

PrecastBIM.pro

Users' Manual

Prerequisites

1. In order to use precastBIM.pro application you need to have active Tekla Structures (TS) license. Currently supported versions are 2021, 2022 and 2023. You can get Tekla Structures from your local Trimble representative or contact them [online](#).
2. Make sure you have active PrecastBIM.pro subscription.

You can purchase subscription license on our [website](#), or contacting via info@precastbim.pro.

Download and First Start

1. Download application on our website User Page as an archive which contains:
 - Multiple application versions available through launcher
 - TS model attributes from presentation videos
 - Default application settings and dimensioning Rules files
2. Extract archive contents
3. Place all files from downloaded “attributes” folder to your TS Model attributes folder
4. Place application folder to your desktop or another folder (might not work from “Downloads” folder on some configurations)
5. Open your TS Model in supported version
6. Launch and test application!

Login/License

In order to use PrecastBIM.pro application, you need to login via button in a top right corner.

Use login credentials you used to register on our website.

Existence of active license is also required and checked on login.

GA-Drawing

Make sure Drawing is opened in Tekla Structures before you start using plugins in this tab. This plugin can be used with any types of drawings.

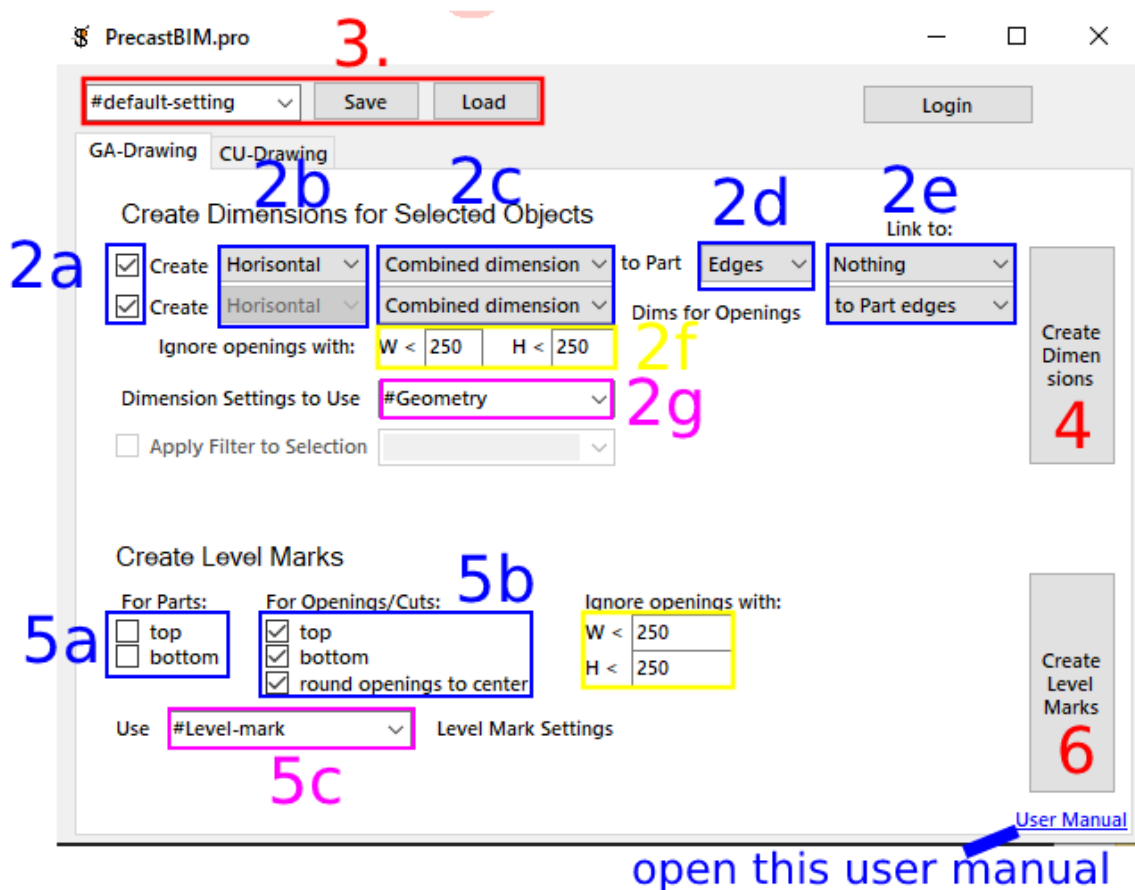
The aim of this plugin is to minimize time dimensioning General Arrangement Drawings.

This is achieved by using selections of objects for dimension creation instead of manually picking dimension points.

In addition, it allows you to create any type of level marks for whole view at once.

Please watch [demonstration video](#) to see examples of usage. Usage possibilities are limited only with your imagination.

See screenshot and detailed instructions below:



Basic GA Dimensioning instructions:

1. **Select part objects** that you want to dimension in the drawing.
2. **Choose desired dimensioning settings** or load previously saved ones.
 - a. Put a tick if you want to create dimensions for parts and/or openings in those parts.
 - i. First row – part dimension settings. Second row – opening dimensioning.
 - ii. If you select both ticks, you will be later asked to choose 2 points: one for part dimensions, and one for opening dimensions
 - b. Select what dimension direction(Horizontal or Vertical) you need.
 - c. If multiple parts chosen, then Combined/Separate setting defines if there will be separate dimension line for each part, or they are all combined into one.
 - d. In the parts row choose whether selected parts should be dimensioned to their edges or center
 - e. In “Link to” fields choose if dimensions should be linked to anything
 - i. “All axes” – connects to all axes visible in the view.
 - ii. “One nearest axis” - connects to axis closest to selected part objects’ side.
 - iii. “Axis on each side” – connects to closest axis from each side of created dimension(for long dimension lines).
 - iv. “to Part edges” – option available for opening dimensioning, connects openings to their main Part edges.
 - f. “Ignore openings”- to ignore some small openings or recesses set limit values to Width and Height of smallest opening which should be dimensioned. All smaller ones will be ignored.
 - g. Choose needed TS dimension settings (taken from model attributes folder)
3. You can **save settings** for future use by typing name in the setting field and pressing “Save” button. (Settings are saved into folder where applications’ “.exe” file is located). Load existing setting by choosing from the list and pressing “Load” button.
4. Press “Create Dimensions” button and pick point/points for dimension placement.
5. To create Level Marks for selected parts, choose appropriate options:
 - a. “For Parts” – if selected, Level Marks on top and/or bottom of selected parts are created.
 - b. “For Openings/Cuts” – if selected application puts level marks in all openings found in selected parts, excluding cuts smaller than defined “Ignore openings with” Width and Height.
 - c. Select preferred Level Mark settings from model attributes folder.
6. Click “Create Level Marks” button!

CU-Drawing

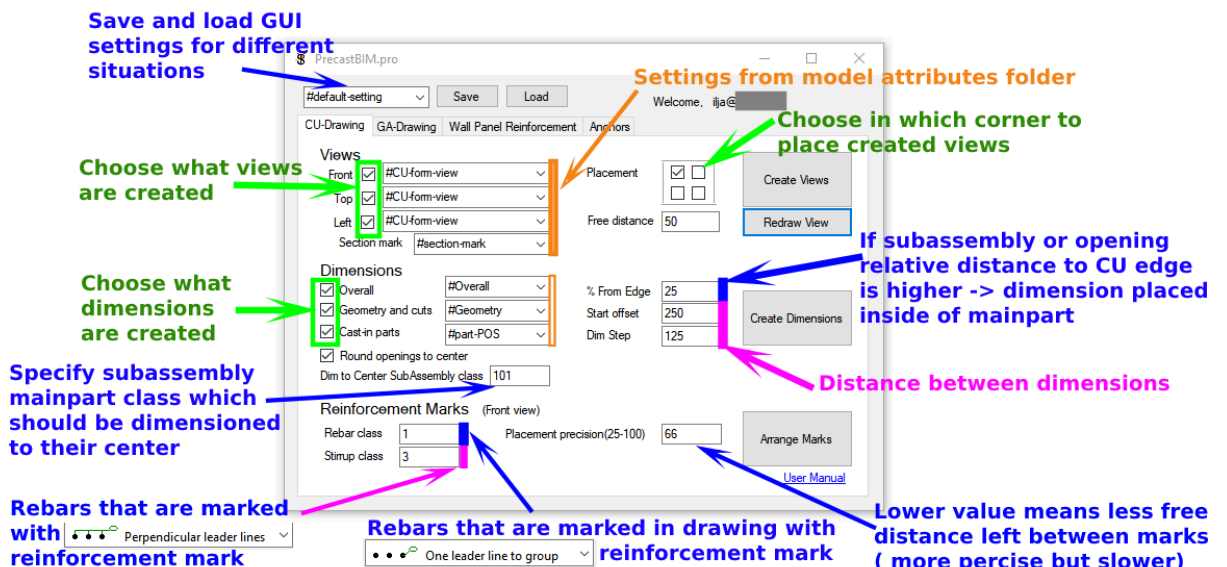
CU-Drawing tab is used for formalizing precast-unit production drawings. Current version is optimized for wall panel precast elements. Future updates will make it universally effective for all CU types.

Make sure CU-drawing is opened in Tekla Structures before you start using plugins in this tab.

Things to consider when modeling for further dimensioning:

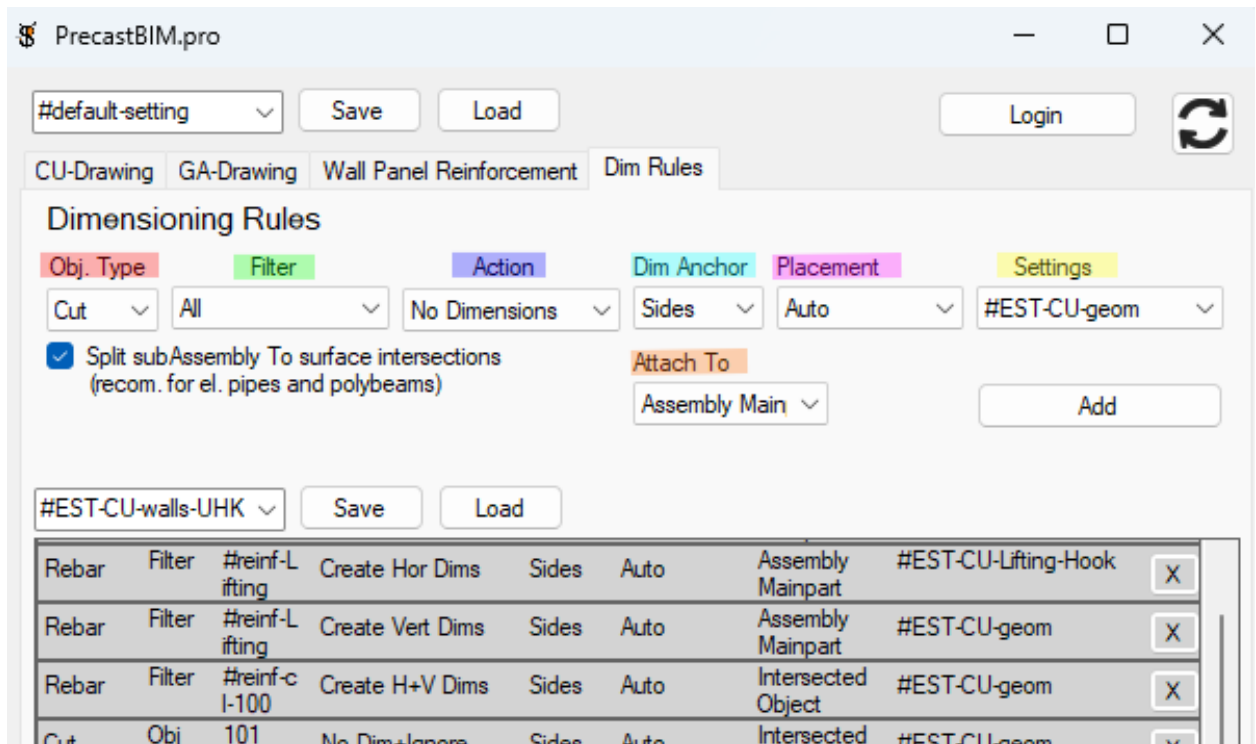
- Program recognizes all CU main and secondary parts, cuts and subassembly mainparts as 3D rectangular boxes.
- Dimensioning is based on recognizing objects' intersections and connecting their points to form a linear dimension
- For example, complex polygon objects such as plates, slabs etc. are taken into account as simplified rectangular 3D object by largest side dimensions. complex geometries are taken into account when "Ignore Complex Geometry" option is turned off(recommended for Detail views)
- Use "Add to Cast Unit" function instead of "Attach to part" when modeling cantilevers or thickenings.
- View creation creates Front view, not View into Form. Please model wall Panels in direction so Front surface corresponds to Form View
- By default, All objects are dimensioned to their sides, unless active dimensioning rules specify otherwise
- Detail views are created for all cut Complex Geometry objects(not rectangular)

GUI (Guided User Interface) overview is in picture below, and also shown in [demonstration video](#) on YouTube.



Dimensioning Rules

Dimensioning Rules are used to override Default settings to fit clients' needs.



Dim-Rules consist of following parameters:

- **Obj. Type** – What object type will defined rule apply to.
- **Filter** – define by filter(from Model attributes folder) or object class to which objects this rule will be applied. If multiple rows describe the same objects – first row with objects defined by class will be prioritized. DimRule with “All” Filter will be applied to objects of defined Type that are not described by any other rules.
- **Action** – choose what dimensions should be created for filtered objects if any. “No Dim+Ignore option” makes application not to take objects into account(For example, if some cut is set to this option, there will be no Intersections recognized between this cut and subassemblies, as a result if subassembly does not intersect outer planes of any other part, it might not be dimensioned.)
- **Dim Anchor** – set if object should be dimensioned to its' center, overall dimensions or min/max point.
- **Placement** – overrides default placement(by “% From Edge” field value) if option different than “Auto” is chosen.
- **Settings** – choice of needed dimensions' settings from model attributes folder
- **Attach To** – defines if filtered object dimensions should be attached to intersected object(part or cut), or just Assembly mainpart. Please note that
- “Split subassembly to surface intersections” – Recognizes each intersection with outside surface of a mainpart as a separate object with same part position(only for subAssemblies)

Usage:

1. Choose Dim Rule parameters
2. Click "Add"
3. Add as many Dim Rules as necessary
4. If you want to remove any row from Dim-Rules set, click on "X" button.
5. Enter the name and click save(.dimrules file will be saved to app location).
6. To make changes to existing ones select presaved Dim-Rule before clicking load, modify it and then save.
7. Test and modify. Maybe change some classes in the model, or just create needed filters. Getting desired results is likely possible.

Sets of dimensioning rules for different situations can be created by user and saved as separate loadable files for future usage. Dimensioning Rules being used should be chosen in main "CU-Drawing" tab.

Description of default dimensioning approach, used if not overridden by Dim Rules:

- By default, All objects are dimensioned to their sides, unless active dimensioning rules specify otherwise
- Dimensions are placed in the center of the view if object is further from edge of Cast Unit than "% From Edge" value. Otherwise on the closest side.
- Default Dimensioning Settings are chosen in CU-Drawing tab.
- If subassembly or rebar intersect some cut-object in addition to mainPart, attaching its' dimension to cut is prioritized by application
- For Sub-assemblies only its' mainpart is recognized and all intersections and dimensions are created according to it.
- Objects are dimensioned based on intersections with each other. For example, cuts cutting same side of same part will be dimensioned together. Sub-assemblies or rebars intersecting some cut object will be attached to that cut by dimension.
- Only intersections with outside surface of an object are recognized(with 1mm tolerance). So if sub-assembly is deep inside concrete part and even doesn't intersect with any cuts – it will not be dimensioned.

Default dimensioning also described in [this demonstration video](#)

FAQ:

1. Getting “Tekla Structures not Connected”? Please place folder with extracted application on Desktop. Might Not work from Downloads folder.
2. Dimensions are too far away from each other on detail views? Define start offset and Dimension step to smaller values or “0” for automatic placement.
3. I would like to purchase multiple licenses/for longer periods for my company. How would I do this? Contact us on info@precastbim.pro and we will find best solution for you.
4. Can I order modifications to be made to application in order to fulfil my Company’ needs? Yes! We will do minor changes/fixes for free for our clients, Significant development requests can be discussed separately.