

PLANBAR 2016



New Features in PLANBAR 2016

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Welcome

Dear Sir or Madam,

The new PLANBAR 2016 version is complete. On the pages that follow, we will present the most important new features we have developed since Allplan Precast 2015.

Again, we were able to put a great number of your ideas into practice.

We adjusted and further developed the hollow core element and prestressed hollow core element slab types. In addition, you have advanced options to define concrete areas. You can create linear fixtures and surface fixtures at the connections of walls created with wall element design. We added a wide range of additional settings to the layout catalog, allowing you to further customize element plans for your needs. You can find a new tool for backing up resources specific to precast elements (catalogs, configurations, fixtures and so on), helping you communicate with the support team. In addition, you can now save catalogs and configurations directly to the project folder. PXML format, version 1.3, is now available for creating production data.

We wish you fun and success in exploring PLANBAR 2016!

Precast Software Engineering GmbH
Salzburg, November 2015


Precast Elements


New Features Across Modules


Special components and modeling objects

We improved the element plan table, invoicing lists and production data, making it easier for you to include special components (concrete strips, concrete areas, surfaces, insulating panels, facing layers (tiles) and so on), modeling objects and linear fixtures with the "outline" option.

Variables for formulas in the fixture catalog

Earlier versions either used fixed text for special components and modeling objects or analyzed the **List text** parameter defined on the **Logging** tab in the **Fixture catalog** (in  **Catalogs, General**). However, the latter applied to just a few special components, such as concrete strips and insulating strips.

Corbels and **Dummy joints** you defined using the  **Modify Wall in View** tool could not be analyzed at all.

PLANBAR 2016 provides a uniform solution: it always uses the fixture name defined for the **List text** parameter on the **Logging** tab in the **Fixture catalog** (in  **Catalogs, General**) - be it a normal fixture, special component or modeling object.

The new **\$QL**, **\$QB** and **\$QH** variables are available for special components and modeling objects. By using the new variables, you can also configure the old, fixed text if you want.

Note: The program enters the dimensions in these new variables in [m], as usual. Use a multiplier if you want to convert the dimensions to a different unit.

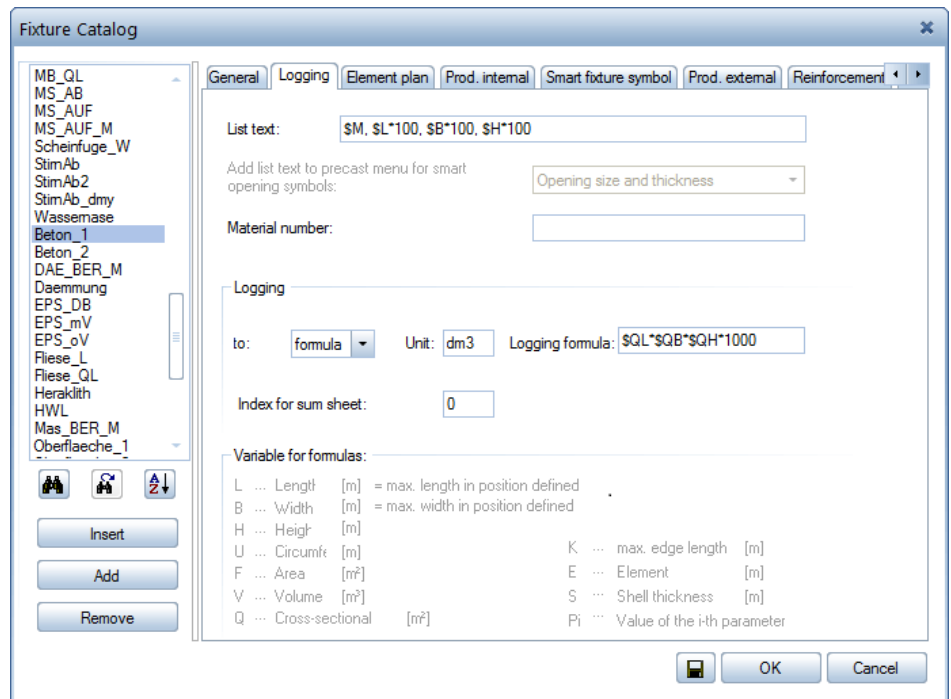
Due to the new variables, the **\$L**, **\$B** and **\$H** variables for concrete strips and insulating strips have changed.

Note: We adjusted the fixture catalog to these new variables. When you install Allplan for the first time, this catalog will automatically be installed to the default folder. If you used one of these three variables for defining list text, check and adjust the entries in your fixture catalog.

For better understanding, we changed the descriptions of $\$L$ and $\$B$ to **Max. length in defined position** (local x direction of element) and **Max. width in defined position** (local x direction of element), respectively. Earlier versions used **Span direction** to describe these two variables. This was simply wrong.

For wall elements, for example, $\$L$ is perpendicular to the direction of span and $\$B$ is parallel to it. For slab elements, it is the other way round. The values assigned to these two variables have not changed. Here, **defined position** stands for the plane defined by the element's local x-axis and local y-axis.

Furthermore, the program now assigns values to the variables of almost all components mentioned at the beginning of this section. You can find the exceptions in the following list.



List of variables for special components and modeling objects:

Insulating strip, concrete strip (created automatically or manually):

- **\$L** length in defined position
- **\$B** width in defined position
- **\$H** height perpendicular to defined position
- **\$U** currently unassigned
- **\$F** area in defined position
- **\$V** volume
- **\$Q** cross-sectional area; here $\$QB \times \QH
- **\$K** currently unassigned
- **\$QL** path for placing insulating strip, concrete strip
- **\$QB** input value for the width
- **\$QH** input value for the height or layer thickness (for insulating strips without height specifications; for example, insulating strips placed around openings)

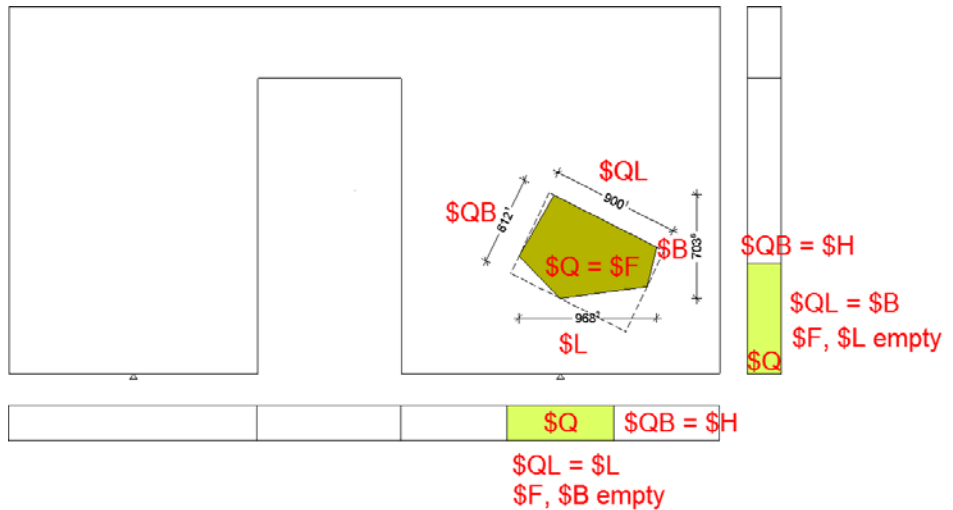
- **\$M** material currently unassigned for concrete strips; for insulating strips, Name of the associated insulation material in the **Insulation material catalog**

Areas with insulation, tiles or concrete:

- **\$L** length in defined position
- **\$B** width in defined position
- **\$H** height perpendicular to defined position
- **\$U** currently unassigned
- **\$F** area in defined position
- **\$V** volume
- **\$Q** cross-sectional area; for walls and slabs = **\$F**; for concrete areas of structural precast elements, iParts, partially assigned in accordance with the viewing direction and position of the component
- **\$K** currently unassigned
- **\$QL** max. dimension in the direction of the longest edge; for concrete areas of structural precast elements, iParts, see above: **\$Q**
- **\$QB** max. dimension perpendicular to the longest edge; for concrete areas of structural precast elements, iParts, see above: **\$Q**
- **\$QH** max. dimension in the direction of the design identifier or viewing direction; for concrete areas of structural precast elements, iParts, see above: **\$Q**
- **\$M** material for insulating strips; Name of the associated insulation material in the **Insulation material catalog**; for tiling areas, name of the associated **Element to be placed** (tile, brick) in the **Brick/tile catalog**; for concrete areas, Name of the selected concrete in the **Concrete grade catalog**.

Areas with surfaces:

- \$L length in defined position (see above); unassigned for surfaces applied to front sides (left, right)
- \$B width in defined position (see above); unassigned for surfaces applied to front sides (top, bottom)
- \$H height in defined position (see above); assigned for surfaces applied to front sides (left, right, top, bottom); otherwise, unassigned
- \$U perimeter in defined position
- \$F area in defined position (see above); unassigned for surfaces applied to front sides (left, right, top, bottom)
- \$V volume; unassigned
- \$Q area of defined polygon
- \$K currently unassigned
- \$QL max. dimension in the direction of the longest edge with the viewing direction set to the area of the defined polygon
- \$QB max. dimension perpendicular to the longest edge



- \$QH unassigned
- \$M Name from the Surface catalog

Tiles, insulating panels:

- \$L length in defined position; placing direction ignored
- \$B width in defined position; placing direction ignored
- \$H height in defined position; thickness of tile, insulating panel
- \$U currently unassigned
- \$F area in defined position
- \$V volume
- \$Q cross-sectional area = \$F
- \$K currently unassigned
- \$QL Length from the Brick/tile catalog or Insulation material catalog
- \$QB Width from the Brick/tile catalog or Insulation material catalog
- \$QH Thickness from the Brick/tile catalog or Insulation material catalog
- \$QM Name from the Brick/tile catalog or Insulation material catalog

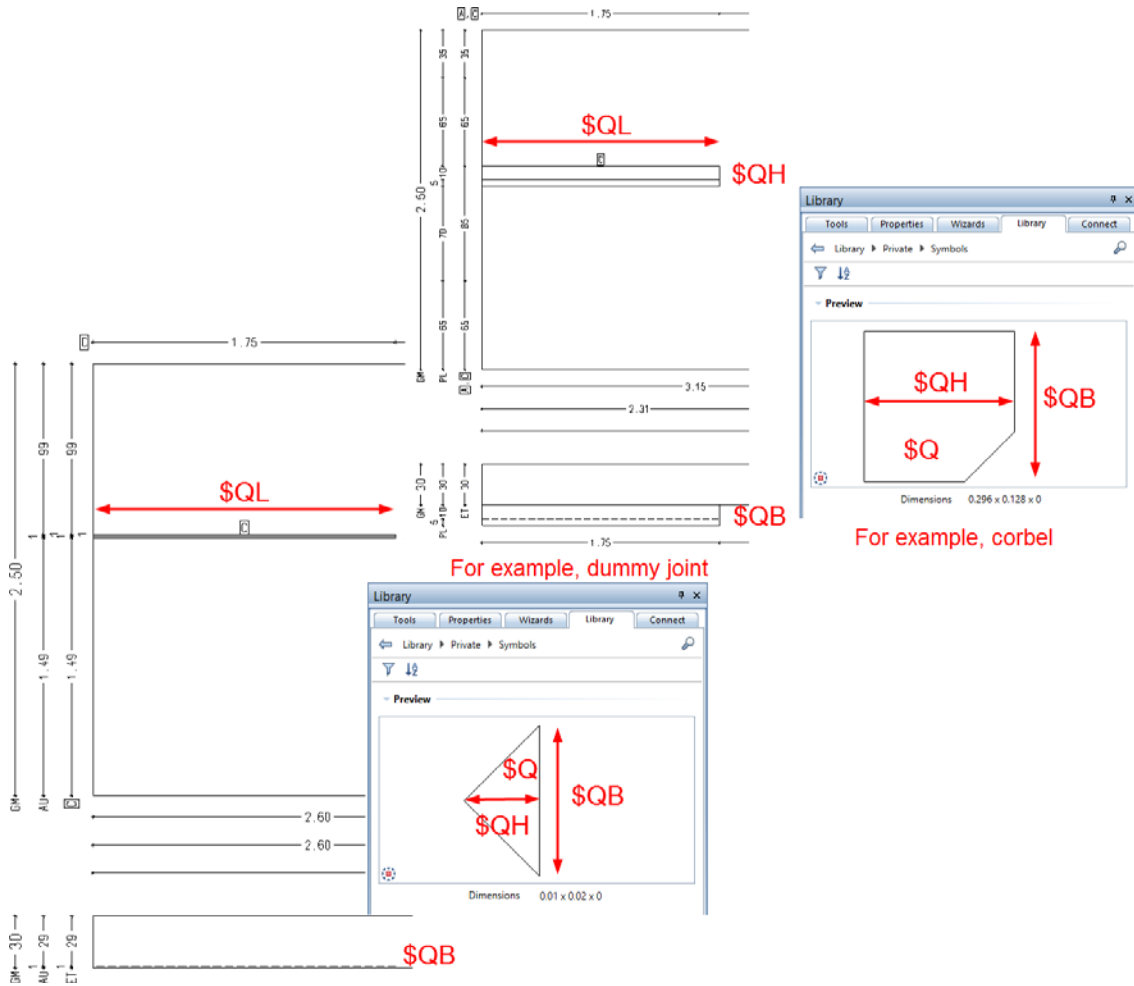
Modeling objects and linear fixtures with the "outline" option:

- \$L length in defined position
- \$B width in defined position
- \$H height in defined position
- \$U currently unassigned
- \$F area in defined position
- \$V volume
- \$Q cross-sectional area of the defined polygon
- \$K currently unassigned
- \$QL path
- \$QB max. dimension in the direction of the longest edge of the polygon; like \$QL for surfaces
- \$QH max. dimension perpendicular to the longest edge of the polygon; like \$QB for surfaces

- \$M Name of the selected fixture for invoicing in the Fixture catalog



Dummy joints and corbels:

- \$L length in defined position
- \$B width in defined position
- \$H height in defined position
- \$U currently unassigned
- \$F area in defined position
- \$V volume
- \$Q cross-sectional area of the polygon
- \$K currently unassigned
- \$QL path
- \$QB width of the associated fixture on the wall area viewed
- \$QH depth of the associated fixture on the wall area viewed



- \$M Name of the selected fixture for invoicing in the Fixture catalog

Special components and modeling objects for structural precast elements, iParts

The points mentioned above for slab elements and wall elements also apply for structural precast elements, iParts: you can include modeling objects created with  **Model Precast Elements**, linear fixtures with the "outline" option and special components created with  **Surfaces and Concrete Areas**.

Do not forget that the program will assign the \$Q, \$QL, \$QB and \$QH variables only partially. This depends on the viewing direction defined or the position of the component.

Methods for placing fixtures

Using the  **Methods for Placing Fixtures** tool, you can now place group fixtures, too.


If you want to use a group fixture, you have to select the new **without** option for **Linear fixture** in the **Parameters for fixtures along lines** dialog box.

The line you define while creating the group fixtures serves as an aid. The program will delete it afterwards.

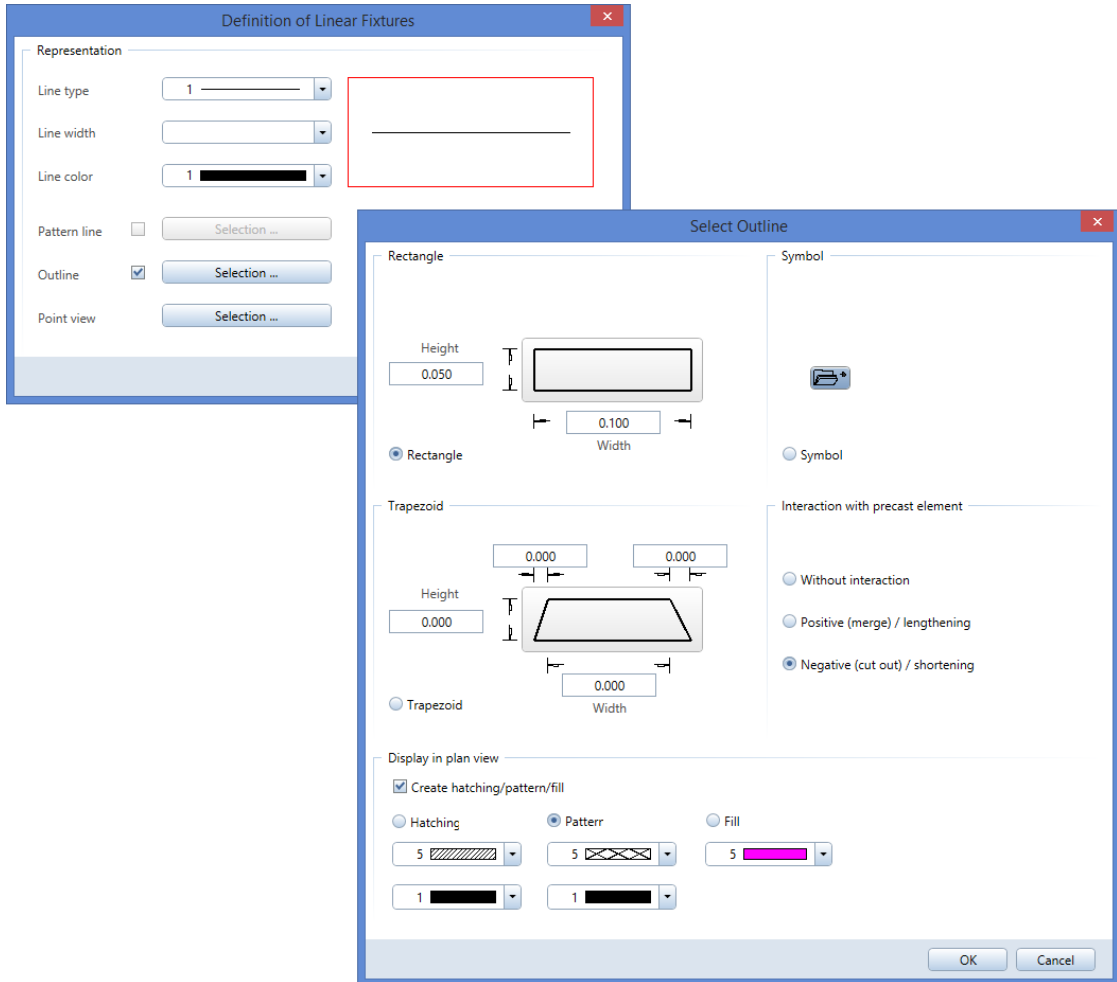
PLANBAR 2016 places the group fixtures one by one. After placement, they are no longer associated with the line. If you want to move or delete them, you have to do this separately for each group fixture. Using the **Line as a construction line** and **Fixture** options, you can normally modify the distribution by changing the end points. However, this is not possible here.

Furthermore, unlike the **Line as a construction line** and **Fixture** options, the settings for **Start offset**, **End offset** and **Offset** or **Number** apply to only one fixture at any one time. The program cuts the construction line at each panel edge.

Displaying linear fixtures with the "outline" option


So that you can easily identify linear fixtures with the "outline" option in placing drawings or element plans, you can define the **Display in plan view** in addition to the outline and the manner in which the fixture interacts with the precast element. You can do this in the **Select Outline** dialog box. You have the same options for modeling objects created with  **Model Precast Elements**.

If you want to display a fixture in a special way, select the **Create hatching/pattern/fill** check box in the **Display in plan view** group and decide whether you want to display the fixture with **Hatching**, **Pattern** or **Fill**. After this, select the hatching style and the line color, the pattern and the line color or the fill color.




PLANBAR 2016 creates the outline of the linear fixture with the selected hatching, pattern or fill in all orthogonal views of the placing drawing or element plan.

Displaying fixtures in views


Allplan Precast 2015 introduced the **Always convert to wireframe in associative views** parameter for symbol fixtures on the **General** tab of the **Fixture catalog** (in  **Catalogs, General**). You can now use this parameter with linear fixtures and surface fixtures, too.



When you select the check box for this parameter, the program converts the corresponding fixture to a wireframe model.


Take a hidden line image, for example: by selecting this parameter, you can display particular linear fixtures or surface fixtures as wireframe models whereas the other fixtures appear as hidden line images (even though the **Representation as a wireframe model** option is not selected for fixtures in the  **Options for Associative views - Representation**).

Surfaces and concrete areas

Please note the following restrictions when using surfaces and concrete areas.



Unlike normal fixtures, surfaces and concrete areas you include in structural precast elements, iParts using  **Surfaces and Concrete Areas** will not automatically be transferred to other identical precast elements with the same mark number.


 **Transfer Elements** and  **Transfer Element Plan** ignore surfaces and concrete areas.


Note: The  **Modify Mark Number** tool (with the **Mode** set to **Identical**) takes surfaces and concrete areas into account, as usual.

Selecting symbols and smart symbols in catalogs, configurations and dialog boxes

We adapted the catalogs, configurations and dialog boxes of PLANBAR 2016 to the changes in saving and structuring symbols and smart symbols in the **Library** of Allplan 2016. Here are some examples:

- Select a symbol representing the formwork bottom or the symbol for leaf 1. To do this, open the  **Configurations - Wall Programs** for walls created with the  **Wall Element Design** tool. Click **Labeling** on the left and go to the **Symbols** tab.



Previews are not visible when you open the Library palette straight from the  Configurations.

- Select Symbols for formwork attributes in the Layout catalog (General area, Symbols) in the  Catalogs, General.
- Select a smart symbol for identifying piles for the Symbol parameter of a structural precast element, iPart of the Foundation type in the Pile definition dialog box.

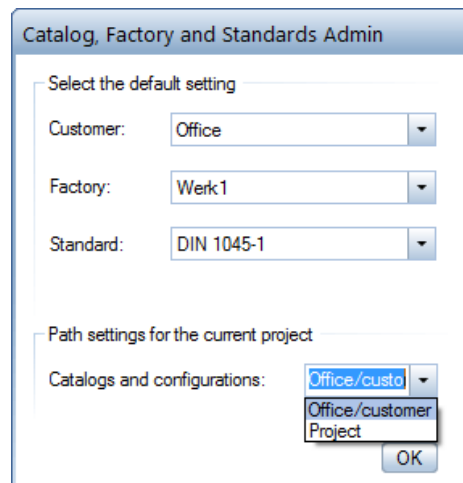
Instead of selecting a File and an Entry, you now select the symbol file or smart symbol file directly.

Saving catalogs and configurations to the project folder

PLANBAR 2016 lets you save catalogs and configurations to the project folder.

Therefore, we added functionality to the  Factory and Standards Admin tool and renamed it  Catalog, Factory and Standards Admin.

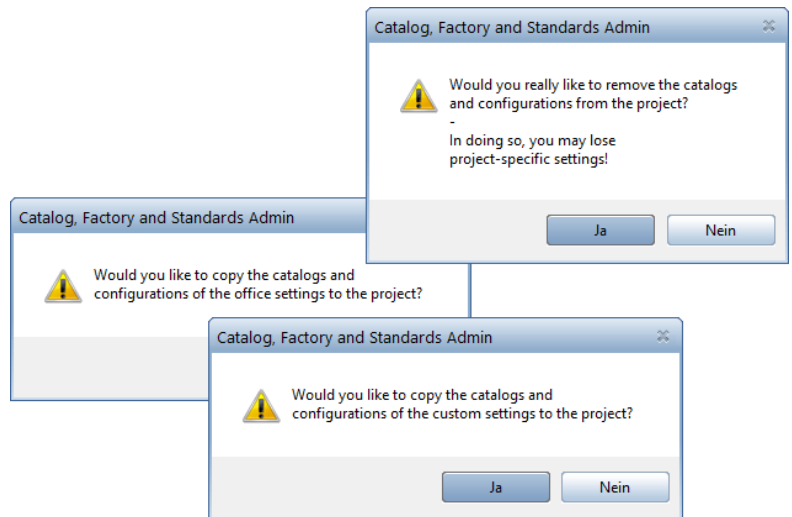
Using the Catalogs and configurations parameter in the Path settings for the current project area, you can choose to take the settings from the office standard or a customer folder, as usual (Office/customer option). As an alternative, you can save the catalogs and configurations for the current project to the project folder (Project option).



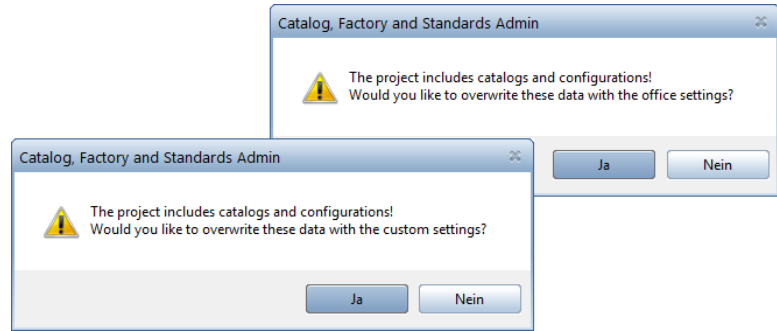
When you select

- **Office/customer**, the program uses the catalogs and configurations in the `..\std\fact` or `..\std\fact_mandant` folder of the office standard.
- **Project**, the program creates the new `..\fact` subfolder in the project folder and copies the catalogs and configurations of the office standard or customer set in the **Customer** box to the current project. You cannot use customers in a project!

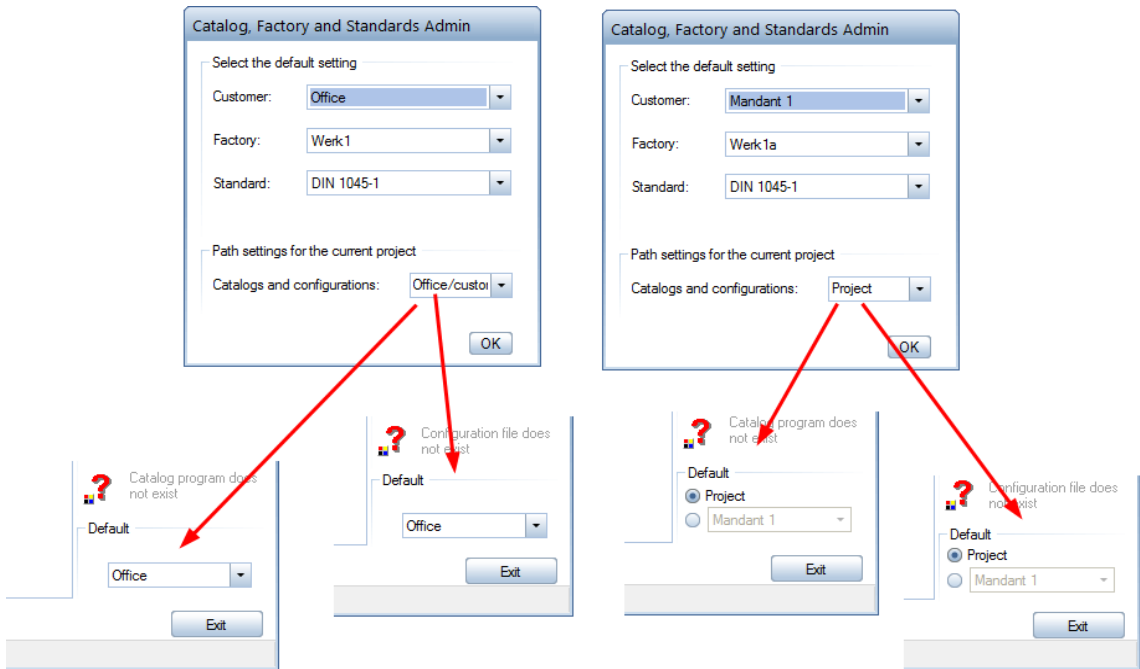
PLANBAR 2016 displays a warning if you switch from **Office** to **Project** or vice versa, making sure you do not change this parameter inadvertently. Click **No** to cancel the process.





The program will also issue a warning if the **Catalogs and configurations** parameter in the **Path settings** for the current project area is set to **Project** and you select **Project** again. Here, too, you run the risk of overwriting settings inadvertently.




If a project taking its catalogs and configurations from the project folder is active in PLANBAR 2016 and you open the Catalogs or Configurations, you can switch between project view and office view or customer view at bottom right in the dialog box. Project view is set by default.



Names of backup files for catalogs and configurations

When you save configurations or catalogs using  **Save Configurations** or  **Save Catalogs**, the name proposed for the backup file (*.bco, *.bca) now includes the exact program version (for example, 2015-1-2) so that you can identify the file quickly and easily. In earlier versions, the file name stated only the general program version (for example, V2015.0).

Backing up catalogs, configurations and so on

The new  **Data Backup** tool helps you exchange data with the support team.

In addition to saving the currently loaded drawing files with resources, you can use this tool to centrally select the data specific to precast elements (catalogs, configurations, fixtures, reports and so on), which are spread across a number of different folders. You can then save the data to a compressed file (*.zip). Using this tool, you can also retrieve data you saved beforehand.

General settings



In the **General** group, you start by selecting the **Mode: Save data** or **Read data**. When you choose **Save data**, you continue by defining the data path and the name of the **Archive file (*.zip)**. When you choose **Read data**, you continue by selecting the data path and the name of the **Archive file** you want to retrieve.

Read data offers another option: by selecting the **Backup copy of current data** check box, you can specify whether you want to save the current data to a **Backup copy** before the program imports the data from the **Archive file**. After you have selected this option, define the data path and the name (*.bak) of the **Backup copy**.

Note: You should always select this option, thus making sure you can restore data you have overwritten inadvertently.

Saving data

Please note that it may take several minutes to save the Archive file, in particular if you select **manufacturer catalogs**, **article catalogs**, **symbols**, **smart symbols**, **SmartParts** and so on for backup and set different paths (for example, **default**, **office** and so on) to boot. That is because the program has to find and compress a large number of small files spread across various folders.

Tip: Use  **Save as a favorite** to save frequently used settings as favorite files. This saves the settings to files ending in ***.pexdat**. You can retrieve these files whenever you need. Just click  **Load favorite**.

When you set the **Mode** to **Save data**, you can back up the following files.

Loaded drawing files with resources

If you want to include the currently loaded drawing files (current, open in edit mode, open in reference mode) in the backup, go to the **Loaded drawing files** group and select the **Export loaded drawing files with resources** option.

The program writes the drawing files to the archive file specified. The result is the same as if you selected **File - Export - Export Loaded Drawing Files with Resources**.

You do not need to make further settings.

Export layer definitions

Regardless of the layer structures you may have backed up together with the drawing files with resources, you can save all layer definitions by selecting the **Export layer definitions** option.

Here, too, further settings are not required.

Catalogs and configurations

You can use **Export catalogs and configurations** to back up the current office catalogs and office configurations, the catalogs and configurations of a customer or the catalogs and configurations of the current project.

After you have selected the **Export catalogs and configurations** check box, define which data you want to back up (**Office** or **Project**).

If you select **Office**, the program displays an additional option: **Customer**. Use this option to specify whether you want to save the data of the office standard or the data of a customer. To do this, select **Office** or one of the customers displayed. Finally, you have to define the **Factory** you want to back up. The program presents only factories that are appropriate to the entry you selected for **Customer**.

If you select the **Project** option for **Exporting catalogs and configurations**, you can specify only the **Factory**. That is because you cannot use customers in a project!

Note: If you select the **Project** option for **Exporting catalogs and configurations**, but the current project contains neither catalogs nor configurations, the program displays the following message for the **Factory** parameter: **Note: no catalog available!**

Cross-section catalogs

If you want to include the current definitions of cross-section catalogs in the backup, select the **Export cross-section catalogs** option.

You do not need to define further parameters. Depending on the **Path** settings for the **Bar and mesh cross-section catalogs** in the **Project Settings**, PLANBAR 2016 backs up the cross-section catalogs in the **Office path** or the cross-section catalogs saved in the **Project**.

Fixtures

If you want to include fixtures in the backup, select the **Export fixtures** option.

You can choose to back up the fixtures in the **Office path**, **Private path**, **External path** and in the **Current project path**.

Manufacturer catalogs, article catalogs

If you want to include manufacturer catalogs and article catalogs in the backup, select the **Export article catalog** option. You can choose to back up **Manufacturer catalogs** or **Article catalogs** or both.

PLANBAR 2016 always backs up all manufacturer catalogs and article catalogs.

Symbols, smart symbols, SmartParts, legends, label styles, reports

If you want to include symbols, smart symbols, SmartParts, legends, label styles and reports in the backup, select the corresponding check boxes.

You can choose to back up the objects in the **Default path**, **Office path**, **Private path**, **External path** and in the **Current project path**.

Any folder

If you want to export data other than the types mentioned above (for example, favorites), you can select the **Export any folder** option and set the path to the **Folder** you want to include in the backup.

Reading data

After you have selected the **Archive file** you want to import, the program analyzes its contents and displays the data and paths found on screen.


To exclude data from the import, clear the corresponding check box(es).

Except for the path for importing data from any folder, you cannot change the paths found in the archive file. PLANBAR 2016 always writes the data back to the original folder. Therefore, the paths are grayed out. They are displayed only for information.

Here, too, it may take several minutes both to analyze the **Archive file** and to extract the **Archive file**, in particular if the file contains **manufacturer catalogs**, **article catalogs**, **symbols**, **smart symbols**, **SmartParts** and so on and you set different paths (for example, **default**, **office** and so on) when you saved the file.

The whole process will take even longer if the program creates a **Backup copy** before it overwrites the current data with the data from the **Archive file**.

Size of error dialog boxes


PLANBAR 2016 displays dialog boxes with errors or warnings when you enter or modify walls using  **Wall Element Design** or when you create MWS reinforcement. You can now resize these dialog boxes so that you can always read the messages without having to scroll.

The program remembers the size and the last position of the dialog box.

Element Plan

Layout catalog

Wall types with facing layers

Open the Layout catalog (in  Catalogs, General) and select the Element types tab for the element plan layout. The Precast wall group offers only wall types with facing layers you can actually design. Earlier versions also presented wall types intended for future use.

Resizing factors for view – isometric view

Like Sections, views of the View – isometric view type can now be given resizing factors in the x direction and y direction. To define these factors, open the Properties of the view on the View – isometric view tab, go to the View group and enter values for the X factor and Y factor.

This allows you to display isometric views at a scale that differs from that used for other views.

Displaying slab recesses in the same way as in placing drawings

As soon as you select the Hollow core element or Prestressed hollow core element slab type in the Precast slab group on the Element types tab in the Properties palette of an element plan, you can find the additional Recesses parameter in the Symbols in drawing group on the Symbols tab in the Properties palette of a view with the Viewing direction for view set to 1 or 6.



When you select this option, PLANBAR 2016 displays recesses in the corresponding view in the element plan in the same way as in placing drawings (continuous recess → continuous line with crosses; recess only at top → continuous diagonal; recess only at bottom → dashed diagonal).



The program draws diagonals for non-rectangular recesses based on the same rules as for placing drawings.

Note: There are no defaults for pen thickness and color. The program uses the current settings instead.

Recesses protruding over the panel edge (in other words, belonging to two or more panels) will be divided into parts of "notional" recesses in the relevant panels. These parts of "notional" recesses in the different elements plans will then be marked in accordance with the rules mentioned. The same rules also apply to recesses near the edge of a panel. These recesses change the panel shape.

If you set the **Viewing direction** for view to **6**, the program replaces the representation of non-continuous recesses at the top with that for non-continuous recesses at the bottom, because recesses that are at top in the placing drawing are at the bottom in the element plan and vice versa.

Note: Automatic marking is only possible for "real" slab recesses created with  **Recess, Opening in Slab** in the Architecture module or  **Recesses** in the

Precast Slab module. Recesses created with  **Model Precast Elements** and recesses created at supports by the automatic fixture features will not be marked automatically by the program in placing drawings and element plans. You have to define the marking together with the fixture or you have to do this manually for recesses created with  **Model Precast Elements**.

Displaying dimension lines

The new list box for the **Create dimension lines** parameter in the **Advanced** group on the **Dim. lines** tab in the **Properties** palette of a view or section offers the following options: you can choose not to create dimension lines (**No**) or you can limit the dimension lines to horizontal ones (**horizontal only**) or to vertical ones (**Vertical only**). You can also choose to display both horizontal and vertical dimension lines (**Horizontal and vertical**).

You cannot see the **Show dimension line** option in the **Advanced** group until you select **Horizontal only**, **Vertical only** or **Horizontal and vertical**. Using this option, you can hide the dimension line itself, but you cannot hide dimension line points or dimension text.

Dimensioning panel edges and connections

Using the **Dim. lines** group on the **Dimensioning** tab in the **Properties** of a view or section, you can define whether you want to dimension the edges resulting from connections (for example, due to poured joints in concrete walls) together with the panel edges.

Therefore, we replaced the **Panel edge** check box with a list box offering the **No**, **Panel edge only** and **Panel edge and connections** options.

The options in detail:

- **No dimensions** neither the panel edges nor the edges resulting from connections. This option is the same as if you cleared the former **Panel edge** check box.
- **Panel edge only** dimensions only the panel edges. Points resulting from defined connections will not be dimensioned.
- **Panel edge and connections** dimensions panel edges and edges resulting from connections. This option is the same as if you selected the former **Panel edge** check box.

Note: You cannot create separate dimension lines for edges resulting from connections. The program always dimensions those edges together with the panel edges. However, you can dimension connections if you use the options for defining fixtures at connections (see below). To do this, define fixtures for the connections (for example, using a separate **Dim. string index**). You can then create dimension lines for these fixtures. By applying fixtures to the axes of connections, you get dimensions for the connection axes.

Dimensioning assembly bars and secondary bars

Using the **Dim. lines** group on the **Dimensioning** tab in the **Properties** of a view or section, you can choose to additionally dimension **Assembly bars** of attached reinforcement.


In addition, you can choose to skip dimensioning for **Secondary bars** (**No**). As an alternative, you can configure the program to dimension only the first bar in a placement (**Dimension first bar** option) or to dimension all bars in a placement (**Dimension all bars** option). Therefore, we replaced the former check box with a list box.

Dimensioning fixtures


By making appropriate settings in the **Fixture catalog** and **Layout catalog**, you have various options for dimensioning fixtures in a view or section: you can limit dimensioning to horizontal dimension lines or vertical dimension lines or you can use both. If you want, you can even skip dimensioning altogether. These settings do not depend on the general setting for vertical and horizontal dimension lines on the **Dim. lines** tab in the **Properties** of a view or section.

In addition, you can decide whether you want to create absolute dimensions or relative dimensions. You can make this setting separately for vertical and horizontal dimensioning of each fixture.

Settings in the fixture catalog

Open the **Fixture catalog** (in  **Catalogs, General**) and select the **Element plan** tab. As you can see, we replaced the global settings (**No**, **Horizontal**, **Vertical** and **Horiz+vert.**) for the **Dimension** parameter with two parameters: **Horizontal dimensions** and **Vertical dimensions**.

Using the **Horizontal dimensions** and **Vertical dimensions** parameters, you can choose between **No**, **Acc. to layout catalog**, **Relative** and **Absolute**. The options in detail:

- **No** skips dimensioning in the selected direction.
- **Acc. to layout catalog** dimensions the fixtures in the selected direction relatively or absolutely in accordance with the setting on the **Dim. lines** tab in the **Properties** of a view or section in the **Layout catalog** (in  **Catalogs, General**).
- **Relative** creates relative dimensions for the fixtures in the selected direction.
- **Absolute** creates absolute dimensions for the fixtures in the selected direction.

So that the former settings are compatible with the new ones, we transferred the options of the old **Dimension** parameter to the new **Horizontal dimensions** and **Vertical dimensions** parameters in the **Fixture catalog** as follows:

Dimension	Horizontal dimensions	Vertical dimensions
No	No	No
Vertical	No	As in layout catalog
Horizontal	As in layout catalog	No
Horiz + vert.	As in layout catalog	As in layout catalog

When you select one of the new options (**Relative** or **Absolute**), the program always uses the option selected here to dimension the fixtures, regardless of the general setting for other horizontal and vertical dimension lines.

Note: If the program creates a common dimension line for different fixtures having the same **Dim. string index** but different settings for the dimension line type in the fixture catalog (for example, E-Dose-1, **Dim. string index** = 5 linked with a fixture with the **Vertical dimensions** = **Relative** setting; E-Dose-2 and E-Dose 3, **Dim. string index** = 5 linked with a fixture with the **Vertical dimensions** = **Absolute** setting), the program uses the most frequently used setting. Make sure the settings are consistent!


Settings in the layout catalog

As you can make separate settings for the dimension line type of fixtures, you can now create both relative dimensions and absolute dimensions in the horizontal direction and in the vertical direction. Therefore, the **Absolute dimension lines mode** parameter is now always visible on the **Dim. lines** tab in the **Properties** of a view or section. In earlier versions, you could see this parameter only if you selected the **Absolute** option for the **Dimensioning** parameter.

The options provided by this parameter are still the same: **From left to right** or **From bottom to right** or **From bottom to top**, **From right to left** or **From top to left** or **From top to bottom** and **On both sides**.


The distance between view or section and dimension line and the distance between dimension line and dimension line have not changed; these values also apply to the distance between relative dimension lines and absolute dimension lines.

Local mark number for reinforcement

Earlier versions provided a global setting for the **Local mark number** parameter, which was valid for all element types. You could find this setting in the  **Configurations, General, Program Sequence, Element plan** on the **General** tab. You can now define this setting separately for each slab type and wall type. It is also available for structural precast elements, iParts.

To define this setting, you can find the new **Element plan** group with the **General** tab and the **Local mark number** parameter in the configurations for all slab types and wall types under **Entry**. For structural precast elements you can find this new group under **General** entry.

Wall types with facing layers in element plan in batch run

Like the Layout catalog, the  **Element Plan in Batch Run** dialog box offers only wall types with facing layers you can actually design. You can find these types in the **Select precast wall** group.

Attached Reinforcement


New features for A.W.M. machines

To account for advanced machine capabilities, we integrated new, optional parameters for the current mesh welding systems of the A.W.M. SpA. company.


For example:

- Setting for the x direction of the mesh. This setting is only important if
 - The minimum or maximum bar overlaps of straight bars or bent bars at the front differ from those at the rear.
 - You want to check the minimum length of the last 0° bar in alignment (see below).
 - You want to check the bar groups for 90° bars (see below).
- Separate setting for the minimum bar length of the last 0° bar in alignment (bars placed one after the other in alignment).
- Uniform diameter for all 0° bars or 90° bars in alignment.
- Rules for successive 90° bars. When you observe these rules, you can combine successive bars with the same diameter to "bar groups". The minimum length applying to a bar in group is considerably smaller than that for a 90° bar outside a group.
- Setting for the direction (relative to the production direction of the mesh) used to install the 90° bars, making sure the "bar groups" are created correctly.

Creating loose bars when bars are shorter than minimum bar length

We added the new **No - loose bars** option to the **No, One side** and **Both sides** options for the **Lengthen bars to minimum length** parameter on the **0° bars 2** and **90° bars 2** tabs in the  **Configurations, General, Attached Reinforcement**.

When you select this new option, the program creates bars that are shorter than the minimum length defined as loose bars.

If the bar is shorter than the "absolute" **Minimum length** set in the configurations of a factory for the current slab type or wall type and bar type (for example,  **Configurations, Slab Programs, Half floor, Calculation, Longitudinal bars** or **Cross bars** or **Secondary bars**), the program will not create the bar. This is equivalent to selecting the old **No** option.

Selecting PXML driver in mesh welding system editor


Version 1.3 of the PXML interface is now available (see below):
Therefore, you can now select drivers of version 1.2 and 1.3 in the menu of the mesh welding system editor. Select **Edit, PTS Server...** and choose the driver you need.

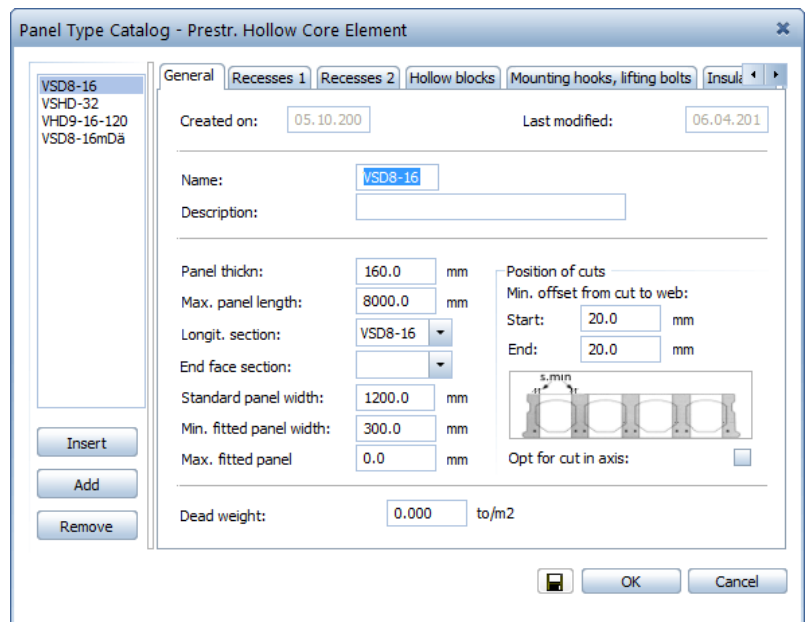
Precast Slab

Prestressed hollow core element, hollow core element

Sections for end faces of prestressed hollow core elements

For slabs of the **Prestressed hollow core element** type, you can create sections for supports in addition to joint sections. As with slabs of the **Concrete slab** and **Hollow core element** types, you can use different sections for supports parallel to the direction of span (longitudinal sections) and supports perpendicular to the direction of span (end face sections).

In order to define default settings for the sections, use the **Longitudinal section** and **End face section** parameters on the **General** tab in the **Panel type catalog** for the **Prestressed hollow core element** (in  **Catalogs, Slab**).



Panel Type Catalog - Prestr. Hollow Core Element

General | Recesses 1 | Recesses 2 | Hollow blocks | Mounting hooks, lifting bolts | Insulz

Created on: 05.10.200 Last modified: 06.04.201

Name: VSD8-16

Description:

Panel thickn: 160.0 mm

Max. panel length: 8000.0 mm

Longit. section: VSD8-16

End face section:

Standard panel width: 1200.0 mm

Min. fitted panel width: 300.0 mm

Max. fitted panel: 0.0 mm

Dead weight: 0.000 to/m2

Position of cuts

Min. offset from cut to web:

Start: 20.0 mm

End: 20.0 mm

Opt for cut in axis:

Diagram showing the cross-section of the panel with a cut, labeled s_min.



Buttons: Insert, Add, Remove, OK, Cancel

Note: Due to the new **End face section** parameter, we adjusted the **General** tabs of the panel type catalogs for slabs of the **Prestressed hollow core element** and **Hollow core element** types. However, we did not change the contents of these tabs.

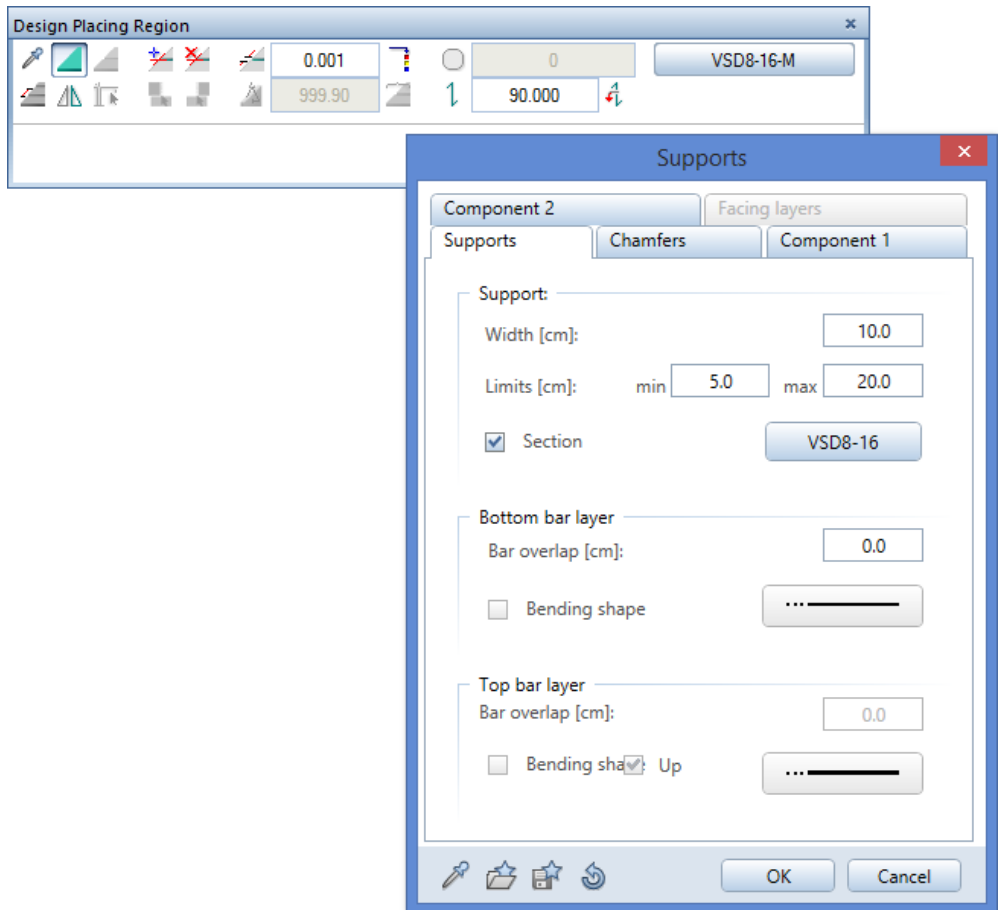
During design PLANBAR 2016 assigns the preset longitudinal section to the support lines parallel to the direction of span in the placing polygon and the preset end face section to the support lines perpendicular to the direction of span in the placing polygon.



As soon as you confirm the design, the program transfers the section details of the support lines to the panel edges, thus creating the final sections. The following rules apply:

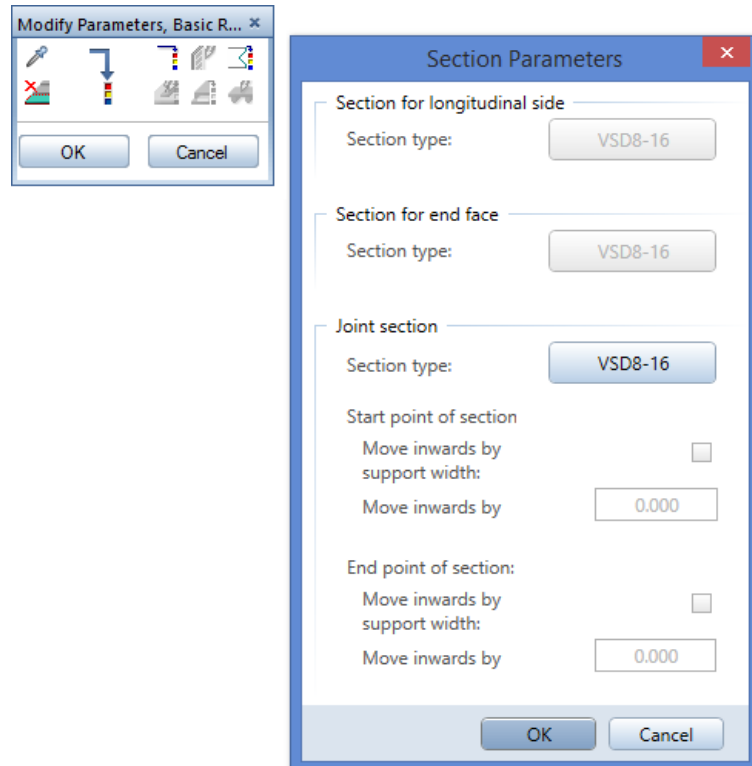
- The longitudinal section is used for all panel edges parallel to the direction of span if these panel edges touch another panel and if they were not produced by cutting.
- The longitudinal section is used for all panel edges parallel to the direction of span if these panel edges touch the circumscribed rectangle of the precast element and if they were not produced by cutting.
- The end face section is used for all panel edges perpendicular to the direction of span if these panel edges touch the circumscribed rectangle of the precast element.

By clicking a single support line, you can override the default settings defined in the panel type catalog. To do this, use the **Supports** tab in the **Supports** dialog box of  **Design** and  **Modify Design**. This allows you to create a section for a support which is not automatically given a section (see above; for example, a longitudinal side produced by cutting or an end face not touching the circumscribed rectangle of the panel).

Note: You can now use the **Supports** dialog box to change sections for slabs of the **Hollow core** element type, too,




Using  **Change profile** in  **Modify Parameters, Basic Reinforcement**, you can override the joint sections for individual precast elements.



Mounting hooks and lifting bolts

You can now create mounting hooks and lifting bolts for slabs of the **Prestressed hollow core element** type in the same way as for slabs of the **Hollow core element** type.


The algorithm is exactly the same as that used for creating mounting hooks and lifting bolts for **hollow core elements**. The only difference is that you can create the mounting hooks and lifting bolts only in the hollow blocks of prestressed hollow core elements. You cannot create them in the ribs.

As with slabs of the **Hollow core element** type, you define the settings for mounting hooks and lifting bolts on the new **Mounting hooks, lifting bolts** tab in the **Panel type** catalog for the **Prestressed hollow core element** (in  **Catalogs, Slab**).

The settings are exactly the same (except the option for creating mounting hooks and lifting bolts in the ribs).

Now you can also select a fixture group for the fixture of mounting hooks and lifting bolts placed in slabs of the **Prestressed hollow core element** and **Hollow core element** types.


Note: Similarly, you can also use group fixtures for fixtures of lifting points created automatically in slabs of the **BubbleDeck** and **Cobiax** slab types and for fixtures of mounting hooks and lifting bolts placed in slabs of the **Concrete** slab type.

Tip: In conjunction with the new features we implemented for concrete areas (see below), you can define a group fixture that automatically closes a part of the hollow block when the program places the lifting bolt. To do this, use the  **Change Hollow Blocks, Concrete Strips, Filling Objects, Bricks** tool to create a concrete area (= fixture) with the **Along length of fixture** option. After this, use this concrete area, the symbol fixture for the lifting bolt and, if necessary, secondary reinforcement to define a group fixture in the hollow block.

For the **Fixture path**, you can set only the **Allplan office path**, the **Allplan project path** or the **Allplan private path** (similar to the **Panel type catalog** for the **Hollow core element**). At the moment, you cannot select a fixture in a **Manufacturer Catalog** or an **Article Catalog**.

Make sure you fill out all entries on this tab. Otherwise, PLANBAR 2016 will not save the values to the **Panel type catalog**.


We have not changed the algorithm. It is exactly the same as that used to generate lifting bolts for **hollow core elements**.

If the element geometry prevents the program from placing four lifting bolts, it creates only the valid lifting bolts. The approach is the same as that for **hollow core elements**. In addition, the placing drawing will show an E (**Automatic fixtures incorrect** state) instead of the mark number, indicating that the precast element is incorrect (provided you did not define different identifiers on the **Notes** tab in the  **Configurations, General, Program Sequence**).

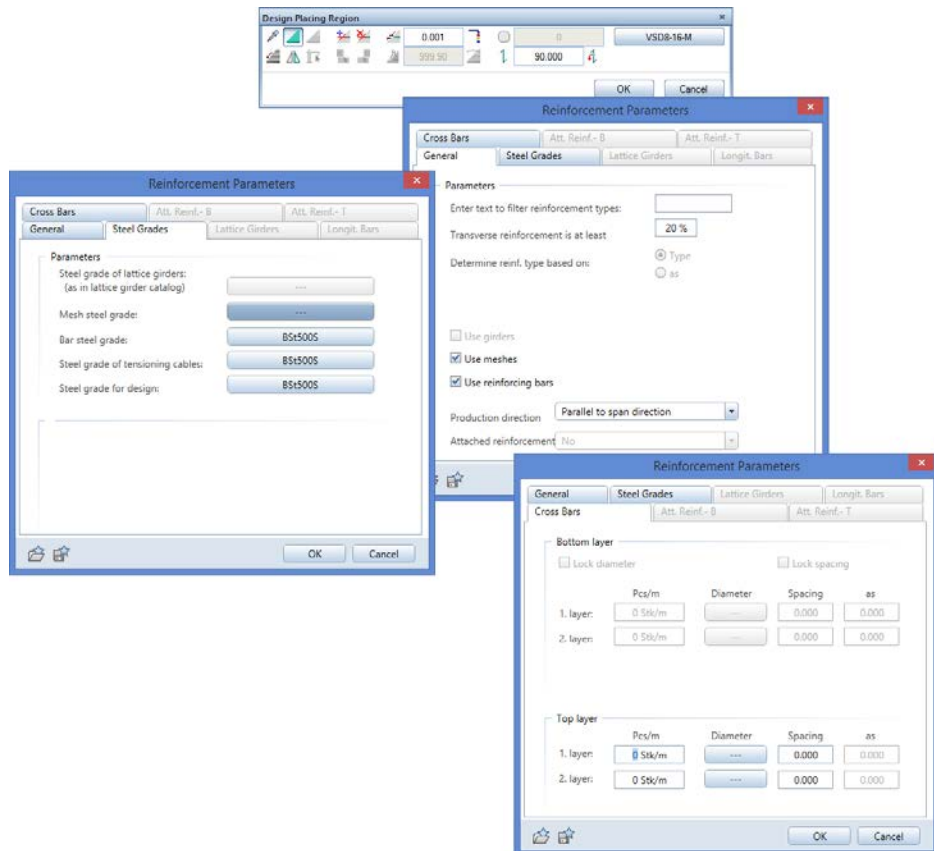
Place the missing lifting bolts manually and set the state to **Automatic fixtures correct** in order to output the mark number.



Top reinforcement in transverse direction for prestressed hollow core elements

For slabs of the Prestressed hollow core element type, you can create additional, not-attached reinforcement at the top in the transverse direction.


You can set the steel grade for the reinforcement at the top using the Steel grade for bars parameter on the Steel grades tab in the Steel grades group in the  Configurations, Slab programs, Prestressed hollow core element, Entry. We renamed the former Steel grade for bars parameter Steel grade for tensioning cables. By default, PLANBAR 2016 uses the same steel grades for these two parameters.

When you select  Design or  Modify Design, you can define the top reinforcement on the General, Steel Grades and Cross Bars tabs in the  Reinforcement Parameters dialog box.



Using  Basic Reinforcement Parameters in  Modify Parameters, Basic Reinforcement, you can override the top reinforcement for individual precast elements.

Concrete areas for hollow core elements and prestressed hollow core elements

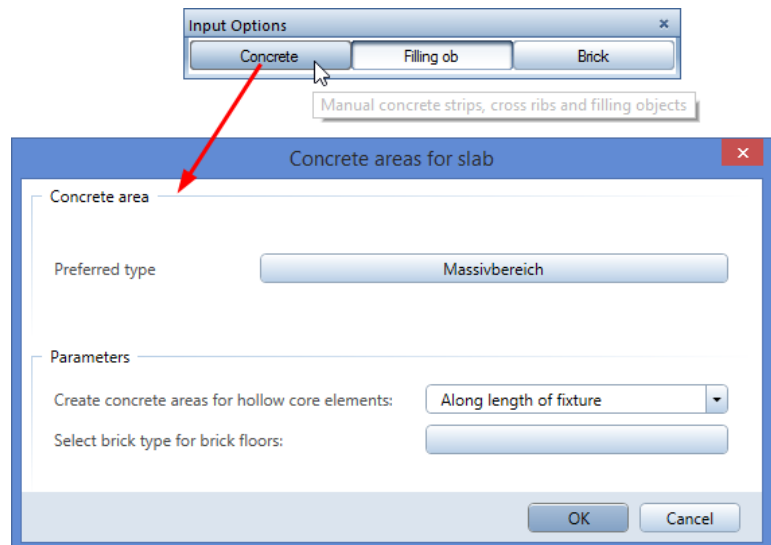
When you edited slabs of the **Prestressed hollow core element** and **Hollow core element** types in earlier versions, you could close hollow blocks only along their entire length using  **Change Hollow Blocks, Concrete Strips, Filling Objects, Bricks** in conjunction with the **Concrete** option on the **Input Options** toolbar. In PLANBAR 2016 you have the additional option to close only a part of a hollow block.

Dialog box for defining placing parameters

You can now select all fixture types (symbol fixture, linear fixture, surface fixture) for the **Preferred type** of a concrete area in the **Concrete areas for slab** dialog box.

Note: This also applies to concrete areas for slabs of the **Half floor with filling objects, BubbleDeck, Cobiax slab** types and for all brick slab types.

In addition, this dialog box offers the new **Create concrete areas for hollow core elements** parameter with the **Along entire length of hollow block** and **Along length of fixture** options.

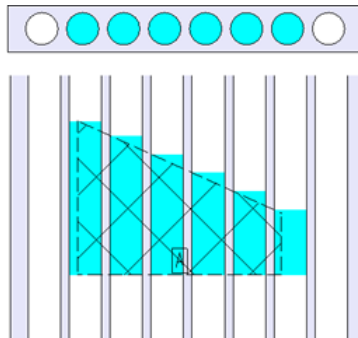



Rules for creating and displaying concrete areas

The **Along entire length of hollow block** option has the following effect: if the fixture of a concrete area is completely within a single hollow block or if it cuts or covers several hollow blocks, PLANBAR 2016 closes the hollow blocks along their entire length.

When you select **Along length of fixture**, the program closes the hollow blocks only along the length that is equivalent to the maximum length of the fixture's min-max-box in the area of the single hollow block (see blue areas in the following illustration).

Both options close the hollow blocks across the entire width.




Concrete areas in parts of hollow blocks have no particular effect on the various display modes (**Indicate web edge**, **Indicate cutting edge** and so on) you can define on the **Hollow blocks** tab of the **Hollow blocks** group in the  **Configurations**, **Slab Programs**, **Prestressed Hollow Core Element** or **Hollow Core Element**, **Entry**.

Please note that PLANBAR 2016 displays only hollow blocks that are closed along their entire length. They are visible as construction lines.

Note: Concrete areas closing a hollow block partially or fully will not be written to production data. This applies even if the corresponding fixture is linked with the **Fixture catalog**.

Considering concrete areas when calculating weight and volume

In the same way as PLANBAR 2016 increases the precast element weight and the concrete volume when it closes a hollow block along its entire length, the program increases these two values when it closes a hollow block partially.

The program uses the same specific weight of concrete for closing the hollow blocks as for the precast element. Whether the program uses the **Specific weight of reinforced concrete** or the **Specific weight of concrete** defined in the **Concrete grade catalog** depends on the option set for weight calculations on the **Weight calculation** tab in the **Design** group in the  **Configurations, Slab Programs, Prestressed Hollow Core Element** or **Hollow Core Element, Entry**.

Note: If you enter a value that is not equal to 0.000 to/m² for the **Dead weight** parameter on the **General** tab in the **Panel type catalog** for the **Prestressed Hollow Core Element** design mode, PLANBAR 2016 does not take into account the closed hollow blocks when calculating the weight and volume of the precast element. In this case, PLANBAR 2016 calculates the element weight by multiplying the panel area by the value of the **Dead weight** parameter. To obtain the volume, the program divides the weight calculated beforehand by the **Specific weight of reinforced concrete** defined in the **Concrete grade catalog**.


Arranging fitted panels

We slightly changed the placing algorithm for identifying fitted panels in the placing region.

Before creating two fitted panels, PLANBAR 2016 always checks the values defined, trying to create one panel with the **Half panel width** defined and one fitted panel. Only if the fitted panel is smaller than the **Minimum width of fitted panel** will the program create two fitted panels.


Recesses near element edges

Basic reinforcement for recesses near element edges

PLANBAR correctly processes the settings for longitudinal bars and cross bars in conjunction with the **Overlap at recesses** parameter (for example,  **Configurations, Slab Programs, Half floor, Calculation, Longitudinal bars or Cross bars, Longitudinal bars 2 or Cross bars 2 tab**) if the recess is near the panel edge. This applies to slabs of the **Half floor, Concrete slab, Hollow core element, BubbleDeck, Cobiax** slab types and for the **Brick slabs**.

Note: This may produce longitudinal bars and cross bars of a slightly different length even if you update existing drawing files.

Lattice girders for recesses near element edges

PLANBAR correctly processes the settings for lattice girders in conjunction with the **Overlap at recesses** parameter (for example,  **Configurations, Slab Programs, Half floor, Calculation, Lattice girders, Lattice girders 2 tab**) if the recess is near the panel edge. This applies to slabs of the **Half floor, BubbleDeck, Cobiax** slab and **Brick** slab types.

Earlier versions shortened lattice girders in a manner that differed from the parameter set only if the **Overlap for bar overlap = 0** parameter was set to **Use SetValue** and the value set for the **SetValue** parameter differed from the value set for **Overlap at recesses**.

Note: This may produce lattice girders of a slightly different length even if you update existing drawing files.


FILIGRAN Plug-In

We added functionality to the plug-in you can use to import FILIGRAN punching shear reinforcement (for example, FDBII) you calculated with the design program (ProFi-2) provided by the FILIGRAN company. In particular, the program now checks the files with the results (*.cad) before it imports them. Now you can also import results calculated by the HDB program of the HALFEN company.


Precast Wall

Wall element design

Concrete wall with facing layers

For walls of the Concrete wall type created with the  Wall Element Design tool, you can now create facing layers on the side of the design identifier or on both sides.

Improvements to configurations


We split up the former Favorites tab (in  Configurations, Wall Programs, Concrete wall (new), Entry) into two new tabs: Favorite 1 and Favorite 2.

Using the Favorite 1 tab, you define favorites for the Concrete wall without facing layers. The Favorite 2 combines the definitions of the familiar Concrete wall with facing layer on side opposite design identifier wall type and the two new Concrete wall with facing layer on both sides + Concrete wall with facing layer on side of design identifier wall types.

For the two new types, you define the favorites for the Design mode, Divisions and Basic reinforcement in the same way as for the familiar Concrete wall with facing layer on side opposite design identifier type.

Just enter the name of the favorite file here. The program automatically assigns the correct file name extension.



Improvements to dialog boxes

We adjusted the Wall type, layers tab of the  Design palette by adding the new On side parameter to the Wall type area.



You cannot see this new parameter until you select the check box for With facing layer. Using this new parameter, you can define the side where you want to create the facing layer(s).

You define the other settings for the facing layer(s) in the same way as for the Concrete wall with facing layer on side opposite design identifier type.



Formwork attributes for panel edges

For transferring walls created with  **Wall Element Design** to production, you can define additional attributes in the **Formwork attributes** area on the **Attributes** tab in the  **Design** palette. In addition to the **Chamfer at bottom**, **Special formwork**, **Poured joint** and **Chamfer at top** attributes, you can now define the **Rounding off at bottom**, **Tongue**, **Groove** and **Rounding off at top** attributes, too.

Smart symbols for adjusting layers around openings

For walls created with  **Wall Element Design**, you can configure the program to lengthen or shorten wall layers. You can make these definitions on the **Layer adjustments**, **concrete strips** tab in the  **Design** palette or in the **Properties** palette of a recess in a precast element.


To account for smart symbols placed in an architectural recess you changed by adjusting layers, we implemented the following additions and changes:

- By adjusting layers, you change the dimensions of the recess. However, the size of the smart symbol placed in an architectural recess does not change.
- We adjusted the labels and dimensions in the views of the element plan and in the element plan table.
- Using the invoicing lists, fixture lists and so on created with  **List Generator**, you can separately analyze the different dimensions of the actual recess and of the smart symbol in the recess.
- When creating data using  **Production Data, NC Generator**, the program transfers the smart symbols in the **CUTOUT** or **MOUNTPART** block of the Unitechnik file. This depends on the setting in the **Fixture catalog**.

Due to the requirements of the formwork robots, the program always transfers the outline of the **larger** recess (unchanged architectural recess or precast element recess changed by layer adjustments) in the **CUTOUT** block, regardless of whether layer adjustment is positive or negative.

The **MOUNTPART** block transfers both outlines so that you can use the geometry of the actual fixture and the outline of the recess for the laser.

Linear fixtures and surface fixtures for connections and joints

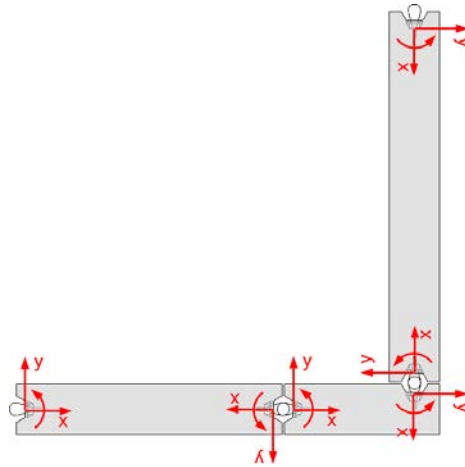
When you select a section for connections and joints of walls created with  **Wall Element Design**, you can select not only symbol fixtures but also linear fixtures and surface fixtures (provided the section you select allows the creation of fixtures).

In addition to **Create symbol fixtures** (used to be **Create fixtures**), the palette displays the two new **Create linear fixtures** and **Create surface fixtures** parameters. After having selected the corresponding check box, you can see the **Symbol fixtures**, **Linear fixtures** and **Surface fixtures** areas.

We added the **Move reference point (wall thickness)** and **Rotation** parameters to **Symbol fixtures**.

Therefore, you can now use fixtures that were initially not positioned correctly (local x-axis of fixture parallel to global x-axis) or fixtures with a moved reference point.

Positive values for **Move reference point (wall thickness)** define a movement in the mathematically positive direction of the local y-axis of the coordinate systems on the corresponding side of the connection (see illustration below). Positive values for **Rotation** define an angle in the mathematically positive direction (counterclockwise). The positive direction of the x-axis of the local coordinate system always points from the connection towards the inside of the element.



So that you can easily tell apart the movements of the symbol fixture's reference points in the directions of the wall height and wall thickness, we renamed the **Move reference point** parameter **Move reference point (wall height)**.

The parameters for linear fixtures and surface fixtures are basically the same as those for symbol fixtures.

To **+** add new fixtures or **X** remove existing fixtures in the **Fixture** dialog boxes, click in the right column of the **Fixture** parameter. Clicking **◀** and **▶** takes you from entry to entry.

First, use **Drop-in point** to define the direction of the fixture.

Direction x stands for the walls adjoining the connection.

Tip: When defining symmetrical fixtures, start with one side and add the second fixture. After this, all you need to do is change the **Drop-in point** while taking into account the values for **Move reference point (wall thickness)** and **Rotation**.

Select the fixture you need. Specify whether the fixture is to be taken from the **Allplan office path**, the **Allplan project path**, the **Allplan private path**, a **Manufacturer catalog** or an **Article catalog**. For the first three options, you need to specify the **File** and **Entry**, and for the other two options, the **Class**, **Subclass**, if necessary, and the **Article**.

Depending on the active group, only linear fixtures or surface fixtures are presented for selection.

Note: Although you can select linear fixtures with the "outline" option, the program cannot analyze the setting defining how the fixture is to interact with the precast element.

In addition to the options of symbol fixtures, the **Distribution option** area offers the **Entire joint height** option, which creates the fixture over the entire height of the connection joint.

In conjunction with this option, you can choose only the **Move reference point (wall thickness)** parameter.

If you select one of the other three distribution options (**From bottom level**, **From top level** or **From middle**) for linear fixtures and surface fixtures, you can choose from the same parameters as for symbol fixtures: **Distribution values** with the **Absolute** and **As a % of joint height** settings, **Move reference point (wall height)**, **Offset of fixtures** and **Move reference point (wall thickness)**.


For linear fixtures, you can define an additional value for the **Length**, allowing you to distribute shorter line segments over the wall height.

Note: The **Rotation** defined for linear fixtures, which is only relevant to linear fixtures with the "outline" option, is not yet taken into account.

For surface fixtures, you can enter values defining the **Length** and **Width** of the surface and the **Rotation**. **Rotation = 0°** places the surface of the fixture on the surface of the connection.


Tip: It is a good idea to save frequently used fixture settings as connection favorites.

Calculating insulating boards with half panels

When you selected the **Create insulating boards** option on the **Insulation** tab of  **Basic reinforcement,...** and the **Half panel rule** option for the **Count number of rows** or **Count number of panels** parameter, the program calculated one half of the insulating board by bisecting the **Length** and **Width** defined on the **Placement** tab in the **Insulation material catalog**.

However, to account for the cutting tool, you still have to subtract a value from half the panel length and half the panel width calculated by the program. Therefore, you can now define separate values the program is to subtract from the **Half panel length** and **Half panel width** on the **Placement** tab in the **Insulation material catalog**.

Modeling kernel




Allplan Precast 2015-1-3 introduced a standardized calculation method and a hybrid modeling kernel for walls created with  **Wall Element Design**. We improved and optimized these developments, reducing the number of warnings and error messages the program issues when you design or modify walls or place connections.

Structural Precast Elements, iParts

Column without architectural column

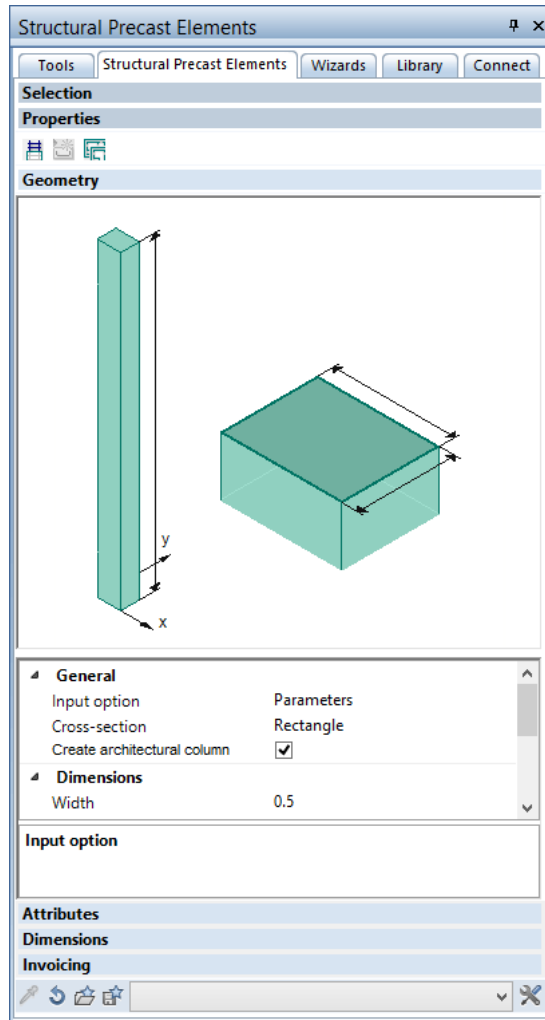
When you define a structural precast element, iPart of the **Column** using the **Parameters input option**, the program has always created an architectural column together with the structural precast element, iPart.

However, you require this architectural column only when you

- Create the **Fixtures for wall-column connection** while designing or modifying walls of the **Wall panel** type using  **Design** or walls of the **Concrete wall** or **Sandwich wall** types using  **Wall Element Design**.
- Create circumferential joints for **Columns in wall** for walls created with  **Wall Element Design**.

You do not require the architectural column for anything else.


Therefore, you can now prevent the program from creating the architectural column by deactivating the new **Create architectural column** parameter in the **General** area on the **Geometry** tab of the **Geometry** palette while creating structural precast elements, iParts of the **Column** type.





Please note that you cannot select this parameter later and create the architectural column while modifying the column using the **Input option** and **Cross-section** parameters.


Note: When you simultaneously modify structural precast elements, iParts of the **Column** type with or without architectural columns, the **Geometry** tab is hidden from the **Properties** palette.

Extruding structural precast elements, iParts

You can use the  **Extrude** tool in the **3D Modeling** module to edit the 3D solids of a structural precast element, iPart.

Draw any outline on the surface of a solid. You can then "push" or "pull" this outline or cut it out. You can even use the outline of an offset surface as the basis.

Please note that you cannot use  **Extrude Spline** or  **Extrude Circle** with structural precast elements, iParts. These actions would result in incompatible data structures.


PLANBAR 2016 updates the labels of a structural precast element, iPart as it would modify points using the  **Stretch Entities** tool. Some examples:

- Extrude a structural precast element, iPart created with the input option set to **Parameters** → the program will update the weight; the dimensions will not change, as they are read from the parameters.
- Extrude a structural precast element, iPart created with the input option set to **3D object** → the program will update the weight; the dimensions will change, as they are taken from the enclosing min-max-box.

Production Planning

Production planning, catalogs

Wall types and slab types with facing layers

The Element type list box in the Overwrite product codes area on the Element data tab of the NC generator driver catalog (in  Catalogs, Process Planning) offers only wall types with facing layers you can actually design.

For slab types with facing layers, we replaced the On side of design identifier and On side opposite design identifier descriptions with Top and Bottom, respectively. Please note that Top and Bottom refer to the final position. These terms do not describe the position for producing the slab element. This also applies to element that are rotated for production (for example, balcony elements).


Production planning, creating production data

PXML version 1.3

You can use the new version 1.3 to create production data in PXML format of the Progress Maschinen und Automation AG company.

The new version 1.3 of the PXML interface comes with various new features and changes in the structure. It is backward compatible with PXML 1.2 (provided you observe the compatibility recommendations). Old systems using version 1.2 can immediately work with version 1.3. You do not have to change anything.

You can find more information on the PXML interface at <http://www.pxml.eu>.


If you want to use the new version of the interface, select ProgressXML 1.3 for the Driver parameter on the Data creation tab in the NC generator driver catalog (in  Catalog, Process Planning).

So that you can tell the two versions apart, we renamed the old ProgressXML option ProgressXML 1.2.


Mark number for polygonal placements in PXML Format

When creating production data in PXML format, the program writes the multi-level mark numbers (for example, 1.1, 1.2 and so on) into the Pos/Mrk field (= text field indicating the mark number of the single bar) so that you can identify the individual reinforcing bars placed in polygon. Earlier versions transferred only the main mark number.

Production data for free reinforcement

You can find the new **Free reinforcement** option on the **Input Options** toolbar of the  **Production data, NC Generator** tool.

In the same way as the **MWS** option transfers free, attached reinforcement not linked with a precast element, this new option transfers all free reinforcement elements (for example, top reinforcement, transverse reinforcement placed on the precast element and so on) not linked with a precast element.

Note: Reinforcement you link with basic reinforcement or secondary reinforcement placed in an element using the  **Assembly** tool will be transferred with the **Precast elements** option to production as usual.

CAD foils for displaying symbol fixtures

You can display symbol fixtures using the CAD foil defining the position for production.

If there is a foil at a scale of 1:1, the program will use this foil for production data. Otherwise, it will use the first foil defining the position for production.

This allows you to transfer a different (for example, simplified) representation than that in the drawing.

Note: Only lines and arcs are transferred to production.


Adjoining recesses with smart symbols

We completely redeveloped the algorithm that compares smart architectural symbols in recesses with panel outlines or recess outlines.

Earlier versions included a basic algorithm that simply checked whether the smart symbols and recess outlines were congruent.

However, if there was a recess that was obtained from combining adjoining recesses, the program could not find congruency, thus discarding the smart symbol.


Data for lattice girders inserted manually

When creating production data in Unitech format or PXML format, the program will mark lattice girders with the insertion mode set to **Manual** on the **Girder data** tab in the **Lattice girder catalog** (in  **Catalogs, General**) as being not producible. Only lattice girders with the **Automatic** insertion mode get the producible identifier. Earlier versions ignored the setting defining the insertion mode.


After updating, check the settings for the insertion mode in the **Lattice girder catalog**, thus avoiding non-producible girders. This is particularly important, because the insertion mode used to be preset to manual for all lattice girders in the default catalog. When you install for the first time, this catalog will be installed together with the program.

List generator

New invoicing list in XML format

The **Lists and schedules** in the **defaults** folder in the  **List Generator** include new **xml-KPR Interface** lists for slabs, walls and structural precast elements, iParts. You can use these new lists for invoicing and costing in XML format.

Bars with default bending shapes

When you include bars with default bending shapes in invoicing lists, the program calculates the lengths of these bars - like the lengths of all other bars and stirrup cages - in accordance with the settings in  **Options, Reinforcement - Label, Schema**.

Note: In the case of bars with default bending shapes, the lengths for the bending shapes displayed in the element plan table will still differ, as these lengths are based on the specifications given by the machine manufacturers.

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