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Installation Instruction

Important Information

Directory Synchronization

For directory synchronization applications, e.g., roaming profiles, etc., please note that you must close STRAKON and all open drawings before synchronization to avoid data loss. Alternatively, exclude the STRAKON directory of open drawings **version.2024\strakon-workdir** (see Installation paths) from synchronization if you always want to close STRAKON with open drawings.

Installation Requirements

64-bit OS: ≥ Windows 8.1 SP1
Screen resolution: 1920 x 1080 (recommended)
 min. OpenGL version 3.2

If the Setup program does not find the **runtime libraries for Visual C++**, it offers their installation, which you must perform as a **User with administrator privileges**.

Installation Important

The separate installation is carried out independently of the later STRAKON user, i.e. it can be carried out by an **administrator account**. In addition, to install user data, choose whether to install it separately for each user or for all users.

User data separated for each user

After the program data has been installed, the user's user data for the user's **user account** are automatically reinstalled during the first start of STRAKON in the context of an initial setup. This operation does not require administrative permissions for the user.

User data for all users

During installation, the program data including user data are installed. All STRAKON users access the common user data later via their user account.

If STRAKON is only required for a single user on the computer, the installation can be performed directly from the user's account, but with administrative authorization.

Installation with a custom installation path is no longer supported.

Installation Paths

Program Files: **C:\Program Files\DICAD\Version.2024**
User data disconnected: **C:\Users\<USERNAME>\AppData\Roaming\DICAD\Version.2024**
User data for all: **C:\ProgramData\DICAD\Version.2024**
Open drawings separated: **C:\Users\<USERNAME>\AppData\Local\DICAD\Version.2024\strakon-workdir**
Open drawings for all: **C:\ProgramData\DICAD\Version.2024\strakon-workdir**

DICAD 2024 Program Group

Regardless of the type of installation selected, the **DICAD 2024** program group with all entries is available to every user in the Windows Start menu after installation.

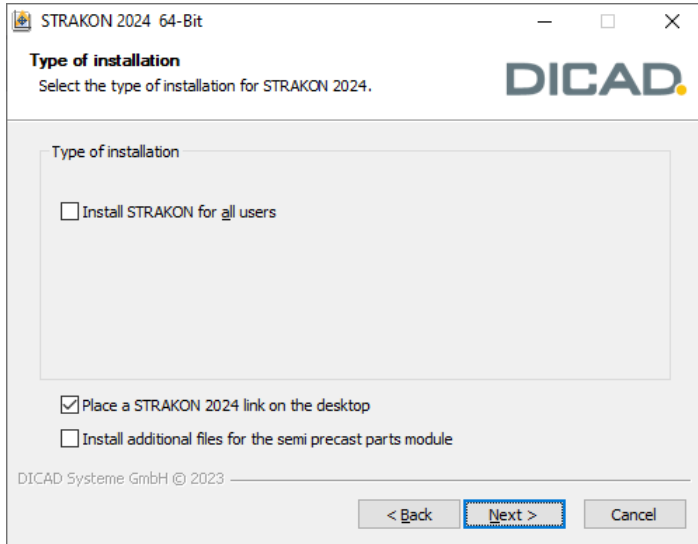
Prerequisite for an update:

Updates are only possible with the same selection of installed user files.

Installation

Start the installation by clicking **setup*.exe** and select the language version to be installed (this will appear if you are performing a first and parallel installation).

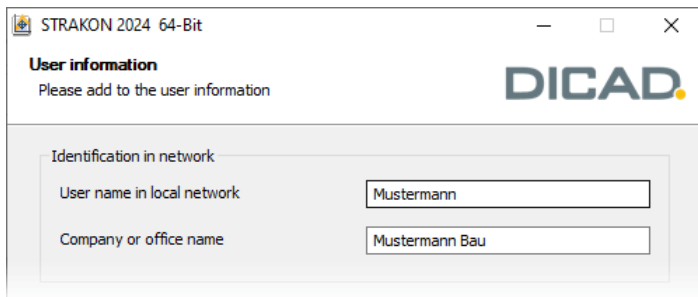
Initial Installation



Install STRAKON for all users

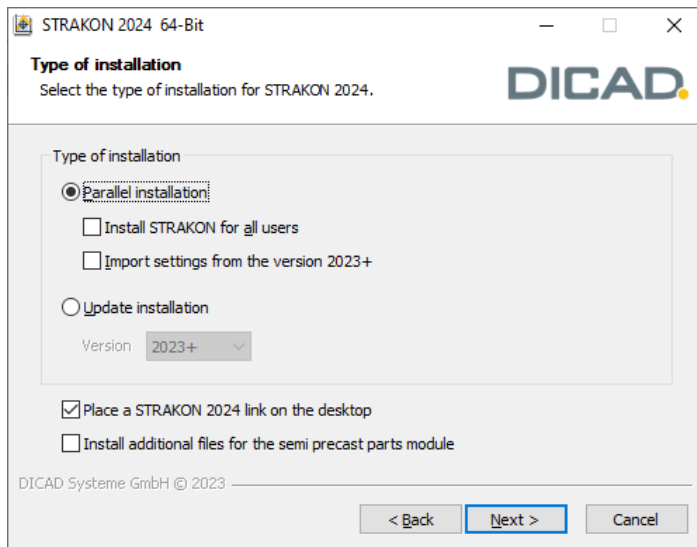
Select whether to install the user data separately for each user (**AppData\Roaming\DICAD** directory) or once for all users (directory **C:\ProgramData\DICAD**).

When installing separate user data, the user retrieves the user information when the user starts STRAKON for the first time. Each user should define their own unique user name. When installing user data for all users, the first start of STRAKON makes the query once by the first user, i.e. all other users have the same user name in STRAKON.



This username is sometimes used for various locks in the STRAKON, e.g. drawing being processed etc.

Update / Parallel Installation



Parallel installation

Select whether to install the user data separately for each user or for all users. Optionally, settings from an installed STRAKON version 2023+ can be adopted.

To be applied:

plotter/printer drivers (*.use only except **standard*.use**, **plotter.ger** and **sysfplot.ini**) and redirection files, tablet configuration, screen layout, layer sets, colors, editor setting, Excel template files, images from template folders, input dimensions, text blocks, company header, backup file (**secur.sic**), data export settings (PPS, BVBS, etc.), preset sets, mapping files for DWG/DXF import/export, Settings of the dialog for backups, unitisation (all SYS files), Auto Snap settings **einbau-s.dat** for PPS export, master data management **strasys.ini**, design mesh and settings definition files from the **Settings > General settings** menu.

All files are copied locally to the 2024 version home directories.

Update installation

Select the version on which to install STRAKON 2024. All files are copied only to the local default folders, e.g. embedded parts to **..lebt**.

Place a STRAKON 2024 link on the desktop

Switch this option if you want the program link to STRAKON 2024 to be created on your desktop for all users.

Installing additional files for the semi precast parts module

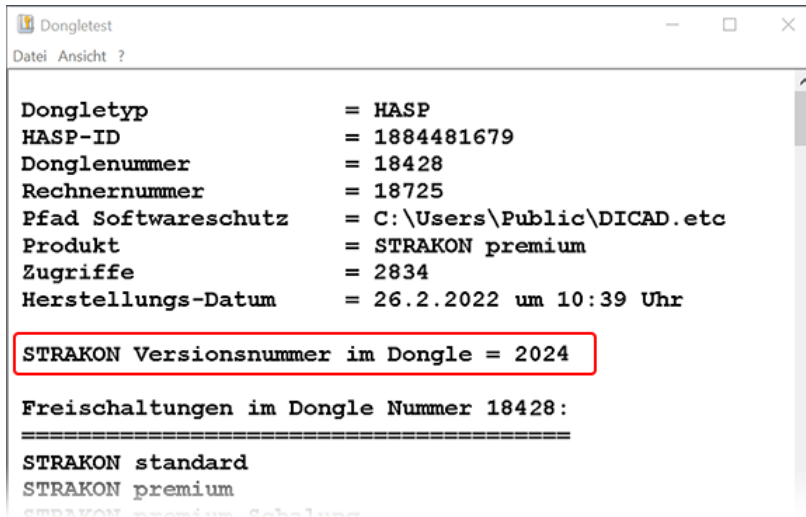
Switch the option to install additional files that are required specifically for the semi precast parts module, such as reinforcement categories and view box templates.

De-Energizing

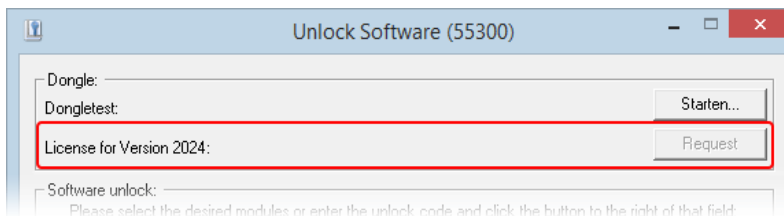
Dongle Version Enable

A version release for the dongle in the service is usually not necessary!

Check the version number in the dongle from **Start > Programs > DICAD 2024 > Dongle test:**



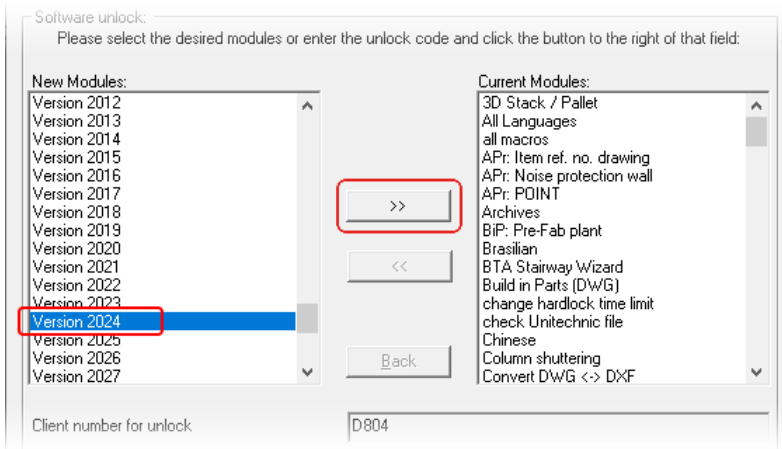
If a version number < 2024 is shown in the highlighted line, request release for the dongle. Open the activation via **Start > Programs > DICAD 2024 > Unlock modules:**



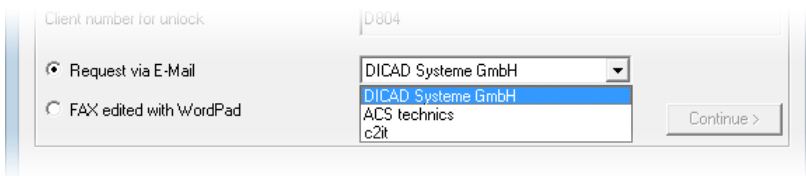
Click the **Request** button, fill in the fields, and submit the request to the appropriate sales representative.

Module Enabling for the Computer

Modules, e.g. steel construction, etc., can be activated via an unlock key only for the computer. Open the activation via **Start > Programs > DICAD 2024 > Unlock modules**:



Mark the modules, click on **>>** and **Request**, fill in the input fields and send the request to the responsible sales manager.



Register Unlock Keys

After receiving the unlock key, open the activation via **Start > Programs > DICAD 2024 > Unlock modules**, type the unlock key in capital letters and click **Register on**.

We wish you continued success in your work with the 2024 version!

Please do not hesitate to contact us if you have any questions.

Your DICAD Support Team

Important Information about Version 2024

Please read this information before updating to STRAKON 2024 or editing existing drawings / projects from STRAKON <2024 with this version.

"3D segment drawing" is no longer possible

From STRAKON 2024, it is no longer possible to open drawings of the **3D segment** edit mode. The associated functionalities such as 3D segment, level etc. are no longer available.

Database jump to version 2024

For version STRAKON 2024 it enters a database jump for various important STRAKON data (drawings, Flex-Parts / 3D embedded parts etc.), i.e. these data are no longer compatible with STRAKON <2024 after reading or edits in STRAKON 2024. If you are working on projects with multiple users, please consider whether you finish the project in the previous version of STRAKON or directly update all STRAKON computers of the project participants with STRAKON 2024. This also applies to the data transfer to external STRAKON suppliers.

Transition to Python 3 requires customization of own additional programs

Own additional programs written in Python must be adapted by the user to the valid Python 3 syntax.

Configurations

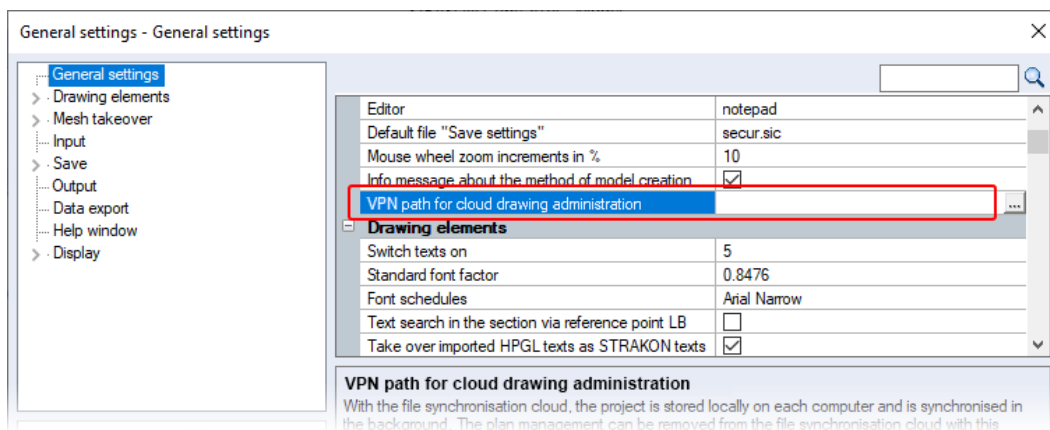
Settings

Sync Cloud: Central Folder for "strako.db"

To work together in a file synchronization cloud, such as SharePoint, NextCloud, or OneDrive, you can now determine a central folder for the **strako.db** drawing administration, regardless of project data, that is not synchronized via the file synchronization cloud.

The prerequisite for this central folder is that the **strako.db** is located in a directory on the server or on a computer to which all users have full VPN access, regardless of the file synchronization cloud. The other data of the STRAKON workspace (project) are located in the cloud and as a copy locally on the computer of each user, which are automatically synchronized on an ongoing basis.

In order to allow everyone to access this central directory via VPN, each user enters the **VPN path for cloud drawing administration** (menu **Settings** > **General settings** > chapter **General settings**) the path on their computer in which the drawing administration **strako.db** is located. This path is the root directory.



You can enter this path, for example, as a network path via a UNC address `\\hostname\folder\subfolder` or by specifying a substituted drive letter, for example `L:\`, under which a network folder is assigned.

strako_db (\\NAS0\support2\planung) (L:)

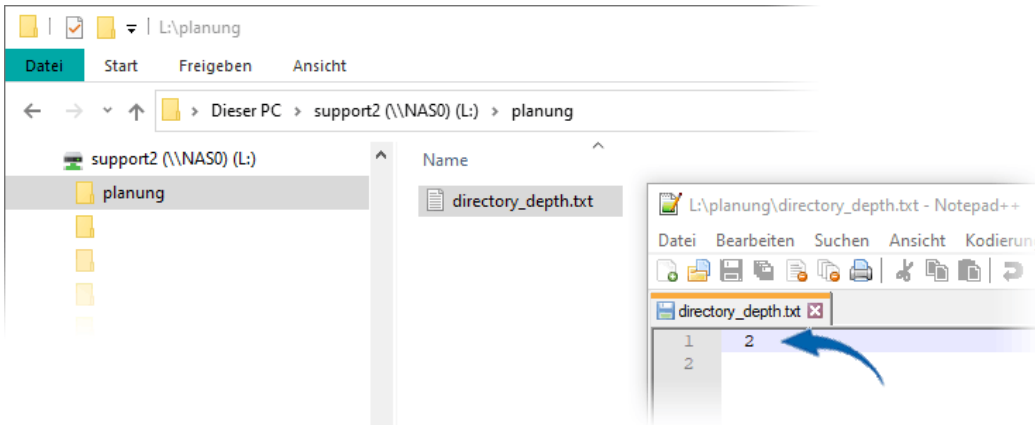
Important!

For the new setting to be saved correctly after entering the VPN path and confirming with **OK**, you must close and restart STRAKON.

TXT file directory_depth.txt

Because the structure of a workspace is always different and the resulting directory depth cannot be predetermined, you must set the directory depth in the TXT **directory_depth.txt** file by a value, such as **2**, to map the tree.

Save a this file in your root directory. It is important **before** creating a new workspace that you create this file with the desired directory depth. It is not possible to change the directory depth later.

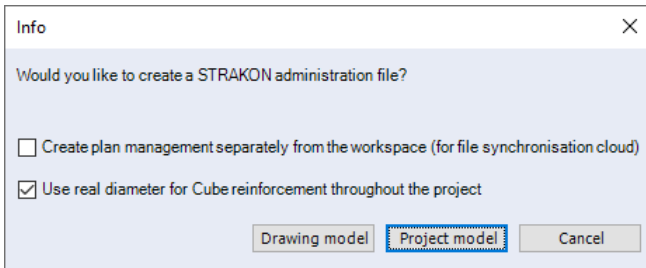


If the **directory_depth.txt** file does not exist, it is automatically created in root directory and preassigned with directory depth 1.

Important!

Also, a change to the **directory_depth.txt** file requires a restart of STRAKON to save the new setting correctly.

If you create a new project now, when you query for the management file, the new option **Create plan management separately from the workspace (for file synchronization cloud)** also appears:



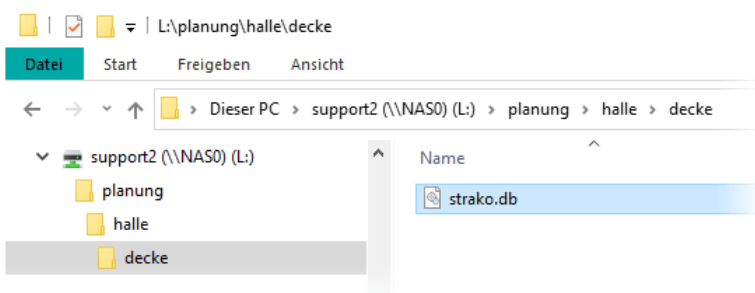
If you have not specified a VPN path, this option does not appear.

Switch this option to place the **strako.db** drawing administration separately from the workspace in the central folder you specify (see **VPN path for cloud drawing administration** option).

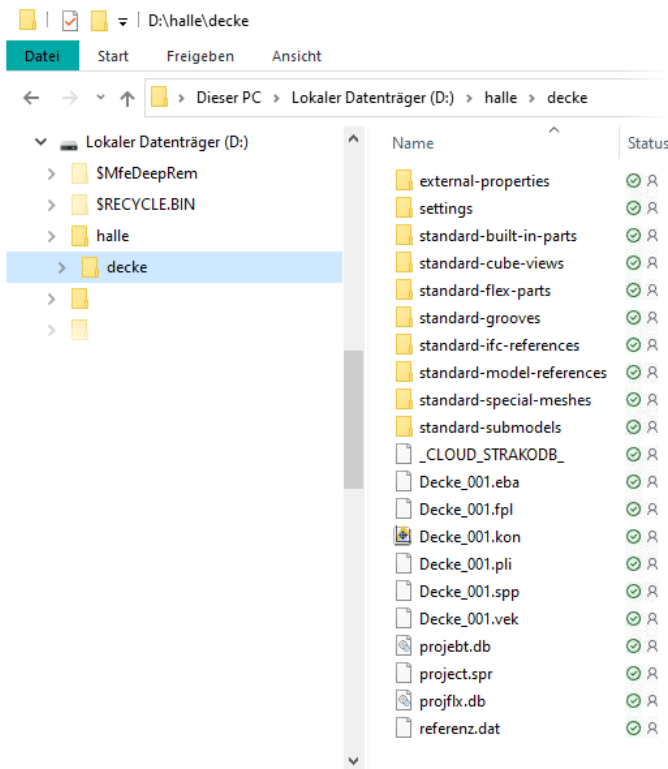
Example:

Select the **..halle\decke** directory for the new workspace. Now the VPN path **\\nas0\support2\planung**, which you have set and which is the root directory, automatically places the drawing administration **strako.db** into the directory **\\nas0\support2\planung\halle\decke**.

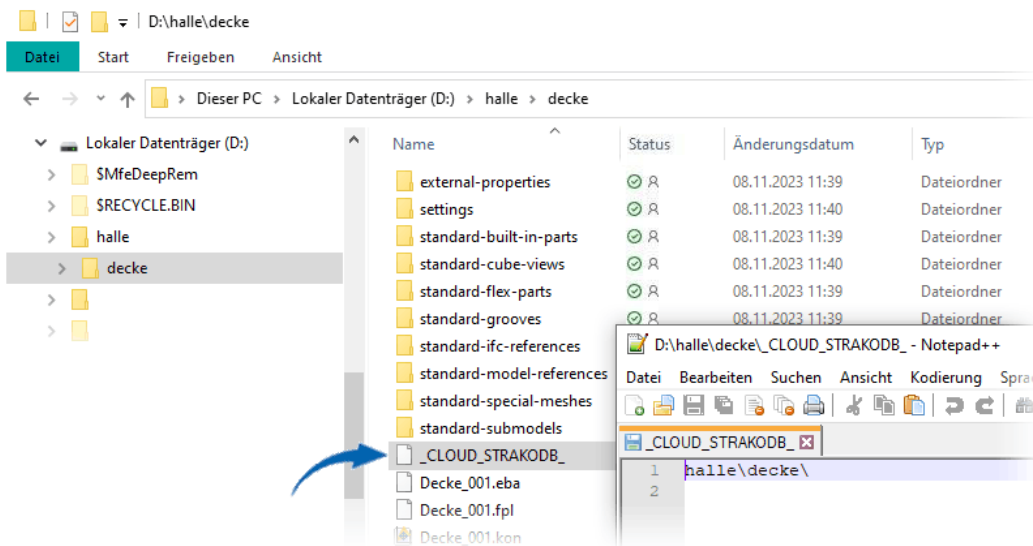
strako.db is centrally located below the predefined VPN path:



The other project data is located locally on the computer as well as in the cloud in the workspace:



In addition, the file **_CLOUD-STRAKODB_** is now created in the directory of the workspace. In this file the path of the workspace on your computer is entered, e.g. **halle\decke**



Together with the entry of your VPN path (see the **VPN path for cloud drawing administration** option), this results in the complete mapping of the network path to **strako.db** for this workspace, e.g. **\\nas0\support2\planung\halle\decke**

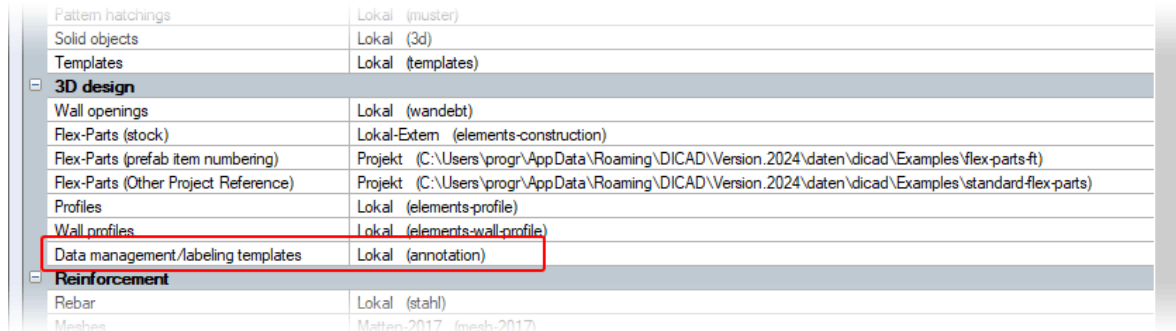
Since the workspace on your computer is constantly automatically synchronized from the cloud, when another user accesses it, the location of the **strako.db** drawing administration can be automatically ascertained.

Note:

Note that it is not possible to separate the drawing administration from the workspace.

Master Data Renamed / Expanded

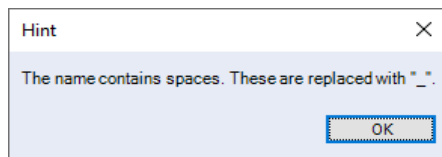
Under the **3D design** category, the **Labeling/data container templates** item has been renamed to **Data management/labeling templates**. Lets you determine the root data name and path for label/data container templates, property sets, and export filters.



Pattern hatchings	Lokal (muster)
Solid objects	Lokal (3d)
Templates	Lokal (templates)
3D design	
Wall openings	Lokal (wandebt)
Flex-Parts (stock)	Lokal-Extern (elements-construction)
Flex-Parts (prefab item numbering)	Projekt (C:\Users\progr\AppData\Roaming\DICAD\Version.2024\daten\dicad\Examples\flex-parts-ft)
Flex-Parts (Other Project Reference)	Projekt (C:\Users\progr\AppData\Roaming\DICAD\Version.2024\daten\dicad\Examples\standard-flex-parts)
Profiles	Lokal (elements-profile)
Wall profiles	Lokal (elements-wall-profile)
Data management/labeling templates	Lokal (annotation)
Reinforcement	
Rebar	Lokal (stahl)
Meshes	Matten-2017 (mesh-2017)

Material Administration: Space in Material Group

Spaces are not allowed in the name of the material group, so they will now be replaced with underscores after a message is displayed:



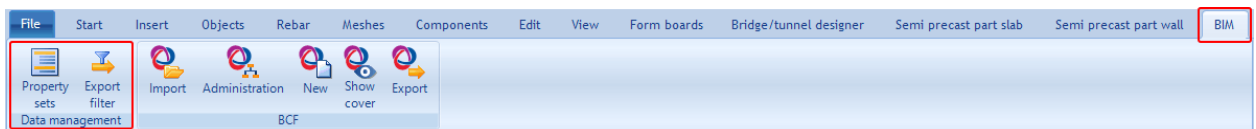
3D - Modeling

Cube

General

Tab Renamed / Expanded

The **BCF** tab has been renamed **BIM** and expanded with the **Data management** group (see "BIM" Tab, page 16).



Accessibility

New Key Commands

The following key commands have been added to the **View** tab (see also New Key Commands in the reinforcement, page 37):

- [Shift] + [1] Save current scene (view/section, display + zoom)
- [Shift] + [2] Load scene

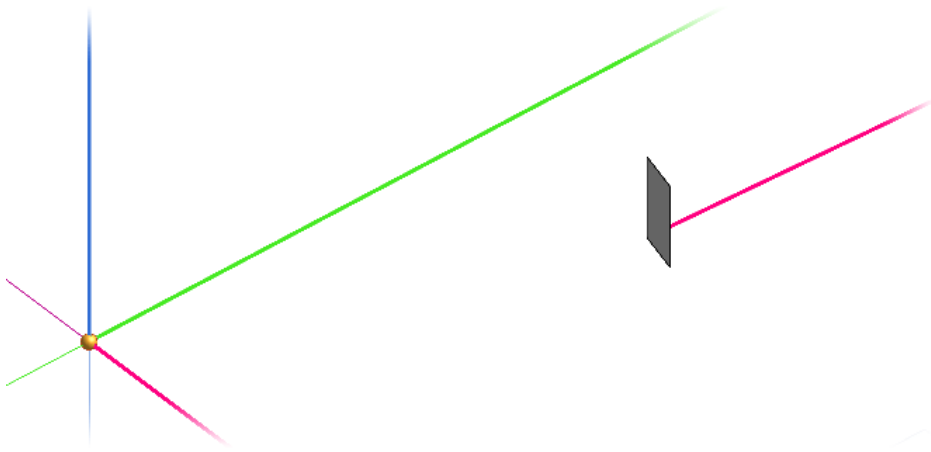
"Objects" Tab

Path and Blend Generation Adjusted / Profile Alignment Expanded During Insert

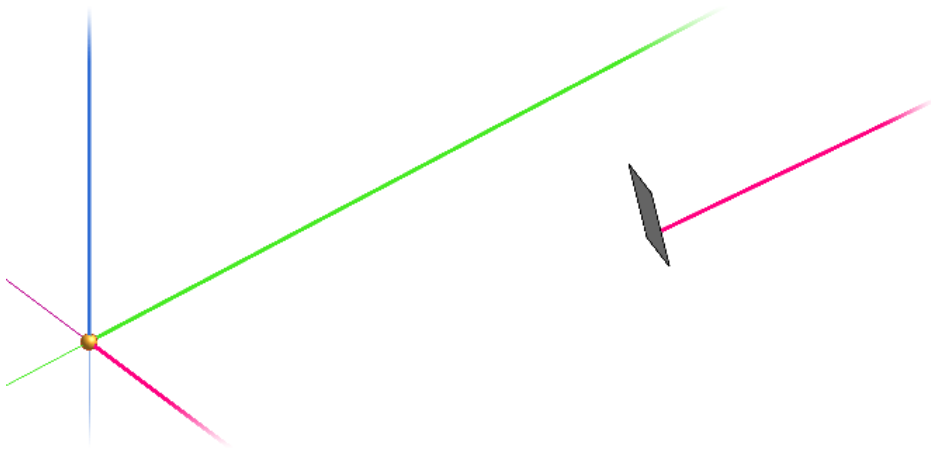
The **3D route** property has been removed from the object data of a path and also from a 3D route, which can be inserted through the Bridge/Tunnel Designer. In order to continue using this functionality, the **Profile** function has been expanded. When placement a profile, you can now align the profile parallel to the z-axis by turning on the new icon **Align profile parallel to global z-axis on path** in the additional toolbar when starting up the path.

Additional toolbar



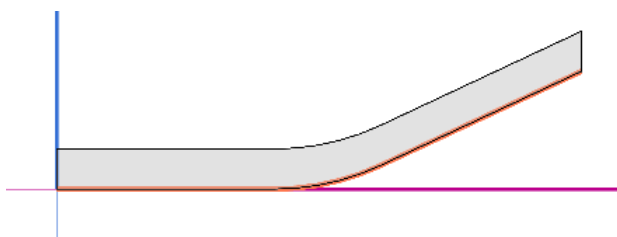


When off, the function is inserted orthogonally to the path.

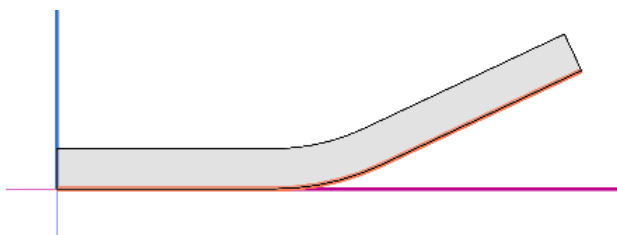


The **Blend** function has also been expanded by a function. By turning on the new icon **End faces parallel to the global z-axis**, the blend is generated with its end faces parallel to the z-axis.

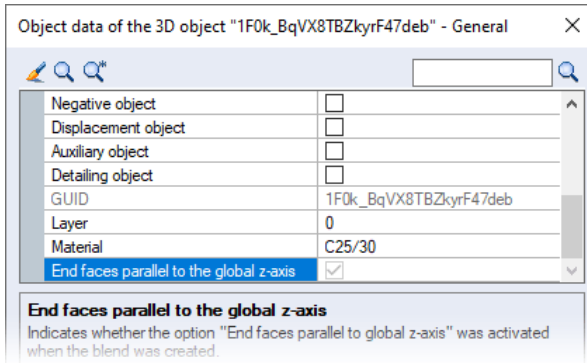
Additional toolbar



When the function is turned off, the blend is created with its end faces orthogonal to the path.

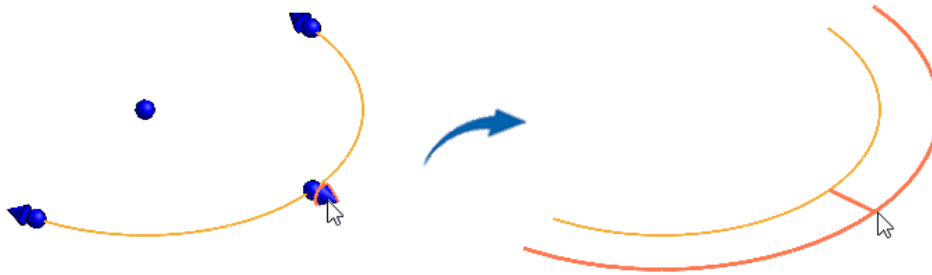


The object data of the blend show whether the function was switched on or off when the blend was create, for information about the property **End faces parallel to the global z-axis**.

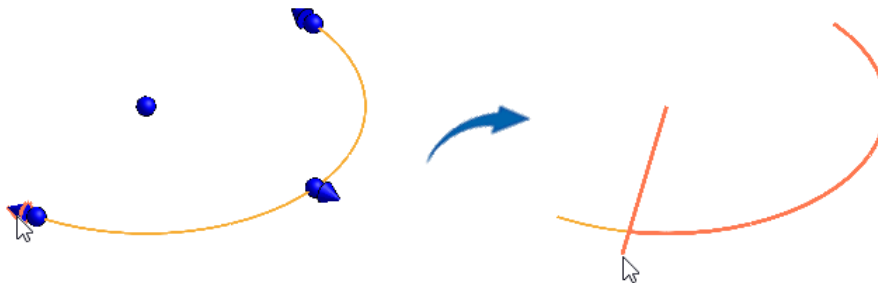


Arc: Machining via Handles Extended / Unified

Editing a 2D object **Arc** over the handles has been unified in **Cube** and **Cube view**. In addition, three additional handles have been added for editing an arc. You can change the diameter or flip it as the end points are moved using the new cone handle in the center.



You can lengthen or shrink the arc using the conical handles on the end points. The diameter remains intact.

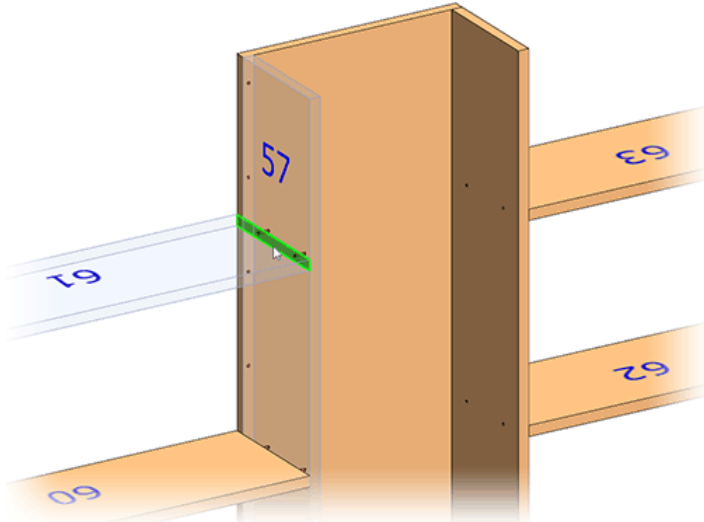


In Cube view, you work with handles for the arc comparatively.

"Shuttering Boards" Tab

Screw Connection also Possible at T-Joints

A screw connection as a connector is now also possible at a T-joint.



"BIM" Tab

IFC Data Management: Using Property Sets

In open BIM projects, it is necessary for a BIM model to contain project-specific property sets and for the object properties to be associated with these property sets (P-sets). In so-called AIAs (client information requests), the client determines which property sets with which properties should be used for which objects and components in a project. As a result, this must be transfer into an IFC model file.

The IFC data management functionality enables STRAKON to define individual property sets and assign properties of objects and components to them. Thus, individual requirements on the part of the client can be mapped in AIAs with STRAKON. The resulting IFC data are then adapted to the respective AIA requirements.

You can also use the STRAKON data management to control object and component properties in such a way that only certain properties are transferred to specific project partners via IFC. Internal data thus remain internal.

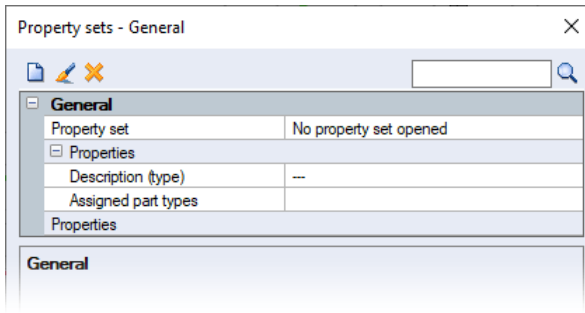
Changes in the property set, e.g. new property set, delete property set, etc. directly affect existing 3D objects with the associated part type.

Determine property sets using the **BIM** tab > group **Data management** > function **Property sets**.



Edit Property Sets

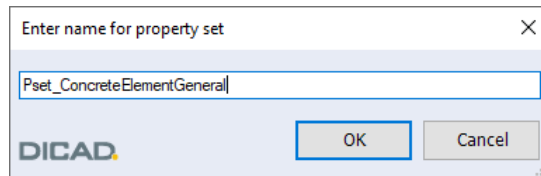
After clicking on the function, a dialog box will open to create or edit property sets and determine properties:



New Property Set

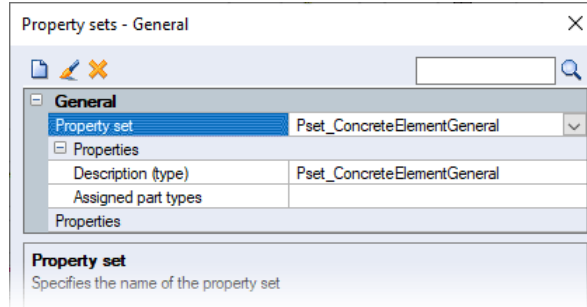
Create property set

In the dialog box that opens, enter the name for the new property set, e.g.



The letters A to Z (upper and lower case), numbers, and underscores are allowed as you type. Note that the name cannot start with a number.

The name of the property set is considered an ID, which uniquely identifies the property set.



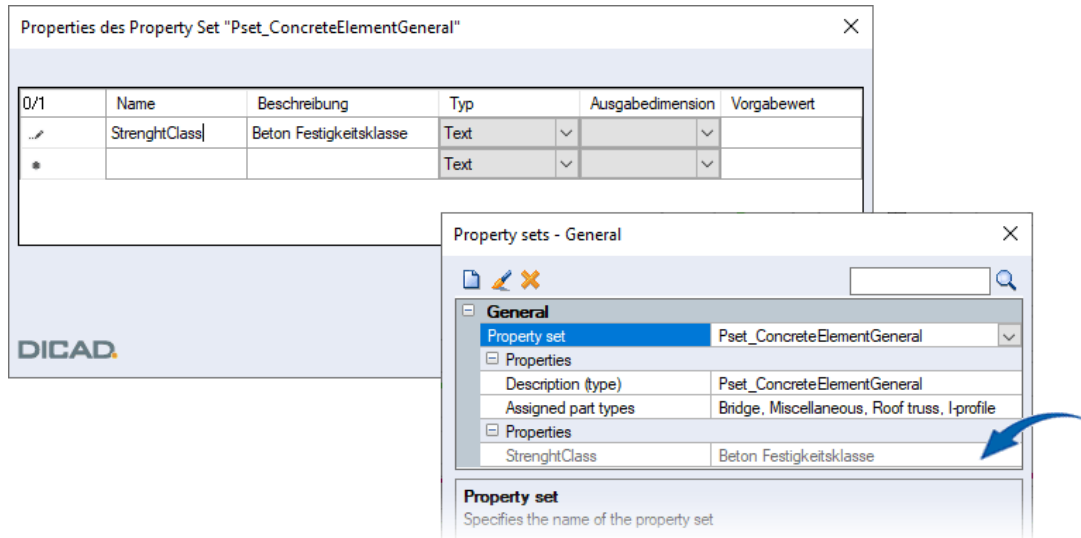
If you confirm the entry of the new name, this name is automatically used as the description.



Edit current set properties

Add properties for the current property set

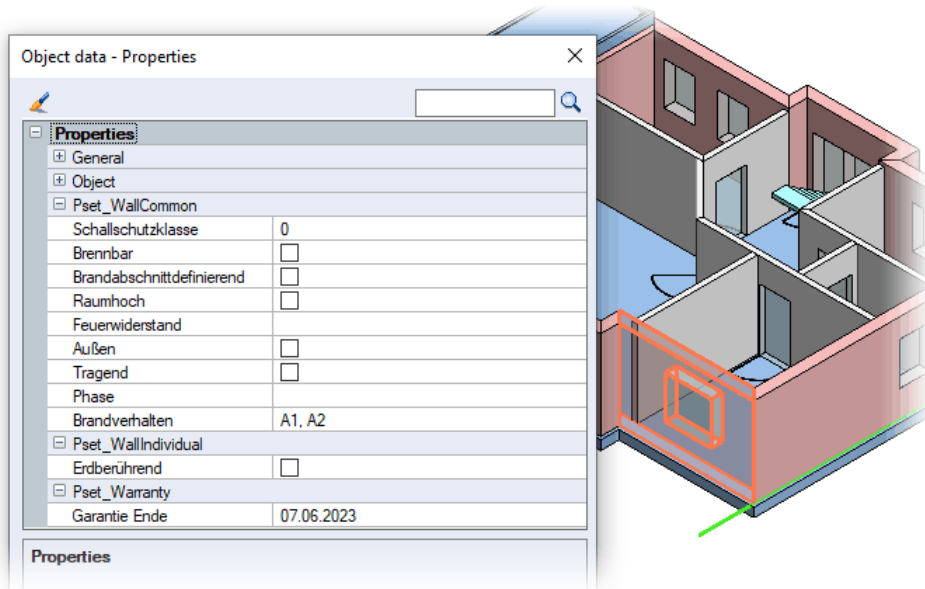
The property name is the identifier for the IFC file and its description text will appear in the data container later. Also note that only letters A to Z (upper and lower case), numbers and underscores are allowed!



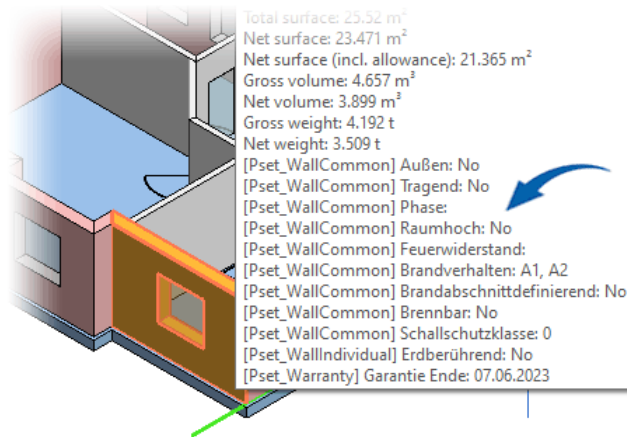
If you confirm the entry of the properties with **OK**, these properties will be displayed to the property set.

All 3D objects with the appropriate part type (see **Assigned part types** option) are then assigned these properties from the property set.

In the object data, the property sets are appended with their respective properties:



In the tooltip, the properties from the respective property sets are listed at the end of the object properties.

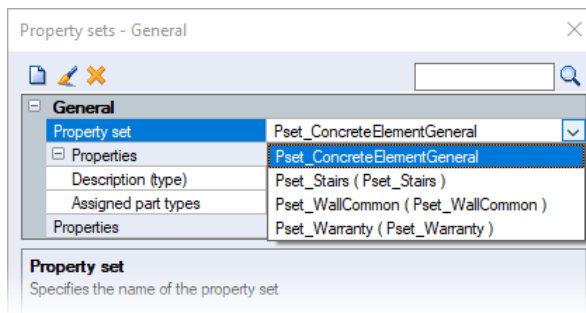


Delete the current set

Delete the currently selected set directly.

Property Set

Select property set from the drop down list:



The text of the description is also displayed in parentheses after the name.

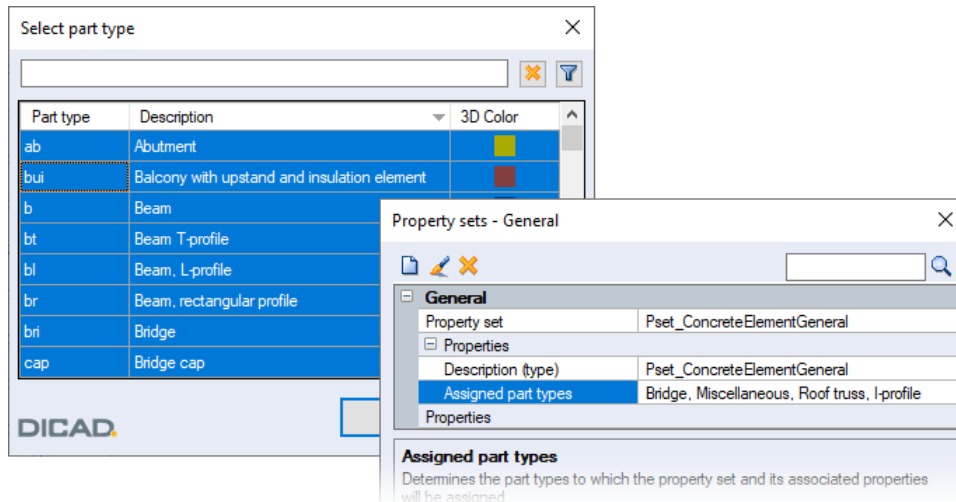
Properties

Description

Description text for the property set, which you can change as you wish

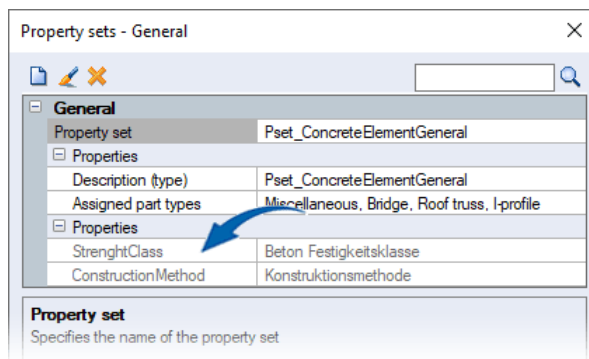
Assigned part types

Assign part type(s) to the property set



Properties

Display of all assigned properties to the selected property set



The property set file **user-property-registry.json** is placed in the stored master data path of the data management/labeling templates (**annotation**).

IFC Data Management: Applying Property Sets / Properties Export Filter

When export IFC in the **Cube** (tab **File** > **Save as** as IFC file), you can now use the export filter to exclude property sets or only certain data from this set, i.e. the data transfer are not save as.

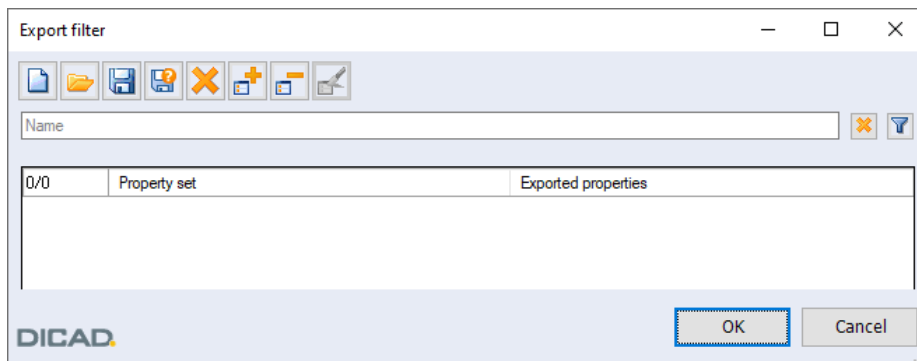
In principle, in the case of an export IFC, the properties are listed separately in the IFC file for each property set.

To open the export filter, go to the **BIM** > group **Data management** > function **Export filter** tab.



Call export filter

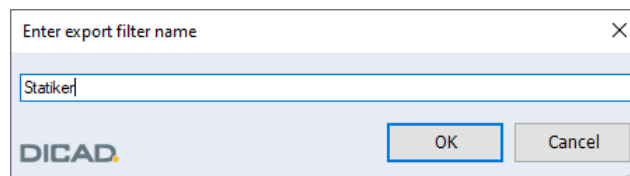
After clicking the function a dialog box will open, in order to create/edit export filters:



New export filter

Create export filter

In the dialog box that opens enter the name of the new export filter, e.g.



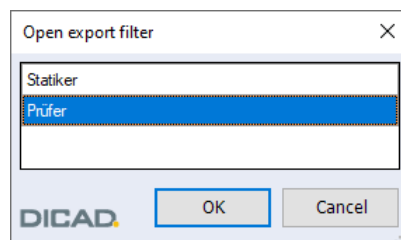
Confirm the new name. The export filter will be opened directly, its name will be displayed in the dialog title bar.

You can then add property sets to this export filter by clicking the **Add property sets** button that are not supplied during export IFC.



Open export filter

Select export filter for further processing



Save export filter

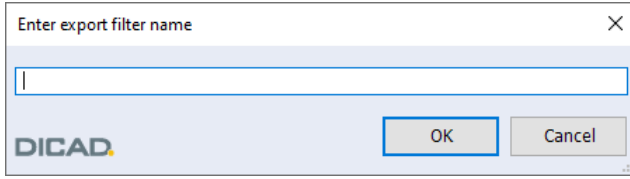
Save the currently open export filter

The dialog box stays open for further editing.



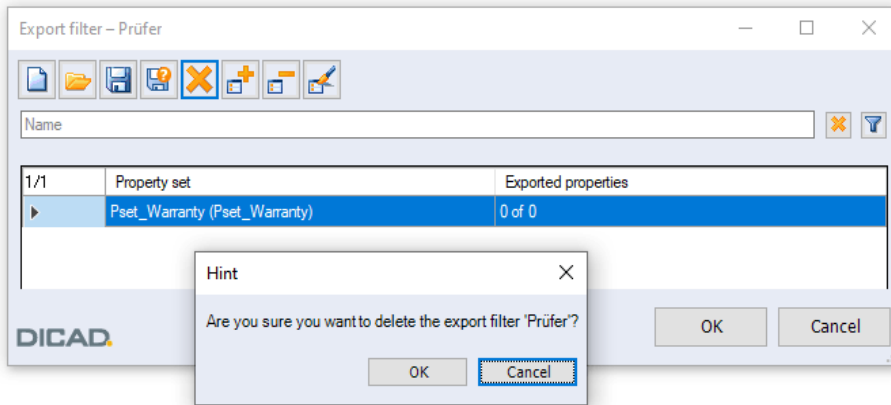
Save export filter as

Duplicate the currently open export filter with a new name



Delete export filter

Delete the currently open export filter:

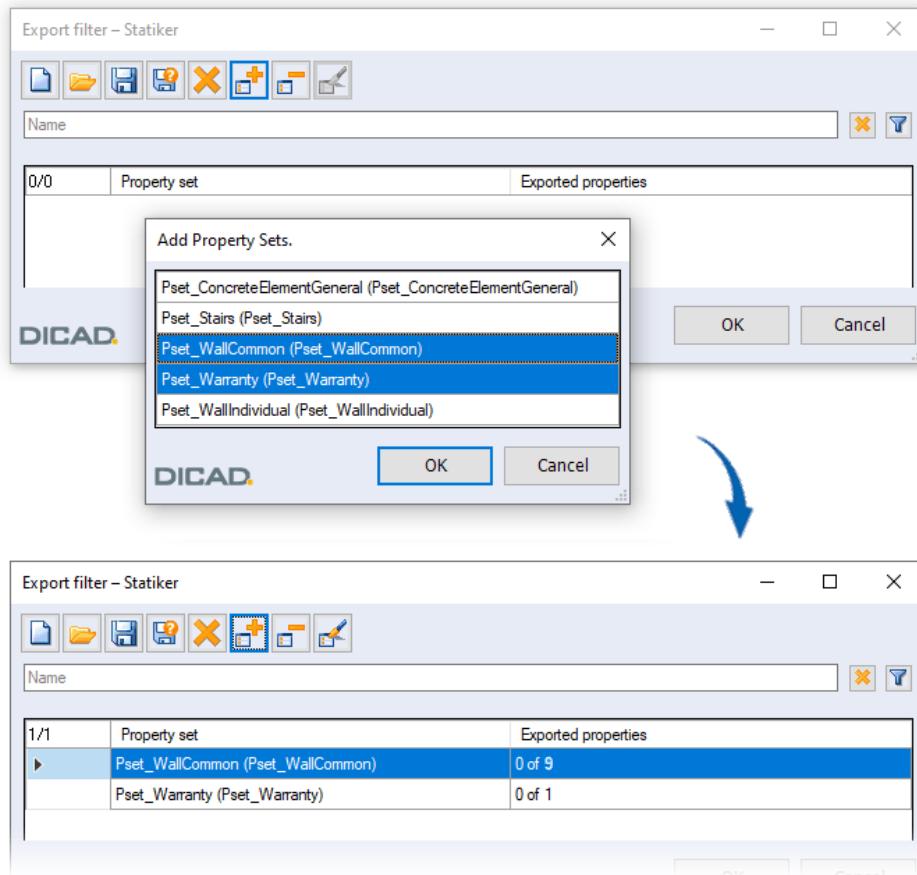




Add property sets (selected sets are not exported)

Add property sets to the previously created export filter (see **New export filter**) or to the opened export filter (see **Open export filter**), which are not supplied by the export IFC

A dropdown list with the property sets appears.



Once selected, the selected property sets are transfer in the export filter.

The **Exported properties** column shows the number of properties in the property set excluded from the export filter (see **Exclude properties of selected property set from export filter** icon).



Remove selected property sets

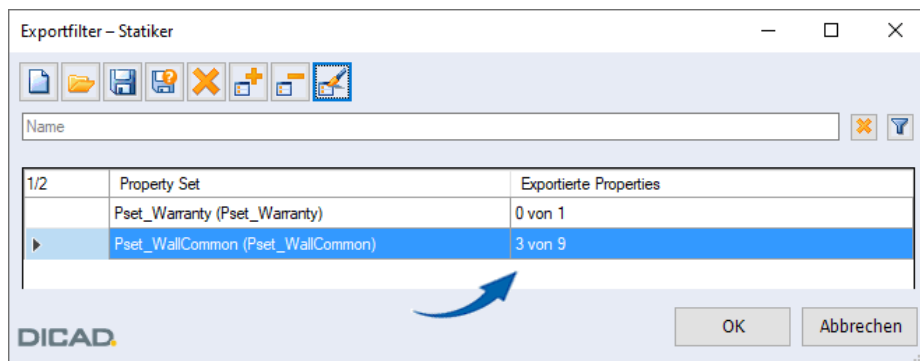
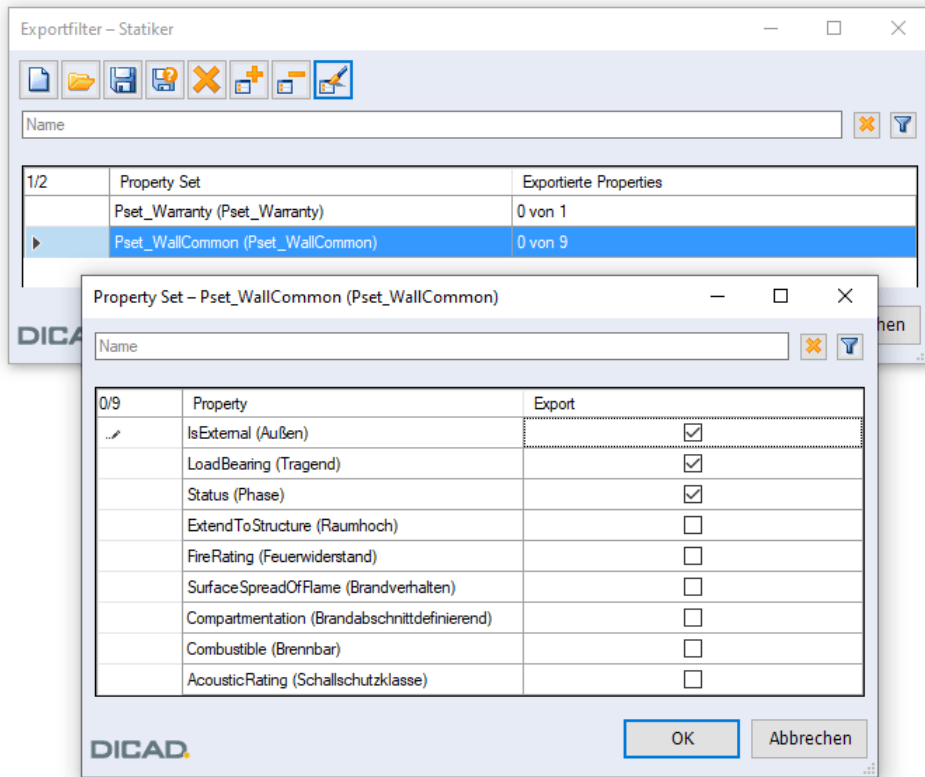
Delete property sets in the currently open export filter

Select the property set and click the icon. The property set is deleted directly.



Exclude properties of selected property set from export filter

Although a property set is excluded from export, you can select individual properties from this property set that will be exported anyway.

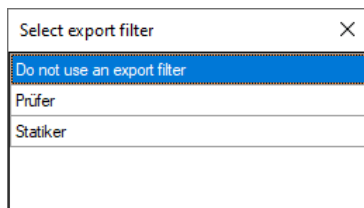


The **Exported properties** column now indicates that some properties in the property set are excluded from the export filter, so these properties are transfer during export IFC.

Click **OK** to save your entry in the selected export filter and close the dialog box.

The export filter file **export-filters.json** is placed in the stored master data path of the data management/labeling templates (**annotation**).

If you then carry out an export IFC, e.g. in **Cube** (tab **File** > **Save as** as IFC file), you will be offered a selection list with the export filters. Alternatively, you can use the **Do not use an export filter** option to pass all the data during export.



Create Stairs

Riser Quantity Changes: Cube Reinforcement in the Head of Stairs Adjusts

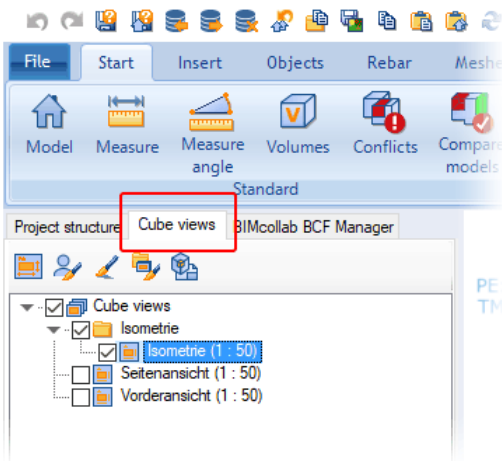
If the quantity of the risers changes with a new height of the flight, the reinforcement in the head of stairs will now be adjusted. The reinforcement attached to the head of stairs at the top two steps is retained.

Project model

General






Ribbon / Tabs: Structured

The functions of the Cube views have been moved from the ribbon on the left edge of the **Cube model** window to the new tab **Cube views** (see Cube Views Expanded, page 26).



Cube Views Expanded

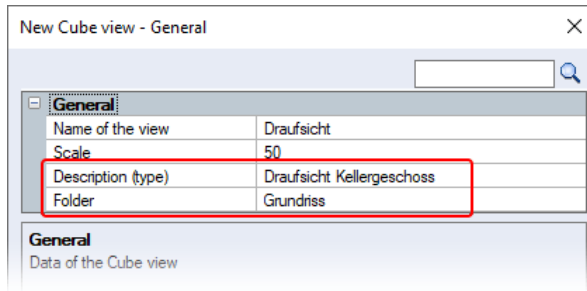
The following features are now available on the new **Cube views** tab for working with Cube views through the icons:

-  **New Cube view**
-  **Edit Cube view exclusively**
-  **Edit Cube view data / rename folder**
-  **Configure Cube views / folders**
-  **Export to drawing as 3D view**

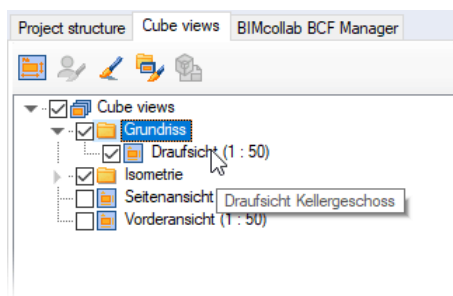
The Cube views are now listed in a tree structure. This tree displays only the Cube views and folders that contain the Cube views that are relevant to this drawing, that is, it displays a plan-specific representation of the Cube views.

New Cube view

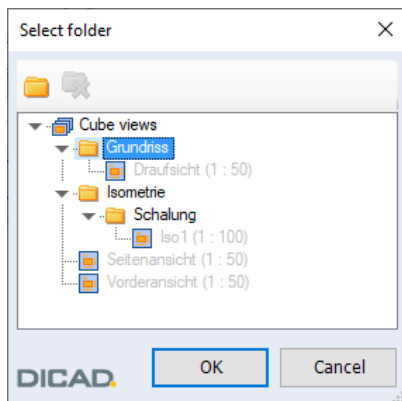
To create a new Cube view, the Cube view's data have been expanded:



You can now determine an additional description for the Cube view and assign a folder under which the new Cube view will be placed. The description will then appear in the tree as a tooltip.

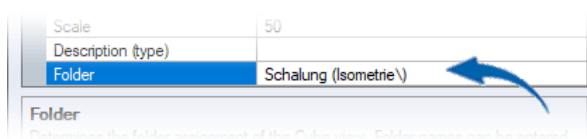


A selection dialog will open to assign the Cube view to a folder. You can also create new folders and delete an empty folder in the dialog. If the top item **Cube views** is selected, the Cube view is not assigned to any folder.

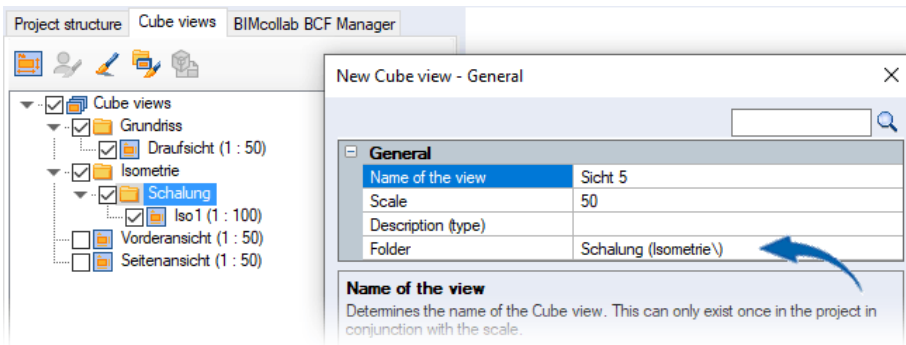


The Cube views below a folder are shown inversely and cannot be selected.

The folder where the Cube view is located is displayed. If parent folders are entered, they are also displayed in parentheses after the folder name:



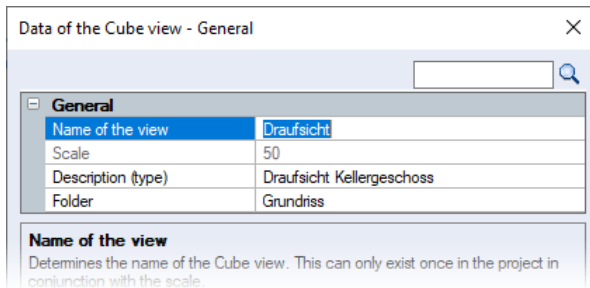
You can also add the folder for the new Cube view directly to the Cube view's data dialog by first selecting it in the tree view and then clicking the **New Cube view** icon:



The edit of Cube views, e.g. to enter dimensions and datum level in the respective view, is now done via the **Edit Cube view exclusively** icon.

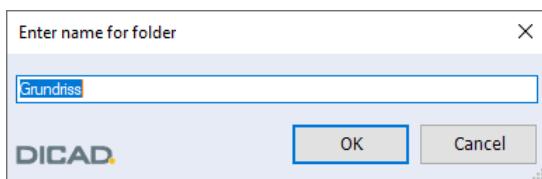
Edit Cube view data

To edit a Cube view, select it and then click the **Edit Cube view data / rename folder** icon. You can change the data of the Cube view, such as its name and description, and select a different folder.



Rename Folder

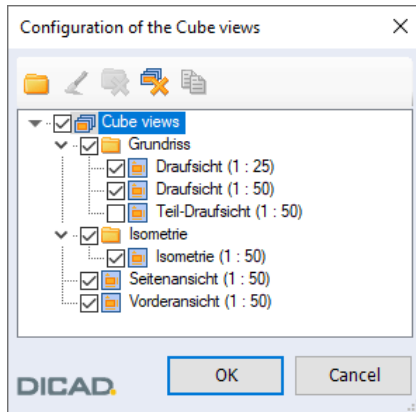
To rename a folder, select it and then click the **Edit Cube view data / rename folder** icon:



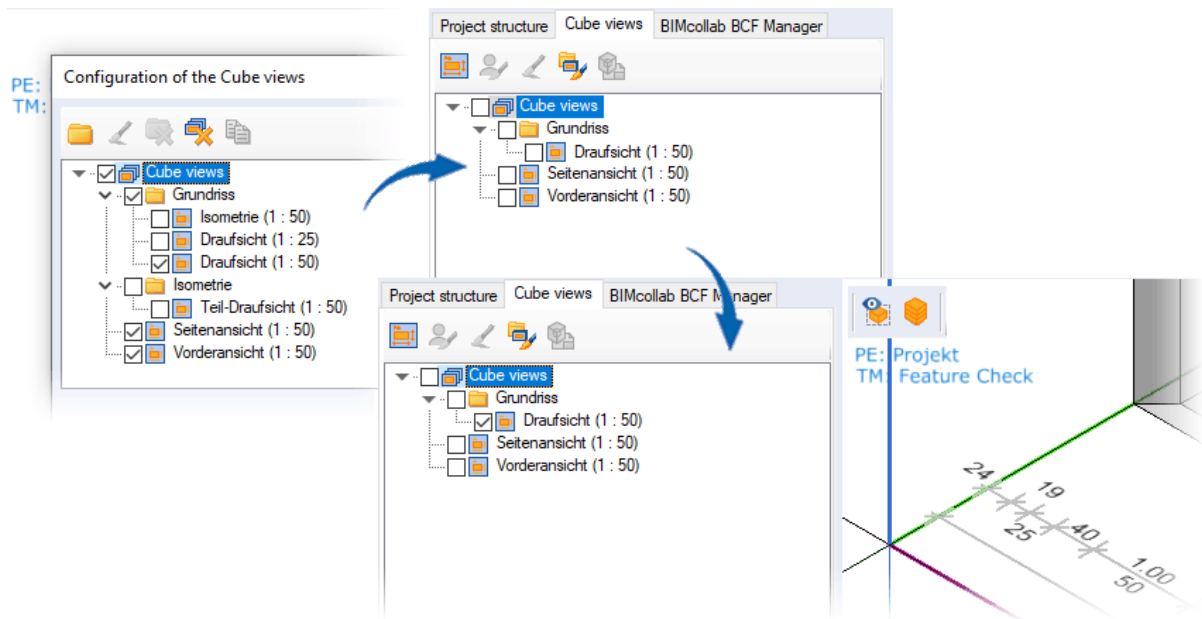
Configure Cube views / folders

The new **Configure Cube views / folders** function opens the Cube views configuration page to help you keep track of the many Cube views and folders that exist in your project.

You can create a new folder, a blank folder, i.e. without Cube views, by clicking on the icons or the context menu. You can also drag and drop a Cube view from one folder to another, and reorder the sequence of the Cube views within the folder.



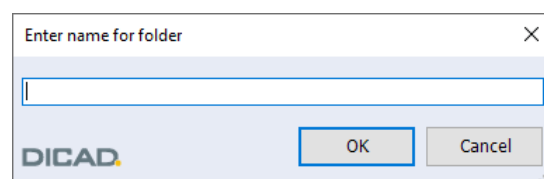
Similarly, from all the Cube views in your project, you configure the views or folders to display in the tree structure. In the tree structure, you then activate the views whose 2D objects, such as dimensions and texts, you want to display in the Cube model.



New folder

Create folder

In the dialog box that opens enter the name of the new folder.





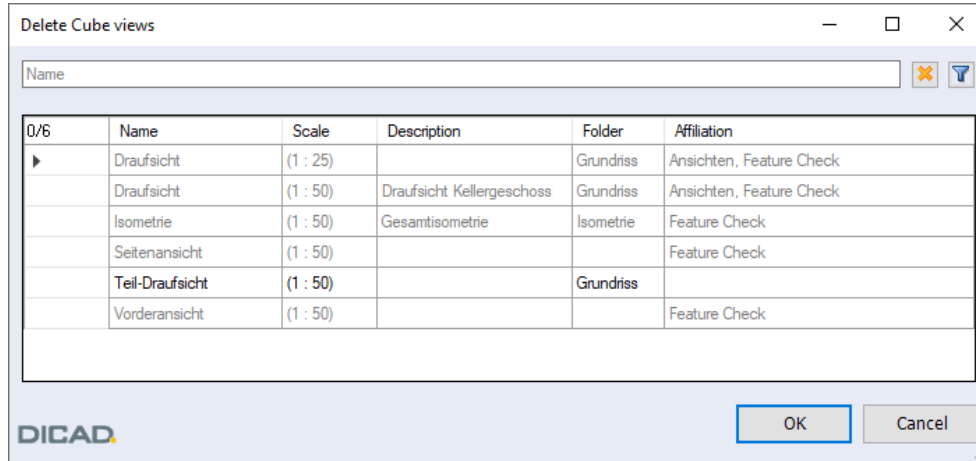
Delete selected folder

Delete empty folder

The icon does not become active until you click on a folder that does not contain a Cube view.

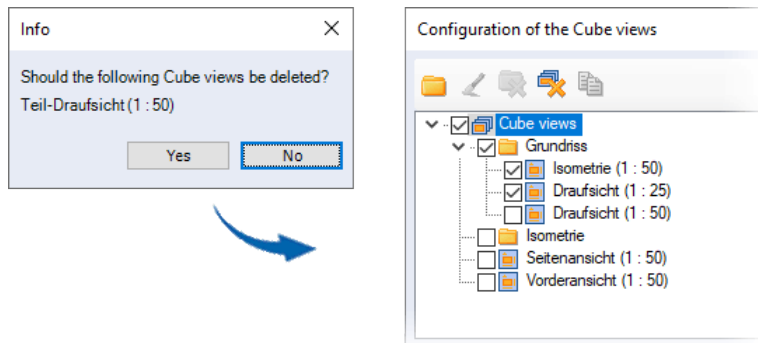


Delete Cube views



A schedule of all Cube views in the project is displayed. Each Cube view is listed with its data. In addition, the **Affiliation** column shows in which drawing the Cube view is used. Several drawings are listed in a row. You will only receive a schedule save with the current affiliation after the drawing's date.

You can only delete a Cube view if it is not associated with a drawing. The line is black. Holding down the [Ctrl] button, you can also select multiple times. Confirm the selection with **OK** and answer the following message:



Thereafter, the Cube view from the tree structure is omitted.



Export to drawing as 3D view

Put the Cube view in its saved representation (view or section) as a 3D view into the drawing without opening the exclusive processing.

Cube View: Edit Cube Views Exclusively

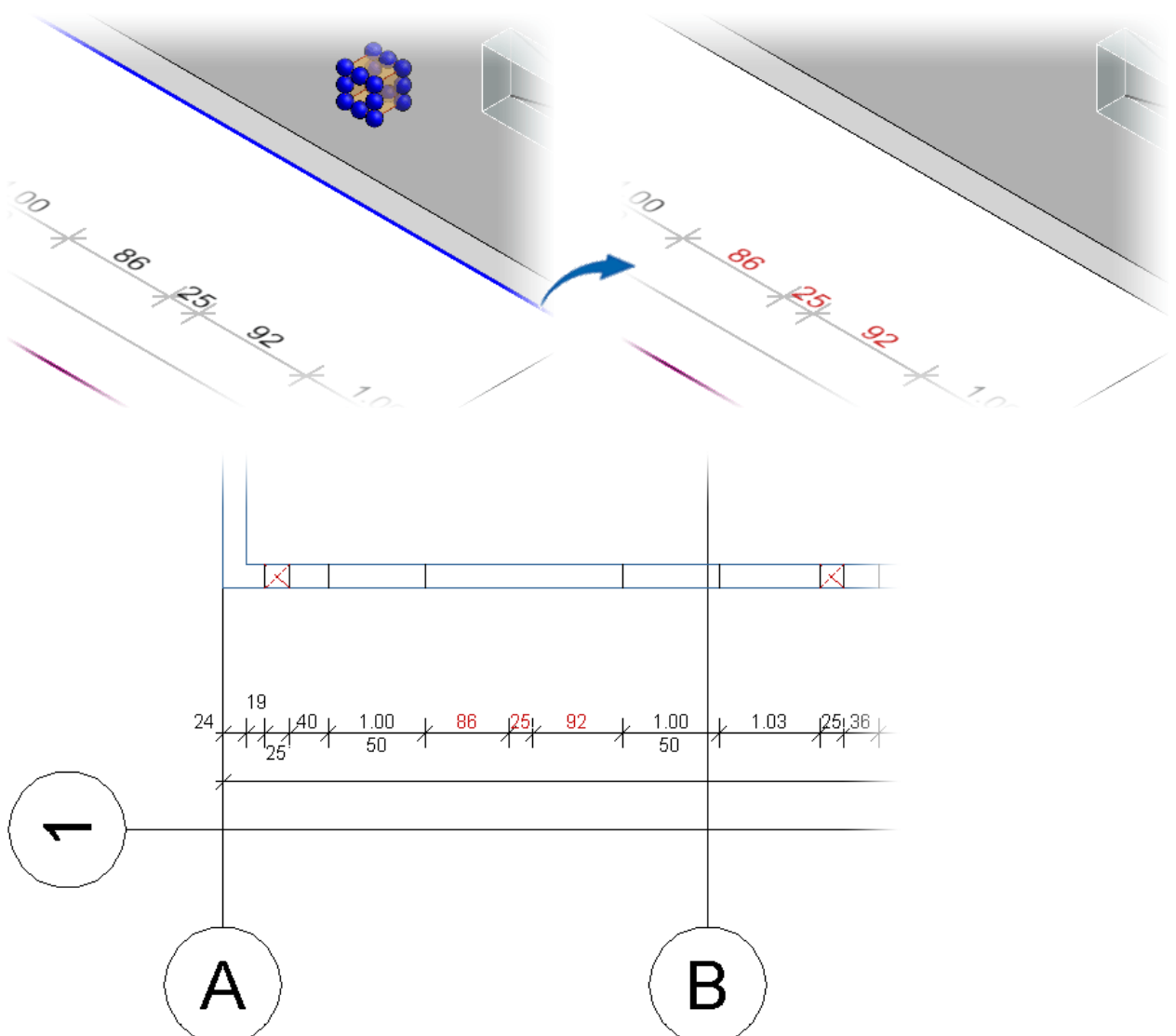
Tab Expanded

The **Edit** tab has been expanded in the group **Change** by the function **Link** (see Delete/Correct Dimension Points Without Connection, page 32):



Dimensions Without Connections Remain Intact

When a dimensioned feature is deleted, the dimensions are retained without binding and are highlighted in red in both the Cube view and the model or 3D view in the drawing. You can remove or correct these dimensions using the **Link** function.



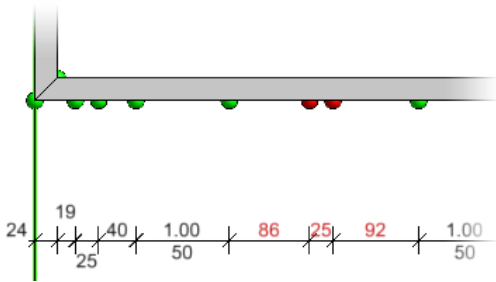
Delete/Correct Dimension Points Without Connection

To see directly if there are dimensions without a connection in a complex Cube view, use the new **Link** function (tab **Edit** > group **Change**).



Delete/correct dimension points without association

Clicking on the function will check all measurements for faulty measurement chains.

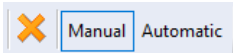


A notice will appear in the status bar showing the quantity of the defective dimension chains and the dimension points that are no longer connected.

1 Dimension chain(s) are incorrect because 2 Dimension point(s) are not connected (edit via additional bar)

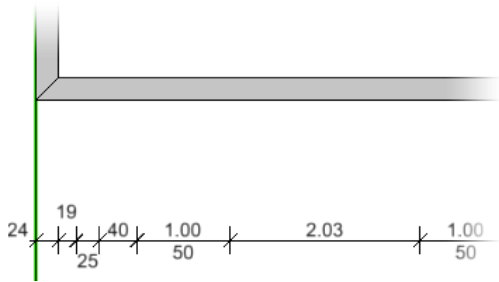
The additional toolbar can be used to correct erroneous measurement chains.

Additional toolbar



Delete dimension points without connection

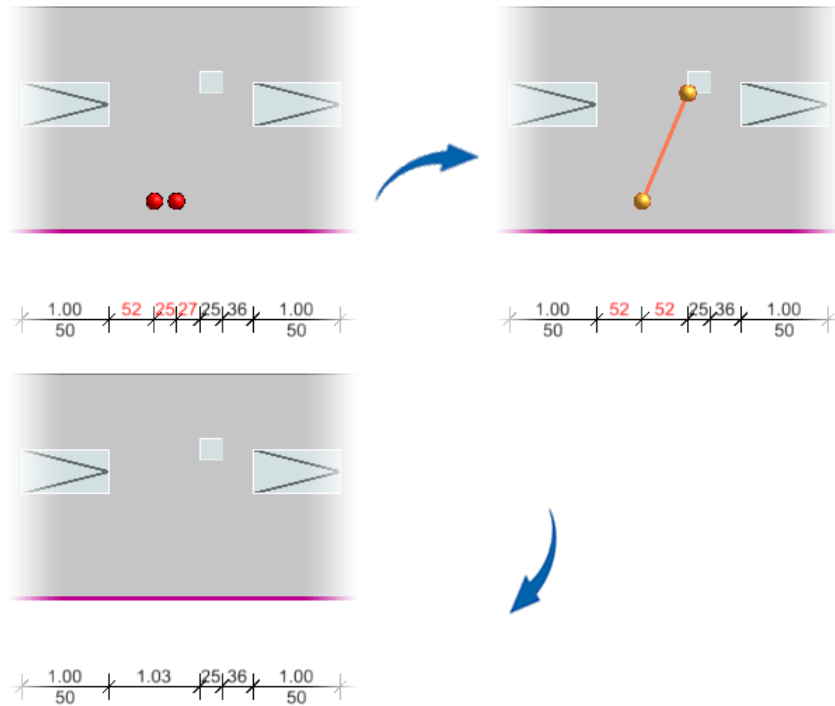
The unconnected measurements are deleted and the dimension chains are automatically corrected.



Manual

Manually correct dimension points without association

First, you can trap several of the object points marked in red by dragging a section or select a single object point by clicking on it. Then determine the new connection point.



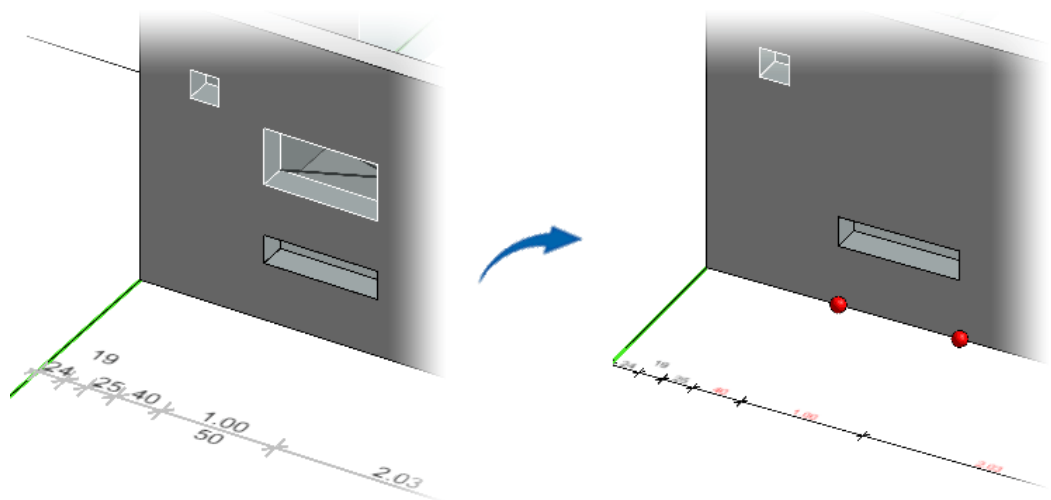
Automatic

Automatically correct dimension points without binding

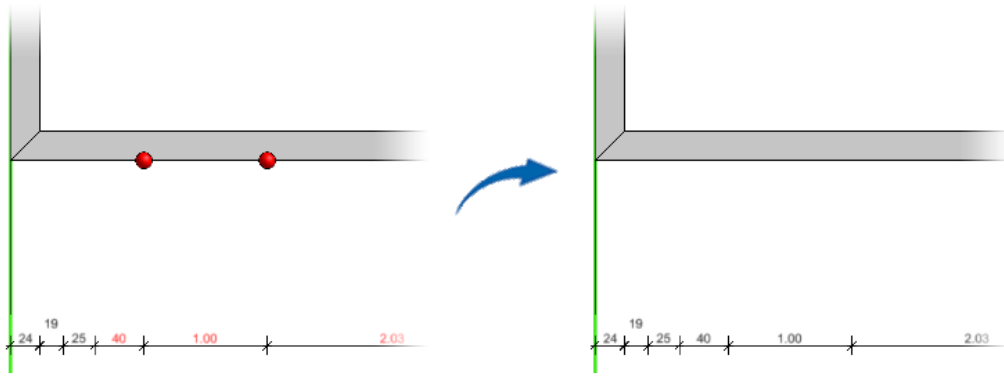
If you switch this function, the dimension points will be automatically corrected, i.e. the connection points will be reassigned if further connection points lie in the viewing direction.

Example:

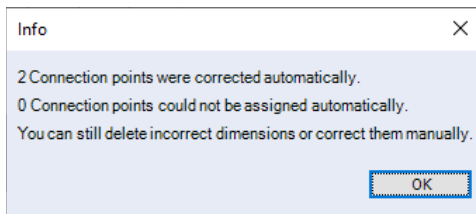
A wall opening containing the connection points of the measurements has been deleted. If the automatic control is switched on, the program checks whether there are further points in the viewing direction to which the measurement can be connected. If object points are found, they are automatically assigned as new connection points.



Note that the input view must be fixed for an automatic connection (see function **Lock view**).



After mapping, a message is displayed:



If you confirm this information, the dimension chain will be displayed without incorrect dimensions.

A new check with the **Link** function then indicates in the status bar that no faulty dimension chains have been found.

Move Dimension Text

You can now move dimension texts in the Cube views by help the handles. Switch **Grip points** and select the dimension chain. The handles are displayed for all dimension texts.



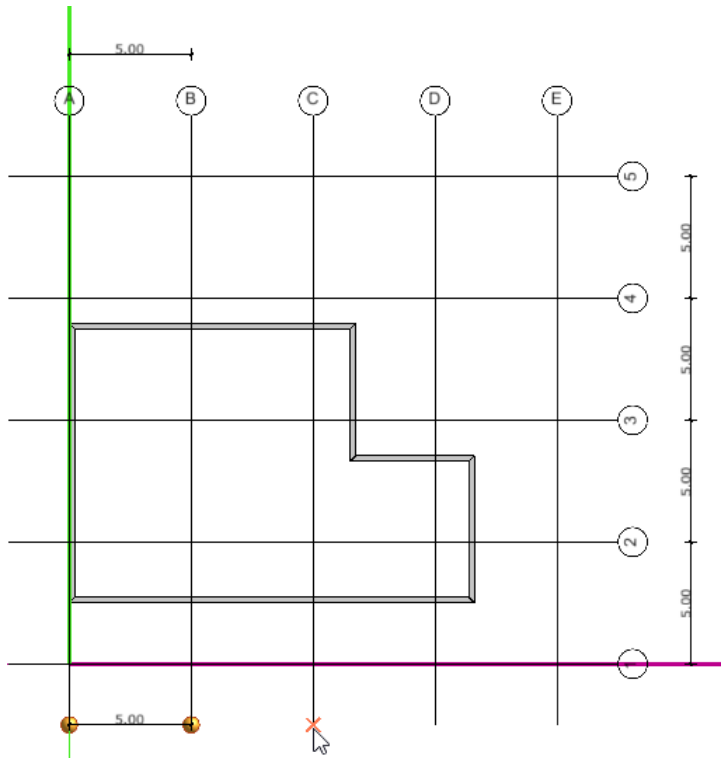
Select the dimension text from the grid point and reposition it. If a dimension point is deleted/inserted for this measure, the item of the new dimension text is set back to the default position.

Dimensioning the Lines in the Cube View

You can now also select the end points of lines, such as a polygon, circle, and arc, for the dimension (group **2D objects** > function **Dimension**).

Dimensioning the Axes in the Cube View

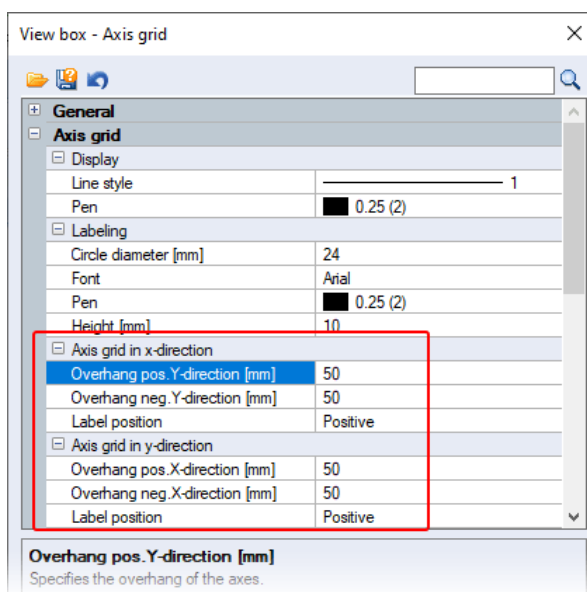
You can now dimension an orthogonal axis grid in the plan view of a Cube view (group **2D Objects** > function **Measure**). To do this, drive the end points of the axle grid. Notice that the alignment grid is not cut.



Visual Representation of the Axes in Each Cube View Determine

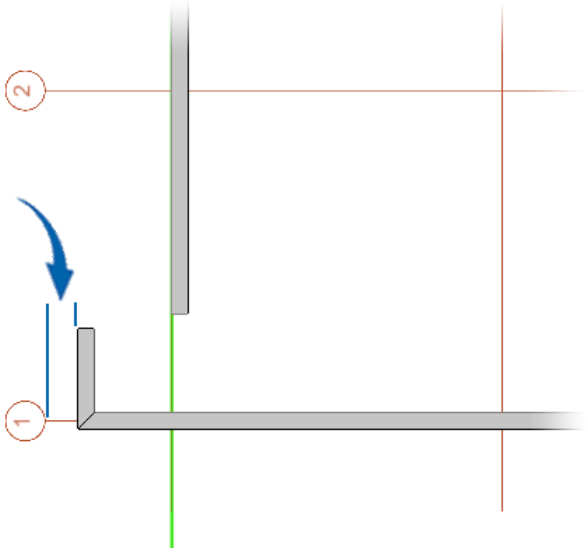
You can now determine the visual representation of the axes for **each** Cube view, i.e. you can use different linestyles for the axes in each Cube view and also make the labeling different.

If you have created a new Cube view, the presentation of the axle grid is first taken from the **Cube**. In the Cube view, you can customize this appearance in the **View box**. For this purpose, the settings of the axle grid have also been extended by options:



You can now also select the extent of the axes determine from the entity in the X and Y directions, and the label position, right or left, from both sides of the Cube view, or none. The supernatant value is the actual dimension on the plotted drawing.

If an object is outside the grid, the projection of the axes refers to the outermost edge of the object of the Cube view and not to the intersection of the axes.



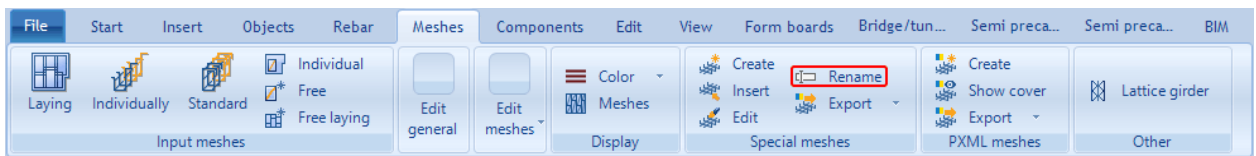
As you determine the settings, the grid of axes adjusts accordingly in real time.

Cube Reinforcement

General

Tab Expanded

The **Rebar** and **Meshes** tabs have been expanded with the **Rename** function in the **Special meshes** group (see Rename Special Mesh Afterwards, page 40):



Accessibility

New Key Commands

The following key commands have been added to the **Rebar** and **Meshes** tabs:

Rebar

- [1] Create and lay rebar as individual bending shape
- [2] Insert and lay rebar as standard bending shape
- [3] Create laying in an area

Meshes

- [4] Create and lay mesh as individual bending shape
- [5] Insert and lay mesh as standard bending shape
- [6] Create laying in an area

Rebar / meshes

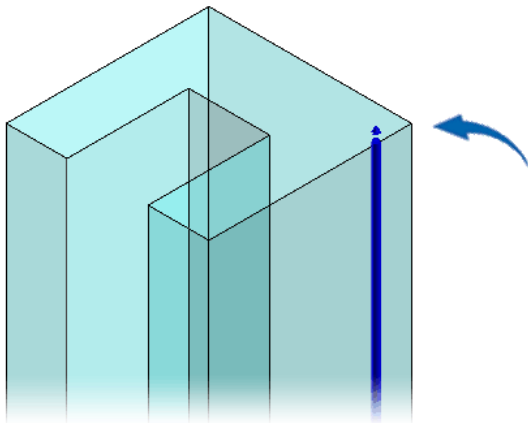
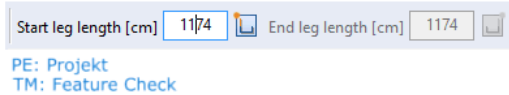
- [7] Modify concrete cover using an area
- [8] Edit / add / delete hooks
- [9] Edit leg lengths of free legs
- [0] Edit laying

- [Ctrl] + [K] Copy layings
- [Ctrl] + [Shift] + [K] Copy with auxiliary object

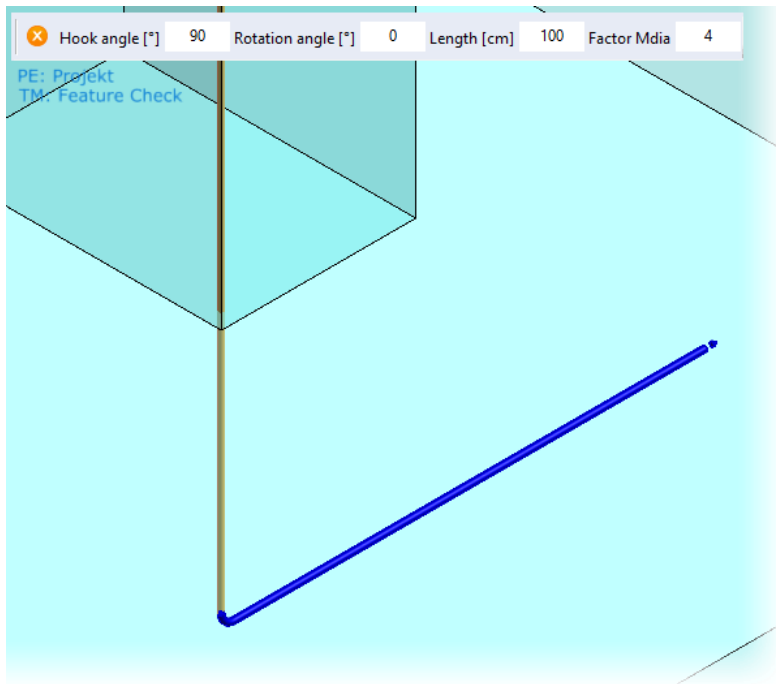
Rebar

Input Rebar: Leg Modification / Hook Input With Optical Marking

When creating a bending shape with leg modification and hook input, you now receive visual support for this, as well as for the subsequent modify of the legs or hooks. If the query is made after the leg modification, the input field for the initial leg length is automatically active. The leg to be corrected is highlighted in blue, and an arrow indicates the direction of the change in length. The remaining legs of the bending shape are temporarily displayed in the selection color.



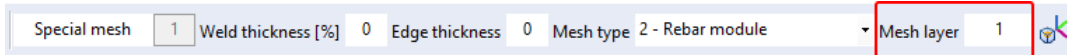
When you click in the end portion length edit box, the selection moves to the other side of the bending shape. When the hook is input, this visual indication is also automatically displayed at the end of the bending shape to which the active input in the additional toolbar relates.



Rebar / Meshes

Special Meshes Create: Mesh Layer Determine

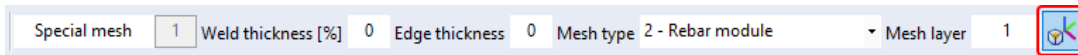
When create a special mesh, you can now also determine a **Mesh layer** via the additional toolbar.



Special Meshes Create: Local Coordinate System for Routing Direction

When creating a special mesh, the local coordinate system is now visualized, which is saved for special mesh. If you want to route a special mesh afterward, it is important that you determine the x-direction of the special mesh over an object edge when you define the coordinate system so that it matches the later routing direction.

Before you set the reference point / placement point of the special mesh, you can use the new toggle icon additional toolbar to determine the orientation of the special mesh in the coordinate system.



You can inherit the active coordinate system of the special mesh or automatically determine the orientation of the coordinate system by traversing an object edge to determine the later routing direction.

Toggle icon



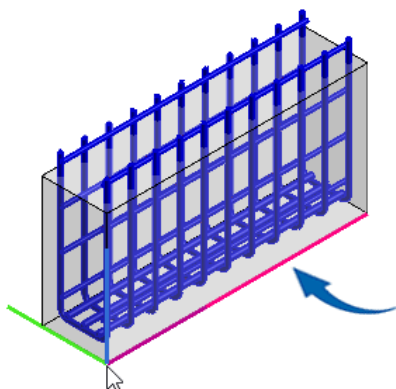
Alignment of the active coordinate system



Set coordinate system automatically

Select **Alignment of the active coordinate system**, determine the reference point / placement point of the special mesh. The active coordinate system of the model is taken over here and is now also displayed on the mouse cursor. This corresponds to the previous standard behavior during generation.

Select **Set coordinate system automatically**, determine the edge for the alignment of the local x-axis. The edge marked in magenta (x-direction) determines the later laying direction (see Route Special Mesh During Insert, page 40).



Rename Special Mesh Afterwards

The new **Rename** function in the **Special meshes** group lets you rename a special mesh in your model and edit it, such as changing its diameter or length.

Important!

This renaming does not affect the initial special mesh in the administration.



Rename special mesh

Select the special mesh and then click the icon. The additional toolbar defaults to the old name and automatically increments the numeric value. You can accept or re-enter this name. When re-typed, the administration checks for name equality and sets the number value to 1 if necessary.

Additional toolbar



Route Special Mesh During Insert

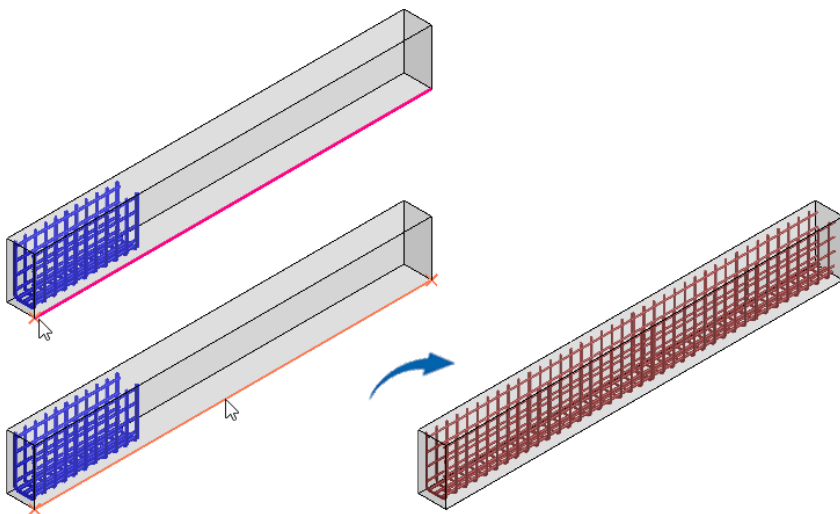
You can now also route a special mesh that you choose through the administration. Before you determine the new reference point, click the **Laying** icon in the additional toolbar.

Additional toolbar



Then select the edge incl. placement point (starting point for the laying) for the alignment and confirm with right click. Optionally, you can now use the additional toolbar to rotate the placed mesh around the 3 axes and confirm again with right click. Then select the laying section using two points or the edge. Now use the additional toolbar to determine the start and end spacing (concrete cover) of the laying and the overlap length.

When you finish entering the laying, press right click.

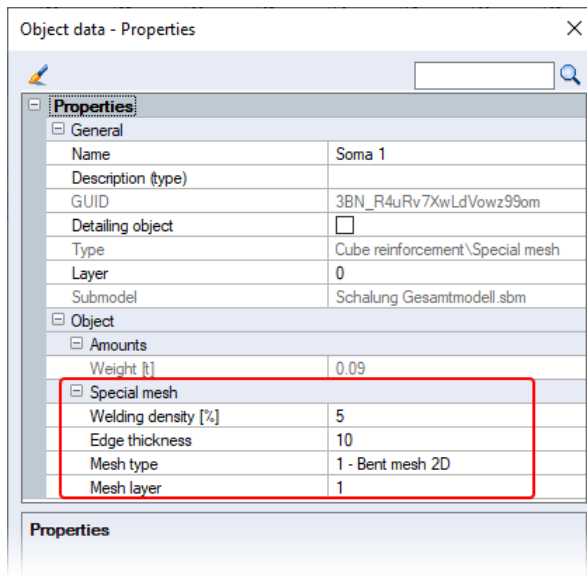


Note:

If a component is shorter than the laid special mesh, or if the last mesh protrudes from the component in the case of the laying of several special meshes, this mesh is cut off optically in a matching manner in the model. However, for calculating the schedules in the drawing and the export to PXML, this special mesh retains its geometry and also the same rebar item numbers as the untruncated special meshes.

Object Data for Special Meshes

The object data now display the properties of a special mesh and you can change them there.



Export IFC of Special Meshes

Save when using a 3D model or a component as an IFC file, the special meshes are now also output as shown in the model. In the case of export, the special mesh is exported with its properties, i.e. object-specific properties such as mesh type and mesh layer, welding density and edge thickness are taken over. Likewise, the IFC structure lists the individual steel rod assemblies with their reinforcing bars.

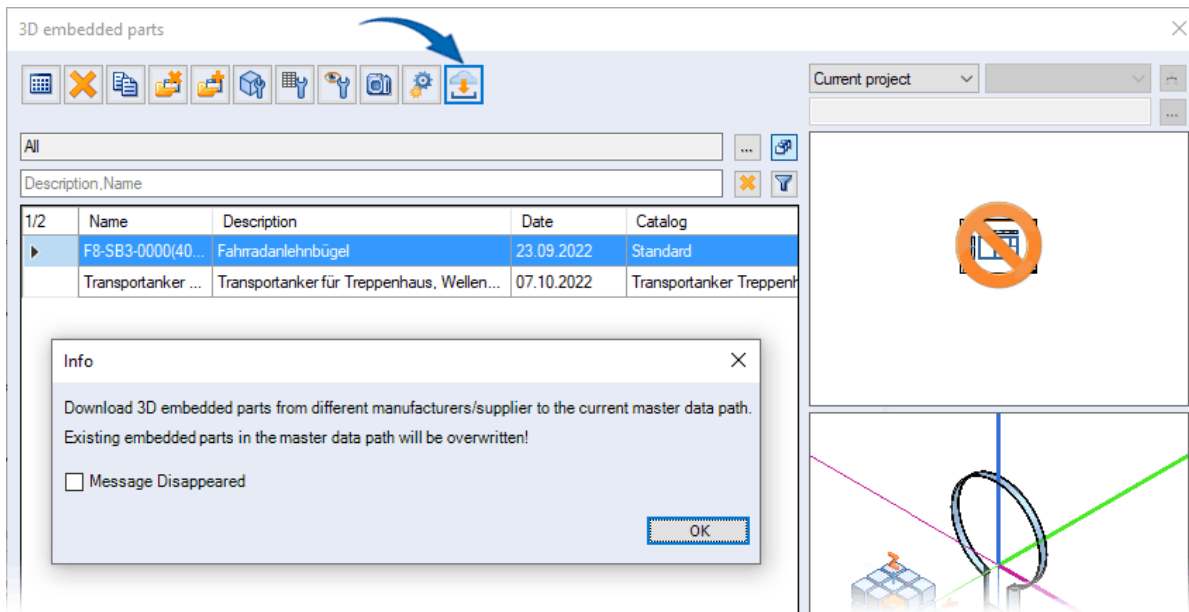
The enveloping auxiliary object of the special mesh is not exported.

Embedded Parts

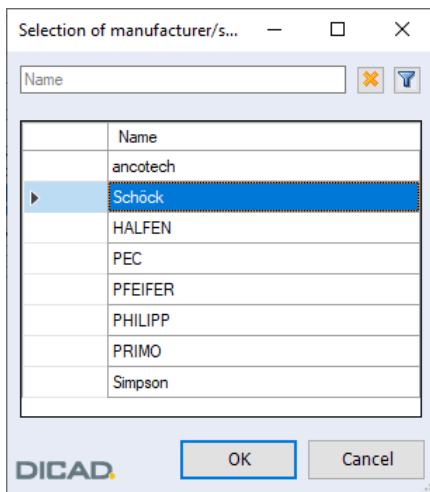
Reload 3D Embedded Parts on Demand

For an initial installation, fewer 3D embedded parts are installed so that the administration is not delayed. We now make the 3D embedded parts available for download on a server in different catalogs sorted by different manufacturers/suppliers.

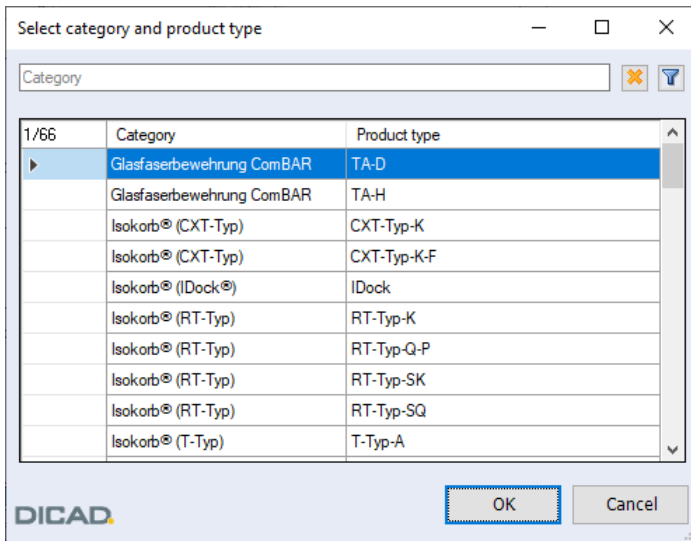
You can access the download in the administration of the 3D embedded parts via the icon **Download 3D embedded parts in STRAKON format**. The files are downloaded in STRAKON format directly into the current master data path.



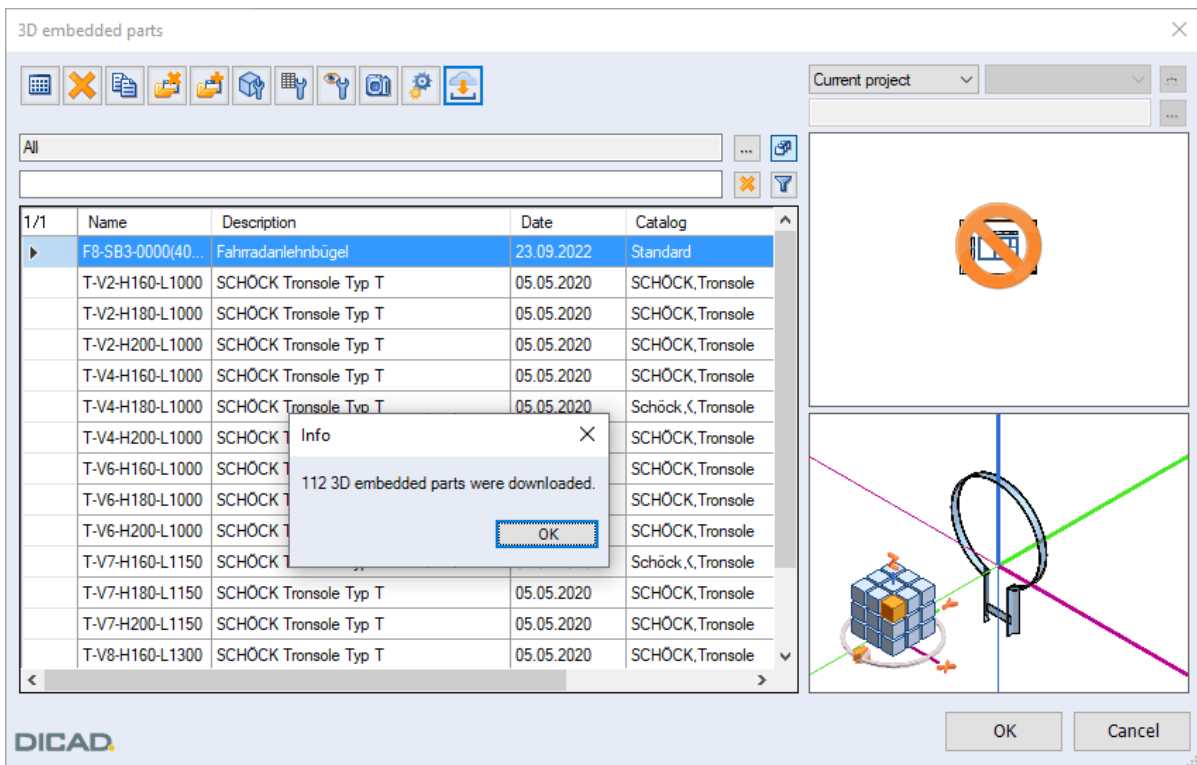
If you confirm this message, a list of manufacturers/suppliers will open:



If you select a manufacturer/supplier, a further dialog box will open with the categories and the corresponding product types:



You can select one or more categories. After confirming with **OK**, the embedded parts are downloaded directly and saved to the currently selected master data path. A message appears informing you of the quantity of 3D embedded parts downloaded.



In the same way, you can perform this download of 3D embedded parts in the **3D embedded parts** > additional function toolbar: **Download Center** function.