



# What's New

PowerPack for Advance Steel 2025



# Table of Contents

<b>1</b>	<b>Welcome to Graitec Powerpack for Advance Steel 2025</b>	<b>3</b>
1.1	Compliance with Autodesk Advance Steel 2025	3
<b>2</b>	<b>Introducing New Features</b>	<b>4</b>
<b>3</b>	<b>New Powerpack Features</b>	<b>5</b>
3.1	Multi Grid Level tool: Manual label control	5
3.2	Multi Grid Level tool: Sub Axis options	5
3.3	Camera Browser: Selected objects & Predefine query option	6
<b>4</b>	<b>New Railing Features</b>	<b>8</b>
4.1	Lap Joint	8
4.2	Stem model role for 'By Bar' Top Handrail to post connection	10
<b>5</b>	<b>New Stairs Features</b>	<b>11</b>
5.1	The Cage Ladder	11
5.2	Ladder features	12
5.2.1	Primary Geometry	12
5.2.2	Ladder - Overview tab- Rung spacing	13
5.2.3	Ladder General - Profile selection and Weld designation	13
5.2.4	Ladder Exit Types & Step off Feature	14
5.2.5	Ladder supports	17
5.3	Cage Features	19
5.3.1	Cage Geometry	19
5.3.2	Cage hoop spacing control	19
5.3.3	Cage Main Sections and Connections	20
5.3.4	Cage Exit segment	21
5.4	Library options	22
5.5	Ladder user profiles	22
<b>6</b>	<b>Cloud Link command: Retirement</b>	<b>24</b>
<b>7</b>	<b>Online Help: continued update</b>	<b>25</b>

# 1. Welcome to Graitec Powerpack for Advance Steel 2025

GRAITEC is pleased to present the latest version of Advance PowerPack for Advance Steel 2025, part of the Graitec Advance Suite.

## 1.1 Compliance with Autodesk Advance Steel 2025

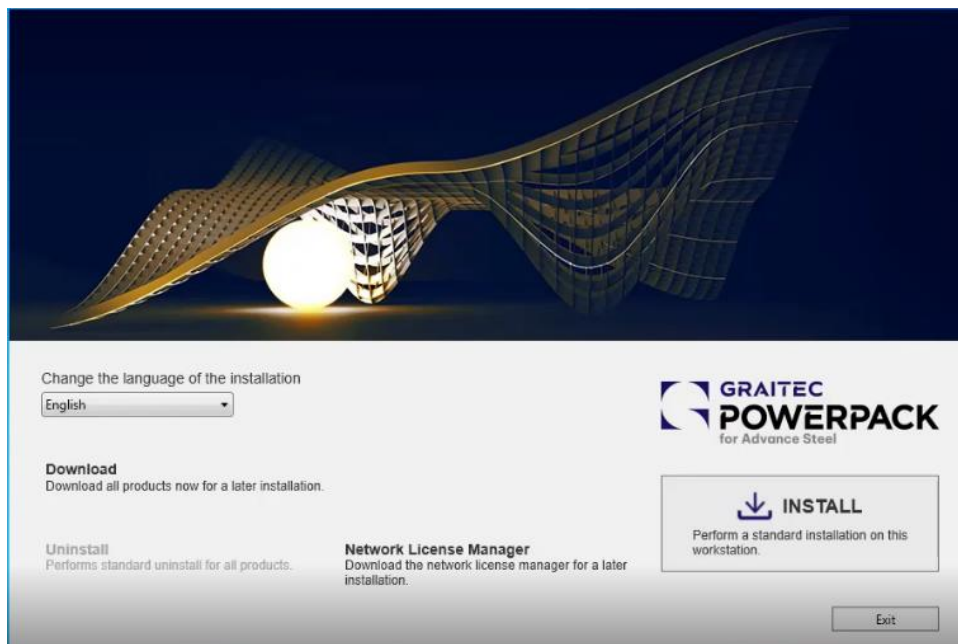
The **PowerPack for Advance Steel 2025** is compliant with **Autodesk Advance Steel 2025**.

The **PowerPack for Advance Steel 2025** can be installed using the **Setup PowerPack for Advance Steel 2025**.

Due to the change to .NET 8 framework for the core platform, the installation of the 2025 version is only compatible with the 2025 version of Advance Steel.

To install the PowerPack version 2025, please follow these steps:

1. **Open Advance Setup 2025** of PowerPack for Advance Steel. The setup will automatically identify the installed software.
2. Press **Install** to begin the update process.



*Advance Setup 2025 installer popup*

## 2. Introducing New Features

In the 2025 version, we are excited to introduce several improvements to our existing tools within the PowerPack, along with a new feature requested by users for easier modelling of several key features. Our focus continues to be on enhancing productivity through additional features and improvements.

The features listed below are detailed further in this document. For comprehensive command help, please refer to the online help portal ([PowerPack for Advance Steel \(graitec.com\)](https://www.graitec.com/PowerPack-for-Advance-Steel)) which will be updated with information on these new elements.

### New Powerpack Features:

- **Multi Grid Level: Manual Label Control.**
- **Multi Grid Level: Sub-axis options.**
- **Camera Browser: Selected Object & Predefine Query.**

### New Railing Features:

- **Lap joint.**
- **Stem Model role.**

### New Stair Features:

- **The Cage Ladder.**

For more insight into these new features, please continue to explore the document as we outline the fundamentals of each addition to the PowerPack for Advance Steel.

**NOTE:** *For further information on the command operation, refer to the Powerpack for Advance Steel Online Help portal.*

### 3. New Powerpack Features

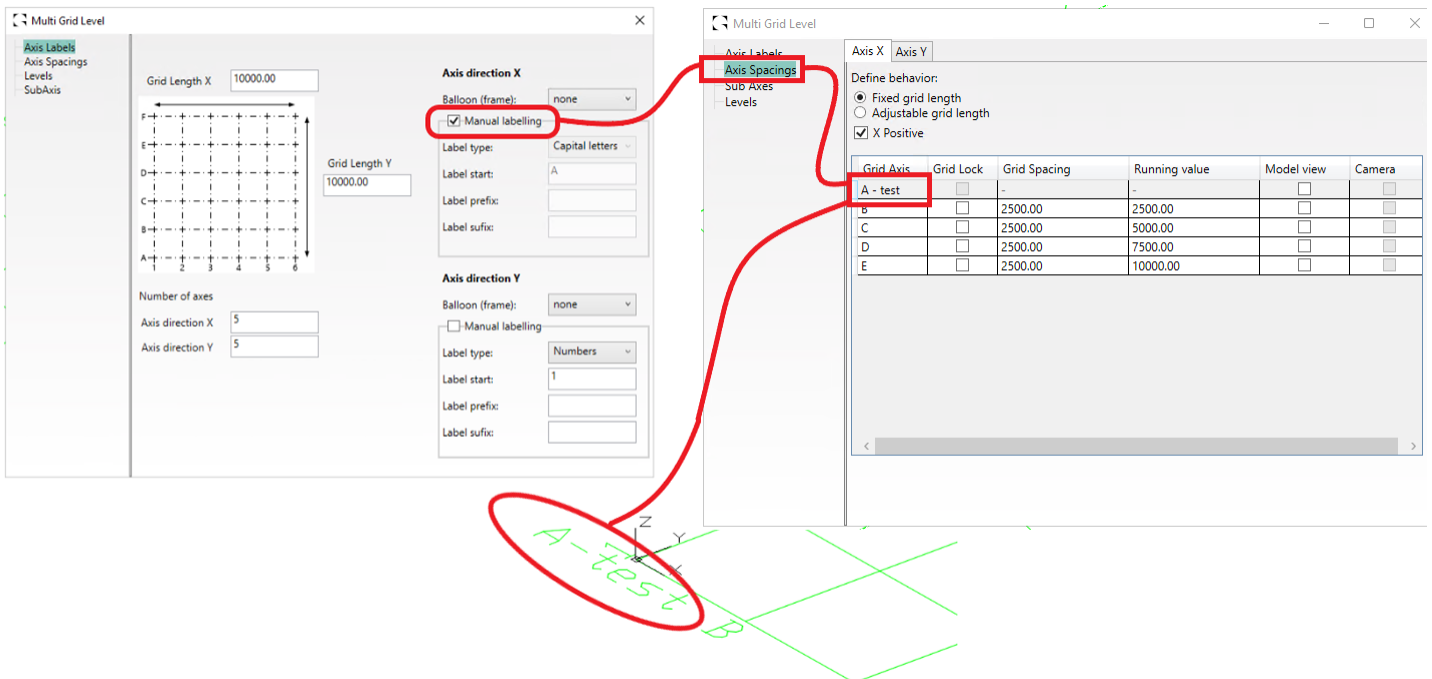
This section of the What's New guide focuses on the key features related to the main PowerPack application.

#### 3.1 Multi Grid Level tool: Manual label control

The Multi Grid Level tool has been enhanced to allow users to add their manual label content to the text field relative to each grid line. Here's how to use this new feature:

By checking the Manual labelling check box under the Axis label page, with the Axis direction required, the user can then access the Grid label via the Grid Axis column cell on the Axis spacings page. The user can type text entry as required and it is displayed in the gridline in the model.

The user may change back to automatic labels, this will remove the previously manually entered text entries, resting back to the previous automatic label settings.



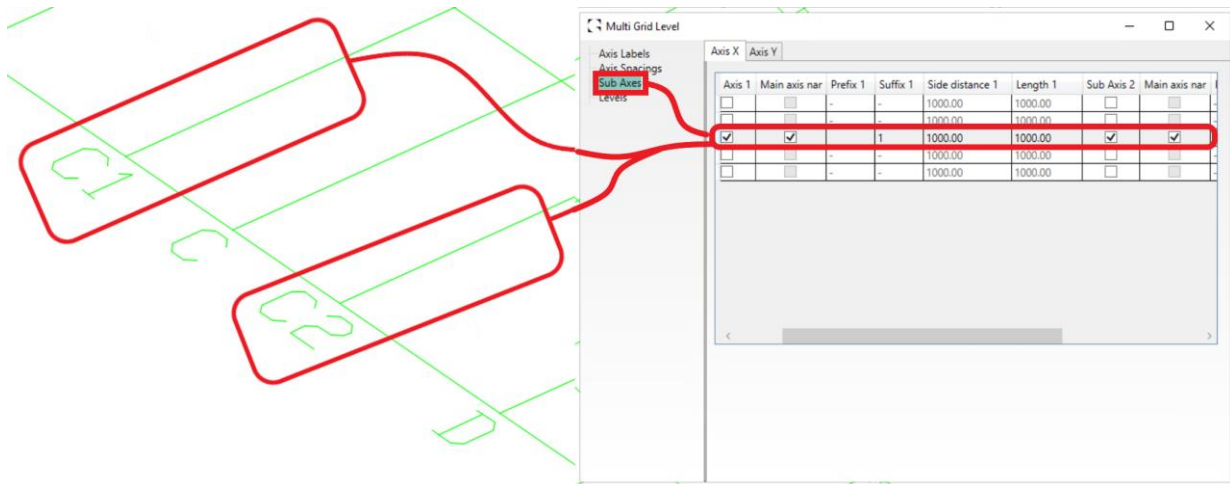
Multi Grid Level - Manual labelling

#### Advantages:

- Control the labels of the entire grid from one single command.
- Set specific labels when required to the text field that is relative to each grid line.
- Aligns with Standard Advance Steel manual label option.

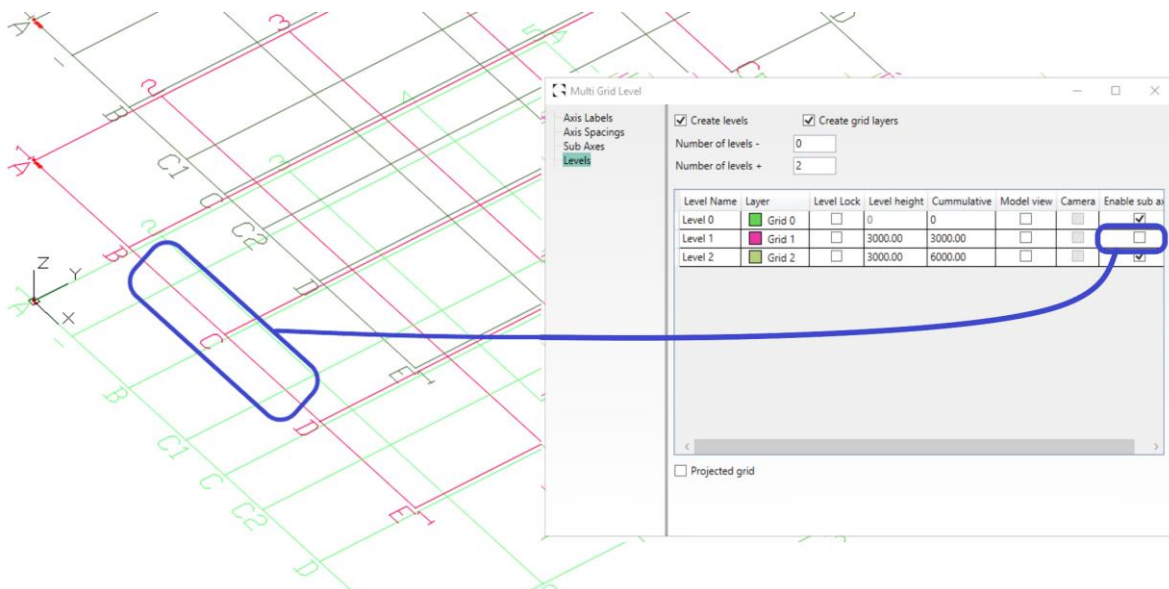
#### 3.2 Multi Grid Level tool: Sub Axis options

Another feature included in this version is the addition of Sub Axis within the grid structure. A new dialog page dedicated to Sub Axis allows users to enable and define sub axes on either side of the main grid. Users can use the main grid name and define prefix and suffix content.



Multi Grid Level - Sub axis tab

Within the sub axis options, when levels are used, there is an option to disable a Sub-axis on a level. In the image below, we can see that at Level 1, the Enable Sub-Axis check box is unchecked, and the Sub-axis is not present in the modelled grid structure.



Multi Grid Level - disable enable sub axis within levels

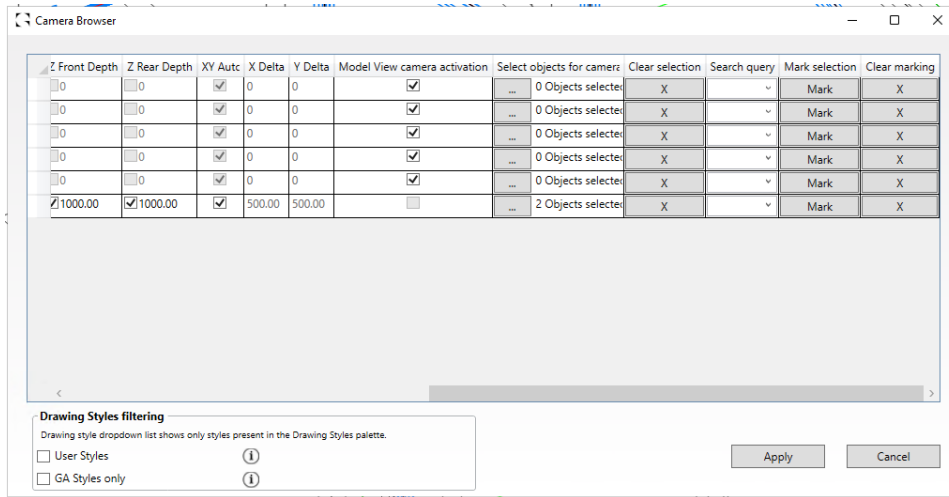
**NOTE:** Multi-Grid level dialog is now resizable.

**Advantages:**

- Define the Sub-Axis directly from the same grid command.
- Replicate the sub-axis in Levels, with the option to display or hide them, as needed.

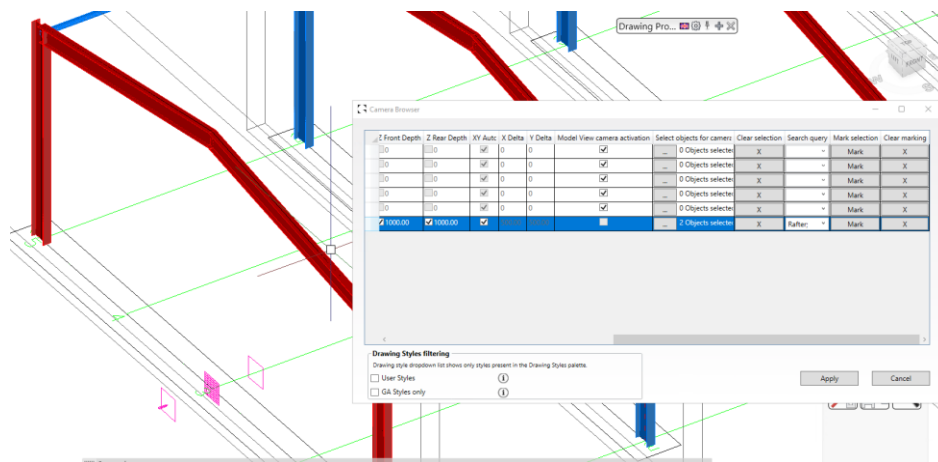
**3.3 Camera Browser: Selected objects & Predefine query option**

For the version, we are introducing the Selected objects and Predefined query options, which are found under the properties of a camera object within Advance Steel. These options will be part of the main browser table towards the right side of the column arrangement. You can find them by scrolling across the table or expanding the table window.



Camera Browser – Additional column for object selection and Queries

The options in the Camera Browser allow users to **create/change a selected group of objects** using either the manual selection process “*Select object*” or the “*Predefine query/Save Searches*” features of Advance Steel, via the command button for this option. To complement these options, we can highlight the selection, with the “*Mark selection*” button and its counterpart to “*Clear marking*”. These features also display the number of objects selected and show the active query within the dialog.



Camera Browser – highlighted objects from selection methods

**Advantages:**

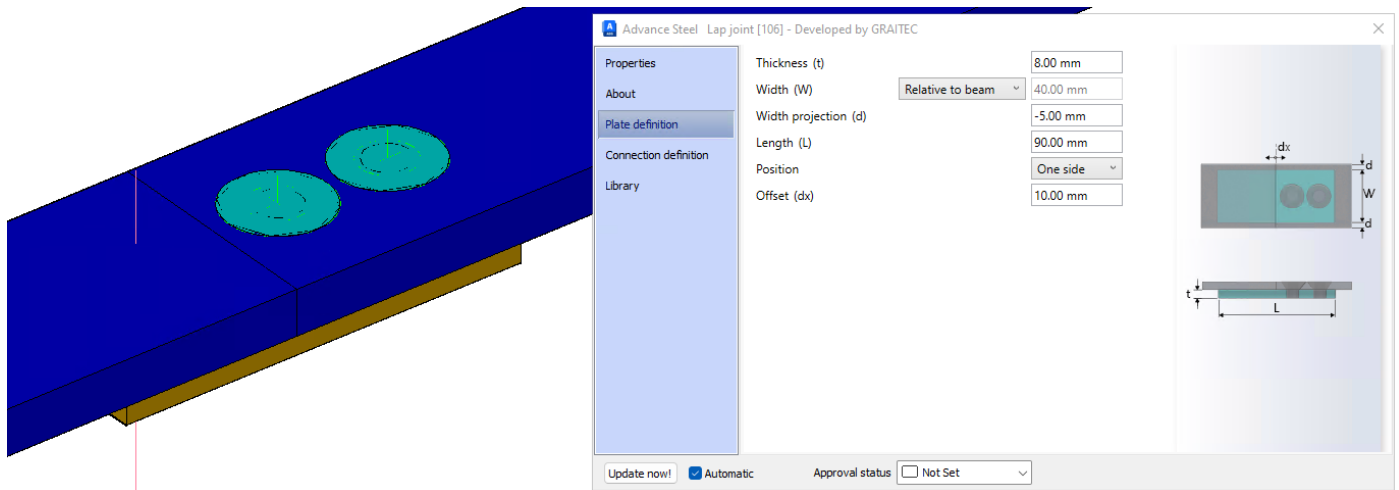
- Direct change in the Camera Browser dialog.
- Add or remove the selected objects from the camera view after the creation.
- Selection of predefined queries from the model, already created and stored under the main model via the Project Explorer.
- Alignment with Standard Camera Functionality.

## 4. New Railing Features

In this version, we are introducing a lap style joint targeted for flat type handrails and middle rails. This allows users to create a simple splice plate type connection with options for welds and bolts to the main rail element.

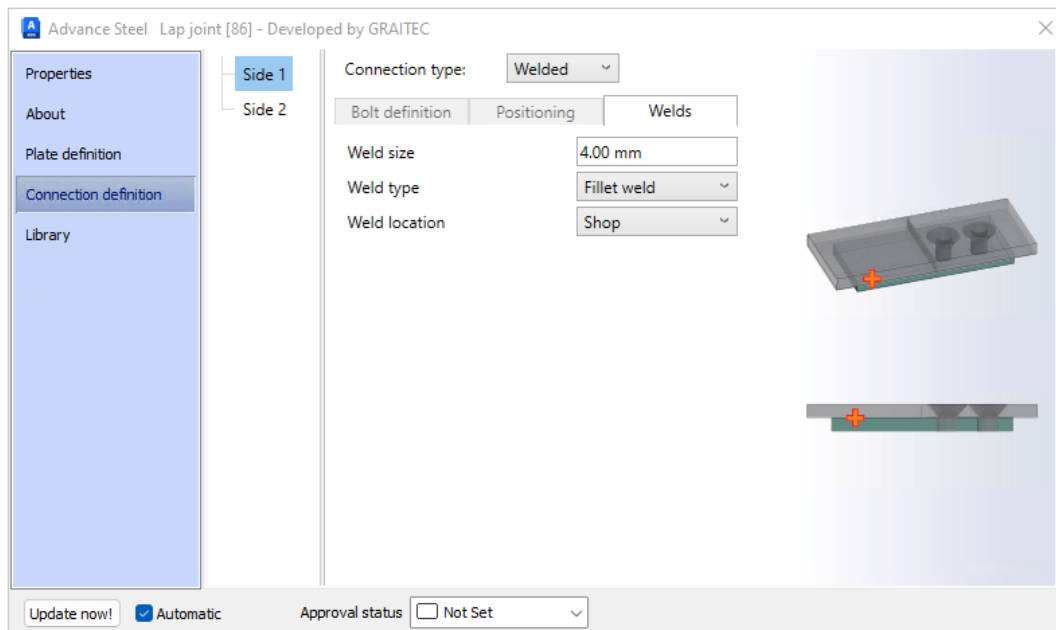
### 4.1 Lap Joint

The lap joint is designed to insert a plate segment to the bottom side of a handrail/middle rail element with a default setting of welded on one side, and the other side offering a bolted connection arrangement. The connection allows the user to change from these defaults to a desired configuration.



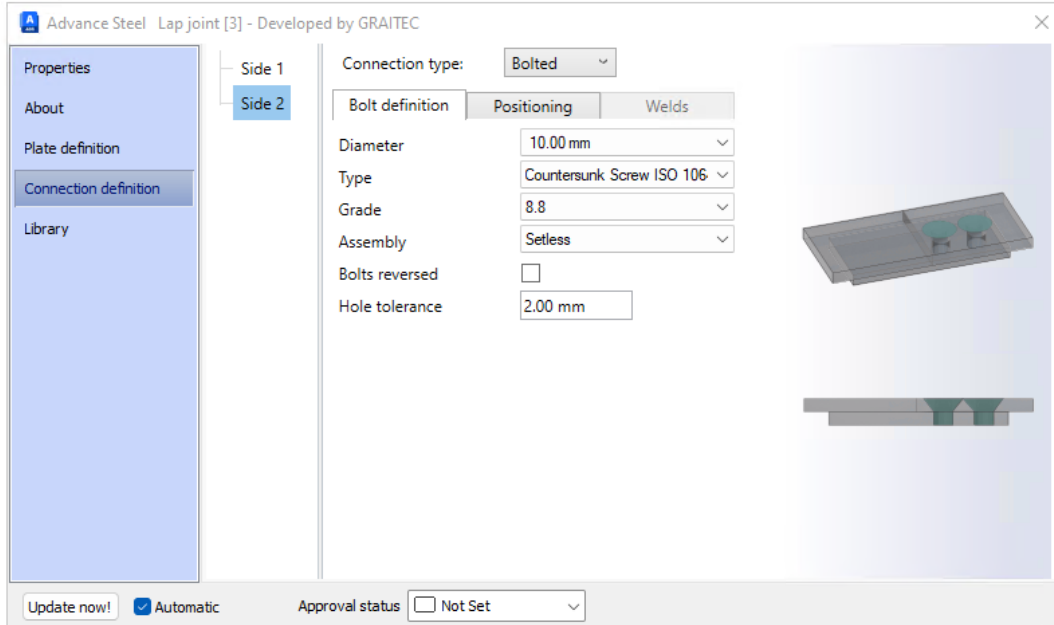
*Lap Joint – Plate Definition*

There are several pages to the connection allowing for control of the plate size relative to the main railing elements, the bolt arrangement, and the gap between elements.

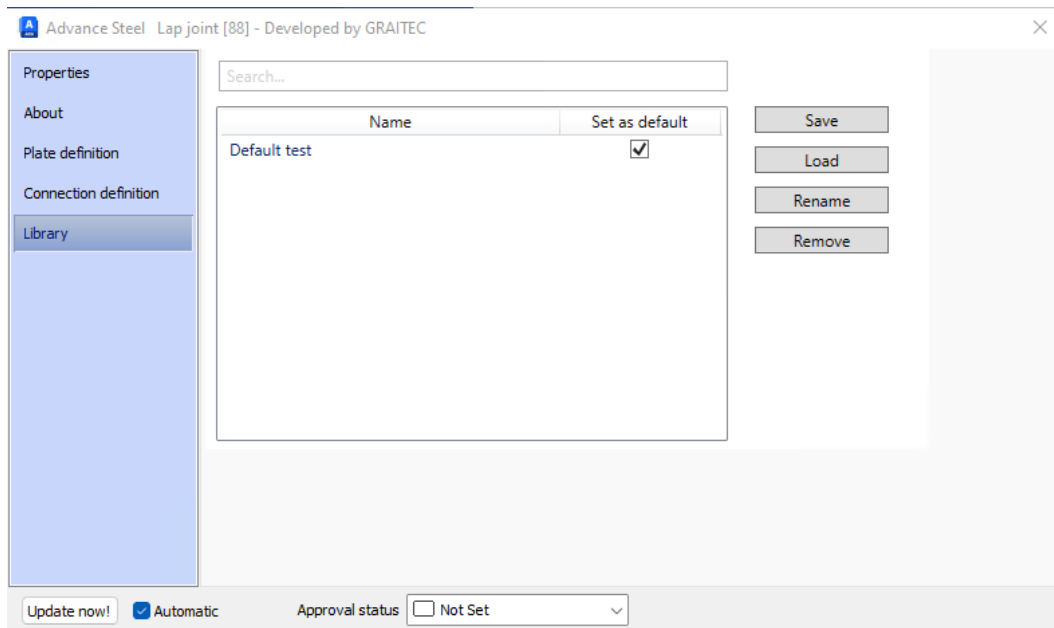


*Lap joint – connection definition – welded option*





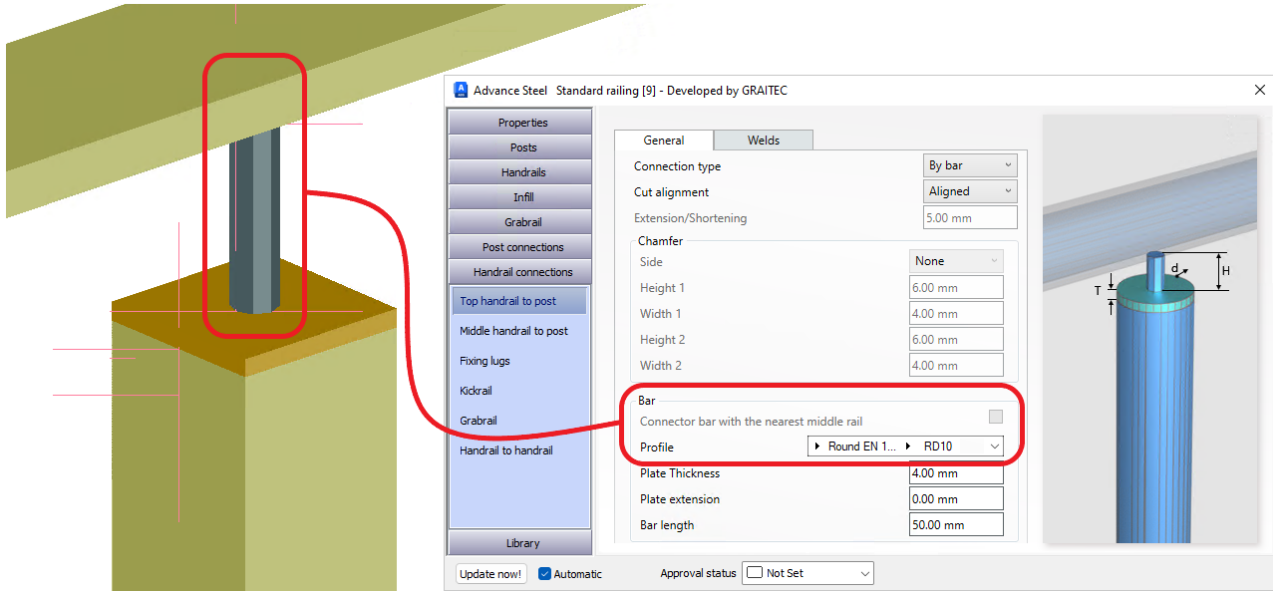
*Lap joint – connection definition – bolted*



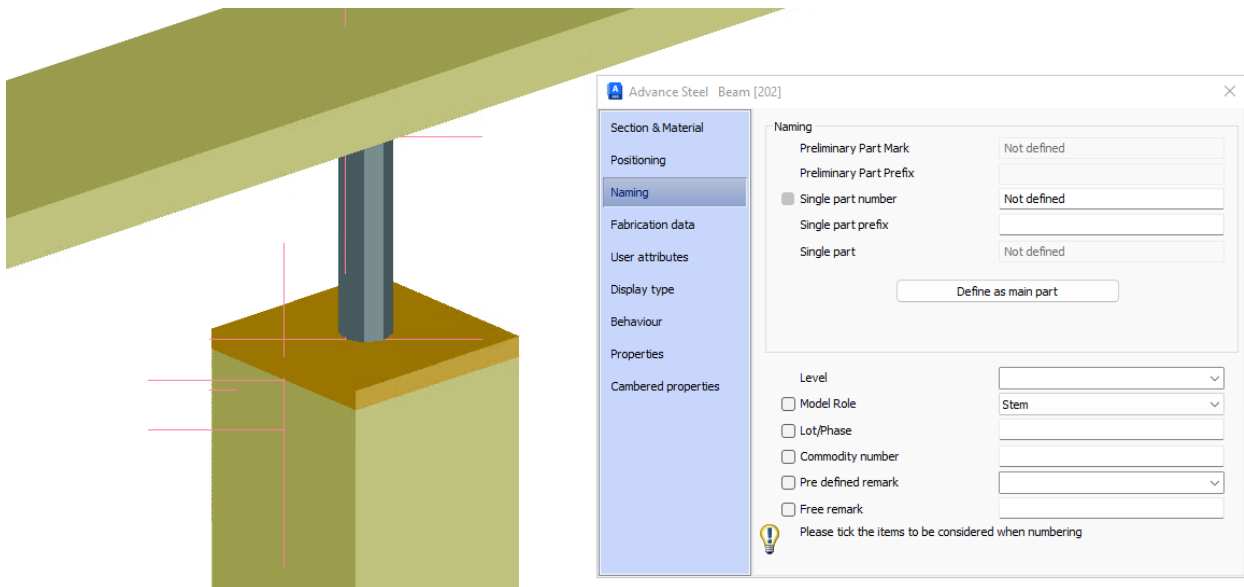
*Lap joint –library page*

**4.2 Stem model role for 'By Bar' Top Handrail to post connection**

The railing macro includes a top handrail to post connections feature, with an option for **By Bar**. This option introduces a short profile section, defaulted to round, between the handrail element and the post cap plate element. This element now has the model role **Stem**, applied automatically when selecting the connection option.



*Stem model role - By Bar handrail to post connection type*



*Stem model role - element properties - naming page - model role*

## 5. New Stairs Features

In this version, we are introducing a new type of stair: the **Cage Ladder**. This new macro complements the existing stair tools in the PowerPack. The Cage Ladder macro allows you to create a single ladder (vertical or inclined) with a step-off feature and ladder stays, combined with various cage types. The cage arrangements work in combination with different ladder exit types for both straight and splayed configurations. Additionally, the macro includes several smaller features to aid the detailing of the ladder.

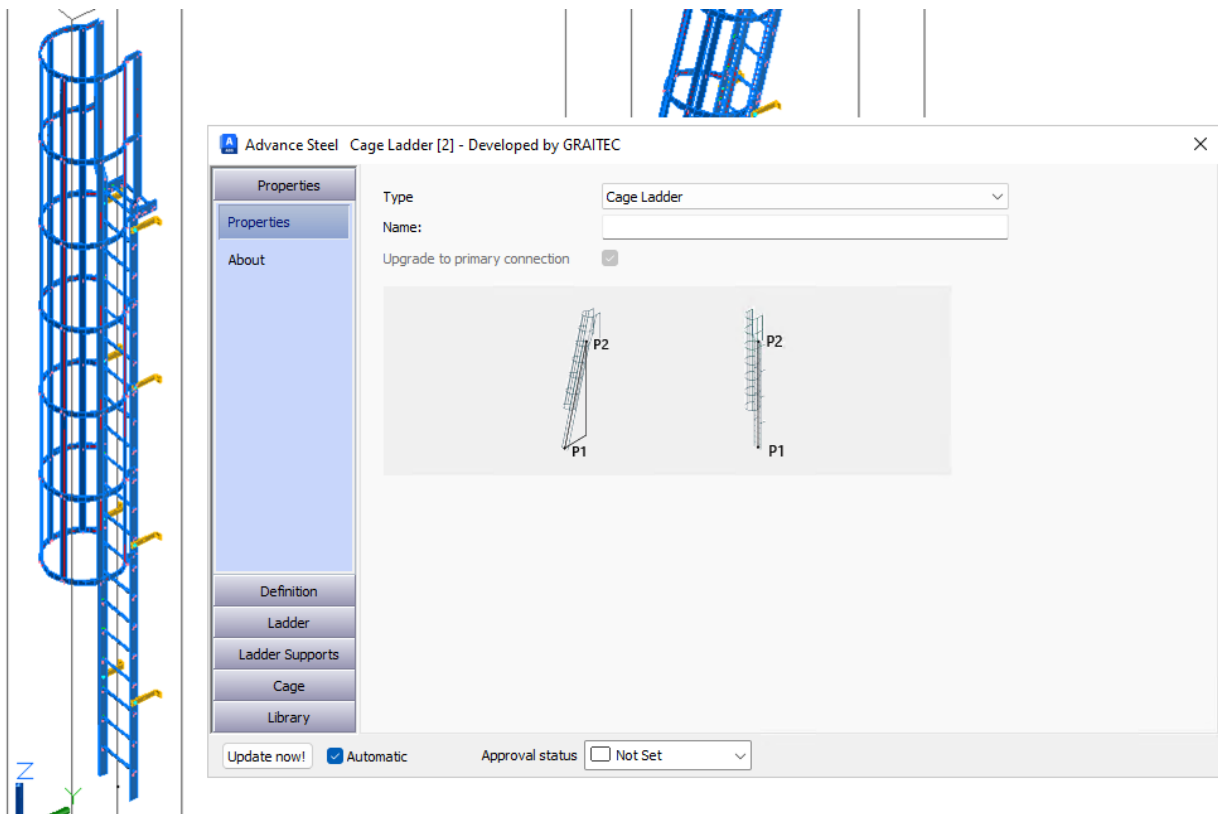
### 5.1 The Cage Ladder

The Cage Ladder macro creates the ladder element from a series of point inputs: a start and an end point. These points can be aligned vertically or at an incline. The ladder is then created from these points, oriented to the World Coordinate System. Users can adjust the height, inclination, and rotation of the ladder via the dialog, with these adjustments based on the start point of the ladder.

The macro interface design allows users to define the basics of the ladder and cage geometry initially. It then provides dedicated pages for controlling more detailed aspects of those elements. These pages, subpages, and tabs enable control over spacing arrangements, profile selections, and connections between elements, along with options to turn on or off certain features of the ladder.

The dialog arrangement is aligned to aid the workflow of creating the ladder and cage from a series of predefined default options for section types and sizes, combined with dimensional values taken for available standards. These parameters are editable within the system and can be stored in the library of macro for the user to create their form ladder types to their requirements.

Within the macro, there are a series of tab elements aligned to provide constraints for the ladder. These are typically taken to be from regional standards. The constraints are then implemented to aid the user in seeing via visual changes the inputs as to whether they are exceeding those designated constraints.



*Cage Ladder – main properties page*

**Advantages:**

- Cage element of macro works with splayed exit types, including Splayed ladder exit and Splayed ladder loop over exit.
- Create an inclined ladder without having to set a custom User coordinate system.
- Adjustment of ladder incline after creation.
- Ladder rotation on plan after creation.
- Automated rung calculation method, with User defined options.
- Holes are created in the ladder for rung connections (round, circular tubes), with full hole depth for external weld placement.
- Ladder supports aligned to inside/middle/outside of the main ladder stiles (stringers), with bolted/welded options.
- The cage features automated hoop spacing.
- Define constraints for the ladder and cage based on local standards. Constraints for ladder and cage.
- Interaction with main definition entries, highlighting exceeding these parameters.

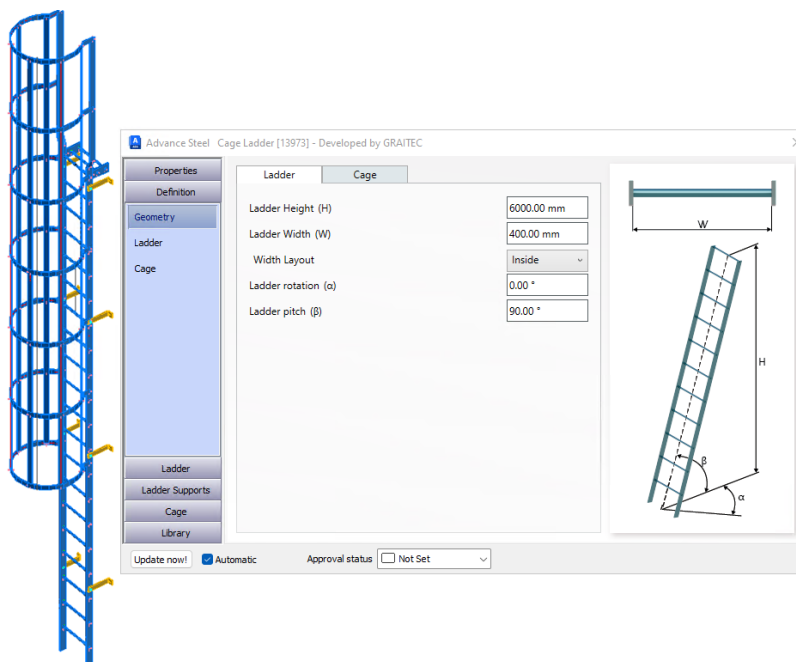
**5.2 Ladder features**

Within the dialog, several key features and options are available for users to modify after creating the initial ladder:

**5.2.1 Primary Geometry**

The dialog offers primary control of the following key geometric parameters:

- **Ladder Height:** editable.
- **Ladder width:** editable.
- **Ladder inclination:** editable.
- **Ladder rotation:** editable.

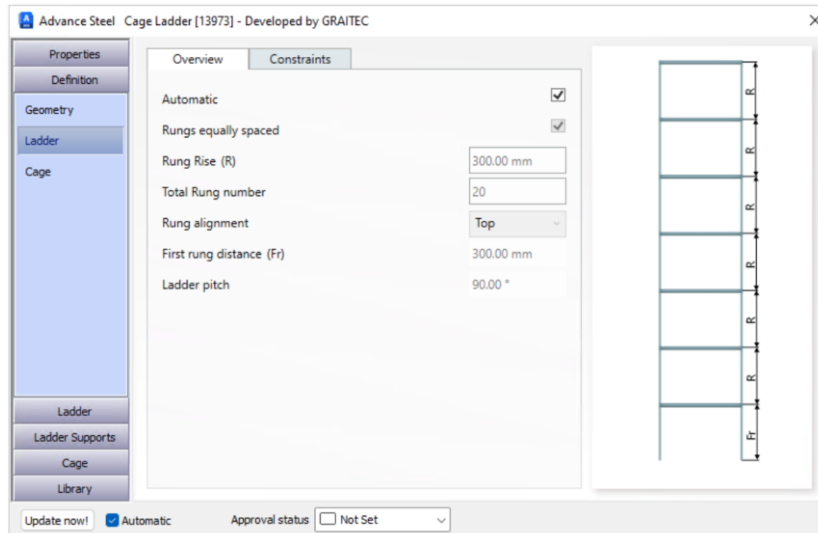


*Ladder definition – geometry tab for ladder*

Each one of those is a primary geometry option and editable under the Definition page of the dialog.

### 5.2.2 Ladder – Overview tab- Rung spacing

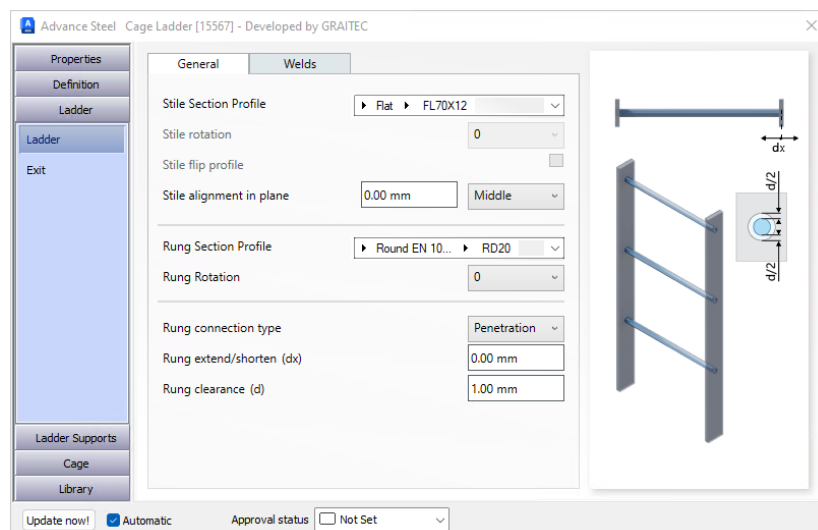
Within the ladder definition, several methods are available to control the rung spacings of the ladder based on the designated top level of the rung. Users can move away from the fully automated option to control the number of rungs with an equal distance or to unlock options to define rung distance with the remaining distance within the first rung distance cell. These options provide flexibility for rung placement.



Definition – Ladder -Overview tab – rung calculation options

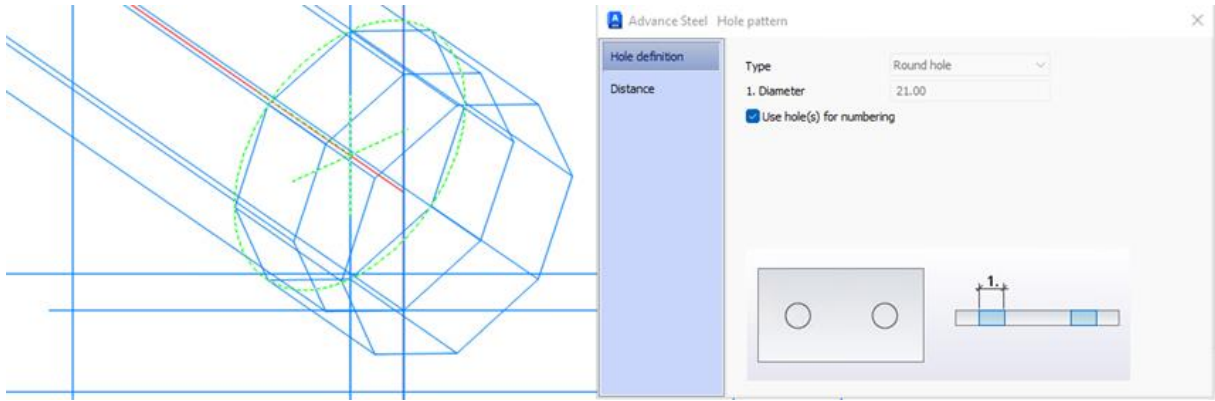
### 5.2.3 Ladder General – Profile selection and Weld designation

As the users progress through the creation of the ladder, they have the option to control the profile type and size selection for both the ladder Stile and rungs. Within this subpage, users can also control the connection arrangement of the Rungs to the Stile, with options for *Aligned*, *Cut* and *Penetration*.



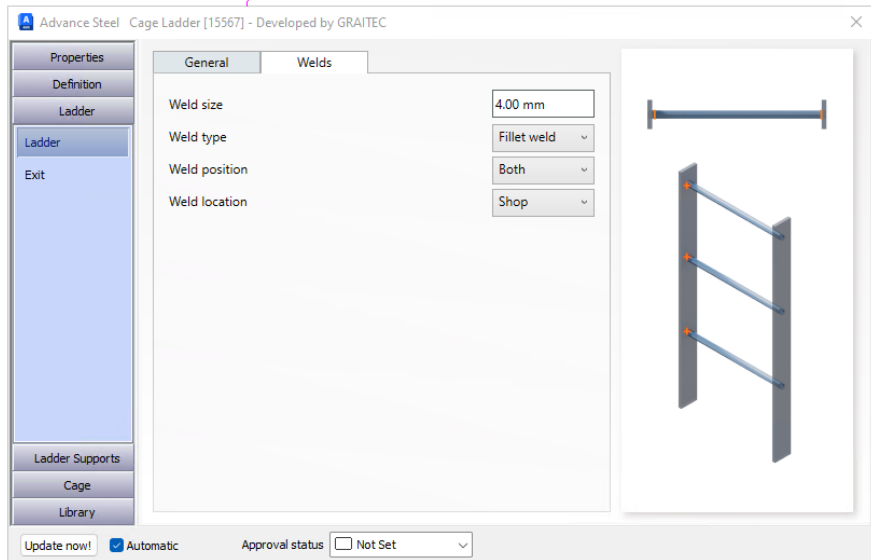
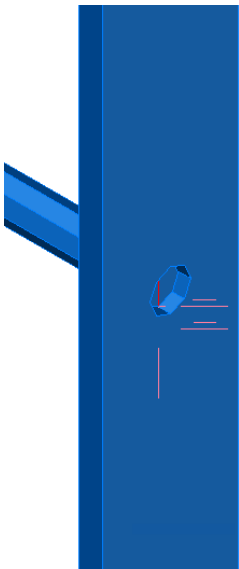
Ladder – Ladder – General Tab for section selection and rung to stile connections

The *Penetration* type is designed to create **holes for round bars/tubes**. For other profiles, it creates a contour feature.



Rung - hole designation for round type

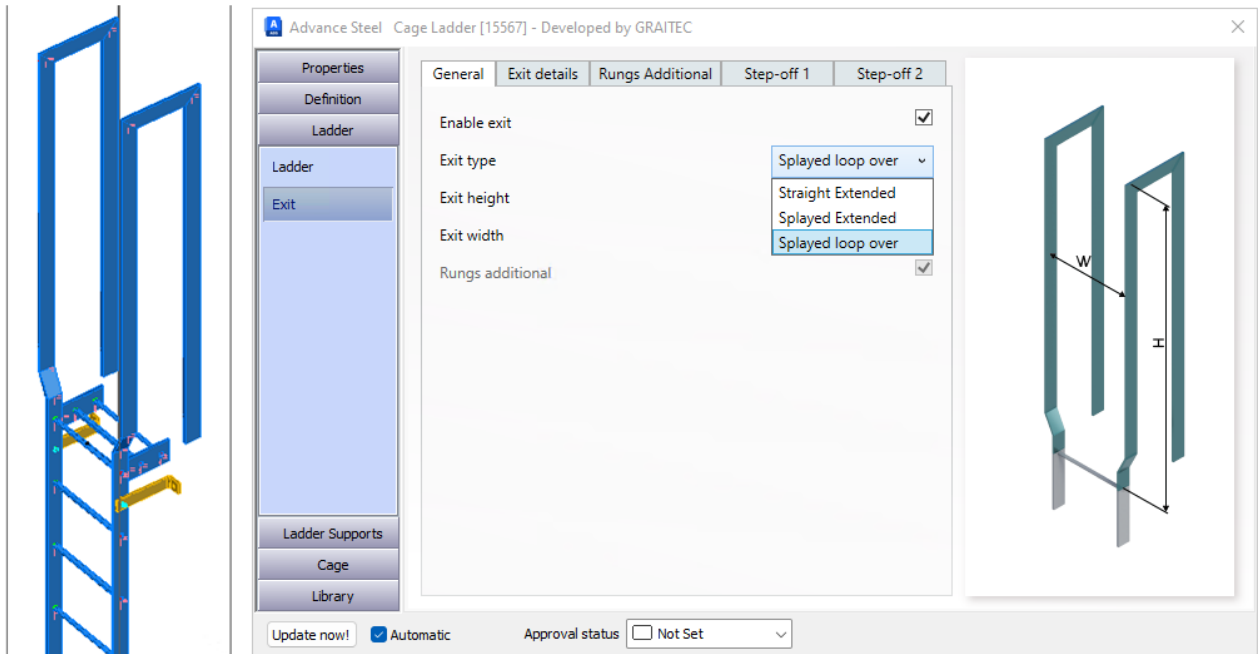
Under the **Welds Tab**, there are options to control the weld location as well as type and size. These are particularly useful when using *Penetration* type and weld can be designated for the **Both**, **Internal** and **External** rung/Stile arrangement.



Ladder - Ladder - Welds Tab

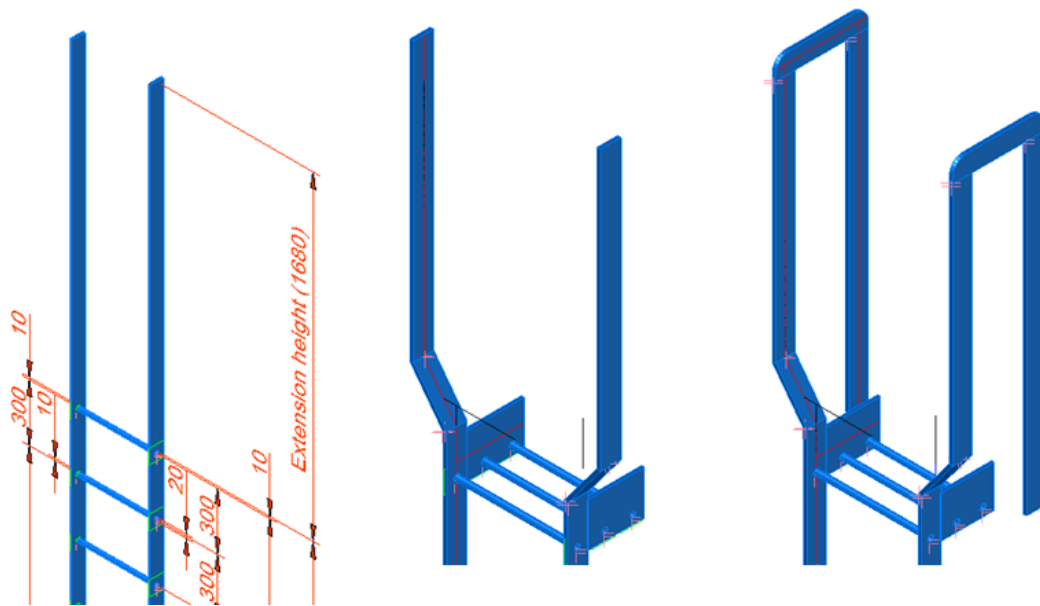
### 5.2.4 Ladder Exit Types & Step off Feature

Within the Exit subpage of the dialog, the user can change the exit type between the default of *Straight extended* to *Splayed* or *Splayed loop over*. Changing between these types enables/disables different elements of the Tabs available within the overall exit page.



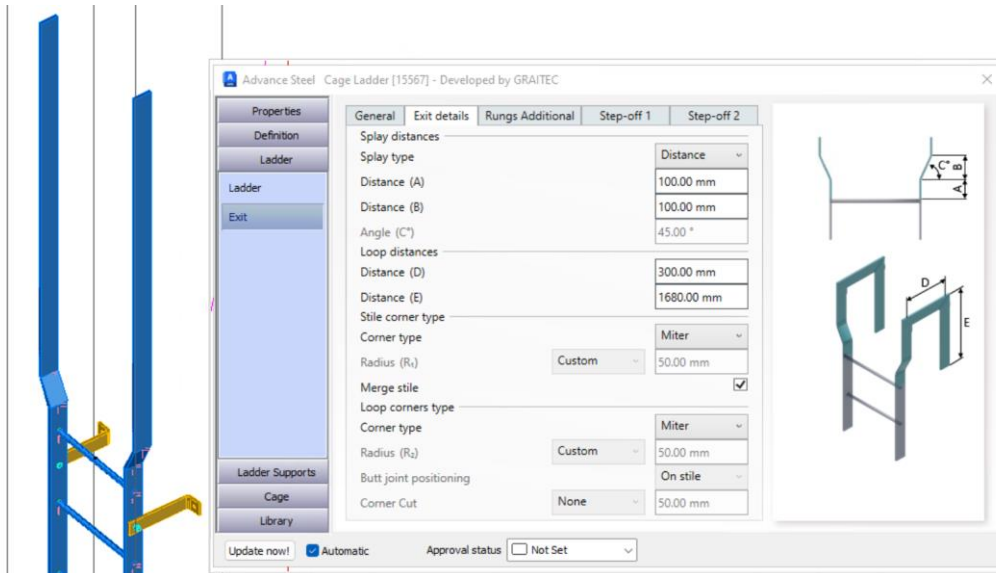
*Ladder – Exit –general tab- exit type selection*

These options allow for different exit arrangements, that later can interact with the Exit Cage.

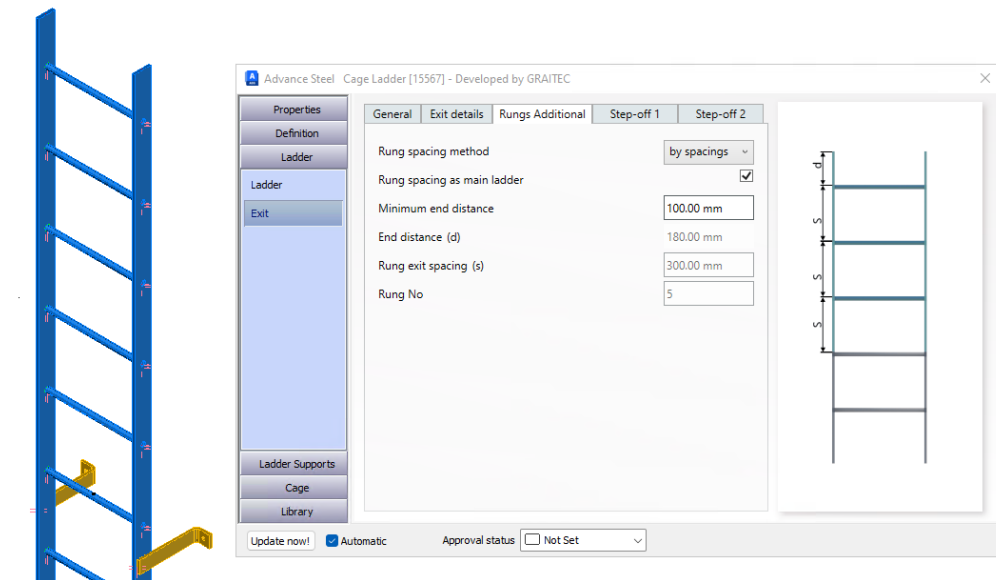


*Ladder – Exit Types–Straight–Splayed–Splayed loop over*

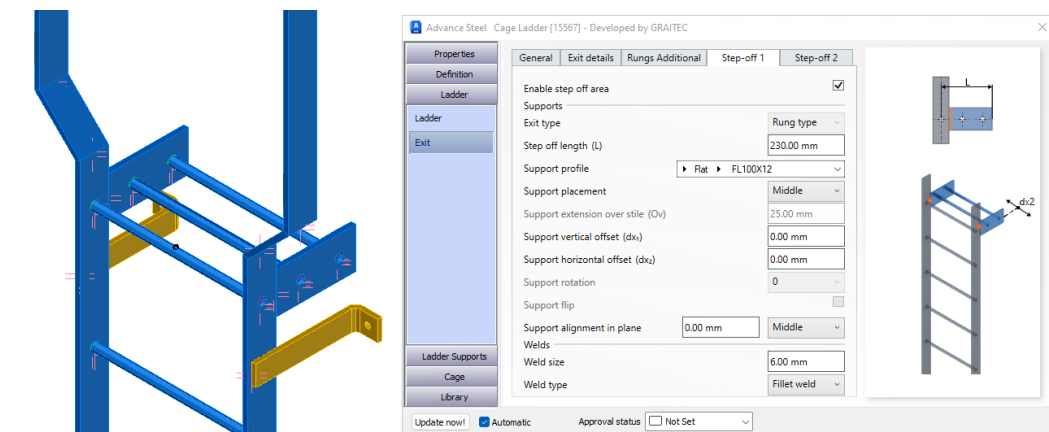
These tabs provide options to control the additional rungs, the exit type dimensions, and the enablement of the step-off feature for the ladder exit. Each tab allows users to change the arrangement and dimensional parameters to fit their specific requirements.



Ladder – Exit – Exit Details tab

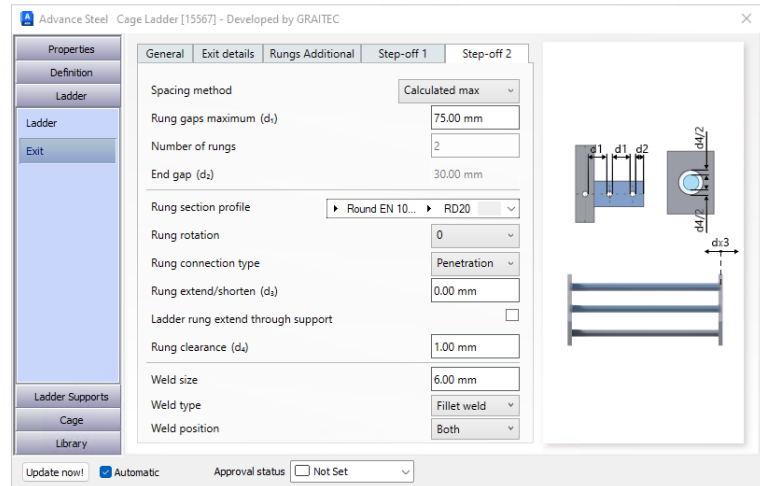
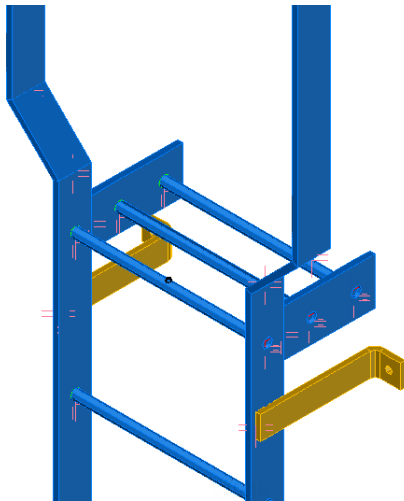


Ladder – Exit – Rungs Additional tab



Ladder – Exit – Step-off 1 tab

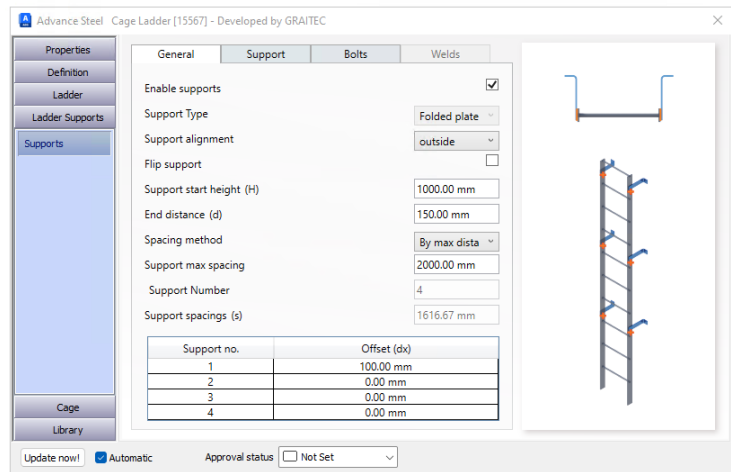
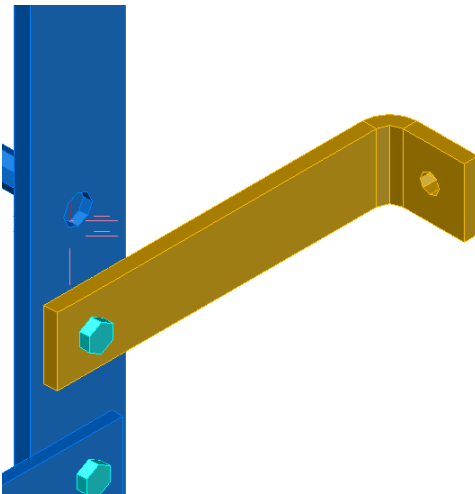




*Ladder - Exit - Step-off 2 tab*

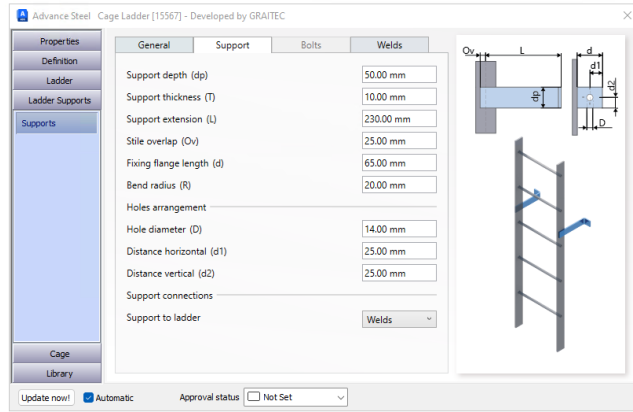
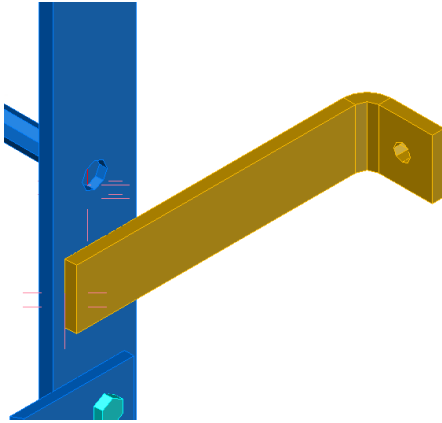
**5.2.5 Ladder supports**

Under the Ladder Supports page, the subpage for supports, tab General, allows the user to choose start height and end distances with maximum distances, combined with options for local offset. The supports can be positioned externally (Default), internal, or centrally to the ladder stile.



*Ladder Supports - Support - General tab*

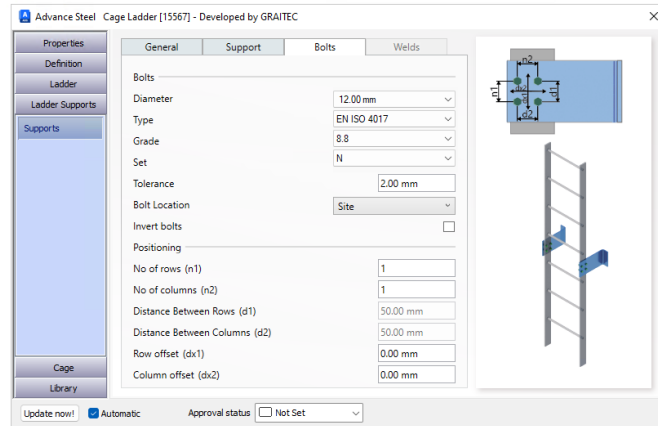
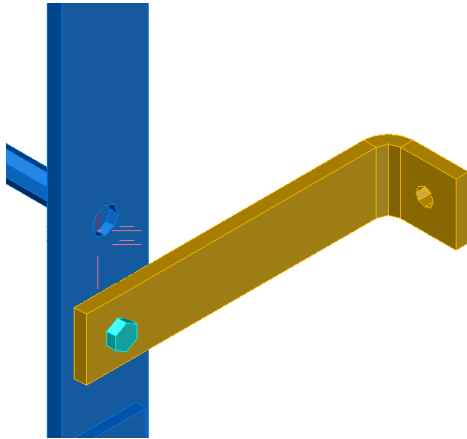
Changing to the tab for Supports, the user has control parameters for the strap body, overlap to stile and flange fixture hole.



*Ladder Supports – Supports – Support tab*

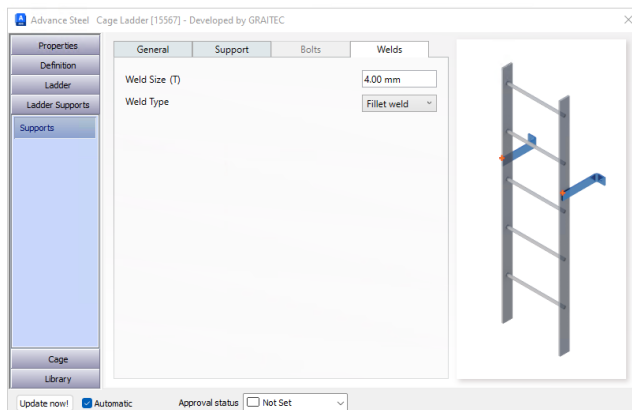
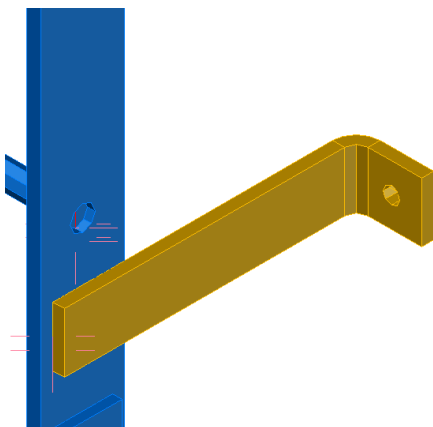
Users can choose whether the stays are welded or bolted to the ladder. Selecting an option will activate the corresponding tab within the dialog page.

As users proceed to the connections, the bolts become active. Users can then navigate to the Bolts tab to see various parameter options for bolt type and location, with options to control the Positioning.



*Ladder supports – supports – bolts tab*

The Welds tab becomes active when set under the support tab and allows for weld size and weld type to be designated.



*Ladder supports – supports – welds*

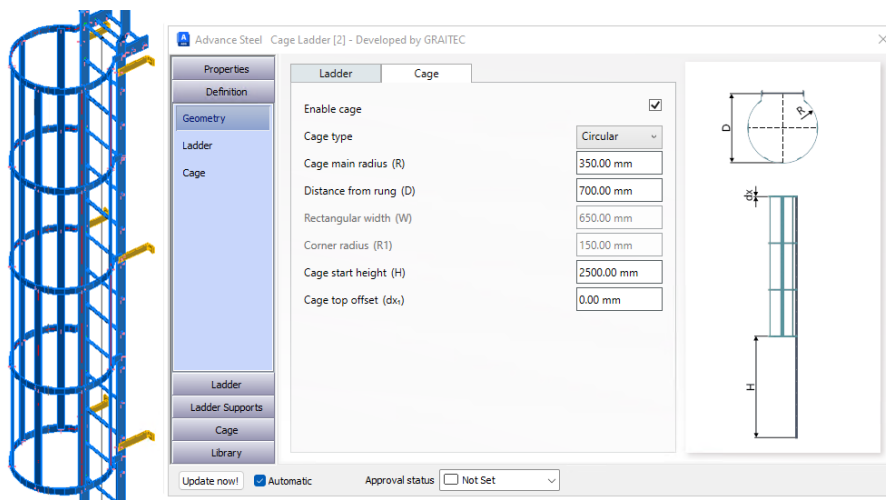
Next, we will outline the Cage features available within the cage ladder macro.

### 5.3 Cage Features

The cage for the ladder can be activated under the **Definition - Geometry - Cage** tab via a simple check box. This will enable the cage primary features in this tab and allow for the further activation of the cage options within the dialog. The overall cage is split into two main segments main and exit cages, controlled within the overall dialog arrangements.

#### 5.3.1 Cage Geometry

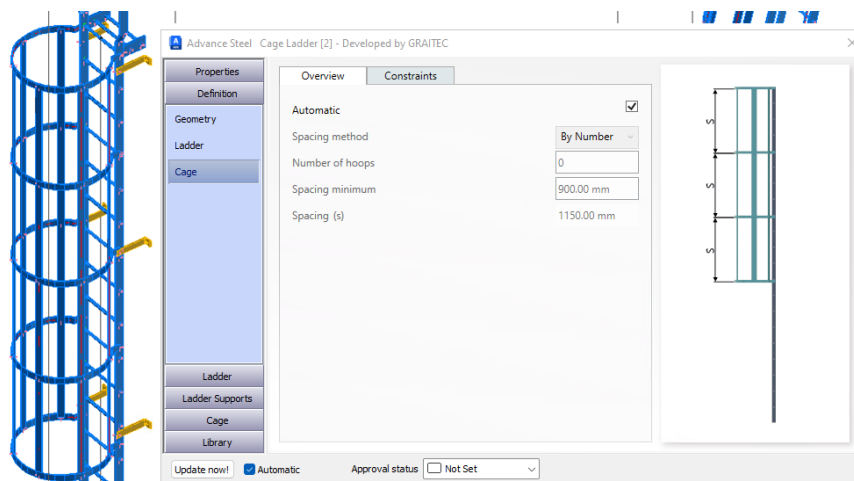
The primary page for the cage is the **Geometry**, under the **Definition**. The user enables the main cage and adjustment to key parameters such as Main radius, distance from rung, start height, and some other minor parameters.



Cage Geometry tab under definition page

#### 5.3.2 Cage hoop spacing control

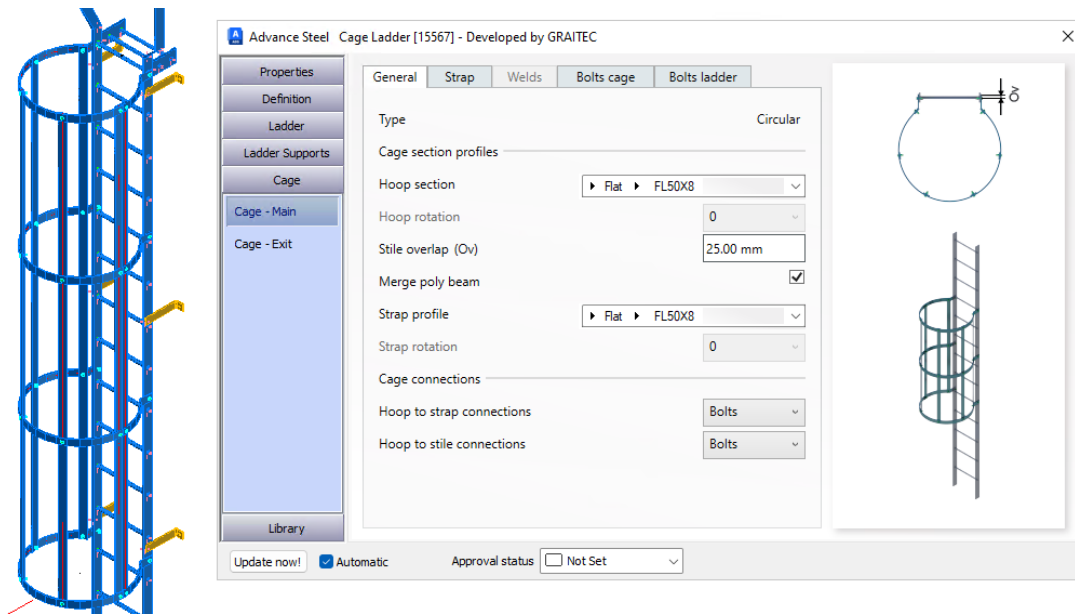
Cage hoop spacing control can be found under the **Definition - Cage** section. Within a series of tabs starting with **Overview**, users can check or uncheck options to affect the control of the hoops within the overall main cage body.



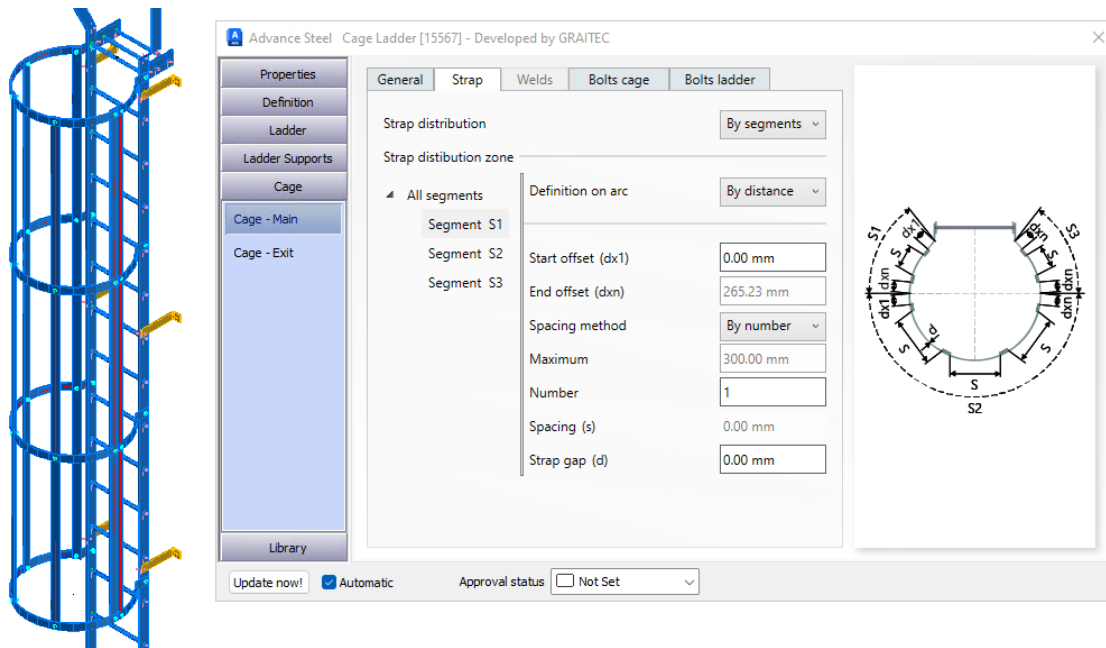
Cage overview tab under definition - Cage subpage

5.3.3 Cage Main Sections and Connections

Moving down to the Cage page of the dialog, the user will see two main subpages used to control the **Cage-Main** and **Cage-Exit** for hoop and strap sections. Both have options to control the strap placement method, combined with a series of tabs for bolted or welded arrangements.

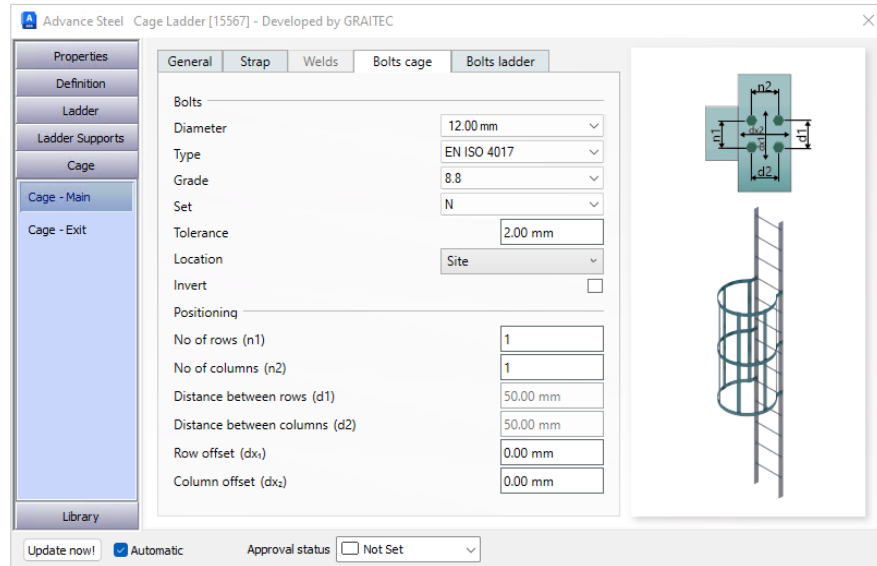
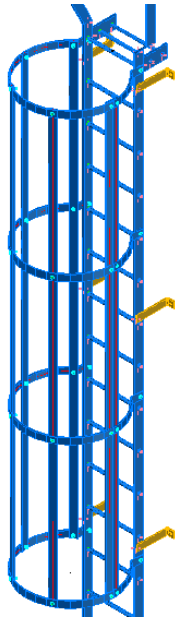


Cage Main- General tab



Cage main - Strap tab

From the **General** tab there are options to control the welds and bolts within the cage itself and the cage to the ladder. These are then reflected in a series of tabs controlling those elements. These tabs are configured similarly to other bolt and welds tabs previously shown in this document.

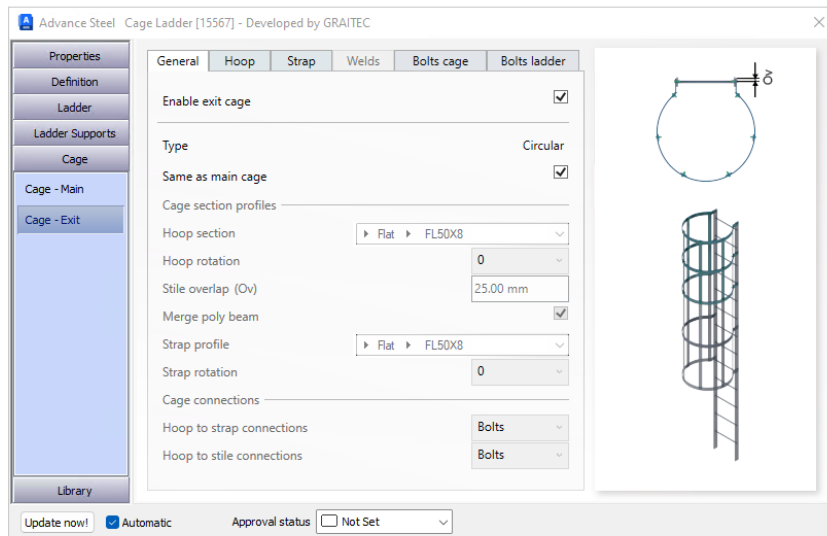
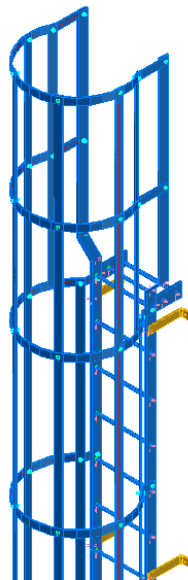


*Bolts for Cage-to-Cage connection option*

### 5.3.4 Cage Exit segment

The exit cage is activated and controlled using a similar design of page and tab arrangement, to allow the same interaction with the key elements of the main cage. With options to allow the exit cage to match the main cage below and merge straps where possible.

These activations are controlled by simple check box options.



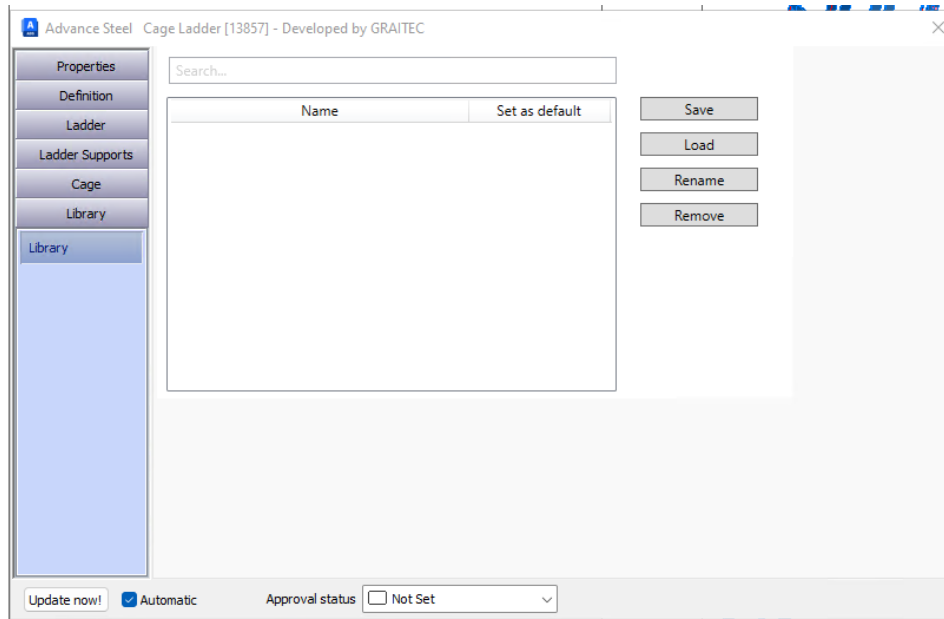
*Cage exit- general tab with exit arrangement activated*

The main check box to enable the exit is located under the **General** tab within **Cage-Exit** subpage.

The other tabs under this subpage are the same approach as the main. They are greyed and inactive when the same as the main cage is active, with an option to allow the user to interact and change these settings as required.

### 5.4 Library options

The macro comes with a library option for the user to store the configuration and set it as their preferred default arrangement to start from.



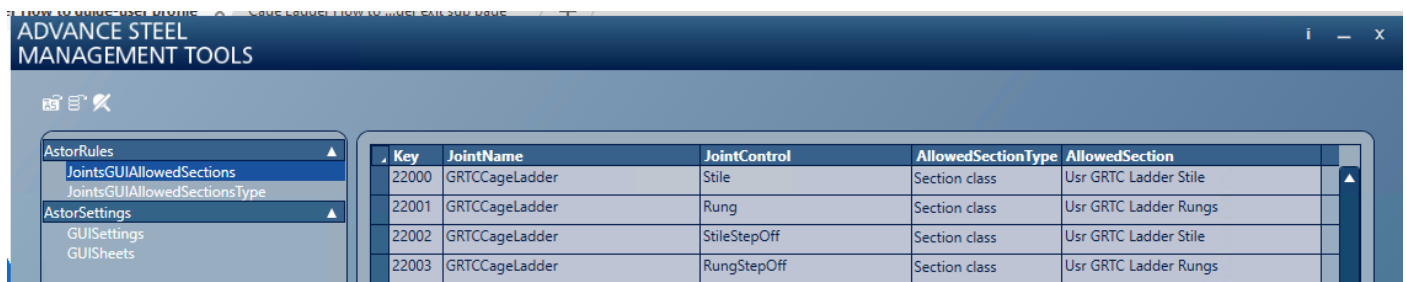
Library tab

### 5.5 Ladder user profiles

The ladder feature includes an option to add user-defined profiles for the Stile and Rungs that form part of the ladder and the Step off areas.

This can be done by using the GUI-allowed Section table within the AstorRules of Advance Steel. The user can create and add these profiles, by following the process defined in Advance Steel via the Management Tools table editor.

To demonstrate this, refer to the mock-up entry based on a series of test user profiles created for this purpose.



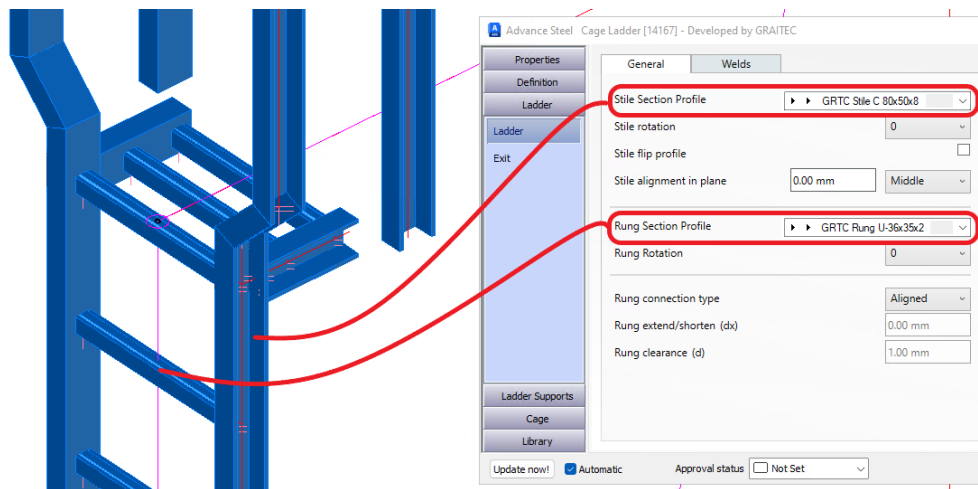
User profiles - GUI allowed sections table

- **Joint Name:**
  - GRTCCageLadder
- **Joint controllers:**
  - For **Ladder Stile:** Stile
  - For **Ladder rung:** Rung
  - For **Step off stile:** StileStepOff

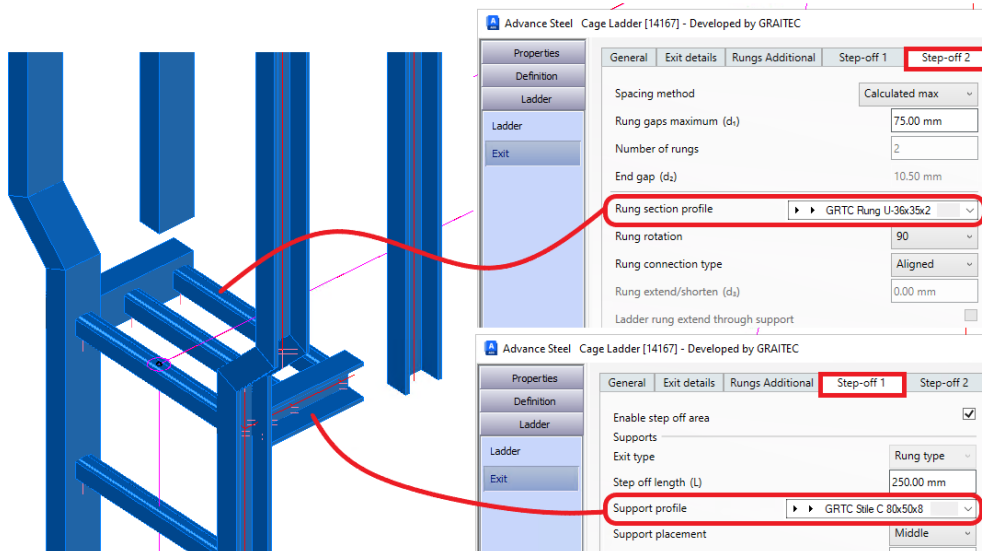
- For **Step off rung**: RungStepOff
- **Allowed Section Type:**
  - If a user-defined profile shape is used, then set it to Section class.
  - If a standard shape code reference is used, then use the Section shape.
- **Allowed Sections:**
  - This is the typename text entry from the profilemastertable of the Astorprofiles database. This links the profile to the GUI allowed sections.

**User-defined profiles** following the Standard Advance Steel user-defined profiles method. This involved defining all the coordinates and system points within the required profile shape and adding the range of stiles or profiles as required.

After adding the User profiles and GUI table references, these profiles will be available within the different dialog pages and sub-elements.



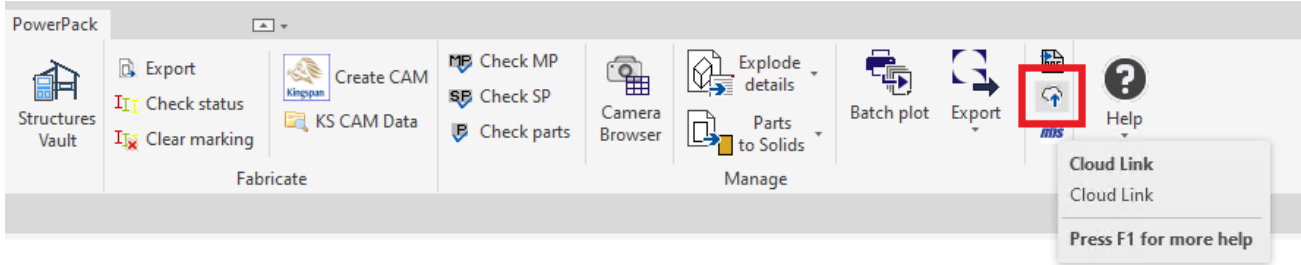
*Ladder user profiles – Stile -Rung options*



*Ladder user profiles – Step off options*

## 6. Cloud Link command: Retirement

We announce the retirement of the **Cloud Link** command starting with this version. This decision reflects the evolution of technology and user needs. As cloud data storage solutions become more sophisticated, users now benefit from a range of versatile access methods tailored to modern workflows. Consequently, this command has become redundant within a dedicated software solution.



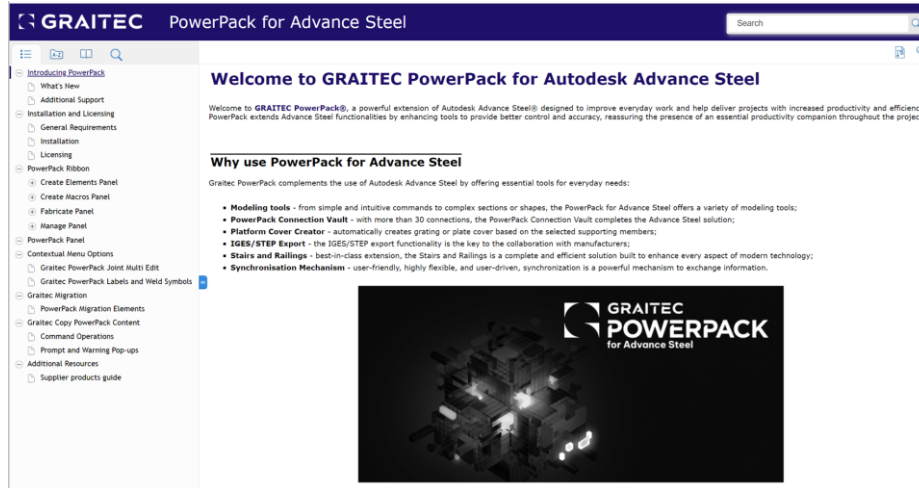
*Cloud link – current ribbon location for the command*

The command and functionality will be removed from the PowerPack, resulting in the ribbon arrangement changing under this Manage ribbon panel.



## 7. Online Help: continued update

We continue to update the Powerpack for Advance Steel online help portal. As new features are added to the system, the help portal will receive additional content to complement these new features. This ensures users have access to vital insights into the command operations, quick start guides, and accompanying media.



*PowerPack for Advance Steel Online Help*

Please check the portal for updates, which will be available shortly after the product release.

Link: [PowerPack for Advance Steel \(graitec.com\)](https://www.graitec.com/powerpack-for-advance-steel)