Tekla Structures 2025

Release notes 2025

March 2025

Contents

1 Tekla Structures 2025 release notes

Welcome to Tekla Structures 2025!

Smart automation and efficient cross-product workflows: highlights of Tekla Structures 2025

Tekla Structures 2025 focuses on intelligent automation for reliable on-time delivery and efficient cross-product workflows, supporting the work of project teams.

- **Better fabrication drawing creation (page 26)** - Use **Smart create** in fabrication drawings to automatically select the best matching drawing template or drawing settings file for any fabrication drawing type, including single-part drawings. Combined with several usability improvements, this feature now enables you to generate desired drawing content quickly and with minimum input. In addition, the improved drawing automation offers **better cloning results and more reliable update of views and dimensions particularly in respect to placing the views and dimensions (page 33)**.

- **AI Cloud Fabrication drawings (Preview) (page 39)** - The AI Cloud Fabrication drawings feature is a new, advanced way to create fabrication drawings in Tekla Structures. This feature creates new fabrication drawings based on finalized fabrication drawings from previous projects, which have been uploaded to a cloud collection owned by your organization. Artificial Intelligence (AI) is used when classifying drawings into libraries inside the cloud collection and when looking for the best matching drawing to be used in the drawing creation.

- **Numbering preview and other numbering improvements (page 10)** - Better control and transparency over numbering and its changes. With the new numbering preview you can now preview the proposed position numbers before you apply the numbering results to model objects.

- **Tekla PowerFab Connector—Connect the fabricator and detailer (page 66)** - The enhanced interoperability between Tekla Structures and Tekla PowerFab fabrication management system enables seamless and

easy cooperation between steel detailers and fabricators who are using Tekla PowerFab.

- **Export STEP and IGES files - New export for automated steel manufacturing (page 98)** - Export polybeams, and straight, curved, and arc shaped profiles with boolean operators directly and quickly in the STEP (`.stp`) or IGES (`.igs`) format with real arc and bend data for automated manufacturing of steel parts, especially handrails.

- **Renewed Status Sharing (page 76)** - The **Status Sharing** tool has been completely renewed and embedded into Tekla Structures to streamline workflows for detailers, engineers, fabricators and site teams, providing a common user interface for **Status Sharing** in Tekla Structures and Trimble Connect for Browser. If you are using **Status Sharing** between Tekla Structures and Tekla PowerFab, you can filter actions in Tekla Structures to show only those from Tekla PowerFab.

- **Live Collaboration for Tekla Structures (Preview) (page 71)** - Collaborate in real-time within 3D models, without exporting or sharing any files, between two or more instances of Tekla Structures or between Trimble Connect and Tekla Structures. This enables live model-based collaboration with a wider project team.

- **Improved point cloud experience (page 81)** - You can access, process, manage, and share large point cloud files stored in Trimble Reality Capture platform service. Additionally, **Layout manager has been enhanced (page 78)** to improve the workflow and collaboration between the field and the office.

For more new features and improvements, see

Preview features in Tekla Structures 2025

Some of the features in Tekla Structures 2025 are released as Preview features.

A Preview feature is ready for production use, but the feature development can continue based on the feedback. The Preview features are primarily intended for evaluation purposes, providing an alternative approach to your usual workflows. We encourage you to test these features in a normal

business environment and share your feedback. NOTE: a Preview feature may be enhanced, updated, or discontinued at any time in response to feedback. Preview features are provided "as is" without any Trimble warranty or indemnity.

For details about licenses where the Preview features are enabled, see Supported Preview features by license.

Compatibility

We recommend creating a backup of your model in your current Tekla Structures version before migrating your project to the latest release.

This version is not backwards compatible. When you create or save a model in Tekla Structures 2025, you cannot open it in older versions due to database differences.

See the Tekla Structures hardware recommendations for information on supported operating systems.

Tekla Structures Administrator's release notes

For information on managing Tekla Structures settings for other users or for yourself, see Tekla Structures 2025 Administrator's release notes (page 139).

Tekla Structures Localization release notes

For information about new and changed features specific to different localized environments, see Tekla Structures Localization release notes (page 162).

Tekla Open API release notes

For developers who create custom applications and extensions using the Tekla Open API, see the Tekla Open API changes in Tekla Structures Open API release notes in Tekla Developer Center.

Summary of release notes across Tekla Structures versions

The Release notes summary across Tekla Structures versions page provides an overview to the new features and improvements in Tekla Structures versions and service packs for Tekla Structures version 2018 and newer. The summary is available in English only.

List of obsolete advanced options across Tekla Structures versions

The Obsolete advanced options page provides information about the advanced options that have become obsolete in Tekla Structures in version 2018 and newer.

2 What's new in modeling in Tekla Structures 2025

- Numbering preview and other numbering improvements
- Reinforcement sequence numbering and other reinforcement improvements
- Modeling direction locking with the Shift key for easier snapping
- New clip boxes - focus on point clouds, reference model details and model details in the model views
- Miscellaneous modeling improvements

2.1 Numbering preview and other numbering improvements

Tekla Structures 2025 comes with many improvements in numbering.

Numbering preview

You can now preview the proposed position numbers before you apply the numbering results to model objects, such as parts, assemblies, and reinforcement objects. This way you can prevent time-consuming investigations and fixing of numbering errors, such as overlapping position numbers, afterwards. Additionally, it becomes easier to detect accidental changes in objects that have already been delivered to a factory or construction site before assigning the position numbers.

The new **Numbering preview** dialog opens when you start a numbering command, **Number modified objects** or **Number series of selected objects** from the ribbon, or either of the **Diagnose & repair** --> **Numbering** commands from the **File** menu.

The **Numbering preview** dialog is not shown if you use a standard-part model, or if **Synchronize with master model (save-numbering-save)** is selected in the **Numbering Setup** dialog.

In the **Numbering preview** dialog, you can filter and sort numbering results in various ways, and you can find objects with overlapping numbers that require fixing. You can then accept the proposed numbers, or reject them and go back to adjust the numbering settings and the model as needed.

If you reject the proposed numbers or cancel the numbering, the model is not reloaded, which saves time. Also, automatic drawing cloning happens only after you accept the numbering results.

Actual position numbers visible in the property pane

After numbering, you can now see the actual position numbers of the selected parts, assemblies, cast units, and rebar assemblies in the property pane next to the series prefix and start number. For example:

If you have several objects with different position numbers selected in the model, the text **Varies** is shown. Also, a list then shows the different position

numbers within the selection, and in parentheses how many objects have those position numbers.
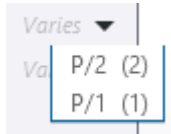
Note that you can select and copy position numbers from the property pane for later use, for example, in filtering. However, you cannot modify the actual position numbers in the property pane, only the series prefixes and start numbers.

Comparison reports and messages improved for parts and assemblies

When you use the command **Edit** --> **Compare** --> **Compare parts** or **Compare assemblies** to compare model objects, Tekla Structures shows a comparison report.

The comparison report template `TS_Report_Assembly_Comparison.rpt` that is used for assemblies has been updated slightly.

A new, separate comparison report template `TS_Report_Part_Comparison.rpt` is now available for parts.

When Tekla Structures is installed in the `..\Program Files` folder, these templates are by default available in the folder `..\ProgramData\Trimble\Tekla Structures\<version>\Environments\common\system\`. If necessary, you can customize the comparison report templates to suit your needs. Copy the templates to your project or firm folder and then modify the copied templates as needed.

The messages shown in the comparison report after you use the **Compare parts** or **Compare assemblies** command have also been improved. The messages give you more information about why the compared objects are different (or same), or numbered differently.

The Number series of selected objects command now works correctly

This top fix was already introduced in Tekla Structures 2024 SP4.

2.2 Reinforcement sequence numbering and other reinforcement improvements

Using Tekla Structures 2025, you can assign cast unit or pour unit specific sequence numbers to reinforcement objects, connect disconnected rebar set legs, inquire rebar set layers, automatically create splitters for rebar sets, and make use of many new properties and settings for rebar sets.

Reinforcement sequence numbering

In Tekla Structures 2025, you can number reinforcement objects using running sequence numbers that start from 1 (or A, or other specified start number or letter) within each cast unit or pour unit. This method complies with the industry standards of many countries and makes the reinforcement numbers smaller, shorter, and easier to use and read.

There is now a new tab, **Reinforcement sequence numbering**, in the **Numbering Setup** dialog:
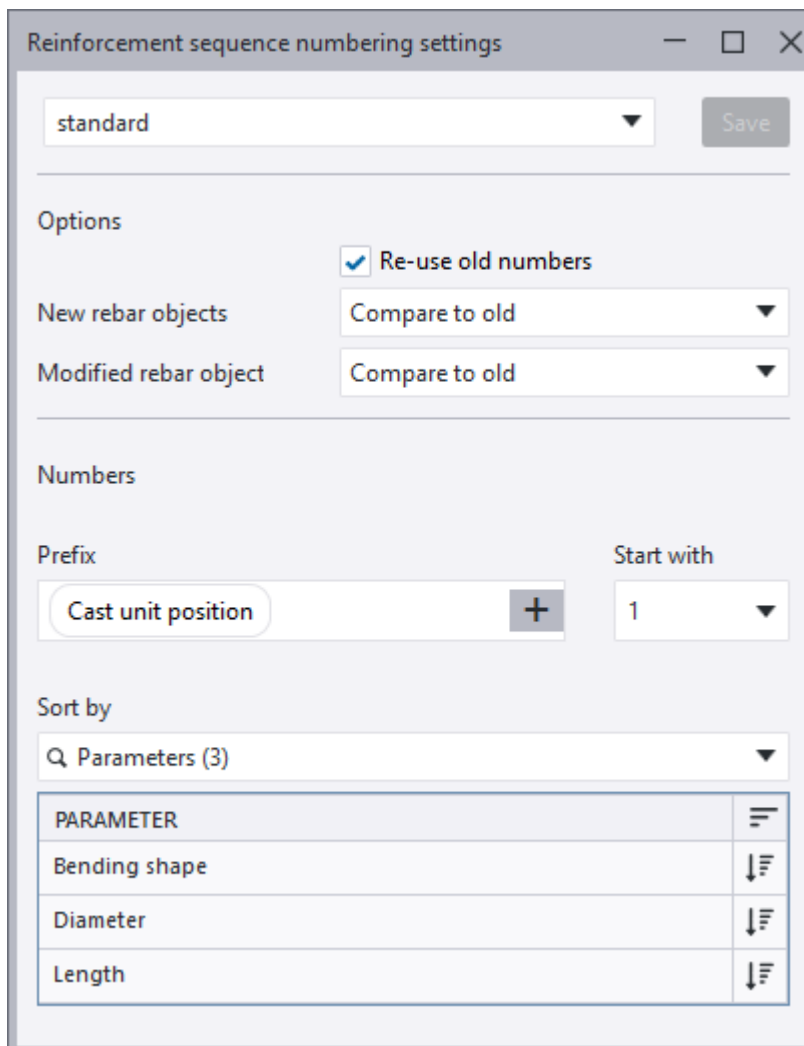
When you select **Yes** in the **Create reinforcement sequence numbers** list, Tekla Structures will use the sequence numbering settings for the specified

reinforcement objects the next time you number model objects. This simplifies the reinforcement numbering workflow, because you no longer need to use the **Rebar sequence numbering** macro separately, and you do not need to run the macro before you open a drawing or create a report that shows reinforcement.

Note that the **Number rebars in cast in place using** list is only available when pour management is enabled for the model (the advanced option `XS_ENABLE_POUR_MANAGEMENT` is set to `TRUE`).

With selection filters, you can define object groups that will be numbered using reinforcement sequence numbers. To define settings for a selected object group, click **Edit settings** and use the **Reinforcement sequence numbering settings** dialog.

To define the default separator for reinforcement sequence numbers, go to **File menu** --> **Settings** --> **Options** --> **Numbering**. There is a new list, **Rebar sequence number separator**, where you can select dot (.), comma (,), slash (/), or hyphen (-) to be the default separator.
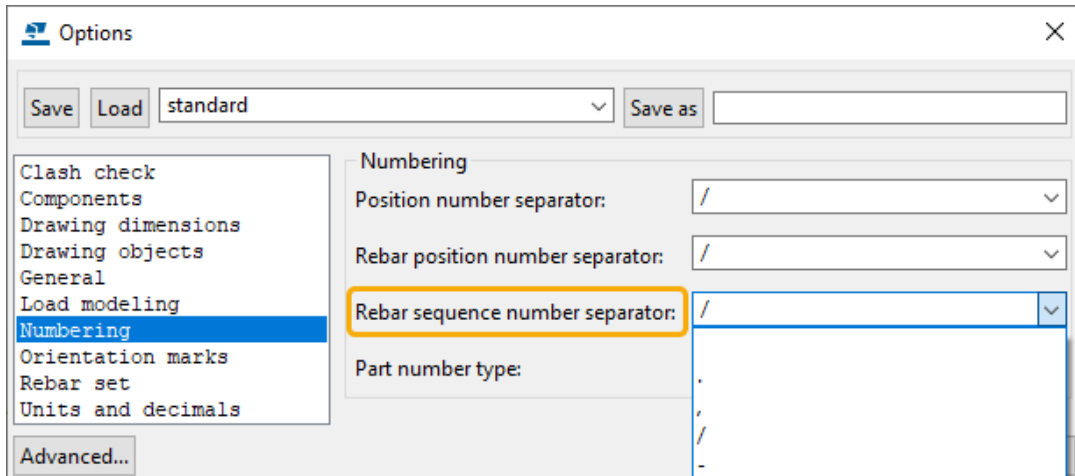
New UDAs for cast units and pour units

If specific sequence numbering start characters (numbers or letters) are needed for different reinforcement objects in individual cast units or pour units, you can define the start characters on the new **Reinforcement** tab in the cast unit or pour unit user-defined attributes. There are separate attributes for reinforcing bars, reinforcement meshes, and strands:

- **Rebar start number or letter** (`RBR_SEQ_START_NO_R`)

- **Mesh start number or letter** (`RBR_SEQ_START_NO_M`)

- **Strand start number or letter** (`RBR_SEQ_START_NO_S`)

Reinforcement sequence numbers in drawings and reports

To show the sequence numbers of reinforcement objects, use the new `REBAR_SEQ_POS` template attribute in drawing and report templates and the new **Sequence position** element in reinforcement marks in drawings.

The following report templates, which are used when you view object properties using the **Inquire** commands, have been updated to show reinforcement sequence numbers:

- `TS_Report_Inquire_Rebar_Mesh.rpt`

- `TS_Report_Inquire_Rebar_Set.rpt`

- `TS_Report_Inquire_Rebar_Strand.rpt`

- `TS_Report_Inquire_Reinforcement.rpt`

A new formatting option, `%REBAR_SEQ_POS%`, can now be used with the following advanced options to show reinforcement sequence numbers:

- XS_REBAR_POSITION_NUMBER_FORMAT_STRING

- XS_REBARSET_TAPERED_REBAR_POSITION_NUMBER_FORMAT_STRING

- XS_REBARSET_TAPERED_GROUP_POSITION_NUMBER_FORMAT_STRING

Improvements in rebar set guidelines

Previously, the number of guidelines in rebar sets was limited to two, or three in curved structures. This restriction has now been removed for rebar sets with leg faces, allowing an unlimited number of guidelines.

Tekla Structures now automatically creates the necessary number of guidelines for rebar sets that you create using the **Rebar** --> **Longitudinal** command.

For example, for longitudinal rebar sets in flat polybeams, Tekla Structures 2025 creates one guideline at each sharp polybeam corner, and three guidelines at each curved polybeam segment. This enhancement makes it possible to easily reinforce flat, continuous polybeams and strip footings using rebar sets.

If you want to add more guidelines to existing rebar sets, you can use the

Secondary guideline command on the **Rebar set** contextual tab on the ribbon.

NOTE   Rebar sets with leg surfaces still have the limitation of two guidelines.

A new property, **Chamfer type**, is now available for rebar set guidelines. With the chamfer type options **None** and **Arc point** you can adjust how rebar set bars follow sharp and curved part corners. You can find the **Chamfer type** property in the following locations:

- In the rebar set properties under **Primary guideline**, which is a new section in the property pane
- In the secondary guideline properties under **General** in the property pane
- On the contextual toolbar for guidelines

With the new secondary guideline property **Inherit offsets from primary** set to **Yes**, you can use similar start and end offsets for secondary guidelines as those of the primary guideline. The offsets are automatically adjusted so that the rebar set bars run parallel to the edges of the parent part.

New Close shape property for rebar sets

A new property, **Close shape**, is now available in the rebar set properties in the property pane.

When you set **Close shape** to **Yes**, bar legs in rebar sets are connected over the gaps of leg faces or leg surfaces, for example, in T-shaped beams, ledger beams, and L-shaped columns.
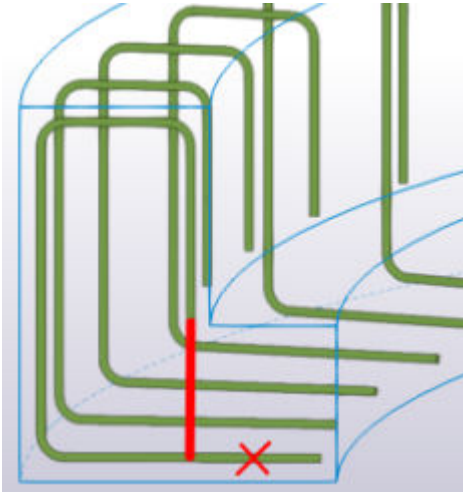
Tekla Structures automatically extends or shortens existing disconnected bar legs to intersections, so that a continuous bar shape is formed. Typically, the result is a closed shape, but it can also be an open shape. The continuous bar shape can also extend outside the concrete if the intersection of the existing leg faces or leg surfaces is outside the concrete.

The **Close shape** property does not affect the leg faces and leg surfaces of rebar sets; only the bar legs are extended or shortened. Tekla Structures does not delete or add leg faces or leg surfaces to automatically form a continuous bar shape. If you want to add or delete a leg face or leg surface, do it manually before selecting **Yes** for **Close shape**.

Inquire rebar set layers

A new **Inquire** command, **Rebar set layers**, is now available on the ribbon, and a new button on the contextual toolbar for rebar sets and for leg faces and leg surfaces. You can use the command to gain more information about which rebar sets affect and which are affected by the placement of the selected rebar set.

Concrete cover improvements for leg surfaces

Rebar set bars that are created using leg surfaces now respect the concrete cover at all part edges, including round cuts, openings, notches, and concave edges. This applies to both straight and curved bars, and works with property modifiers, end detail modifiers, and splitters.

Cut creation settings for rebar sets

In the **Options** dialog, you can now control the automatic creation of cuts for rebar sets and set the minimum size for cuts to be created. By default, all cuts in the parent concrete parts are also created to the rebar sets. This applies to the rebar sets that are created using the commands **Crossing**, **Longitudinal**, and **By face** on the **Rebar** tab.

If you want to adjust the default **Cut creation** settings, go to **File menu** --> **Settings** --> **Options** --> **Rebar set** --> **General**, and use the following settings:

- In **Automatically create cuts**, select whether the cuts in the parent parts are created to the rebar sets when the rebar sets are created.

- In **Do not create cuts smaller than**, define the minimum dimension for the cuts to be created. For round cuts, this dimension is the diameter, for rectangular cuts, the shortest edge of the cut, and for polygonal cuts, the shortest edge of the object-oriented bounding box around the cut.

New Auto splitter tool for rebar sets

Tekla Structures 2025 introduces the **Auto splitter** detailing component for rebar sets. With **Auto splitter** you can generate rebar set splitters that split and splice long bars in rebar sets so that the bars do not exceed the stock length.

Auto splitter is similar to the existing **Automatic splicing tool** for reinforcing bar groups. However, **Auto splitter** is more user-friendly, because it updates automatically when the split rebar set is modified.

Improved error messages for rebar sets

The error messages that are shown for rebar sets in the **Inquire object** window have been improved. For rebar set bars that are not valid, Tekla Structures now shows an error number (ERROR_STATUS attribute) and a description of the reason why the bar is not valid.

The errors are as follows:

- (1) Unable to automatically remove a leg that was too short for the bending radius

- (2) Unable to apply length adjustment to start of bar

- (4) Unable to apply length adjustment to end of bar

- (8) Unable to apply cranking to the bar

- (16) Unable to apply cover/layer/additional offsets to the legs of the bar

- (32) Unable to fit smooth curves to bar geometry

- (64) Unable to calculate bendings for bar geometry

- (128) Unable to calculate bendings for bar geometry
- (256) Incorrect splitter lapping parameters
- (512) Unable to apply length adjustments to closed bar

Note that errors 64 and 128 have the same error message. They are different errors, but are both related to the rebar bending calculations.

Other improvements

- A new content type, `SIMILAR_REBAR_ASSEMBLY`, can now be used in templates to report information about similar rebar assemblies.

- Previously, in reinforcement marks in drawings, the **Number** element showed an incorrect value for spiral reinforcing bars. Now it shows 1, as each spiral bar is a single entity. This is also in line with how the `NUMBER` attribute works in templates.

  To show the number of rounds for a spiral bar, use the `ROUNDS` attribute that shows a decimal value.

2.3 Modeling direction locking with the Shift key for easier snapping

You can now temporarily lock the modeling direction with the **Shift** key when hovering over a snapping point on a line or on a point. When you release the **Shift** key, the direction locking is released. The modeling direction locking in Tekla Structures works similarly to inference locking in SketchUp.

1. Run a command that requires you to pick points.

    For example, start creating a beam.

2. To lock the direction for the first point to be picked, ensure that the **Snap to nearest points (points on line)** ⧖ snap switch is active.

3. Hover over a snap position on a line, such as part edge line, part reference line, or grid line.

4. Hold down the **Shift** key to lock the modeling direction.

    As long as you hold down **Shift**, the direction is locked, and any point that can be snapped is projected to the locked line.

    You can snap either to a line or a point:

    - if you snap to a line (for example, using the **Snap to nearest points (points on line)** snap switch), the direction locking extends the line to the intersection of the first locked line.

- if you snap to a point (for example, using **Snap to end points** or **Snap to mid points** snap switch), the point is projected perpendicular to the locked line.
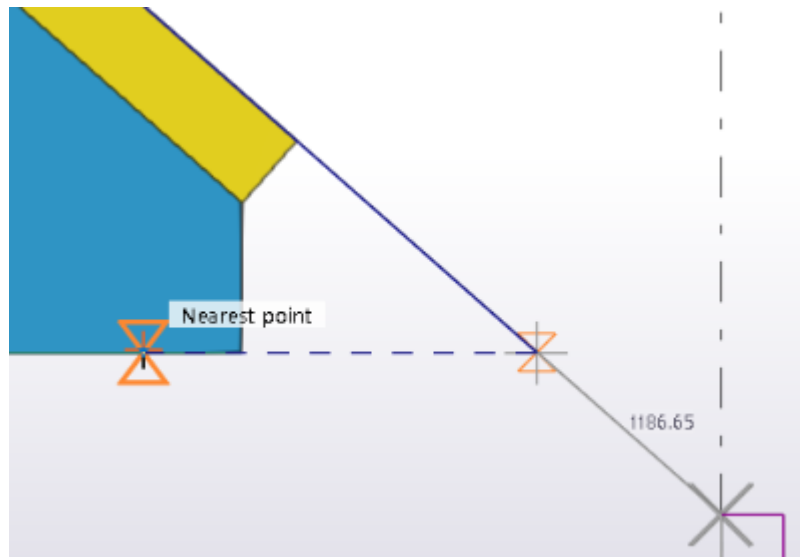
A perpendicular symbol is displayed when the snapped point is projected perpendicularly to the locked line.

5. Pick the first point.

6. To lock the direction for the second point to be picked, ensure that a snap switch that enables snapping either to lines (such as **Snap to nearest points (points on line)**) or to points (such as **Snap to end points** or **Snap to mid points**) is active.

7. When the snap symbol is visible, hold down the **Shift** key to lock the direction.

8. Pick the second point by snapping either to a point or a line, similarly as when picking the first point.

9. Continue to pick more points, if needed.

Note that the direction locking works only in modeling mode, not in drawings. Direction locking does not work with numeric snapping.

2.4 New clip boxes - focus on point clouds, reference model details and model details in the model views

With the new clip boxes in Tekla Structures 2025, you can isolate a specific area within a model by hiding the rest of the model.

Clip boxes enable you to focus on the required detail in the model, without the need to create multiple clip planes. You can isolate an area of the model

for closer inspection with one click. You can create one clip box per one model view.

With clip boxes, you can either

- create a clip box around a larger area of the model by picking a point in the model. The default size of a clip box is 5000 x 5000 x 5000 mm.

- create a clip box around a selected object in the model.

Additionally, you can now create clip planes and clip boxes only to reference model objects and point clouds by selecting the **Clip only reference objects** checkbox in **View** --> **Clipping**, or find the command in **Quick Launch**. When selected, the native Tekla Structures objects are not clipped. When the checkbox is cleared, clip planes and clip boxes in all views clip all objects.

This new **Clip only reference objects** option replaces the previously used advanced option **XS_DO_NOT_CLIP_NATIVE_OBJECTS_WITH_CLIP_PLANE**.

Create a clip box around a picked point

1. On the **View** tab, click **Clipping** --> **Clip box**, or find the command in **Quick Launch**.

2. In the model, pick the center point for the clip box.

   The clip box is created. The axis of the clip box follows the work plane.
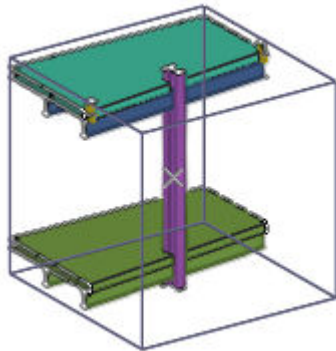
3. To change the position of the clip box, pick a new center point for the clip box.

4. To finish creating a clip box, press **Esc**.

5. To adjust the clip box size, select the clip box.

The direct modification handles appear to the clip box.
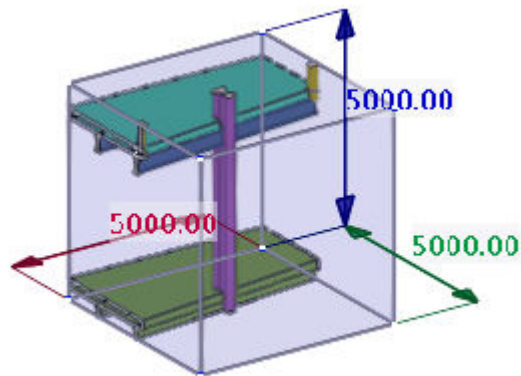
6. Drag any of the handles, or modify the dimension values.

Create a clip box around a selected object

In addition to the default sized clip box, you can create a clip box around a selected part, assembly, bolt, reinforcement, reference model, reference object, or buildings or spaces in building hierarchy. The clip box then contains only the selected object.

1. In the model, select the object you want to create the clip box around.

2. Right-click and select **Create clip box**.

    The clip box is created around the selected object. The orientation of the clip box follows the coordinate system of the selected object.
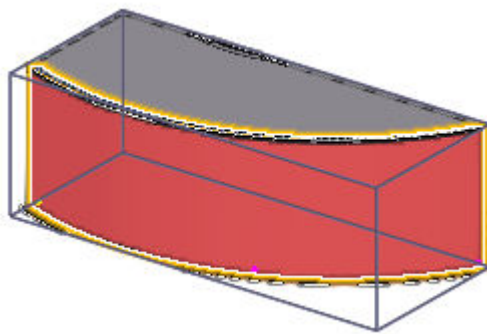
3. To adjust the clip box size, select the clip box.

The direct modification handles appear to the clip box.
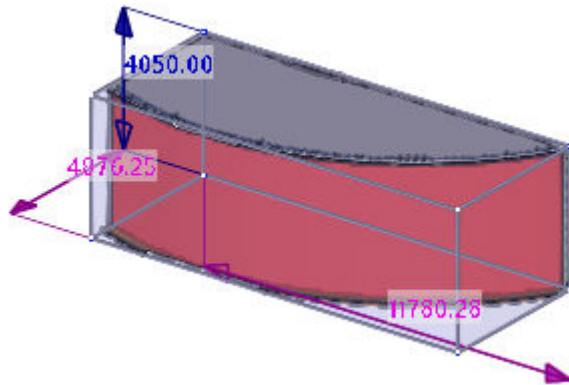
4. Drag any of the handles, or modify the dimension values.

2.5 Miscellaneous modeling improvements

Tekla Structures 2025 provides improvements in modeling functionalities.

Changes in copying properties in the property pane

When you copy properties in the property pane using the **Copy to clipboard** command, you can copy individual properties of an object to the clipboard. You can copy one or more properties to the clipboard and paste the properties to objects of the same type. After you have copied properties to the clipboard, and you place your mouse on the **Paste** button, Tekla Structures shows a preview of the properties that are about to be pasted.

Additionally, all user-defined attributes (UDAs), excluding unique UDAs, are copied with the object properties, also those which are not visible in the property pane.

These improvements were already introduced in Tekla Structures 2024 SP4.

Improvements in the DirectX rendering

The transparency handling in the default DirectX rendering has been improved, allowing you to see model objects more clearly, especially at close zoom levels.

- The frontmost face towards the camera now has higher priority, resulting in a clearer visual outcome.

- Dashed hidden lines fade away earlier than before, making transparent views easier to see.

In Tekla Structures 2025:
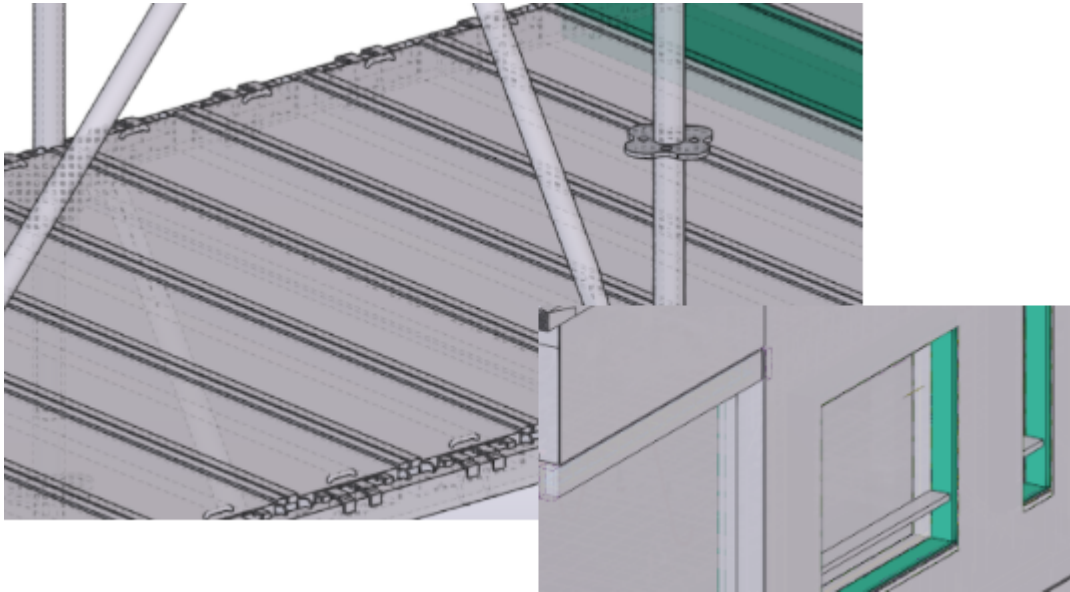
In Tekla Structures 2024:
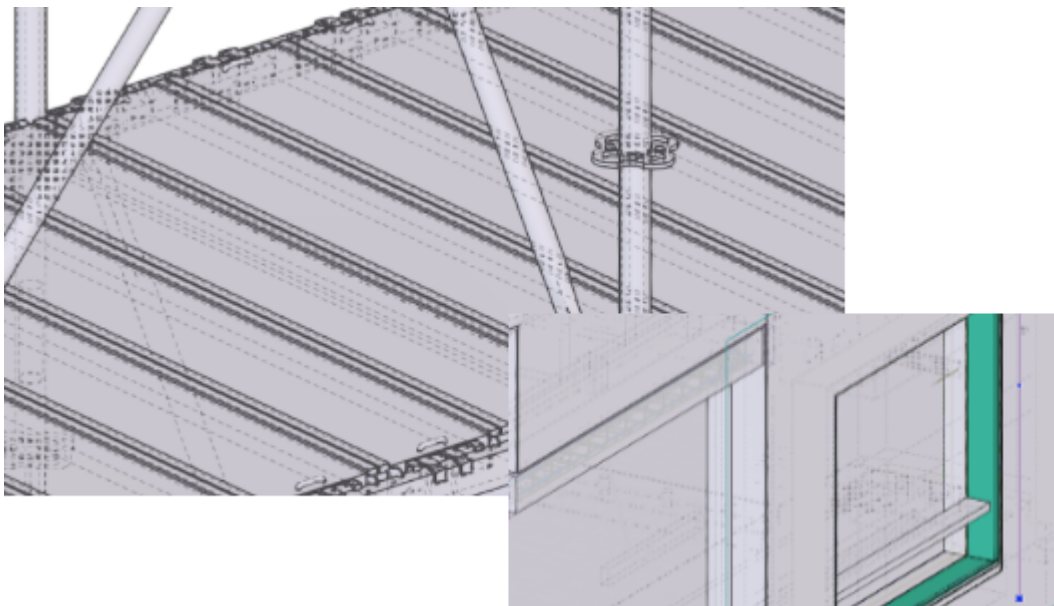
Main part consistency in cast units

To maintain consistency of main parts in cast units, the main part set by the user using **Set as new main part of assembly** now remains unchanged when parts are added to a cast unit or removed from a cast unit.

Previously, adding a new part to the cast unit would reset the main part to the part with the largest volume. To avoid any unwanted changes, the main part remains as manually defined.

Compare assemblies using the context menu

You can now select two assemblies or sub-assemblies, right-click, and then use the **Compare** command from the context menu to compare the assemblies.

Model view window layout is maintained after a drawing is closed

Now, when a drawing is closed, the layout of the model view window returns to the same state as before opening the drawing. Maximized or minimized views and their layout will be the same before and after a drawing is opened and closed.

Changes in key shortcuts for managing snap switches when dragging a direct modification handle

Previously, the **Shift** key was used to temporarily disable the snap switches when dragging a direct modification handle. Now, the **Alt** key is used for this instead.

Instead, the **Shift** key now locks the snapping direction when dragging a handle.

Changes in modifying your Tekla Structures setup in the File menu

Previously, your could change your Tekla Structures setup (environment, role, and configuration) in **File** --> **Settings** --> **License**.

In Tekla Structures 2025 the **License** area has been renamed to **Your current Tekla Structures setup**, and you can no longer change the setup but the information is now as displayed as text. You can change the setup when you start Tekla Structures.

3 What's new in drawings in Tekla Structures 2025

- Fabrication drawings - better, more extensive Smart create results
- Improved drawing automation - Better cloning and update of views and dimensions
- AI Cloud Fabrication drawings (Preview)
- Document manager improvements
- Enhancements in drawing colors and lines
- Merge new marks to existing merged marks
- Improvements in drawing property pane usability
- Other improvements in drawings

3.1 Fabrication drawings - better, more extensive Smart create results

In Tekla Structures 2025, you can use **Smart create** in fabrication drawings to automatically select the best matching drawing template or drawing settings file for any fabrication drawing type, including single-part drawings. Combined with several usability improvements, this feature now enables you to generate desired drawing content quickly and with minimum input.

The cloning functionality has also been improved to produce better automatic results, which helps you to keep your fabrication drawings more stable during project updates.

Best matching drawing templates for single-part drawings (W)

Smart create can now suggest best matching drawing templates also for the selected single parts.

[1001] PLATE	W		FAB-PLATE	
[b/4] BEAM	W		[b.2] BEAM	
[b/1] BEAM	W		FAB-BEAM	
[c/1] COLUMN	W		[c.2] COLUMN	
[S/1] SLAB	C		FAB-SLAB	
[C/10] COLUMN	C		Applied settings	
[C/11] COLUMN	C		Applied settings	
[FP/1] PAD FOOTING	C		Applied settings	
[C/5] COLUMN	A		[C.7] COLUMN	

Earlier, the best matching drawing template was suggested only for assemblies and cast units.

Best matching saved settings for all fabrication drawing types (A, C, W)

Smart create can now suggest best matching saved drawing settings found for the selected single parts, assemblies, and cast units. **Smart create** first looks for the best matching drawing template and if one is found, uses the saved settings that were used to create that template. If those are not found, the best matching saved settings based on the object name are used. If no top match is found, the applied settings are used. The saved settings are searched from the environment, model, firm, project, and company folders.

[C/3] COLUMN	A		COLUMN 1	
[C/1] COLUMN	A		COLUMN 1	
[C/2] COLUMN	A		COLUMN 1	
[B/4] BEAM	A		BEAM 1	
[S/1] SLAB	C		FAB-SLAB	
[1004]	W		welds	
[1001] PLATE	W		FAB-PLATE	
[b/1] BEAM	W		FAB-BEAM	

Earlier, only the best matching drawing template was suggested.

Quick creation of drawings using new intuitive Smart create switches

Tekla Structures 2025 provides a quick way to switch between different creation methods, which can be necessary for different model objects and drawing types. The creation methods are now readily available for selection as switches on the **Create fabrication drawing** ribbon menu and in the **Creation review** dialog. Now you can clearly see the methods that you have available and that you have selected.

The renewed **Create fabrication drawing** ribbon menu with the new switches, the **Template suggestion** switch is enabled by default:
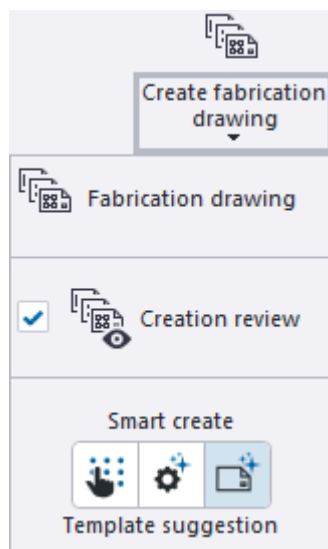
The new look of the **Creation review** dialog with new switches:
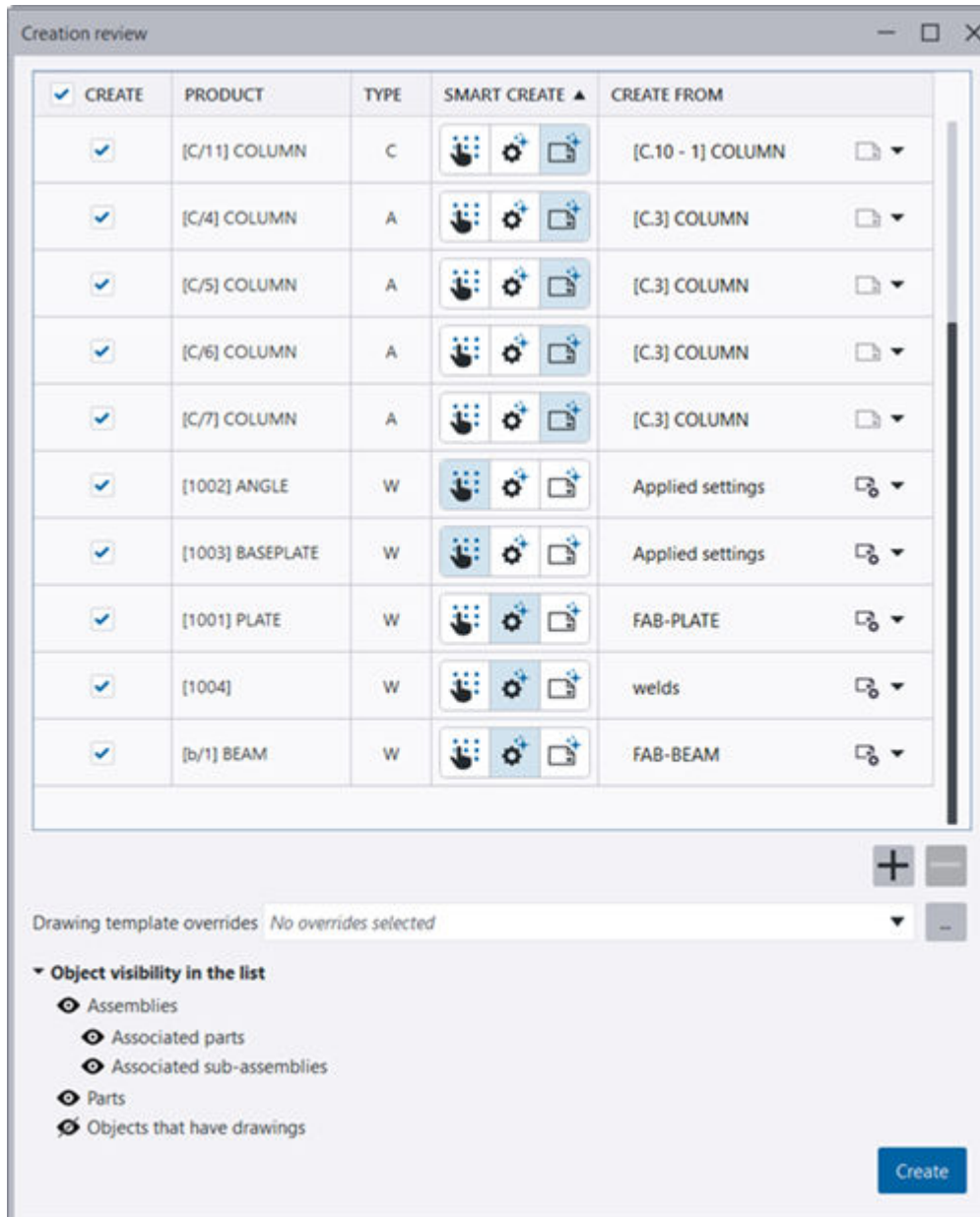
- To create drawings, select the model objects, and on the **Create fabrication drawing** ribbon menu, enable **Creation review** and select the desired **Smart create** switch. Then click the **Create fabrication drawing** command. In the **Creation review** dialog, refine your selection and click **Create** when ready.

- To change the **Smart create** creation method, click another switch in the **Smart create** column. The selection in the **Create from** column changes

accordingly, and the displayed information indicates the selected creation method.

Smart create column	Create from column
Template suggestion	`Template drawing name` **Template suggestion** looks for the best matching drawing template based on the product geometry and properties. This is the default **Smart create** option. When a drawing has been created using a drawing template, the new **Document manager** column **Cloning source** indicates which drawing has been used as the drawing template.
Settings suggestion	`Settings file name` **Settings suggestion** looks for the best matching drawing template and if one is found, uses the saved settings that were used to create that template. If those are not found, the best matching saved settings based on the object name are used.
Manual selection	`Applied settings` **Manual selection** uses the applied settings by default.

- In the beginning of the project, when no drawing templates are available, you can use **Template suggestion**, because the system will automatically look for a saved settings match if no template match is available.

  Previously, **Smart create** could not suggest any creation source in the beginning of the project, and you had to select the source settings manually by going through the settings list in the **Creation review** dialog.

- If no drawing template match is found, the system automatically looks for the best matching saved settings, and if no saved settings match is found, applied settings are suggested.

Three top matches suggested

Smart create now lists up to three best matching drawing templates and best matching saved settings for the selected model objects.

Three best matching drawing templates:

Three best matching saved settings:

Earlier, only one best matching drawing template was suggested.

New drawing template preview

The new drawing template preview allows you to better evaluate which of the suggested drawing templates suits your needs the best. The prerequisite for showing the preview is that you have saved a snapshot of the template drawing. Previews are also shown for drawing templates in other models, and you can preview the drawing templates without opening the model.

- To show the preview, *hover over* the icon of the drawing template in the **Create from** column.

- To open the preview in the snapshot window, where you can zoom the preview, *click* the icon.

Preview:

Snapshot window:

Settings files cannot be previewed as they are not drawings.

Other improvements in Creation review dialog

*   You can now add more model objects in the list of objects when the **Creation review** dialog is open. To do this, select the desired objects in the model and click the new ➕ **Add selected objects** button. Drawing creation options will be suggested for the new objects immediately. To remove objects from the object list, select the object row and click the new ➖ remove button.

*   In the **Creation review** dialog, the **Create** button is now disabled if you have not selected any objects or if your selections are not valid.

*   In the **Creation review** dialog, the objects that already have drawings now have a status icon 🗋 in the **Create** column and a tooltip telling that the drawing already exists.

3.2 Improved drawing automation - Better cloning and update of views and dimensions

Tekla Structures 2025 provides improvements in drawing cloning and updates particularly in respect to placing the dimensions and drawing views.

- The view placement logic has been improved to prevent the view overlapping, misalignment, and the placing of views outside the drawing frame. The views in the drawings are now placed similarly to how they were placed in the template drawings. Also, the relative location of the section views is now respected. Earlier, there were a lot of view overlapping issues and cases where views were placed outside the drawing sheet, resulting in extra work to clean up the drawings.

- The dimension placement logic and the mechanism to avoid dimension overlapping with other texts have been improved, and now the dimensions in the cloned drawings are placed similarly to how they were placed in the template drawings. The bolt object dimensioning logic at drawing update has also been improved. Earlier, the dimensions were not always placed in cloned drawings according to the original placement pattern used in the template drawing, which caused extra work when dimensions had to be moved to appropriate locations.

Due to the improvements in the drawing cloning and updates, the following Tekla Structures features now work more reliably and with better results:

- **Smart create** in fabrication drawing creation
- Cloning through **Document manager**
- Generic drawing update behavior caused by changes in the model

Examples of improvements

Example 1a: Before

The dimension order is incorrect with irregular distances between dimension lines.
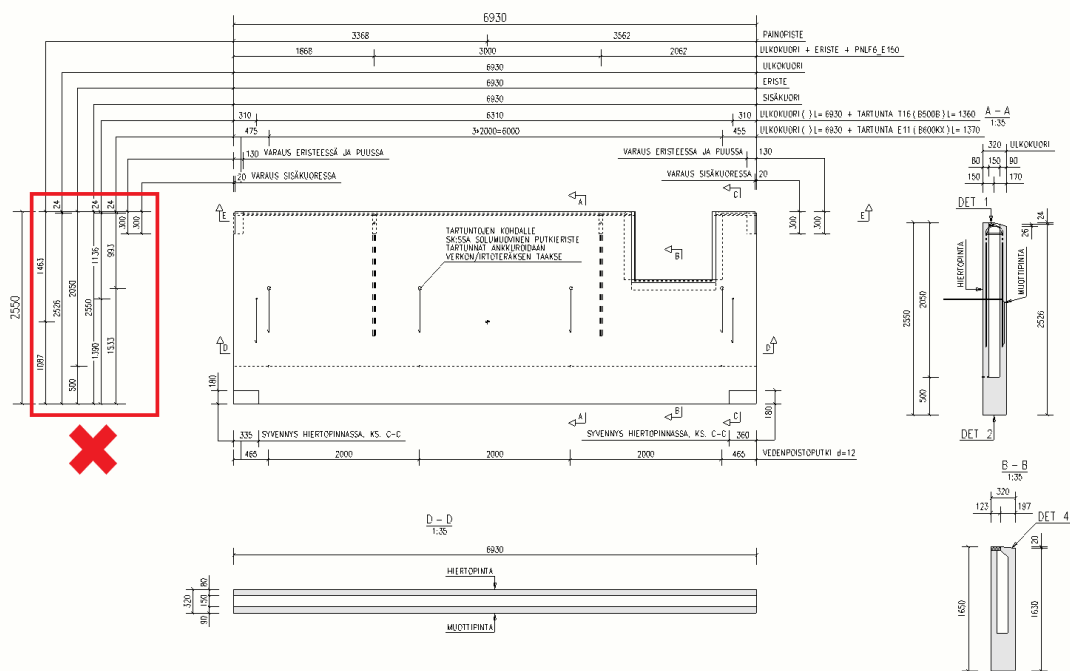
Example 1b: After

The dimension order is correct with regular intervals between dimension lines.
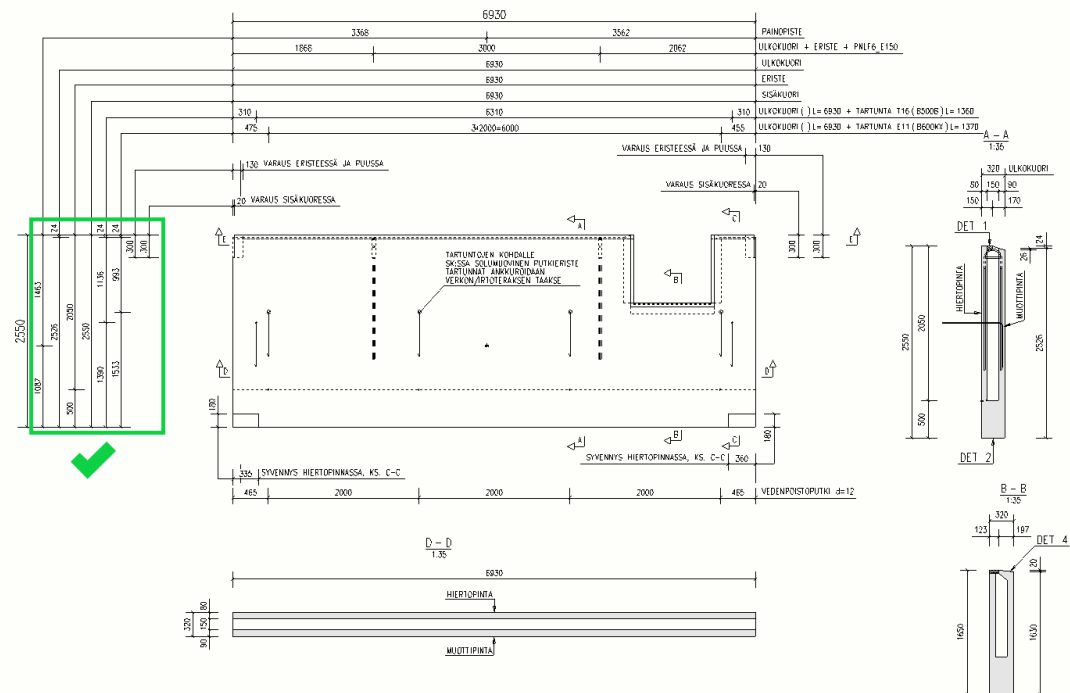
Example 2a: Before

Main views and section views are overlapping.
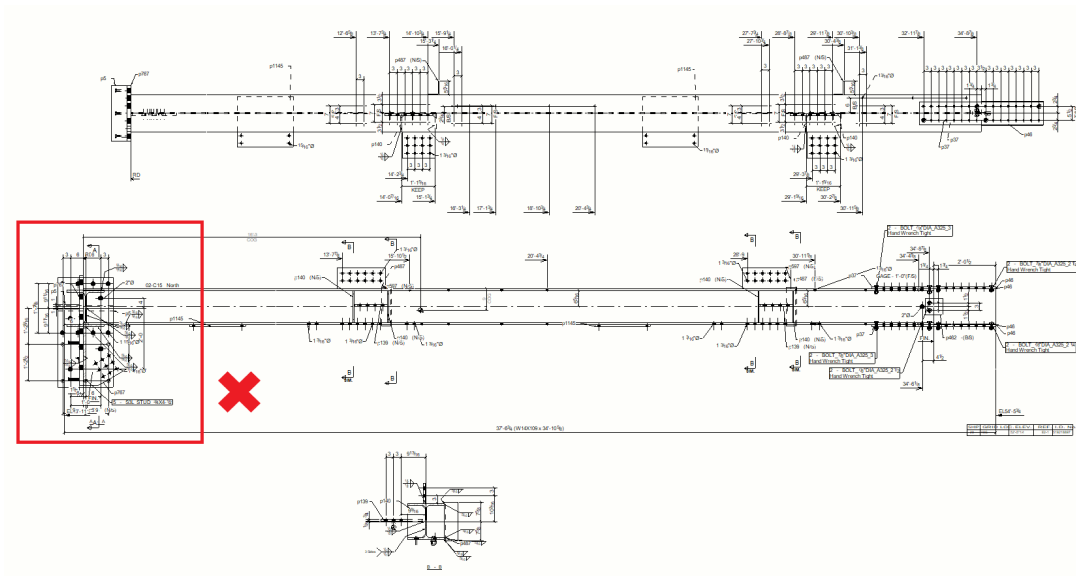
Example 2b: **After**

Views are aligned and placed without overlapping.
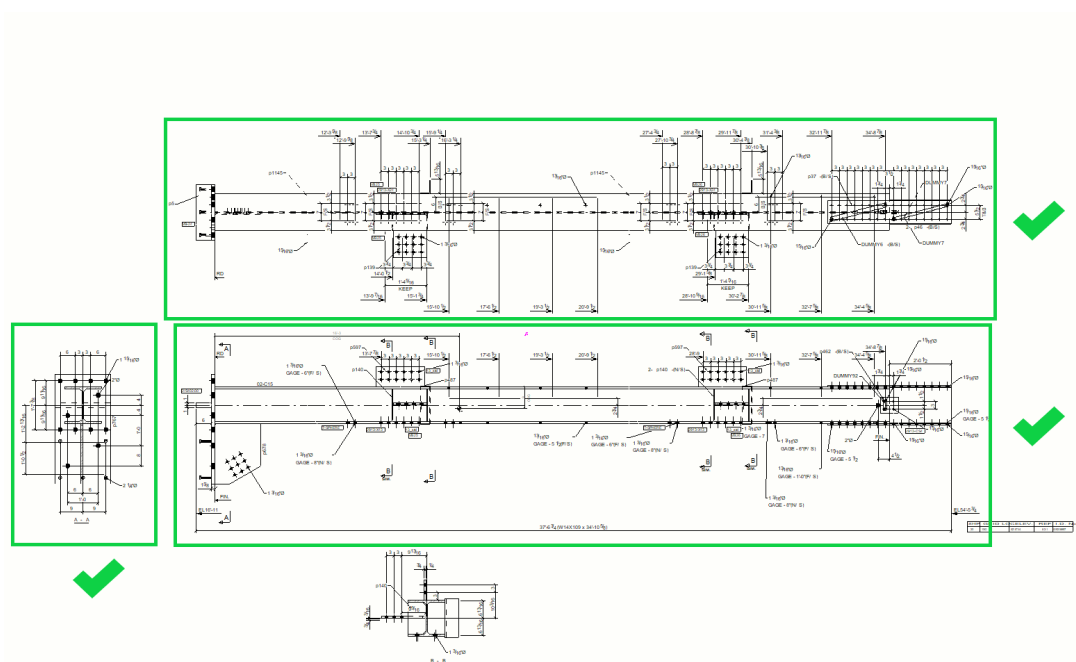
Example 3a: **Before**

The dimension order is incorrect with irregular intervals between dimension lines.

Example 3b: After

The dimension order is correct with regular intervals between dimension lines.
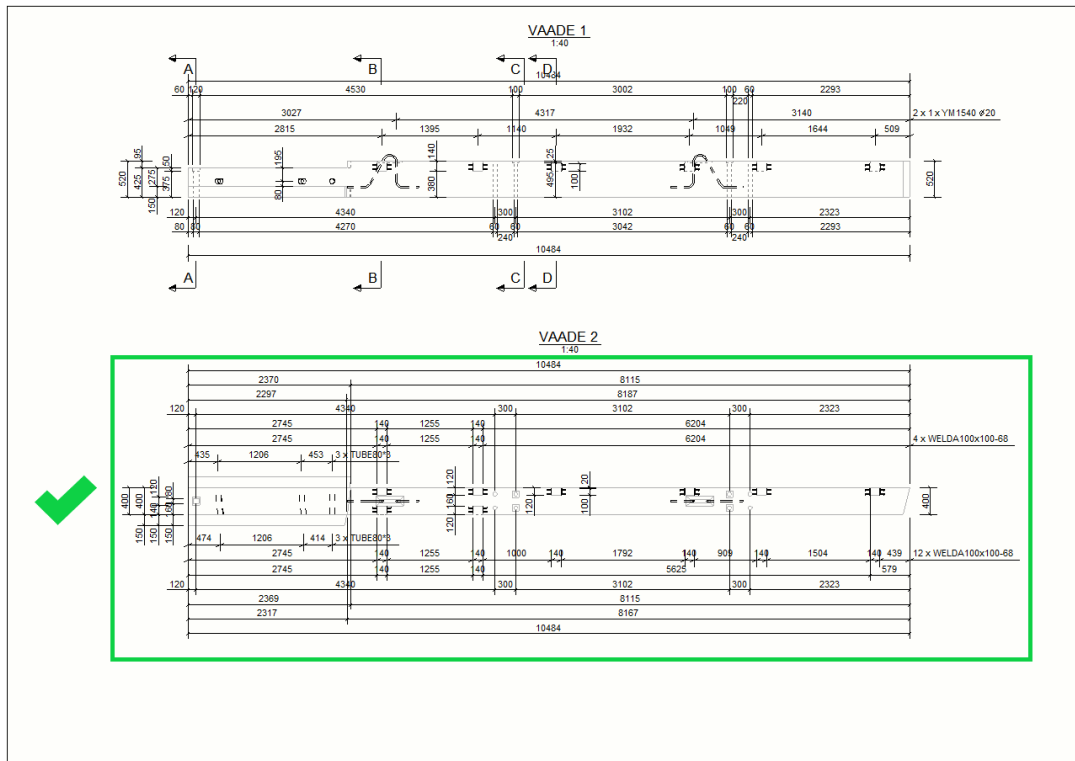
Example 4a: Before

The dimension order is incorrect, and some marks overlap with other objects.
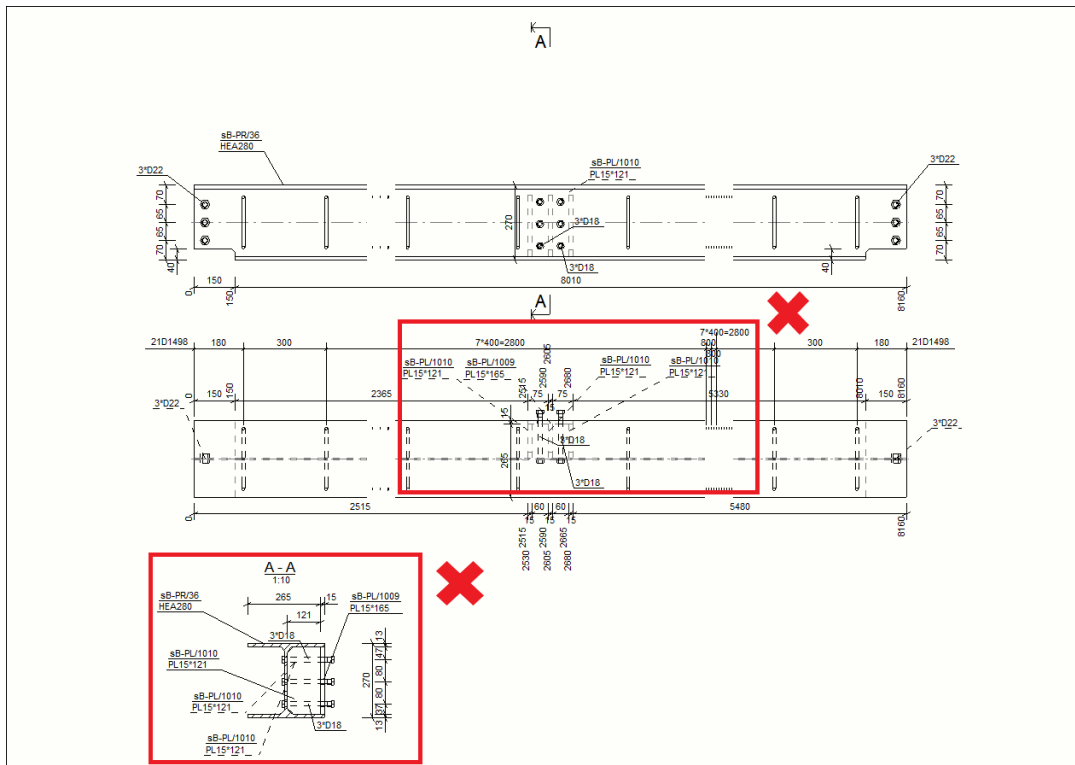
Example 4b: After

The dimension order is correct, and marks are placed without overlapping.
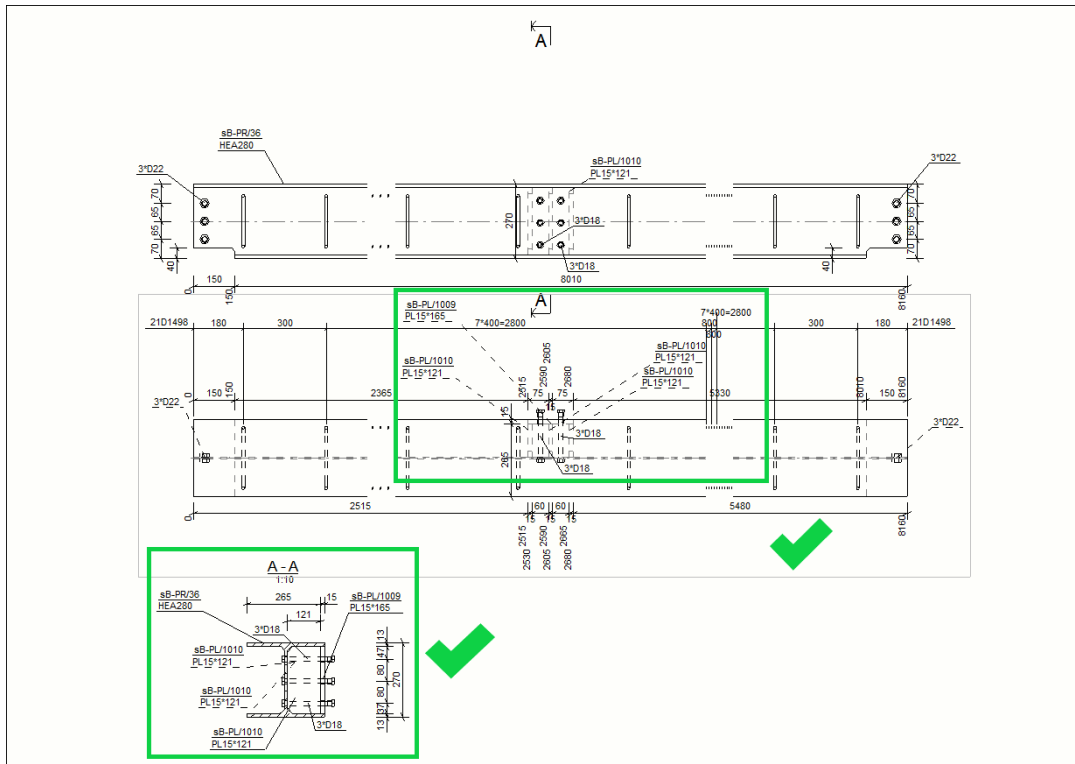
Other improvements in cloning and updates

- Knock-off dimensions are now preserved better in cloning.

- Handling radial dimensions in drawing update and drawing cloning has been improved.

- Earlier, in cloned drawing views, manually created dimensions for rebar objects or embeds could be non-associative in certain cases. This issue has now been fixed.

- In cloning, the detail views are no longer associated to objects that do not exist in the view.

3.3 AI Cloud Fabrication drawings (Preview)

The AI Cloud Fabrication drawings feature is a new, advanced way of creating fabrication drawings in Tekla Structures. This feature creates new fabrication drawings based on finalized fabrication drawings from previous projects, which have been uploaded to a cloud collection owned by your organization. Artificial Intelligence (AI) is used when classifying drawings into libraries inside the cloud collection and when looking for the best matching drawing to be used in the drawing creation.

Classification   Matching

Drawings

Cloud Collection

New drawing
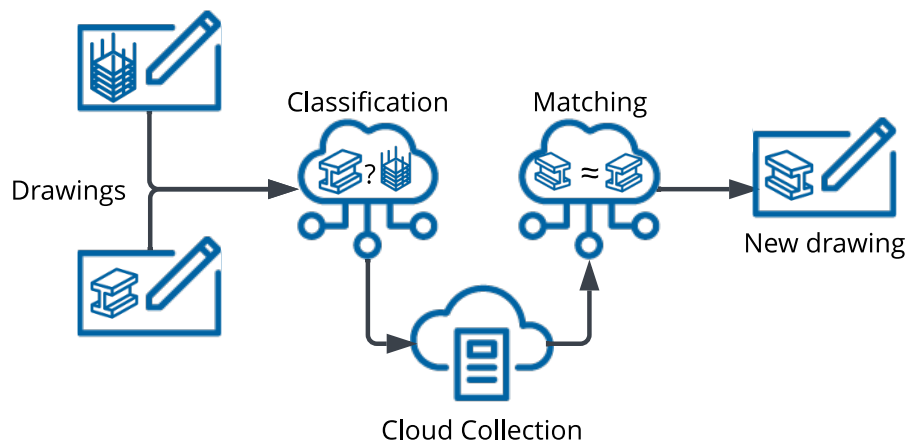
With this feature, you can create assembly and cast unit drawings. Single-part drawings cannot be created using the AI and fabrication drawing cloud collections but they can be created using the applied settings or other locally saved settings.

Unlike the traditional ways of creating fabrication drawings using cloning, the AI Cloud Fabrication drawings feature does not rely only on drawing templates available locally, but allows you to easily access thousands of drawings from your company's previous projects stored in a secure cloud space. You can create drawings either from the best matching drawing templates using cloning or from the settings used by the best matching drawings. The larger availability and variety of drawing templates and saved settings, enhanced by the power of AI to help find the best match, gives you the potential for better drawing results, increased productivity, and reduced amount of time spent editing drawings. The workflow is simple and user-friendly, which ensures a smooth learning curve. All you need is an internet connection and a suitable license. For details about licenses that have the AI Cloud Fabrication drawings feature enabled, see Supported Preview features by license.

Tekla Structures version 2025 introduces the AI Cloud Fabrication drawings functionality as a Preview feature. To find out more, see Why Preview? in "Create fabrication drawings using AI and cloud collections (Preview)" under Create drawings.

Create fabrication drawings using AI and cloud libraries

To create drawings using this feature, you need to have a collection of drawings in the cloud. The service can learn from your previous drawings, so the more drawings you add to your collection the better the results.

• Select the assemblies or cast units in the model and, on the **Drawings & reports** ribbon tab, click **AI Cloud Fabrication drawings**.

You can also start the command from the context menu, contextual toolbar, or **Quick Launch**.

The **Creation review** dialog is displayed.
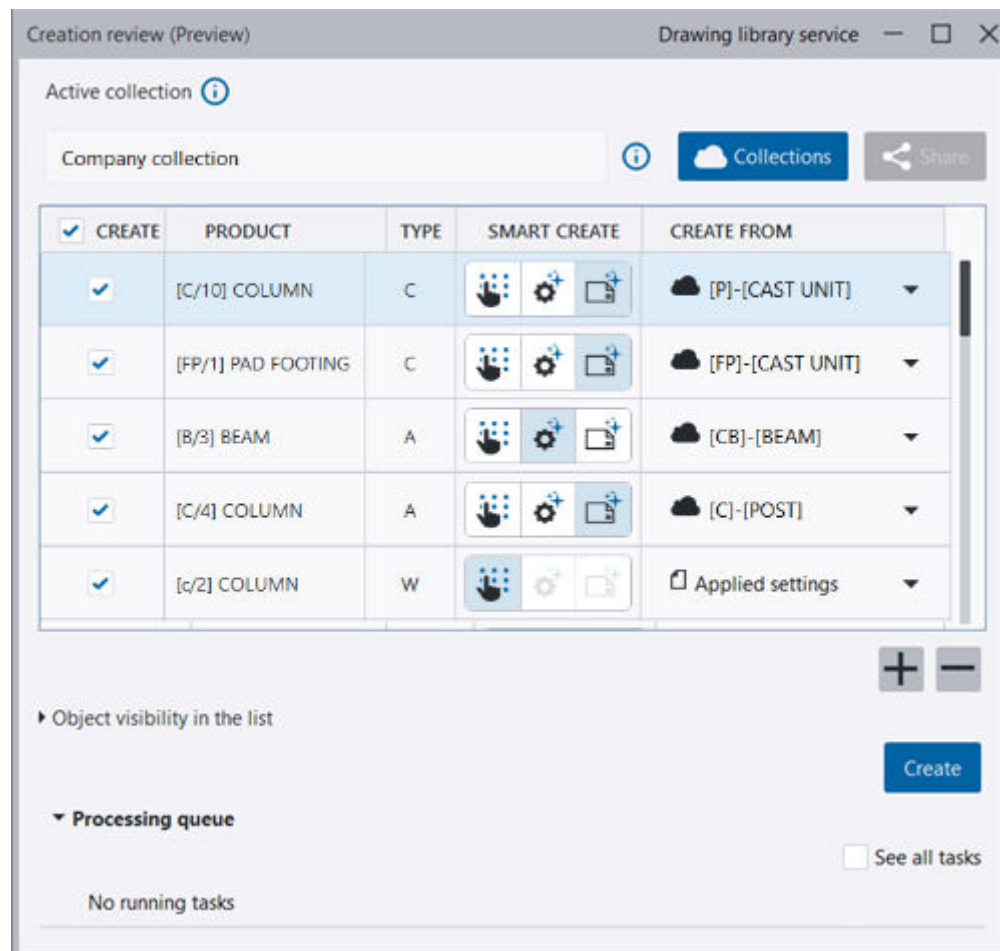
- You can change your **Smart create** selection:

   (manual selection): This option uses the applied settings by default, but you can select any saved settings. This is the only option available for single parts.

   (settings suggestion): This option looks for the best matching library in the active collection. Drawings will be created from the settings used by the best matching drawing found in this library.

 (template suggestion): This option looks for the best matching library in the active collection. Drawings will be created by cloning from the best matching drawing template found in this library.

If you selected template or settings suggestion, AI analyzes the properties of the selected objects, looks for a library within the active cloud collection with the properties that look closest to the properties of the selected assemblies and cast units, and suggests a library. If the feature does not find a suitable library in the collection, a notification is displayed. For these objects, you can select a library manually. If you do not select another library, a drawing will be created using the applied settings.

- Add objects in the object list while the dialog is open: Using the **Select assemblies** switch on the selection toolbar, select the objects in the model, and click the plus button . To delete objects from the list, select the objects and click the minus button .

- Click **Create** to create the drawings. AI looks for the best matching drawings (drawing templates or saved settings) in the selected library, and uses those as a source to produce new drawings. Click **Import** to download the created drawings from the cloud to **Document manager**.

  If you selected (manual selection) or if the applied settings were automatically selected, drawings are created based on the applied settings or other saved settings that you selected.

  The **Create** button is disabled if you have not selected any objects or if your selections are not valid.

The **Document manager** has some new data shown related to the usage of AI Cloud Fabrication drawings. For more information, see Document manager improvements (page 46) in the release notes.

Manage collections and libraries

A fabrication drawing cloud collection contains finalized fabrication drawings or drawing settings from previous projects. Drawings have been added to the cloud collection of your organization by the collection editors. You may have an editor or a viewer role in a collection.

- To access the **Collections** dialog, click **Collections** on the **AI Cloud Fabrication drawings** ribbon menu.

  You can also click the **Collections** button in the **Creation review** dialog.

  The active collection is displayed at the top. You can change it by selecting another collection from the list.
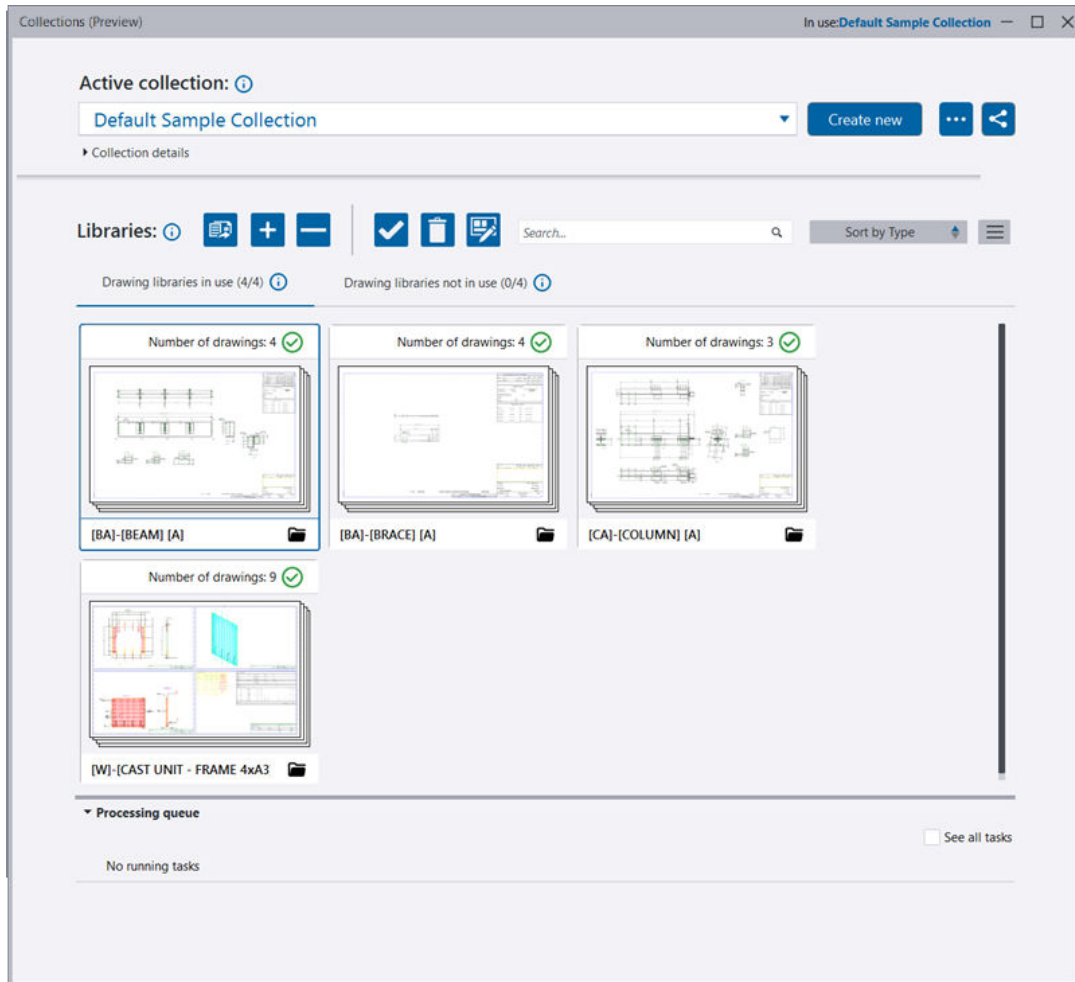
Collection editors can do the following in the **Collections** dialog:

- See collection details (creator, creation date, modification date, your role type, and collection descriptions) and the models from which drawings were added to the active collection, and modify the collection description. Search is also available.

- **Create new**: Create a new collection.

- ![icon] Rename, duplicate, or remove the active collection.

- ![icon] Manage access to the active collection. If you are not allowed to manage the access to the active collection, the button is dimmed.

- ![icon] ![icon] ![icon] Add drawings to and remove drawings from the collection.

  When you add drawings, AI analyzes the drawings and classifies the drawings into libraries within the active cloud collection based on how similar the properties of the cast units or assemblies behind the drawings are. Similarity is based on a predefined list of cast unit or assembly properties (weight, profile, name, volume, UDAs, etc). For example, column

drawings are classified into one library and beam drawings into another. After adding the drawings, **Review** the libraries and **Accept** the upload of the drawings.

- Activate or inactive the selected library, delete the selected library, or assign a new drawing layout for the selected library so that all drawings that are created using a drawing in this library will be created with the selected layout.

- Control the collection appearance: select between the list or icon view and select the desired icon size and color mode.

- Manage library content: View the drawings in the library, merge libraries, move drawings to a new or another library, remove drawings from the library, or override drawing layouts and sizes for drawings created using the drawings in a library.

- Use search to filter libraries.

- Sort the library view by the name, type, total drawing number, creation date, or the modification date.

Collection viewers are limited to actions related to the drawing creation only, such as activating and deactivating libraries and changing the assigned layout of a library. Unavailable actions appear dimmed.

Access to service and collections

You can manage access to collections as well as change user roles within the collection in the online AI Cloud Fabrication Drawings Management Console.

In the Management Console, only organization administrators and collection editors can give access to a collection, or change a user's role in a collection. Additionally, the organization administrators can also see all users in their company that have access to all collections owned by the company.

The access to collections is based on an invitation system. In the console, organization administrators and collection editors can invite either their entire organization or individual users, both internal and external. Everyone invited to a collection has either an editor role or a viewer role.

When using the AI Cloud Fabrication Drawings feature in Tekla Structures, editors have access to all functionalities and can invite others to join a collection. Viewers are limited to creating drawings from collections.

- To access the Management Console from inside Tekla Structures, in the

  Collections dialog or in the **Creation review** dialog, click **Share**.

  The following example shows a list of users who can access the active collection:

- To access the Management Console directly in a browser, go to https://console.permissions.tekla.com/collections.

  The following example shows a list of all collections the user can access:

Limitations

- AI Cloud Fabrication drawings does not support the creation or upload of general arrangement drawings or multidrawings. Single-part drawings can only be created using the applied settings or other local settings.

- The drawing creator needs to have access to the drawing layout file and associated template files used by the drawing in the collection. If the files are missing, the drawing will not contain all the information of the template, such as title blocks or other tables. Therefore, we recommend

that you use the same environment to create drawings that was used to upload the drawings to a cloud collection.

- The **Smart create overrides** functionality is not available in the **Creation review** dialog for AI Cloud Fabrication drawings.
- You cannot create empty libraries.

3.4 Document manager improvements

In Tekla Structures version 2025, the functionality of some **Document manager** buttons has been improved, and there are also changes in drawing status flags, columns, and messages.

Some buttons now enabled in drawing editing mode

Revising, locking, freezing, issuing, and marking ready for issuing

The **Revision** button and the command buttons for locking or unlocking, freezing or unfreezing, issuing or unissuing, and marking or unmarking ready for issuing are now available also in drawing editing mode. Previously, these buttons where not available when you had a drawing open, and you could not use these commands.

Finding drawings associated to selected model objects

The **Select and show only drawings containing parts currently selected in the model** button is now available also in drawing editing mode. Previously, this button was disabled when you had a drawing open.

New and updated columns and status flags

- The new column **Cloning source** indicates which drawing was used as the drawing template.

- The new cloud flag ☁ in the new **In collection** column indicates that the current version of the fabrication drawing is available in the currently active fabrication drawing cloud collection.

- The new status flag 🖼 in the **Up to date** column indicates that a drawing has been cloned from a cloud drawing.

- In the **Changes** column there is a new message for fabrication drawings created from drawing templates in cloud collections: **Drawing was cloned from cloud**.

- The general arrangement drawings are now excluded from the numbering status check. Previously, the numbering status was shown in the **Changes** column also for general arrangement drawings, even though it is not needed.

- More colors were added to the status flag icons in the **Up to date** column to help you to better identify whether drawings are up to date.

Icon	Description
	Quantity increased
	Quantity decreased
	Parts modified
	All parts deleted
	Drawing updated
	Drawing was cloned
	Drawing was cloned from cloud

Multinumbering and multidrawing improvements

Drawing marks for multidrawings correct in Document manager

When you used multinumbering and created multidrawings from existing drawings, showing a correct drawing mark required re-opening **Document manager**. This issue has now been fixed and **Document manager** shows correct marks when the multidrawings have been created.

This improvement was already introduced in Tekla Structures 2024 SP2.

Multinumbering and multidrawings work again

When you added an assembly drawing to a multidrawing, **Document manager** did not show or update the single-part and assembly marks correctly.

If you performed renumbering after creating the multidrawing, the assembly drawings became obsolete, showing a quantity of zero, and lost the connection to the model objects. Assembly numbers were correct in the model, but the drawing link was broken, and using the repair numbering command did not fix it. This issue has now been fixed and multinumbering and multidrawings work again correctly.

This improvement was already introduced in Tekla Structures 2024 SP2.

3.5 Enhancements in drawing colors and lines

In Tekla Structures 2025, you can define specific colors and line types for individual drawing object elements for parts and neighbor parts so that you can efficiently produce the required project drawings to the necessary specification. You can now specify exactly how section lines, own hidden lines, and center lines are output in drawings, and control drawing line end shapes in PDFs. There are also other enhancements in drawing colors.

More control over part lines in drawings

New properties for color and type of section lines, own hidden lines, and center lines

You can now control the color and type of section lines, own hidden lines, and center lines for parts and neighbor parts in drawings through the object and view level properties. In general arrangement (GA) drawings, you can also manage these properties through the drawing level properties. The new line properties support both standard colors and custom RGB colors.

New line controls in the part properties in the property pane:
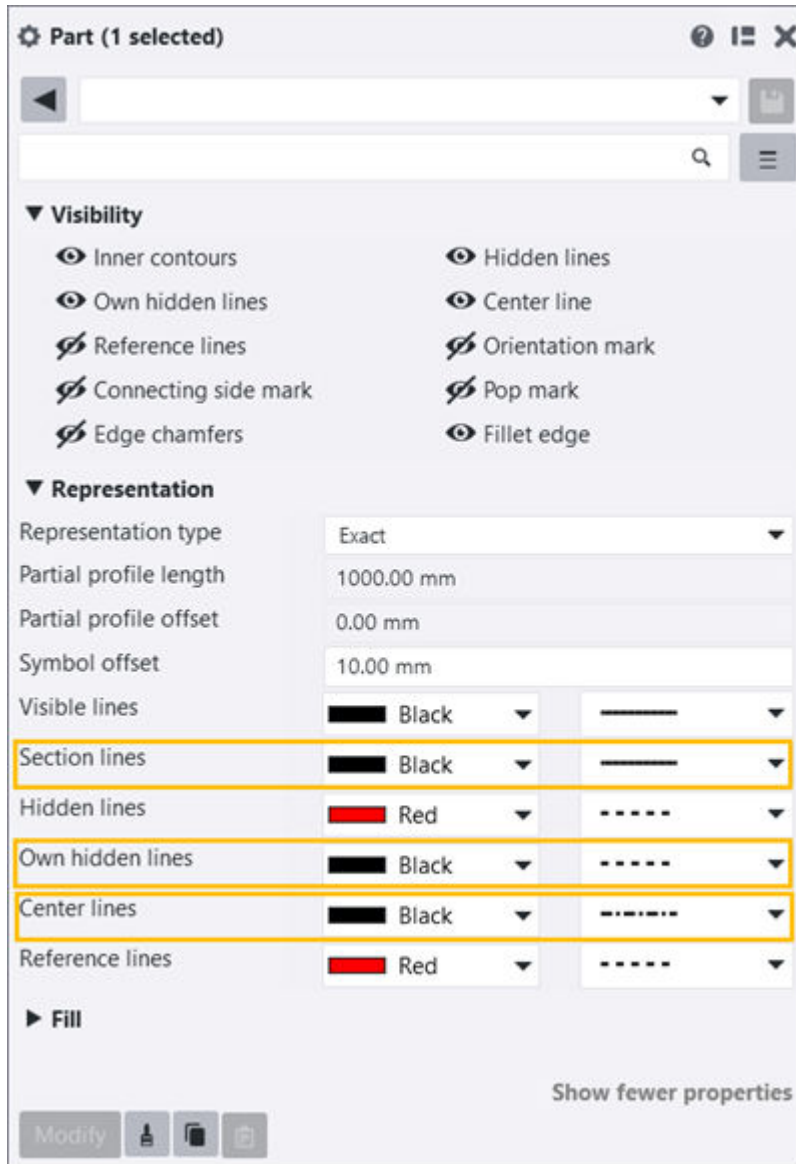
New line controls in the part properties on the view and drawing level:
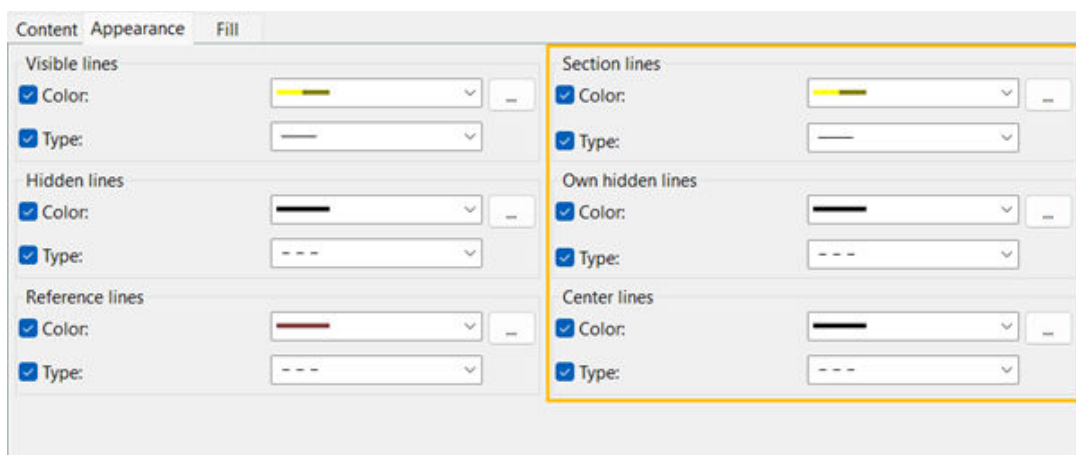
Example of drawing lines shown with different colors and types:
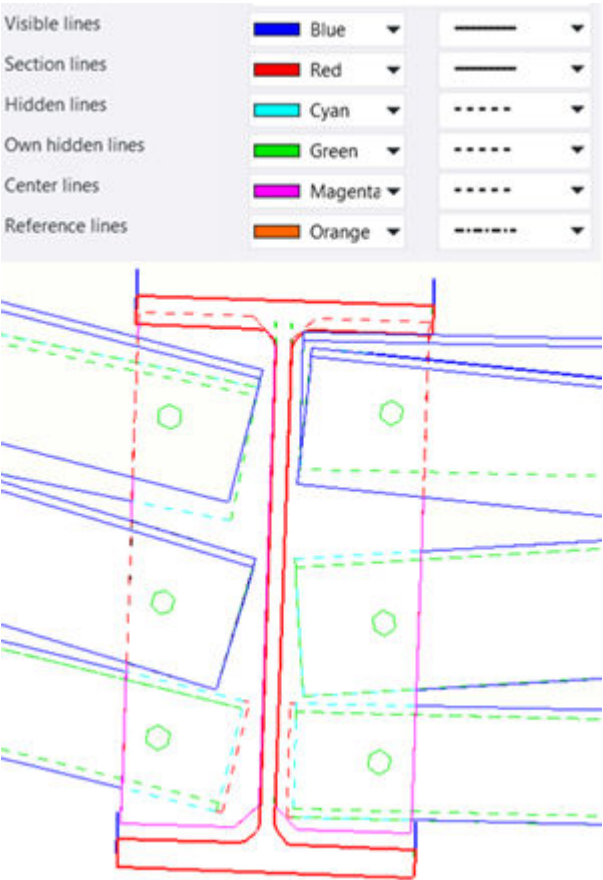
You can also apply the new line properties through detailed object level settings:
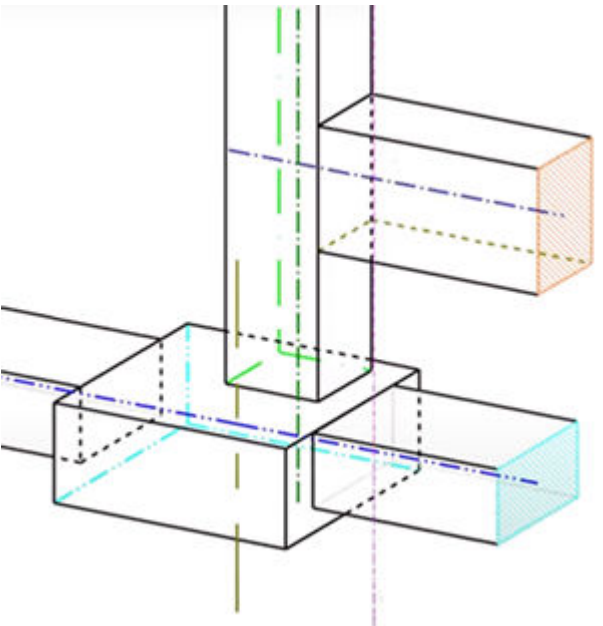
Why are new line properties needed?

- The section line color may need to be different based on the part material. The selected color also affects the section line thickness in the output.

- A part may require a center line that is different in type or thickness.

- Controlling hidden and own hidden lines separately is sometimes necessary to ensure a clear distinction between recesses, embeds, and other hidden objects.

Previously, you could only control individually the color and type of visible lines, hidden lines, and reference lines for parts and neighbor parts, but not those of section lines, own hidden lines, or center lines. The **Hidden lines** property also affected own hidden lines. Also, you could only adjust the center line type and section line color using advanced options. The advanced options listed below are still supported, and they override the new line properties set in the drawing, view, or object level properties:

- XS_CENTER_LINE_TYPE

- XS_SECTION_LINE_COLOR_RGB

Own hidden lines available in DWG/DXF/DGN export presentation filtering

A new option, **Own hidden lines**, has been added to the **Presentation filtering** list in the **Export drawings as DWG/DXF/DGN** dialog allowing you to map own hidden lines to a different layer/level.
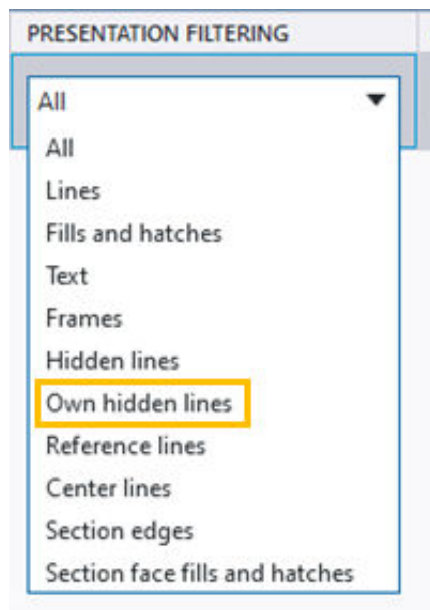
Open API support

Open API now supports the new properties for drawing part and neighbor part lines: **Section lines**, **Own hidden lines**, and **Center line**.

Limitations

The following features do not support the new line properties:

- Old fabrication drawing property dialogs (visible when `XS_USE_OLD_DRAWING_CREATION_SETTINGS` is set to `TRUE`)

- The old object-level drawing part property dialog available through **Quick Launch** only

- Contextual toolbar

Other updates in drawing colors

Printing Special color hatches in old drawings

In Tekla Structures 2024, when you printed drawings that were created in Tekla Structures versions older than 2024 using **Black and white** or **Tekla Grayscale** printing color mode, the Special color used in hatches in the old drawings was printed as black, hiding all the overlapping lines and markings. In previous Tekla Structures versions, a Special color could be defined for hatches using the advanced options XS_HATCH_SPECIAL_COLOR_R, XS_HATCH_SPECIAL_COLOR_G, and XS_HATCH_SPECIAL_COLOR_B. This issue has now been fixed and the Special color is shown correctly in all printing color modes.

This improvement was already introduced in Tekla Structures 2024 SP1.

Drawing color palette - New location for Invisible and None

The **Invisible** and **None** color options are now located at the end of the standard color list in the color palette. Earlier, they were located at the beginning. **Invisible** and **None** may or may not be shown in the color palette depending on where you open the color palette, and previously, the position of other colors could change. Now when the location of the colors no longer changes, selecting colors is more efficient.

This improvement was already introduced in Tekla Structures 2024 SP1.

New button for creating a new color palette file

The color palette has a new button, **Create a new color palette file**, for creating a new, empty color palette. The new button is located at the bottom of the color palette dialog, and it is active in color editing mode.
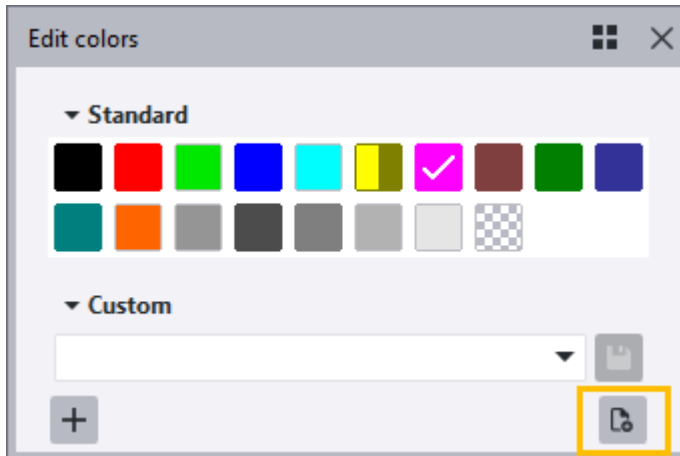
- The **Create a new color palette file** button removes all custom colors from the color list and clears the color palette file name, so that you can start creating the new palette from scratch.

- To prevent accidental emptying of the color list, the button is not active when there are unsaved changes in the color palette dialog.

This improvement was already introduced in Tekla Structures 2024 SP2.

Color palette state is now shared

The state of the color palette, meaning the color palette view mode (grid or list) and the collapsed or expanded state of the **Standard** and **Custom** color categories, is now shared between all the locations where you can open the color palette and between color editing and selecting modes. The state of the color palette is also shared between Tekla Structures sessions, automatically showing the state that the color palette was in when you restart Tekla Structures.

This improvement was already introduced in Tekla Structures 2024 SP2.

New custom RGB colors to pattern lines

Now you can also apply custom RGB colors to the pattern lines that you add in drawings using the **Pattern line** command. Pattern lines are special and complex lines that you can easily create and apply to drawings. To use custom colors when adding pattern lines, click the browse button in the **Pattern line properties** and select a color from a custom color palette.
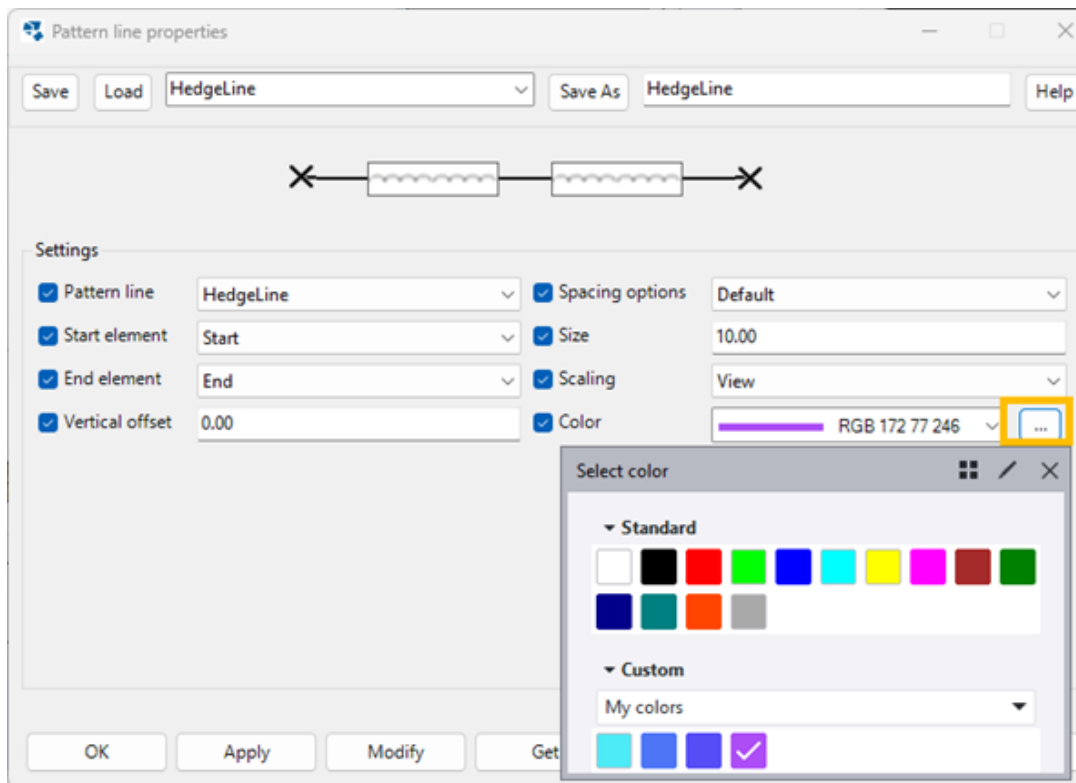
Custom colors are available for selection when you are adding pattern lines in the drawing using the **Pattern line** command, but not when you are creating the line patterns in the **Pattern line editor**.

This improvement was already introduced in Tekla Structures 2024 SP3.

Adjust line end shapes in PDFs

In PDF drawings, corners in lines did not always meet drawing standards.

Now you can use the new advanced option, `XS_DRAWINGS_LINE_CAP_STYLE`, to adjust the shape of the line ends in PDF printouts by defining the line cap style. Enter one of the following values:

0 = Lines break in corners. This is the default value and the old way of printing the line ends.

1 = Round corners (recommended)

2 = Rectangular corners

`XS_DRAWINGS_LINE_CAP_STYLE` is located in the **Printing** category of the **Advanced options** dialog.

Value 0:
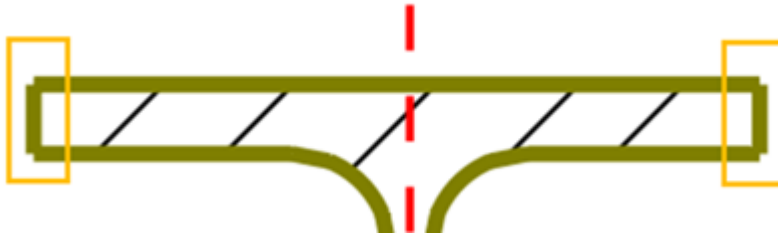
Value 1:
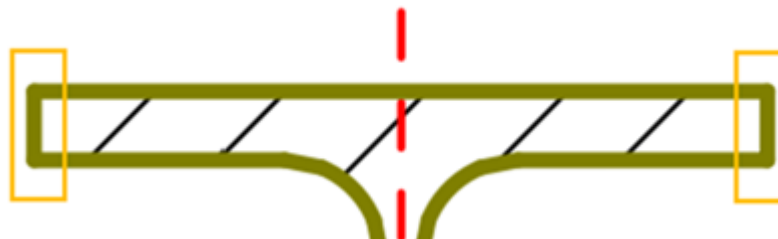
Value 2:
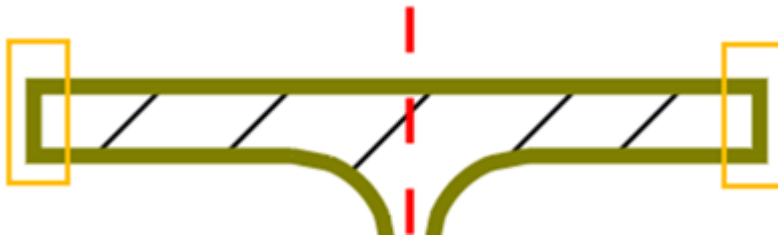
This improvement was already introduced in Tekla Structures 2024 SP4.

3.6 Merge new marks to existing merged marks

Merging part, bolt, reinforcement, or weld marks in drawings is a widely used feature. There is now more flexibility in merging new marks into existing merged marks, and you no longer need to split the existing merged marks first to be able to merge a new mark.

When you select existing merged marks, the **Merge** command is now available in the context menu allowing you to merge new marks to the merged marks, keeping the original position of the merged marks.

- To merge a new mark into existing merged marks, select the new mark, then right-click the merged marks and select **Merge**.
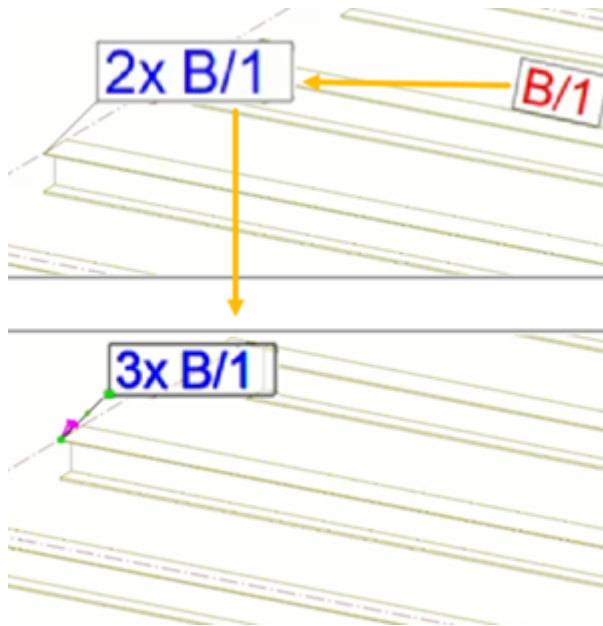
If marks are merged so that you select one set of merged marks, all the selected single marks are merged into that set of merged marks. If you select multiple sets of merged marks, all the selected single marks are merged into the set of merged marks that you selected last.

3.7 Improvements in drawing property pane usability

In Tekla Structures 2025, there are some important usability improvements in the drawing property pane related to **Text** elements and view labels.

- **Text** element editing is much easier and more consistent.

- The positioning properties for the **Text** elements in section view labels that you defined when you created the section view are now applied properly.

- The detail mark, section mark, and view label container interaction and editing is smoother and more intuitive.

- When creating a section view, only the section view label editor can now be used, and the view label editor is disabled.

3.8 Other improvements in drawings

Tekla Structures 2025 also includes enhancements in the performance of opening the drawing property dialogs, detailed object-level settings, drawing dimensioning, drawing notes and marks, pull-out pictures, drawing rebar mesh views, section and detail view labels, hatch patterns, and in the 2D Library.

Faster drawing dialogs

Opening drawing view properties significantly faster

The drawing **View Properties** dialog is now cached when you open it for the first time so that it opens much faster every time you open it again in the current Tekla Structures session.

This improvement was already introduced in Tekla Structures 2024 SP2.

Opening dimensioning rule properties significantly faster

The **Dimensioning rule properties** dialog opening time has been improved significantly.

Buttons working properly in table-based property dialogs

The buttons that act on the rows of table-based property dialogs in drawings, such as the **View properties** button in the **View creation** panel in the single-part, cast unit, and assembly drawing properties, and the **Edit rule** button in the **Dimensioning** panel in the drawing view properties, now work on the first click, regardless of how you select a row in the table. Previously, you often had to click the button twice for it to work.

Also the opening performance of all classic property dialogs in drawings has been improved.
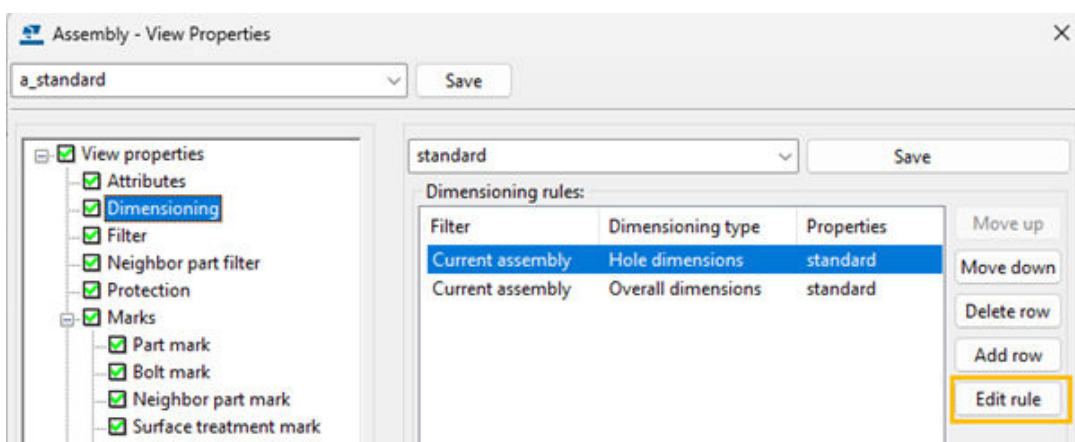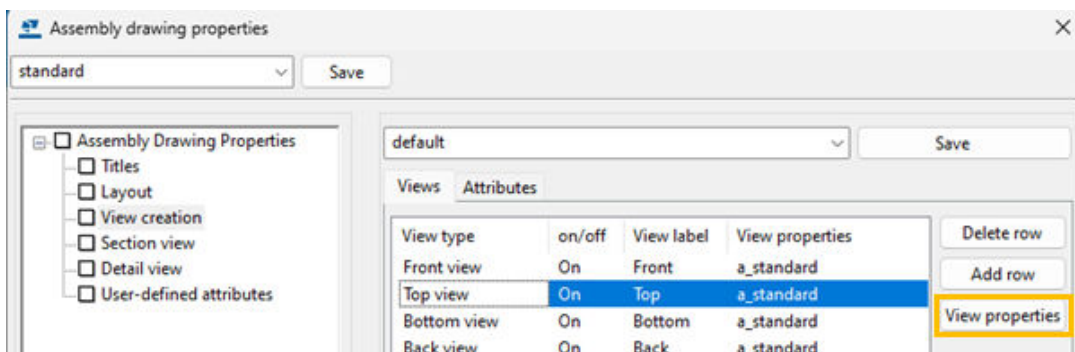
This improvement was already introduced in Tekla Structures 2024 SP4.

Improved rule order in detailed object level settings

When you are adding new rules to a rule set in detailed object level settings using the **Add row** button, and you have selected a rule, the new rule will now be added after the selected rule. Previously, the new rule was always added last in the rule set, and you needed to use the **Move up** and **Move down** buttons to place the rule in the desired position in the rule set.
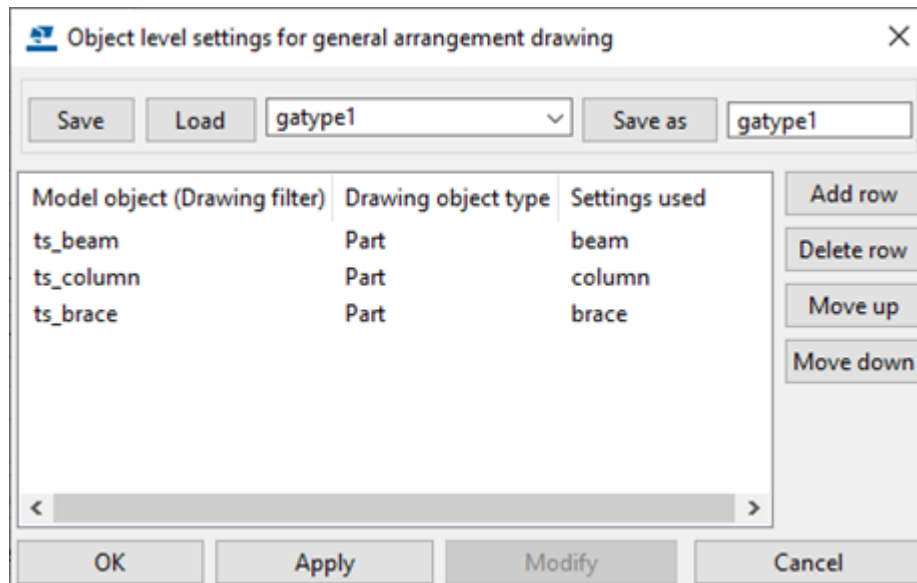
This improvement was already introduced in Tekla Structures 2024 SP3.

Improvements in dimensioning

Use gradians in angle dimensions

You can now use gradians (gons) instead of degrees in angle dimensions in drawings.

For example, in general arrangement drawings where a bridge alignment with the road below is shown, it is a common practice to show the angle between in gradians instead of degrees.

There are new gradian options available in the angle dimension property pane, contextual toolbar, GA drawing dimension properties, and in the old dimension properties dialogs:

Gradians on side

Gradians at angle vertex

Triangle with gradians
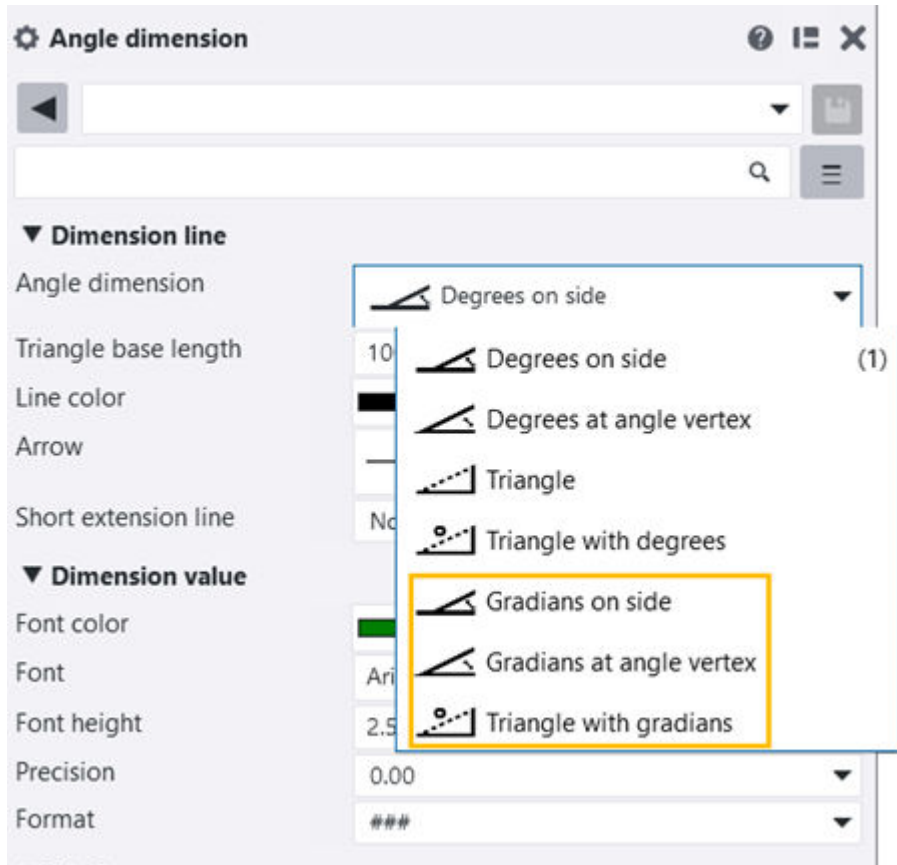
You can use the new advanced option, XS_ANGLE_GRADIAN_SIGN, to set the desired gradian sign. The default value is "g". This advanced option is located in the **Drawing properties** category of the **Advanced options** dialog.
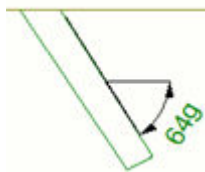
This improvement was already introduced in Tekla Structures 2024 SP4.

Customize dimension line arrow symbols for radial dimensions

You can now create dimension line arrow symbols of your own also for radial dimensions.
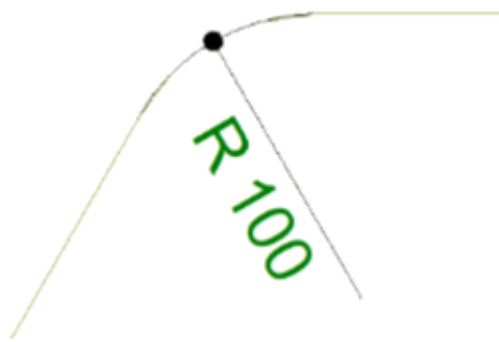
For details on customizing dimension line arrow symbols, see Customize dimension line arrows.

Improvements in Rebar group dimensioning

Associative notes used in labels

The **Rebar group dimensioning** tool now uses associative notes in the label creation. Now the UDAs in rebar group dimension labels are automatically updated when there is a change in the model objects they are bound to.

Combine equal marks

You can use the new **Combine equal marks** setting on the extra marks tabs to group duplicate marks into one mark.

Dimension inclined bars in rebar sets

Now it is possible to dimension the inclined bars in the rebar sets.

Better recognition of circular holes in hole dimensioning

The **Hole dimensions** dimensioning method now recognizes circular holes better in view-based dimensioning. Now a regular polygon with at least 8 points is regarded as a circular hole. For example, a polygon cut with round corner chamfers is now recognized as a circular hole.

Improvements in dimensioning surface treatment

- In view-based dimensioning, the **Combine on one line** option **By name** now supports surface treatment.

- In **Filter dimensions**, all vertex points of a polygonal surface treatment can now be dimensioned by selecting the all points option (the last option) from the **Dimension to** list.

Improvements in drawing notes and marks

Add associative notes with applied values

A new command for adding associative notes, **With applied values**, has been added, and in the Default environment, it is available on the ribbon by default.

This command allows you to create associative notes using the value that you have selected for the **Leader line** setting in the associative note properties. The other three associative note commands do not allow using an applied value for the **Leader line** setting, they always use the predefined value defined for each command: **With leader line**, **Without leader line**, or **Along line**.

The new **Add associative note with applied values** command is used by default when you select the **Add associative note** command from the context menu or from the drawing property pane object list, or enter the command in **Quick Launch**.

If the **With applied values** command is not shown on the ribbon, you can add it through the Ribbon editor.

This improvement was already introduced in Tekla Structures 2024 SP1.

Mark background fitted to mark frame

The mark background is now fitted to the exact frame boundary when you have the **Opaque** option selected. Previously, only the text was masked.

Now:
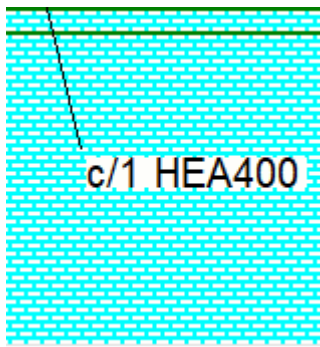
Earlier:
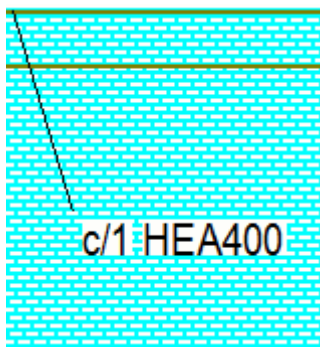
Rebar group marking uses associative notes in labels

Rebar group marking now uses associative notes in the label creation. Now the UDAs in the rebar group markings are automatically updated when there is a change in the model objects they are bound to.

Improvements in pull-out pictures

New positioning options in Draw rebar pull-outs

In the **Draw rebar pull-outs** application, you can now place the bending shapes and notes in the area that you select in the drawing using the new **Position** option **Custom position in aligned blocks**. This option will distribute the bending shapes and notes into columns in the area that you select. All bars within a column are vertically aligned by default. To select the area, click the **Pick a block position** button. **Custom position in aligned blocks** is available only if you have selected the **Rebar pull-out picture and marking** creation option. With this position option, you also have a possibility to place the bending shapes horizontally using the **Orientation**: **Rotate to horizontal** option.

Mirror rebar pull-out pictures

You can now mirror pull-out pictures in rebar marks horizontally or vertically through the object-level rebar pull-out picture properties using the new **Mirror** options in the pull-out picture properties:

Mirroring is available in **One factor** and **Two factors** modes.

This improvement was already introduced in Tekla Structures 2024 SP1.

Improvements in relabeling section views and detail views

Relabel section views and **Relabel detail views** have been changed to applications. Previously they were macros, which had some limitations. There is a new dialog for the applications, where you can save and load settings and select to relabel manually modified view labels. In some cases, section views and detail views were labeled incorrectly, now the view labels are correct.
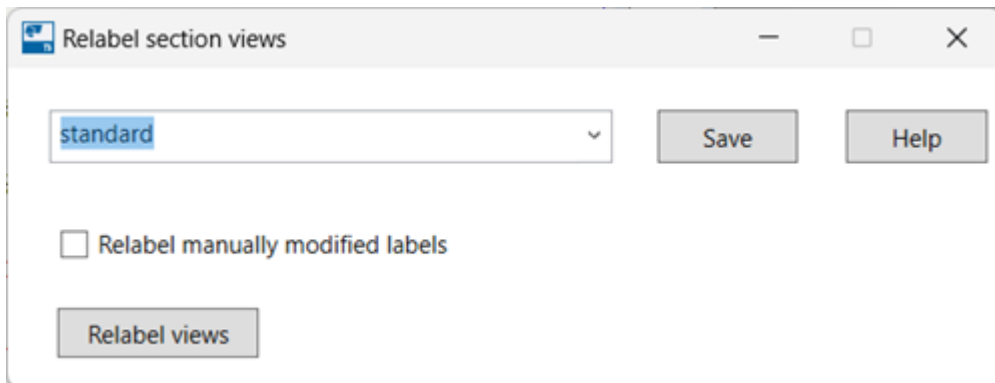
Improvements in Rebar mesh view creator

Add mesh label in view

A new option, **Mesh label**, has been added in the **Rebar mesh view creator** dialog allowing you to add a mesh label in the top-left corner of the view. The options are **None** and **Mesh position**. The mesh position value consists of the mesh position number (ASSEMBLY.SERIAL_NUMBER) and the assembly name (ASSEMBLY.NAME).
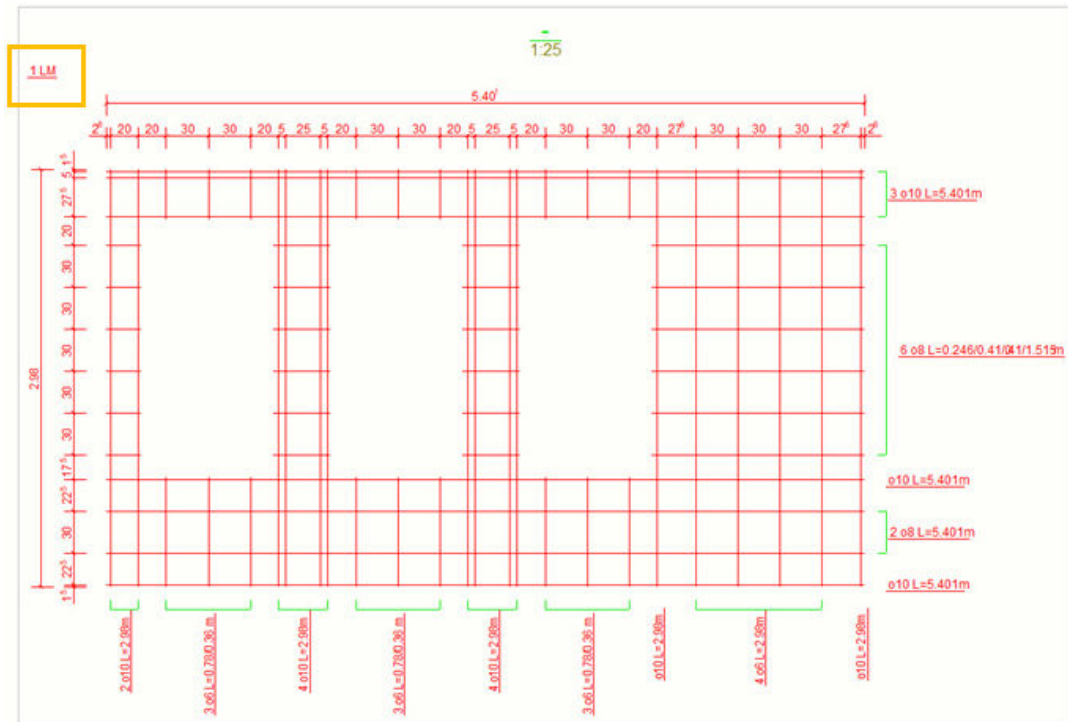
This improvement was already introduced in Tekla Structures 2024 SP1.

Command line parameter support added

You can now run the **Rebar mesh view creator** tool from the command line.

Mesh views from all view types

You can now create mesh views from any view type, not only from front and back views. You can also create mesh views from views in general arrangement drawings.

Change in hatch pattern definition file location

The hatch pattern definition file `hatch_types1.PAT` file has been moved from `\common\inp` to `\common\system`. This makes easier for you to define your own configuration file using XS_SYSTEM, XS_PROJECT, or XS_FIRM. The

folder search order for hatch patterns is now the same as for other settings files: model folder, XS_PROJECT, XS_FIRM, XS_SYSTEM, XS_INP.

Drawing 2D Library improvements

New option to scale text separately

You can use the new **Scale text** option in the **Options** menu to lock or scale the font height when changing the scale of a detail in a drawing.

Before (text not scaled):
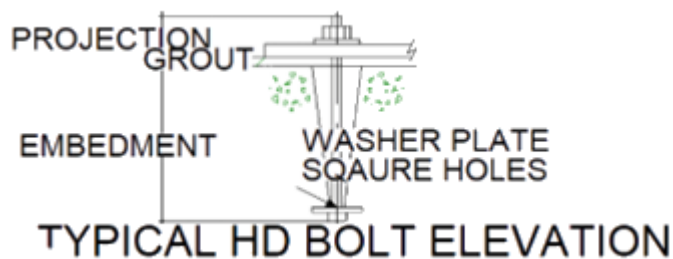
After (**Scale text** selected):
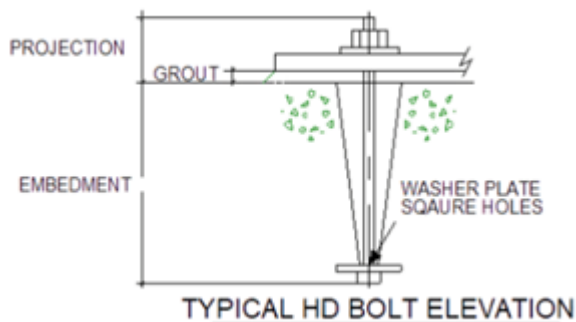
Other improvements in 2D details

- Detail scaling now works as intended and as described in the instructions.
- The detail scale is now correct when you insert a detail in an existing view or place the detail onto paper without creating a new view.
- Colors are now displayed correctly in details.
- The scaling of marks, dimensions, text, and symbols now works.
- Images are now supported.
- Rich text is now supported, and the text scaling inside rich text boxes now works.
- Issues with text leader lines have been fixed.

- Curved dimensions in 2D Library details now work correctly.

- A critical error occurred when you used the **Undo** command after the **Combine lines** command. This issue has now been fixed.

- Details from older Tekla Structures versions now get recognized properly and no longer cause scaling issues.

- The text scale is now correct also in old details.

4 What's new in connected workflows in Tekla Structures 2025

- Tekla PowerFab Connector—Connect the fabricator and detailer
- Trimble Live Collaboration for Tekla Structures (Preview)
- Improved TrimBIM workflow with Trimble Connect
- Renewed Status Sharing
- Layout manager - improved collaboration with site
- Improved point cloud experience
- Improved issue tracking using BCF Topics
- Unified design-to-detail workflows

4.1 Tekla PowerFab Connector—Connect the fabricator and detailer

The enhanced interoperability between Tekla Structures and Tekla PowerFab fabrication management system enables seamless and easy cooperation between steel detailers and fabricators who are using Tekla PowerFab.

With Tekla PowerFab Connector, you can now quickly and easily get an up-to-date fabricator catalog and finishes and real-time fabricator statuses from the fabrication management system.

You can also pass model information for purchasing, change tracking, and submittal packages directly back into the fabrication management system. This collaborative, fully integrated end-to-end workflow ensures the accuracy of information being submitted.

Tekla PowerFab Connector reduces manual fixes and resolving of conflicts in data transfer, which minimizes the risks of delays in fabrication and delivering to site, wasted material, and projects exceeding budget.

Tekla PowerFab Connector enhances interoperability between Tekla Structures and Tekla PowerFab, transforming the communication and submittal process. It will make it quick, accurate, and easy to set up and use throughout the project from procurement to fabrication including change management.
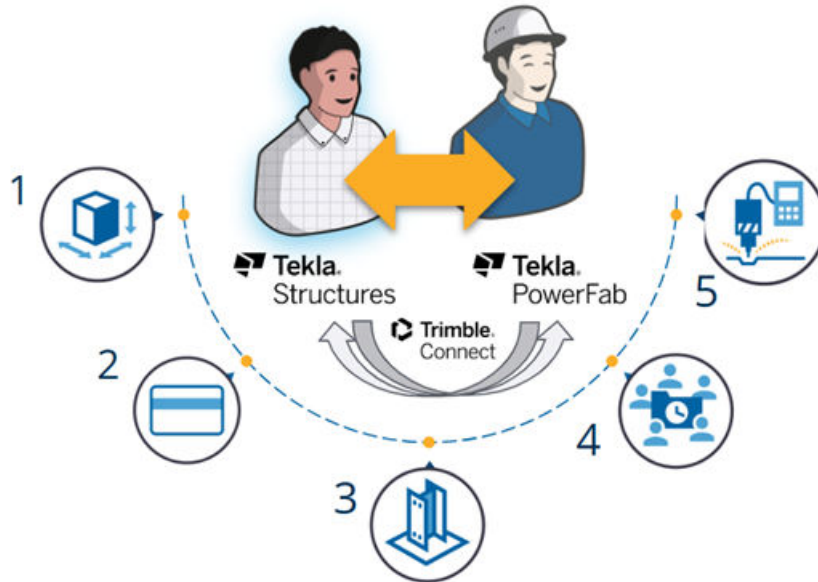
(1) Modeling process starts

(2) Submit for purchasing (ABM)

(3) Detailing continues

(4) Release fabrication drawings and other real-life information

(5) Fabrication starts

Now you can easily submit data at any stage of your project without depending on the existence of fabrication drawings or part numbering.

In addition to bringing a lot of new functionalities to support the end-to-end workflow, the old export to Tekla PowerFab functionality has been reinvented to support and guide the real project workflow. All the functionalities in the old dialog are also present in the new enhanced submittal workflow but exactly when you need them.

On the ribbon, there is a new **Tekla PowerFab** tab that contains tools for the end-to-end collaborative workflow. The tools help the project team to collaborate utilizing the same information.
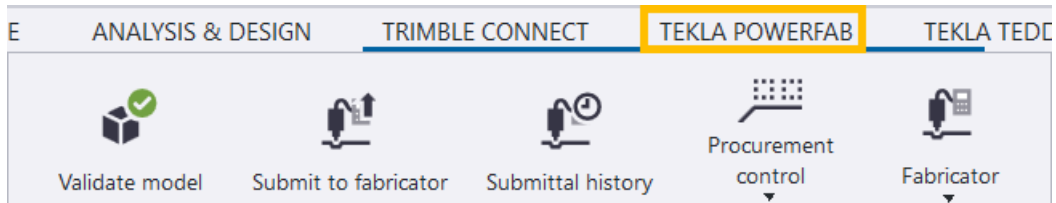
The fabricator using Tekla PowerFab can share their catalog of profiles, materials and finishes to the detailer via a cloud storage. The detailer can then select to use the fabricator in a project and access their data.
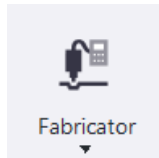
See Fabricator settings in the Share models and files Product Guide.

After this, the new workflow functionality guides you to use the correct profiles and materials supported by the fabricator.

NOTE   Your settings are not automatically replaced by the fabricator settings.

Before submitting any objects, you can validate the model using the correct fabricator settings. You can validate the model either manually, object by object, or automatically using the validation tool.

The **Validate model** tool helps you to find and correct problems before you submit anything to the fabricator.
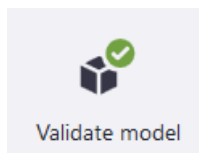
Using the tool, you can be confident that the profiles, grades, finishes, or the part you are submitting to the fabricator will be accepted by the fabricator using Tekla PowerFab. and that the data exchange happens smoothly.

See Validate Tekla PowerFab submittal the Share models and files Product Guide.

The submittal tool guides you when you export and submit different types of packages to the fabricator at any stage of the project. You can export the following data from Tekla Structures either locally to check it or directly to Tekla PowerFab for estimating, material ordering, and fabrication:

· IFC data

· data for procurement

· drawings and drawing info

· CNC data

You can export IFC data to the fabricator for estimating. See Estimating settings in the Share models and files Product Guide.

For the procurement phase, you can create a package for the fabricator for material purchasing and define the necessary properties. The exported file format is .trb. See Procurement settings in the Share models and files Product Guide.

When your drawings are ready, you can submit your drawings to the engineering office for an external approval process. When your drawings have been approved, you are ready to submit the package for fabrication. The exported file format is .pfxt.

See the following in the Share models and files Product Guide:

• Drawings for external approval settings

- Fabrication settings

To enable seamless collaboration and communication, you need to have a Trimble Connect project selected to which both you and the fabricator are connected. Subsequently, the fabricator gets notifications of your submittals in Tekla PowerFab. The fabricator can then review the submittal, and accept or reject it, and send comments to you.

You can view the current status, the content of all submittals, and fabricator's comments in **Submittal history**.
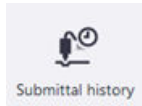
See View submittal history in the Share models and files Product Guide.

For managing the procurement process, there is the new **Procurement control** tool. You can use it to assign order numbers for materials to be purchased, which allows change management later in the project. The tool also allows you to easily see if there are changes in the model that might affect procurement and require resubmitting a package for procurement.

You can also check and track changes made to already procured steel.

The **Status Sharing** service has been added to the Trimble Connect ribbon tab to facilitate its use and also to support the Tekla PowerFab Connector workflow.
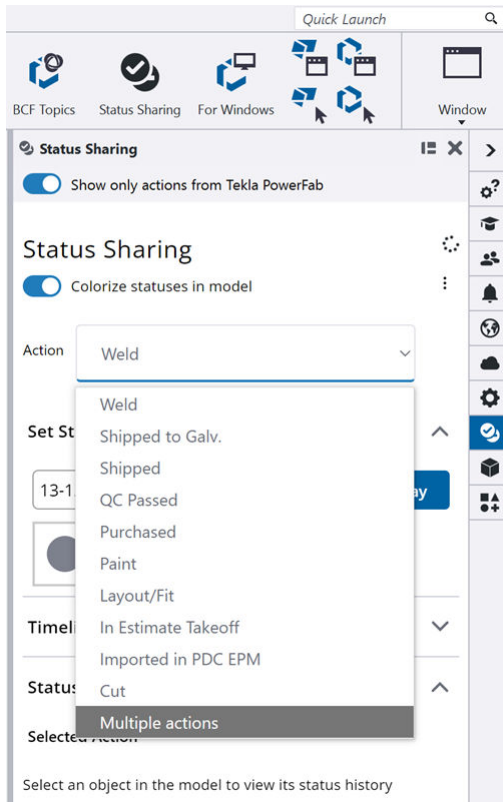
Status Sharing has the **Show only actions from Tekla PowerFab** switch for quickly displaying the fabricator status.

Import from Tekla PowerFab is still available as a separate functionality. See Import from Tekla PowerFab in the Share models and files Product Guide. We recommend that you use status sharing instead of import for statuses.

4.2 Live Collaboration for Tekla Structures (Preview)

With **Live Collaboration** for Tekla Structures you can collaborate in real time between 3D models without exporting or sharing any iles. **Live Collaboration** works between multiple instances of Tekla Structures and Trimble Connect, enabling live model-based collaboration with a wider project team from your office. All collaborators can instantly see changes made by others, allowing for live design and review sessions by the project team members.

Tekla Structures 2025 introduces the **Live Collaboration** functionality as a Preview feature. To find out more, see .

As a part of the review process, Tekla Structures users can share their model modifications live to other Tekla Structures and Trimble Connect users, and

see the modifications and the navigation of other collaborators in their Tekla Structures model. Model changes are visible to all collaborators, but each user can edit only their own model. This means that you can see other users' model objects as an overlay among your model objects in Tekla Structures, but you cannot edit them or convert them to native Tekla Structures objects. Trimble Connect users can also share models which are stored in the Trimble Connect project.

As a prerequisite for using **Live Collaboration**, you need to link your Tekla Structures model to a Trimble Connect project and invite your collaborators to the project.
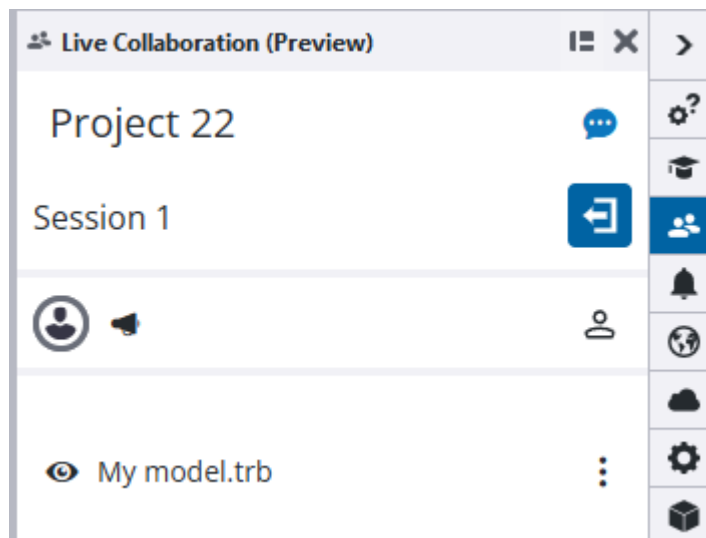
1. In the Tekla Structures side pane, click to open the **Live Collaboration** side pane window.

2. To start a live collaboration session, click next to the **Start a session or join a session with a link** box.

    If there are already sessions on the list of sessions, click next to the session name to join it.

3. When the session has started, click **Share** to add your model to the session and make it visible to other collaborators.

4. Start working in the model or follow other collaborators.

    You can see other collaborators' model edits live in the 3D model view. You can share your location and navigation and see the location and navigation of each session participant live in the 3D model view.

5. To leave the session, click [icon] .

Note that collaborators can join the same session multiple times, from different applications, devices, or even different instances of the same application.

4.3 Improved TrimBIM workflow with Trimble Connect

In Tekla Structures 2025, the data exchange with Trimble Connect has had major updates. The improved TrimBIM workflow now better supports the project workflow, to create a more seamless experience between Tekla Structures and Trimble Connect.

You can now

- export a TrimBIM ile (`.trb`) directly from Tekla Structures.
- easily control the settings with the `.tekla` ile upload.

Export a TrimBIM file directly from Tekla Structures

You can now create a TrimBIM (`.trb`) file directly in Tekla Structures, and select which IFC property sets are included in the TrimBIM file.

You can use the same IFC property sets for the efficient TrimBIM export as when exporting IFC files. The **Property set definitions** dialog allows you to add and modify the property sets. When you have created the property set settings, you can use them with the export you prefer.

To export, go to **File** --> **Export** --> **TrimBIM**.

- Export the entire model, or only the selected model objects.

- Select the object types that included in the export. This defines the content included in the export.

- Define where the `.trb` file is stored locally. The file is always exported locally, and you can then upload the file to a selected Trimble Connect project, leaving the local file to the location where it was originally exported to. By default, the `.trb` file is exported under model folder.

Easily control the settings with the .tekla file upload

When you upload a Tekla Structures model to a Trimble Connect project as a `.tekla` file, you can now easily define settings for the upload.

The new **Upload model settings** dialog allows you to define the upload folder for the `.tekla` file, and select which IFC property sets are included in the upload. This enables flexibility in managing the data included in the `.tekla` file. Use the same IFC property sets for the `.tekla` file as when exporting IFC files. When you have created the property set settings, you can use them with the export you prefer.

The IFC property sets replace the previously used `part.epr` file.

In addition, if you are using Tekla Model Sharing, you can select the frequency of the `.tekla` file upload.

To define settings for the `.tekla` file upload, go to **File** --> **Trimble Connect** --> **Upload model settings**.
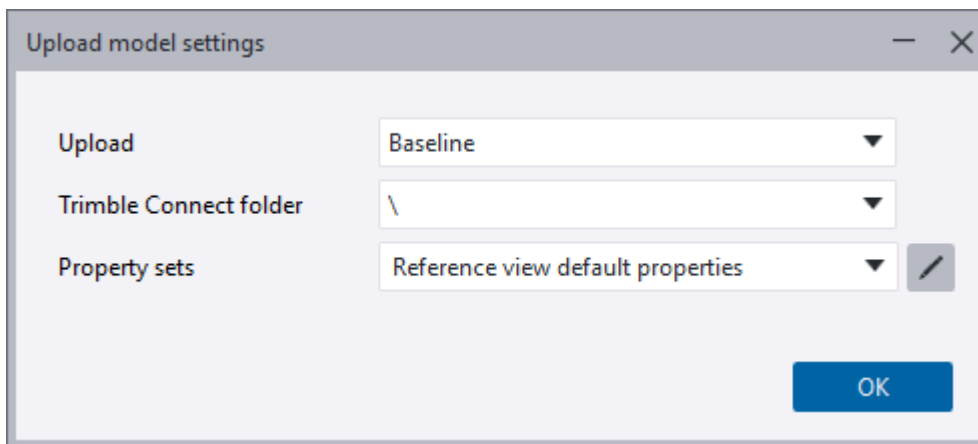
- Select the Trimble Connect project folder where the current model will be uploaded as a `.tekla` file. By default, the folder path is `Structural\Tekla Models`.

- If needed, select the IFC property sets that you want to include in the upload. You can open the **Property set definitions** dialog that allows you to add and modify the property sets.

- If you are using a Tekla Model Sharing model, select the frequency of the `.tekla` file upload. The options are:

  - **Baseline** (default) = The shared model is automatically uploaded to the set Trimble Connect project folder each time a user creates a new baseline.

  - **Write out** = The shared model is automatically uploaded to the set Trimble Connect project folder after each successful write out.

- **Never** = The shared model is never uploaded to the set Trimble Connect project folder.

These new settings replace the previously used advanced options **XS_ CONNECT_UPLOAD_MODEL_FOLDER** and **XS_UPLOAD_SHARED_MODEL_TO_ CONNECT**.

Extension improvement: Linking documents to Trimble Connect

The **Linking documents to Trimble Connect** extension from Tekla Warehouse now supports custom folder structure, and you can define a Trimble Connect project folder path for each document type which will be used when documents are uploaded to Trimble Connect.

4.4 Renewed Status Sharing

The completely renewed **Status Sharing** tool is now integrated in Tekla Structures and in Trimble Connect, allowing you to share statuses without any downloads and installations. With the **Status Sharing** tool you can set, view and change statuses of your model objects and assemblies. The status of an object can be, for example, a manufacturing status or an erection status. If you are using **Status Sharing** between Tekla Structures and Tekla PowerFab, you can filter actions in Tekla Structures to show only those from Tekla PowerFab.

The tool integration provides a common user interface for **Status Sharing** in Tekla Structures and in Trimble Connect for Browser, and the workflow information can be utilized also in Tekla PowerFab, Trimble Connect for Windows, and in Trimble Connect for Mobile.

In Tekla Structures, on the **Trimble Connect** ribbon tab, click the **Status Sharing** button to open the **Status Sharing** side pane window. In the side pane window you can:

- add actions
- assign and change statuses
- use the timeline to view how the status has changed over time
- see multiple actions in the same model
- save status values as user-defined attributes (UDAs) for use, for example, in reports, filters, and drawing marks

In addition, you can now share the statuses between Tekla Structures and Tekla PowerFab, enabling real-time collaboration and project tracking, getting instant fabricator status without the need for manual exporting and importing. If you are using **Status Sharing** between Tekla Structures and Tekla PowerFab,

you can filter the actions in Tekla Structures so that only actions from Tekla PowerFab are visible.

4.5 Layout manager - improved collaboration with site

In Tekla Structures 2025, **Layout manager** introduces many improvements to the workflow between the office and the site, and enhances productivity and collaboration between detailers, engineers, fabricators, and site teams. New import and export options for Trimble Connect now enable seamless and up-to-date sharing of layout data. The user interface of **Layout manager** has also been extensively updated to have a new user-friendly look and feel.

Renewed Layout manager user interface

The **Layout manager** user interface has been renewed. The new user interface has many improvements that allow you to customize the settings to fit your project requirements. The **Layout manager** user interface now offers simple navigation, intuitive ribbon tools, and automatic error handling, for example.
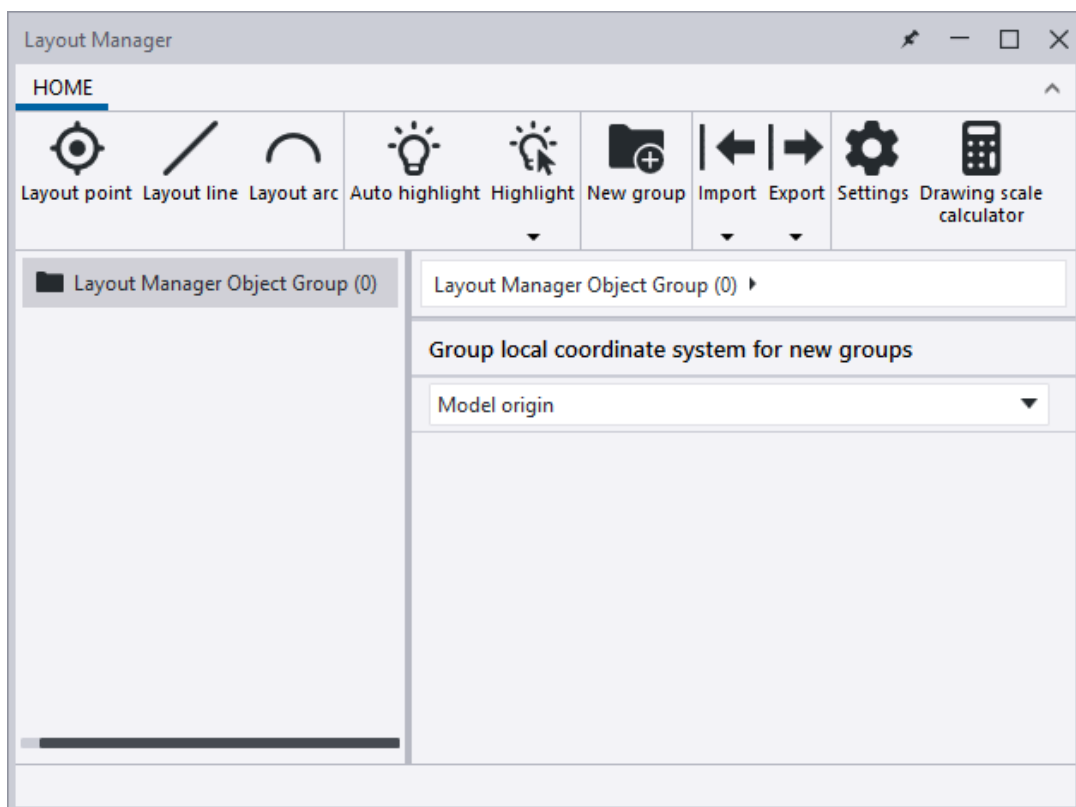
Create layout points, lines, and arcs

You can now create layout points, layout lines, and layout arcs using the commands in the **Layout manager** dialog. The command buttons on

the **Layout manager** ribbon open the dialogs where you can define the properties.
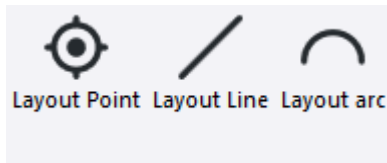
You can now easily define the default size of layout points, lines, and arcs in the **Layout manager** settings. Click the ⚙ button in **Layout manager** to open the settings. As before, you can also define the class and shape for points, and class for lines and arcs. Previously, the **Class** property was called **Color** in the settings.

Enhanced grouping features

Enhanced grouping features allow for better organization of layout data. The limitation of a maximum of 255 groups was already removed in Tekla Structures 2024 SP1.

You can now add UDAs to groups of points in the new **Set attributes** dialog for easier on-site management and identification. Right-click a group in **Layout manager** to open the dialog.
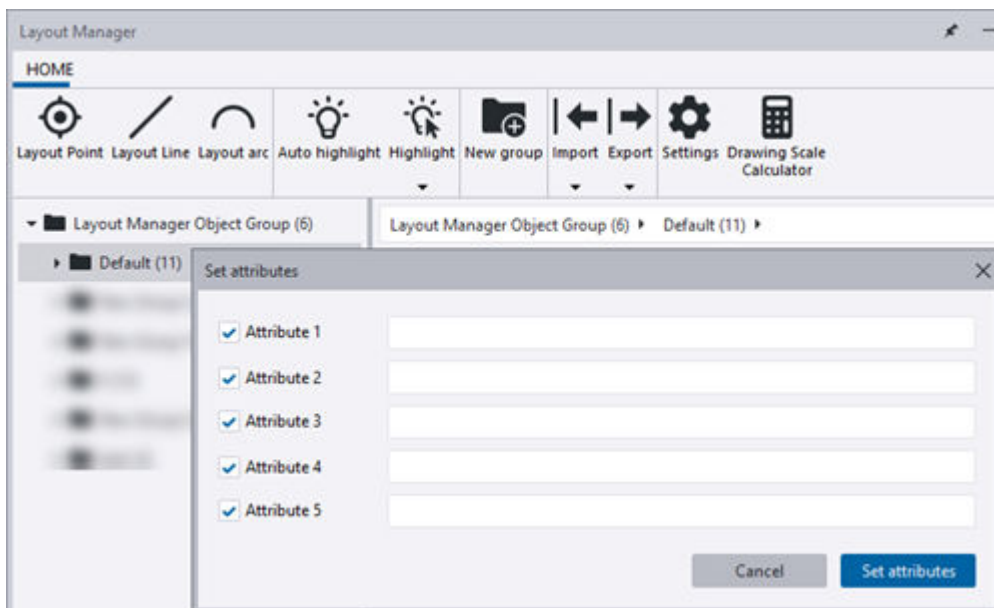
Automatic error detection

When you enter values, **Layout manager** now automatically shows a warning if the entered value is not suitable.

Improvements in import and export

Import and export options for Trimble Connect

You can now use the new import and export commands to transfer layout data from and to Trimble Connect effortlessly to enable seamless data sharing with automatically up-to-date files. The layout data is imported and exported in Trimble FieldLink `.tflx` file format.
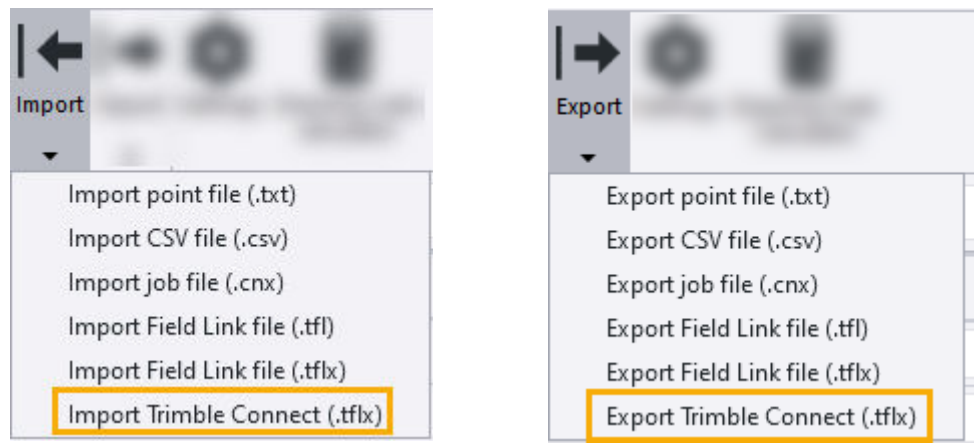
Improvements in import and export dialogs

The import and export dialogs have been improved to have a wider preview area that makes viewing and verifying data easier, especially when working with larger data sets. A progress bar has also been added to show the status of data import and export.

In the **Layout manager** settings, you can now easily change the order of the columns in the import and export dialogs.
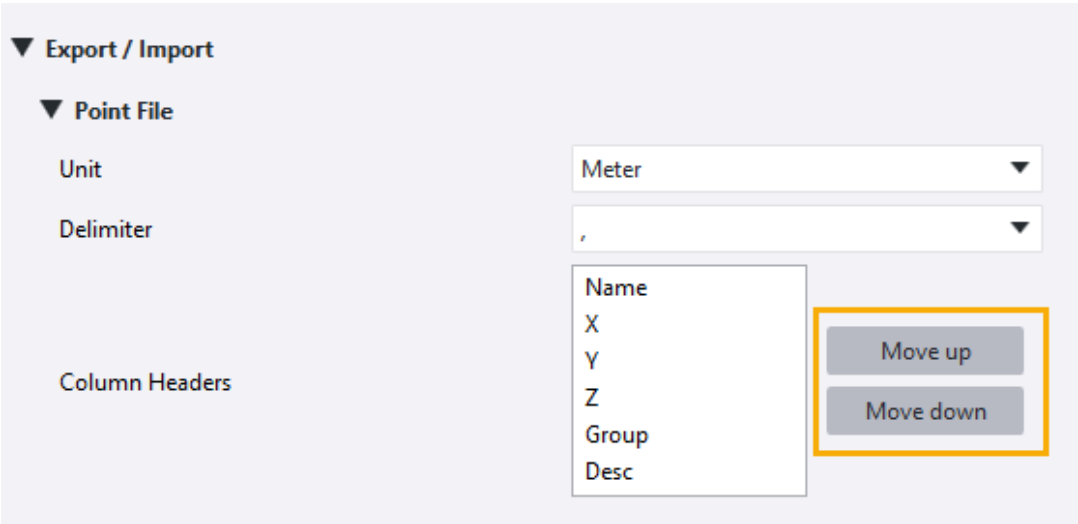
The import and export dialogs now only contain tabs that have content. For example, if there are no layout arcs, the dialog does not show a tab for layout arcs.

Import/Export error detection

There is now an error message if you try to import or export an incorrectly formatted file.

4.6 Improved point cloud experience

Starting from Tekla Structures 2025, you can access, process, manage, and share large point cloud files stored in the Trimble Reality Capture platform service. Tekla Structures 2025 also introduces improvements in the point cloud performance and usability.

Attach point clouds hosted in Trimble Connect - Integration with Trimble Reality Capture

Using the Trimble Reality Capture platform service, you can attach point clouds hosted in an existing Trimble Connect project without having to store large point cloud files locally on your computer. Using point clouds directly from the cloud improves collaboration and project accuracy.

When you need to access a point cloud, you can quickly turn it on in Tekla Structures and use it.

Trimble Reality Capture platform service license is required for the point cloud provider (surveyor or other scanner owner) to store and share the scan data: Streaming point clouds from Trimble Reality Capture platform service does not require a separate license. The license is required for the point cloud provider to store and share the scan data in the Trimble Reality Capture Platform Service. Trimble Connect users can use the Trimble Reality Capture platform service by just toggling the button in the Trimble Connect User Interface to access it. They will get 10 gigabytes as free storage so it's easy to trial and if they need more storage beyond that they can purchase a license.

To learn more about the service, see Trimble Reality Capture.

Point clouds in Trimble Connect:
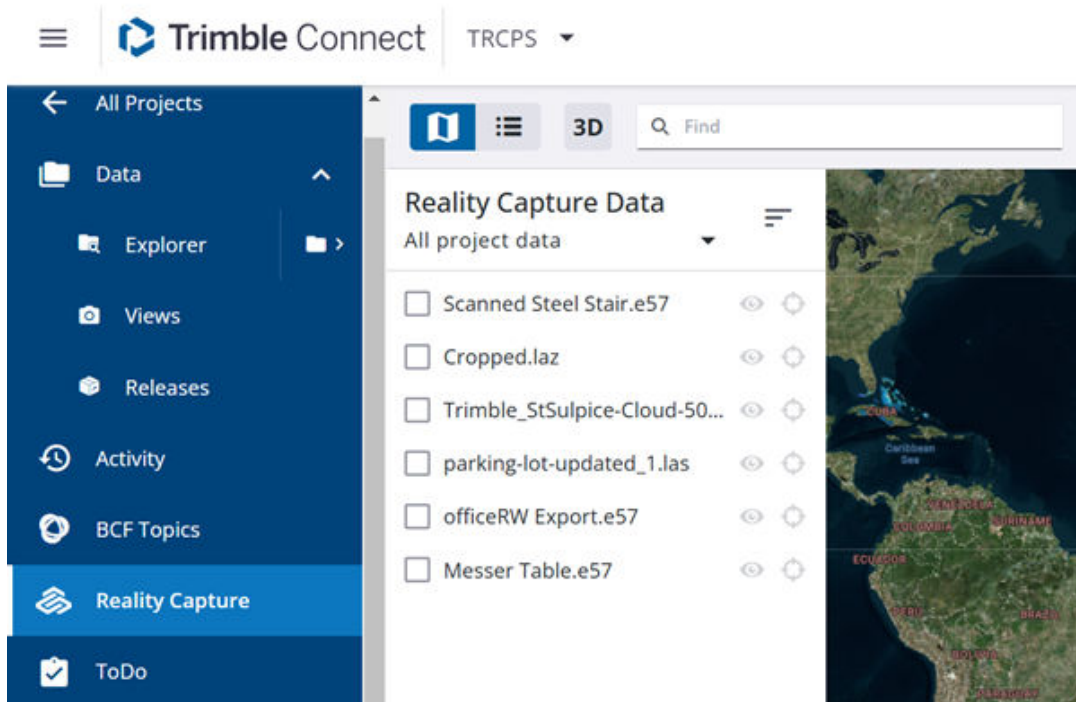
Changes in Attach point cloud dialog

The **Attach point cloud** dialog has been changed so that attaching point clouds hosted in a Trimble Connect project, attaching point clouds from web, and attaching point clouds locally now have tabs of their own: **Trimble Connect**, **URL**, and **Local**.

Attach point clouds hosted in aTrimble Connect project:
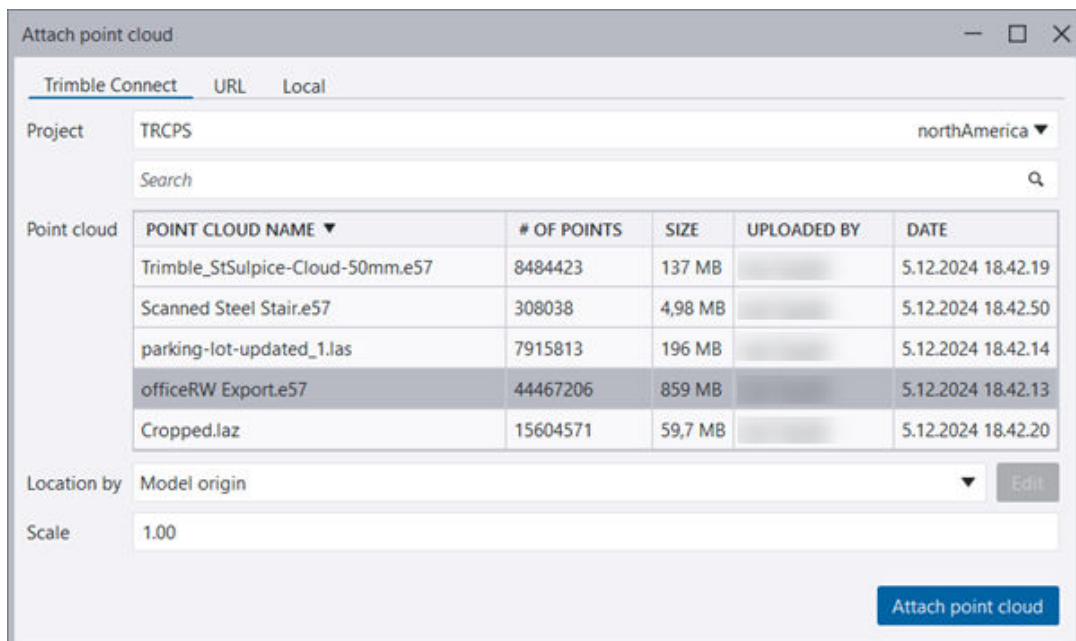
Attach point clouds from web:
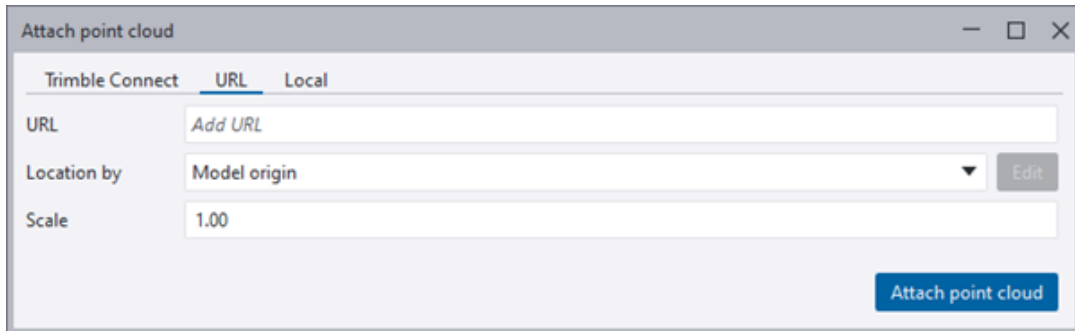
Attach point clouds locally:
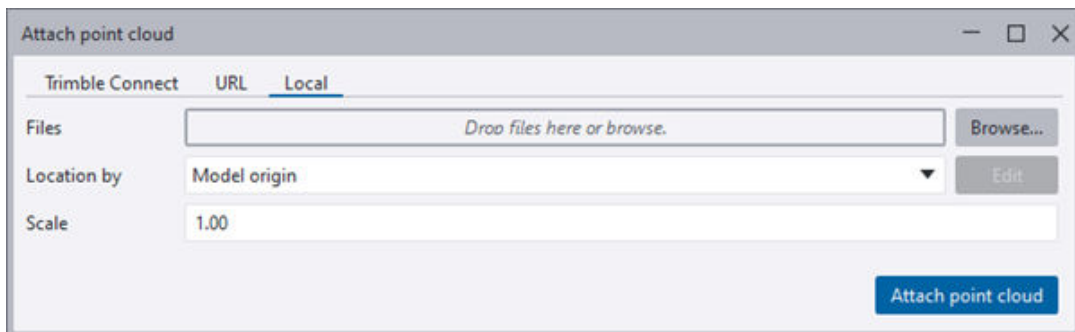
Attach a point cloud from a Trimble Connect project

- In the Tekla Structures side pane, click the ☁ **Point clouds** button and click **Attach**. In the **Attach point cloud** dialog, on the **Trimble Connect** tab, select a Trimble Connect project. A loading spinner is displayed while the point clouds for the selected project are being loaded. Select a point cloud hosted in the Trimble Connect project, and click **Attach point cloud**.

- You can browse to any Trimble Connect project that has point clouds in the service without needing to do anything specific in the Tekla Structures model. You can also search for point clouds in the **Attach point cloud** dialog.

- Once the point cloud is attached, you can show the point cloud in the model by selecting the model view where you want to show it and clicking the eye button next to the point cloud in the side pane, just like earlier.

- Once the point cloud is attached, it will no longer be available for attaching again in the **Attach point cloud** dialog.

Better point cloud performance and usability

Enhanced performance

You can now zoom, pan, and rotate models with large local point cloud files much faster than before. This improvement makes it easier to use point clouds for creating models, pulling dimensions, and checking for clashes.

Improved usability

You can now more easily isolate areas of interest in point clouds using the new **Clip box** feature on the **Clipping** menu on the **View** ribbon tab. To create clip boxes only to reference model objects and point clouds, go to **View** --> **Clipping** and select the **Clip only reference objects** checkbox. This command is also available in **Quick Launch**.

4.7 Improved issue tracking using BCF Topics

BCF Topics were introduced in Tekla Structures 2024, with several improvements released in Tekla Structures 2024 service packs. such as support for reference models so that they can be reviewed in Tekla Structures. For example, you can now communicate with those project stakeholders who provide their models produced in other software, such as Autodesk Revit. There is also better support for BCF topics that originate from third-party applications and that are loaded in Tekla Structures, such as from Solibri to Tekla Structures.

The following are the main improvements. For a complete list of fixes to BCF topics, see the Tekla Structures 2024 service packs release notes.

Native Tekla Structures model objects exported to a Trimble Connect project as .tekla file

- Support for selected and hidden objects in topic views has been added. Now, when working with models uploaded from Tekla Structures

as `.tekla` files, loading and saving topic views in Tekla Structures includes information about the selected and hidden objects.
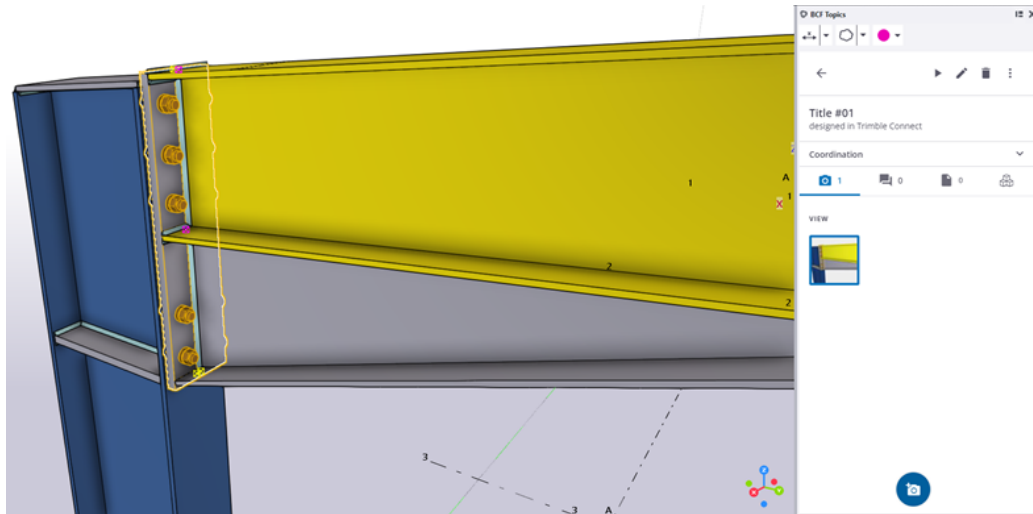
Third-party IFC files inserted as reference models in Tekla Structures

For third-party IFC files that have been inserted as reference models in Tekla Structures, the following has been improved:

- Support for linked objects in BCF topics has been added. Now, when working with IFC reference models in Tekla Structures, objects linked to BCF topics that have been created in Trimble Connect are highlighted.

  Note that objects that are linked to a BCF topic in Tekla Structures cannot be highlighted when you click **View model objects** in Trimble Connect. Such objects can still be visualized in Tekla Structures.
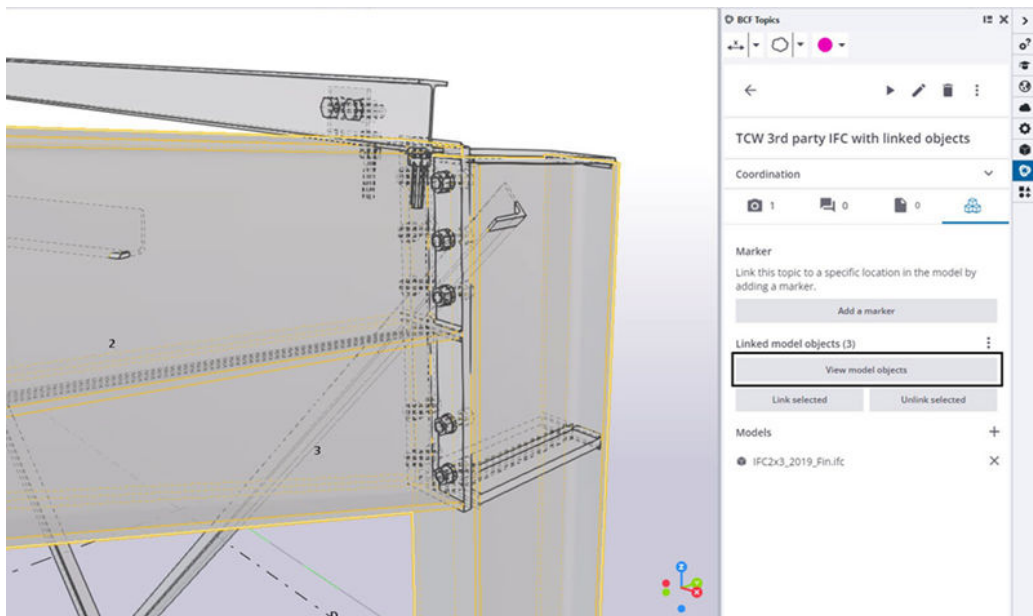
- Support for selected and hidden objects in topic views has been added. Now, when working with IFC reference models in Tekla Structures, loading

topic views that have been created in Trimble Connect include information about the selected and hidden objects.

Note that when you work in Trimble Connect, loading the topic views that have been created in Tekla Structures do not include information about selected and hidden objects. Such views can still be visualized as expected in Tekla Structures.
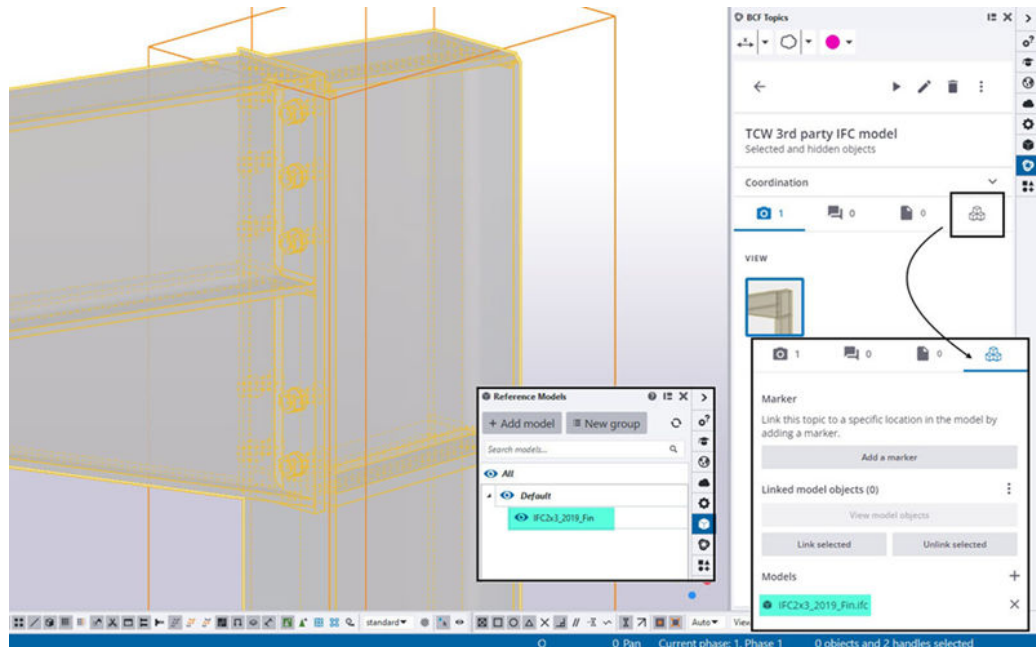
Third-party IFC files inserted as overlay models in Tekla Structures

For third-party IFC files that have been inserted as overlay models in Tekla Structures, the following has been improved:

- Support for linked objects in BCF topics has been added. Now, when working with overlay models in Tekla Structures, objects linked to BCF topics that have been created in Trimble Connect are highlighted.

  Also, you can now link objects to BCF topics in Tekla Structures, and they will be highlighted when you click **View model objects** in Trimble Connect.

  Note that linking and visualizing linked assemblies is not supported in Tekla Structures with overlay models.
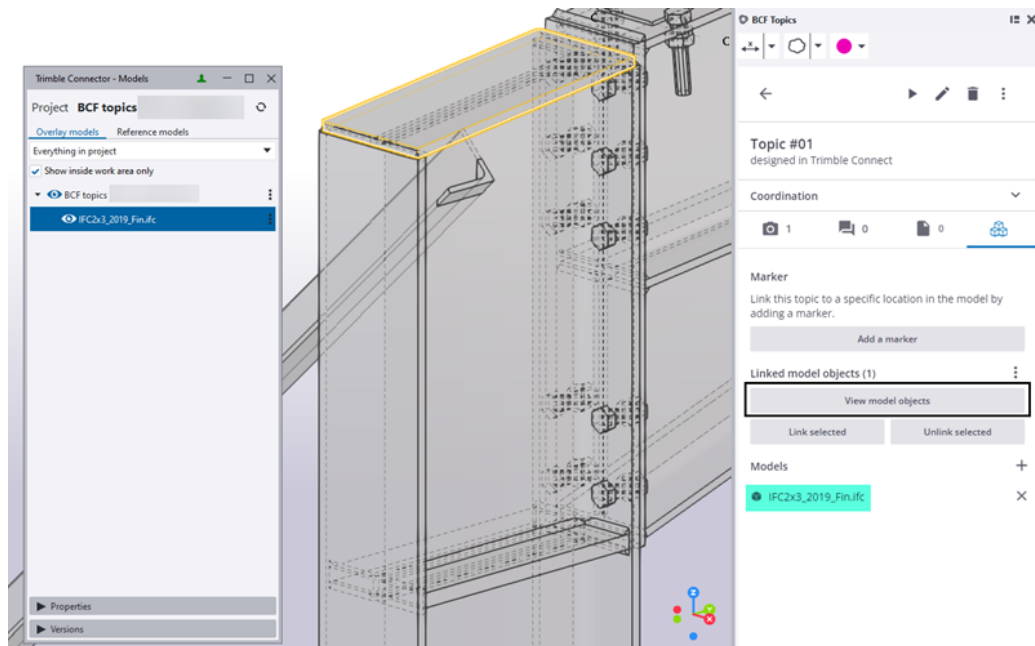
- Support for selected and hidden objects in topic views has been added. Now, when working with overlay models in Tekla Structures, loading topic views that have been created in Trimble Connect include information about the selected and hidden objects.

  Note that when working in Trimble Connect, loading the topic views that have been created in Tekla Structures do not include information about selected and hidden objects. Views that include selected objects can still be visualized in Tekla Structures. Hiding objects is not possible in Tekla Structures when working with overlay models.
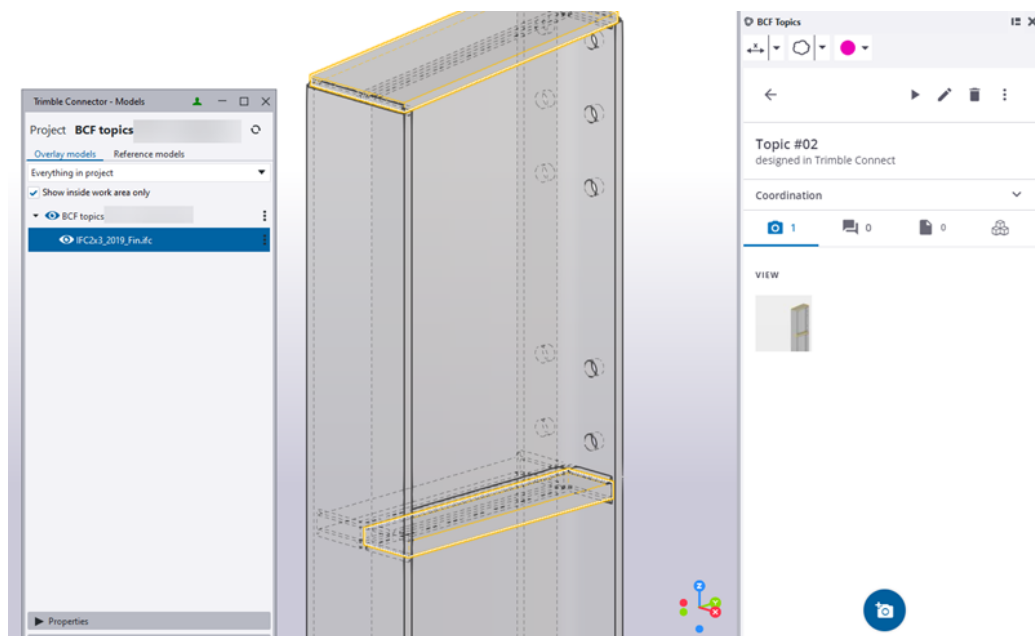
BCF topics that have been created in a third-party application

- For BCF topics that have been created in third-party applications, such as in Solibri, and loaded to Tekla Structures, support for more object states has been added. Now, loading topic views in Tekla Structures displays the selected and hidden objects correctly in the model view.
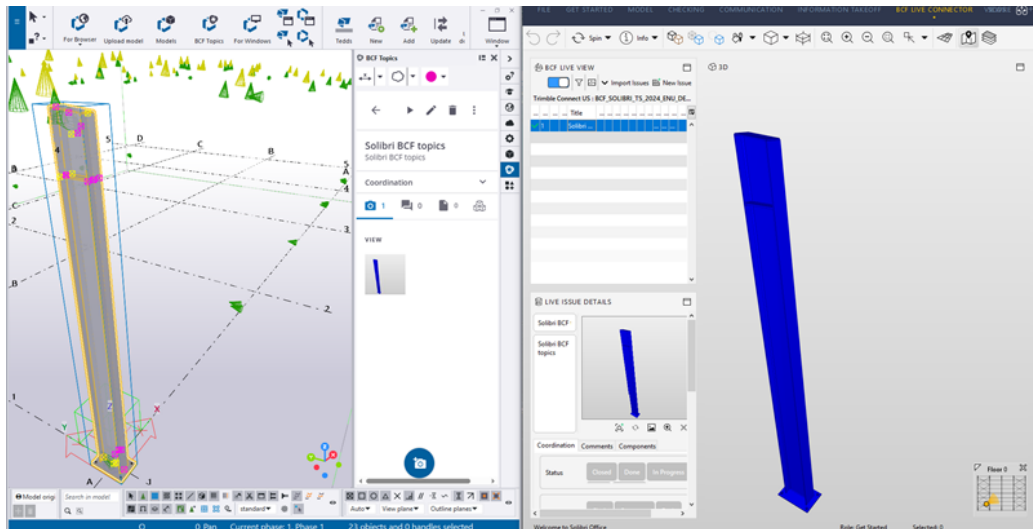
4.8 Unified design-to-detail workflows

Workflows and data transfer between Tekla Structures and Tekla Structural Designer have been enhanced in 2025 versions, including a new way to create analysis models, the ability to transfer fabrication and construction data, and the improved display and transfer of connection forces.

New way to create analysis models

New for our 2025 software releases, we introduce a new approach for creating analysis models in Tekla Structural Designer from models originating in Tekla Structures. This approach is specifically aimed at engineers using Tekla Structures for analysis and design during the early stages of design.

The overall transfer is based on the geometric part location in Tekla Structures. The integration uses a file-based transfer, meaning that Tekla Structural Designer and Tekla Structures do not need to be on the same computer.
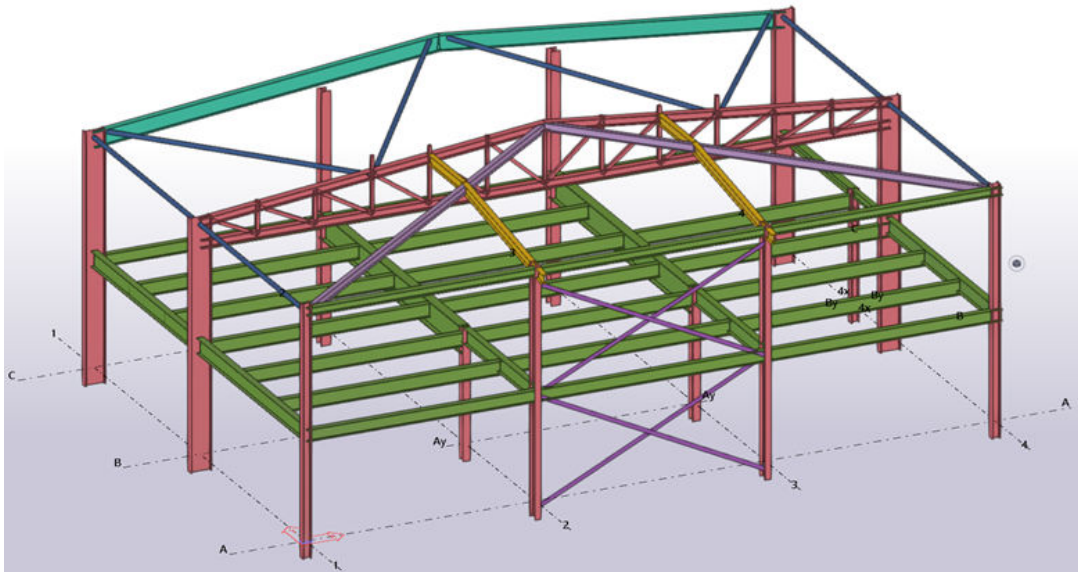
To perform the initial export process, use the **Publish to Tekla Structural Designer** extension, which you can download from Tekla Warehouse.
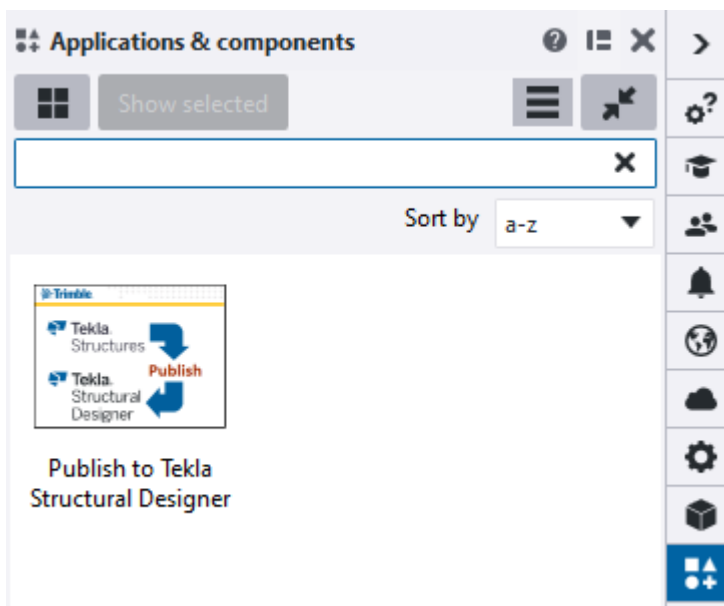
The focus of this version is on steel structures, covering the integration of main structural members, such as beams, columns, and braces.

On import to Tekla Structural Designer, the analysis model is generated to create a connected, solvable model that is available for immediate use. No preparatory work is required in Tekla Structures.

In Tekla Structural Designer, the use of reference models allows for an accurate visual representation of the BIM model. This representation can be used for manual modeling processes, or as the basis for our generated analysis and design model.
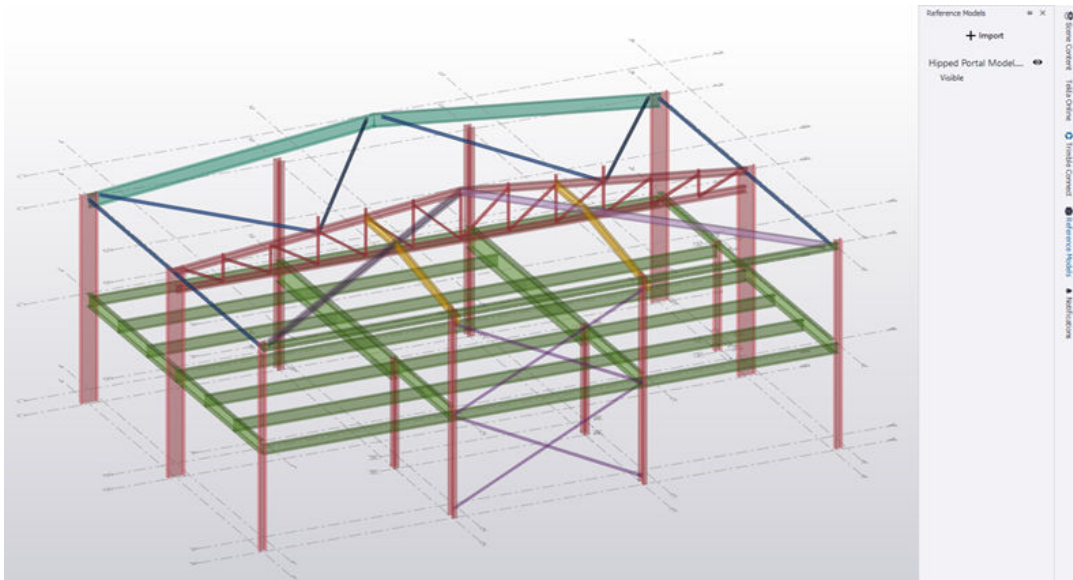
The conversion of member categories, profile sizes, and material grades is completed automatically. Part name categories can be filtered to ensure that only structurally significant parts of the model are imported. Profile conversion is based on the regional settings and the geometrical cross sections. All this leads to a quick and accurate transfer without the need for mapping files or manual intervention.

The result is a seamless integration process that is fast and accurate, and meets the requirements of the engineer.
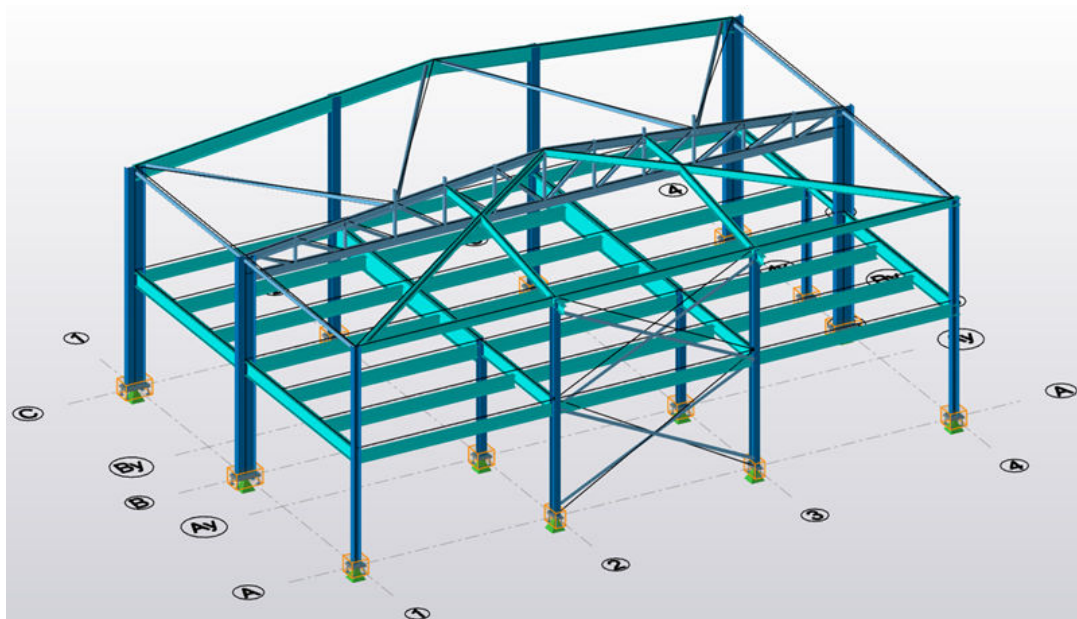
Analysis and design can be performed in Tekla Structural Designer, or the generated analysis model can be exported using existing native links.
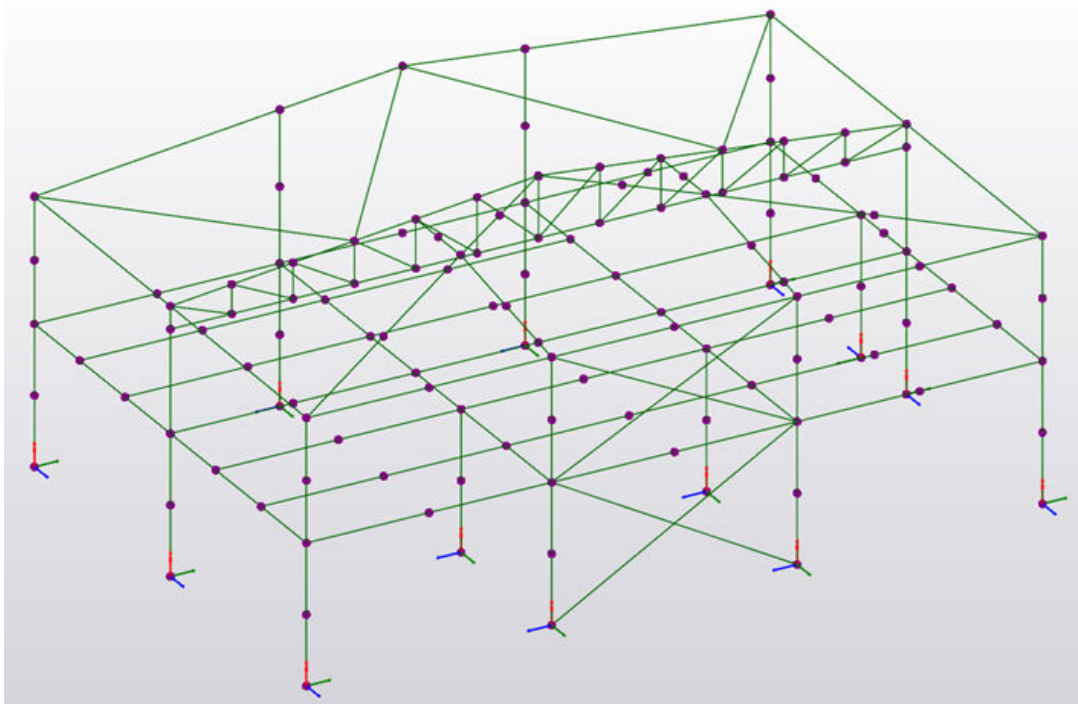
Transfer fabrication and construction data to Tekla Structures using Tekla Structural Designer UDAs

Tekla Structures 2025 has been improved with the ability to transfer relevant construction and fabrication information. This information can now be integrated as user-defined attributes (UDAs) from Tekla Structural Designer to Tekla Structures. This enhancement improves communication and the integration experience between the engineer and the detailer.

Information saved to the user-defined attributes in Tekla Structural Designer can be directly imported to Tekla Structures.
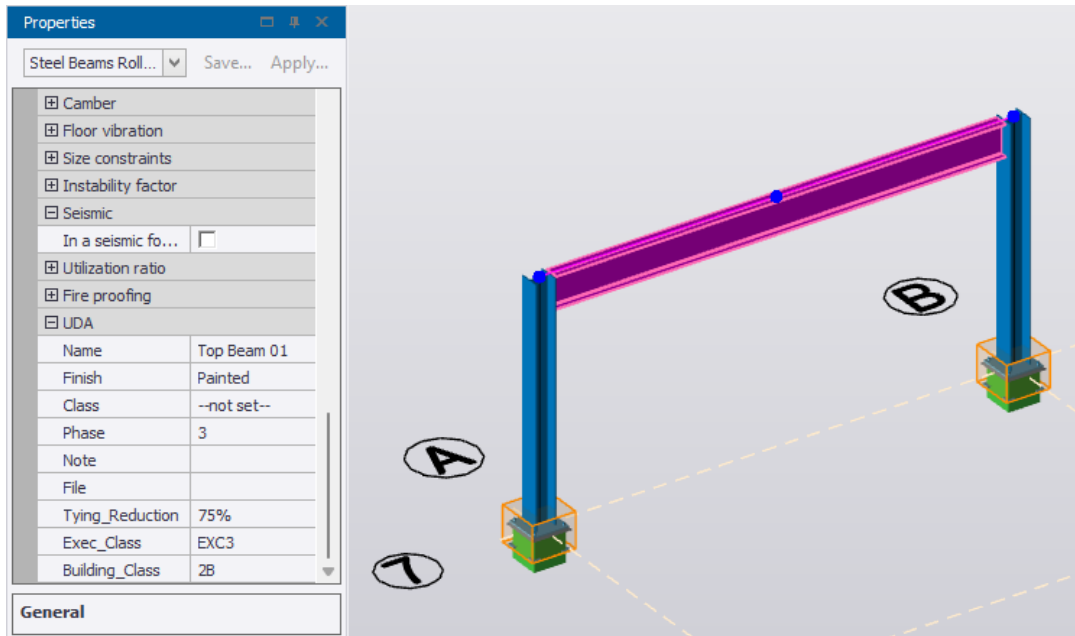
The UDA information can subsequently be made available for the construction and fabrication model. This workflow also includes user-generated attribute information, and is fully customizable to suit the requirements of the Tekla Structures modeler.
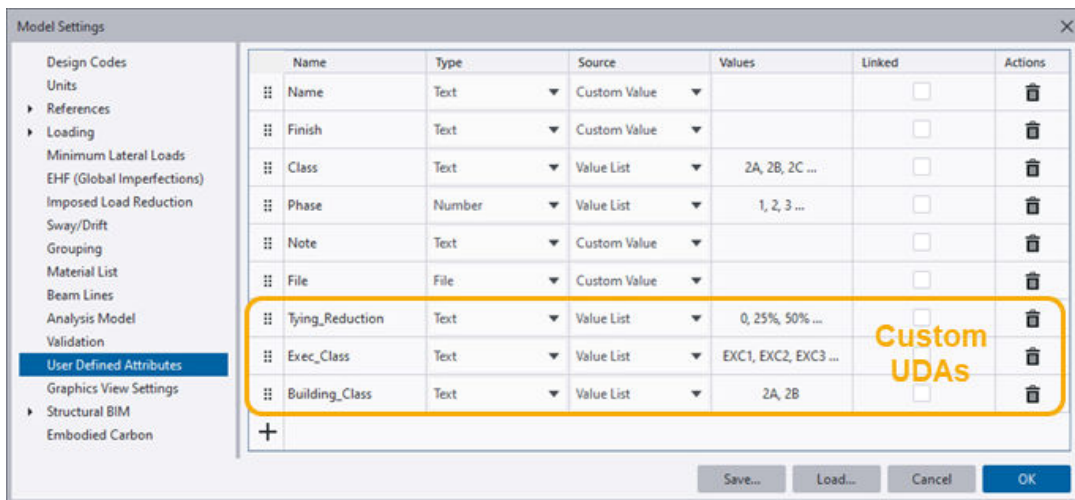
For engineers, the automated integration process reduces manual rework and is flexible enough to meet their overall project requirements. Integrated UDA information is automatically assigned to the imported parts and can be viewed using the **Inquire** command.

6000.00

B

Inquire object

GUID: 76ed2a27-051f-4156-9dd2-8feeac07e9a8 Type: 2 Assembly phase:

```
TSD_StartVShearMax [kN]    : 0.00
Building_Class             : 2B
Phase                      : 3
Exec_Class                 : EXC3
Tying_Reduction            : 75%
Name                       : Top Beam 01
Finish                     : Painted
TSD_EMBODIED_CARBON        : 597.584 kgCO2e
Profile Name               : UB 406x178x54
TSD_GUID                   : 72d3772f-3ad4-40d8-9d16-46a943283f55
TSD_DETAIL_GRP             : SBR1
Design Revision Status     : Dir1
TSD_END_CONN               : Pinned
TSD_START_CONN             : Pinned
TSD Member Type            : GENERAL_BEAM
Mark                       : SB 1/A/7-1/B/7 - 1
Integration Status         : New
```

User-defined attribute parameters, including custom parameters, can be added to the Tekla Structures `objects.inp` file. This allows the attributes to be directly visible in the part properties dialogs and provides a flexible user experience for the detailer.

This information can then be carried forward to any created documentation and included in digital model transfers as required.

Improved connection design workflows

Tekla Structures 2025 has been updated with some important changes to the display of connection forces. Connection forces added to the model database can be shown on the new **Connection forces** or **Base plate forces** tab in the analysis properties dialog of each part.

This functionality can be used by all third-party developers to transfer design force data to the Tekla Structures model, avoiding basic enveloping of forces and potential overdesign of analysis elements. Connection forces are included for all integrated parts, covering all design cases and combinations. This improvement directly leads to enhanced workflows for connection design.

Filter maximum and minimum connection forces using the quick and easy-to-use checkboxes in the part's analysis properties dialog.

This filtering can be further enhanced by including coincident force values.

For column parts, base plate forces are shown on the **Base plate forces** tab, providing accurate values required for connection and foundation design.

Connection forces are automatically populated by the import from Tekla Structural Designer. The transfer covers all integrated members from the Tekla Structural Designer model and supports all analyzed load combinations.

Tekla Structures automatically shares and stores design data and connection forces by design case. This is a significant benefit for detailers in connection design, providing a single point of truth for all this information.

5 What's new in interoperability tools in Tekla Structures 2025

- Export STEP and IGES files - New export for automated steel handrail manufacturing
- Updates in tools for automated precast fabrication
- Updates in DSTV/NC export and DSTV to DXF conversion
- Improvements in Building hierarchy
- Improvements in IFC export

5.1 Export STEP and IGES files - New export for automated steel handrail manufacturing

Starting from Tekla Structures 2025, you can export polybeams, and straight, curved and arc shaped profiles with Boolean operators directly and quickly in the STEP (.stp) or IGES (.igs) format with real arc and bend data for automated manufacturing of steel parts, especially handrails. The export provides solids instead of faceted or tessellated geometry.

The STEP and IGES export formats extend the interoperability possibilities to serve handrail manufacturers and related fabrication processes, and mechanical computer-aided design.

You can export steel profiles and associated connecting entities, such as bolts and welds, as assemblies or single parts. The Tekla Structures model geometry is directly transformed to the STEP or IGES file formats using the Open CASCADE Technology (OCCT), where no conversion files are needed.

For more information about the STEP and IGES formats, see STEP and IGES.

- To start the export, click the new **File** --> **Export** --> **STEP/IGES** command. Load any export settings predefined in your environment, or set up the export as necessary. You can export all or selected objects relative to the

model origin, to the current work plane coordinates, or to the defined base point. When you are ready, click **Export**. By default, the files are exported to the `\STEP` folder under the current model folder.
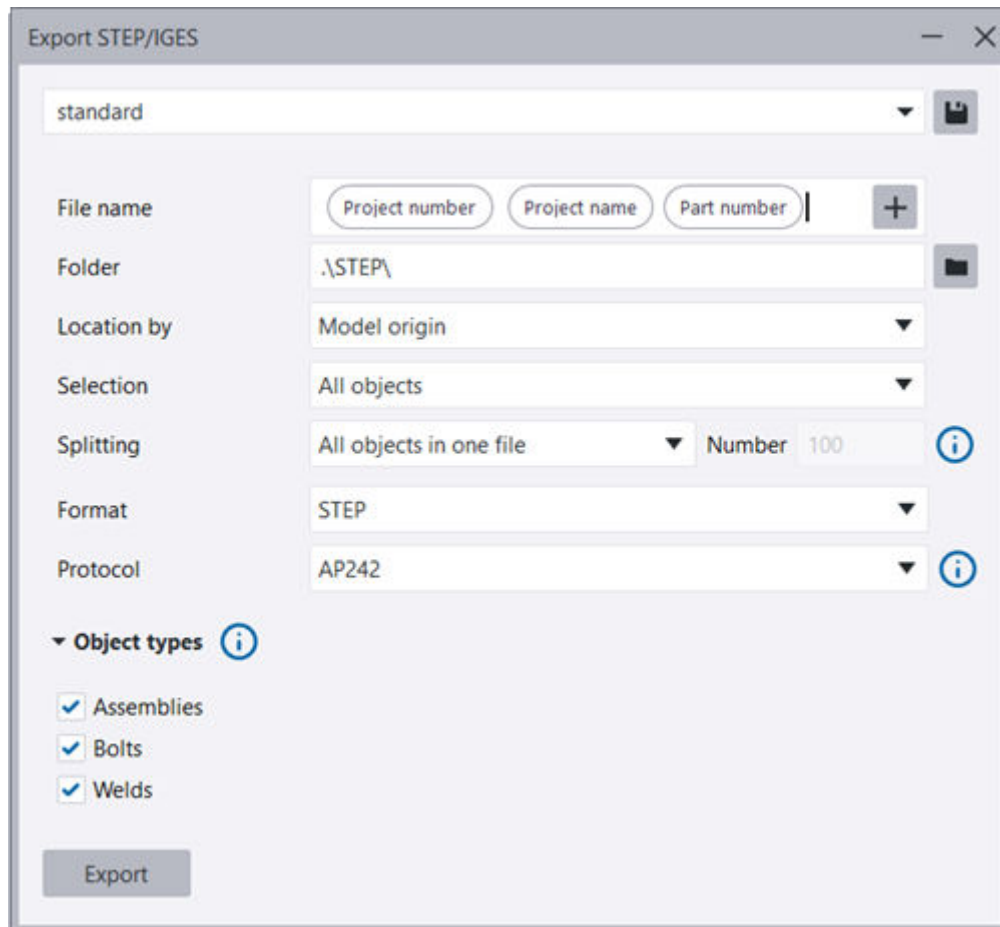
Earlier, you had to use the Multi Converter extension in Tekla Warehouse or a third-party software to convert the exported data to the STEP or IGES format, and sometimes also remodel the geometry in a third-party software. Exporting and remodeling was time consuming, and the resulting files could be extensive in size.

In the image below, the handrail on the top represents the output generated by the Multi Converter extension. The exported object geometry is faceted, and the output is not suitable for handrail manufacturing processes. The handrail at the bottom represents the output generated by the STEP/IGES export. The exported objects have solid geometry, and the output is suitable for handrail manufacturing processes as such.
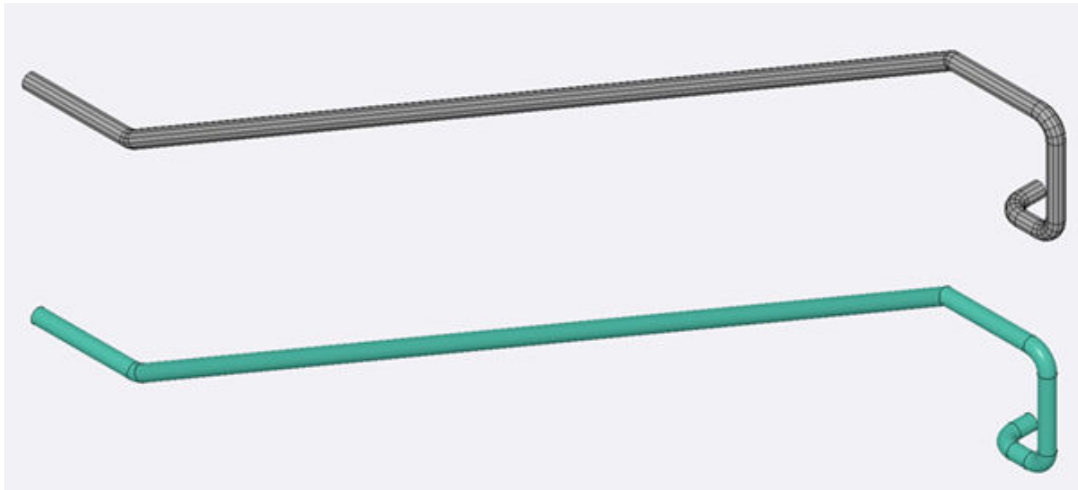
Define export file name using a template

You can define the name of the export file by entering the name directly in

the **File name** box or by clicking the ➕ plus button and double-clicking the desired file name elements in the attributes list. You can use a combination of text and attributes. You can also drag file name elements to a new location, or delete elements by selecting the elements and pressing **Delete** on the keyboard or selecting **Delete** from the context menu. You can move in the box using the arrow keys and the **Home** and **End** keys.

Export to one or multiple files

Splitting allows you to select whether to export **All objects in one file**, **Selected number of objects in each file**, or **One object in each file**. When exporting multiple files, the export adds a running number to the end of the file name.

STEP application protocol

For STEP files, you need to select the appropriate application protocol: **AP203**, **AP214**, or **AP242**. The application protocol to use depends on the software that will be used to open the file. AP203 is the oldest and AP242 the newest protocol.

Objects included in export

You can select whether to include **Assemblies**, **Bolts**, or **Welds** in the export. If you select **Assemblies**, steel parts are exported as whole assemblies, otherwise steel parts are exported as single objects.

Limitations in STEP/IGES export

Currently, the STEP\IGES export does not export the following objects:

- Object types related to sheet metal unfolding, such as bent plates and lofted plates

- Concrete parts
- Cambered profiles
- Warped profiles
- Reinforcement and mesh
- Weld preparations
- Added parts
- Surface treatment
- Pours

5.2 Updates in tools for automated precast fabrication

Tekla Structures 2025 provides significant improvements in the tools for automated precast fabrication.

Unitechnik export

Calculate cast unit overall dimensions

You can now specify how the overall dimensions of the cast unit are calculated using the new option, **Cast unit dimensions**, on the **Pallet** tab. The options are:

All elements: All elements are considered when calculating the overall dimensions.

Only concrete elements: Only concrete elements are considered when calculating the overall dimensions.

Running number to meshes exported into individual files

When exporting meshes into individual files using the **Split meshes to individual files** setting on the **Main** tab, a running number is now automatically added to the file name.

Remove # from Text[Template]#Counter output

You can now remove the # symbol from the **Text[Template]#Counter** option output by enclosing the # symbol in parenthesis (#) in the string that you enter in the dialog. For example, if you want to export mesh names as MSA_1^1, enter MSA_1^(#) as the string for the **Meshes designation** option on the **Reinf. data specification** tab.

Spacer pitch value from UDA or template attribute

You can now select to read the **Spacer pitch** value also from a UDA or template attribute.

Embed name search no longer case sensitive

Searching for the embed name in **Special export assembly file name** on the **Symbols** tab is no longer case sensitive. Previously, if you used a different case in the assembly file than in the model, the embed was not found.

BVBS export

New option to export tagging

A new option, **Export tagging**, has been added on the **Data content** tab. This option reports the rebar intersection tagging in the private block.

This improvement was already introduced in Tekla Structures 2024 SP5.

Select rebar geometry type

The new **Geometry type** setting on the **Advanced** tab has two options, **Default** and **Fabrication geometry**. Both options convert segmented arcs into true arcs. In addition to that, the **Fabrication geometry** option takes into account the **Recognize as straight** user-defined attribute and the Max curve radius requiring bending setting.

ELiPLAN export

New Template option for Position number type

A new option, **Template**, has been added for the **Position number type** setting on the **Data settings** tab. Now you can enter the template attribute for any property you want to be returned for the position code.

ACN values also from cast unit level

The **Position number type** options **Assigned position number (ACN)** and **Cast unit (ACN)** now capture also ACN values that are set on the cast unit level. Previously, these options only captured ACN values set on the part level.

Improvement in exporting round holes

The export now writes the X/Y center point coordinate of round openings and the width and height representing the hole diameter. Previously, the X/Y coordinate only defined the lower left corner of a box to which the width and height were provided.

5.3 Updates in DSTV/NC export and DSTV to DXF conversion

In the DSTV/NC export, there are improvements in the file header and handling sawing angles. The DSTV to DXF converter now allows you write tapped holes correctly into the DXF format and has some new settings for this purpose.

Decimals shown for plate thickness in DSTV file header

In DSTV files, the profile name in the header now includes decimals for plate profiles. The `XS_MAX_DECIMALS_IN_PROFILE_NAME` advanced option is correctly used to define the number of decimals in the header. The plate thickness in imperial units is now correctly shown in metric units when converted.
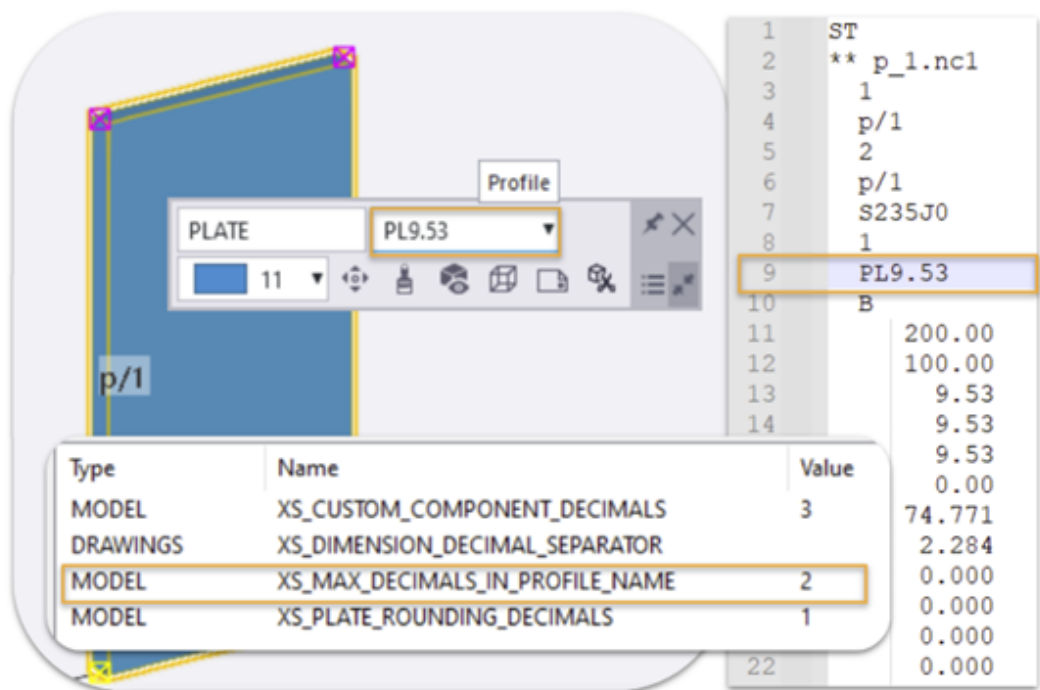
This improvement was already introduced in Tekla Structures 2024 SP6.

Improvement in sawing angles to NC for profiles

The sawing angles for web and flange start and end are now by default set to 0.00 degrees when one of the related outermost profile faces has a 90-degree angle to the profile direction.
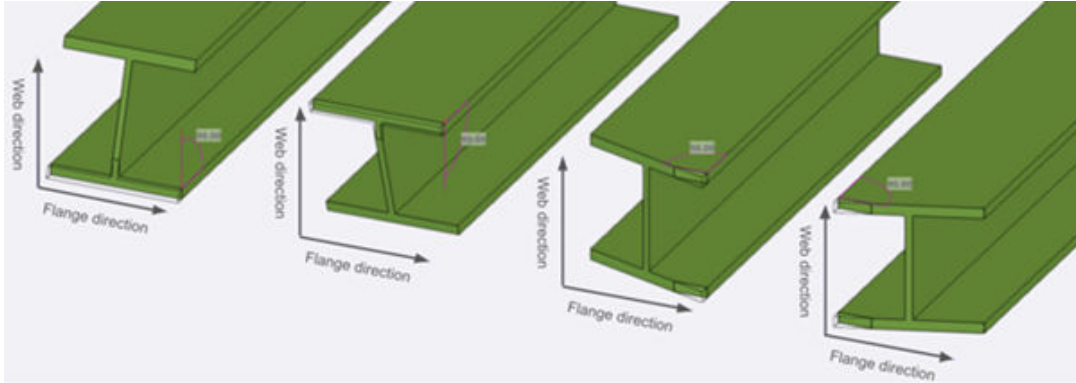
Now the sawing angles are always based on the shortest possible sawing length. See also Standard Description for Steel Structure Pieces for the Numerical Controls.

This improvement was already introduced in Tekla Structures 2024 SP1.

DSTV to DXF converter - new settings to control tapped holes

Since Tekla Structures 2023, it has been possible to create tapped holes, and now it is also possible to write tapped holes correctly into the DXF format and control the output with some new settings in the **DSTV to DXF converter** dialog.

- A new setting, **Draw tapped holes**, has been added on the **Environment** tab with the following options:

  - **Core hole size**: Maps and draws tapped holes using the core hole size conversion and layers.

  - **Nominal size**: Draws tapped holes using the nominal (DSTV value) size. Tapped holes are mapped to the layers and colors as defined on the new **Tapped holes** tab.

  - **No**: Tapped holes are ignored and not drawn in the DSTV output.

- A new tab, **Tapped holes**, has been added with the following settings:

- **LAYER NAME**: Defines the name for the tapped holes layer.

- **DIAMETER**: Sets the bolt hole diameter for the tapped holes on the defined layer. This is the size that is found and matched in the DSTV NC file.

- **CORE HOLE SIZE**: Sets the core hole size for the tapped holes on the defined layer. This is the size that is used in the DXF output if **Core hole size** is the selected **Draw tapped holes** option.

- **COLOR**: Sets a new color for the tapped holes on the defined layer.

This improvement was already introduced in Tekla Structures 2024 SP4.1.

5.4 Improvements in Building hierarchy

In Tekla Structures 2025, **Building hierarchy** has many enhancements to enable faster and more reliable project handling, and an improved way to communicate the building hierarchy in the model.

Building hierarchy commands are now by default in use. As before, you can use the XS_USE_INTEGRATED_BUILDING_HIERARCHIES advanced option to control whether the **Building hierarchy** functionality is in use. By default, the advanced option is now set to TRUE. Previously, the default value was FALSE. Note that when the advanced option is set to TRUE, the IFC export uses the hierarchy created in **Building hierarchy**. If you want to

export the hierarchy created in **Organizer** or with advanced options, set the `XS_USE_INTEGRATED_BUILDING_HIERARCHIES` advanced option to `FALSE`.

Multiple buildings and improved hierarchy structure

You can now create multiple buildings using **Building hierarchy** if you have more than one building in your model.

Building hierarchy has an improved hierarchy structure. You can now create building sections in a building to more easily handle complex projects. The hierarchical structure now follows the IFC spatial structure, **project > site > building > building section > building storey > space**. In previous, Tekla Structures versions, building storeys were called levels.

Easy creation of building hierarchy

You can now easily create and manage building hierarchies in the new **Building hierarchy** side pane. The new side pane replaces the **Building hierarchy** dialog that was used in previous Tekla Structures versions. To start using the **Building hierarchy** side pane, go to the **Manage** tab on the ribbon and click **Building hierarchy**.

The commands for creating all building hierarchy elements are on the same menu in the **Building hierarchy** side pane. Click the ✛ button to start creating a building hierarchy in the model, and then follow the instructions in the status bar. Note that the ribbon commands for creating levels and spaces have been removed.
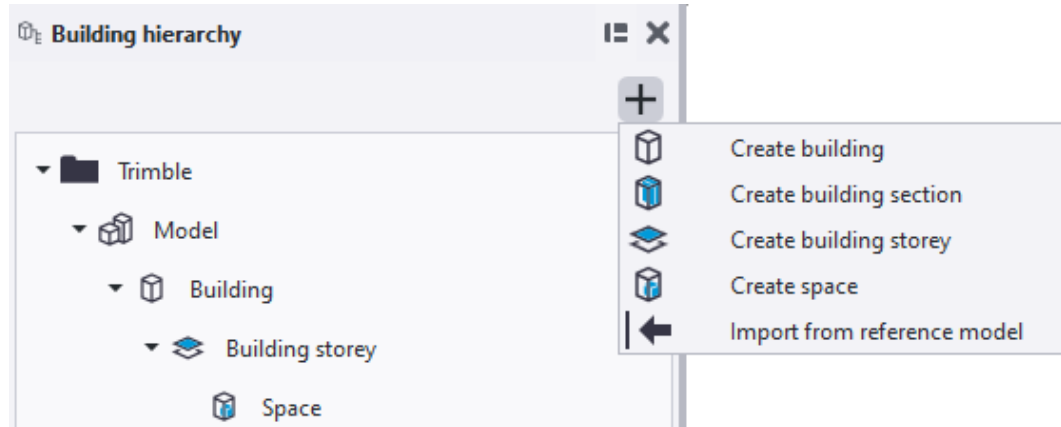
The building hierarchy elements now have a property pane that you can use to modify the properties as needed.

Assign assemblies to building hierarchy elements

You can now manually assign assemblies to building hierarchy elements. Select the assembly in the model, right-click and select **Building hierarchy** to use the assign command. Then select the building hierarchy element. You can restore the default assignment, if needed.

Viewing building hierarchy elements in the model

You can now change the rendering of building hierarchy elements. To use the two new rendering options, go to the **View** tab on the ribbon and click **Rendering**. You can select to show the building hierarchy elements either as wireframe or as shaded wireframe.
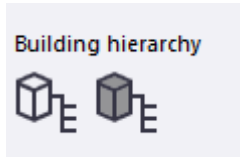
There is also a change in the display settings of model objects. Previously, you had to set the visibility separately for the building and space. Now this has been simplified so that you only set the visibility for the building.

5.5 Improvements in IFC export

In Tekla Structures 2025, there are changes in the IFC property set configuration file location and in exporting the assembly UDAs.

Change in IFC property set configuration file location

The `common\inp` folder has been reorganized so that different kinds of content are stored in more specific folders.

The IFC property set configuration files have been moved from `\common\inp` to `\common\collaboration\ifc`. The XS_INP advanced option has been updated in `teklastructures.ini`. You can now use ready-made IFC property sets from the common environment without taking other settings from `\common\inp` so that you define `\common\collaboration\ifc` folder for the `XS_INP` advanced option in your own .ini file.

Assembly UDAs in IFC4 export

Previously, the user-defined attribute values that were inherited from the assembly main part were not written to assembly objects in the IFC4 export. This issue has now been fixed as follows: When you fetch the UDA from the assembly, and the UDA has no value or has the default value (like for RENOVATION_STATUS, the default value is an empty string), Tekla Structures tries to fetch the value from the assembly main part. If the assembly main part returns a valid value, it is used.

- If the assembly value and the main part value are default values, the assembly value is used.

- If the assembly does not have a value and the main part has a default value, the main part default value is used.

You can disable this functionality using the advanced option XSR_DISABLE_ASSEMBLY_UDA_INHERITANCE. If you set the advanced option to `TRUE`, and if UDA is not set on the assembly level, the UDA is left empty or it uses assembly level's default value. If you set it to `FALSE`, the UDA is inherited from the main part.

IFC subtypes in alphabetical order

The predefined IFC subtype list **Subtype (IFC4)** in the property pane is now sorted alphabetically.
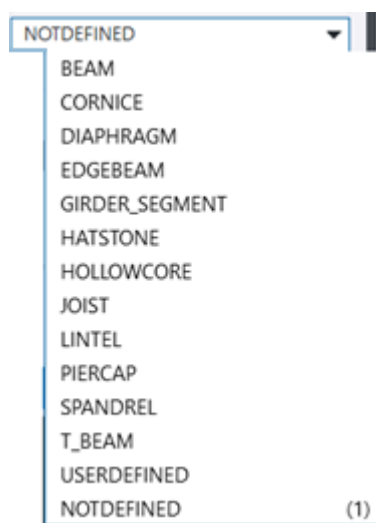
6 What's new in starting Tekla Structures and getting in-product guidance in Tekla Structures 2025

- Environments in cloud - Tekla Launcher (Preview)
-
- Trimble Assistant for Tekla (Preview)

6.1 Environments in cloud - Tekla Launcher (Preview)

Tekla Structures 2025 introduces the Tekla Launcher as a new way to start Tekla Structures and open models. Using the Tekla Launcher you can open and create models and open and join Tekla Model Sharing models without downloading and installing environments from Tekla Downloads. With the Tekla Launcher, the environments are stored and maintained in a cloud service, ensuring that everyone working on the model is using the same environment with consistent settings and files. With the Tekla Launcher you have an easy access to recent models, and you can create new models with readily available environments.

Tekla Structures version 2025 introduces the Tekla Launcher functionality as a Preview feature. To find out more, see Preview features in Tekla Structures 2025 (page 7).

When you install Tekla Structures, two desktop icons appear:

- that launches the classic Tekla Structures startup screen.

- that launches the new Tekla Launcher startup screen.

To use the Tekla Launcher to start Tekla Structures, double-click the desktop

icon or select the Tekla Launcher from the Windows Start menu.

In a similar fashion as with the classic Tekla Structures startup screen, you can use the Tekla Launcher, for example, to:

- open models

- create new models

- select the environment that is used with the model

- modify the model properties

- open the model folder

The Tekla Structures environments in the cloud service and those downloaded from Tekla Downloads are built from the same source, so the content of the environment files is the same. When creating a new model in the Tekla Launcher, you can select whether the new model uses a cloud environment or a downloaded, local environment. For existing models, you can switch between a local environment and a cloud environment.

Note that hosting your own environments is not possible using the Tekla Launcher.

The Tekla Model Sharing models that have been created using the Tekla Launcher are restricted to the environment and environment version that they were created in. This ensures that all users in the shared model are using the same environment.
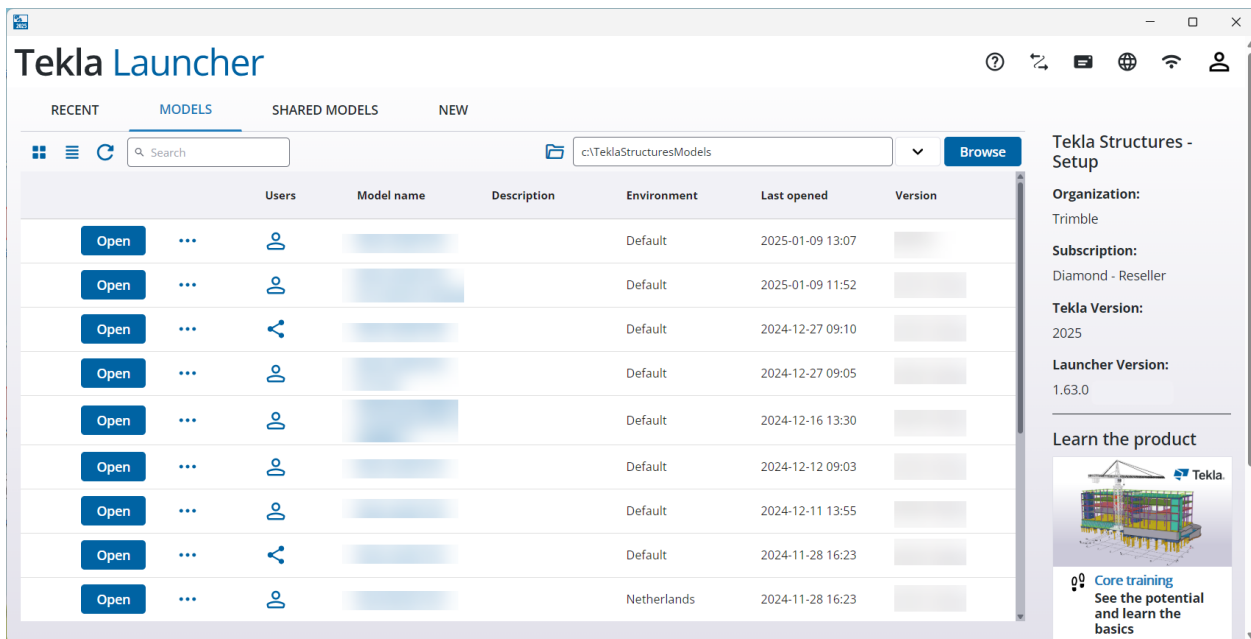
6.2 Notifications on the side pane

Before, notifications were shown only on the Tekla Structures start screen. Now, notifications are shown in the Tekla Structures application.

The new Notifications side pane shows all new and read notifications. It also has settings for how notifications are shown.

Depending on your settings, notifications can be shown as pop-up messages that open in the main view of the Tekla Structures application, or only in the new Notifications side pane.

6.3 Trimble Assistant for Tekla (Preview)

Trimble Assistant for Tekla is an artificial intelligence (AI) chat service that provides support for Tekla products.

Trimble Assistant for Tekla has two chat assistants: the Tekla User Assistant and the Tekla Developer Assistant.

- The Tekla User Assistant provides support for Tekla Structures, Tekla Structural Designer, Tekla Tedds, and Tekla PowerFab based on content in Tekla User Assistance.

- The Tekla Developer Assistant helps with writing macros and modifying models using the Tekla Structures Open API.

The Tekla Developer Assistant is available for users who have a Partner license. For details about licenses for which the Tekla User Assistant is available, see Supported Preview features by license.

You can use Tekla Assistant in a web browser. Trimble Assistant for Tekla is also available as an extension in Tekla Warehouse.

In Tekla Structures 2025 Trimble Assistant for Tekla is a Preview feature. To find out more, see Preview features in 2025.

7 What's new in Template Editor and templates in Tekla Structures 2025

Tekla Structures 2025 introduces some improvements in nut and washer reports, Template library, and in template functions.

7.1 Nut and washer improvements in Template Editor

To allow nuts and washers to be correctly combined in reports, nuts and washers can now be separated within a bolt assembly in Template Editor.

In Template Editor templates, nuts and washers within a bolt assembly are no longer combined into one row. Previously, when a bolt assembly had different nuts and/or washers, the quantity of them was combined, but it was not possible to distinguish the sizes and standards of the nuts and washers. The result was that in the bolt inquiry report, washers were not combined.
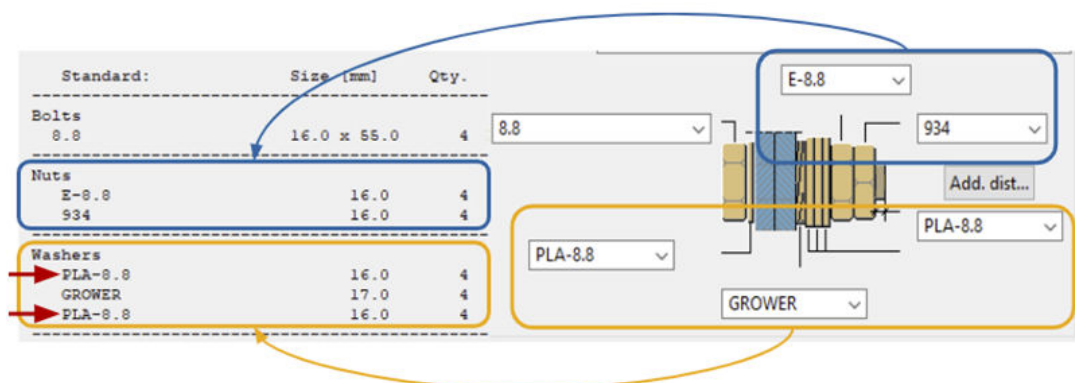
Now, if nuts and washers are not the same in a bolt assembly, Template Editor is able to separate them in templates. You no longer need to use NUMBER 1 - NUMBER 3 in the row property rules for nuts and washers. This allows nuts and washers from multiple bolt groups to be correctly combined or separated.

In the image below, you can see that washers are combined although they have different sizes.

To see this change in your own templates, you need to update the templates. The bolt inquiry report (TS_Report_Inquire_Bolt.rpt) already contains the fix.

This improvement was already introduced in Tekla Structures 2024 SP1.

7.2 Template library improvements

The Template Library has been updated for Tekla Structures version 2025. The following improvements have been made:

- In Template Editor, define both **Meaning** and **Unit** for value fields if you want to avoid using a default unit for the meaning. Previously, the unit was not always correct. For example, at least in some cases, the **Length** meaning uses meters as the default unit.

What's new in Template Editor and templates in
Tekla Structures 2025
114
Template library improvements

- When sorting is used in a value field (**Order** is set to **Ascending** or **Descending**) and the **When rows are combined** setting is set to **Sum values across all rows** or **Sum values within one row**, the sort now uses combined values. Previously, the sort used uncombined values.

- When GetFieldFormula referred to a value field that had a combine action **When rows are combined** selected, it would return an unsummed value. This issue has now been fixed.

- In graphical templates, the Sum() and Count() functions now calculate column values only when used in table footers. Previously, for example Count() would always return the numbers of cells (aka rows) in the whole table, so all table footers would have the same count. For example, a 3x4 table, 3 columns and 4 rows, with first 2 columns with 4 cells and the last column with 3 cells, would previously have counted as 11 in all table footers. Now the first two table footers would have 4 and the last one 3.

- A formatted value always overrides a value field value, even when the value field data type is **Number** (formatted value is always a string).

- In some cases, when imperial units were used, the 0 value was shown incorrectly as 0.0. This issue has now been fixed.

- GUIDs are now sorted correctly.

- Negative numbers represented as strings are now sorted correctly.

- In graphical templates, if a value field content will actually fit inside value field boundaries, it is not cut even if the content is longer than the defined field length.

- In graphical templates, value field font auto-size (**Font size change** in **Free attributes**) now works more precisely. Previously, a bit too large font size could be selected.

- Value field formula resolving order is now correct and not mixed with the drawing order.

  The drawing order is the same as the order of the value fields in the content browser. The resolving order is determined by the formulas in the value fields. So a value field that refers to another value field (for example, with GetFieldFormula or CopyField) is always resolved after the value field it refers to.

7.3 Improvements in fvf function

- For the fvf function, the fifth parameter is now available also in drawing templates and custom components. If it is set to TRUE, empty entries from the read line of the file will be considered when the function gets resolved. If it is missing or set to FALSE, empty entries are removed.

Below are several hypothetical examples that illustrate how the syntax in the fvf formula produces different results, including the use of a fifth parameter in the formula to produce empty columns.

This example specifies an input file called `sample.dat`, with the line:

A; B;; C; D

In this case, the formula

will return an empty string: ""

What's new in Template Editor and templates in
Tekla Structures 2025
116
Improvements in fvf function

As each separator in the above example is considered meaningful, the third column is an empty column between the first ';' and the first ' ' separators. So the column values in this case are:

1: "A"

2: " B"

3: ""

4: " C"

5: " D"

and

```
Formula
fvf("sample.dat","A",3,  ";",  FALSE)
```

will return: "C"

A subsequent example would be when multiple separators are used in the input file, i.e. a mix of spaces and commas.

A, B, C, D

In this case, the formula:

```
Formula
fvf("sample.dat","A",3,  ",  ",  TRUE)
```

will return: "B"

and

```
Formula
fvf("sample.dat","A",4,  ",  ",  TRUE)
```

will return an empty string: ""

and

```
Formula
fvf("sample.dat","A",3,  ",  ",  FALSE)
```

will output: "C"

and finally

```
Formula
fvf("sample.dat","A",4, ", ", FALSE)
```

will output: "D"

That is, when the last parameter is FALSE, consecutive separators are interpreted as one separator.

TRUE = allow empty columns, thus consecutive separators are treated as unique separators.

For more information about the fvf function, see fvf.

8 What's new in components in Tekla Structures 2025

There are many improvements in concrete components and steel components in Tekla Structures 2025.

8.1 New commands for creating components

You can now easily create new components in your model using two new creation commands. The new commands minimize the time spent on searching for components in the **Applications & components** catalog.

- When you have a component selected in the model, you can now right-click and select **Create new** to start creating a new component in the model based on the settings applied for the selected component. The **Create new** command is available for all components in the model.
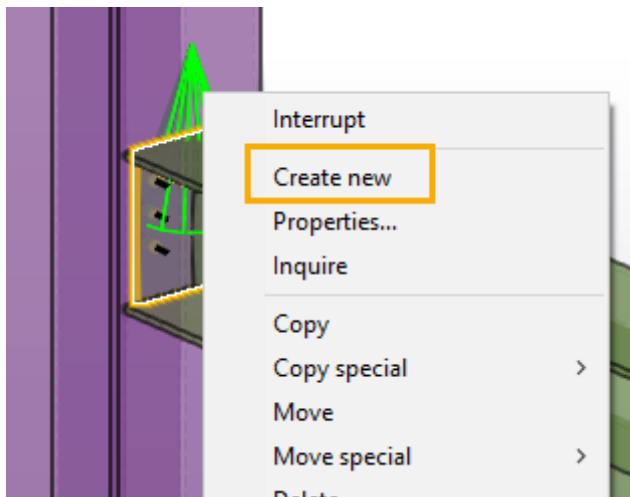
- There is a new **Create** button in the bottom right corner of system and custom component dialogs. When you have a component dialog open, you can click the **Create** button to create a new component based on the

settings applied in the dialog, without having to select the component in the **Applications & components** catalog. Previously, you always had to select the component in the **Applications & components** catalog first to start creating the component.
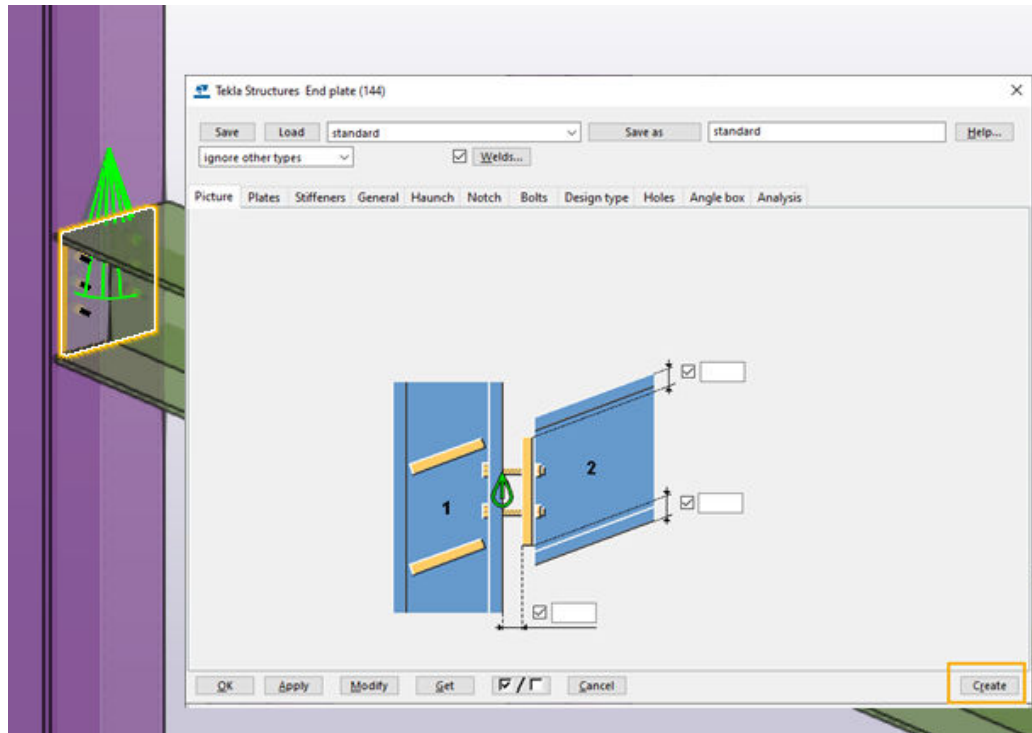
8.2 Change in displaying the command prompt window about adding or modifying a component

You can now use the new `XS_DISPLAY_RPC_COMPONENT_CONSOLE_WINDOW` advanced option to control whether to display the command prompt window that has information about adding or modifying a component in the model. Set the advanced option to `TRUE` to display the window. The default value is `FALSE`. Previously, the window was always displayed when you added or modified a component in the model.

8.3 Concrete components

New features and improvements

Component	Description
Auto splitter	With this new detailing component you can generate splitters that split

Component	Description
	long bars in rebar sets so that the bars do not exceed the stock length.
Corbels and recesses (82)	On the **Configuration** tab, there is a new setting, **Cutout parts in cast unit**, where you can define the class or name of the cast unit parts that are avoided when corbels or recesses go through the parts.
Embedded anchors (008)	On the **Advanced** tab, you can now select in the **Include reinforcement in COG** setting whether the weight of the reinforcement in the cast unit is included in the COG calculation.
Edge and corner reinforcement (62)	On the **Edge bars** tab, there is a new setting where you can select to create either a group of multiple edge bars with a specific cover thickness or a single edge bar group in the middle of the part.
Hole reinforcement for slabs and walls (84)	On the **Edge bars** tab, you can now manage the creation of edge bars on each side of the hole separately and define their length.
Longitudinal reinforcement (70)	On the **Parameters** tab, you can now use the **Ignore cuts**, **Cut class**, and **Cut name** options to define whether the bars are cut and which cuts are ignored.
Mesh bars, **Mesh bars by area**	On the **Splicing** tab, you can now select a new non-symmetrical option for **Splicing symmetry** that allows you to place the short bar on the right hand side.
Rectangular column reinforcement (83)	On the **Bar ends** tab, you can now define the cranking dimensions separately for corner bars and side bars.
Reinforced concrete stair (95)	• On the tabs for the bars C, D, E, G, and K, you can now define a comment and a name for the additional bars. • On the **Bar H** tab, you can now define spacing and the start/end

Component	Description
	offsets separately for the top and bottom bars.
Seating with dowel (75)	When creating nuts, you can now define if the nut will be a polygon type or a beam type with a profile.
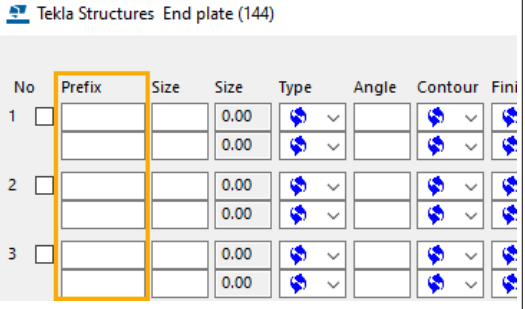
8.4 Steel components
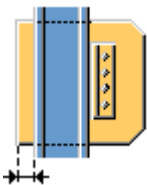
New categories for steel components in Tekla User Assistance
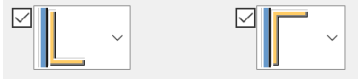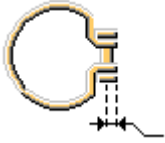
The user documentation of steel components in Tekla User Assistance has been partly reorganized. The following new categories have been added under the **Steel components** section in the Tekla Structures 2025 product guides:
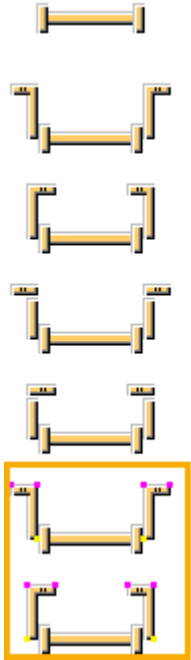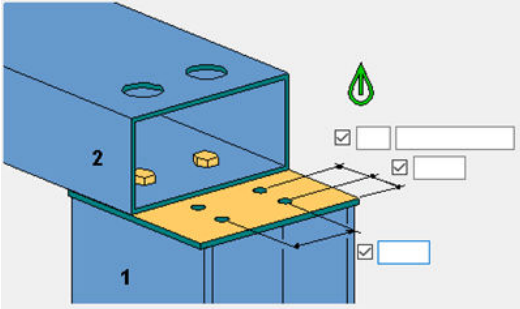
- Cold rolled connections
- Haunch connections
- Moment connections
- Notch connections and details
- Category for other miscellaneous connections, details and detailing tools
- Offshore
- Purlin connections
- Safety details
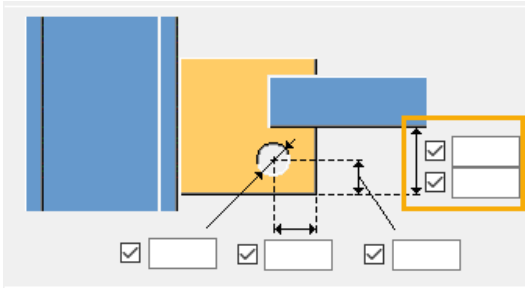
New features and improvements

Component	Description
Weld prefixes for steel components	You can now define weld prefixes for above and below line welds in the welds dialog for steel components. Previously, you could only define the prefixes in the property pane.
Apex haunch (106)	You can now create galvanizing holes on the **Holes** tab.
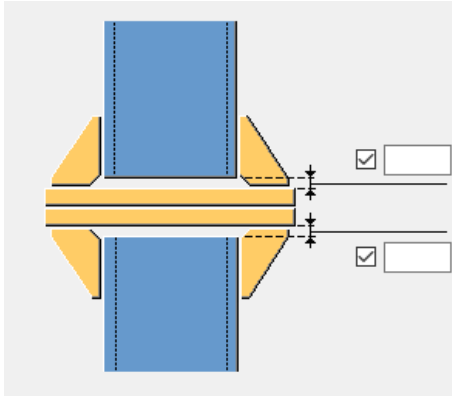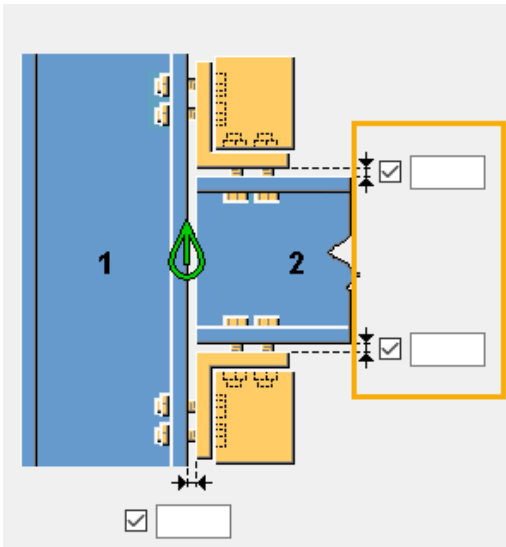
Component	Description
Base plate (1004)	On the **Anchor rods** tab, you can now define the assembly position number for the plate washer.
Base plate (1004), **Stiffened base plate (1014)**, **Web stiffened base plate (1016)**, **Base plate (1042)**, **U.S. Base plate (1047)**, **Circular base plates (1052)**, **Tapered column base plate (1068)**	• The cast unit type of the grout is now **Cast in place**. • On the **Anchor rods** tab, you can now define the gap between the base plate and nut or washer created above the base plate. • A new anchor rod type which enables specific UDAs to be reported with anchor rod objects or with base plate objects has been added to base plate components. Inquiring anchor rod objects from these base plate components will report UDA values for: RodSize, RodMaterial, and EmbedmentThickness.
Beam with stiffener (129), **Full depth (184)**, **Full depth S (185)**	It is now possible to use separate welds for the stiffener plate and the shear tab.
Bolted gusset (11), **Tube gusset (20)**, **Gusseted cross (62)**	On the **Picture** tab, you can now define the gusset plate extension dimension from the opposite face when the gusset runs through the main part.
Bolted gusset (11), **Seating (30)**, **Haunch (40)**, **Splice connection (77)**, **End plate (101)**, **End plate with compensating flange plates (111)**, **Stub (119)**, **Clip angle (141)**, **Two sided clip angle (143)**, **Shear plate simple (146)**	• On the **Bolts** tabs, you can now define a bolt comment. • On the **Bolts** tabs, **Bolt comment** has been replaced with **Comment**.
Bolted gusset (196), **L splice (175)**	• You can now define the **Finish** property for all parts.

Component	Description
	• You can now define the **Class** property for all parts.
Bolted moment connection (134)	• You can now define the **Finish** property for all parts.
	• On the **Flange plates** tab, you can now select in the new **Are weld preparations required** setting whether to create weld preparation polygon cuts.
Built up box (S6)	You can now define the batten placement in a similar way to the lacing placement on the **Parameters** tab.
Cage ladder (S60)	• On the **Cage** tab, you can now define the length projection of the vertical bars when the cage is created with the left or right step type.
	• On the **Cage** tab, there is a new O type hoop that creates hoops at the inside face of the stringers.
	• On the new **Anchor rods** tab, you can now define whether bolts or custom components are used as anchors.
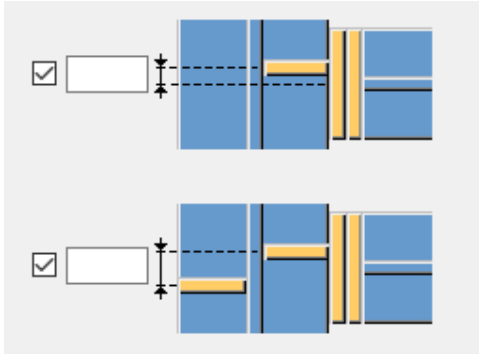
Component	Description
	• On the **Supports** tab, you can now select to create backside supports as polybeams.
Clip angle (141), **Two sided clip angle (143)**	Seat angle can now also be created when the components are used in beam-to-beam type connections.
Column tube seating (100)	You can now define more than one row of bolts.
Gusseted cross (62), **Corner wrapped gusset (63)**	On the **Brace conn** tab, you can now define the bolt main part for the L profile or plate connection gusset to the bracing.
Doubler plate (1022)	When you now define `0.0` as the hole diameter value on the **Doubler plate** tab, no hole is created.
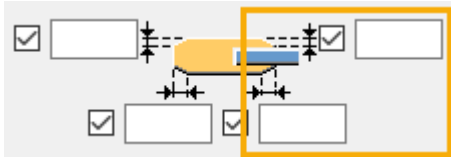
Component	Description
End plate (29)	You can now create galvanizing holes in the end plates on the new **Holes** tab.
End plate (101), **End plate with compensating flange plates (111)**	The default value of the end plate thickness has been changed. The default thickness is now: • 10 mm for a secondary profile that is lower than 200 mm • 12 mm for a secondary profile that is higher than 200 mm
End plate (144)	On the **Plates** tab, you can now define whether a seat plate is created under the end plate. The seat plate is created when you define a thickness for the plate.
Handrailing (1024)	On the **Parts** tab, you can now define if the toe plate is created as a plate or as a beam with a specific profile.
Haunch (40)	On the **Extra plates** tab, you can now define the horizontal offset of the upper and lower bolt plates on the left and right side.
Joining plates (14)	On the **Parts** tab, you can now select in **Place plates centered** whether plates are created as centered to the connection origin point.
2-Sided joist to column (162)	On the **Stabilizer** tab, you can now define separate vertical offsets for the near side and far side stabilizer plates.
Joist to column, type 1 (161), **2-Sided joist to column (162)**	On the **Parts** tab, you can now define that stiffeners are created under the cap plate.
Joist to column, type 2 (163)	On the **Seat** tab, you now create chamfers for the vertical plate and

Component	Description
	define the dimensions when you have selected to create the seat as two plates.
JP Full depth special (185)	You can now create haunch plates on the **Haunch** tab.
Ladder (S35)	On the **Picture** tab, there is a new O type hoop that creates hoops at the inside face of the stringers.
LProf base detail (1020)	On the **Bolts** tab, you can now define the bolt cut length, slotted holes, and the number of bolts and bolt spacing in the base plate.
L splice (175)	On the **Parts** tab, you can now define the assembly position number and the **Class** property for parts. You can define the corner chamfers on the new **Parameters** tab.
Multiple beam railing (S84)	On the **Parts** tab, you can now define if the toe plate is created as a plate or as a beam profile.
Partial stiffened end plate (65)	On the **Parameters** tab, you can now create chamfers on all four corners of the shear tab.
Railing plane to plane (90)	On the **Parameters** tab, you can now select to create the railing as a polybeam.
Railings (S77)	• On the **Rails** tab, there is a new setting, **Connect closure**, where you can select whether a connection is created between the closure and the first or last stanchion. • Middle rail cuts at the first and the last stanchion are now cutting only one side of the stanchion.
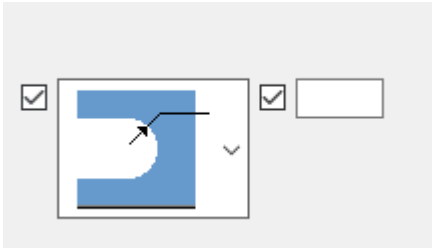
Component	Description
Round joining plates (124)	• On the **Parameters** tab, you can now define different weld gaps for the main part and secondary part. • On the **Parts** tab, you can now create ring plates.
Seat conn type 1 (52), **Seat conn type 2 (54)**, **Seat conn type 3 (59)**, **Seat conn type 4 (57)**	On the **Picture** tab, you can now define separate vertical offsets for the top and bottom seat. On the **Secondary bolts** tab, you can now separate bolts into two bolt groups. By default, the bolts are created as one bolt group.
Seat type 9 (73)	On the **Parameters** tab, you can now specify three different types of cope cuts for the secondary part.
Seating cap (37), **Seating (39)**	On the **Bolts** tab, you can now delete bolts.

Component	Description
Splice connection (77)	It is now possible to use weld 8 for the welds between the main or secondary part and the internal or external flange plates.
Stairs (S71)	It is now possible to specify more than one horizontal distance between bolts in the `steps.dat` file. Option I now supports specifying several distances between square brackets.
Stanchion double plate (87), **Stair base detail (1039)**	On the **Bolts** tab, you can now define the bolting direction.
Stanchions (S76)	• You can now create stanchions as custom components. • You can now define an additional height for the first stanchion. Previously, the same value was used for the first and last stanchion.
Stiffened end plate (1014), **Web stiffened end plate (1016)**, **Simple base plate 2 (1031)**, **Stairs detail (1038)**, **Stairs detail (1039)**, **Base plate (1042)**, **Stairs detail (1043)**, **U.S. Bearing plate (1044)**, **U.S. Base plate (1047)**, **Circular base plate (1052)**, **Base plate (1053)**, **Box column base plate (1066)**, **Tapered column base plate (1068)**	On the **Bolts** tabs, you can now define a bolt comment.
Stiffened end plate (27)	• On the **Parameters** tab, you can now define the shear tab offset from the secondary part web axis and the stiffener offset from the shear tab.

Component	Description
	• On the **Parts** tab, you can now define the height, width, and class of fitting plates.
Stiffened end plate (27), **Stub (28)**, **Seating cap (37)**, **Seating (39)**, **Haunch (40)**, **Partial stiff end plate (65)**, **Clip angle (141)**, **Two sided end plate (142)**, **End plate (144)**, **Stiffener (1003)**	Previously, the default chamfer value was rounded to the closest 5 mm. Now the radius of the profile is used as the default value.
Stiffeners (1003)	On the **Parts** tab, you can now define the **Finish** property for stiffeners.
Stub connection (119)	• On the new **Top/bottom plate** tab, you can now define the angle between both the top and bottom front stiffener and the horizon. Previously, you could only define the bottom angle. The angle cannot be defined in sloped or skewed situations. • On the **Picture** tab, you can now define the top and bottom plate width.
Tower 1 diagonal (87)	On the **Bolts** tab, you can now specify the hole type, rotation of slotted holes, and in which part slotted holes are created.
Tube crossing (22), **Shear plate simple (35)**, **Shear plate to tube column (47)**, **Shear plate built-up T (69)**, **Welded to top flange (147)**	On the **Bolts** tab, you can now define the bolting direction.
Tube gusset (20)	• On the **Brace conn** tab, you can now create chamfers on the connection plate also on the side of the connection plate that is closer to the bracing. • On the **Gusset** tab, it is now possible to create four chamfers on the gusset plate when the gusset is created on a column.

Component	Description
Two sided clip angle (143)	On the **Parts** tab, there are now two new safety connection types, where the corner of the clip angle is chamfered.
Two sided end plate (142)	On the **Notch** tab, there is a new notch size option that measures the size from the edge of the main beam flange and from the outer edge of the top flange of the main beam.
U.S. Base plate (1047)	On the **Parameters** tab, the option to select between bolts or holes has been removed.
U.S. Bearing plate (1044)	• On the **Stiffeners** and **Stiffeners 2** tabs, you can now define the stiffener polygon rotation and stiffener rotation angles, and separately set the shape and chamfer types of the left and right stiffeners. • You can now define the **Class** property for all parts in the component. • On the **Anchor rods** tab, you can now define the assembly prefix and start number for the anchor profile.
Web stiffened base plate (1016)	It is now possible to create the bottom chamfer on the web stiffener when the stiffener is sloped.
Welded beam to beam (123)	On the **Chamfers** tab, there is now a new chamfer type available for the secondary beam web chamfers.

Component	Description
Weld preparation (44)	On the **Parameters** tab, there are now two new chamfer types available for secondary beam web chamfers.
Welded gusset (10)	On the **Brace conn** tab, you can now select to create a rounded notch in the secondary parts.
Windbracing (S55), **Vertical bracing (S56)**	On the **Parameters** tab, you can now define the **Class** property for the subconnections used for connecting diagonal braces and rafters.
Wooden purlin shoe (15)	On the **Parts** tab, you can now select inversed options for the **L position** to weld the shorter side of the profile to the main part.
Wooden steps pan (S72), **Polybeam pan (S73)**	You can now define the **Finish** property for all parts.
Wraparound gusset cross (60)	• It is now possible to use weld 8 to create a weld between the seal plate and the gusset. • On the **Gusset** tab, you can now define the clearance between the gusset and the connection plates or clip angles.
Wraparound gusset (58), **Hollow brace wraparound gusset (59)**, **Wraparound gusset cross (60)**	On the **Gusset conn 1** and **Gusset conn 2** tabs, and the **Gusset bolts 1** tab, you can now select whether the gusset or the clip angle (L profile) is set as the component main part for the bolts.

Component	Description
Z Pan (S74)	You can now define a step profile prefix on the **Z pan** tab.

8.5 Improvements in previous service packs

Tekla Structures 2025 also includes the improvements that were already introduced in the following Tekla Structures 2024 service packs.

Concrete components

Component	Description
Embedded anchors (8)	You can now enter longer file paths, up to 256 characters in the **Browse configuration file** box on the **Placement** tab. Previously, the maximum path length was 80 characters. Tekla Structures Service pack 1
Reinforced concrete stair (95)	It is now possible to use **Bar L** rebars to reinforce all steps created by the component. Previously, the maximum number of steps to reinforce was 34. Tekla Structures Service pack 1

Steel components

Component	Description
Base plate (1004), **Base plate (1042)**	It is now possible to specify a class for the grout on the **Anchor rods** tab. Tekla Structures2024 Service pack 3
Full depth S (185), **JP Full depth Special (185)**	You can now define the bottom chamfer of the tab plate on the **Plates** tab. Tekla Structures Service pack 1
Stiffener end plate (27)	On the **Parts** tab, you can now select in the **Use polygon weld** setting whether a polygon weld is used when the space between the end plate top or bottom and the beam flange is less than 2 mm. Tekla Structures2024 Service pack 5

Component	Description
Stiffeners (1003)	You can now select on the **Parameters** tab whether the component searches for input parts created as composites of welded parts. Tekla Structures Service pack 3
Stub connection (119)	• On the **Picture** tab, you can now define the size of the stub as distance from the main part center line to the outer edge of the first end plate. • On the **Picture** tab, you can now define the offset of the top plate and bottom plate from the main part web. • You can now define the vertical offset of end plate 1 on the **Parts** tab. Tekla Structures Service pack 1
Tube gusset (20)	• On the **Gusset** tab, there is a new setting for creating chamfers. You can now create four chamfers on the gusset plate when the gusset is created between the flanges of the main part. Previously, you could create two chamfers. • Previously, the chamfers on the gusset plate were created only when the connection was used on one secondary part. This issue has been fixed now and chamfers are also created for more than one secondary part. Tekla Structures Service pack 1

9 Changes in advanced options in Tekla Structures 2025

In Tekla Structures 2025, there are some new advanced options, and some of the advanced options have become obsolete. Also, the functionality of some of the advanced options has been changed.

You can use advanced options for configuring Tekla Structures to suit the way you work, or to comply with specific project requirements or industry standards. You can change advanced options values in the **Advanced options** dialog, or in the initialization files.

9.1 New advanced options

XS_ANGLE_GRADIAN_SIGN

Use the XS_ANGLE_GRADIAN_SIGN advanced option to set the desired gradian sign to be used in angle dimensions in drawings. The default value is "g".
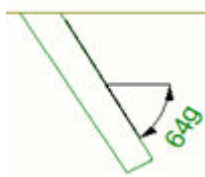
This advanced option was already introduced in Tekla Structures 2024 SP4.

XS_DRAWINGS_LINE_CAP_STYLE

Use the XS_DRAWINGS_LINE_CAP_STYLE advanced option to adjust the shape of the line ends in PDF printouts by defining the line cap style.

Value 0:
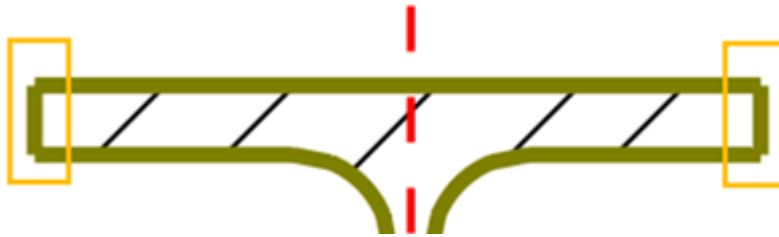
Value 1:
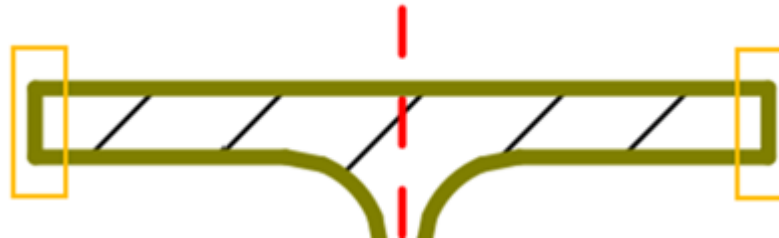
Value 2:
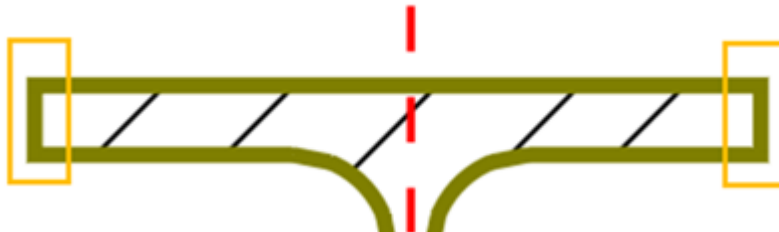
This advanced option was already introduced in Tekla Structures 2024 SP4.

XS_DISPLAY_RPC_COMPONENT_CONSOLE_WINDOW

Use the XS_DISPLAY_RPC_COMPONENT_CONSOLE_WINDOW advanced option to control whether the command prompt window is shown when adding or modifying a system component in the model. The command prompt window shows information about adding or modifying the component. Set the advanced option to TRUE to show the window. The default value is FALSE.

XS_ENABLE_US_SURVEY_UNIT

Set the XS_ENABLE_US_SURVEY_UNIT advanced option to TRUE to change the measurement system in the model from international/imperial feet to U.S. survey feet. The default value is FALSE.

XS_SHOW_LICENSE_ERROR_MESSAGE_FOR_BYPASS_INI

If you use the Bypass.ini file to bypass the Tekla Structures startup screen, set the XS_SHOW_LICENSE_ERROR_MESSAGE_FOR_BYPASS_INI advanced option to TRUE to show error messages that relate to obtaining a license.

Set the XS_SHOW_LICENSE_ERROR_MESSAGE_FOR_BYPASS_INI=TRUE in teklastructures.ini or in env_<environment>.in file.

XS_TSEP_TO_BE_INSTALLED_ORG_DIR

You can use the `XS_TSEP_TO_BE_INSTALLED_ORG_DIR` advanced option in the `user.ini` file to define the location of `.tsep` files to be automatically installed. Your Tekla Structures manages this folder and its contents.

9.2 Changed advanced options

New option for formatting reinforcement position numbers

A new formatting option, `%REBAR_SEQ_POS%`, can now be used with the following advanced options to show reinforcement sequence numbers:

- XS_REBAR_POSITION_NUMBER_FORMAT_STRING

- XS_REBARSET_TAPERED_REBAR_POSITION_NUMBER_FORMAT_STRING

- XS_REBARSET_TAPERED_GROUP_POSITION_NUMBER_FORMAT_STRING

XS_DO_NOT_CREATE_ASSEMBLY_DRAWINGS_FOR_LOOSE_PARTS

Now when you have set the advanced option XS_DO_NOT_CREATE_ASSEMBLY_DRAWINGS_FOR_LOOSE_PARTS to `TRUE`, it no longer considers assemblies with only one part but with reinforcement, workshop bolts, or studs attached to it as a loose part. Earlier, setting this advanced option to `TRUE` would not allow the creation of an assembly drawing for base plates with studs, for example. Now you can create assembly drawings for these assemblies.

XS_REBARSET_SHOW_MODIFIERS_CREATED_BY_COMPONENTS

The default value of this advanced option has been changed from `FALSE` to `TRUE`.

XSR_DISABLE_ASSEMBLY_UDA_INHERITANCE

Previously, IFC4 export always used the UDA value from the main part of the assembly if the assembly did not have it defined.
Now, you can disable this functionality using the advanced option XSR_DISABLE_ASSEMBLY_UDA_INHERITANCE. If you set the advanced option to `TRUE`, and if UDA is not set on the assembly level, the UDA is left empty or it uses assembly level's default value. If you set it to `FALSE`, the UDA is inherited from the main part.

XS_USE_INTEGRATED_BUILDING_HIERARCHIES

The default value of this advanced option has been changed from `FALSE` to `TRUE`.

XS_MODEL_TEMPLATE_DIRECTORY

You can now set multiple folder paths for XS_MODEL_TEMPLATE_DIRECTORY.

9.3 Obsolete advanced options

XS_DO_NOT_CLIP_NATIVE_OBJECTS_WITH_CLIP_PLANE

This advanced option has now been replaced with the **Clip only reference objects** command in **View** --> **Clipping**.

XS_CONNECT_UPLOAD_MODEL_FOLDER and XS_UPLOAD_SHARED_MODEL_TO_CONNECT

These advanced options have now been replaced with the **Upload model settings** in **File** --> **Trimble Connect**.

9.4 List of obsolete advanced options across Tekla Structures versions

The Obsolete advanced options page provides information about the advanced options that have become obsolete in Tekla Structures in version 2018 and newer.

10 Tekla Structures 2025 administrator's release notes

Upgrade guide from Tekla Structures 2024 to Tekla Structures 2025

Administrator's release notes are intended to provide advanced users with instructions on how to apply the additional customizations available in a new Tekla Structures version.

10.1 Administrator's release notes: Model templates in version update

NOTE If you have model templates in Tekla Warehouse, remember to update them as well.

If your model template has a building in it, building hierarchy does not work. You must remove the building from the model template or delete the building and create a new building with a boundary box.

Update model templates

1. Open Tekla Structures 2025.

2. Create a new model using an existing model template.

3. Give the model the same name as in the previous Tekla Structures version.

4. Open a 3D view.

5. Diagnose and repair the model.
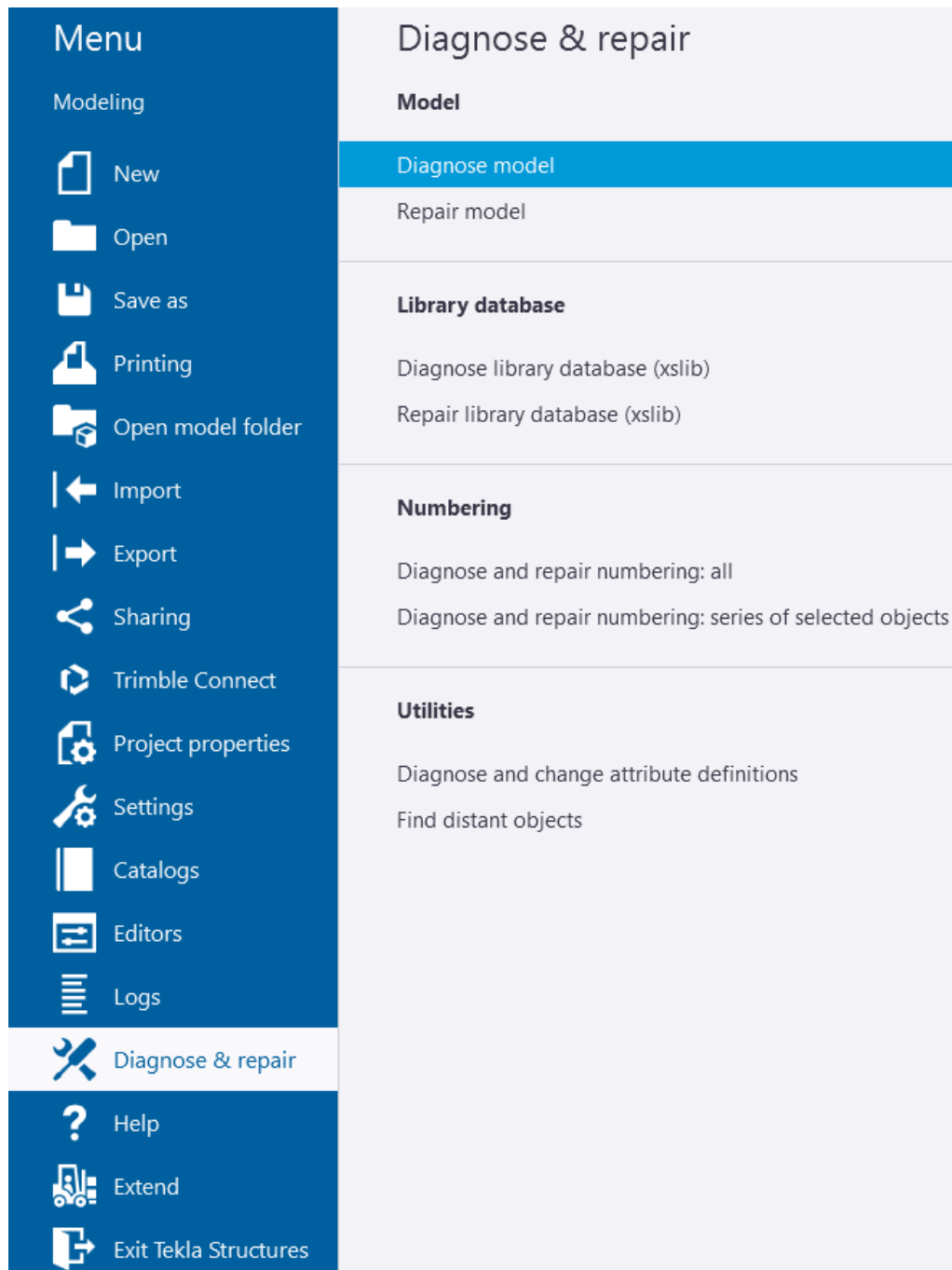
6. Create a project thumbnail, or add a custom image named `thumbnail.png` in the model folder.

   The preferred size of the image is `120 x 74` pixels.

141
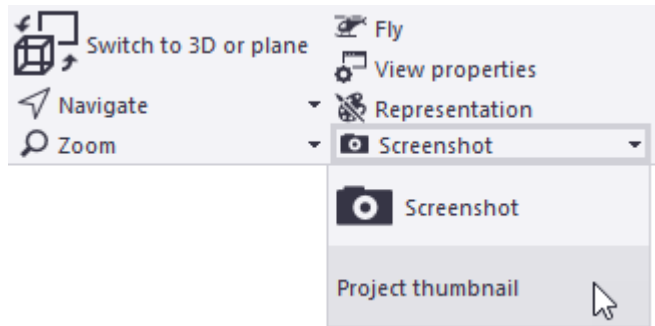
7. Save the model.

   If you do not save the model, a message that warns about the model being created with a previous version might be shown.

8. Save the model as a model template.
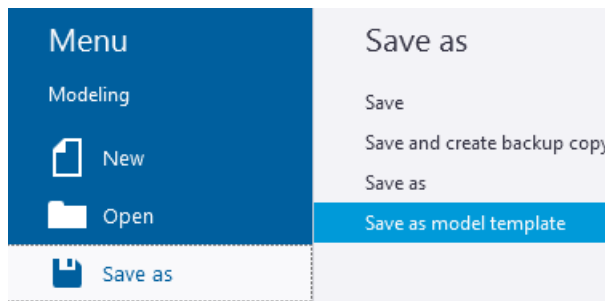
9. Include the needed catalog files and subfolders from the model folder, and click **OK**.
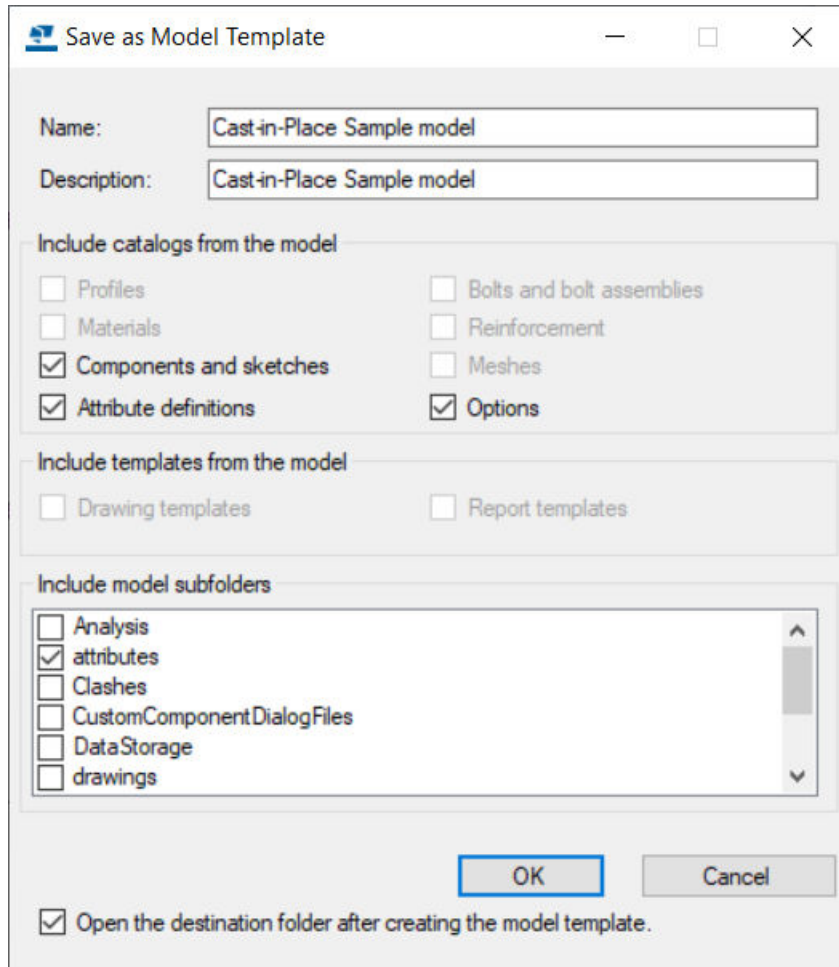
10. Manually remove all `*.db` files (environment database, options databases) from the model folder.

    The `*.bak`, `*.log` and `xs_user` files are automatically removed from the model folder.

    The `.idrm` files (`db.idrm` and `xslib.idrm`) should be kept as they are part of the model.

    The model template is saved in the location specified by `XS_MODEL_TEMPLATE_DIRECTORY`.

    You now have a sample image for your model template. The **Applications & components** catalog is now also in order and easy to use.
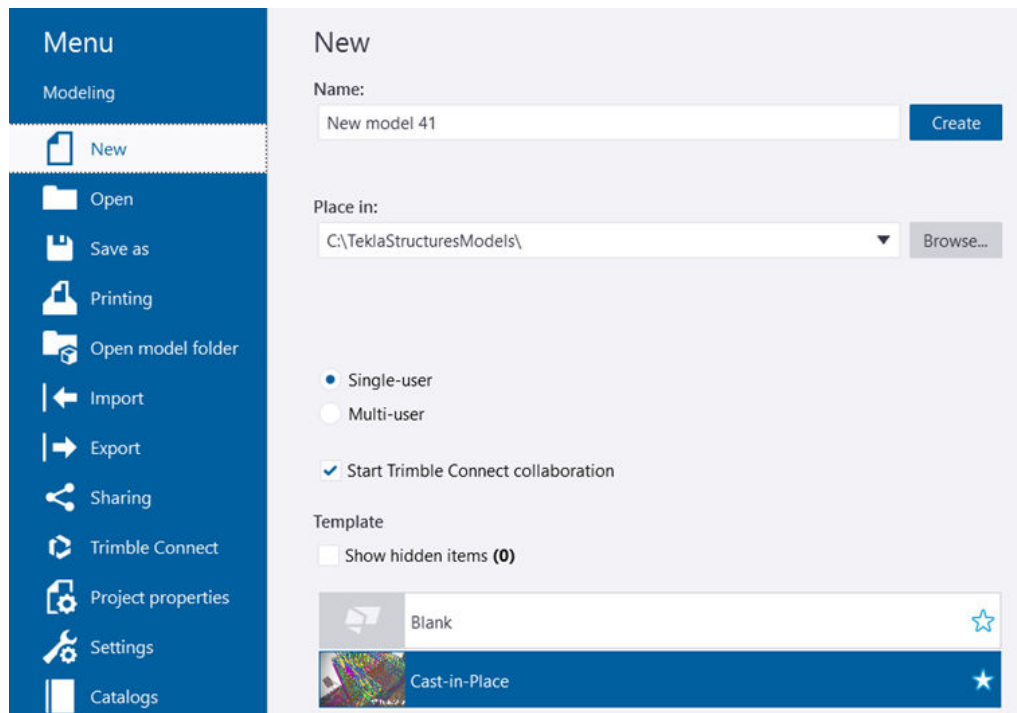
10.2 Administrator's release notes: Applications & components catalog maintenance

Keep the **Applications & components** catalog organized and usable.

Set `XS_COMPONENT_CATALOG_ALLOW_SYSTEM_EDIT` to `TRUE` to be able to edit the **Applications & components** catalog definition files that are located in the `XS_SYSTEM` folders.

Check and fix the following:

1. Add items to groups

Check the **Ungrouped items** group and add the items to the appropriate group.

2. Check the logs for errors

The **Applications & components** catalog shows the message log button in the lower-right corner of the catalog if there are errors or warnings, such as errors in the catalog definition files.

If there are references to missing plug-ins, go to the referred `ComponentCatalog.xml` and remove the references manually:

```
    ...
    <ComponentCatalogItemPlaceholder>
        <ItemIdString>CatalogMacroModelingItem?CreateSurfaceView?GLOBAL</ItemIdString>
    </ComponentCatalogItemPlaceholder>
    <ComponentCatalogItemPlaceholder>                    Delete selected lines for each missing plugin
        <ItemIdString>CatalogPluginComponentItem?CopyModelDirectoryPlugin</ItemIdString>
    </ComponentCatalogItemPlaceholder>
    <ComponentCatalogItemPlaceholder>
        <ItemIdString>CatalogMacroModelingItem?CloseViewsExceptSelected?GLOBAL</ItemIdString>
    </ComponentCatalogItemPlaceholder>
    <ComponentCatalogItemPlaceholder>
        <ItemIdString>CatalogMacroModelingItem?CloseTemporaryViews?GLOBAL</ItemIdString>
```

Thoroughly test that these changes do not create any further errors or change the structure of your **Applications & components** catalog. Check at least the **Ungrouped items** and **Legacy catalog** groups.

As in the example above, there might be errors for:

- `CatalogPluginComponentItem?CopyModelDirectoryPlugin`

- `CatalogPluginComponentItem?SaveAsModelTemplatePlugin`

3. Hide all non-related applications and components from roles

1. In the **Ungrouped items** catalog, select **Show hidden items** at the bottom.

2. Right-click an application or a component and select **Hide / Unhide**.

4. Create custom thumbnails
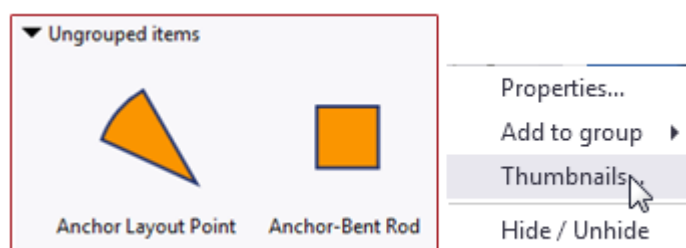
Publish a component in the Applications & components catalog

You might need to use the same component with different settings in different cases. To easily use the component, you can define the settings for each case and publish the component in the catalog. This feature can be useful for some roles.

10.3 Administrator's release notes: Ribbon updates

If you have customized the ribbon, the changes made in the new Tekla Structures version are not visible. Check the changes and add them to your customized ribbon.

Check the changes

Compare the original ribbon with the changes that you have made.

You can check the changes to see what has been added and removed, and what has been moved to different tabs.

If you have customized the ribbon, update the ribbon to include the changes made in the new Tekla Structures version.

Add changes for the Create tool

1. Add a new **Rebar set layers** button to the **Inquire** commands with these settings:

   - **Add ribbon item**: Simple button

   - **Command**: **Create**

   - **Appearance**: Command: Scalable icon

   - **Text**: Command: Short text

2. Save the changes.

   The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

3. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for clip box

1. On the **View** tab, add a new **Create clip box** button with these settings:

   - **Add ribbon item**: Simple button

   - **Command**: **Create clip box**

   - **Appearance**: Command: Scalable icon

   - **Text**: Command: Short text

2. Move the new **Create clip box** button to the **Clipping** drop-down below **Create clip plane**.

3. Add a checkbox for reference objects with these settings:

   - **Add ribbon item**: Check button

   - **Command**: **Clip only reference objects**

   - **Appearance**: None

   - **Text**: Command: Short text

4. Move the new **Clip only reference objects** checkbox to the bottom of the **Clipping** drop-down.

5. Save the changes.

   The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

6. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for fabrication drawing improvements

1. On the **Drawings & reports** tab, delete these obsolete buttons from the **Create fabrication drawing** drop-down:

   - **Creation review**

   - **?**

2. Add new buttons and a separator.

   a. Add a new **Creation review** button with these settings:

      - **Add ribbon item**: Check button

      - **Command**: **Creation review**

      - **Appearance**: Command: Scalable icon

      - **Text**: Command: Short text

   b. Below the new **Creation review** button, add a horizontal separator with these settings:

      - **Add ribbon item**: Separator

      - **Appearance**: Orientation: Horizontal

   c. Add a new custom control for **Smart create switches** with these settings:

      - **Add ribbon item**: Custom control

      - **Control name**: **Smart create switches**

3. Change the size of the **Smart create switches** custom control so that the text is all on the same line.

4. Save the changes.

   The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

5. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for AI Cloud Fabrication drawings

1. On the **Drawings & reports** tab, add a new **Fabrication drawing service** drop-down next to **Create fabrication drawing**.

2. Add a new **AI Cloud Fabrication drawings** split button with these settings:

   - **Add ribbon item**: Split button
   - **Command**: **AI Cloud Fabrication drawings** (Preview)
   - **Appearance**: Gallery (scalable), browse to **AI Cloud Fabrication drawings**
   - **Text**: Command: Short text

3. Add these buttons to the **AI Cloud Fabrication drawings** split button:

   - **AI Cloud Fabrication drawings** (Preview)
     - **Add ribbon item**: Simple button
     - **Command**: **AI Cloud Fabrication drawings** (Preview)
     - **Appearance**: Command: Scalable icon
     - **Text**: Command: Short text
   - **Collections**
     - **Add ribbon item**: Simple button
     - **Command**: **Open AI Cloud Fabrication drawings collection**
     - **Appearance**: Command: Scalable icon
     - **Text**: Command: Short text

4. Save the changes.

   The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

5. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for building hierarchy

1. On the **Manage** tab, make these changes:

   a. Under **Building hierarchy**, delete **Building storey** and **Space**.

   b. Select **Organizer** and move it under **Building hierarchy**.

2. Modify all current items under the **Rendering** drop-down:

   a. Set **Text** to **None**.

    b. Change the icons to the largest size.

    c. Move the icons in each section to be next to each other.

    d. Add a header above each group of icons.

3. Under the **Rendering** drop-down, add the new Building Hierarchy items.

    a. Add a horizontal separator.

    b. Add items for `Representation.Hierarchies.Wireframe` and `Representation.Hierarchies.ShadedWireframe`.

    c. Resize the icons so that they are the same size as the other icons.

4. Save the changes.

    The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

5. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for Status Sharing

1. On the **Trimble Connect** tab, add a new button for status sharing next to **BCF Topics** with these settings:

    • **Add ribbon item**: Simple button

    • **Command**: **Status Sharing**

    • **Appearance**: Command: Scalable icon

    • **Text**: Command: Short text

2. Save the changes.

    The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

3. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for the Create model view on work plane command for the Carbon and Viewer configurations

This command was previously not available in the **Carbon** and **Viewer** configurations. These configurations use the `albl_up_Carbon--.xml` and `albl_up_Viewer-.xml` configuration files.

1. On the **View** tab, add the **On work plane** button to the **New view** drop-down with these settings:

- **Add ribbon item**: Simple button
- **Command**: **Create model view on work plane**
- **Appearance**: Command: Scalable icon
- **Text**: Command: Short text

2. Save the changes.

   The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

3. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

Add changes for Tekla PowerFab Connector

1. Add a new **Tekla PowerFab** tab to the ribbon: `translation:Commands.Export.PowerFab.ShortText`.

2. Add Simple buttons (Scalable icon, Short text):
   - Export.Validate and view package contents
   - Export.Submit to fabricator
   - Export.Submittal history

3. Add a split button: **Procurement numbering** (Scalable icon, Short text)

4. Add two simple buttons to the **Procurement numbering** split button:
   - **Procurement numbering** (Scalable icon, Short text)
   - **Procurement settings** (Icon=Gallery "Settings", Short text)

5. Add a split button: **Select fabricator** (Scalable icon, Short text)

6. Add two simple buttons to the **Select fabricator** split button:
   - **Select fabricator** (Scalable icon, Short text)
   - **Fabricator info** (Scalable icon, Short text)

7. Save the changes.

   The new ribbon configuration file is saved to `C:\Users\<username>\AppData\Local\Trimble\Tekla Structures\2025.0\UI\Ribbons`.

8. Move the file to the **Ribbons** sub-folder in a folder that is in the XS_SYSTEM path.

10.4 Administrator's release notes: Numbering improvements

For more information about these improvements, see Numbering preview and other numbering improvements (page 10) in the Tekla Structures 2025 release notes.

Update your standard files if you want to use your own default values for the new options and features.

Save columns in your numbering preview

1. Select the columns that you want to use in the numbering preview.

2. Save the settings file.

   The file is saved as `Settings.PreviewTable.xml` in the `MODEL\attributes` folder

3. Copy the `Settings.PreviewTable.xml` file to any folder defined in the XS_SYSTEM variable in your environment.

Update report files for improvements in compare reports

If you do not use the `TS_Report_*.rpt` files from the `common\system` folder, update the files in your environment.

1. Compare the `TS_Report_Assembly_Comparison.rpt` file in your environment folder with the `TS_Report_Assembly_Comparison.rpt` file in the `common\system` folder and merge the changes to your own file.

2. Copy the `TS_Report_Part_Comparison.rpt` file from the `common\system` folder to your environment folder.

10.5 Administrator's release notes: Reinforcement improvements

Tekla Structures 2025 introduces improvements to reinforcement sequence numbering, a new **Inquire** command for rebar set layers, automatic creation of splitters for rebar sets, and many new properties and settings for rebar sets.

For more information about these improvements and changes, see Reinforcement sequence numbering and other reinforcement improvements (page 12) in the Tekla Structures 2025 release notes.

Update your standard files if you want to use your own default values for the new options and features.

If you want to have different values than the ones in `common\system`, create your own reinforcement sequence numbering settings standard file.

If you have customized the ribbon, to include the changes made in the new Tekla Structures version.

Updates for reinforcement sequence numbering

If you do not use the `objects_*.inp` files from the `common\inp` folder, update the files in your environment.

1. Compare your `objects_*.inp` files with the ones in the `common\inp` folder and merge the changes to your own file.

2. Copy the `objects_RebarSequenceNumbering.inp` file to your own XS_INP folder.

10.6 Administrator's release notes: AI Cloud Fabrication drawings (Preview)

The AI Cloud fabrication drawings feature creates new fabrication drawings based on finalized fabrication drawings that your organization has previously uploaded to a cloud collection.

Tekla Structures version 2025 introduces the AI Cloud Fabrication drawings functionality as a Preview feature. To find out more, see Why Preview? in "Create fabrication drawings using AI and cloud collections (Preview)" under Create drawings.

For more information about these improvements, see in the Tekla Structures 2025 release notes.

If you have customized the ribbon, to include the changes made in the new Tekla Structures version.

Make your organization's fabrication drawing collection public

By default, your organization's fabrication drawing collections are only accessible by invitation or by making them available to your organization. You can allow anyone using a certain role or environment to access a collection.

10.7 Administrator's release notes: Building hierarchy

In Tekla Structures 2025, **Building hierarchy** has many enhancements to enable faster and more reliable project handling, and an improved way to communicate the building hierarchy in the model.

For more information about these improvements, see Improvements in Building hierarchy (page 105) in the Tekla Structures 2025 Release notes.

If you have customized the ribbon, update the ribbon (page 145) to include the changes made in the new Tekla Structures version.

Update objects.inp files for building hierarchy

UDA definitions that are related to building hierarchy have been moved to the `objects_BuildingHierarchyAttributes.inp` file in the `common\inp` folder.

If you do not use the `objects_*.inp` files from the `common\inp` folder, update the files in your environment.

1. Compare your `objects_*.inp` files with the ones in the `common\inp` folder and merge the changes to your own file.

2. Copy or merge the new values from the `objects_BuildingHierarchyAttributes.inp` file to your own XS_INP folder.

10.8 Administrator's release notes: Tekla PowerFab Connector

Tekla PowerFab Connector enhances interoperability between Tekla Structures and Tekla PowerFab. With Tekla PowerFab Connector, you can now get an up-to-date fabricator catalog, and finishes and real-time fabricator statuses from the fabrication management system.

For more information about these improvements, see Tekla PowerFab Connector—Connect the fabricator and detailer (page 66) in the Tekla Structures 2025 release notes.

Update your standard files if you want to use your own default values for the new options and features.

If you have customized the ribbon, update the ribbon (page 145) to include the changes made in the new Tekla Structures version.

10.9 Administrator's release notes: Export STEP and IGES files - New export for automated steel handrail manufacturing

The STEP and IGES export formats extend the interoperability possibilities to serve handrail manufacturers and related fabrication processes, and mechanical computer-aided design.

For more information about these improvements, see Export STEP and IGES files - New export for automated steel handrail manufacturing (page 98) in the Tekla Structures 2025 release notes.

Update your standard files if you want to use your own default values for the new options and features.

10.10 Administrator's release notes: Reorganization of the `common\inp` folder

The `common\inp` folder has been reorganized so that different kinds of content are stored in more specific folders. UDA definitions for different tabs in the `objects*.inp` file have also been moved into several separate files.

You can now use only some groups of settings without copying settings from the `common\inp` folder to your own folders. For example, you can exclude global UDA definitions but include IFC property sets, or you can use only some of the global UDA definitions.

Because you no longer need to copy content to your own folders, it is no longer necessary to compare and merge content when updating Tekla Structures. The update process is quicker and the correct content is automatically included.

These changes have been made to the content of the `common\inp` folder:

Content	Folder changes
IFC property sets	Configuration files are moved to `common\collaboration\ifc`
Parametric clb profiles	`*.clb` files are moved to `common\profil`
Hatch patterns	The `hatch_types1.PAT` file is moved to `common\system`. The folder search order for hatch patterns is now the same as for other settings files.

The `bin\teklastructures.ini` file now includes these file paths:

```
set XS_INP=%XSDATADIR%\environments\common\inp\;%XSDATADIR%
\environments\common\profil\;%XSDATADIR%
\environments\common\collaboration\ifc
```

Previously, all global UDA definitions were in the `objects*.inp` file in the `common\inp` folder. There are now separate files based on the tabs in the UDA dialog:

- `inp\objects_Analysis.inp`

- `inp\objects_BuildingHierarchy.inp`

- `inp\objects_ConcreteParameters.inp`

- `inp\objects_Drawing.inp`

- `inp\objects_EndConditions.inp`

- `inp\objects_IFCParameters.inp`

- `inp\objects_Projects.inp`

- `inp\objects_RebarSequenceNumbering.inp`

- `inp\objects_TeklaStructuralDesigner.inp`

Update XS_INP for the common configurations

If you define XS_INP in your `*.ini` files, update XS_INP for the common configurations.

If you do not define XS_INP in your `*.ini` files, no changes are needed. The definitions come from `teklastructures.ini`

1. If you define XS_INP in `*.ini` and you have `%XSDATADIR%environments\common\inp`, change it to `%XS_INP%`

2. If you do not have `common\inp` in your XS_INP but you want to use some of the common configurations:

    -   IFC property sets: define in your ini file:

```
set XS_INP=[your own folder];%XSDATADIR%
\environments\common\collaboration\ifc
```

    -   Parametric clb profiles:

        -   Define in your ini file:

```
set XS_INP=[your own folder];%XSDATADIR%\environments\common\profil\
```

        -   Define parametric profiles in your own `XS_PROFDB\profitab.inp` file.

    -   Hatch patterns: add your own patterns to the `hatch_type1.PAT` file and save it to a folder in your XS_PROJECT, XS_FIRM or XS_SYSTEM folder.

3. If you do not use UDA definitions from files in `common\inp`, copy the files that you need to your own XS_INP folder.

10.11 Administrator's release notes: New profile catalog

The profile catalog has been renewed to improve usability and to make the profile catalog consistent with other catalogs, such as the shape catalog and the rebar catalog.

Enable the new profile catalog in your environment

The new profile catalog is not enabled by default in the Default environment, but it might be enabled in other environments. If the new profile catalog is not enabled in your environment, you must enable it.

To use the new profile catalog, add `set XS_USE_OLD_PROFILE_CATALOG=false` to the `env_<EnvironmentName>_environment.ini` file in a specific environment folder.

Convert existing rules to groups

In the new profile catalog, groups replace the rules that were used to organize profiles in the previous profile catalog. The **Convert Rules to Groups** tool converts `rules.lis` and `profiles.lis` files from an existing profile catalog to a `ProfileCatalog.Groups.xml` file for the new profile catalog.

1. From **Quick Launch**, open the **Convert Rules to Groups** tool.

2. If you want to convert only selected rules to groups, select the rules in the previous profile catalog.

    a. To open the previous profile catalog. search for `profile catalog` in **Quick Launch**.

    b. Select the rules that you want to convert to groups.

3. Finish converting the rules to groups in one of these ways:

    • Click **Convert selected rules to groups** to convert only selected rules to groups.

    • Click **Convert all rules to groups** to convert all rules to groups.

    The **Convert Rules to Groups** tool creates a file that contains the new group structure.

4. Copy the created file to the `XS_PROFDB\profil\profiles` folder.

5. Check the output to ensure that it is correct.

Files for profile catalog customization

File	Location	Purpose
`*.ProfileCatalogDefinitions.ail` This file must be manually created.	XS_MESSAGES_PATH	Translations strings of groups and new properties
`<File_Name>.ProfileCatalog.Groups.xml` This file must be created with the Export functionality.	N/A	Used to export and import group structures. These files can be used for localization of groups by placing them in the `profil\profiles` folder in the `firm`, `project`, or `profdb` folder.
`<File_Name>.ProfileCatalog.MaterialTypes.xml` This file must be created by adding a prefix to the `ProfileCatalog.MaterialTypes.xml` model file.	Model/XS_PROJECT/XS_FIRM/XS_PROFDB	This file can be used for localization of material types by placing them in the `profil\profiles` folder in the `firm`, `project`, or `profdb` folder.

Customize groups

1. Open the new profile catalog.

2. Create a group structure.

3. Add profiles to the groups.

   Make one group structure at a time for customization purposes.

   Example: for I profiles, you can have a single group with sub-groups.

4. Save the changes.

5. Export the group structure only.

   Add a descriptive prefix to the exported groups file.

   Example: `IProfiles.ProfileCatalog.Groups.xml`

6. Delete the group structure only for the group that you exported, then repeat the steps for other groups.

7. Copy the groups files to the `Profil\Profiles` folder in the model folder, or the folder defined in the XS_PROJECT, XS_FIRM, or XS_PROFDB advanced option.

Customize material types

1. Open the new profile catalog.

2. Select profiles and assign material types.

   - Use filters and the **Search result** or **All profiles** options.

   - We recommend that you assign one material type at a time for customization purposes. For example, assign only the steel material type to the profiles.

3. Save the changes.

4. Open `<model_folder>\profil\profiles` folder and add a descriptive prefix to the `ProfileCatalog.MaterialTypes.xml` file.

   Example: `Steel.ProfileCatalog.MaterialTypes.xml`

   If you assign more than one material type at the same time, add a prefix that includes all material types.

   Example: `SteelAndConcrete.ProfileCatalog.MaterialTypes.xml`

5. Move this file to a separate folder.

6. Repeat the steps for other material types.

7. Copy the material types files to the `Profil\Profiles` folder in the model folder, or the folder defined in the XS_PROJECT, XS_FIRM, or XS_PROFDB advanced option.

Environment-specific translations

If a translation of the group is missing, you can add it to an environment-specific `.ail` file.

Example file is `DefaultEnv.ProfileCatalogDefinitions.ail`. Add the folder to XS_MESSAGES_PATH in your `.ini` file.

10.12 Administrator's release notes: Miscellaneous general improvements

This version of Tekla Structures includes these general improvements.

Custom object type

You can now add new object types, such as opening, anchor rod, or pipe, and creation commands to the Tekla Structures user interface and deploy them to users.

Add the custom object type to your own `objects.inp` file under `tab_page("HiddenAttributes")`.

```
attribute("__CustomObjectType", "albl_Custom_object_type", string, "%s",
no, none, "0.0", "0.0")
{
value("", 0)
}
```

New advanced option to define line cap style in PDFs

You can use the new XS_DRAWINGS_LINE_CAP_STYLE advanced option to adjust the shape of the line ends in PDF printouts by defining the line cap style.

For more information about this improvement, see Changes in advanced options in Tekla Structures 2025 (page 135) in the Tekla Structures 2025 release notes.

Change the value of the advanced option in your `.ini` file if needed.

Export to TrimBIM

You can now create a TrimBIM (`.trb`) file directly in Tekla Structures, and select which IFC property sets are included in the TrimBIM file.

For more information about this improvement, see Improved TrimBIM workflow with Trimble Connect (page 73) in the Tekla Structures 2025 release notes.

Update your standard files if you want to use your own default values for the new options and features.

Use gradians in angle dimensions

You can now use gradians (gons) instead of degrees in angle dimensions in drawings.

For more information about this improvement, see Other improvements in drawings (page 56) in the Tekla Structures 2025 release notes.

You can use the new XS_ANGLE_GRADIAN_SIGN advanced option to set the gradian sign used in drawings. The default value is "g". Change the value of the XS_ANGLE_GRADIAN_SIGN advanced option in your `.ini` file if needed.

Tekla Structures 2025 administrator's release notes
159
Administrator's release notes: Miscellaneous general improvements

Washer and nut improvements in Template Editor

To allow nuts and washers to be correctly combined in reports, nuts and washers can now be separated within a bolt assembly in Template Editor.

For more information about these improvements, see What's new in Template Editor and templates in Tekla Structures 2025 (page 113) in the Tekla Structures 2025 release notes.

The bolt inquiry report (`TS_Report_Inquire_Bolt.rpt`) already contains the fix. If you use custom templates, update your templates.

New advanced option for `.tsep` files to be automatically installed

You can use the new `XS_TSEP_TO_BE_INSTALLED_ORG_DIR` advanced option in the `user.ini` file to define the location of `.tsep` files to be automatically installed for all users in the organization.

Change the value of the advanced option in your `.ini` file if needed.

Enhancements in the Management Console for Tekla Model Sharing

If you are an administrator in the Management Console for Tekla Model Sharing, these new enhancements help you manage your organization's shared models more securely and efficiently.

Enhanced security with malware scanning

New changes to shared models written out using Tekla Structures are now scanned for malware. If possible malware is detected, a notification is shown in the Management Console for Tekla Model Sharing, and an email is sent to the user who wrote out the model and to the users who have the **Owner** role for the model. By default, the model is also automatically locked to prevent both read-ins and write-outs. For managing the locking of the model, there is a new setting, **Lock model when malware is detected**. See Manage settings in the Management Console.

After investigating the model and resolving the case, Tekla Model Sharing administrators can unlock the model.

For more information, see Lock models and delete model versions in the Management Console.

Support for the separate Tekla Model Sharing Admin role

To improve access control, the administrators of an organization can now assign the new **Tekla Model Sharing Admin** role to users in the Tekla Online

Admin Tool. Users with the **Tekla Model Sharing Admin** role are allowed to manage the organization's shared models, in addition to users who are full Tekla Online administrators.

Manage multiple organizations

The Management Console for Tekla Model Sharing now supports managing models for multiple organizations. Users who are Tekla Model Sharing administrators in more than one organization can select the organization where they want to manage models.

For more information, see Select the organization in the Management Console.

10.13 Administrator's release notes: Steel settings

The following customization settings only apply to the steel user group.

Administrator's release notes: Steel components

There are several improvements in steel components in Tekla Structures 2025.

Update your standard files if you want to use your own default values for the new options and features.

For more information about these improvements, see What's new in components in Tekla Structures 2025 (page 119) in the Tekla Structures 2025 release notes.

10.14 Administrator's release notes: Concrete settings

The following customization settings only apply to the concrete user group.

Administrator's release notes: Concrete components

There are several improvements in concrete components in Tekla Structures 2025.

Update your standard files if you want to use your own default values for the new options and features.

For more information about these improvements, see What's new in components in Tekla Structures 2025 (page 119) in the Tekla Structures 2025 release notes.

11 Tekla Structures Localization release notes

Localization release notes for Tekla Structures introduce new and changed features specific to different environments in the new Tekla Structures version.

Localization release notes list the features that have been localized in your environment and assist in customization tasks. These release notes are supplied by the localization teams at local areas and reseller offices.

12 Disclaimer

© 2025 Trimble Inc. and affiliates. All rights reserved.

Use of the Software and of this Software Manual are governed by a License Agreement which determines whether you are an authorized user of the Software and the Software Manual. The warranties and disclaimers set forth in the License Agreement apply to the Software and the Software Manual. Neither the Trimble entity granting the license nor any of its affiliates assume responsibility that the text is free of technical inaccuracies or typographical errors. The right to make changes and additions to this manual is reserved.

Trimble and certain product names are registered trademarks of Trimble Inc. in the United States, the European Union and other countries and may have similar statutory protections. Trademarks of third parties are not mentioned in this Manual to suggest an affiliation with or endorsement by their owners.

Elements of the software described in this Manual may be the subject of pending patent applications in the European Union and/or other countries.

Portions of this software:

Portions of this software make use of Open CASCADE Technology software. Open Cascade Express Mesh Copyright © 2019 OPEN CASCADE S.A.S. All rights reserved.

FLY SDK - CAD SDK © 2012 VisualIntegrity™. All rights reserved.

This application incorporates Open Design Alliance software pursuant to a license agreement with Open Design Alliance. Open Design Alliance Copyright © 2002–2020 by Open Design Alliance. All rights reserved.

CADhatch.com © 2017. All rights reserved.

RapidXml C++ library © All rights reserved.

FlexNet Publisher © 2016 Flexera Software LLC. All rights reserved. This product contains proprietary and confidential technology, information and creative works owned by Flexera Software LLC and its licensors, if any. Any use, copying, publication, distribution, display, modification, or transmission of such technology in whole or in part in any form or by any means without the prior express written permission of Flexera Software LLC is strictly prohibited. Except where expressly provided by Flexera Software LLC

in writing, possession of this technology shall not be construed to confer any license or rights under any Flexera Software LLC intellectual property rights, whether by estoppel, implication, or otherwise.

To see the third party open source software licenses, go to Tekla Structures, click **File menu** --> **Help** --> **About Tekla Structures** --> **3rd party licenses** and then click the option.