt.

Measurement units: pieces

Arithmetic formula:

Quantity of though bolts = Quantity of standard through bolts used to make assembled through bolts in the entire house

Length of the standard through bolt is set in the **House parameters** form, the **Through bolts** tab, the **Length** 75 field.

Length of the assembled through bolt = Length of the tightened element (for example, wall height) x Sealant strip shrinkage, %

Quantity of the standard through bolts required for one assembled through bolt = Length of the assembled through bolt rounded up to the value multiple of the half standard through bolt length / Length of the standard through bolt

$$\textbf{Quantity of the standard through bolts required for one assembled through bolt} = \frac{\text{Length of the assembled through bolt rounded up to the value multiple of the half standard through bolt length}}{\text{Length of the standard through bolt}}$$

Example. Assume that length of the assembled through bolt is 2300 mm and length of the standard through bolt is 1000 mm. Then, quantity of the standard through bolts required for one assembled through bolt is calculated as follows: length of the assembled through bolt is rounded up to 2500 mm (up to the value multiple of the half standard through bolt length equal to 500 mm) and divided by length of the standard through bolt equal to 1000 mm. The result is 2.5 standard through bolts.

Quantity of fixed bearings = Quantity of the assembled through bolts

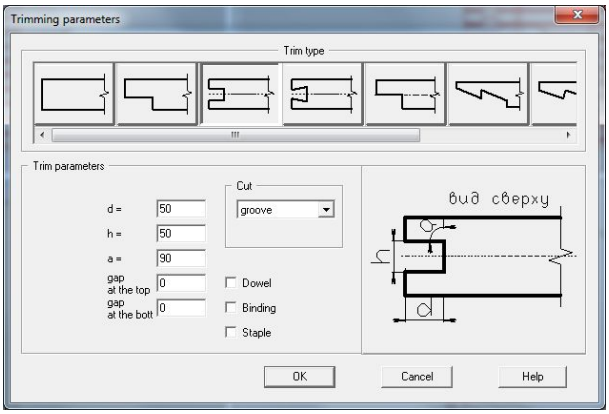
Quantity of threaded couplings = Quantity of the threaded couplings joining the standard through bolts into the assembled ones in the whole house

Calculation of quantity of the threaded couplings for one assembled through bolt is given in the example below. Assume that the assembled through bolt consists of three standard through bolts and the value of the **Quantity of threaded couplings** parameter (see the **House Parameter Settings** 75 section) is equal to 1. Then, quantity of the threaded couplings required for one assembled through bolt is equal to the number of joints multiplied by the value of the **Quantity of threaded couplings** parameter: (3 – 1) x 1 = 2.

Staples are the staples used to fasten divided logs.

Measurement units: pieces
Arithmetic formula:
Quantity of staples = Quantity of log division points

Staples are added to the project by selecting ***Log/Divide***, if you check the **Staple** parameter in the **Trim parameter setting** 154 form:



Dowels is dowel material.

Measurement units: cubic meters

A dowel is a plug used to fill in a notch in the log. This notch appears at the log division point.

The dowels are added to the project if the following parameters are set in the **Log joint type** form (see above):

- the **Trim type** paramater value is **Straight tenon**;
- the **Cut** parameter value is **Notch**;
- the **Dowel** field is checked.

Arithmetic formula:
Cubage of dowels = Cubage of a dowel x Quantity of dowels in the project

Cubage of a dowel = 2 x Notch depth x Notch width x Log course height, where the **Notch depth** and **Notch width** parameters are the values specified in the **Log joint type** form (see above).

Boards is the material used to construct floor, ceiling, rafters and lathing.

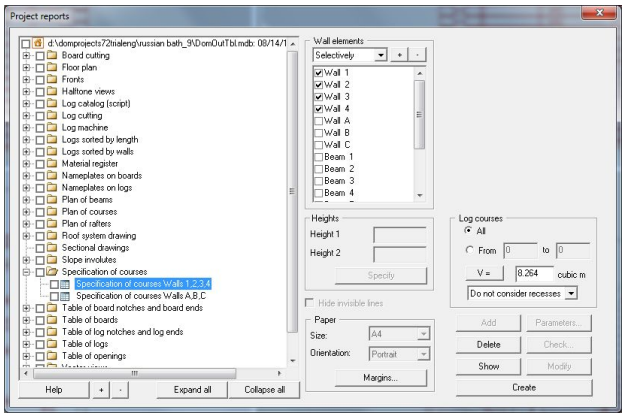
Measurement units: *cubic meters, square meters* or *linear meters*.
Arithmetic formula:
Without notches:
Material cubage = Cubage of all house boards
Cubage of one board = Area of board section x Board length
With notches:
Material cubage = Cubage of all house boards – Cubage of all notches on the boards

26.1.5.5 Specification of Courses

The **Specification of courses** report is a document containing a list of all log courses of the log house. Names of the logs in the log course, their quantity, total length and cubage are specified for each log course.

Prior to setting the report parameters, decide whether your report should include all project walls

and log courses or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the walls and log courses to be included in the register in the right part of the form:



Project: Russian Bath
Customer: Piron C.
Contractor: Zamenhof L. L.
Date: 31.08.2015 18:00:47

Item specification by rows (courses)

Row (course) № 0

A_0_1	B_0_1	B_0_2	B_0_3	B_0_4	B_0_5
B_0_6	C_0_1				

Number of logs (pcs)	8	Full length (r m)	11,98	Full volume (cub m)	0,19

Row (course) № 1

1_1_1	1_1_2	2_1_1	3_1_1	4_1_1	A_1_1
B_1_1	Bm_2_1_1	Bm_3_1_1	Bm_5_1_1	Bm_7_1_1	Bm_9_1_1
C_1_1					

Number of logs (pcs)	13	Full length (r m)	47,08	Full volume (cub m)	1,36

Row (course) № 2

1_2_1	1_2_2	2_2_1	3_2_1	3_2_2	4_2_1
A_2_1	A_2_2	B_2_1	B_2_2	B_2_3	C_2_1

Number of logs (pcs)	12	Full length (r m)	23,04	Full volume (cub m)	0,72

Row (course) № 3

1_3_1	1_3_2	2_3_1	3_3_1	3_3_2	4_3_1
A_3_1	A_3_2	B_3_1	B_3_2	B_3_3	C_3_1

Number of logs (pcs)	12	Full length (r m)	22,84	Full volume (cub m)	0,72

Row (course) № 4

1_4_1	1_4_2	2_4_1	3_4_1	3_4_2	4_4_1
A_4_1	A_4_2	B_4_1	B_4_2	B_4_3	C_4_1

Number of logs (pcs)	12	Full length (r m)	22,84	Full volume (cub m)	0,72

Specification of courses report

26.1.5.6 Wall Involutes

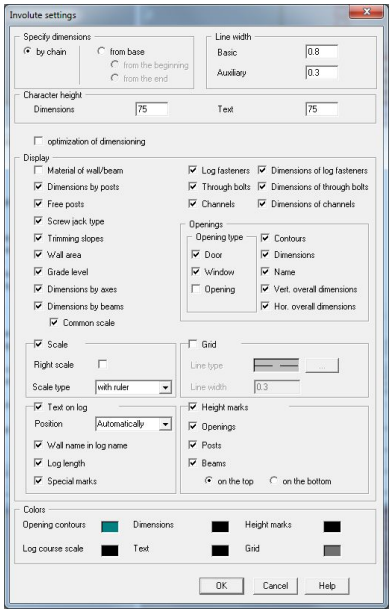
The number of reports in the **Wall involutes** folder is equal to the number of project walls. You cannot change it. You do not have to create involutes of all walls. You can check the walls you need

and create their involutes.

In the right part of the **Project reports** 186 form you can:

- enable deleting the internal lines using the **Hide invisible lines** parameter. For example, in this mode, the notches of the log end will not be visible in the drawing;
- select paper size and orientation for each report in the folder.

Having set the above-mentioned parameters, select the report folder and click **Parameters** to open the **Involute parameters** form:



Dimensions in the involutes can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the wall edge to consider as the base.

Height of the dimension characters and text notes is set in the **Character height** parameter group taking into account actual dimensions of the logs. For example, if diameter of the project log is 200 mm and the character height is set as 75 mm, the height of the characters in the drawing will be equal to about one third of the log height.

Check the elements to be shown in the involute in the **Display** parameter group.

All parameters of the **Openings** group are related to display of the openings. First, check the elements to be shown in the drawing on the right of the **Opening type** group. The **Name** field enables adding the opening names to the involutes. The names consist of the opening type abbreviation (DO – door opening, WO – window opening, O – opening) and sequence number in the wall. The selected elements will be shown for the opening types specified in the **Opening type** parameter group.

Check the **Scale** field to enable creating the report with a log course scale on the left of the drawing. If you check the **Right scale** field, two log course scales will appear in the involute: on the left and on the right of the drawing.

If you enable the **Grid** parameter, a grid consisting of the log course lines will be created in the drawing. The grid will fall slightly outside the wall dimensions.

You can use the **Text on log** parameter group to change the position and text of the notes on the report logs.

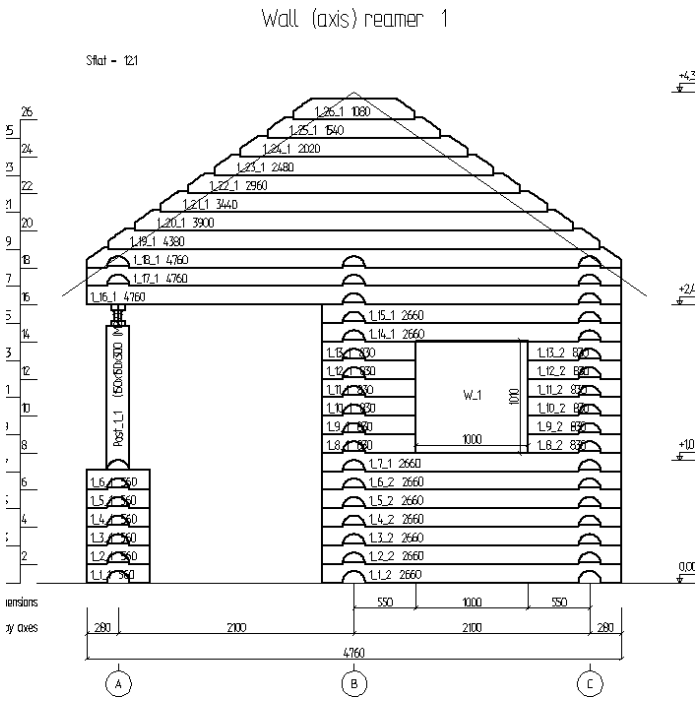
All **Height marks** (the lower point of the opening, the lower and upper points of the post without regard to embedding) are measured from the grade level. Its value is set in the **Wall parameters** form in the **Grade level position** 71 **position** field.

You can set the colors to display the report elements in the **Colors** parameter group. For this purpose, click the small rectangle on the left of the respective element and select a color from the palette on the screen.

Note.

1. If there are no logs in the wall (for example, an opening is added to the wall and its dimensions are the same as the wall dimensions), the wall involute contains only its name.
2. The post at the cross point of two walls is displayed in the involutes of both the walls. Also, the free posts lying on the wall axis are displayed for each wall.

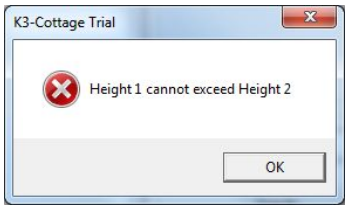
An example of the **Wall involutes** report is given below:



26.1.5.7 Floor Plan and Room Area

Prior to setting the report parameters, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of floors in the project. Then, select each report in the folder one by one and specify two heights (in millimeters) in the right part of the form: **Height1** is the height of the floor and **Height2** is the height of the ceiling. The house elements located between these heights, such as wall parts, openings, roof slopes, stairs, and posts will be shown in the floor plan.

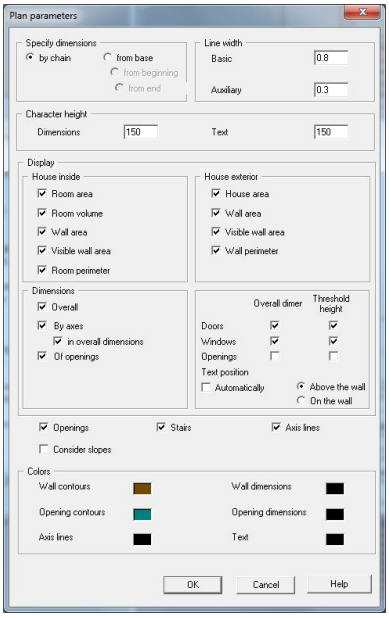
Note. The program checks whether the set heights are correct. If the set value of **Height 2** is less than **Height 1**, you will see the following message on the screen:



All height marks in the plan are measured from the grade level of the project. Its value is set in the **Wall parameters** form in the **Grade level position** 71 field. The height with regard to the grade level position is specified in the report name as well. For example, if the grade level is 200 mm, **Height 1** is 0 mm and **Height 2** is 2500 mm, the report name will be **Plan at height mark 0.200** and all height marks in the plan will be measured from the level of 200 mm.
In the right part of the **Project reports** 186 form you can:

– enable deleting the internal lines using the **Hide invisible lines** parameter;
– select the paper size and orientation for each report in the folder.

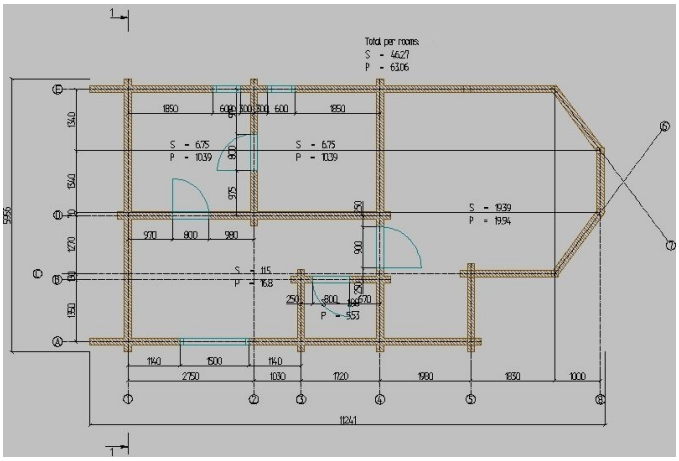
Then, select the report folder and click **Parameters** to open the **Plan parameters** form:



Dimensions of the walls and openings, distances between the wall axes, distances from the openings and free posts to the nearest axes can be specified in the floor plan.

All wall axes are grouped basing on their parallelism. A chain of dimensions – distances between the axes – is created for each group of parallel axes. If you enable the **In overall dimensions** parameter, the distances between the axes of the extreme walls of the group will be specified for each group.
The overall dimensions and threshold height of doors, windows and openings are specified in the plan as well. You can calculate cubage, perimeter, floor area, wall area with and without regard to log surface texture for each room. The wall areas are calculated taking into account the openings for windows and doors. Perimeter, area of the floor and walls are calculated for the external outline

of the house.



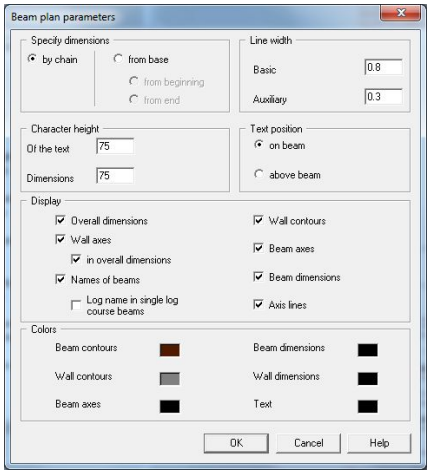
Floor plan report

26.1.5.8 Plan of Beams

Prior to setting the report parameters, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of ceilings in the project. Then, select each report in the folder one by one and specify **Height 1** (in millimeters) of beam position in the right part of the form. If there are no beams at the set height, the report will not be created. Also, you can set the height by clicking the **Set** button.
In the right part of the **Project reports** 186 form you can:

- enable deleting the internal lines using the **Hide invisible lines** parameter;
- select the paper size and orientation for each report in the folder.

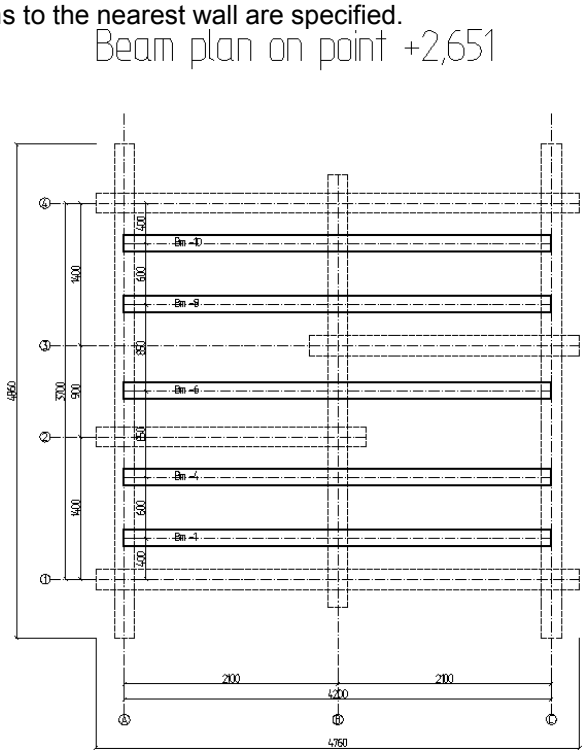
Then, select the report folder and click **Parameters** to open the **Beam plan parameters** form:



Dimensions in the plan can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the wall edge to consider as the base.

Height of the dimension characters and text notes is set in the **Character height** parameter group in millimeters.

Check the parameters to be shown in the plan in the **Display** parameter group and click **OK**. The walls are shown by a dashed line in the plan. Dimensions of the wall axis, beam axis and distances from the beams to the nearest wall are specified.



26.1.5.9 Plan of Courses

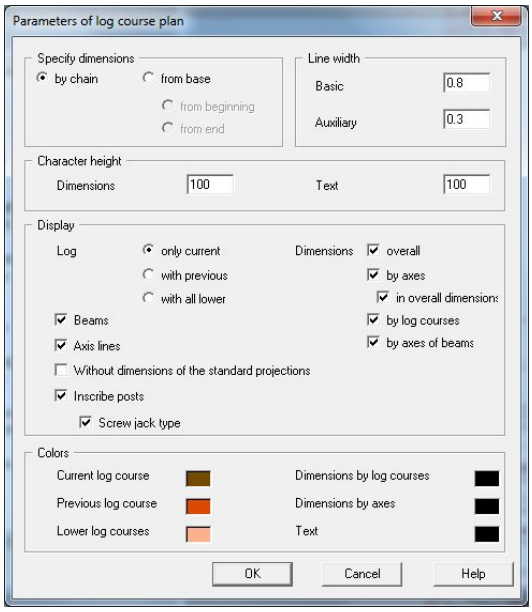
ST·PF Only for K3-Cottage Standard and Professional Packages

Prior to setting the report parameters, decide whether your report should include all project walls and log courses or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the log courses to be included in the plan of courses in the right part of the form.

In the right part of the **Project reports** 186 form you can:

- enable deleting the internal lines using the **Hide invisible lines** parameter;
- select the paper size and orientation for each report in the folder.

Then, select the report folder and click **Parameters** to open the **Parameters of log course plan** form:



Dimensions in the plan of courses can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the wall edge to consider as the base.

You can set the main lines width to draw the log courses and auxiliary lines to write dimensions in the **Line width** parameter group. These parameters are used to print the plan.

Select the log courses to be included in the plan in the **Log courses** group:

– **only current –** a drawing of one log course;
– **with previous –** a drawing of the current log course and the log course under it;
– **with all lower –** a drawing of the current log course and all log courses under it.

Check the **Axis lines** parameter to display the wall and beam axes in the plan.

In the **Dimensions** parameter group, check the elements to be shown in the plan:

– **Overall** – overall dimensions of the structure;
– **By axes** – distances between the wall axes. If you enable the **In overall dimensions** parameter, the distances between the extreme wall axes will be shown in the plan as well;
– **By log courses** – dimensions of the elements of each log course are specified (extreme points, openings, notches, etc.);
– **By axes of beams** – distances between the beam axes.

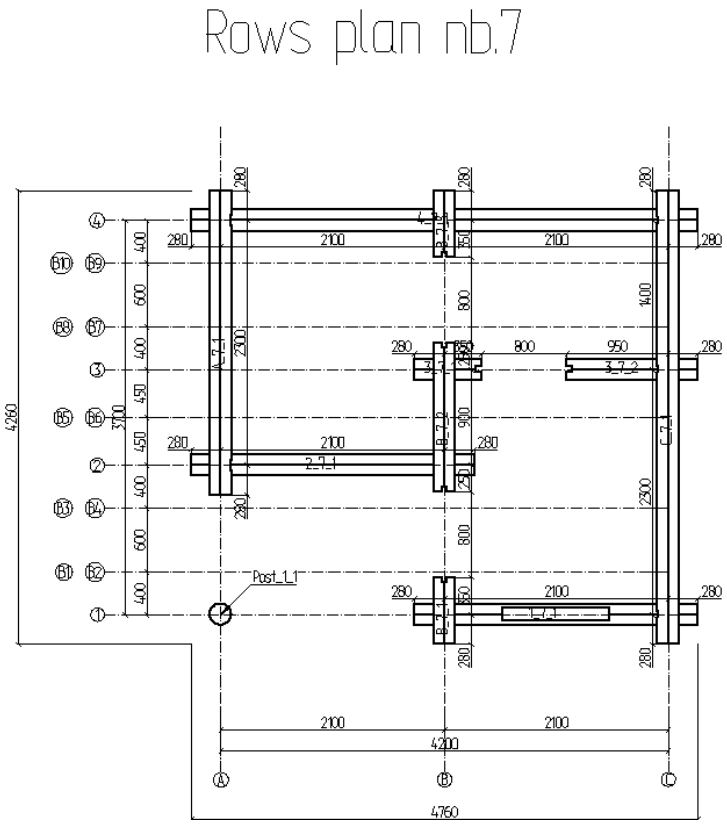
If you check the **Without dimensions of the standard projections** field, dimensions of the wall beginning and end projections 71 will not be specified in the drawing.

You can set the colors to display the report elements in the **Colors** parameter group. For this purpose, click the small rectangle on the left of the respective element and select a color from the palette on the screen.

The following items are specified in the drawings:

- names of the walls, beams and posts;
- unique names of the logs;
- axes of the walls, beams and distances between them;

- projections of the walls and beams;
- distances between the elements of each log course;
- type of the screw jack for the posts.



A fragment of the Plan of courses report

26.1.5.10 Slope Involutes

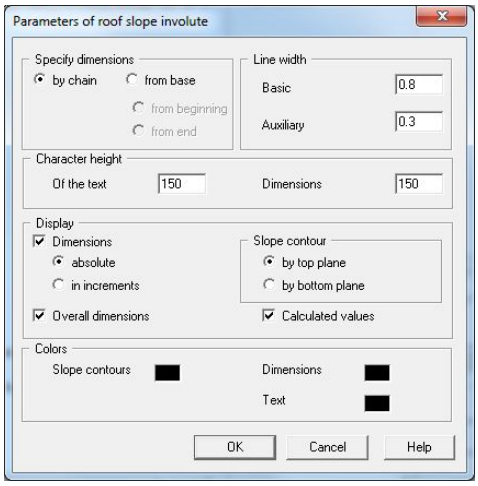
Only for K3-Cottage Professional Package

The number of reports in the **Slope involutes** folder is equal to the number of project slopes. You cannot change it. You do not have to create involutes of all slopes. You can check the slopes you need and create their involutes.

In the right part of the **Project reports** 186 form you can:

- enable deleting the internal lines using the **Hide invisible lines** parameter;
- select the paper size and orientation for each report in the folder.

Having set the above-mentioned parameters, select the report folder and click **Parameters** to open the **Slope involute parameters** form:



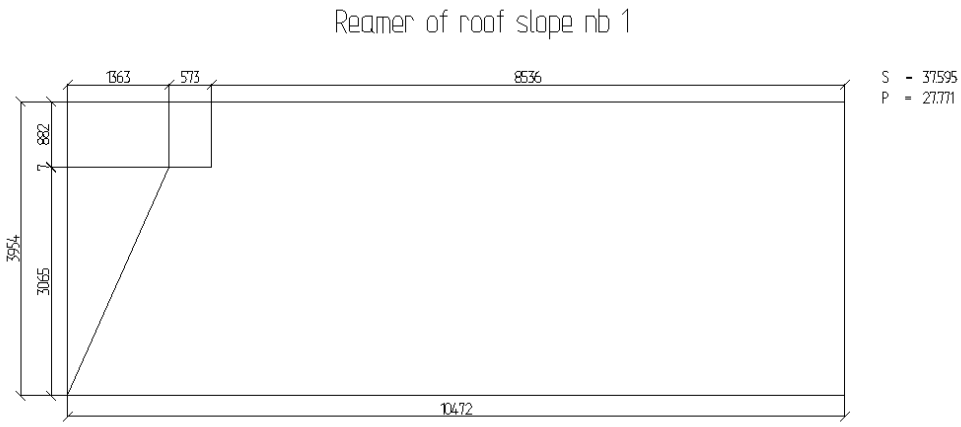
Dimensions of the involutes can be marked in two modes: **in chain** or **from base**. If you select **from base**, the dimensions will be marked from the extreme left (**from the beginning** parameter is enabled) or from the extreme right point of the slope contour (**from the end** parameter is enabled).

Check the parameters to be shown in the involute in the **Display** parameter group.

If you check the **Dimensions** field, the **Absolute** and **In increments** parameters become available. In the **Absolute** mode, the distances between the nodes of the slope contour are specified in the involute. In the **In increments** mode, dimensions of the elements (intervals) of the slope contour are specified in the involute.

If you check the **Calculated values** field, the slope area (S) and perimeter (P) will be specified in the drawing.

You can set the colors to display the report elements in the **Colors** parameter group. For this purpose, click the small rectangle on the left of the respective element and select a color from the palette on the screen.



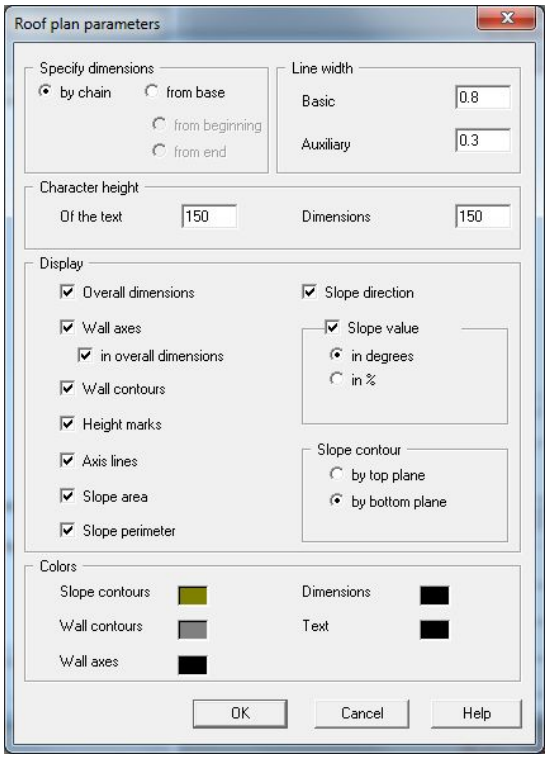
26.1.5.11 Roof System Drawing

PF Only for K3-Cottage Professional Package

The number of reports in the **Roof system drawing** folder depends on the number of group names of the project slopes. You cannot change it. You do not have to create all reports. You can check the repots you need and create them.
In the right part of the **Project reports** 186 form you can:

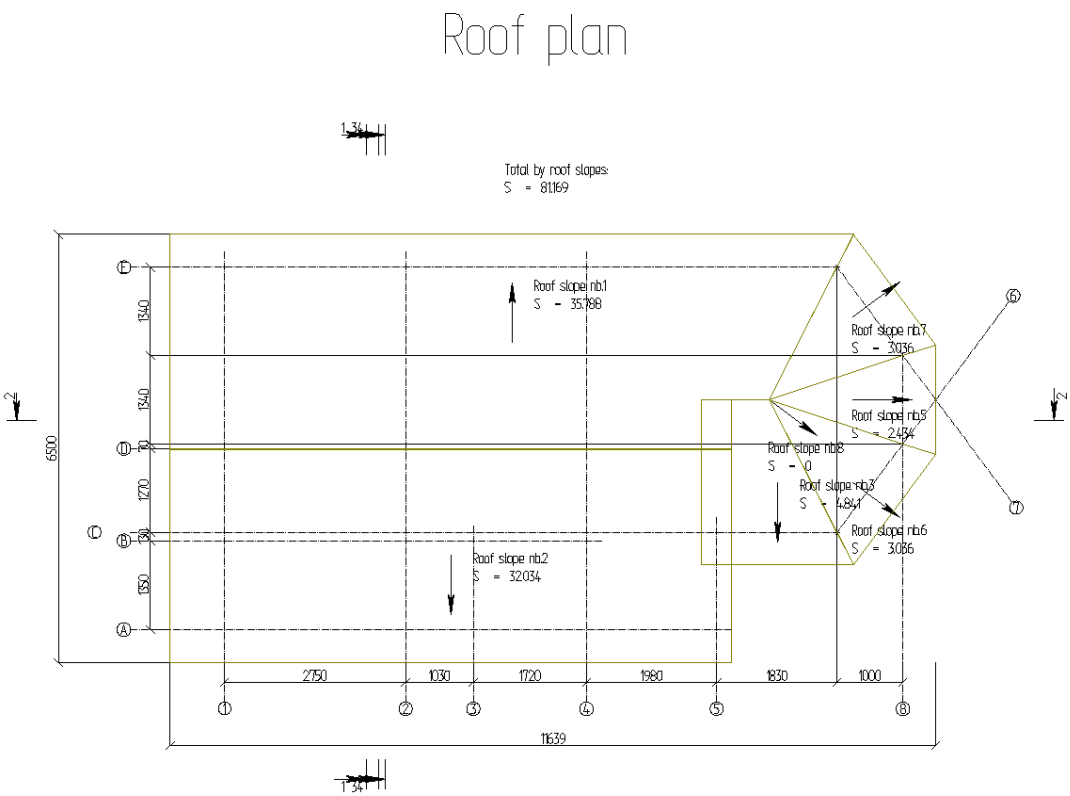
– enable deleting the internal lines using the **Hide invisible lines** parameter;
– select the paper size and orientation for each report in the folder.

Having set the above-mentioned parameters, select the report folder and click **Parameters** to open the **Roof plan parameters** form:



Check the parameters to be shown in the plan in the **Display** parameter group.
Check the **Wall axes** field to enable display of the wall axes and their dimensions. The rule of dimensioning the wall axes is specified in the **Floor Plan and Room Area** 209 section.
Overall dimensions of the roof, height marks as well as the number, angle and tilt direction, square (S) and perimeter (P) of each slope can be specified in the plan. All height marks are measured from the grade level. The grade level is set in the **Wall parameters** form in the **Grade level position** 71 field.

You can select the slope planes (upper or lower) to be used for the drawing in the **Roof slope contour** parameter group.
You can set colors to display the plan elements in the **Colors** parameter group.



Example of the Roof plan report.

26.1.5.12 Plan of Rafters

PF Only for K3-Cottage Professional Package

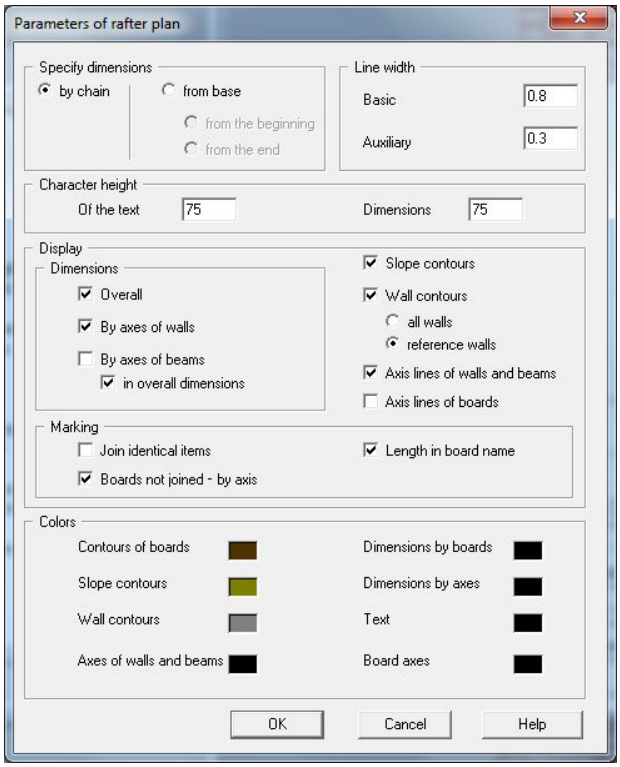
The **Plan of rafters** report is a plan of the rafter structure of the house. It includes the boards of the following types 180: **Rafter, Roof ridge, Ridge, Valley, Cornice, Lathing, Boarding**. Each board type is identified with a certain mark in the plan. You can change it when setting the project parameters in the **Boards** 76 tab.

Prior to setting the report parameters, decide whether your report should include all project rafters or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the board groups to be included in the report in the right part of the form.

In the right part of the **Project reports** 186 form you can:

- enable deleting the internal lines using the **Hide invisible lines** parameter;
- select the paper size and orientation for each report in the folder.

Then, select the report folder and click **Parameters** to open the **Parameters of rafter plan** form:



Dimensions in the plan can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the slope edge to consider as the base.
Height of the dimension characters and text notes is set in the **Character height** parameter group in millimeters.

Check the parameters to be shown in the plan in the **Display** parameter group.

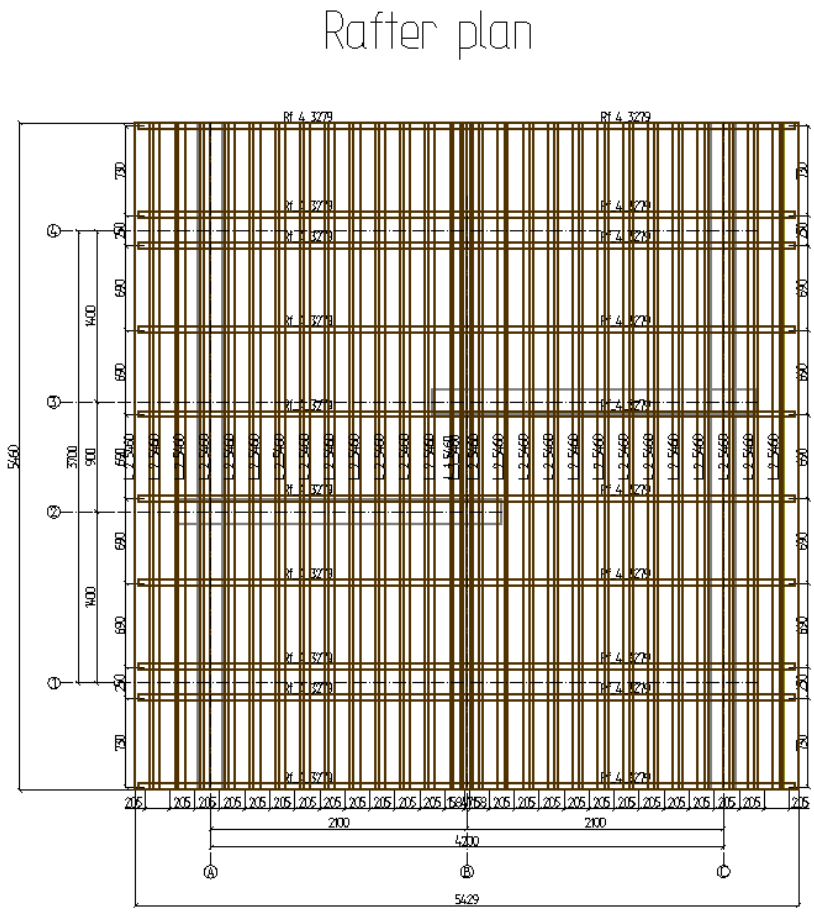
In the **Dimensions** parameter group, check the elements to be shown in the plan:

– **Overall** – overall dimensions of the structure;
– **By axes of walls** – distances between the wall axes;
– **By axes of beams** – distances between the beam axes. If you enable the **In overall dimensions** parameter, the distances between the extreme beam axes will be shown in the plan as well.

The wall and beam axes, slope contours, contours of all or only reference walls can be shown in the plan of rafters. The boards are marked as follows:

– If you enable the **By board axis** parameter, the board name will be written along each board;
– If you enable the **Join identical items** parameter, the board names and their quantity will be written on the callout within each slope for the group of boards with the same name;
– If neither the **Join identical items** parameter nor the **By board axis** parameter is enabled, the name of each board will be written on the callout.

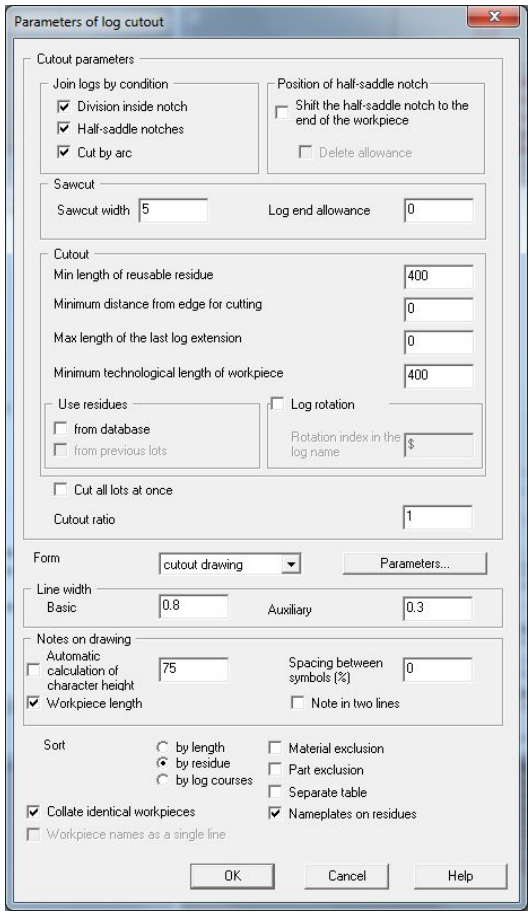
You can set colors to display the plan elements in the **Colors** parameter group.



26.1.5.13 Log Cutting

ST·PF Only for K3-Cottage Standard and Professional Packages

Prior to setting the report parameters, decide whether your report should include all project walls and log courses or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the walls and log courses to be included in the report in the right part of the cutout table.
Then, select the report folder and click **Parameters** to open the **Parameters of log cutout** form:



Lengths of the logs to be used for cutout, the so-called "**lengths of workpieces**", are shown in the **Material_selection** 55 form when creating a new project. They are set in the **Wall_material** 39 catalog.

The logs are grouped by material in the cutout charts. A table of templates is created for each material. Length of the templates is equal to the length of the workpieces of that material. Each template contains one or several project logs, their unique names and length as well as cutout residue. If the residue is not reusable, it is hatched. The RR letters are written on the reusable residue as well as its length. Cubage of workpieces of each material is calculated in cubic meters, residue is calculated in cubic meters and %.

Sequence of the workpieces in the final table can be set in the **Sort** parameter group:

– By length – the workpieces are sorted in the order of decreasing of length of the longest log being a part of the workpiece;

– By residue – the workpieces are sorted in the order of increasing of residue;

– By log courses – the workpieces are sorted in the order of log course sequence: first go the workpieces with logs of the first log course, then, the workpieces with logs of the second log course, etc.

The **Join logs by condition** parameter group is available for the logs only. If you check all

parameters of the group, the program will try to position all logs with half-saddle notches at the log ends so that the half-saddle notches form a whole notch. In this case, the whole notch will be cut at the production site. Please, note that in this case the log length will be reduced by a half of the sawcut width.

Sawcut Parameter Group

Sawcut width is value showing how many millimeters of the workpiece length go to one sawcut.

Log end allowance is value of trimming the log at the front (left) long end. This parameter reduces the workpiece length. For correct cutout, the **Workpiece length** 69 value should not be less than the sum of the **Maximal log length** 69 and **Log end allowance** parameters. Thus, if **Maximal log length** is equal to 6000 mm and **Log end allowance** is 50 mm, then **Workpiece length** should not be less than the sum: 6000 + 50 = 6050 mm.

Cutout Parameter Group

Minimum length of reusable residue. If length of a workpiece residue exceeds this value, such residue is considered as the reusable residue.

Minimum distance from edge for cutting. The distance between the end of the last log and the workpiece edge should not exceed this value. Otherwise, the **Maximum distance of last log extension** value should be more than zero. In this case, **Minimum distance from edge for cutting** is reduced by the value of **Maximum distance of last log extension.**

Minimum technological length of workpiece is minimum length of the last log with residue.

Use Residues Parameter Group

The **From database** parameter enables cutout mode with regard to the material in the **Residues** 41 catalog.

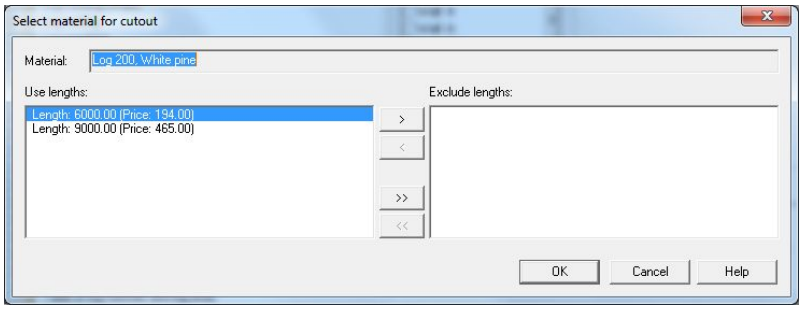
From previous lots (available only if the **Cut all lots at once** parameter is enabled) is a cutout mode using the material residues, which have not been used in the previous lots. The residues are the logs, which are longer than **Minimum length of reusable residue**.

Cut all lots at once is a mode used when the report is divided into lots (by log courses or by walls). In this mode, all lots are cut at once. The material which has not been used in the previous lots is used for cutout of the next lot. If the **Cut all lots at once** mode is enabled, the **From previous lots** parameter is available (see above). This mode allows using not only the material remaining from the previous lots, but the residues of used workpieces as well.

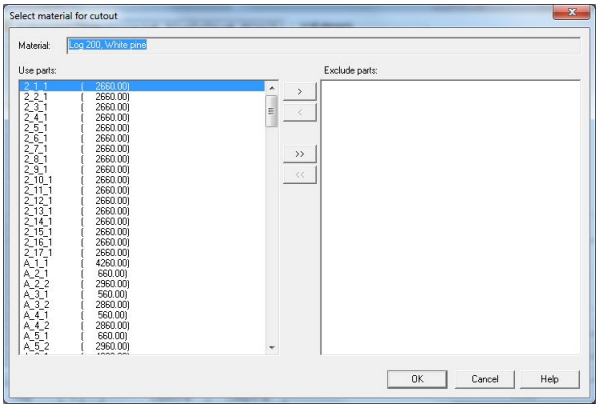
Log rotation. This parameter enables the cutout mode in which notches at the same-name log ends of neighboring cut logs form one notch due to rotation of one log through 180 degrees in its plane. In the cutout table, these logs will be marked with the symbol set in the **Rotation index in the log name** field.

Cutout ratio is the number of the same projects participating in the cutout simultaneously. It is well known that the more walls and log courses are used for cutout, the more optimal calculation is. Therefore, the amount of residues is lower.

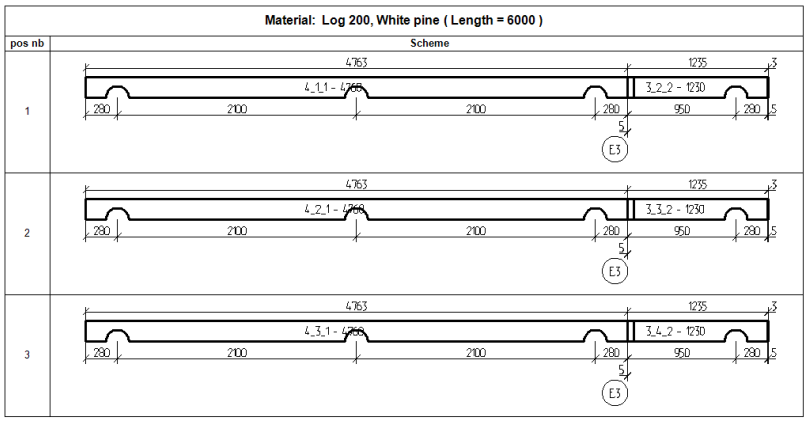
You can select the logs and workpieces for cutout in the system. For this purpose, select the **Material exclusion** and **Part exclusion** parameters. If you enable the **Material exclusion** parameter, the program will open as many forms as the number of materials used in the project. Each time you will see the following form on the screen:



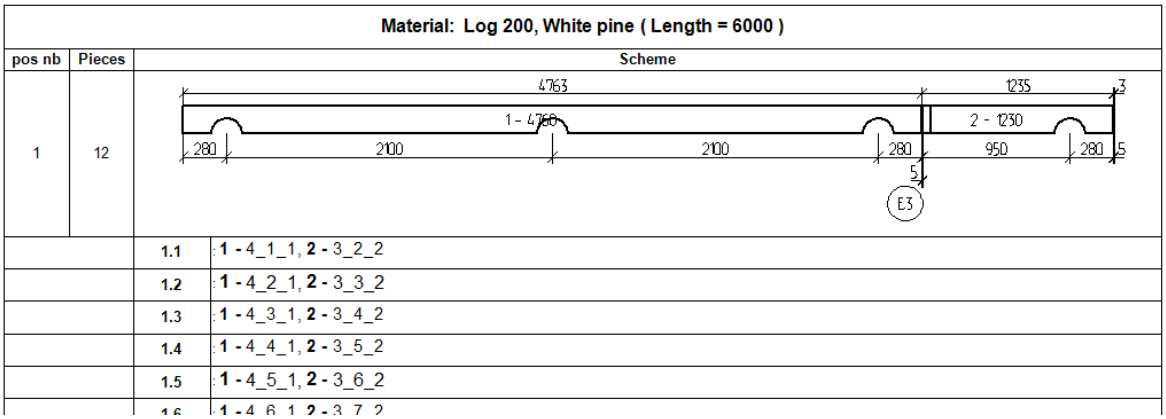
The material and its workpiece lengths set in the manufacturer will be shown in this form. You can exclude the lengths, which you do not want to use for cutout and click **OK**. Click **Cancel** to skip the offered material. The **Cancel** button will not cancel creating the report.
The **Part exclusion** parameter allows excluding certain logs from cutout. In the next form, you can select the logs to be used for cutout:



The **Collate identical workpieces** parameter enables searching for identical workpieces. Such workpieces are included in one line of the table.



A fragment of the cutout chart where identical workpieces are not included in one line



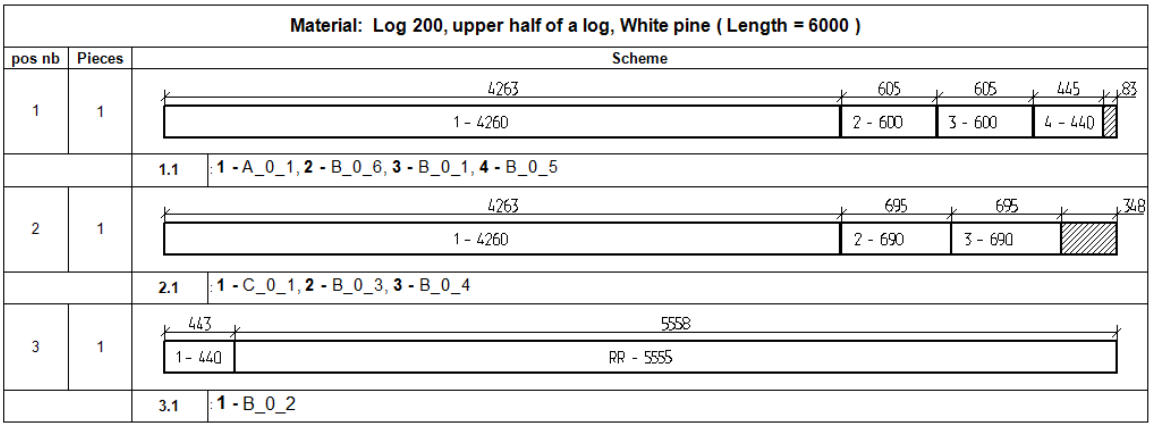
Material: Log 200, White pine (Length = 6000)		
pos nb	Pieces	Scheme
1	12	4763; 1235; 3; 1 - 4760; 2 - 1230; 280; 2100; 2100; 280; 950; 280; 5; 5; E3
	1.1	**1** - 4_1_1, **2** - 3_2_2
	1.2	**1** - 4_2_1, **2** - 3_3_2
	1.3	**1** - 4_3_1, **2** - 3_4_2
	1.4	**1** - 4_4_1, **2** - 3_5_2
	1.5	**1** - 4_5_1, **2** - 3_6_2
	1.6	**1** - 4_6_1, **2** - 3_7_2

A fragment of the cutout chart where identical workpieces are included in one line

If you want to include numbers of identical workpieces in a separate table, check the **Separate table** parameter. Check the **Nameplates on residues** parameter to create a table of nameplates on residues.

If you want to obtain a schematic layout of the logs (in the form of rectangles without notches, sawcuts, etc.), select **Cutout scheme** in the **Form** field.

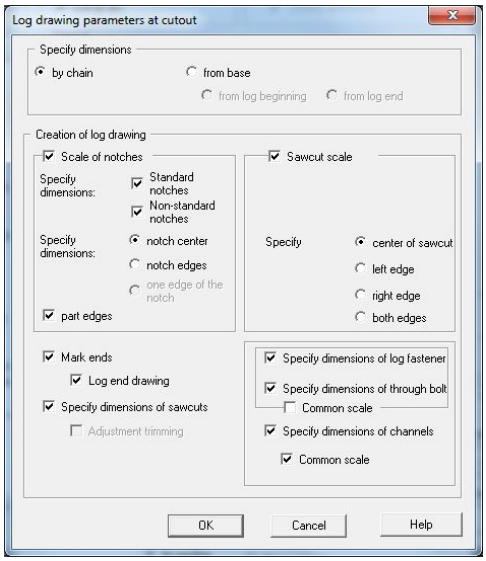
Log cutout chart No.75



Material: Log 200, upper half of a log, White pine (Length = 6000)		
pos nb	Pieces	Scheme
1	1	4263; 605; 605; 445; 83; 1 - 4260; 2 - 600; 3 - 600; 4 - 440
	1.1	**1** - A_0_1, **2** - B_0_6, **3** - B_0_1, **4** - B_0_5
2	1	4263; 695; 695; 348; 1 - 4260; 2 - 690; 3 - 690
	2.1	**1** - C_0_1, **2** - B_0_3, **3** - B_0_4
3	1	443; 5558; 1 - 440; RR - 5555
	3.1	**1** - B_0_2

A page from the Log cutting report. Forming method: Cutout scheme

If you need a detail drawing of the log, select **Cutout drawing** and click **Parameters** to open the **Log drawing parameters for cutout** form:



Dimensions in the log drawings can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the workpiece end to consider as the base.

Making Log Drawing Parameter Group

Check the **Notch scale** field to add a chain of notch dimensions to the drawing. The **Notch center** and **Notch edges** fields are relevant only to rectangular notches. The **One edge of the notch** parameter is available only when dimensions are marked **from base**.

If you check the **Mark log ends** parameter, markers LE1, LE2, etc. will be shown near the log ends in the drawing. Using these markers in the **Table of log ends and log notches** 201 you can find drawings for each log end type in the project. Check the **Log end drawing** field to enable display of the log end geometry in the log drawing.

If you check the **Consider sawcuts** field, dimensions of the sawcut position and depth will be specified in the drawings. If you uncheck this field, the **Adjustment cutting** mode becomes available. In this mode, sawcuts will be marked with a dashed line in the drawing, but their dimensions will not be specified.

If you check the **Consider log fasteners, Consider through bolts** and **Consider channels** fields, dimensions of the position of holes for log fasteners, through bolts and channels will be specified in the drawings. The **Common scale** parameter allows you to set one common scale for these holes. You can enable this parameter when setting parameters of a new project in the **Reports** 78 tab. If this parameter is disabled, you cannot enable it in the **Log drawing parameters for cutout** form.

Notes on the Drawing Parameter Group

Check the **Automatic calculation of character height** parameter to enable automatic selection of symbol height in the drawing taking into account dimensions of the material.

The **Total consumption of materials** table is created after the cutout charts:

Total material consumption

Material:	Length (mm)	Number (pcs)	Volume (cub m)	Waste: (cub m)	Including:	
					Reusable (cub m)	Sawdust (cub m)
Log 200, upper half of a log, White pine	6000	3	0,28	0,09 (33,44 %)	0,09 (30,86 %)	0,00 (0,22 %)
Log 200, White pine	6000	75	14,14	0,59 (4,20 %)	0,23 (1,63 %)	0,03 (0,20 %)
Log 200, White pine	9000	2	0,57	0,00 (0,22 %)	0,00 (0,00 %)	0,00 (0,17 %)
Stand 160x160, White pine	6000	10	1,54	0,47 (30,37 %)	0,46 (30,24 %)	0,00 (0,13 %)
Total per house:		**90**	**16,52**	**1,16**	**0,78**	**0,03**

Information about quantity of used workpieces and amount of expected residues of log production is specified in this table for each material. Explanation of some columns in this table is given below:

Cubage is the total cubage of all used workpieces of that material. It is calculated according to the following formula:

$$V=\pi\times r^2\times l\times n$$

where **r** – log radius, **l** – workpiece length, **n** – quantity of workpieces.

Residue is the total cubage of residue (reusable + non-reusable + sawdust). Percentages of the total cubage of workpieces of the material are specified in brackets.

Reusable is the cubage of reusable residue and its percentage of the total cubage of workpieces specified in the **Cubage** column.

Reusable residue means residues of workpieces of certain length, which should not be less than the **Minimum length of reusable residue** parameter. The manufacturer can use them after cutout in future. For this purpose, the user should enter this reusable residue and its amount manually into the **Residues** 41 catalog.

Sawdust is the sawdust cubage percentage of the total cubage of workpieces specified in the **Cubage** column.

The table of stickers for the reusable residue is created the last:

Reusable residue nameplates

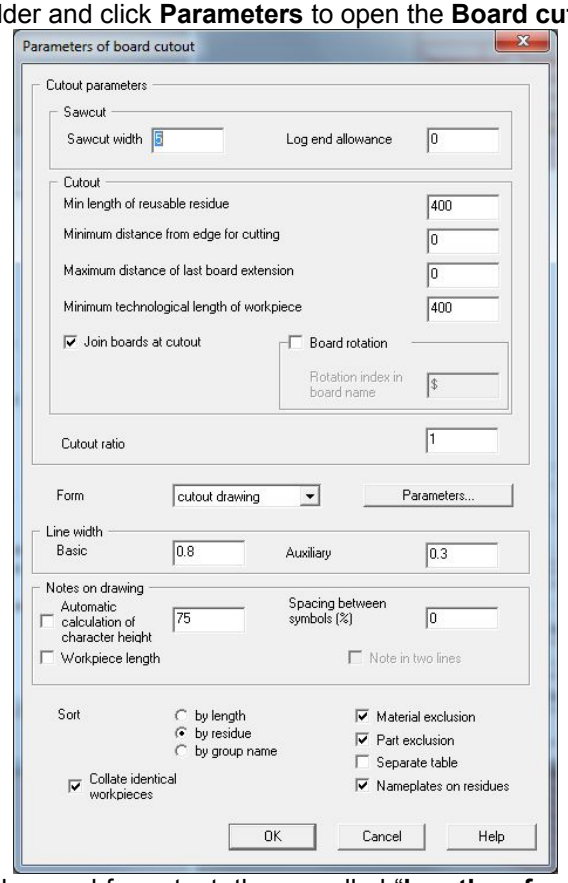
5555 Log cutout chart No.75	**3175** Log cutout chart No.75	**1834** Log cutout chart No.75	**1834** Log cutout chart No.75	**1834** Log cutout chart No.75
1834 Log cutout chart No.75	**1834** Log cutout chart No.75	**1795** Log cutout chart No.75	**1795** Log cutout chart No.75	**1795** Log cutout chart No.75
1795 Log cutout chart No.75	**1795** Log cutout chart No.75	**470** Log cutout chart No.75	**465** Log cutout chart No.75	**465** Log cutout chart No.75
465 Log cutout chart No.75	**465** Log cutout chart No.75	**465** Log cutout chart No.75	**465** Log cutout chart No.75	**465** Log cutout chart No.75
435 Log cutout chart No.75				

26.1.5.14 Board Cutting

ST·PF Only for K3-Cottage Standard and Professional Packages

Prior to setting the report parameters, decide whether your report should include all project boards or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of

project parts. Then, select each report in the folder one by one and specify the board groups to be included in the report in the right part of the form.
Then, select the report folder and click **Parameters** to open the **Board cutout parameters** form:



Lengths of the boards to be used for cutout, the so-called "**lengths of workpieces**", are set in the **Board material** 45 catalog.

The boards are grouped by material in the cutout charts. A table of templates is created for each material. Length of the templates is equal to the length of the workpieces of that material. Each template contains one or several project boards, their unique numbers and length as well as cutout residue. If the residue is not reusable, it is hatched. The RR letters are written on the reusable residue as well as its length. Cubage of workpieces of each material is calculated in cubic meters, residue is calculated in cubic meters and %.

Sequence of the workpieces in the final table can be set in the **Sort** parameter group:

– By length – the workpieces are sorted in the order of decreasing of length of the longest log being a part of the workpiece;

– By residue – the workpieces are sorted in the order of increasing of residue;

– By group name – the workpieces are sorted by groups.

Sawcut Parameter Group

Sawcut width is value showing how many millimeters of the workpiece length go to one sawcut.

Board end allowance is value of trimming the board at the left end. This parameter reduces the workpiece length. For correct cutout, the following three parameters should be agreed: **Board end allowance,** **Maximum board length** 76 and **Workpiece length** 45**.** The **Maximum board length** value should not exceed the difference between the **Workpiece length** and **Board end allowance** parameters. Thus, if **Workpiece length** is equal to 6000 mm and **Board end allowance** is 50 mm, then **Maximum board length** should not exceed 5950 mm.

Cutout Parameter Group

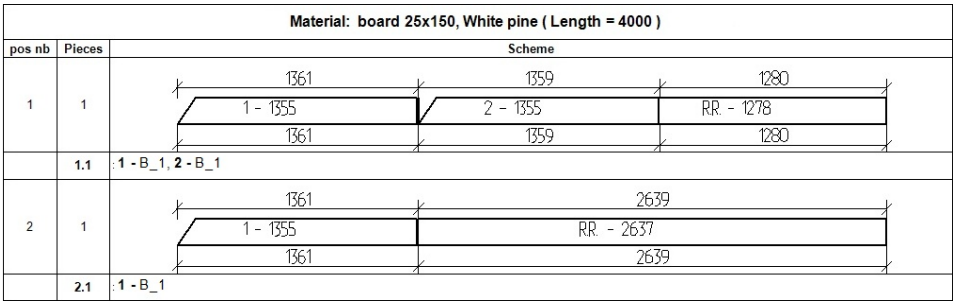
Minimum length of reusable residue. If length of a workpiece residue exceeds this value, such residue is considered as the reusable residue.

Minimum distance from edge for cutting. The distance between the end of the last board and the workpiece edge should not exceed this value. Otherwise, the **Maximum distance of last board extension** value should be more than zero. In this case, **Minimum distance from edge for cutting** is reduced by the value of **Maximum distance of last board extension.**

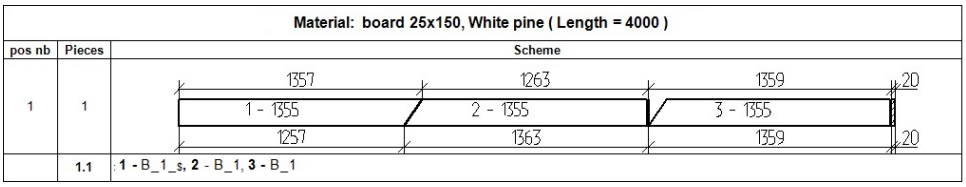
Minimum technological length of workpiece is minimum length of the last board with residue.

Check the **Join boards at cutout** field to enable positioning the boards with regard to the board end geometry in order to minimize the gaps. In this case, you can use bevel sawcuts. If this parameter is not enabled, only overall dimensions of the boards are taken into account for their positioning. Moreover, the sawcuts may be made only at the right angle to the workpieces.

The **Board rotation** parameter enables the cutout mode in which notches at the same-name ends of neighboring boards form one notch due to rotation of one board through 180 degrees in its plane. This function is useful if the scene contains boards with trimmed ends joined edge-to-edge. Therefore, you can save the material.



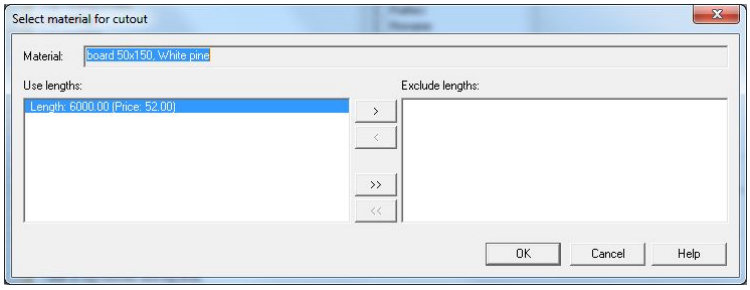
Cutout drawing without board rotation



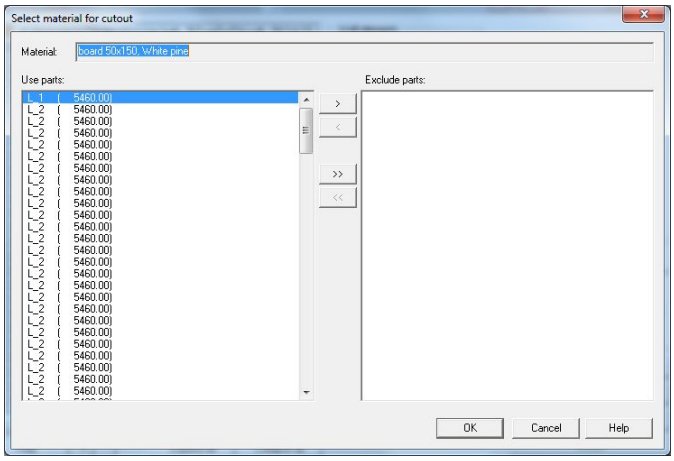
Cutout drawing with board rotation

Cutout ratio is the number of the same projects participating in the cutout simultaneously. It is well known that the more boards are used for cutout, the more optimal calculation is. Therefore, the amount of residues is lower.

You can select the boards and workpieces for cutout in the system. For this purpose, select the **Material exclusion** and **Part exclusion** parameters. If you enable the **Material exclusion** parameter, the program will open as many forms as the number of materials used in the project. Each time you will see the following form on the screen:



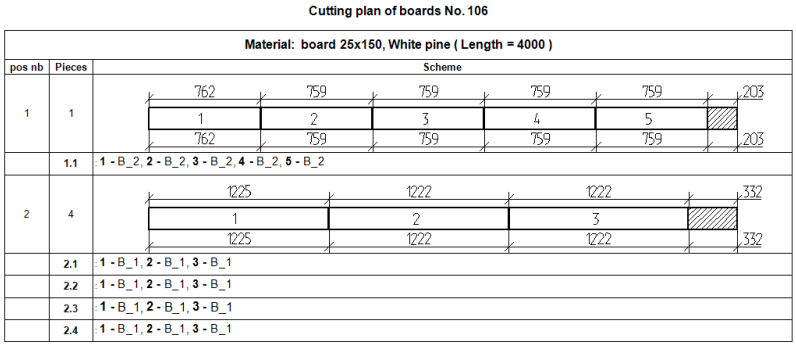
The material and its workpiece lengths set in the manufacturer will be shown in this form. You can exclude the lengths, which you do not want to use for cutout and click **OK**. Click the **Cancel** button to cancel the cutout operation.
The **Part exclusion** parameter allows excluding certain boards from cutout. In the next form, you can select the boards to be used for cutout:



The **Collate identical workpieces** parameter enables searching for identical workpieces. Such workpieces are included in one line of the table.

If you want to include numbers of identical workpieces to a separate table, check the **Separate table** parameter. Check the **Nameplates on residues** parameter to create a table of nameplates on residues.

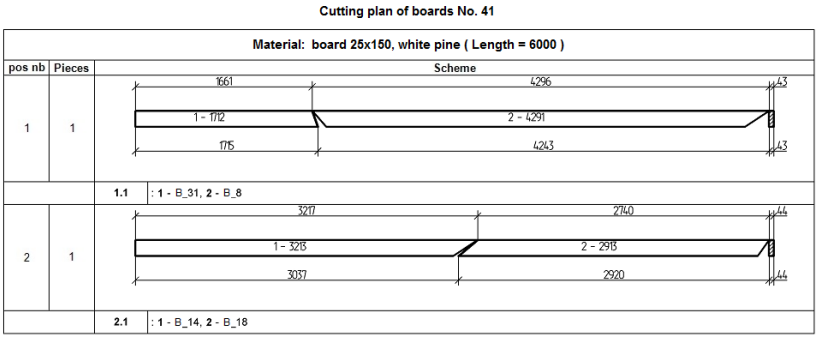
If you want to obtain a schematic layout of the boards (in the form of rectangles without notches, sawcuts, etc.), select **Cutout scheme** in the **Form** field.



Cutting plan of boards No. 106

Material: board 25x150, White pine (Length = 4000)		
pos nb	Pieces	Scheme
1	1	762 759 759 759 759 203 1 2 3 4 5 762 759 759 759 759 203
	1.1	: **1** - B_2, **2** - B_2, **3** - B_2, **4** - B_2, **5** - B_2
2	4	1225 1222 1222 332 1 2 3 1225 1222 1222 332
	2.1	: **1** - B_1, **2** - B_1, **3** - B_1
	2.2	: **1** - B_1, **2** - B_1, **3** - B_1
	2.3	: **1** - B_1, **2** - B_1, **3** - B_1
	2.4	: **1** - B_1, **2** - B_1, **3** - B_1

Pages from the Board cutting report, forming method: Cutout scheme

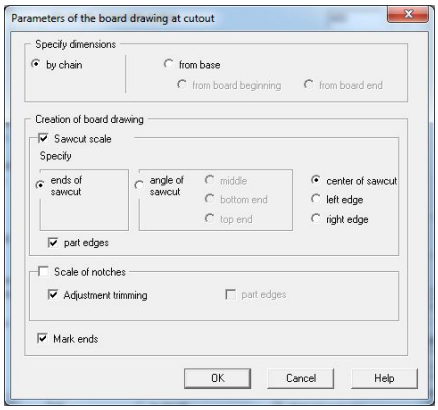


Cutting plan of boards No. 41

Material: board 25x150, white pine (Length = 6000)		
pos nb	Pieces	Scheme
1	1	1661 4296 43 1 - 1712 2 - 4291 1715 4243 43
	1.1	: **1** - B_31, **2** - B_8
2	1	3217 2740 44 1 - 3218 2 - 2918 3037 2920 44
	2.1	: **1** - B_14, **2** - B_18

Pages from the Board cutting report, forming method: Cutout drawing

If you need a detail drawing of the board, select **Cutout drawing** and click **Parameters** to open the **Board drawing parameters for cutout** form:



Dimensions in the board drawings can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the workpiece end to consider as the base.

Making Board Drawing Parameter Group

Check the **Sawcut scale** field to specify dimensions of the board ends or sawcut tilt angles in the drawings. In this case, you should specify the points to measure the distances: from **center, left** or **right edge** of the sawcuts.
Check the **Notch scale** field to add a notch scale to the drawing. In this case, markers N1, N2, etc. will be shown near the notches. Using these markers in the **Table of board ends and notches** 202 you can find drawings for all notches. The **Part edges** parameter available in the **Notch scale** mode includes part edges in the notch scale.

If the **Notch scale** parameter is disabled, the **Adjustment cutting** mode becomes available. In this mode, the notches are shown in the drawing, but the notch scale is hidden.
If you check the **Mark board ends** parameter, markers BE1, BE2, etc. will be added to the drawing near the board ends. Using these markers in the **Table of board ends and notches** 202 you can find drawings of all board ends.

Notes on the Drawing Parameter Group
Check the **Automatic calculation of character height** parameter to enable automatic selection of symbol height in the drawing taking into account dimensions of the material.

The **Total consumption of materials** table is created after the cutout charts:

Total material consumption

Material	Length (mm)	Number (pcs)	Volume (cub m)	Waste (cub m)	Including	
					Reusable (cub m)	Sawdust (cub m)
board 50x150, White pine	6000	73	3,29	0,36 (10,95 %)	0,35 (10,77 %)	0,01 (0,17 %)
Total per house:		**73**	**3,29**	**0,36**	**0,35**	**0,01**

Information about quantity of used workpieces and amount of expected residues of board production is specified in this table for each material. See explanation of some columns in this table in the **Log Cutting** 219 section.
The table of stickers for the reusable residue is created the last:

Reusable residue nameplates

1180	**1180**	**1180**	**1180**	**1180**
1180	**1180**	**1180**	**1180**	**611**
611	**611**	**611**	**611**	**611**
611	**611**	**611**	**611**	**611**
611	**611**	**611**	**611**	**611**
611	**611**	**611**	**611**	**585**

26.1.5.15 Log Catalog

The **Log catalog** report is a table containing information about the groups of identical project logs: group number, quantity by axes, total quantity, total length and total cubage of the group logs.

Project:	Russian Bath
Customer:	Piron C.
Executor:	Zamenhof L. L.
Date:	01.09.2015

Summary specification

Total number:	213
Total length:	502,81
Total volume:	15,37

		Quantity along axis											
№	Length	1	2	3	4	A	B	C	Beams	Columns	Total	Total length	Total volume
1	5460					1					1	5,46	0,17
2	5460							1			1	5,46	0,17
3	4860					1					1	4,86	0,15
4	4860							1			1	4,86	0,15
5	4760	1									1	4,76	0,15
6	4760	1			17						18	85,68	2,69
7	4760	1			1						2	9,52	0,3
8	4380	1			1						2	8,76	0,28
9	4260					1					1	4,26	0,07
10	4260					1					1	4,26	0,13
11	4260					1					1	4,26	0,13
12	4260							1			1	4,26	0,07

A fragment of the Log catalog report

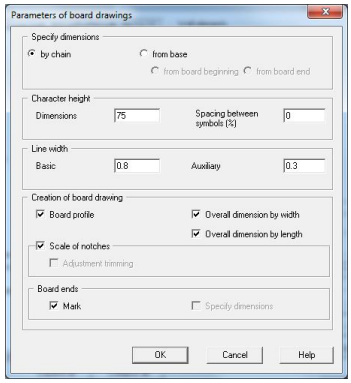
26.1.5.16 Table of Boards

ST·PF Only for K3-Cottage Standard and Professional Packages

The **Table of boards** report is a table containing board drawings, their numbers, lengths and quantity.

The number of reports in the **Table of boards** folder depends on the number of group names of the project boards. You cannot change it. You do not have to create all reports. You can check the reports you need and create them. Only nameless boards are included in the **Table of boards** report.

Cubage of the boards included in the report is calculated in the right part of the **Project reports** form in the **V=** field. Click the **Parameters** button to open the form of report parameters:



Dimensions in the board drawings can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the board end to consider as the base.

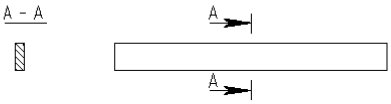
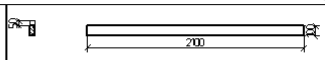
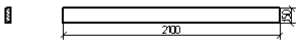
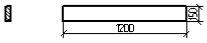
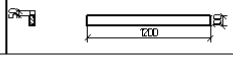
Check the elements to include in the drawing in the **Making board drawing** parameter group:
Board profile. The board profile is displayed;
Overall width and **Overall length.** The board length and width are specified.

Check the **Notch scale** field to add a notch scale to the drawing. In this case, markers N1, N2, etc. will be shown near the notches. Using these markers in the **Table of board ends and notches** 202 you can find drawings for all notches.

If the **Notch scale** parameter is disabled, the **Adjustment cutting** mode becomes available. In

this mode, the notches are shown in the drawing, but the notch scale is hidden.
If you check the **Mark** element in the **Board ends** parameter group, markers BE1, BE2, etc. will be added to the drawing near the board ends. Using these markers in the **Table of board ends and notches** 202 you can find drawings of all board ends. If you enable the **Specify dimensions** mode, the board end dimensions will be specified directly in the drawing. Therefore, you do not need to open the **Table of board notches and ends.**

Table of lumber (boards)
Floor

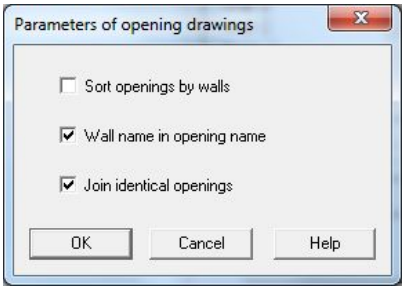
Позиция	Длина	Штуки	Схема
board 50x150. White pine			A - A 
B_5(2)	2100	2	
B_6(24)	2100	24	
B_7(24)	1200	24	
B_8(2)	1200	2	
Total per material: board 50x150. White pine			
Length = 85,80 r m	Living Area = 12,87 sq m	Area of the surface = 34,42 sq m	Volume = 0,64 cub m

A fragment of the Table of boards report

26.1.5.17 Table of Openings

PF Only for K3-Cottage Professional Package

The **Table of openings** report is a table of project openings.
Prior to setting the report parameters, decide whether your report should include all project walls and log courses or it should be divided into parts. To divide the report, select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the walls and log courses to be included in the report in the right part of the form.
The form of this report looks like this:



The openings are grouped by their type: **Door, Window** or **Opening**. The system creates a drawing and provides information on perimeter, area and quantity of each opening.

Russian Bath

Project:	Russian Bath
Customer:	Piron C.
Contractor:	Zamenhof L. L.
Date:	01.09.2015 18:37:16

Table of openings

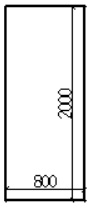
Door openings

4 pcs

1,6 sq m

5,6 r m

D_1(3), D_2(B), D_4(B), D_3(B)



Total number (pcs):	4 pcs	Living Area	6,4 sq m	Perimeter	22,4 r m

Russian Bath

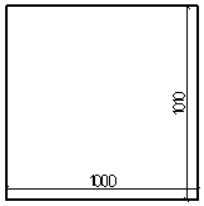
Window openings

1 pcs

1,01 sq m

4,02 r m

W_1(1)



Total number (pcs):	1 pcs	Living Area	1,01 sq m	Perimeter	4,02 r m

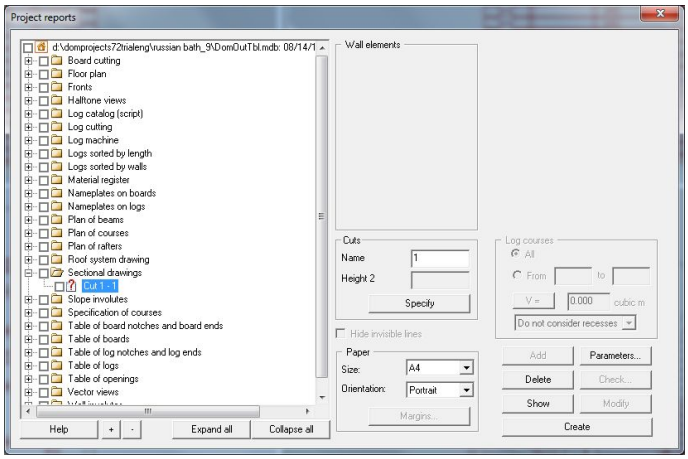
26.1.5.18 Sectional drawings

ST·PF Only for K3-Cottage Professional Package

The **Sectional drawings** report is a house image obtained after its imaginable dissecting by a cutting plane.

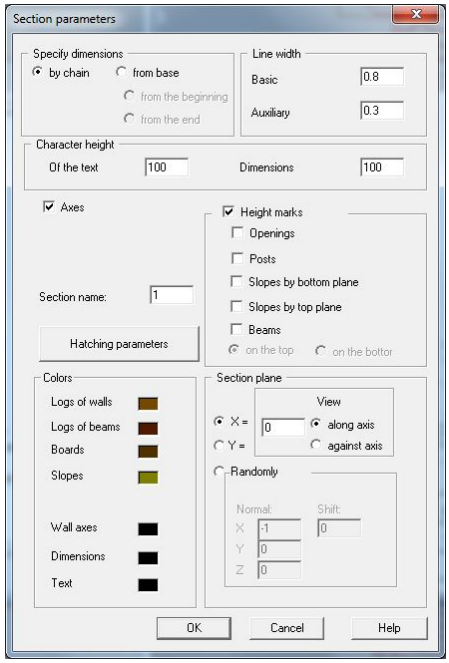
The number of project section views is unlimited.

To add a new section view, select the **Sectional drawings** folder in the right part of the **Project reports** form and click the **Add** button. Then, select the added report in the left part of the form and assign a unique name to it in the right part of the form in the **Name** field.



Then, click the **Set** button and specify the cutting plane in the front or side view and the view direction using the shortcut menu. To set the cutting plane, use the ***Vertical, Horizontal, Two points*** or ***Three points*** parameters. To set the view direction, use the ***Redirect*** parameter.

Also, you can set the name and the cutting plane in the **Section parameters** form. Select the added report and click **Parameters**. Set the name of the section view in the **Section view name** field. Set the cutting plane in the **Section view plane** fields.

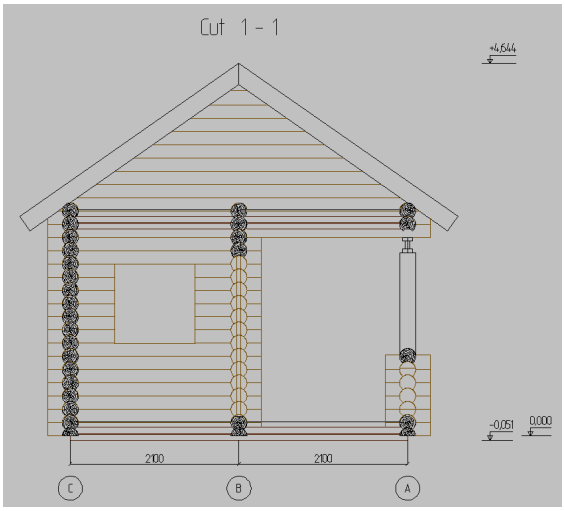


You can set the cutting plane as a plane orthogonal to coordinate axes or a random plane: through the normal line and shift.

Dimensions in the involutes can be marked in two modes: **in chain** or **from base**.

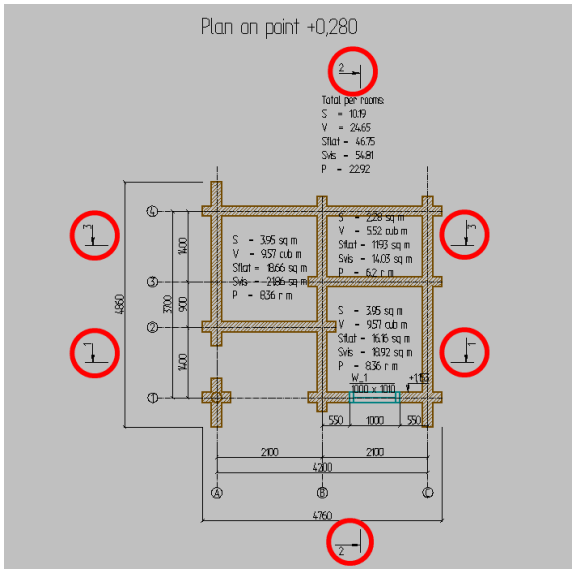
Also, you can set **line width, character height, hatching parameters** in the form and enable display of **height marks** and **axes**.

Upon setting all parameters, you can create a report.



An example of the Sectional drawing report

Attention! The section view is displayed in the plans, fronts and involutes only if it has been added and set prior to creating the drawings. Therefore, we recommend you, first, to add the necessary section views, to set their cutting planes and, then, to create all other reports.



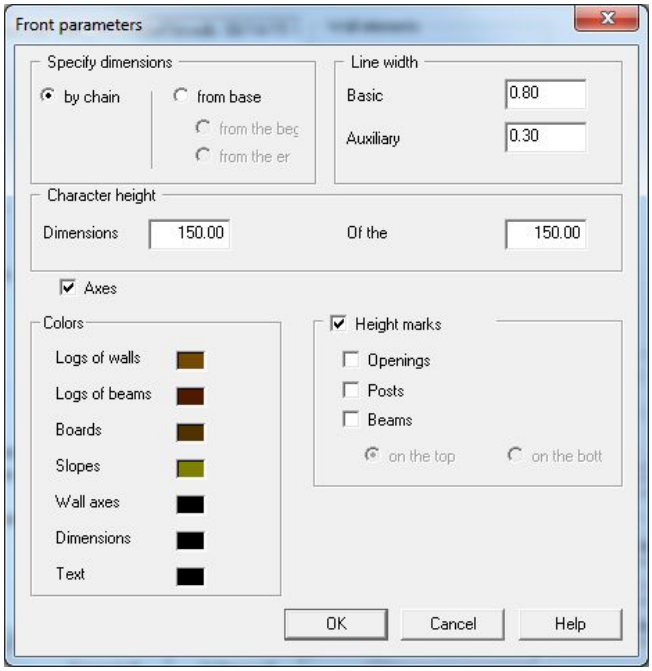
Floor plan report with section views

Otherwise, upon adding a new **Sectional drawing,** all previously created drawings will be marked with the icon. This icon means that the drawings should be recreated. You will have to create them again in order to add the new section view to the drawings.

26.1.5.19 Fronts

Only for K3-Cottage Professional Package

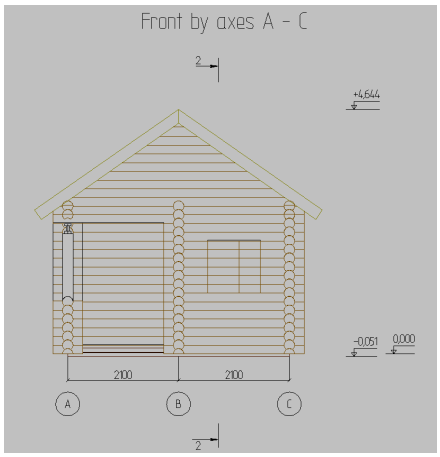
The **Fronts** report includes different views of the house.
Select the report folder in the **Project reports** 186 form and by clicking the **Add** button add the number of reports corresponding to the number of fronts. Then select each report in the folder one by one and specify two axes in the right part of the form. Front selection depends on them. The view vector to the front is always parallel to the wall axis specified in the **Axis1** field. The front is created orthogonally in relation to the view vector, from the left to the right – from **Axis 1** to **Axis 2**.
Then, select the report folder and click **Parameters** to open the **Front parameters** form:



Dimensions in fronts can be marked in two modes: **in chain** or **from base**. If you select **from base**, you can specify the front edge to consider as the base.

The height of the dimension characters and text notes is set in the **Character height** parameter group in millimeters.

Check the elements to be shown in the plan in the **Display** parameter group.
You can select paper size and orientation for each report in the folder in the right part of the **Project reports** 186 form.



Fronts reports

Note. Only visible scene objects 21 are displayed in the **Fronts** report (i.e. the objects, which are not hidden).

26.1.5.20 Vector Views

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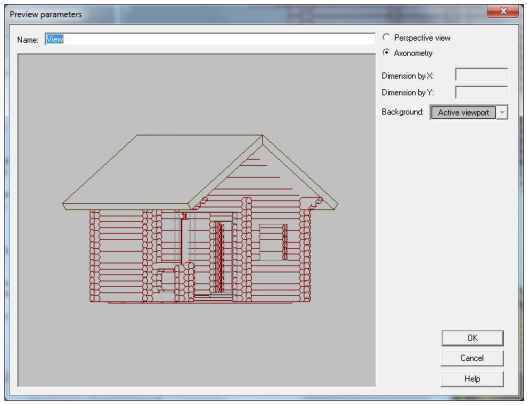
The **Vector views** report includes house images in the vector mode – in lines.

The number of project vector views is unlimited. You can add them to the **Vector views** folder using the **Add** button.

You can select paper size and orientation for each view in the right part of the **Project reports** 186 form.

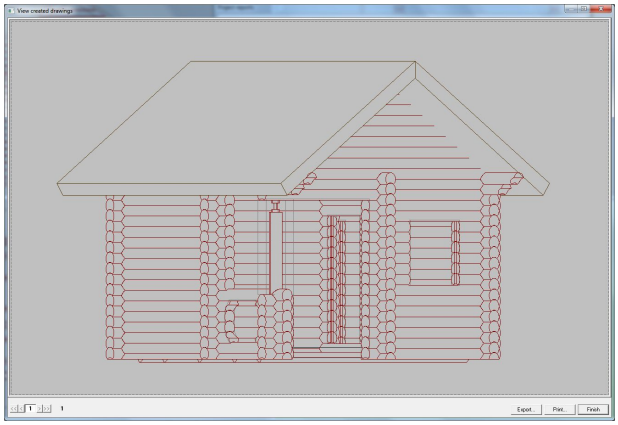
You can specify the name and the aspect angle for each view. For this purpose, select a view in the folder and click **Parameters** to open the next form:



Fill in the **Name** field. Select **Perspective view** or **Axonometry**. Then, put the mouse cursor to the house image and set the aspect angle you need using the following options:

– dynamic rotation – press the left mouse button, hold it pressed and rotate the house in necessary direction;
– image zooming – scroll the mouse wheel up and down;
– parallel shift – press the mouse wheel (the mouse cursor will turn into a palm), hold it pressed and move the house in necessary direction.

Upon setting the aspect angle, click **OK.**



26.1.5.21 Halftone Views

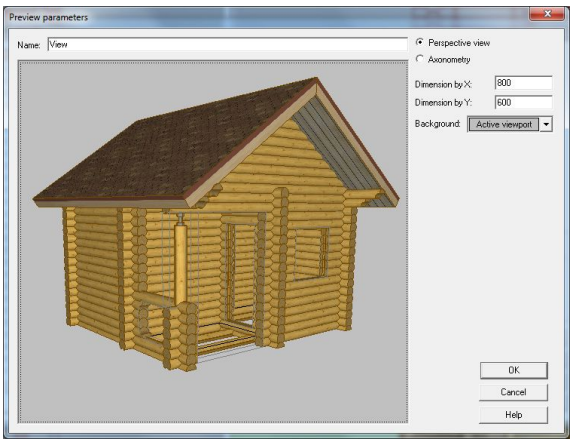
PF Only for K3-Cottage Professional Package

The **Halftone views** reports are color (bitmap) images of the house.

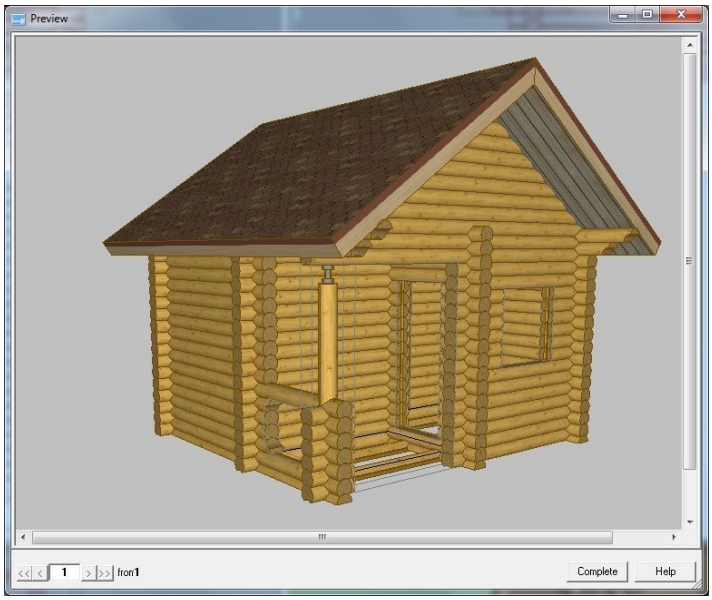
The number of such views for one project is unlimited. You can add them to the **Halftone views** folder using the **Add** button.

You can select paper size and orientation for each view in the right part of the **Project reports** 186 form.

You can set the name, size in pixels, background color and aspect angle for each view. For this purpose, select a line in the folder and click **Parameters** to open the next form:



Fill in the form, set the aspect angle in the same manner as for the **Vector views** 237 report and click **OK.**

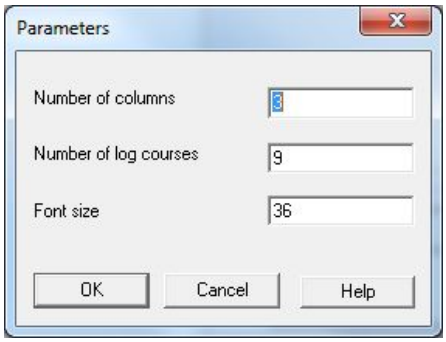


26.1.5.22 Nameplates on Logs

The **Nameplates on logs** report is a table of log numbers used as stickers for the logs.

Prior to setting the report parameters, decide whether your report should cover all project walls and log courses or it should be divided into parts. To divide the report, select the report folder in the **Project reports** form and by clicking the **Add** button add the number of reports corresponding to the number of project parts. Then, select each report in the folder one by one and specify the walls and, if necessary, log courses to be included in the table of log numbers in the right part of the form.

The form for this report is shown below:



Russian Bath

Project: Russian Bath
Customer: Piron C.
Contractor: Zamenhof L. L.
Date: 02.09.2015 16:56:42

Log numbers

1_1_1	1_1_2	1_2_1
1_2_2	1_3_1	1_3_2
1_4_1	1_4_2	1_5_1
1_5_2	1_6_1	1_6_2
1_7_1	1_8_1	1_8_2
1_9_1	1_9_2	1_10_1
1_10_2	1_11_1	1_11_2

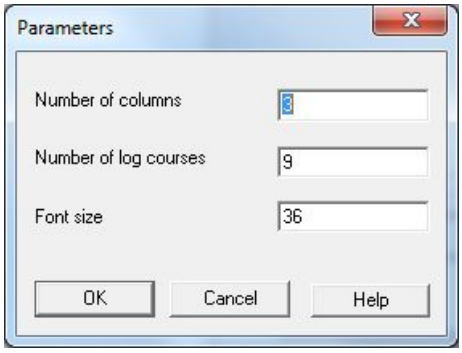
A page of the Nameplates on logs report

26.1.5.23 Nameplates on Boards

The **Nameplates on boards** report is a table of board numbers used as stickers for the boards.

The number of reports in the **Nameplates on boards** folder depends on the number of group names of the project boards. You cannot change it. However, you do not have to create all reports. Check the reports you need and create them. Only nameless boards are included in the **Board table** report.

The form of this report looks like the form of the Nameplates on logs 239 report.



Russian Bath

Project: Russian Bath
Customer: Piron C.
Contractor: Zamenhof L. L.
Date: 02.09.2015 17:00:29

Board numbers
Floor

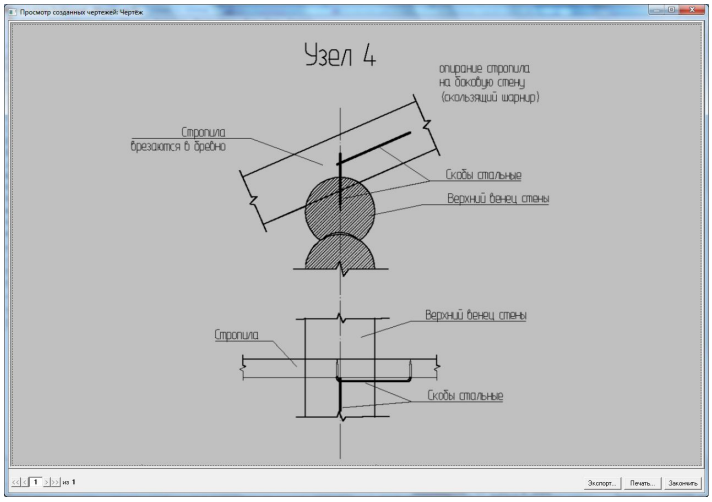
B_8	B_7	B_7
B_7	B_7	B_7
B_7	B_7	B_7
B_7	B_7	B_7
B_7	B_5	B_6
B_6	B_6	B_6
B_6	B_6	B_6

A page of the Nameplates on boards report

26.1.5.24 Drawing

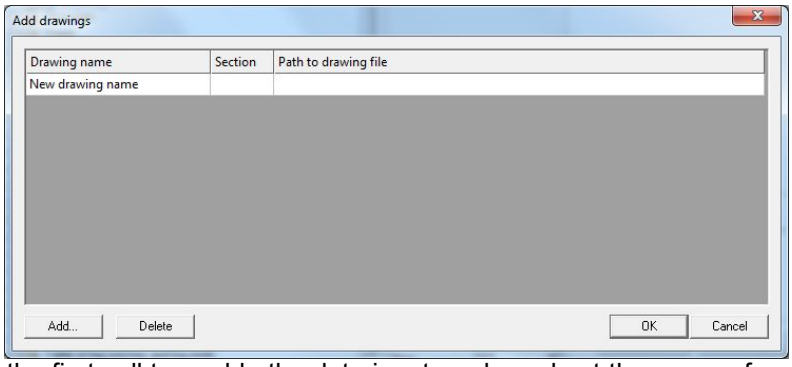
PF Only for K3-Cottage Professional Package

The **Drawing** report consists of random drawings created in the *.K3 format. For example, a rafter joint:



You can select the paper size and orientation for all reports at once or for each individual report in the right part of the **Project reports** 186 form.

The number of **Drawings** for one project is unlimited. You can add them to the **Drawing** paper using the **Add** button. In the next form:



double-click the first cell to enable the data input mode and set the name of a new drawing (for example, Joint). Then, double-click the **Section** cell and specify the project stage of the drawing, for example, WP (working project). Double-click the third cell and select the prepared ***.k3** file in the next form. Fill in the form and click **OK**.
If you have not prepared the ***.k3** file, you can create a report “from scratch”. For this purpose, select a report you need in the **Drawing** folder and click **Modify** to run the **K3** geometry editor. Now, you can create and save a report using the **K3** parameters. Read more about the geometry editor in the **K3** documentation.

If you have not set the drawing name and section when adding a drawing, you can do it later. For this purpose, select a line in the **Drawing** folder, click **Parameters** and set the name and section.

27 Fast Reports

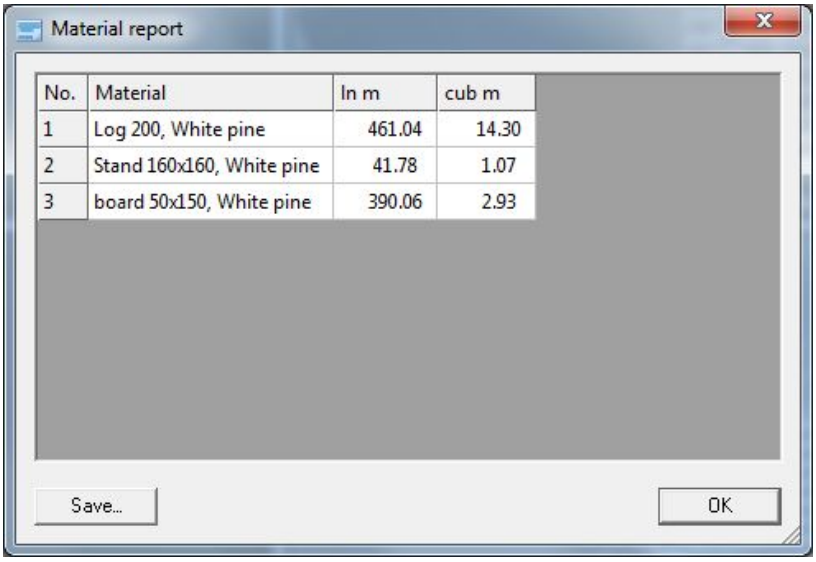
You can use the **Fast reports** function for quick preview of the house plans and fronts and for calculation of necessary materials. This function is used for quick evaluation of planning correctness, attractiveness of the house appearance and its cost at the intermediate stage of project development.

Attention! The created fast reports are not saved by the system. The database is not updated. The system does not save the project or conduct any checks.

To create the **Material register** fast report, select ***House/Fast reports/Material register***. Select the walls, beams and boards to calculate the materials.

Note. Select **All** in the shortcut menu to select all walls, beams and boards of the project.

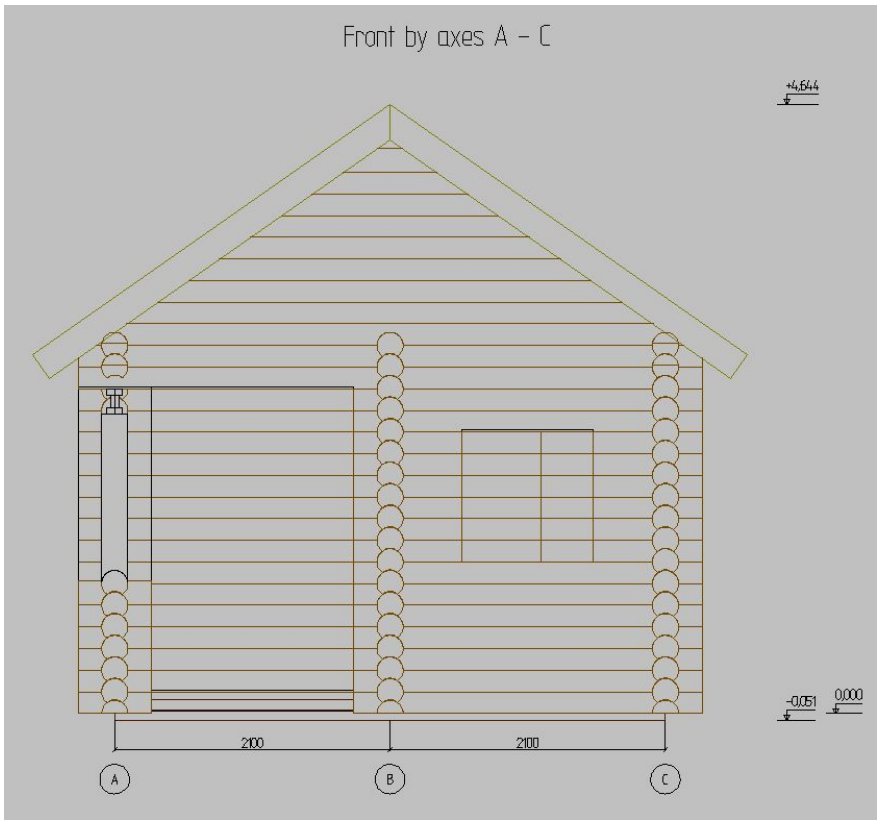
Click ***Finish*** to confirm your selection. A report on materials for these objects will appear on the screen:



No.	Material	In m	cub m
1	Log 200, White pine	461.04	14.30
2	Stand 160x160, White pine	41.78	1.07
3	board 50x150, White pine	390.06	2.93

To create the **Floor plan** fast report, select ***House/Fast reports/Floor plan*** and set the floor and ceiling heights. In the next form, set the necessary parameters and click **OK**. Read about the form and report appearance in the **Floor Plan and Room Area** 209 section.

To create the **Front** fast report, select ***House/Fast reports/Front*** and select two walls. The first wall defines the trajectory of view to the front: it will be parallel to the wall axis. The second wall defines the view direction: it will be on the right of the “viewer”. In the next form, set the necessary parameters and click **OK**. Read about the form and report appearance in the **Fronts** 236 section.



When creating this report, first, wall A has been selected and, then, wall C has been selected.

28 Questions and Answers

This chapter includes the questions frequently asked by the **K3-Cottage** *users and answers to them.*

Question 1

Is it possible to edit the objects using the **K3** menu commands, if they have been created using the **House** menu commands?

Answer

You cannot use the commands from the ***K3/Modify*** menu to edit the objects created using the **House** menu commands (wall, beam, post, etc.).

Question 2.

Can I delete any walls or beams using the icon in the main menu, if such objects have been created using the **House** menu commands?

Answer

No, you cannot. Use the special commands, such as ***House/…/Delete***, to delete the walls, beams, posts and other objects created using the **House** menu commands.

Question 3

The program creates the axes by walls automatically. Is it possible to do it in the opposite way?

Answer

No. Read the **New Project Parameter Setting** 68 section.

Question 4

Is it possible to join logs one by one only?

Answer

Yes. But, if you select ***Wall/Fill with logs***, new logs without notches and division points will be created in all walls. You will have to divide them again.

Question 5

If I forget to divide any long log, how can I find it and how can I understand what log the program means?

Answer

Firstly, all long logs are marked with a different color.

Secondly, the system checks the project for long logs when creating the **Log table** report. If the system finds such logs, it displays the message with the wall name, log course number and log number in the log course. Using this information, you can find the long log easily. You can add the **Long logs** table to the report. Read more about it in the **Report Settings** 184 and **Log Table** 198 chapters.

Question 6

Can I delete a random log in the wall or its part?

Answer

Yes, you can.
If you need to delete a whole log or its internal part, add an opening of the 111 **Opening** 111 type 111 to the respective log course of the wall. The opening height should be equal to one log course. Set the required length of the opening.

If it is the beginning or end of the wall, you can set a console in this log course: the console projection may be > 0 – outward from the wall reference point or < 0 – inwards.

Question 7
I can rotate the views, create isometric views, etc in the program. How can I restore the default settings after it?

Answer
To restore the standard configuration of the program viewports, select ***View scheme by default*** in the **View** menu.

Question 8
When I create a wall involute, the log name overlaps the log course, therefore, it is hard to read the drawing. How can I move the name from the edge?

Answer
Read the **Editing Reports** 195 chapter.

Question 9
Does the program support simultaneous work with several projects?

Answer
No.

Question 10
Can the program make a half-saddle notch?

Answer
Such log end is possible in two conditions:

1. The **Trim type** of the log is set as ***Cut by arc***. Refer to the **Editing Log Parameters** 157 section.
2. The end of the wall or beam log is on the axis of the second wall. In this case, a blind saddle notch is cut in the second wall. See the **Marking Notches** 145 section.