CAD PROJEKT K&A

operation manual

CAD Cut 4.X

program for optimization of cutting furniture boards
during production of kitchen cabinets and wardrobes

Thank You for purchasing our software!

We are very pleased that You have decided to choose the product of CAD Projekt K&A.

This document will introduce You to the issues related to working in our unique program for obtaining the optimal cutting patterns of furniture boards.

However, if You encounter any problems during installation or operation of the program, please contact our technical support available at +48 61 642 90 82 or e-mail: pomoc@cadprojekt.com.pl.

Trainings

We also encourage You to use our training which will make Your work in our programs easier and more efficient. We offer trainings at our head office in Poznan, at basic, extended and advanced levels, carried out individually (only one person is trained) or in groups (maximum 6 participants).

For more information check the **Trainings** section at **www.cadprojekt.com.pl**.

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Table of content

1. Introduction

One of the basic conditions that determines the production financial success is optimally low consumption of the raw material. The best way of achieving this is to pay the closest possible attention to the technological process, in particular to the amount of wastage generated during the production process. It has been proven that even up to 10% of material can be saved if the wastage generation is properly limited.

So why do we generate so much waste? The reason is an inadequate distribution of the raw material. The best way to deal with this problem is to use a computer technology which guarantee optimal material utilization. An automatic planning of material consumption allows to lower production costs as well as save time and labour. Manufacturers encounter this problem on every stage of the furniture production. But now CAD Projekt K&A offers a solution – CAD Cut software, enabling precise optimization of cutting wood panels and other materials.

Operation of CAD Cut is based on adequate formats' placing on freely defined sheets in a way that provides the minimization of an unused surface. The results can be previewed. Such an economic location of formats is presented in Fig. 1.

Fig. 1 – example optimized cut pattern

CAD Cut has been designed to operate as a stand-alone program, as well as to cooperate with CAD Kitchens and CAD Decor PRO furniture databases. The newest version can also use formats of wardrobes, created in a new Wardrobe Module, which can be used in CAD Kitchens, CAD Decor PRO and CAD Decor programs. CAD Cut is addressed especially for furniture factories and individual woodworking plants.

2. Installation of CAD Cut 4.X

Note! In Windows XP, 2000, NT, Vista, 7 and 8 administrator rights are required.
Note! The HASP dongle should not be placed in the computer USB port during the installation! It should be placed there only after the installation is successfully completed.
Note! CAD Cut v. 4 can be also installed during installation of CAD Kitchens or CAD Decor PRO programs, if it has been purchased together with them, as an optional supplementary module.

2.1. Changing settings for Windows Vista, 7, 8/8.1 and 10

Before launching the installation of CAD Cut in Windows Vista, 7, 8/8.1 or 10 you should change some system settings, vital for proper program operation. The procedure varies dependant on the operating system version. To change these settings in all 3 cases you should go to the computer Control Panel and select the **User Accounts** (classic view - Fig. 2), or **User Accounts and Family Safety** icon (category preview – Fig. 3).

Fig. 2 – User Accounts icon in Windows Vista, 7 and 8 – classic view

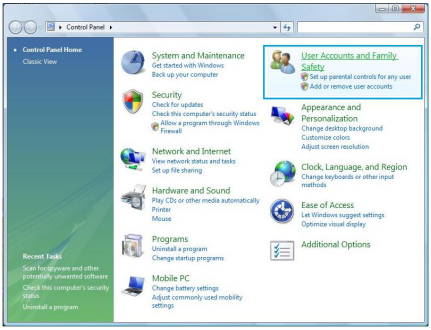


Fig. 3 – User Account and Family Safety icon in Windows Vista, 7 and 8 – category view

Then, in Windows Vista select **'Turn User Accout Control on or off'** option (Fig. 4) and on the following screen unselect **'Use User Account Control…'** (Fig. 5) and confirm by clicking **'Ok'**. After restarting the system will allow smooth operation in our software.

Fig. 4 – Turning user account control off on Windows Vista

Fig. 5 – the option 'User User Account Control…' in Windows Vista

In Windows 7, 8/81. and 10 you can select one of four levels of user account control (Fig. 7). First go to Control Panel and select User Accounts, and then **'Change User Account Control settings'** (Fig. 6).

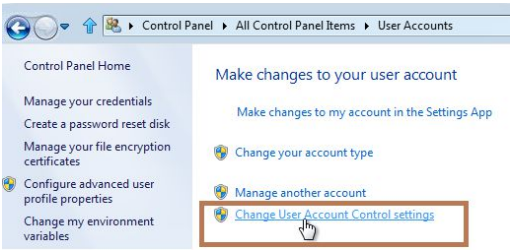


Fig. 6 – changing user account control settings in Windows 7, 8/8.1 and 10

Then a new window opens called 'User Account Control Settings', in which you should use the slider to select the lowest possible level of control (switch it off) (Fig. 7). Then click **'Ok'** to confirm the changes.

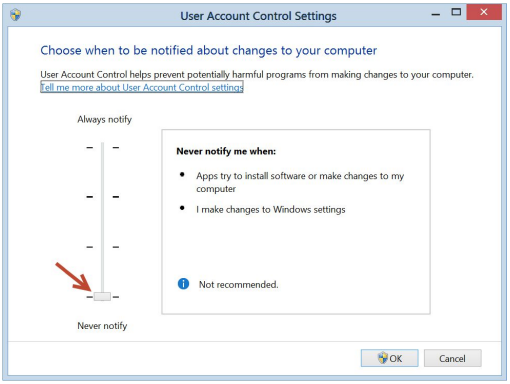


Fig. 7 –user account control switched off in Windows 7, 8/8.1 and 10

Because the account control is active by default, after changing the settings you will be asked to confirm, that you allow the **User Account Control Settings** program to make changes on your computer (Fig. 8).

Select **'Yes'** to disable the control and restart the computer.

After restarting the system will allow smooth installation and operation of CAD Cut.

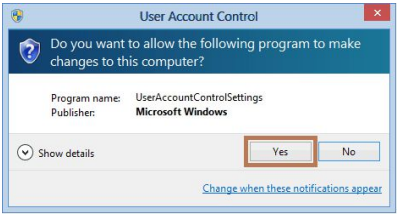


Fig. 8 – confirmation of changes in User Account Control Settings

2.2. Proper installation of CAD Cut

To begin the installation of CAD Cut, insert the disc in the DVD-ROM drive. The setup should start automatically. If the **autostart** option is disabled, start the installation manually. To do it, find a file called **CADRozkroj.exe** on the installation DVD (Start → DVD drive) and run it. The executable file you need to find is marked with this icon:

- After the initiation of the installation you will see a window with program information, which you should make yourself familiar with (Fig. 9).
- Before you begin the installation, close all running applications on your computer.

- To go to the next step, click **'Next >'**.
- You can abort the installation and close the installation wizard at any time by clicking **'Cancel'**, but in such case CAD Cut will not be properly installed or be able to operate.

Fig. 9 – installation wizard

- After clicking **'Next >'** you can indicate a location on a disk, in which CAD Cut program files are to be installed (Fig. 10) - the default location is **C:\CADProjekt\CADRozkroj**.
- To indicate a different installation location, click **'Browse'** and in a new window select the folder in which you want to save the files (Fig. 11).

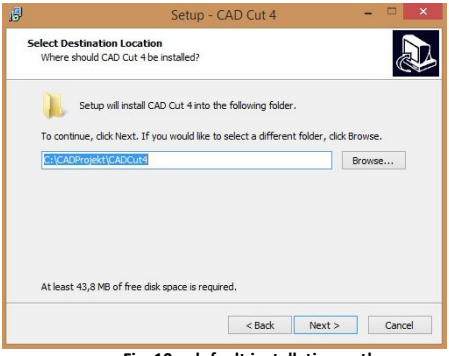


Fig. 10 – default installation path

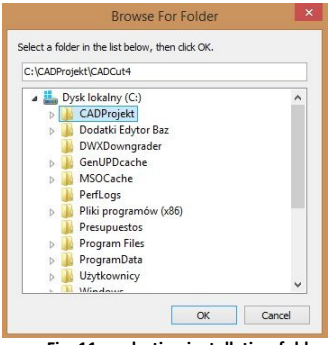


Fig. 11 – selecting installation folder

- In the following window you can select additional tasks for the installer, f. e. creating a desktop shortcut icon for the program (Fig. 12).
- To proceed, after selecting additional tasks, click **'Next >'**.
- You will be then informed, that the installer is ready to begin the installation.
- To launch it, click **'Install'** (Fig. 13).
- If the installation wizard detects any colliding running programs, it will inform you about this fact before starting the installation (Fig. 14).
- In such case you should close these programs before clicking **'Next >'**.
- During the installation you can see the progress bar (Fig. 15).
- When the installation is successfully completed, you will see a message **'Setup has finished installing CAD Cut 4 on your computer'**.
- To close the installation wizard, click **'Finish'** (Fig. 16).

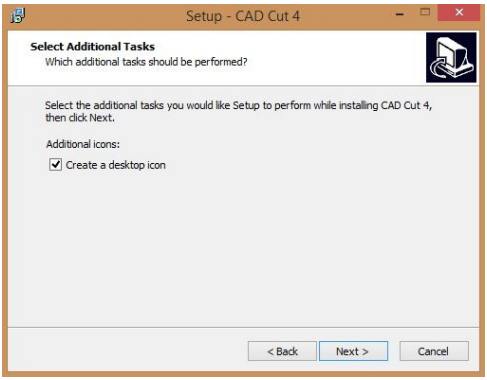


Fig. 12 – selecting additional tasks

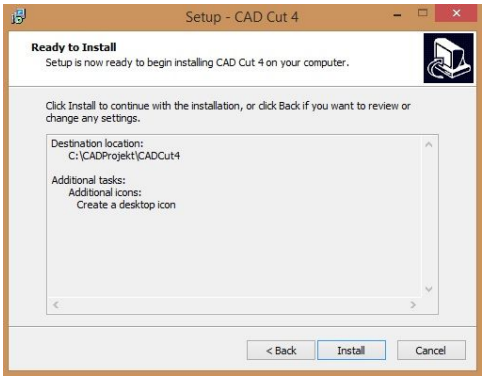


Fig. 13 – installation wizard ready to launch the installation process

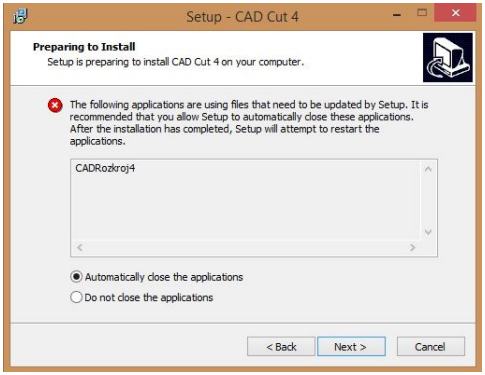


Fig. 14 – warning about running programs

Note! Installation may be aborted at any moment, but in such case CAD Cut will neither be installed nor operate properly.

- After the installation the CAD Cut icon will appear in the **Start/Programs** menu;
- The same icon will also appear on your computer desktop (if you decided to add it during the installation).

- CAD Cut can be also launched by executing **CADRozkroj4.exe** file (CADRozkroj4) that can be found in the program installation location, f. e.: C:\CADProjekt\CADRozkroj\ -
- When CAD Cut is launched for the first time, you will be asked to enter the registration code, received together with the program in the **'Coding'** window (Fig. 17);
- Incorrect or incomplete code is displayed in yellow.
- Properly entered code will display in white colour - then confirm it by clicking the **'Ok'** button.
- After the confirmation of the registration code, you can begin your work with CAD Cut.

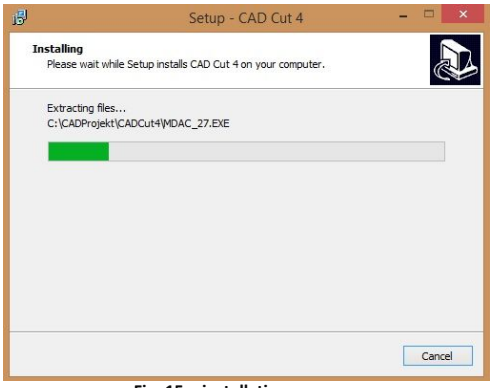


Fig. 15 – installation progress

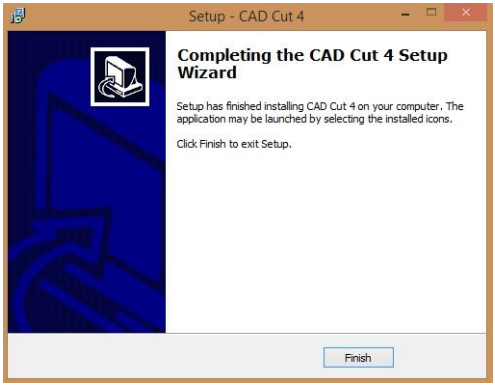


Fig. 16 – installation successfully completed

Fig. 17 – window for entering the registration code for CAD Cut

3. Getting started

3.1. The main window

The main CAD Cut window opens directly after launching the program and looks as presented on the next page (Fig. 19). This is when all configuration settings, loading and saving of projects, as well as defining formats and sheets for cutting patter optimization takes place.

Note! A cutting design is a file in which a full content of a list of formats, list of sheets and additional elements magazine is saved.

In the upper part of the window you can see the top menu, that contains configuration options (Fig. 18). The rest of the window is divided into 3 parts: list of formats, list of sheets and a function panel (Fig. 20).

Fig. 18 – the configuration menu of CAD Cut 4

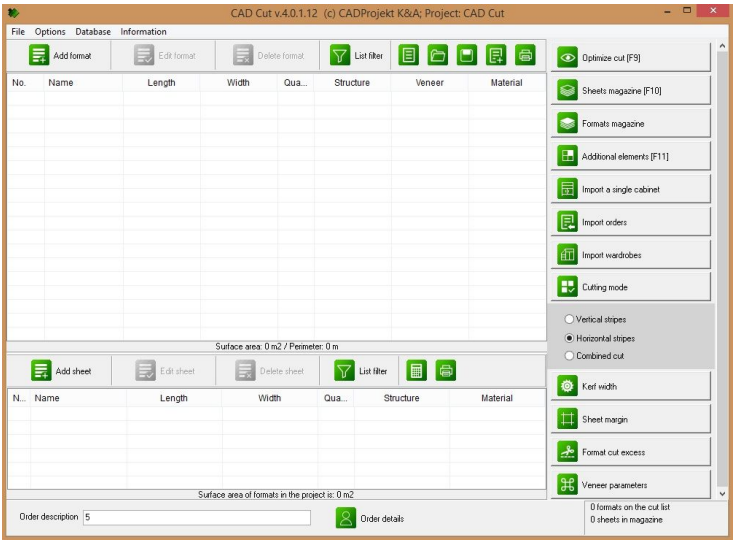


Fig. 19 – CAD Cut 4 main window

The upper table contains **the list of formats for cutting**, with their data: names, dimensions, quantity, grain structure, veneered edges and material, as well as ID number, which is also displayed on the preview of the resulting cutting pattern.

Under the table you can see values of surface area and perimeter of formats, currently present on the list.

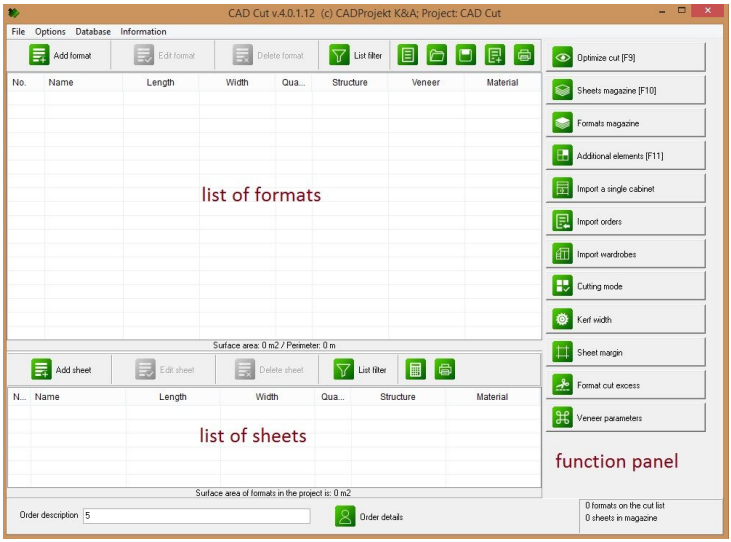


Fig. 20 – main window of CAD Cut 4 divided into 3 parts

Options of the list of formats:

- Three buttons located above the table are used for adding, editing or deleting formats:

- The **'Print'** icon  is used for printing the summary of formats designed for cutting (it may be inactive if the program does not detect any printer).
- The button 

allows to temporarily hide formats made of a particular material, in order to purposely omit them during the optimization.
- Four icons on the right side are for:

  - creating a new project: 

  - loading an existing project from the disk: 

  - adding a list of formats saved in a CAD Cut file to the current list of formats: 

  - saving the current project to the disk: 

The bottom table contains **the list of sheets**. All sheets designed for cutting are displayed in it together with their names, dimensions in millimeters, quantity, grain structure and the material they are made of. Options available for the sheet list:

- Three buttons above the table are used for adding, editing and deleting sheets:

- The **'Print'** icon  is used for printing the summary of sheets intended for cutting.
- The button 

allows to temporarily hide sheets made of a particular material, in order not to use them in the current optimization.
- The button  allows to pre-calculate how many sheets of defined dimensions are needed to plan the cut of all formats present on the format list. It is not a full optimization, so no preview of a cutting pattern is displayed, only an estimated quantity of necessary sheets is given. This option is useful when you want to check the minimum number of sheets, which have to be taken from the magazine to cut all formats.

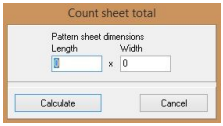


Fig. 21 – 'Count sheet total' option

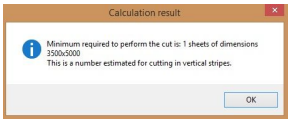
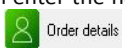


Fig. 22 – the result of estimation of quantity of needed sheets

Below the table the surface area of sheets is given (in m^2).

On the right side of the main program window you can see a **'Function panel'**, containing features that are described in point 3.6. on page 18.

In the bottom part of the main window there is a box called **'Order details'**, in which you can enter the name of the current project, and when you click the 

button you will be able to add further information about the order, in the newly opened window **'Order information'** (Fig. 23).

Fig. 23 - order information

3.2. Main menu - the 'File' tab

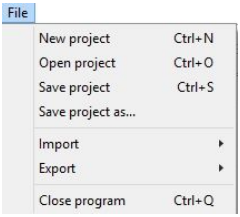


Fig. 24 – 'File' menu

1) '**New project (Ctrl + N)'** - creates an empty file, deleting current lists of formats, sheets and additional elements.
2) '**Open project (Ctrl + O)'** – loads a previously saved project from the disk, replacing the current one.
3) **'Save project (Ctrl + S)' –** saves the current project in the selected location on your computer.
4) **'Import' –** allows to import files in the following formats:

- **CAD Cut 1.0 formats files** – loads a list of formats created in a previous version of the program from the disk.
- **Text files** – loads TXT and CSV files containing lists of formats, so it is possible to quickly import formats lists made in other programs. After selecting this option you will see a message, presenting the correct file structure (Fig. 25), and then a browser in which you can select the TXT or CSV file and click **'Ok'**. Formats listed in the file will appear on the format list in CAD Cut.

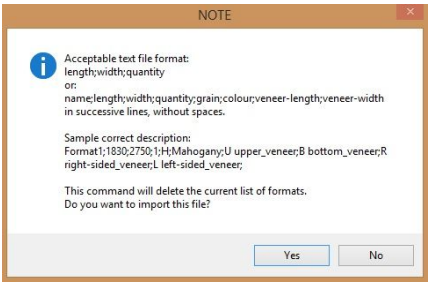


Fig. 25 – information about required format of a text file with formats data

One of the applications from which you can import list of formats using the **'Import' → 'Text files'** option, is Wardrobe Module. For more information on this subject please see the last chapter called *'Cooperation with Wardrobe Module'* on page 52.

- **Magazine status text files –** this option is analogical to the one described above, but on the contrary it is used to load lists of sheets to the magazine. It can be used to import lists of sheets from the Wardrobe Module database.

Note! An exemplary text file is presented in Chapter 8 on page 51.

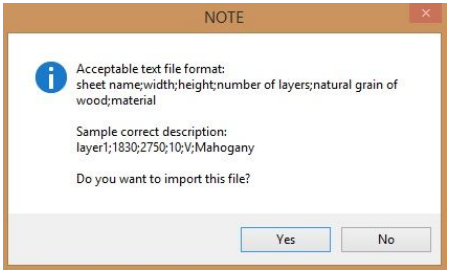


Fig. 26 – information about required format of a text file with sheet magazine data

- **MS Access databases** – allows to load a content of a MDB database to CAD Cut lists.
- **Cabinet Editor chart files** – Cabinet Design and Edition Module is an optional tool for CAD Kitchens, available as standard in CAD Decor PRO. In this module you can create custom cabinets and save lists of their components as CXL files, which can be then imported to CAD Cut.

To generate the summary of components while working in Cabinet Editor, go to the upper menu **'Information'**, select the **'Summary of cabinet components'** option, in the new window click the icon **'Save summary to CAD Cut file'** and indicate the location to save the CXL file.

5) 'Export' – enables you to export the summary of formats in two ways:

- **'Export to HTM'** – opens a window **called 'Print a list of formats…'**, in which you can select print options and load your logo (Fig. 27). After confirming settings by clicking **'Ok'**, you will see another window called **'List of formats'** (Fig. 28), containing the summary of formats that can be printed or saved on the disk.
- **'Export to DDK'** – allows to export the summary of formats to DDK files (Fig. 29).

6) 'Close program (Ctrl + Q)' – exits the application, allowing you to save the project.

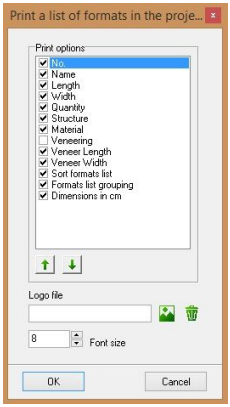


Fig. 27 – format list print setting

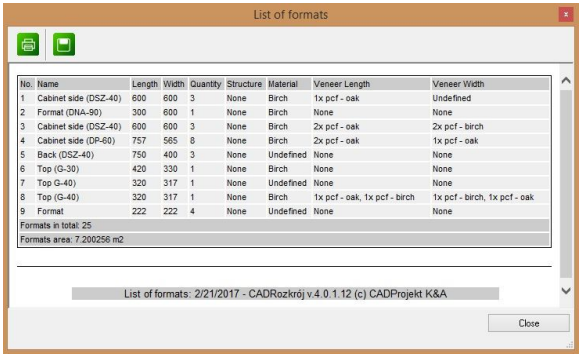


Fig. 28 – exemplary list of formats exported to HTM file

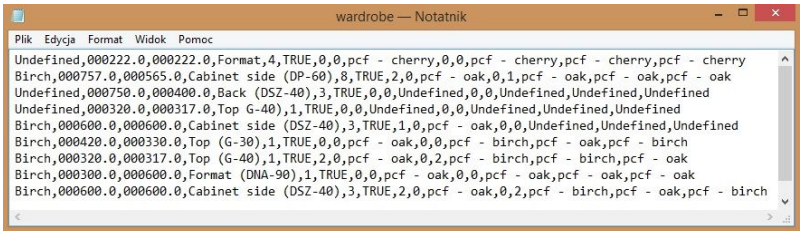


Fig. 29 – exemplary list of formats exported to DDK file

3.3. Main menu - the 'Options' tab

The second tab of the top menu contains configuration options for magazine, optimization, materials, project saving location and others.

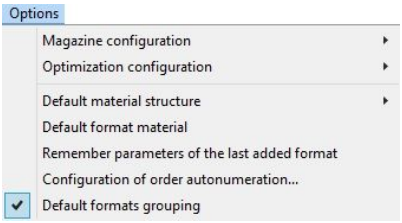


Fig. 30 – 'Options' menu

1) 'Magazine configuration' – enables you to manage the sheet magazine and waste produced during cutting (Fig. 31).

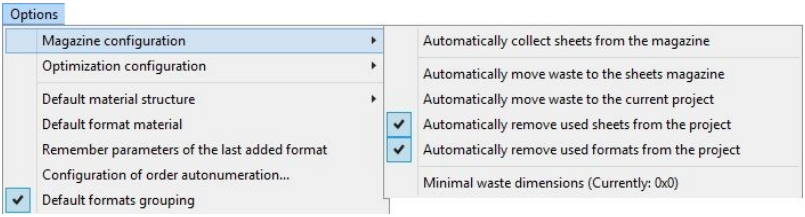


Fig. 31 – options of configuration of the sheets magazine – default view

- **'Automatically collect sheets from the magazine' –** causes automated collection of optimal quantity of boards from the sheet magazine to the current order. You can set the priorities of sheet collection, such as: **only full sheets** (factory boards), **only wastes** or **wastes first** (these options become available after selection of the **'Automatically collect...'** option - Fig. 32). If you do not define the priority, the program will collect the most optimal number of boards, both factory sheets and wastes. When you enable the automated collection, the list of sheets disappears from the CAD Cut main window.

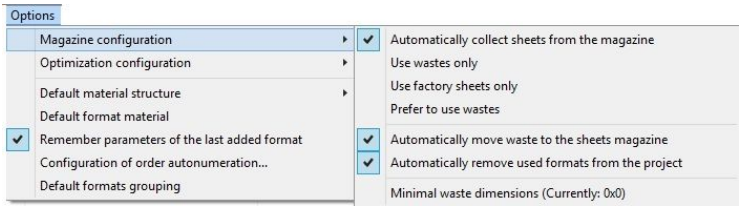


Fig. 32 – options of configuration of the magazine with enabled 'Automatically collect sheets...' function

- **'Automatically move wastes to the sheets magazine'** – wastes created during cutting will be automatically added to the list of available sheets in the main magazine, maintaining all parameters of the sheet they originated from.
- **'Automatically move wastes to the current project'** – this option allows to use wastes in the current project; they are added to the list of sheets after each cutting optimization and maintain the properties of the sheet they originate from.
- **'Automatically remove used sheets from the project'** – thanks to this function sheets used for cutting are automatically deleted from the list of available sheets in the current project.

- **'Automatically remove used formats from the project'** – after enabling this option the formats successfully arranged on cutting patterns are not longer taken into account while conducting new optimizations. In that situation the positions of these formats do not disappear from the list, but are marked with ✓ symbols and are no longer subject to cutting. They can be removed from the list by using the option **'Remove zero positions'**, available under the right mouse button.
- **'Minimal waste dimensions'** – opens a dialog box in which you can define the minimal dimensions, after exceeding which the wastes will be automatically moved to the magazine or to the list of available sheets in the current project (Fig. 33).

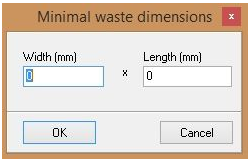


Fig. 33 – setting minimal waste size

2) 'Optimization configuration' – here you can define the settings of cutting optimization.

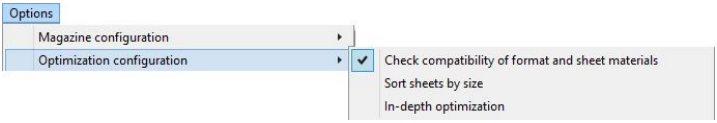


Fig. 34 – optimization configuration options

- **'Check compatibility of format and sheet materials'** – this options ensure that during the optimization formats are located only on sheets of the same material. Formats with undefined material are located on any sheets. When this option is disabled, the program does not take into account the materials which formats and sheets are made from during the cutting optimization, and matches them only by shape and size.
- **'Sort sheets by size'** – when this option is active, the program begins the optimization from the smallest sheet available. Otherwise formats are located on sheets accordingly to their succession on the list, without analyzing their dimensions.
- **'In-depth optimization'** – the program will first use the smallest wastes, and then the increasingly bigger ones, until all wastes are utilized. Then it will begin to use factory sheets.

3) 'Default material structure' – allows to define the default material structure (Fig. 35).

4) 'Default format material' – opens **'Select default…'** window (Fig. 36), where you can define the material the formats are made from.

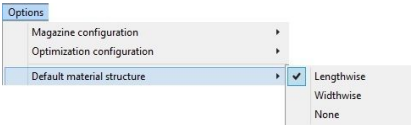


Fig. 35 – selection of default material structure

5) 'Remember parameters of the last added format' – after selecting this option the program will save the parameters (dimensions, structure, veneer etc.) of recently added formats.

6) 'Configuration of order autonumeration' - allows to set the format of the automated project numeration (Fig. 37).

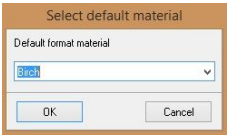


Fig. 36 – selection of default material

7) **'Default formats grouping'** – this option allows to activate and deactivate the grouping of identical formats on the list.

By default after adding new formats of parameters identical to the already existing formats (name, size, material), a new position will not appear on the list but the number of formats of the particular type will accordingly increase. When you resign from this default grouping, each new single format or groups of formats will be displayed on the list as a separate position.

Fig. 37 – setting the autonumeration of orders

3.4. Main menu - the 'Database' tab

Menu of this function becomes visible when there is at least one database of kitchen cabinets, loaded from CAD Kitchens or CAD Decor PRO programs (Fig. 38).

To load the database it is necessary to at least once generate valuation while creating a design drawing in CAD Kitchens or CAD Decor PRO (by clicking on the **'Valuation'** icon in the **CAD-Kitchens** toolbar) and to close that drawing.

Fig. 38 - databases loaded from CAD Decor PRO

1) **Edit cabinet parameters** – opens a window in which you can define the components of cabinets available in CAD Kitchens and CAD Decor PRO databases. To be able to edit cabinet parameters, you should select the database you want to use from the list (Fig. 39). The procedure of defining cabinet's components is described in point **7.1. Importing orders and defining cabinets** on pages 43 - 47.

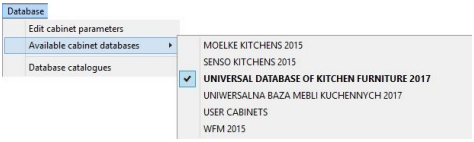


Fig. 39 - Universal database selected for edition

Cabinets do not have attributed definitions, because each carpenter uses unique methods of cutting boards, so to be able to automatically optimize cutting for single cabinets or entire orders from CAD Kitchens and CAD Decor PRO, it is necessary to define from what formats and additional elements they are composed of first.

To define cabinet parameters, after selecting a chosen cabinet from the list in the **'Current database…'** (Fig. 40) window, add all formats that compose this very cabinet (sides, back,

shelves, plinths), and all other elements. Added elements will be automatically saved in the database located in the location: **C:\CADProjekt\CADRozkroj4\Baza_danych** and will be available after restarting the program. It is enough to define parameters of cabinets once, to be able to rapidly generate the optimal cutting patterns of orders in the future.

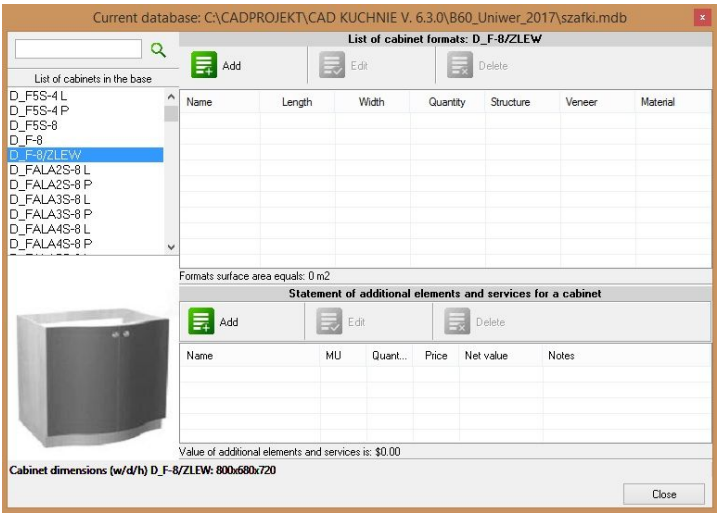


Fig. 40 – edition of a chosen cabinet, available in a selected database in CAD Decor PRO

It is worth remembering that while defining formats you can choose the method of the scaling to be used by the program when the cabinet in the current order will have different dimensions than its equivalent in the database (i.e. when it was necessary to change its dimensions during designing). This makes it possible to cut also the untypical cabinets.

Note! If the program detects cabinets definitions prepared in the version CAD Cut v. 1.0, they will be preserved but at the same time their format will be automatically changed, so they will be no longer available in the older version of the program.

2) 'Available cabinet databases' – displays a list of databases loaded from CAD Kitchens or CAD Decor PRO programs (Fig. 38). Please remember, that a database is loaded no sooner then you generate a valuation of a design created in one of the above programs. CAD Cut allows to select only one of them, but this selection can be changed in any moment. After selecting another database the list of cabinets and orders made in CAD Kitchens and CAD Decor PRO, available for importing to CAD Cut changes.

It is possible to select also an editable User Cabinets database, containing models created in the Cabinet Design and Edition Module, which is an optional tool for CAD Kitchens, available as standard in CAD Decor PRO.

3) **'Database catalogues'** - opens configuration window (Fig. 41), in which you can select a location in which CAD Kitchens or CAD Decor PRO programs have been installed, and this way define the paths to kitchen cabinet database. Use the **'Add'** button to browse for location and then click **'Ok'** to confirm the new path.

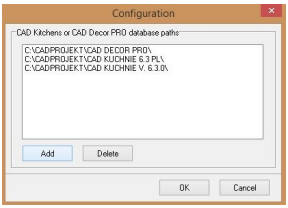


Fig. 41 – 'Configuration' dialog box

3.5. Main menu - the 'Information' tab

In this tab you gain access to general information about the program, to the Operation Manual in PDF and to the newest official version of CAD Cut, available for downloading at our website.

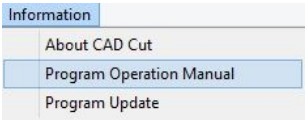


Fig. 42 – informative options

1) **'About CAD Cut'** – opens a window containing information about the CAD Cut program; clicking on the window takes the user to CAD Projekt K&A's website.
2) **'Program Operation Manual'** – opens a user manual for CAD Cut v. 4 in PDF file format.
3) **'Program Update' –** moves you to our website on which you can find links to the newest version of CAD Cut.

3.6. 'Function panel' features

On the right side of the main window of CAD Cut there is a panel, containing function buttons, that are described in the following points (Fig. 43).

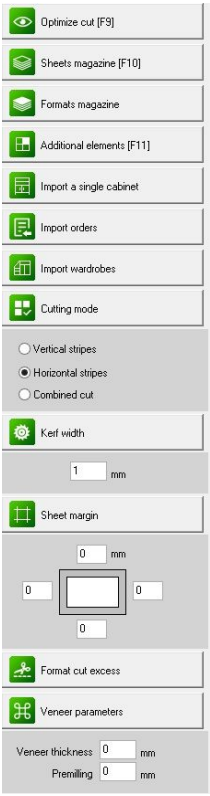
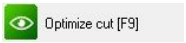


Fig. 43 – function panel

1) 

- starts computations of the optimization. The duration of the process depends on the computer speed and number of elements to match, but even for project containing hundreds of formats the results are generated within seconds.
2) 

- opens the window of the magazine of sheets (Fig. 44).
3) 

- opens the window of the magazine of formats (Fig. 45).
4) 

- opens the window of the magazine of additional elements (Fig. 46)

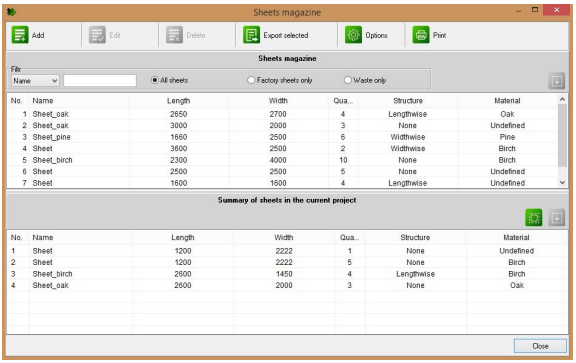


Fig. 44 – sheets magazine window

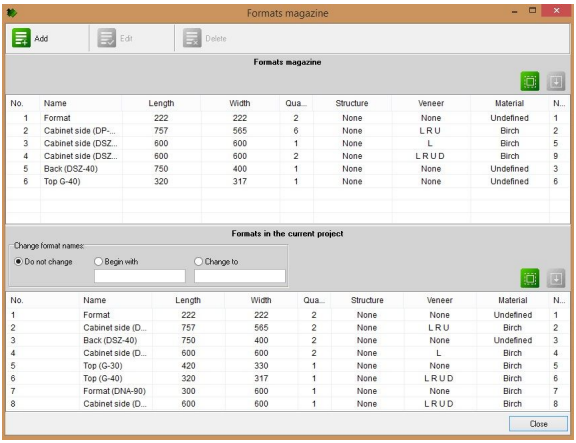


Fig. 45 – formats magazine

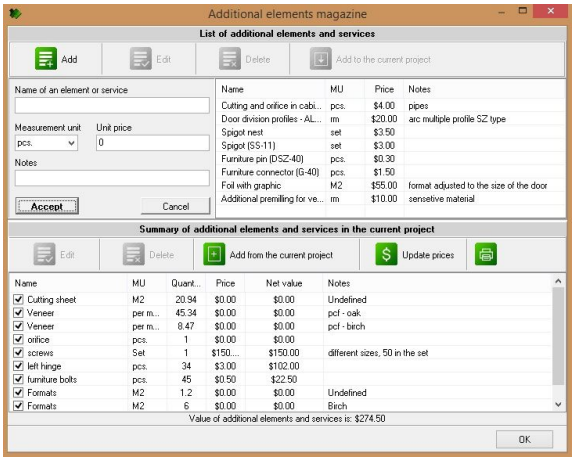


Fig. 46 – additional elements magazine

5) 

– opens the window called **'Import of a cabinet from CAD Kitchens or CAD Decor PRO to the current project '** (Fig. 47), in which you can get formats of components of a chosen cabinet to the cut list by indicating the cabinet on the list and clicking **'Import the cabinet to the cut list'**. The cabinet can be imported only after defining its formats first by using a function **'Edit cabinet parameters'** in the **'Database'** tab of the top menu. For more information please see point 3.4. on page 16 and Chapter 7 on page 42.

Note! Functions 'Import a single cabinet' *and* 'Import orders from CAD Kitchens or CAD Decor PRO' *become active after configuring the database catalogues. CAD Cut automatically searches the recent installation locations of CAD Kitchens and CAD Decor PRO programs. They can be also indicated manually by using the* 'Database catalogues' *option in the* 'Database' *tab of the main menu.*

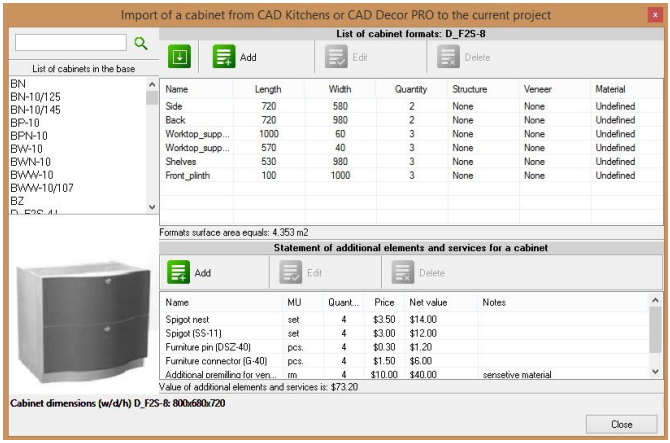


Fig. 47 – importing a single cabinet from the CAD Kitchens database

6) 

- opens a window called **'Import orders from CAD Kitchens or CAD Decor PRO'** (Fig. 48), in which you can get to the cut list the formats of components of all cabinets from a chosen order created in CAD Kitchens or CAD Decor PRO. In this window you will see a list of orders created in the above programs, but only those, which have been at least once valuated (this means that during working in CAD Kitchens or CAD Decor PRO you used the **'Valuation'** option in the **CAD-Kitchens** toolbar).

To import an order first close the design in CAD Kitchens or CAD Decor PRO. Then click on the appropriate position in on the list in the **'Import orders…'** window. You will see a list of cabinets included in the chosen order. For cabinets marked as **'undefined'** the components have not been previously defined, so the program cannot determine what workpieces compose the particular cabinet.

Positions without descriptions are the defined cabinets, with components described using the function **'Edit cabinet parameters'** (editing cabinet parameters is described in point 7.1. on page 43).

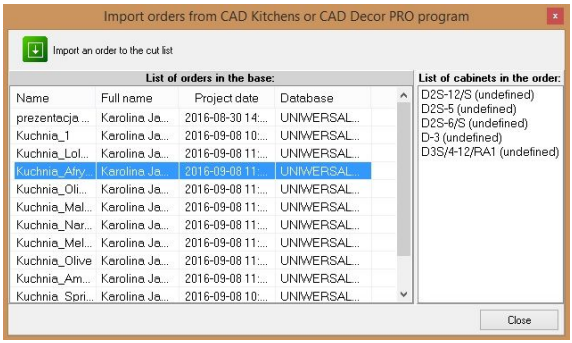


Fig. 48 – importing an order from CAD Decor PRO

7) 

- opens a window **'Import wardrobes from CAD Decor, CAD Kitchens or CAD Decor PRO'** (Fig. 49). For more information about the cooperation between CAD Cut and the Wardrobe Module see Chapter 9 on page 52.

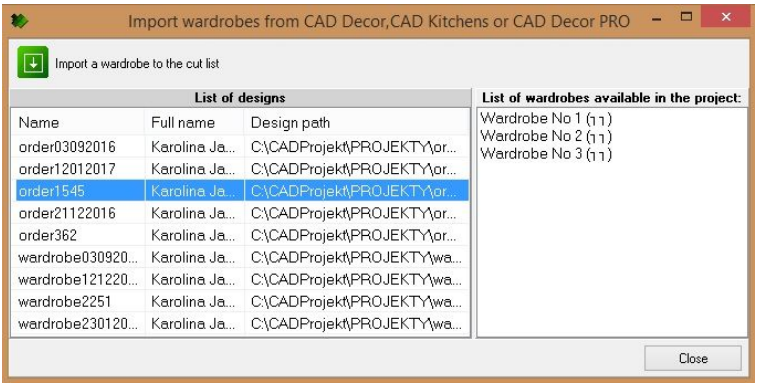
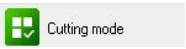


Fig. 49 – importing formats of wardrobes from CAD Kitchens with Wardrobe Module

8) 

- in this field you can switch between three modes of optimization, this is: cutting in horizontal stripes, cutting in vertical stripes or combined mode. Options **'Horizontal stripes'** and **'Vertical stripes'** make it possible to conduct optimization maintaining the order of priorities and ensure the biggest safety of the material (they require a minimum number of moves, what helps to limit the possible damage of cut material). The **'Combined cut'** option may be used when you want to produce as little waste as possible, and use the surface of the board to the maximum, but it carries the risk of scratching the material due to required changes of orientation of the furniture board.

9) 

- a parameter specifying the thickness of the cut line (dimension given in millimeters). The value is retained when the program is closed and remembered when it is reopened.

10) 

– this function enables you to set the width of the part of sheet edges that is not usable for format arrangement, e.g. is uneven or damaged. This parameter is determined once for all sheets and its value is retained for the future use after closing the program.

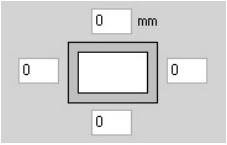


Fig. 50 – boxes for setting sheet margins

11) 

- here you can set the net dimensions of formats, if their edges are to be subject to further processing. This parameter is set once for all formats. The entered value is remembered after closing the application.

12) 

- the newest option, allowing you to include the veneer thickness in the project. Entered values are set in the project and are identical for all formats. Veneer thickness is subtracted, and the premilling value is added to each format side, on which you plan to place a veneer. Changes of these settings are remember after restarting the program.

Fig. 51 – boxes for setting veneer parameters: their thickness and depth of the premilling

4. Entering formats and sheets data

4.1. Adding and editing formats

Formats are the elements intended for cutting. Their data may be entered manually or imported, e.g. from text files, MDB databases, orders created in CAD Kitchens or CAD Decor PRO, summaries of components of cabinets created in the Cabinet Design and Edition Module or from designs created using the Wardrobe Module. During the optimization, formats are virtually cut from the available material (factory sheets or wastes produced during previous cut), accordingly to set configuration, which you can freely modify (e.g. using only full sheets, horizontal cutting mode, in-depth optimization). In this way you obtain the optimal cutting patterns.

During your work with CAD Cut you can:

- add, edit and delete formats;
- import complete summaries of formats of kitchen cabinets from CAD Kitchens and CAD Decor PRO programs, as well as from the Cabinet Design and Edition Module;
- import formats of furniture designed in Wardrobe Module;
- set and modify dimensions, quantity, material and grain structure of formats;
- indicate which edges are to be veneered and define the veneering material;
- set the thickness of the veneers and the depth of the initial milling;
- define the format margins, if the edges will be subject to further processing;
- hide formats made of a particular material from the list by using a filter, so they are not taken into account in the current optimization;
- manager the formats magazine (you can move formats from the current project to the magazine or the other way around - use formats from the magazine in the project).

To add a new format click the Add format button. A new window will open (Fig. 51). The same window opens after editing format (Edit format button). The first option allows you to enter data for a new format, set its dimensions, material etc. The second option enables to make changes in previous settings for the particular format.

Data which can be entered in the **'Add/edit format'** window:

- **name** – it can be typed or selected from the dictionary (after clicking the little arrow);
- **dimensions** – width and length of the format in millimeters or centimeters (you can switch between the units – Fig. 52). Changing dimensions results in automatic change of the format preview in the right part of the window. Dimensions can be swapped by clicking the button.

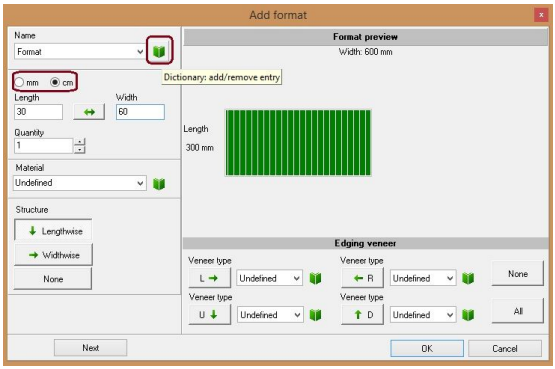


Fig. 52 – window for adding formats

- **quantity** – defines the number of formats of a particular kind;

The icon **'Dictionary: add/ remove entry'** allows to save the currently used name or to delete it. After clicking the icon, confirm the operation (Fig. 53).

Fig. 53 – confirming changes in the dictionary

- **material** – here you specify the material of which the format is made. You can enter text or select it from a dictionary, if it has been previously added. The dictionary is common for formats and sheets and you compose it yourself. When you select an appropriate option of optimization configuration, the program will locate formats of a particular material only on sheets made of the exactly same material. The default position is an **undefined** material, and formats designated this way are placed on formats made of any material.
- **structure** – allows to set the direction of the grain on the format (**lengthwise, widthwise** or **none**). During the optimization the program adjusts the format grain to the grain structure of the sheet, on which format is arranged.
- **edging veneer** – in this pane you can indicate, which edges are to be veneered and set the veneer material. This information will be displayed on the cutting pattern preview, and program will automatically calculate the total length of veneered edges and

amount of necessary veneer. The thickness of veneer and depth of the premilling can be set in the **'Veneer parameters'** pane in the program main window.

- **veneer type** – you set the type of veneer added on format's edges. New names can be added to the dictionary by clicking the icon **'Dictionary: add/remove entry'**. They will be then available on the drop-down list during defining the following veneers. Information about the veneer type may be used for valuation of additional elements in the cutting project. By default the veneer type is set as **undefined**.

4.2. Adding and editing sheets

A sheet is a basic material, which is intended to be divided into smaller parts of particular shapes and dimensions – formats. To add a new sheet to the list in the current project or in the sheets magazine, click the Add sheet button. A new window will open (Fig. 54). The same window opens after selecting a sheet on the list and clicking the Edit sheet button. The first option allows you to add a new sheet, set its dimensions, material and number of copies. During edition you can make changes in previous settings for a particular format.

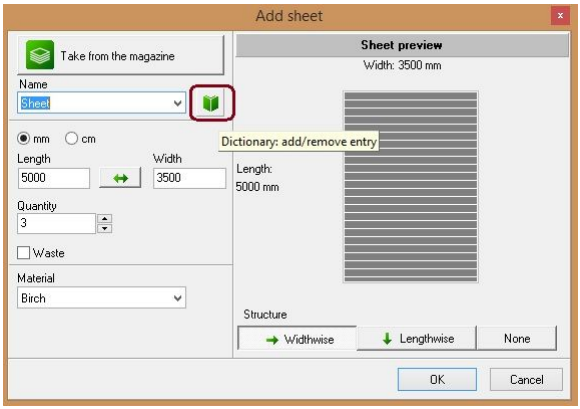


Fig. 54 – 'Add sheet' window

During adding sheets to the current project list, you can use the option **'Take from the magazine'**, available in the upper left corner of the adding/edition window (Fig. 55). It opens a new window, in which you can select any number of sheets present in the magazine and move them to the current CAD Cut order.

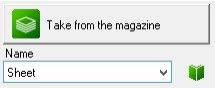


Fig. 55 – 'Take from the magazine' button

In the **'Add/edit sheet'** window you can set:

- **name** – it can be any text typed or selected from among the names added to the dictionary (by using the icon **„Dictionary: add/delete name"**. If the currently entered name is not present in the dictionary, after clicking this icon it will be added there, but if it is already present, after selecting this function it will be deleted.

- **dimensions –** length and width of a sheet. When you make any change in dimensions, you will see them on the preview. Dimensions can be swapped by using the option.
- **quantity** – here you can define how many sheets of identical dimensions are to be added to the current project or to the sheets magazine (from 1 to 9999).
- **waste** – this option allows to set the status of a sheet, which influences the order in which sheets are used during generation of the cutting pattern, based on your settings.
- **material** – here you specify a material from which the particular sheet is made. You can type the text or select it from the drop-down dictionary list. It is the same dictionary as in the case of formats, so names of materials added during adding formats will be available. After selecting the appropriate function in the menu, the program will match only formats and sheets of identical colours. The default position is an 'undefined' one.
- **structure -** here you define the direction of the grain for the sheet. You should pay close attention to this parameter, because during the generation of the optima cutting pattern, the grain structure of formats is matched with the grain structure of sheets.

4.3. Sheets magazine

Sheets magazine is used for storing any number of defined sheets and generated wastes. You can take sheets and wastes from it and use them in the project.

To go to the sheets magazine, click the 

button in the right panel in the main CAD Cut window. The **'Sheets magazine'** window will then open (Fig. 56).

The sheets magazine is independent from particular cut projects, and all changes save to it are available after restarting the program.

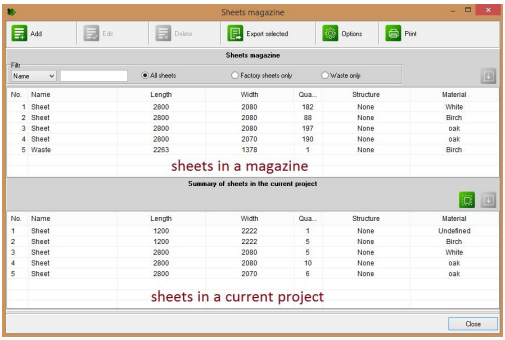


Fig. 56 – sheets magazine window

The upper table contains a list of sheets available in the magazine, and the bottom one – all sheets present in the current project (Fig. 56). In the upper part of the window you can also find a filter, which can be used for searching for sheets of particular parameters (name, length, width or material) (Fig. 57). The list can be also filtered by using options: **'All sheets', 'Factory sheets only'** and **'Wastes only'**.

Fig. 57 – searching a sheet by the name

Functions available in the **'Sheets magazine'** window:

- Add - opens the **'Add sheet'** window;
- Edit - used to edit a selected existing sheet;
- Delete - removes a selected position from the list of available sheets;
- Export selected - exports selected sheets to the CSV file and saves it to the chosen location;
- Print - prints the list of sheets available in CAD Cut magazine;
- Options - functions of deleting **zero positions of wastes** and **zero positions of factory sheets** from the list.
- - moves chosen sheets from the general magazine to the current project. It is necessary to specify the quantity of sheets to be moved (the maximum number is equal to the quantity of sheets of a particular type present in the magazine) (Fig. 58). The given number of sheets will be removed from the magazine and added to the current project list. Sheets can also be moved by a 'drag-and-drop' method.
- - works analogically to the previous function but moves a given number of chosen sheets from the current project to the magazine (Fig. 59).

Note! Sheets can be moved using a simple 'drag-and-drop' technique.
To do so, first select a sheet you want to move on the list with a single left-click. Then, holding the left mouse button down, move the mouse cursor to the second table and release the button. A new dialog box called 'Moving sheets...' *will open, in which you can define the amount of moving boards and confirm it by clicking* 'Ok'. *Sheets will be then moved from one list to another.*

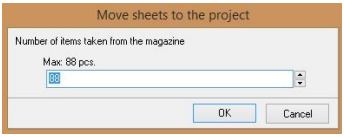


Fig. 58 – moving sheets to the project

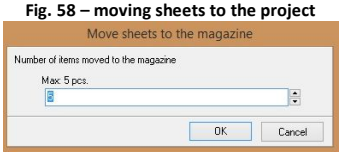


Fig. 59 – moving sheets to the magazine

When you close the sheets magazine after making any changes, you will be asked to confirm whether you want to save or drop them (Fig. 60). You will see analogical message when closing the formats magazine, described in the next point.

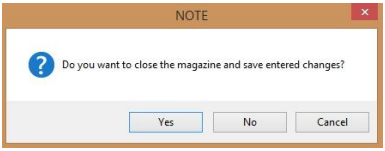
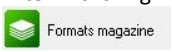


Fig. 60 – confirming changes in the sheets magazine

4.4. Formats magazine

This magazine is used for storing any number of defined formats The magazine is independent from individual cutting projects and all changes made to it are saved for the future use (when confirmed). Used for saving formats for future use and moving them to current projects.

After clicking the 

button in the right panel of the main CAD Cut window, the **'Formats magazine'** window will open (Fig. 61).

The upper table displays the list of formats available in the magazine, and the bottom one contains all the formats available in the current project.

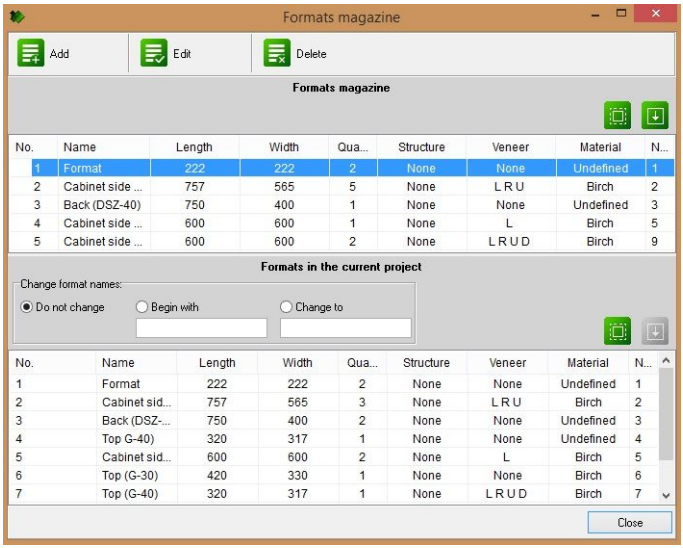


Fig. 61 – Formats magazine window

Functions available in the **'Formats magazine'** window:

-  - moves chosen formats from the general magazine to the current project. You need to specify the quantity of formats to be moved if the quantity of formats is bigger than 1 (Fig. 62). Formats, like sheets, can be moved using the *'drag-and-drop'* method.

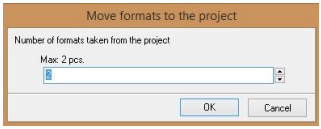


Fig. 62 – moving to the project

-  - works analogically to the previous function: moves a specified number of chosen formats from the current project to the magazine (Fig. 63). During moving format from the project to the magazine you can change their names or add a chosen phrase in front of the current name. To do it, select the appropriate option in the **'Change format names'** field and enter text (Fig. 64).

Fig. 63 - moving to the magazine

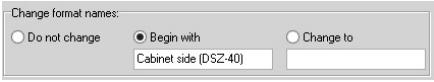
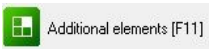


Fig. 64 – changing format's name while moving it to the magazine

5. Additional elements magazine

After clicking the 

button in the right panel of the main CAD Cut window, the **'Additional elements magazine'** window opens (Fig. 65). It has two purposes:

- the upper table serves as a list for storing any number of elements and services defined by you, and, just like the sheets and formats magazines, is independent from cut projects;
- the bottom table displays a list of additional elements and services in a current project.

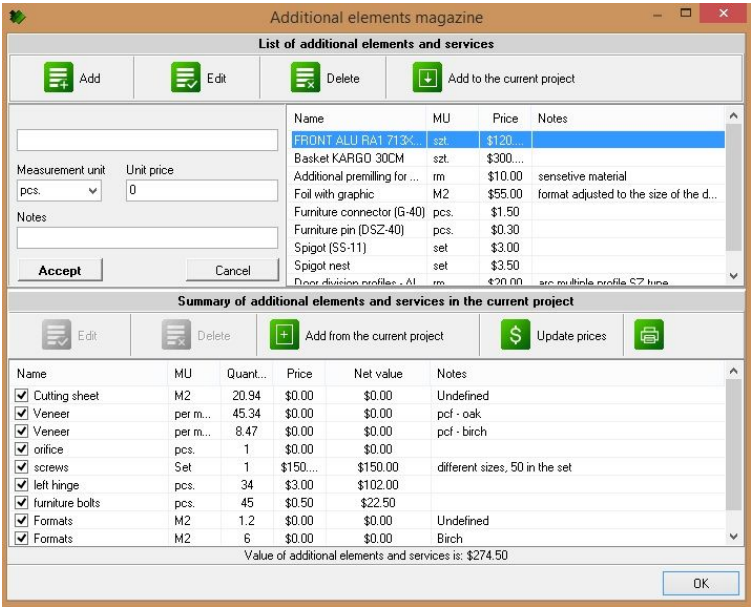


Fig. 65 – Additional elements magazine window

Users have full freedom in defining additional elements. You can list here all necessary action and operations, materials, tools or accessories, which are needed to realize the project. After clicking the **'Add'** button you can define the name of an element or service, their quantity, the measurement unit (MU) (by selecting it from a list or entering the text manually – Figures 66 and 67) and the unit price. Optionally you can also add notes.

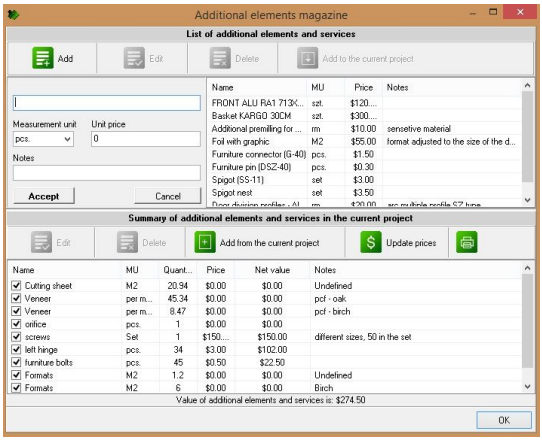


Fig. 66 – adding a new element to the magazine

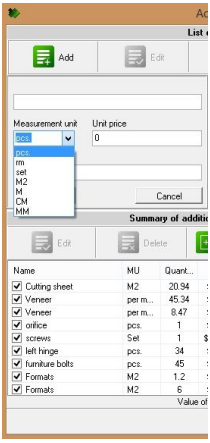


Fig. 67 – selecting the unit

Functions available in the upper part of **'Additional elements magazine'** window:

- Add - opens a new panel in the same window, in which data of a new element can be entered (Fig. 66). Then the newly added position can be moved to the current project by dragging-and-dropping or by clicking the **'Add to current project'** button. If the price and quantity were specified, the program will calculate the total cost;
- Edit - allows to modify data of entered position; **'Confirm'** safes the changes;
- Delete - removes the indicated position from the list;
- Add to the current project - after indicating an item to move and this selecting option, you will see a dialog box called **'Number of positions added to the project'**, in which you can specify, how many items should be taken from the magazine and added to the current project (Fig. 68). You can see elements moved to the project on the above illustration (Fig. 66).

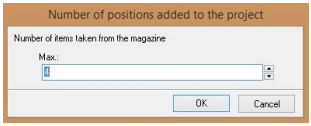
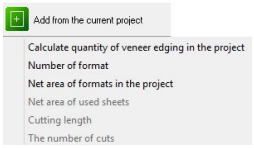
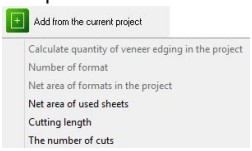


Fig. 68 – 'Number of positions...' dialog box

- Add from the current project - there are three options available under his button:





<u>The first three functions are available before the optimization and another three after the execution.</u>

1) **'Calculate quantity of veneer edging in the project'** – this option counts the total length of veneer used in the project and defined for particular formats. Positions are

differentiated based on the selected type of veneer. The results are given in running meters (Fig. 69).

You can edit each position (by double left-clicking it) and add a price for it (Fig. 70) - then the cost of used veneer will be estimated (in the **'Net value'** column). Under the table the total value of additional elements and services in the project is displayed.

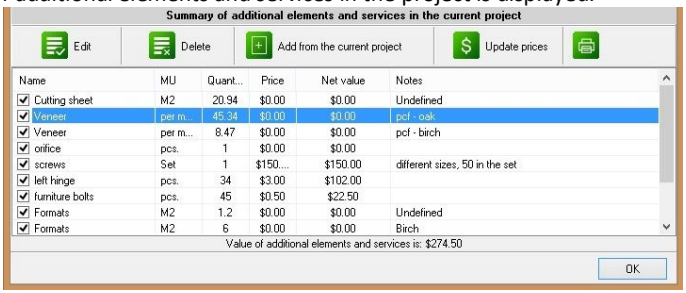


Fig. 69 – veneers added to the list of additional elements (visible only the bottom part of the window)

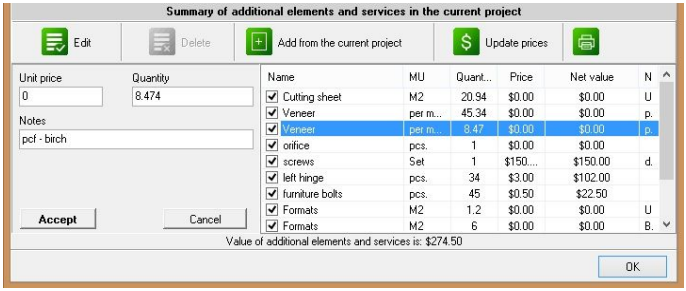


Fig. 70 – adding prices for veneers

After selecting the **'Calculate quantity of veneer…'** you will see a message informing about an automated grouping of identical positions already existing on the list (Fig. 71).

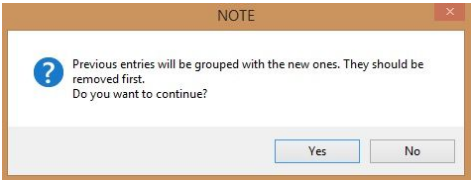


Fig. 71 – warning about automated grouping of identical entries

2) **'Number of formats'** - Automatically grouping, and counting the number and types of formats (made of the same material) contained in the project. This option is available before performing the optimization.
3) **'Net area of formats in the project'** – counts the total size of formats in the current project after taking processing into account, and adds that value to the additional elements summary (results given in square meters).
4) **'Net area of used sheets'** – adds areas of sheets used during cut optimization (results

given in square meters). This information is available not sooner than after the first cut optimization is conducted. Sheets of various materials are listed separately. If you edit them and add prices for each position, the program will also calculate the cost of used sheets. If later you make changes to the list of forms or sheets, you must repeat optimization.

5) **'Cutting length'** - allows you to automatically count the total length of the cut in the current project. These data are available only after cutting optimization. After the introduction of amendments to the format size or sheet must repeat the operation optimization.

6) **'Number of cuts'** - enables automatic counting the number of cuts in the current project. Information about the number of cuts will be taken from the last executed optimization. If later you make changes to the list of forms or sheets, you must repeat optimization.

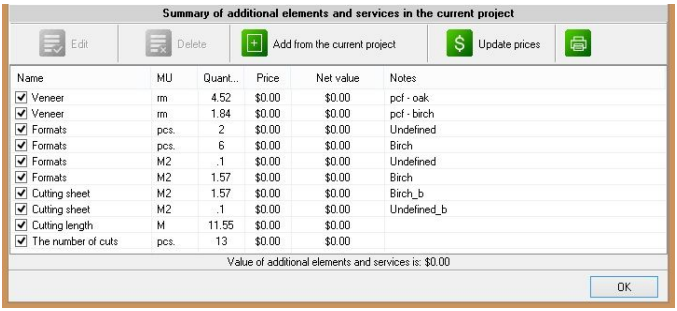
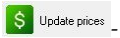


Fig. 72 - exemplary summary of additional elements used in a project, including formats and sheets net areas

Note! To move a chosen position to the current order list, you can select it and drag using the mouse, or click the button called 'Add to the current design'. *If the selected position had defined price and quantity, then the program will automatically estimate also its value, and display the total of costs on the bottom of the window.*

Note! Positions in the lower table belong to the current design and are saved together with it. It is not possible to move them to the main list of elements and services (in the upper table).

- 

- if the price of one or more elements on the magazine list has been changed, then after clicking the **'Update prices'** button the program will calculate the new value for elements in the current project (their prices will be synchronized with the prices in the upper table).

-  **'Export list of additional elements to HTM file'** - allows you to save or print a list of elements in the current project, with or without prices (Fig. 73). Exemplary exported list and its print preview are presented on the following illustrations (Figures 74 and 75).

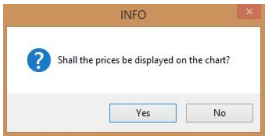


Fig. 73 – choosing to display prices in the exported summary

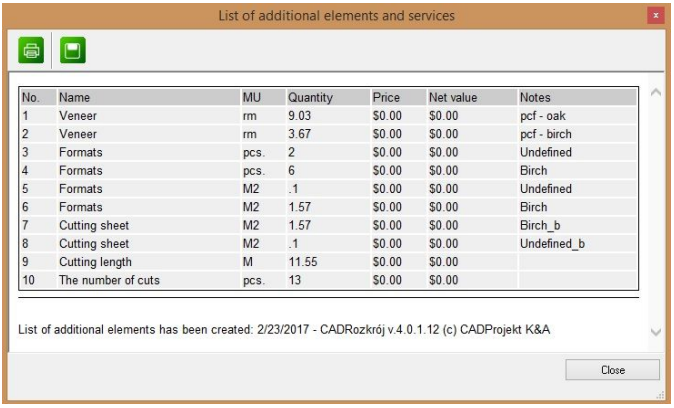


Fig. 74– exemplary list of additional elements containing prices

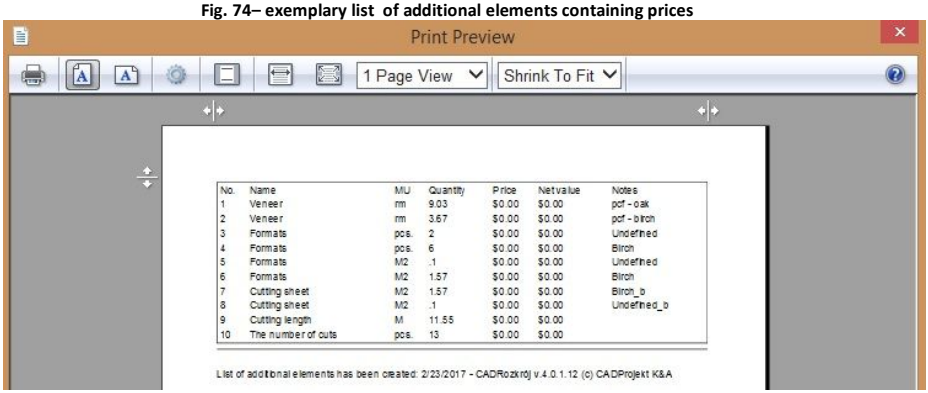
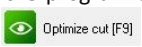


Fig. 75 – print preview of an exemplary list of additional elements

6. Cut optimization

The first button in the right upper corner of CAD Cut main window is used to generate optimal cutting patterns, based on your settings. The program matches defined formats with available sheets and arrange them in a way ensuring the minimum waste generation. The method of arranging formats may vary depending on the selected operating mode and configuration of the magazine and of the optimization process.

6.1. 'Optimization results preview' window

After entering or importing data of all formats, as well as after setting the availability of sheets and configuring the program settings, you can generate the optimal patter of the cut – by clicking on the 

button. If there are suitable sheets (or wastes) in the project, you will see the **'Optimization results window'** (Fig. 78), which has been described in details in the following points of this manual.

If it is impossible to arrange formats due to the lack of sheets of appropriate size or material (type or structure), you will be informed about that fact (Fig. 76 and 77).

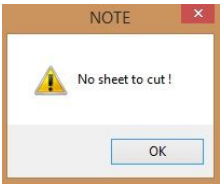


Fig. 76 – information about missing sheets

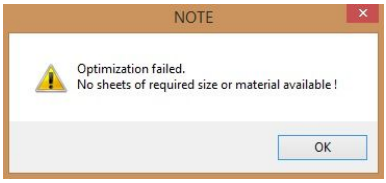


Fig. 77 – information about the lack of sheets of suitable dimensions or material

Functions of the top menu: 'File'

- **'Save image of cut pattern [Ctrl + S]'** - saves the cut preview as JPG or BMP file;

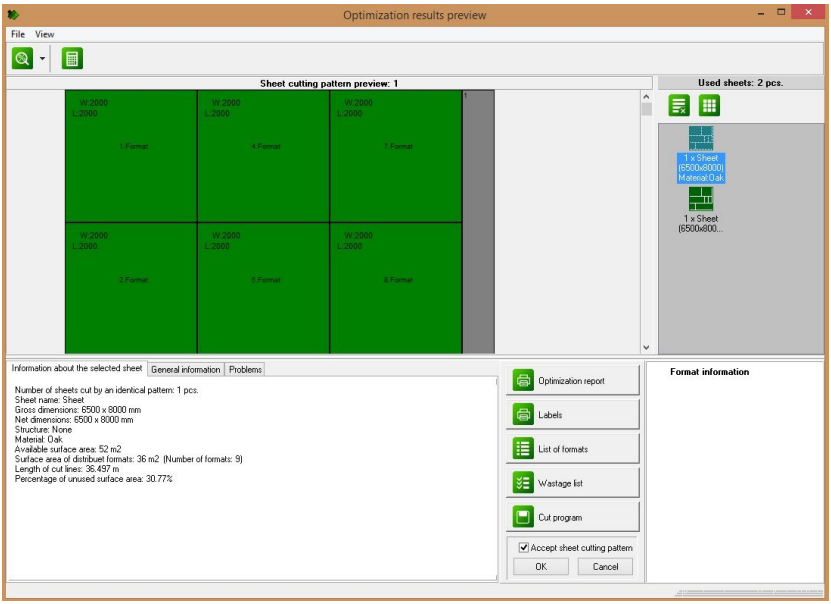


Fig. 78 – 'Optimization results preview' window

- **'Print optimization report [Ctrl + P]'** – opens the **'Print options'** window (Fig. 79); after setting them you can print all obtained images of optimal cutting patterns with their descriptions.

Functions of the top menu: 'View'

- **'Show names of formats'** - displays names of arranged formats (Fig. 80);
- **'Show wastes'** - displays edges of produced wastes (Fig. 80);
- **'Show veneered edges'** - displayed veneers as a white dashed line (Fig. 81);
- **'Mark veneer type' –** designates various types of veneers with different lines (Fig. 81);
- **'Darken formats on the printout' –** after enabling this option formats will be filled on the printout (Fig. 82).

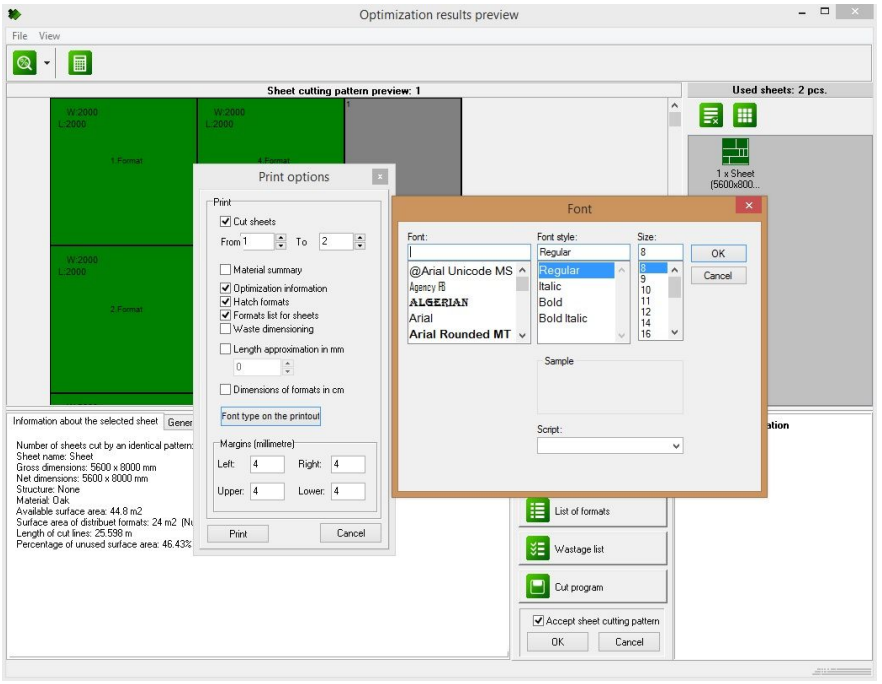


Fig. 79 – 'Print options' window, font selection

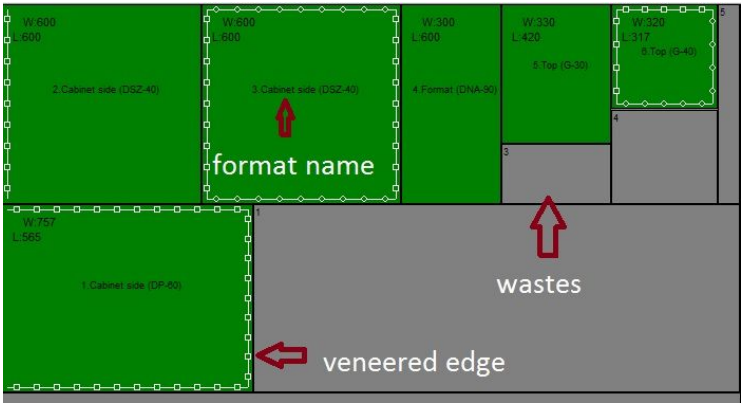


Fig. 80 – an example of 'View' options operation

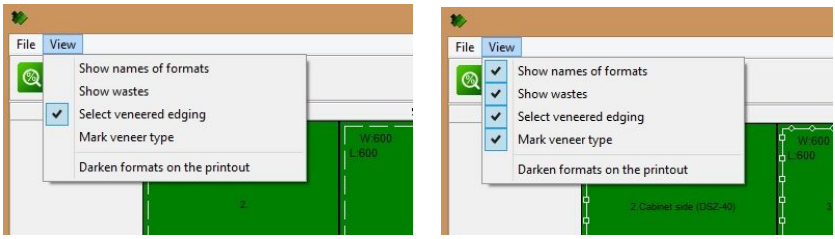


Fig. 81 – effects of different view configurations

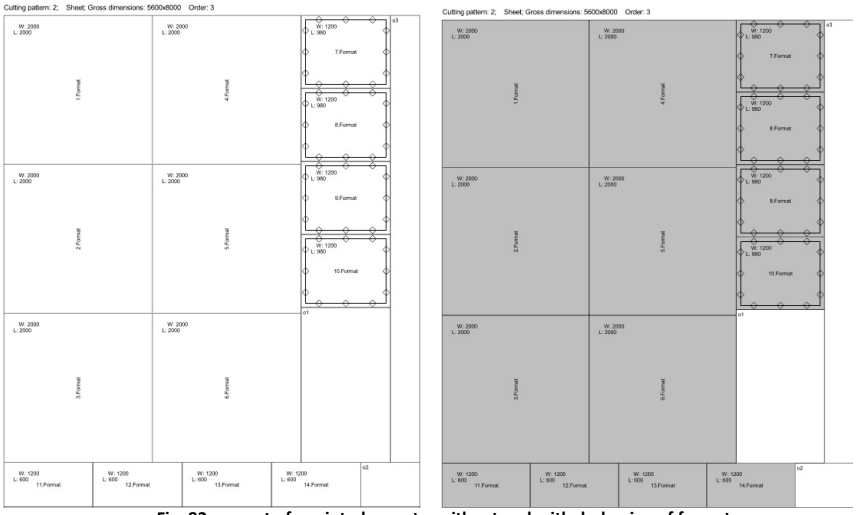


Fig. 82 – a part of a printed report – without and with darkening of formats

Functions of the top menu: 'Scale' & 'Calculator'

- **'Change visualization scale'**- changes the preview size from 50 to 200% (Fig. 83). Sometimes when the scale is too small, format names may not be legible – you can then hide them (in the **'View'** pane). The **'Scale'** option is also available under the right mouse button.
- **'Calculator'** - opens a calculator (Fig. 84).

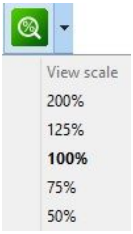


Fig. 83– vew scale

Fig. 84– calculator

The right panel of 'Optimization results preview' window

On the right side of the **'Optimization results…'** window you can see a panel with icons of particular sheets used for cutting. When you click on the selected position, the relevant cutting pattern will be displayed in the central part of the window.

The **'View'** button under the panel changes iconic view to tabular and the other way around (Fig. 85).

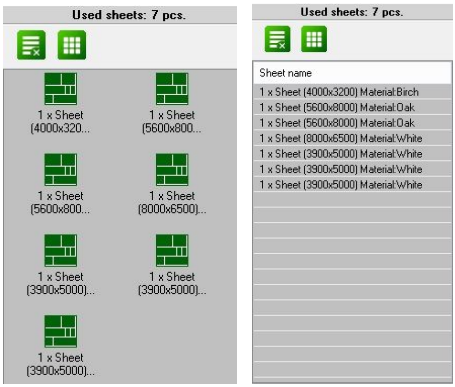


Fig. 85 – different views of sheet panel – icons and list

6.2. Cutting pattern image

The central part of the **'Optimization results preview'** is the area in which the resulting cutting patterns are displayed. If it the image is bigger than available area, sliding bars will appear, enabling you to view the whole cutting pattern. You can also scale it.

On the preview of a cutting pattern you can see arranged formats (areas marked in green), divided by the kerf line (of a width defined by you in the function panel of the main CAD Cut window). You can also see numbered pieces of wastes, which will result from the particular cut (areas marked in grey). There is a name visible on each format, together with a number corresponding with its position on the list of formats present in the project, as well as dimensions (in upper right corner: gross width, and in the bottom left corner: gross length) and veneered edges (the number in brackets beside the dimensions tells you how many format edges are veneered). You can control the visibility of all these elements in the **'View'** tab of the upper **'Optimization results…'** window menu (see the previous page for details).

6.3. Bottom panel of the 'Optimization results preview' window

The bottom part of the **'Optimization results…'** window is used to display data:

- regarding the sheet currently visible on the preview;
- general information about the proceeded optimization;
- about the number of formats that could not be arranged or sheets;
- about problems encountered during generation of the cutting pattern;
- about a format which is currently indicated by the cursor on the preview (right corner).

In this area you can also find button of functions, described in details below.

6.3.1. Information field

The first tab of the bottom part of the **'Optimization results…'** contains data about the currently displayed sheet (Fig. 86), including:

- information about the number of sheets optimized by the identical pattern;

- name and dimensions of the sheet (net and gross);
- structure and type of material;
- available area and area occupied by arranged formats;
- the length of the cut line and percentage of the area occupied by wastes.

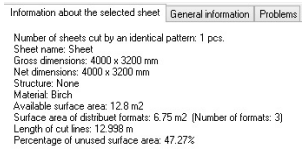


Fig. 86 - information about the sheet

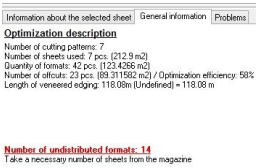


Fig. 87 - general optimization

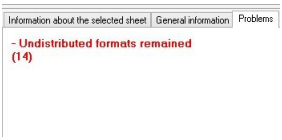


Fig. 88 - information about errors

In the second tab you can see general information about the completed optimization and optionally the number of formats that have not been matched with any sheet, because there was none of the particular material or size (Fig. 87).

In the third tab called **'Problems'** (Fig. 88) you can check notifications about irregularities and errors that occurred during the optimization.

And in the right bottom corner you can see one more information field, presenting data of format or waste piece, currently indicated by the mouse cursor (Fig. 89 and 90): their names; dimensions, areas; perimeter, grain structure and veneer type.

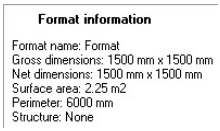


Fig. 89 – format data

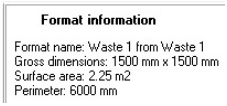
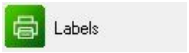


Fig. 90 – waste data

6.3.2. Bottom panel functions

In the middle of the bottom part of the preview window there are several option buttons:

- used for printing the cutting patterns, together with lists of sheets, order data and general optimization summary.



- allows to print a set of labels for formats and wastes, with bar codes of various types. Exemplary labels are presented in Figure 91, and print options in Figure 92.

- generates a list of all formats present in the project, which can be saved or printed (Fig. 93).

- generates a summary of wastes, which are not smaller then the minimal waste defined by you, before moving them to the magazine (Fig. 94).

- allows you to accept a particular cut pattern without accepting the entire optimization. Patterns that are not accepted, as well as formats that have not been arranged, go back to the list of

formats in the current order, so you can change the program configuration and run the optimization again, or add them to a new project.

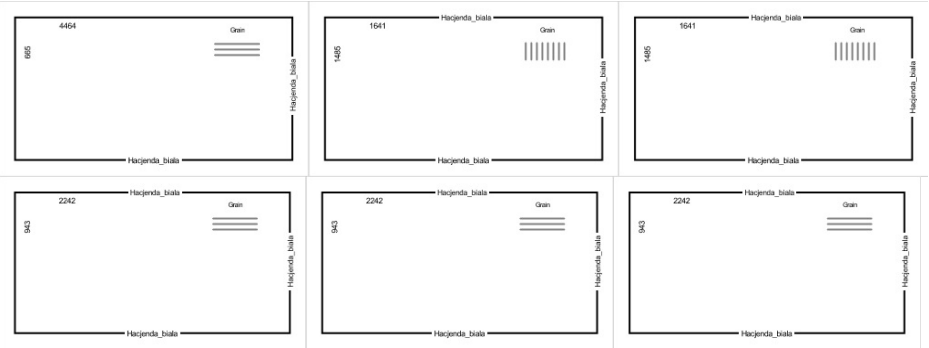


Fig. 91 – exemplary labels for formats

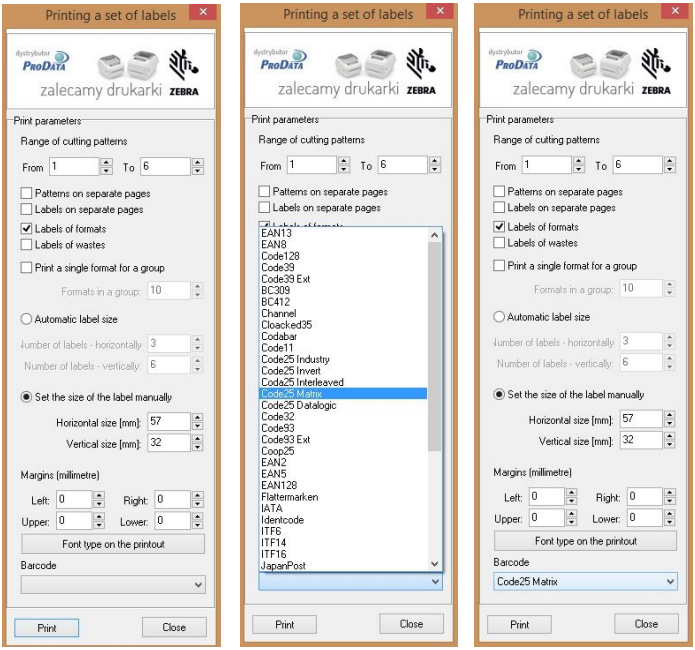
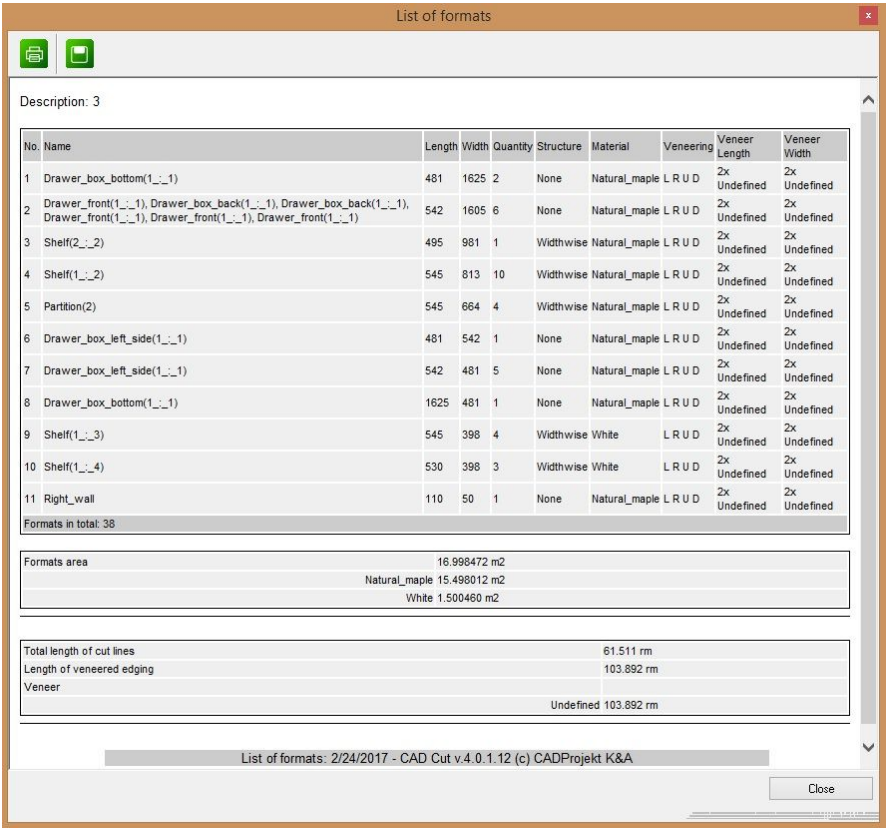
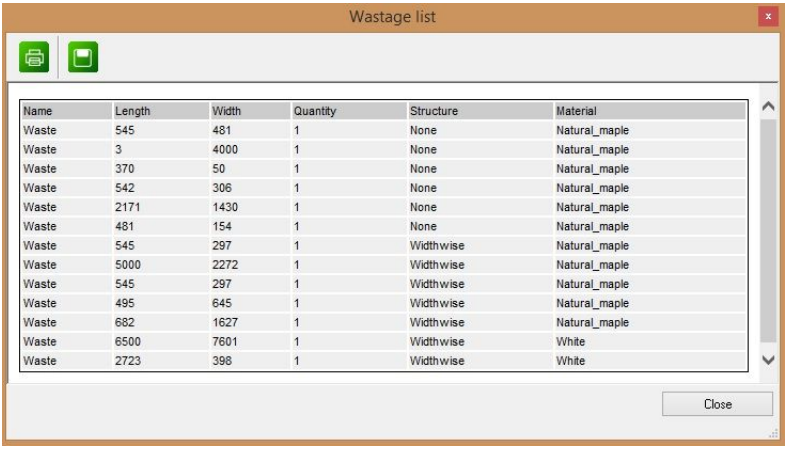


Fig. 92 – labels print options – bar code selection



No.	Name	Length	Width	Quantity	Structure	Material	Veneering	Veneer Length	Veneer Width
1	Drawer_box_bottom(1_:_1)	481	1625	2	None	Natural_maple	L R U D	2x Undefined	2x Undefined
2	Drawer_front(1_:_1), Drawer_box_back(1_:_1), Drawer_box_back(1_:_1), Drawer_front(1_:_1), Drawer_front(1_:_1), Drawer_front(1_:_1)	542	1605	6	None	Natural_maple	L R U D	2x Undefined	2x Undefined
3	Shelf(2_:_2)	495	981	1	Widthwise	Natural_maple	L R U D	2x Undefined	2x Undefined
4	Shelf(1_:_2)	545	813	10	Widthwise	Natural_maple	L R U D	2x Undefined	2x Undefined
5	Partition(2)	545	664	4	Widthwise	Natural_maple	L R U D	2x Undefined	2x Undefined
6	Drawer_box_left_side(1_:_1)	481	542	1	None	Natural_maple	L R U D	2x Undefined	2x Undefined
7	Drawer_box_left_side(1_:_1)	542	481	5	None	Natural_maple	L R U D	2x Undefined	2x Undefined
8	Drawer_box_bottom(1_:_1)	1625	481	1	None	Natural_maple	L R U D	2x Undefined	2x Undefined
9	Shelf(1_:_3)	545	398	4	Widthwise	White	L R U D	2x Undefined	2x Undefined
10	Shelf(1_:_4)	530	398	3	Widthwise	White	L R U D	2x Undefined	2x Undefined
11	Right_wall	110	50	1	None	Natural_maple	L R U D	2x Undefined	2x Undefined

Fig. 93 – exemplary list of formats



Name	Length	Width	Quantity	Structure	Material
Waste	545	481	1	None	Natural_maple
Waste	3	4000	1	None	Natural_maple
Waste	370	50	1	None	Natural_maple
Waste	542	306	1	None	Natural_maple
Waste	2171	1430	1	None	Natural_maple
Waste	481	154	1	None	Natural_maple
Waste	545	297	1	Widthwise	Natural_maple
Waste	5000	2272	1	Widthwise	Natural_maple
Waste	545	297	1	Widthwise	Natural_maple
Waste	495	645	1	Widthwise	Natural_maple
Waste	682	1627	1	Widthwise	Natural_maple
Waste	6500	7601	1	Widthwise	White
Waste	2723	398	1	Widthwise	White

Fig. 94 – exemplary list of wastes

6.3.3. Printing the optimization report

After clicking the 

button, the **'Print options'** window will open (Fig. 95), in which you can:

- define the print range (you indicate the number of the first and last sheet that you want to include in the report);
- decide whether the summary of elements is to be generated too;
- decide whether you want to print out information about optimization;
- add hatching for formats on the printout;
- choose to round up the length up to the specified value (in millimeters);
- decide whether the lists of formats for particular sheets are to be presented;
- define the font type and size (the **'Font on the printout'** button opens a window in which you can modify these settings - Fig. 96);
- set the print margins (in millimeters).

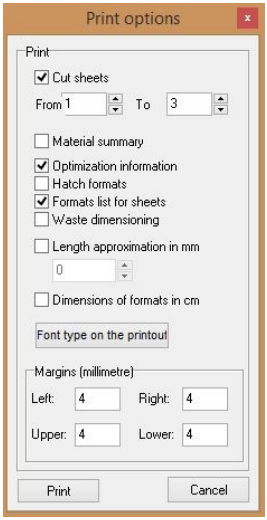


Fig. 95 – 'Print options' window

After choosing settings click **'Print'**, select a printer in the **'Printing'** window and click **'Ok'** to confirm. You can see a fragment of an exemplary optimization report on the next page (Fig. 97).

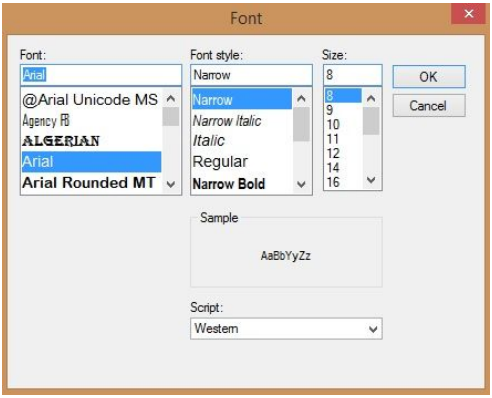


Fig. 96 – defining fonts

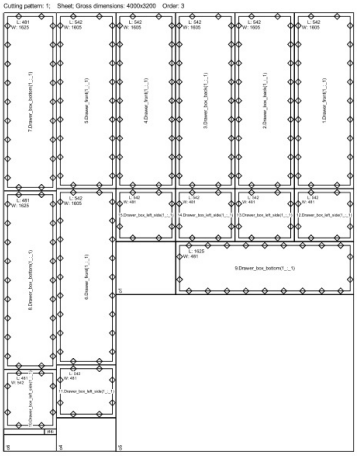


Fig. 97 – exemplary page of a printed report

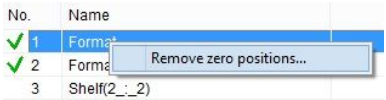


Fig. 100 – removing zero positions

6.4. Accepting the optimization report

Bottom of the **'Optimization...'** window you can see the **'Ok'** and **'Cancel'** buttons (Fig. 98).

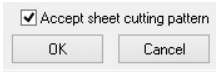


Fig. 98 – accept or reject a pattern by choosing 'Ok' or 'Cancel'

Clicking **'Ok'** results in an automatic approval of all cutting patterns obtained in the current optimization (except those which have been marked as not accepted - see page 40 for details). After confirming and saving changes (Fig. 99) the successfully arranged formats will be marked with this symbol ✓ on the list and will be no longer taken into account in future optimizations. They are so called 'zero positions' and you can delete them from the current project list, using the **'Remove zero positions...'** option, available under the right mouse button (Fig. 100).

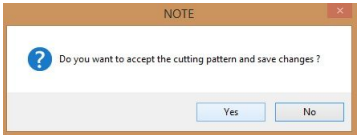


Fig. 99– confirming changes

The **'Cancel'** button closes the **'Optimization preview...'** window without saving changes.

6.5. Cut program for Gabbiani and Altendorf cutting machines

CAD Cut in version 4 offers the possibility of saving cutting programs for Gabbiani and Altendorf cutting machines as PRG (for Gabbiani) and SAW (for Altendorf) files. The procedure is as follows:

- if the optimization results are satisfying, click the 

button;
- a list of machines to choose from will be developed (Fig.101);
- after selecting the appropriate option, a dialog box will appear (Fig. 102), in which you can choose whether the program should include margins, and for Altendorf machines you can also choose the maximum value of the rip fence;
- after clicking "Browse", the "Browse for Folder" window will open (Figure 103), then you should

Fig. 101 - a list of machines

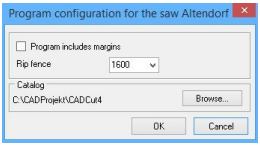


Fig. 102 – dialog box after selecting Altendorf machines

indicate where the files should be saved;;

- you can indicate a folder created earlier specially for this purpose;
- after selecting the folder click **'OK'** to confirm your choice;
- file names are created automatically, by the following scheme:
  [{order_descriprion}]_sheet_{pattern_number}.prg,
  in which:
  - **{order_descriprion}** depends on the text entered in the bottom part of the main CAD Cut window, in the 'Order description' field; if this field is blank, then this part of the PRG file name is ignored;
  - **{pattern_number}** is the ordinal number of the sheet pattern;
- after opening the target folder and clicking **'Ok'**, the PRG files will be saved in it, and the user will be informed, that the operation has been completed in a message **'Saving pattern completed'** (Fig. 105);

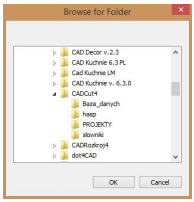


Fig. 103 - selection of the recording folder PRG files

Note! Please remember that the kerf width should be adjusted to the thickness of the blade of the cutting machine. The kerf width can be defined in the right panel of the CAD Cut main window (Fig. 104).

Fig. 104 – setting the kerf width

Note! If the pattern is too complicated to be performed by the cutting machine, the PRG file will not be saved and the user will be informed about this fact is a message (Fig. 106).

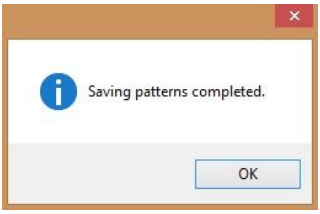


Fig. 105 - a message informing about the completion of saving cutting patterns

Fig. 106 - a message informing about the excessive complexity of the pattern and the recommended change of the optimization settings

7. Cooperation with CAD Kitchens and CAD Decor PRO programs

CAD Cut can cooperate with the kitchen cabinets databases, which are available in CAD Kitchens and CAD Decor PRO programs. This means that you can send formats of cabinets used in CAD Kitchens or CAD Decor PRO designs to the CAD Cut list.

Note! It may be necessary to define the location of CAD Kitchens or CAD Decor PRO programs on the disk to enable their cooperation with CAD Cut. To do it select the 'Databases catalogues' *option from the upper menu* 'Database' *and indicate the location of the programs (Fig. 107).*

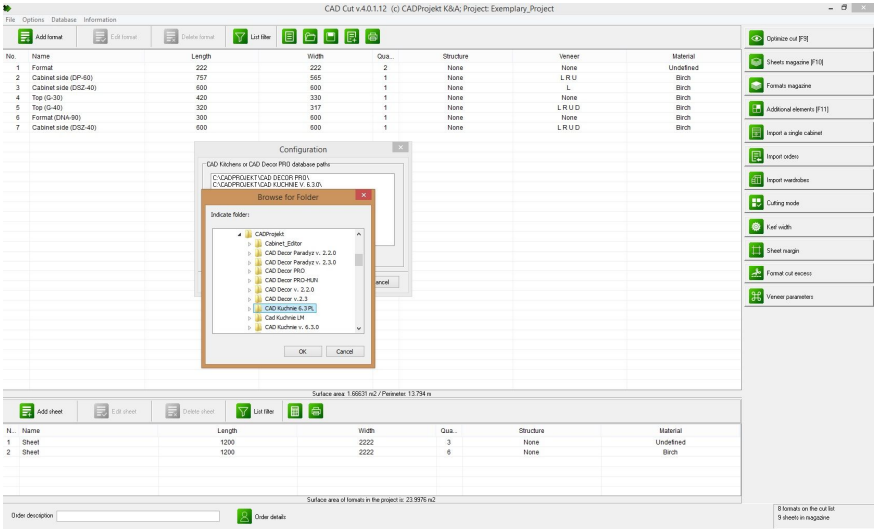


Fig. 107 – indicating the path to CAD Kitchens program

7.1. Importing orders and defining cabinets

To import an order from CAD Kitchens or CAD Decor PRO you should:

- create a design of kitchen in one of the above programs and at least once generated its valuation (option available under the **'Valuation'** icon), and then save the design;
- then in the main CAD Cut window click the **'Import orders from CAD Kitchens or CAD Decor PRO'** button (in the function panel on the right-hand side);
- the **'Import orders…'** window will open (Fig. 108), in which you can see a list of designs created in CAD Kitchens and CAD Decor PRO programs;

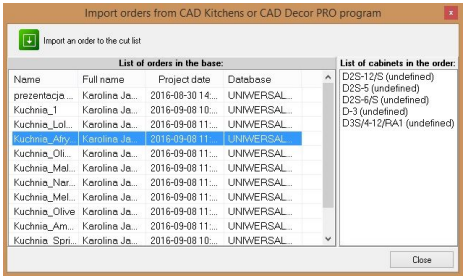


Fig. 108 – the window of importing orders from CAD Kitchens and CAD Decor PRO

- after clicking on a particular position, in the right part of the window a list of kitchen cabinets used in the given design will appear;

- the components (i.e. sides, plinths, shelves) of cabinets designated as **'undefined'** have not been defined, so information about their construction is not available they cannot

be imported to CAD Cut;

- if the cabinet which you want to import to CAD Cut has not been defined yet, you should do it now;

- <u>to define a cabinet you should</u>:
  - finish your work in CAD Kitchens and CAD Decor PRO and run CAD Cut;
  - in the top menu of CAD Cut select the **'Databases'** button and then the **'Available cabinet databases'** option;
  - select the database, on which the design was based, f. e. UNIVERSAL (Fig. 109);

Note! The 'Available cabinet databases' *menu appears only when there is as least one loaded cabinet database on the disk. To enable loading a database, you should at least once generate the valuation in at least one design created in CAD Kitchens or CAD Decor PRO programs – by clicking the*  'Valuation' *icon in the CAD-Kitchens toolbar. You should also close the drawing and save changes.*

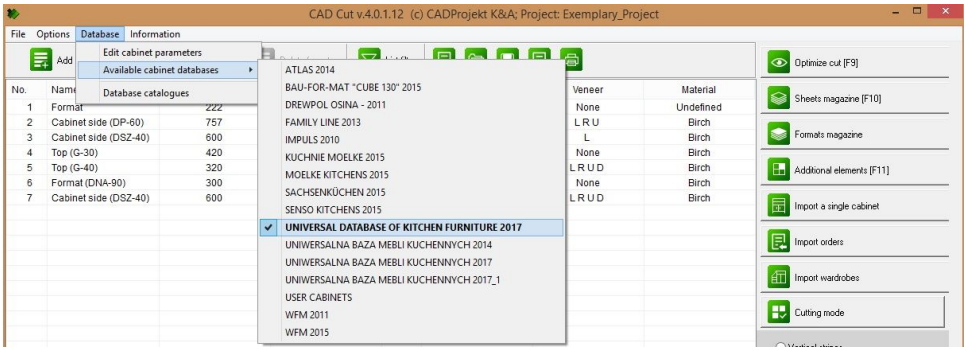


Fig. 109 – selecting a database used in the design created in CAD Kitchens

- select the **'Databases'** tab again and select the **'Edit cabinet parameters'** option;
- in the left part of the **'Current database…'** window you will see a list of cabinets present in the database (Fig. 110);
- find the name of the cabinet you want to define on the list and left-click to select it (you can use the filter in the left upper corner to search cabinets by names);
- at the bottom of the **'Current database…'** dimensions of the currently indicated cabinet are displayed (Fig. 110);
- you can now define the types and quantities of formats of which the indicated cabinet consists - to do it, mark the code of the cabinet on the list and click the **'Add/edit'** button in the **'List of cabinet formats'** field (Fig. 110), and then, one after another, describe the formats (give their dimensions, amount, grain structure, veneer and material) (Fig. 111);

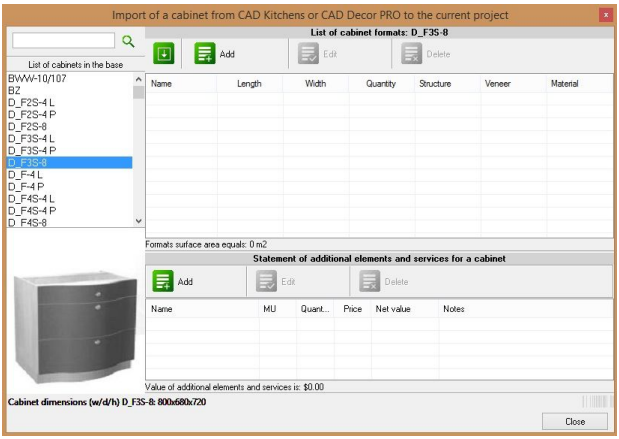


Fig. 110 – The 'current database…' window - list of cabinets available in the database

- during defining the component formats of a cabinets, you can also define the way they will be scaled – in case dimensions of a cabinet are ever modified during inserting it into a design; the option is available under the 

button (Fig. 111);

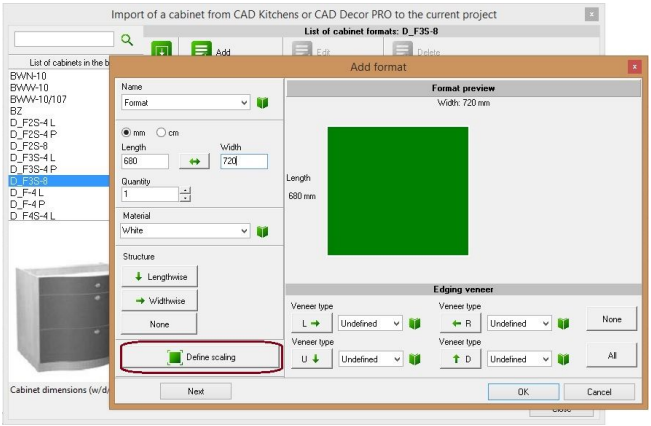


Fig. 111 – defining formats for a cabinet

- for example: for a side format you can define, that together with the change of cabinet's depth, also the width of the format will be accordingly modified, and when the height of the cabinet will be altered, also the length of the particular format will change proportionally (Fig. 112);

- thanks to defined scaling, if you need to modify cabinet's dimensions in a design created in CAD Kitchens or CAD Decor PRO, the parameters of formats defined for that cabinet will simultaneously and automatically change in CAD Cut;

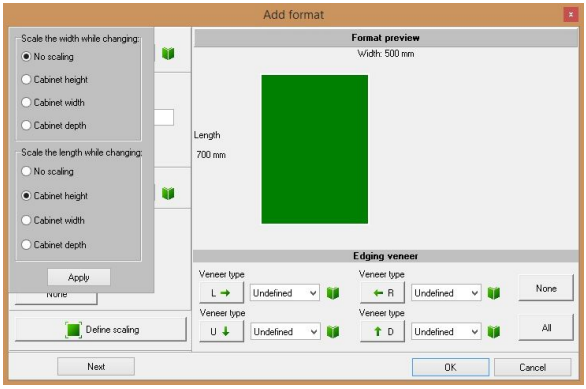


Fig. 112 – examplary format scaling

Note! You can copy formats defined for one cabinet and paste them to the list of formats for another cabinet. To do this, right-click on the symbol of the cabinet for which formats have been defined and are to be copied. Then select 'Copy' form the drop-down menu. Then right-click on the symbol of a cabinet, to which you the copied formats are to be assigned and select 'Paste'. Formats will be copied to the empty list (Fig. 113).

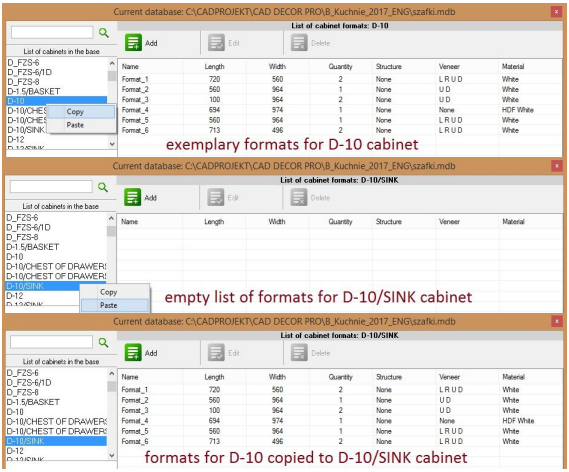


Fig. 113 – example of copying formats during defining cabinet components

- besides defining scaling, for each format you can also define the structure direction (lengthwise, widthwise or none) and indicate, which edges are to be veneered and with what kind of veneer;
- each new material name (of a format or veneer) can be added to the dictionary for the future use (by clicking the **'Dictionary: add/remove entry'** icon);

- for each cabinet you can also create a **'Statement of additional elements and services'** - in a lower table of the **'Current database...'** window;
- a particular cabinet needs to be defined only once - every next time you click the **'Import orders from CAD Kitchens and CAD Decor PRO'** button all defined cabinets will appear on the list without the 'undefined' designation, and will be available for adding to the formats list.

- cabinets prepared in the way described above can be added to the cut list by marking the name of the order on the list and clicking 

.
- you will be asked whether the names of imported formats are to be preceded by the symbol of the source cabinet (Fig. 114);
- if you choose **'Yes'**, the code of the cabinet will be added to formats names, e. g.: **„side DNK-9/9/KOSZ"** (when **'side**' is a name of a defined format);

Fig. 114 – message

- after choosing **'No'** only formats names will display, without source cabinets codes;
- in the main program window you will see a list of formats - the components of the cabinet to be cut (Fig. 115);
- to conduct the optimization of the cut, you must add relevant sheets to the sheet list - otherwise when you click the **'Optimize cut'** button, you will see the message: **"No sheets to cut!'** (Fig. 115). After closing it, a window in which you can add a sheet will automatically open. When you add a sheet, the optimization will automatically follow.

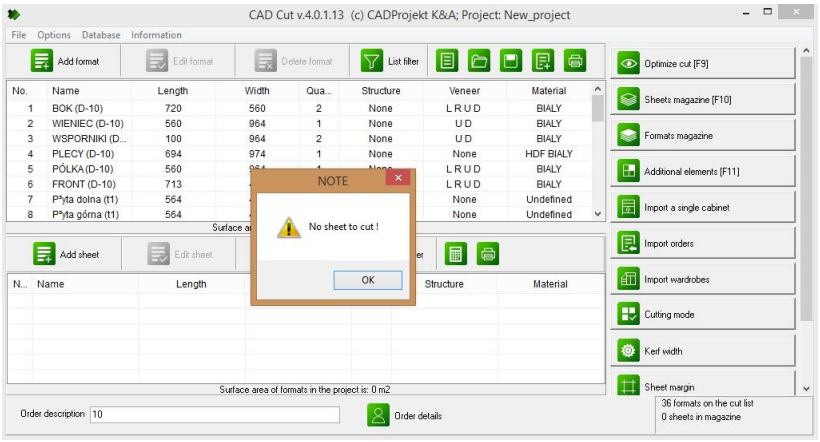


Fig. 115 – formats of cabinets from CAD Kitchens order and a message about missing sheets

7.2. Importing a single cabinet

In CAD Cut you can import formats of a single cabinet from the CAD Kitchens and CAD Decor PRO databases. Such a cabinet has to be previously defined, that is its component formats must be described, accordingly to tips given in point 7.1 on page 43.

Note! In the 'Import of a cabinet…' *window it is possible to select only a cabinet, which has been previously defined in terms of its components (formats) – as described on pages 43 - 47.*

To add a single cabinet from a chosen database to CAD Cut:

- select the **'Import a single cabinet'** button in the right function pane in the main window; the **'Import of a cabinet…'** window will open (Fig. 116), in which you can send component formats to the cut list;

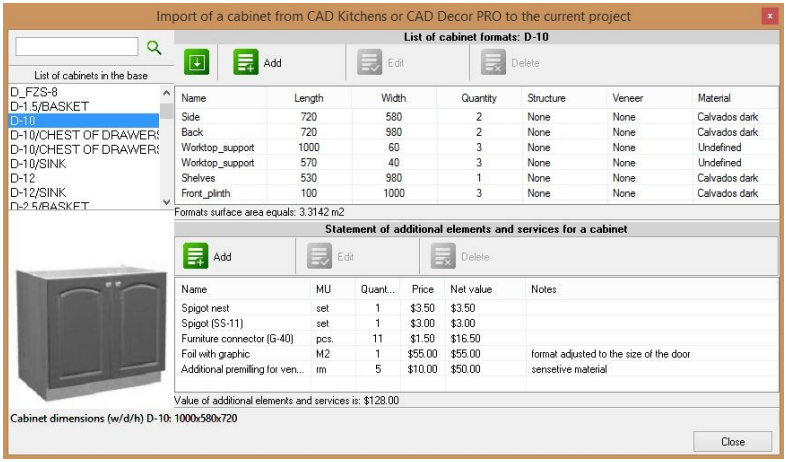


Fig. 116 – 'Import of a cabinet from CAD Kitchens or CAD Decor PRO to the current project' window

- select a cabinet from the list in the left side of the **'Import…'** window;
- to quickly find a cabinet you are looking for, you can enter its code in the filter in left upper corner of the window, and then click the **'Find cabinet'** button;
- after selecting a cabinet a list of its (previously defined) formats will appear;
- the next step is to click the button and deciding, whether the source cabinet code is to be added to the names of the formats (Fig. 117);
- a cabinet is then added to the cut list, and after adding some sheets you can obtain its optimal cutting pattern.

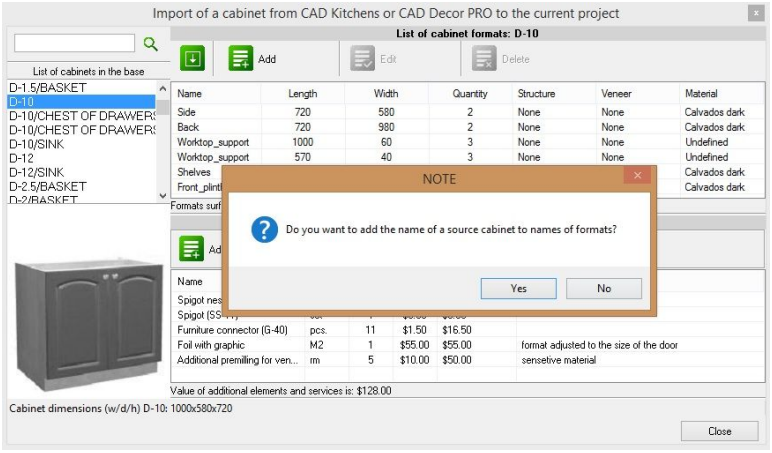


Fig. 117 – importing a cabinet to CAD Cut

7.3. Importing formats of a custom cabinet from the User Cabinets Editor

It is possible to import formats of any cabinet created in the **Cabinet Design and Edition Module**. This module is included as standard and for free in CAD Decor PRO and in CAD Kitchens MAX, and is an optional tool for CAD Kitchens Standard. A detailed description of this module can be found in the operation manuals for CAD Decor PRO and CAD Kitchens.

Fig. 118 – opening the User Cabinet Editor

Using the **Cabinet Design and Edition Module** you can create untypical furniture, together with the summary of their constructional components, which are recognized by CAD Cut.

To do it, select the **'Cabinet Editor'**  icon to open the editor window during your work in CAD Kitchens or CAD Decor PRO and choose the **'User Cabinet Editor'**.

User Cabinet Editor enables the creation of your own cabinets by using a simple parametric method. It is enough to select a cabinet type in the **'New cabinet'** field and then define its parameters - the model is automatically generated, and changes are displayed on the preview in real time (Fig. 119). This way in a relatively short time you can design any number of cabinets unavailable in producers databases. For each of created cabinets you can obtain a summary of construction components - in the **'Information'** menu (Fig. 120).

In the **'Summary of cabinet components'** window, in two separate tables, construction elements for cabinet body and fronts are listed and all their necessary parameters are given. The data for body and fronts is provided in separate groups because the summary for fronts is not used by CAD Cut (fronts are not cut in the same way as other elements). Particular elements in the summary can be deleted (e.g. back) or added (e.g. supports).

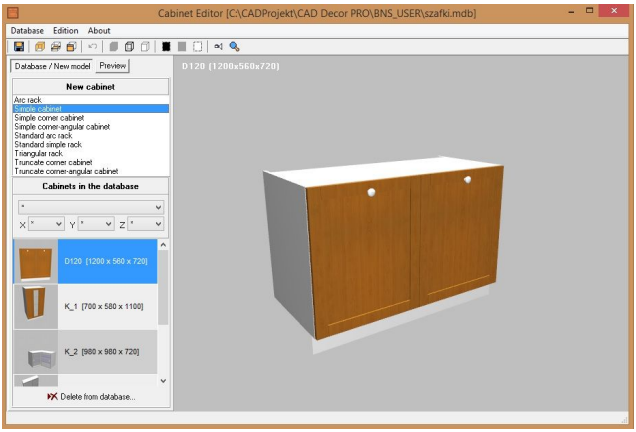


Fig. 119 – User Cabinet Editor window – creating a simple cabinet

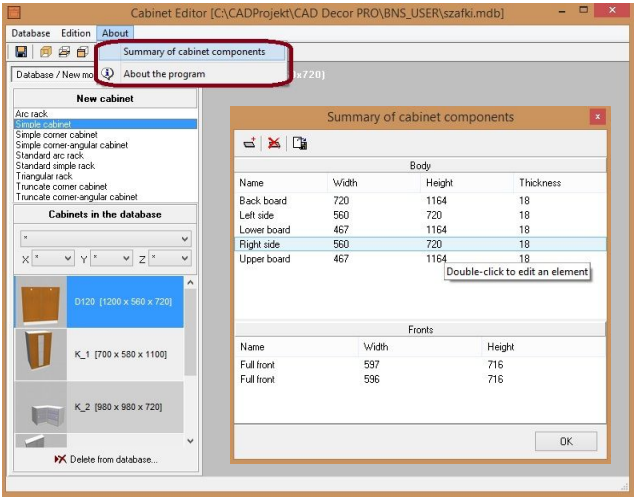


Fig. 120 – generating the summary of components in the Cabinet Editor

Elements in the summary can be also edited in order to change their names, dimensions, add a veneer, specify material or exclude from exporting to CAD Cut (Fig. 121).

To save the summary to the CXL file format, recognized by CAD Cut, click the **'Save summary to CAD Cut file'** icon and indicate the location to save the file (Fig. 122). The list of components of an object created in the Cabinet Editor may be then imported to the cut list and the optimal cutting pattern for it may be obtained.

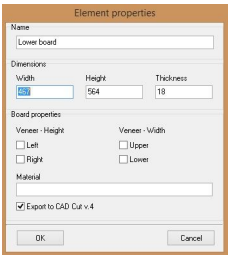


Fig. 121 – component edition

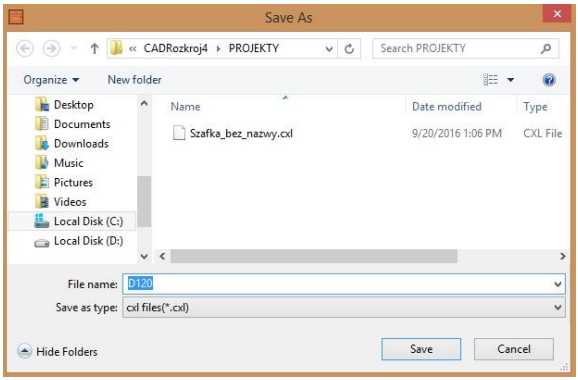


Fig. 122 – saving a list of components of your own cabinet to the disk

The CXL file containing the summary of cabinet components may be imported to CAD Cut by using the option: **'File' → 'Import' → 'Cabinet Editor summary files'** in the upper menu (Fig. 123).

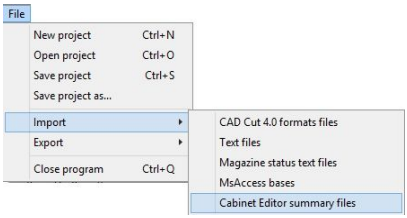


Fig. 123 – importing the summary of cabinets components

8. Creating text files for importing

To prepare a text file (TXT or CSV) with the list of formats and their specification, you can use any text editor. However, to be able to property import the content of the text file to CAD Cut, you should closely follow the requirements listed below.

Each entered lane should contain the exact data referring to a single format. The sequence of the data should be identical to the one presented on the illustration below (Fig. 124).

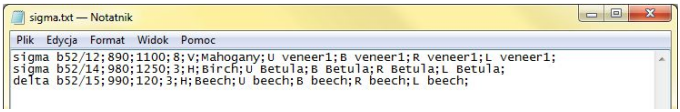


Fig. 124 - exemplary text file with formats data

Entries should be separated by a semicolon and they entered in the specified order:

- format name (e.g. sigma b52/12)
- legth (e.g. 890);
- width (e.g. 1100);
- number of formats (e.g. 8);
- grain structure (horizontal = H, vertical = V, none = 0);
- veneering (accordingly to the following pattern: U veneer_name;B veneer_name;R veneer_name;L veneer_name;), when U, B, R and L stand for format edges, relatively: upper, bottom, right and left.

You can also prepare a text file containing sheets data (Fig. 125). In this case the required data format is as follows:

- sheet name (e.g. Sheet1_Largo);
- length (e.g. 2000);
- width (e.g. 1800);
- number of sheets (e.g. 15);
- grain structure (horizontal = H, vertical = V, none = 0);
- material (e.g. Birch_plywood).

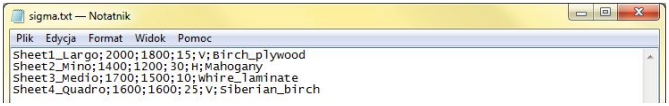


Fig. 125 – exemplary text file with sheets data

Files prepared that way may be imported to CAD Cut by using the options: **'File'** → **'Import'** → **'Test files'** (formats list) or **'Magazine status text files'** (sheets list) (Fig. 126). After selecting this option, you will see messages containing important information about the required file structure. In case of importing a list of formats you should remember, that a new list will completely replace the previously opened one (and is not added to it).

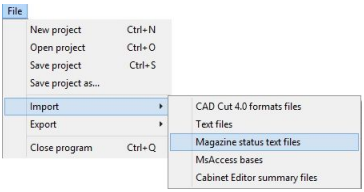


Fig. 126 – options of importing text files with formats or sheets lists

If the content of the indicated file has different structure to the required one, the file will not be imported.

9. Cooperation with the Wardrobe Module

CAD Cut has been equipped with the possibility of importing orders created in the Wardrobe Module. In that optional module users of CAD Decor, CAD Kitchens and CAD Decor PRO may quickly and easily design custom wardrobes, shelvings and dressing-rooms. Detailed information about this additional module can be found in the Wardrobe Module Operation Manual, available in the **Information Zone** at our website. The start screen of the module is presented in Figure 127. When your design of a wardrobe is complete, you can export its components to CSV file, which is recognized by CAD Cut. This function becomes available after running the valuation of the wardrobe design, in the **'Report'** tab, under the  **'Export to CSV'** button (Fig. 128).

During exporting to CSV the program saves 2 files. In the file described as **_base.csv** you can find data of formats of all wardrobe components (Fig. 129). In the second file, described as **_mag.csv** the default parameters of sheets are given, which will be necessary for obtaining the optima cutting pattern (f. i. the material of the furniture boards is automatically adjusted to the material of wardrobe formats) (Fig. 130). You can indicate the location in which these files are saved.

Files containing information about wardrobe formats are also saved automatically after saving the wardrobe design in the **SzafyWnekowe** directory (subdirectory **rozkroj** – exemplary localization: C:\CADProjekt\CAD Decor PRO\SzafyWnekowe\rozkroj\).

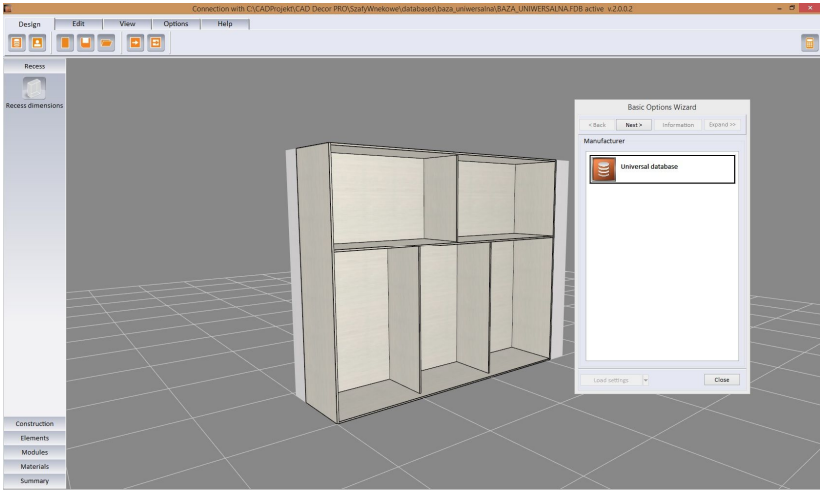


Fig. 127 – the main window of the Wardrobe Module – view after launching the module

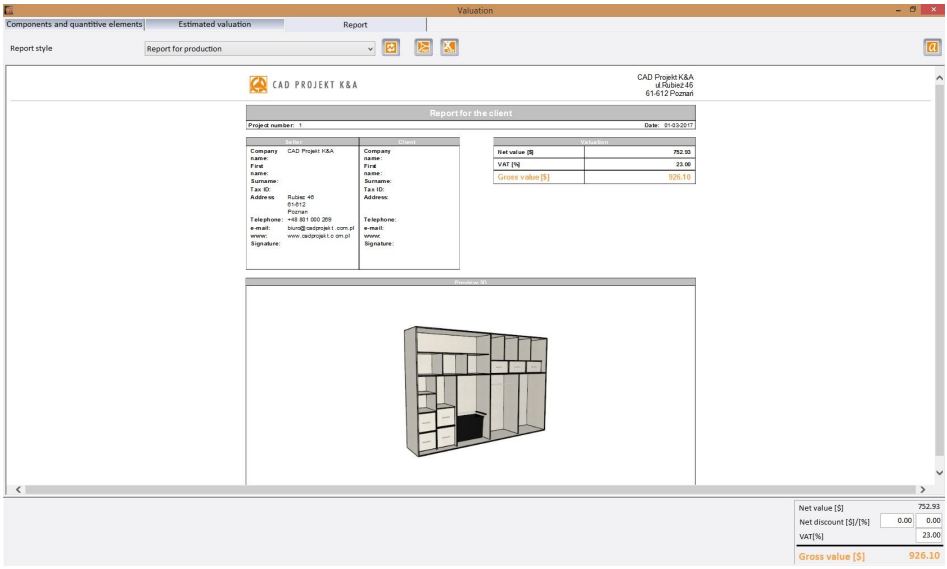
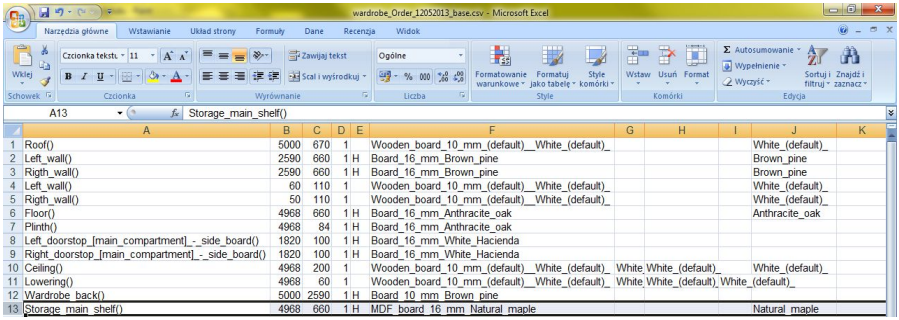


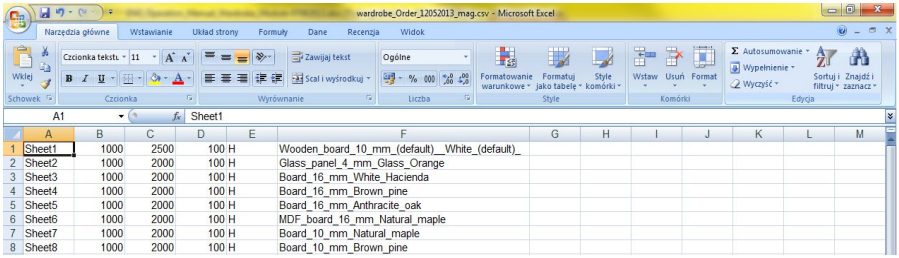
Fig. 128 – exemplary report for a client, generated in the Wardrobe Module



wardrobe_Order_12052013_base.csv - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K
1	Roof()	5000	670	1		Wooden_board_10_mm_(default)__White_(default)_				White_(default)_	
2	Left_wall()	2590	660	1	H	Board_16_mm_Brown_pine				Brown_pine	
3	Rigth_wall()	2590	660	1	H	Board_16_mm_Brown_pine				Brown_pine	
4	Left_wall()	60	110	1		Wooden_board_10_mm_(default)__White_(default)_				White_(default)_	
5	Rigth_wall()	50	110	1		Wooden_board_10_mm_(default)__White_(default)_				White_(default)_	
6	Floor()	4968	660	1	H	Board_16_mm_Anthracite_oak				Anthracite_oak	
7	Plinth()	4968	84	1	H	Board_16_mm_Anthracite_oak					
8	Left_doorstop_[main_compartment]_-_side_board()	1820	100	1	H	Board_16_mm_White_Hacienda					
9	Right_doorstop_[main_compartment]_-_side_board()	1820	100	1	H	Board_16_mm_White_Hacienda					
10	Ceiling()	4968	200	1		Wooden_board_10_mm_(default)__White_(default)_	White_	White_(default)_		White_(default)_	
11	Lowering()	4968	60	1		Wooden_board_10_mm_(default)__White_(default)_	White_	White_(default)_	White_	(default)_	
12	Wardrobe_back()	5000	2590	1	H	Board_10_mm_Brown_pine					
13	Storage_main_shelf()	4968	660	1	H	MDF_board_16_mm_Natural_maple				Natural_maple	

Fig. 129 – CVS file with wardrobe formats data



wardrobe_Order_12052013_mag.csv - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Sheet1	1000	2500	100	H	Wooden_board_10_mm_(default)__White_(default)_							
2	Sheet2	1000	2000	100	H	Glass_panel_4_mm_Glass_Orange							
3	Sheet3	1000	2000	100	H	Board_16_mm_White_Hacienda							
4	Sheet4	1000	2000	100	H	Board_16_mm_Brown_pine							
5	Sheet5	1000	2000	100	H	Board_16_mm_Anthracite_oak							
6	Sheet6	1000	2000	100	H	MDF_board_16_mm_Natural_maple							
7	Sheet7	1000	2000	100	H	Board_10_mm_Natural_maple							
8	Sheet8	1000	2000	100	H	Board_10_mm_Brown_pine							

Fig. 130 – CVS file with hypothetical sheets data

To import CSV files with wardrobe formats and necessary sheets data, select: **'File'** → **'Import'** → **'Text files'** (formats) and **'Magazine status text files'** (sheets).

You can also use the button 

in the function panel. After clicking it the **'Import wardrobes from CAD Decor, CAD Kitchens and CAD Decor PRO'** window will open (Fig. 131), in which orders from these programs containing wardrobes created in the Wardrobe Module will be displayed.

Note! To make a wardrobe available for importing to cut list, it is necessary to save the design created in CAD Kitchens, CAD Decor or CAD Decor PRO programs.

All wardrobes available in the selected design are listed in the bottom of the **'Import wardrobes…'** window. After indicating a particular wardrobe and clicking the 

button, formats and sheets will be displayed on the cut list.

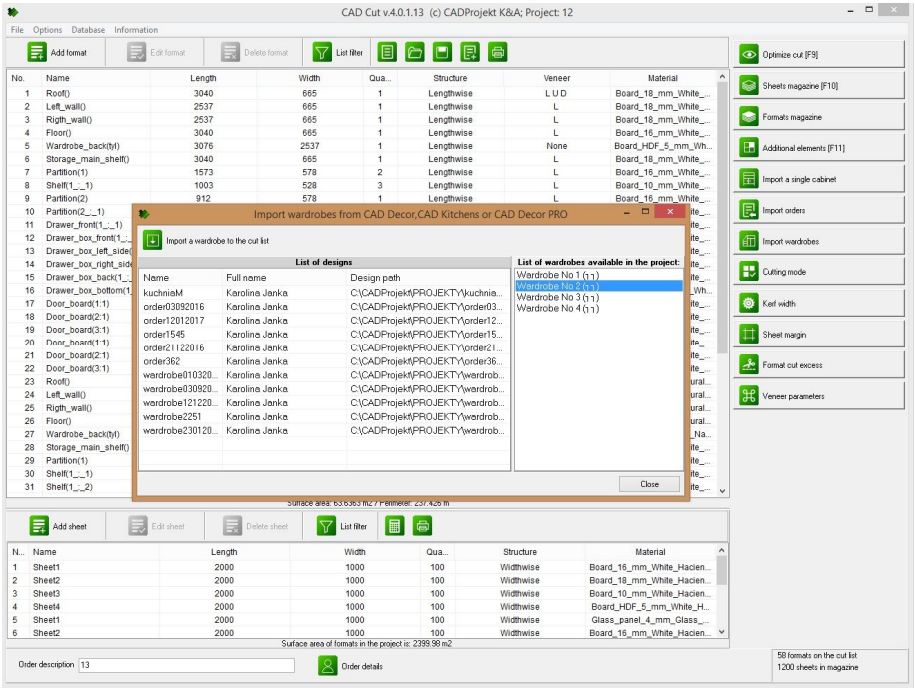


Fig. 131 – importing formats and default sheets for wardrobes from CAD Kitchens program

10. Completing work with CAD Cut

You can end work in CAD Cut in several ways:

- by clicking **'Close program'** in the **'File'** menu (Fig. 132);
- by using the keyboard shortcut command **[Ctrl + Q]**;
- by clicking on the cross in the right upper corner.

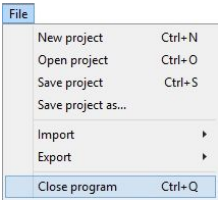


Fig. 132– closing CAD Cut

If you close an empty project (with empty list of formats), the program will ask you, if you really want to close it (Fig. 133). If there are any positions on the formats list, you will be asked whether you want to save the current project before closing (Fig. 134).

After confirming the project will be saved and the program will be closed. Saved design contains information about the content of the formats and sheets lists, including formats successfully distributed on sheets during the optimization and confirmed cutting patterns. You can edit it by using the **'Open project'** option in the **'File'** menu.

When you choose **'No'** the program will close without saving the current project to the disk. You can also cancel your attempt to close the program by clicking **'Cancel'**.

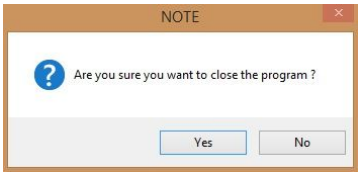


Fig. 133 – confirmation of closing CAD Cut

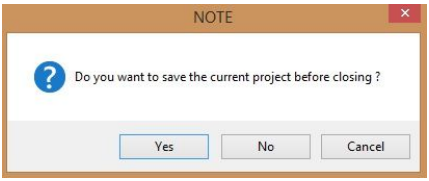


Fig. 134 – question about saving the current project

11. Uninstallation of CAD Cut

If for any reason you will find it necessary to remove CAD Cut from your computer, go to Windows **Control Panel** and select the option **'Uninstall or change program'** and in the newly opened window select CAD Cut by left-clicking on its position on the list (Fig.135). Then click the **'Uninstall'** button in the upper part on the window and confirm your decision to remove the program. When the program is successfully uninstalled, you will be informed about it.

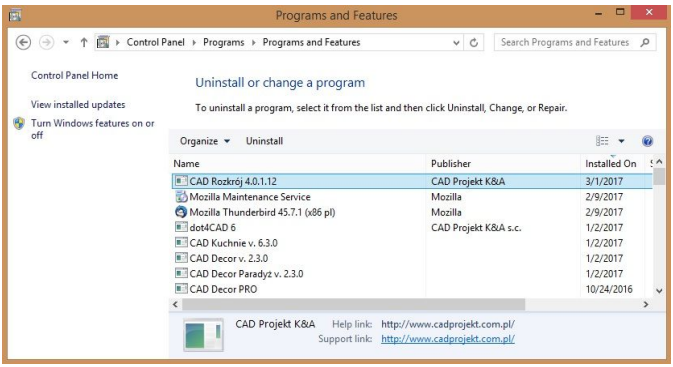


Fig. 135 – uninstall CAD Cut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or look for information in the 'Knowledge center'
at our website www.cadprojekt.com.pl

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