



Weld strength check according to:
Eurocode3, DNV OS-C101, DNV OS-C201



12.09.2020
version 2020.0.2

This step-by-step tutorial demonstrates how to perform the weld strength check according to Eurocode 3, DNV OS-C101-LRFD, DNV OS-C201-WSD standards in SDC Verifier.

The following steps are covered:

- ▶ Weld Finder Tool detailed review;
- ▶ Weld Stress calculations;
- ▶ Standards creation;
- ▶ Report preparation and results.

Open Project

1

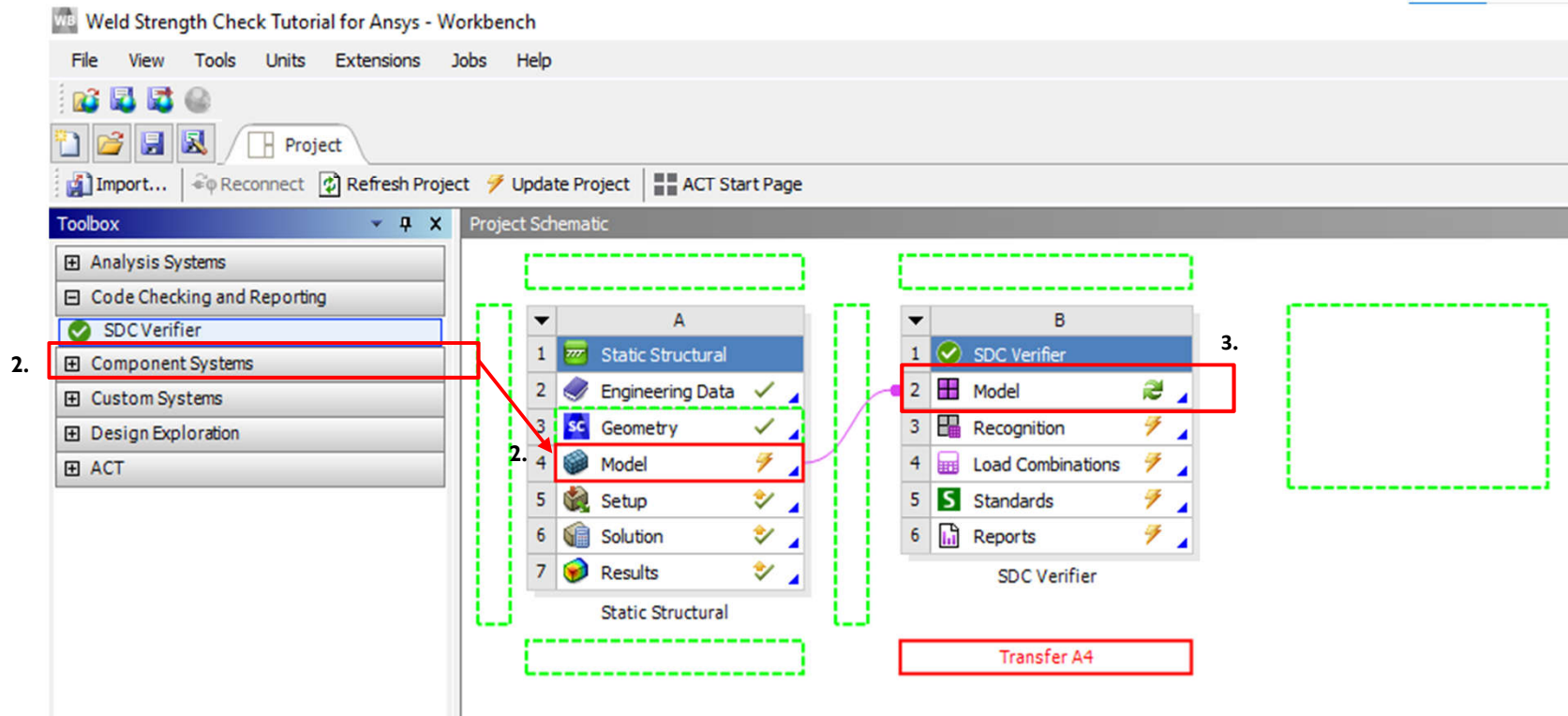
Open in **Ansys Workbench** WB
Weld Strength Check tutorial for Ansys

2

Hold and move **SDC Verifier** to **Static Structural Model**

3

Double click on **Model**



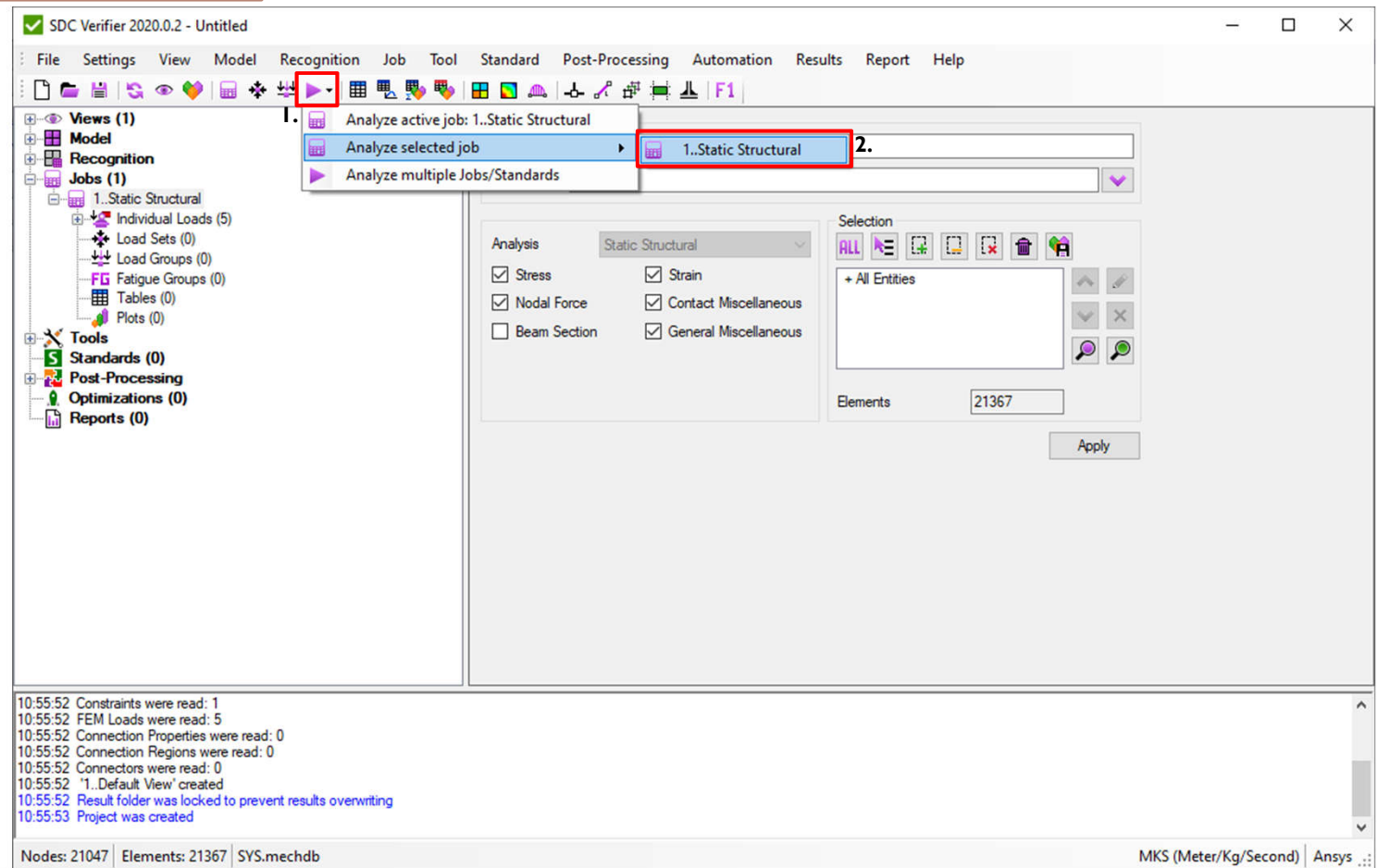
Run Analysis

1

Press button 

2

Select in a drop-down menu **Analyze selected job=> Static Structural** to start to Analyze in Ansys



Weld Finder – General overview

1

Execute **Recognition =>Weld Finder => Edit.**

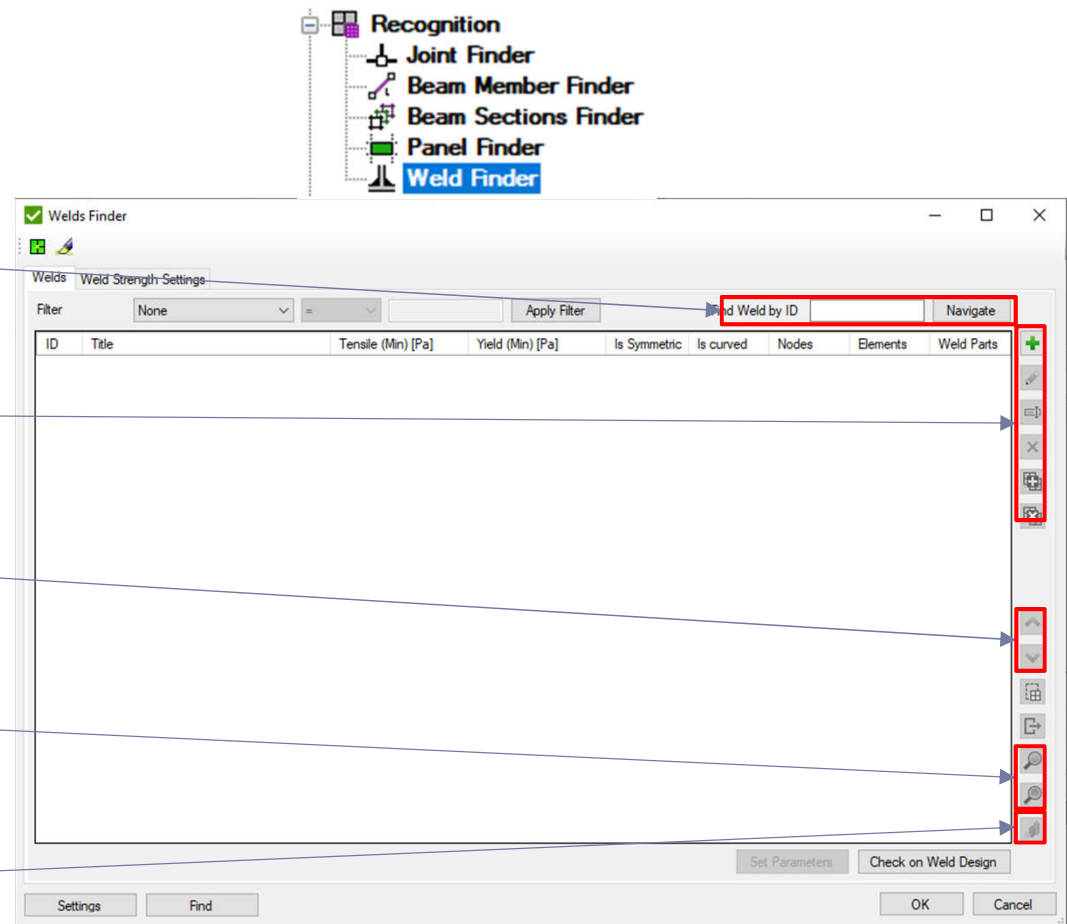
Navigate option in order to find weld by ID.

Add, Edit, Combine, Split and Remove Weld(s).

Move Welds. Order is important when the same element belongs to 2 welds.

Preview selected weld(s).

Plot of selected weld(s) in colors and with labels of IDs (drop-down menu).



Add exception rule for recognition

1 Press *Settings*

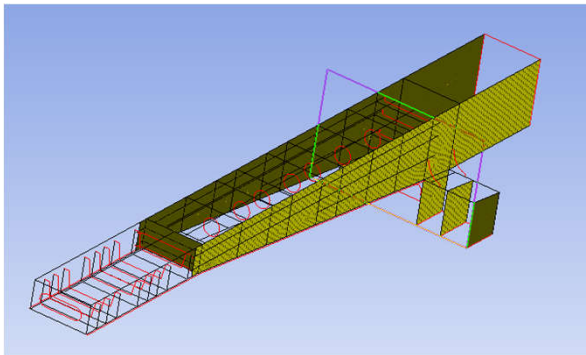
2 Press *Edit* for **Not weld** properties.

3 Select **property ID3**.

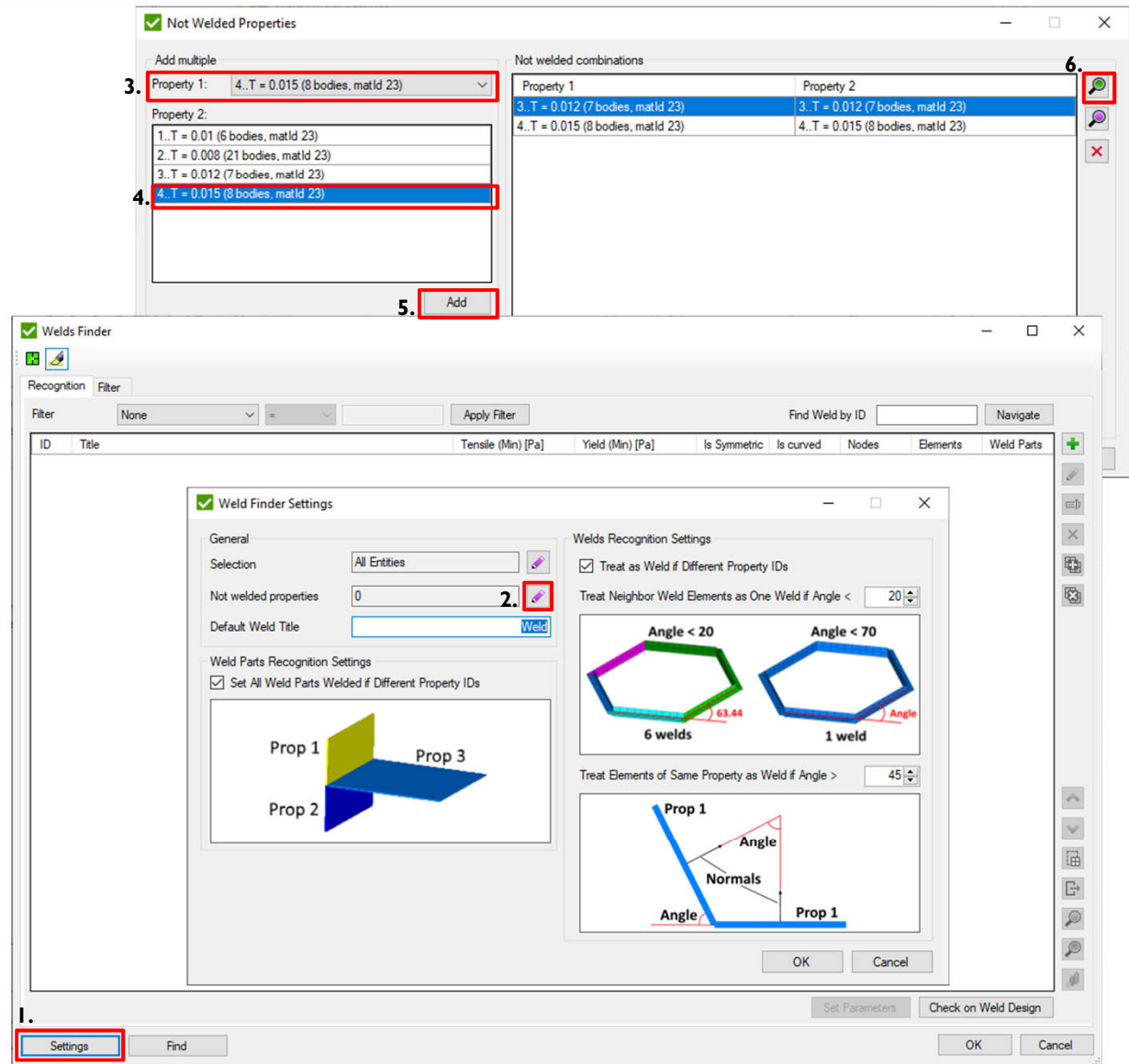
4 Select **property ID4**.

5 Press *Add*.

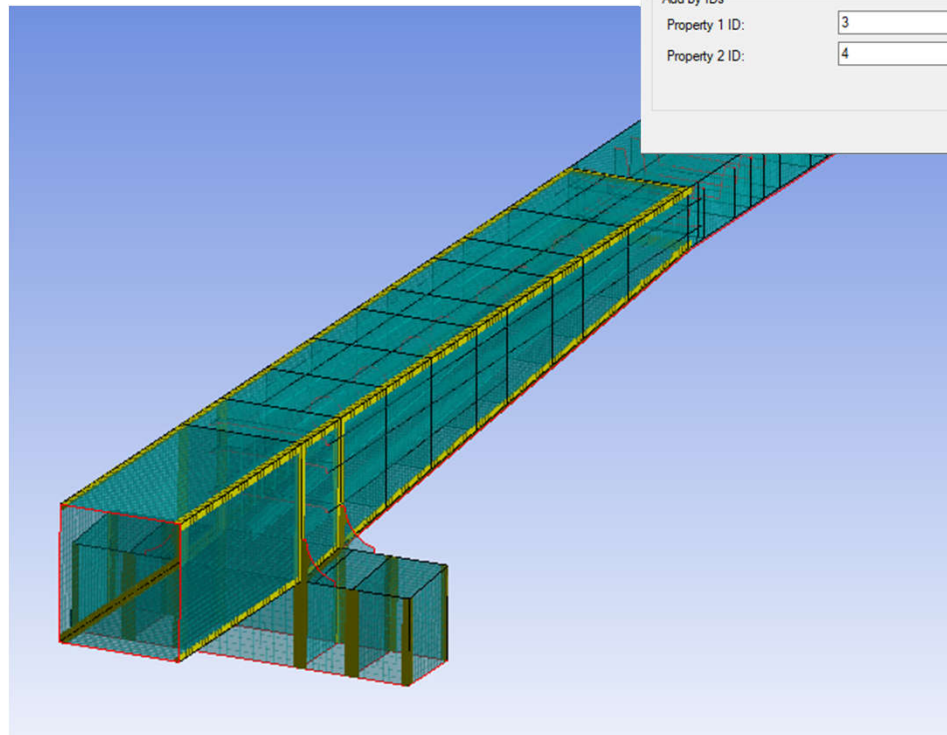
6 Press 



Connections with properties 4 and 5 are not treated as welds



Not welded properties. Option2



Not Welded Properties

Add multiple

Property 1: 3..T = 0.012 (7 bodies, matId 23)

Property 2:

- 1..T = 0.01 (6 bodies, matId 23)
- 2..T = 0.008 (21 bodies, matId 23)
- 3..T = 0.012 (7 bodies, matId 23)
- 4..T = 0.015 (8 bodies, matId 23)

Add

Add by IDs

Property 1 ID: 3

Property 2 ID: 4

Add

Not welded combinations

Property 1	Property 2
3..T = 0.012 (7 bodies, matId 23)	4..T = 0.015 (8 bodies, matId 23)

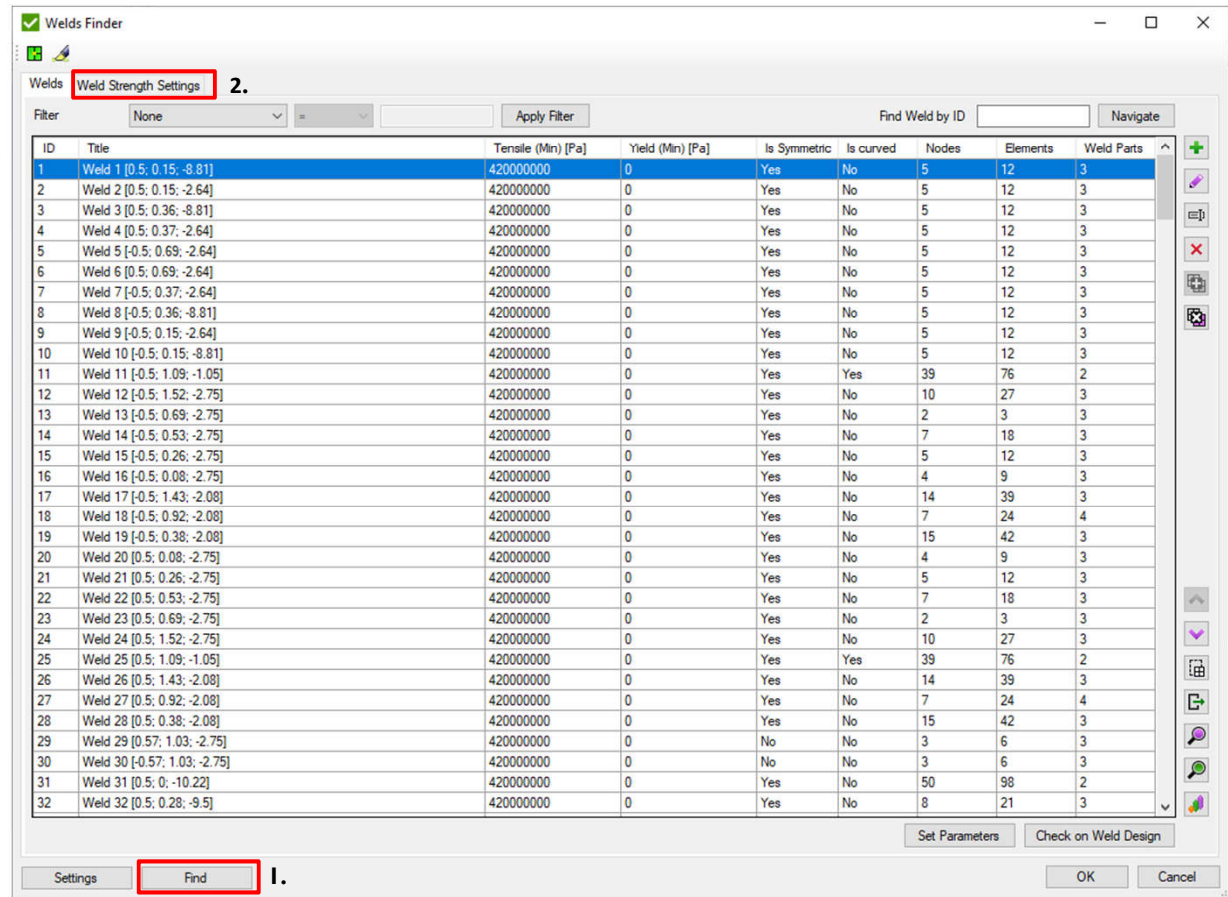
OK Cancel

It is possible to select properties manually in Ansys by elements to add a not welded combination

Recognize welds

1 Press *Find*.

2 Press *Weld Strength Settings*.



Weld Finder – Details

Selection gives a possibility to select a part of the model (group, component) for making changes.

This filter can be used to search the weld(s) due to different parameters (length, thickness, area, weld only, non weld only etc.).

Edit, Combine, Split, Export and Remove Weld(s).

Navigate option in order to find a weld by ID.

Preview selected weld(s).

Plot of selected weld(s) in colors and with labels of IDs (drop-down menu).

The screenshot shows the 'Welds Finder' window with various settings and a table of weld data. Annotations point to specific features:

- Selection:** Points to the 'All Entities' dropdown in the 'Selection' section.
- Filter:** Points to the 'Display Weld Parts' section with radio buttons for 'All', 'Welded', and 'Non-Welded', and the 'Filter Rule' dropdown.
- Edit, Combine, Split, Export and Remove:** Points to the toolbar on the right side of the window.
- Navigate:** Points to the 'Find Weld by ID' and 'Navigate' buttons.
- Preview:** Points to the 'Apply to selected weld parts' section.
- Plot:** Points to the 'Set Welded Parts by' dropdown menu.

Weld ID	Title	Length [m]	Weld Type	Welded	Csys	t [m]	r [m]	s [m]	h [m]	Alpha
1	Weld Part 1.1 [0.5; 1.06; -2...	0.667	None	Yes	Rotation [84.77; ...	0.012				
1	Weld Part 1.2 [0.5; 1.06; -2...	0.667	None	Yes	Rotation [-95.23; ...	0.012				
2	Weld Part 2.1 [0.5; 1.09; -1...	2.081	None	Yes	Rotation [89.89; ...	0.012				
3	Weld Part 3.1 [0.5; 0.15; -2...	0.204	None	Yes	Rotation [-180; -9...	0.008				
4	Weld Part 4.1 [0.5; 0.37; -2...	0.205	None	Yes	Rotation [-180; -9...	0.008				
5	Weld Part 5.1 [-0.5; 1.06; -2...	0.667	None	Yes	Rotation [-95.23; ...	0.012				
5	Weld Part 5.2 [-0.5; 1.06; -2...	0.667	None	Yes	Rotation [84.77; ...	0.012				
6	Weld Part 6.1 [-0.5; 1.09; -1...	2.081	None	Yes	Rotation [-90.11; ...	0.012				
7	Weld Part 7.1 [-0.51; 0.48; -...	0.025	None	Yes	Rotation [-180; 0...	0.01				
8	Weld Part 8.1 [0.51; 0.48; -...	0.025	None	Yes	Rotation [-180; 0...	0.01				
9	Weld Part 9.1 [-0.5; 0.69; -2...	0.205	None	Yes	Rotation [180; 90...	0.008				
10	Weld Part 10.1 [0.5; 0.69; -...	0.205	None	Yes	Rotation [0; -90; 0]	0.008				
11	Weld Part 11.1 [-0.5; 0.37; -...	0.205	None	Yes	Rotation [-180; 9...	0.008				
12	Weld Part 12.1 [-0.5; 0.15; -...	0.205	None	Yes	Rotation [180; 90...	0.008				
13	Weld Part 13.1 [-0.5; 1.39; -...	0.749	None	Yes	Rotation [0; 0; 90]	0.012				

Weld Finder – Set weld parameters

Set Non-welded only - change selected **welded** parts by selecting elements on the model.

Set Welded only - change selected **non-welded** parts by selecting elements on the model.

Restore default data if some of them were assigned incorrectly.

Possibility to apply weld type and dimensions of weld to all selected weld(s) parts.

Possibility to modify or change length, thickness, coordinate system and origin to all selected weld(s) parts.

Welds Finder

Welds Weld Strength Settings

Information

Selection:

Display Weld Parts: ☐ All ☒ Welded ☐ Non-Welded

Filter Rule:

Weld-ID	Title	Length [m]	Weld Type	Welded	Csys	t [m]	r [m]	s [m]	h [m]	Alpha
1	Weld Part 1.1 [0.5; 1.06; -2...	0.667	None	Yes	Rotation [84.77; ...	0.012				
1	Weld Part 1.2 [0.5; 1.06; -2...	0.667	None	Yes	Rotation [-95.23; ...	0.012				
2	Weld Part 2.1 [0.5; 1.09; -1...	2.081	None	Yes	Rotation [89.89; ...	0.012				
3	Weld Part 3.1 [0.5; 0.15; -2...	0.204	None	Yes	Rotation [-180; -9...	0.008				
4	Weld Part 4.1 [0.5; 0.37; -2...	0.205	None	Yes	Rotation [-180; -9...	0.008				
5	Weld Part 5.1 [-0.5; 1.06; -2...	0.667	None	Yes	Rotation [-95.23; ...	0.012				
5	Weld Part 5.2 [-0.5; 1.06; -2...	0.667	None	Yes	Rotation [84.77; ...	0.012				
6	Weld Part 6.1 [-0.5; 1.09; -1...	2.081	None	Yes	Rotation [-90.11; ...	0.012				
7	Weld Part 7.1 [-0.51; 0.48; -...	0.025	None	Yes	Rotation [-180; 0...	0.01				
8	Weld Part 8.1 [0.51; 0.48; -...	0.025	None	Yes	Rotation [-180; 0...	0.01				
9	Weld Part 9.1 [-0.5; 0.69; -2...	0.205	None	Yes	Rotation [180; 90...	0.008				
10	Weld Part 10.1 [0.5; 0.69; -...	0.205	None	Yes	Rotation [0; -90; 0]	0.008				
11	Weld Part 11.1 [-0.5; 0.37; -...	0.205	None	Yes	Rotation [-180; 9...	0.008				
12	Weld Part 12.1 [-0.5; 0.15; -...	0.205	None	Yes	Rotation [180; 90...	0.008				
13	Weld Part 13.1 [-0.5; 1.39; -...	0.749	None	Yes	Rotation [0; 0; 90]	0.012				

Find Weld by ID:

Apply to selected weld parts

Set Welded / Non-Welded:

Length [m]:

Weld part thickness (t) [m]:

Csys:

Origin:

Apply to selected weld parts (only for welded parts)

Weld type:

☒ Apply by sizes ☐ Apply by throat thickness (a)

Weld leg horizontal (f) [m]: ☒ Throat thickness (a) [m]:

Weld leg vertical (h) [m]: ☐ Set a = t / 2

Penetration depth (s) [m]: Override type:

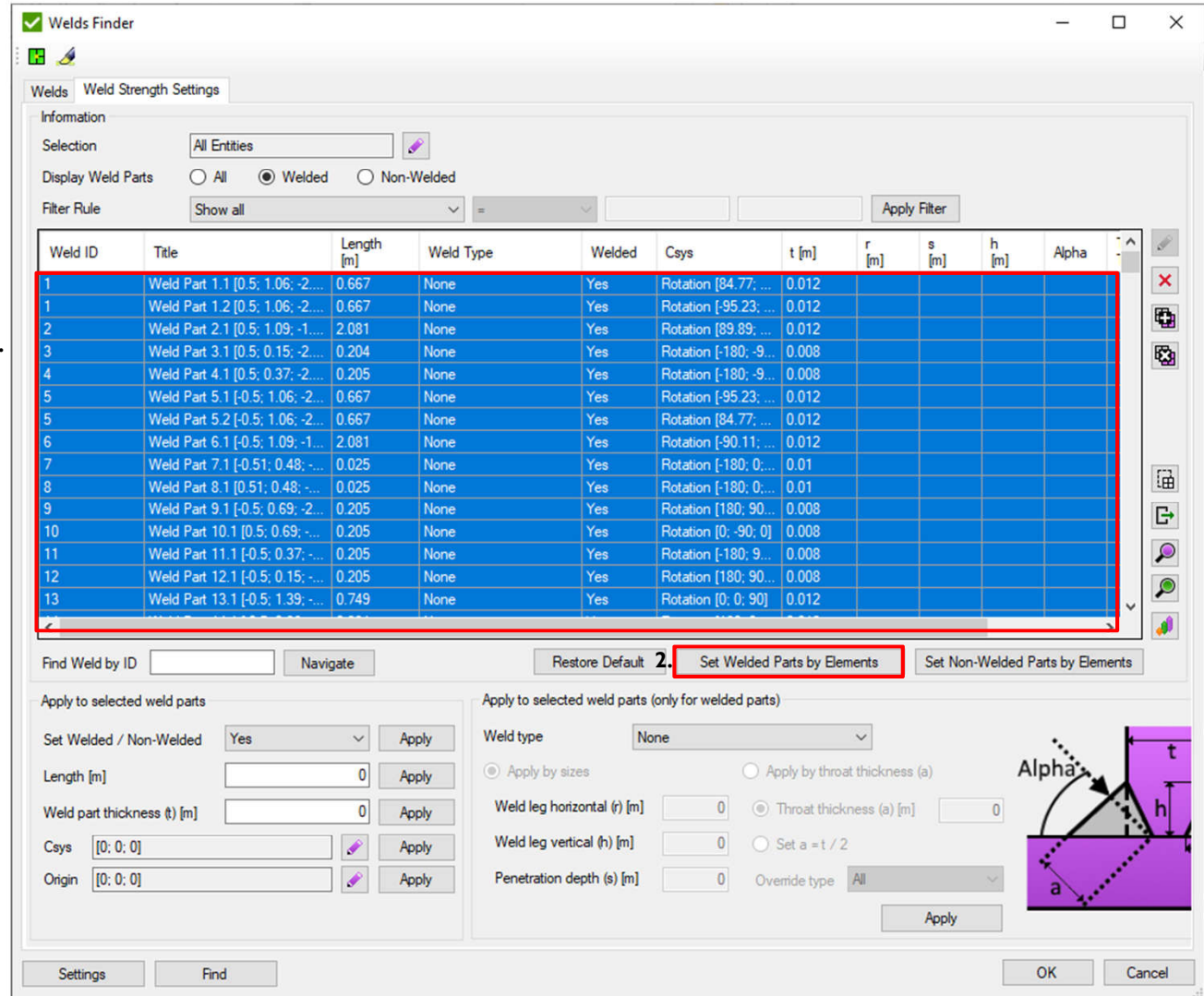
Set welded parts by elements

1

Select all welds part by pressing **Ctrl+A** keys combination.

2

Press **Set welded parts by elements** to find weld parts by elements and include them in weld strength calculations (also this command could be performed for few or single weld part).



Set weld part type welded (manually)

1

Select **Non-Welded** element(s) which should be changed to **Welded** element(s).

It is sufficient to select only one element from a weld part to pick full part automatically.

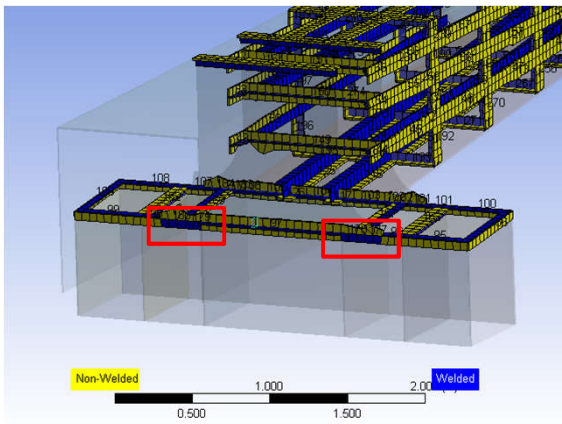
2

Press **OK**.

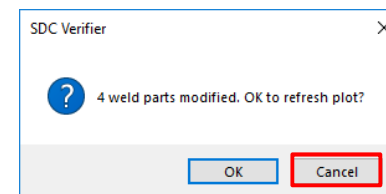
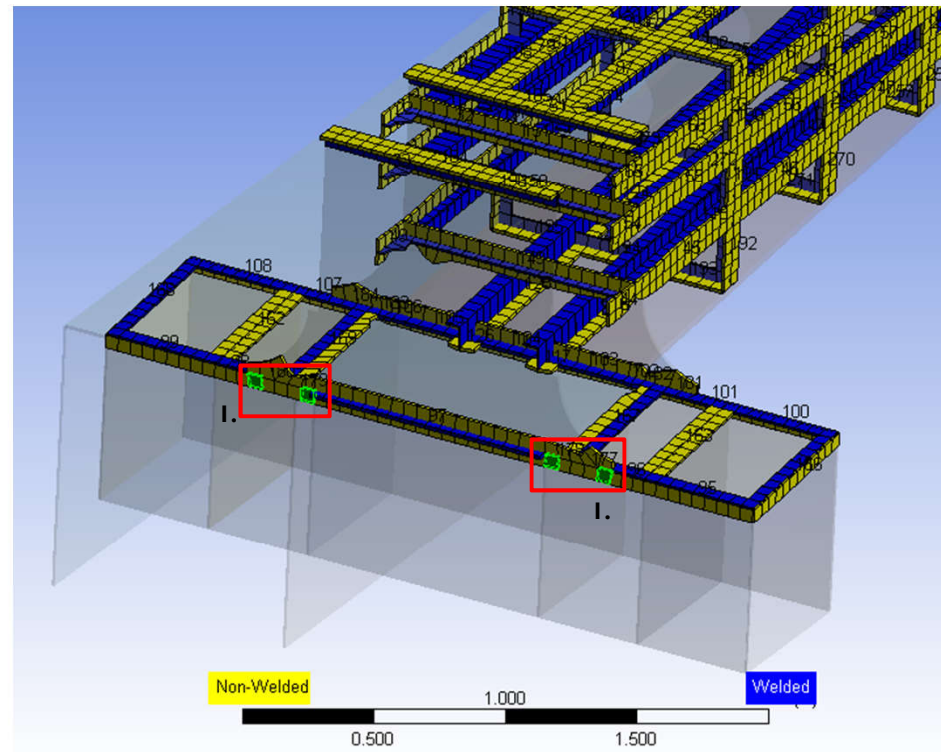
3

Press **Cancel**.

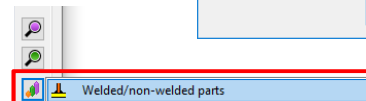
Updated plot shown below



In order to get refreshed plot of the weld(s), select all weld parts by using **Ctrl+A** keys combination and choose command **Welded/non-welded parts**



3.



Set weld parameters

1 Select all weld parts by pressing **Ctrl+A** keys combination.

2 Select the type of weld **Double fillet**.

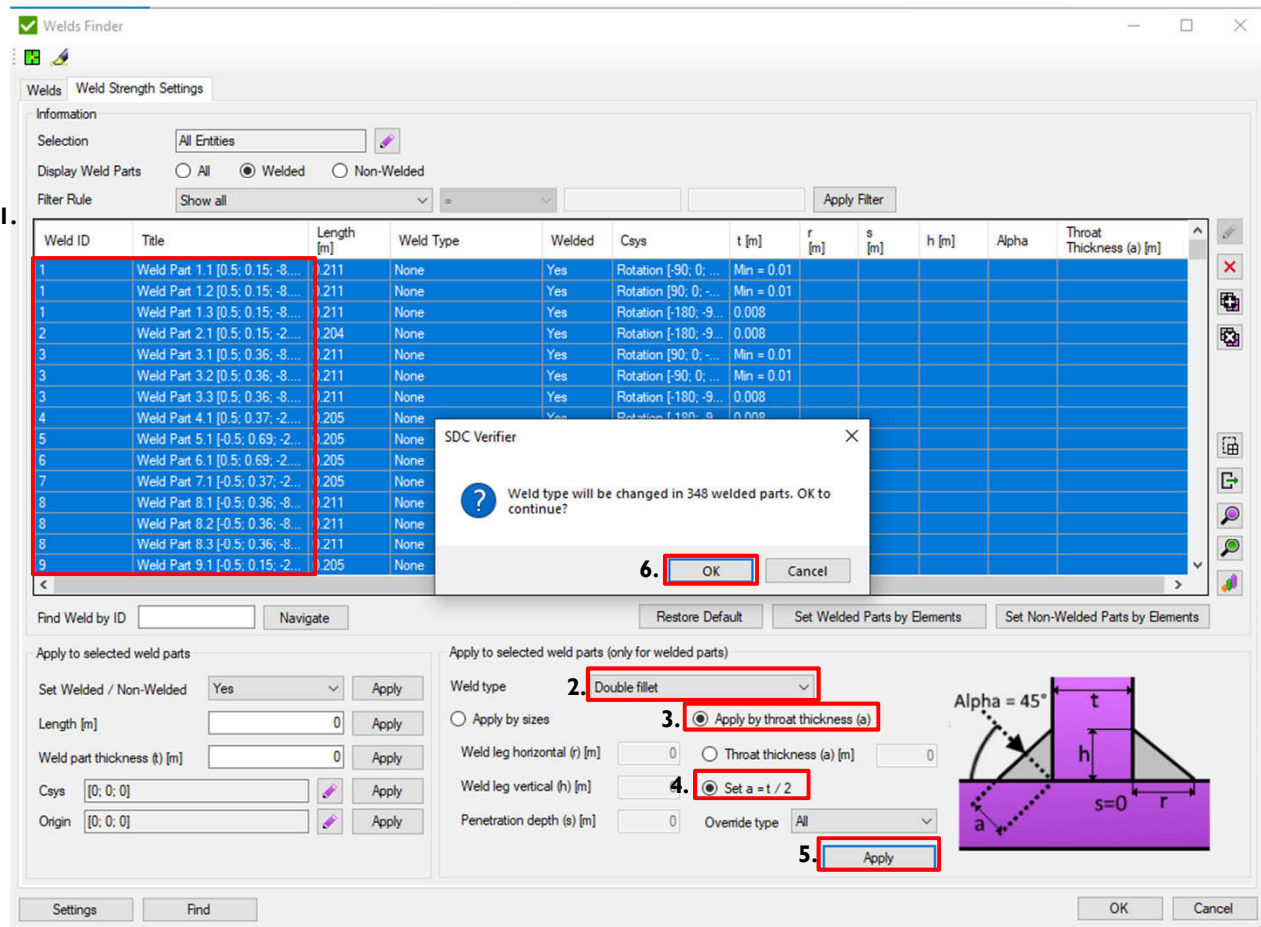
3 Choose the method: **Apply by throat thickness**.

4 Select **Set $a = t / 2$** type (half of thickness welded plate).

5 Press **Apply**.

6 Press **OK**.

For beams elements t is the minimum thickness of shape. For bars element t is the minimum of height/width. For plates element t is a plate thickness.



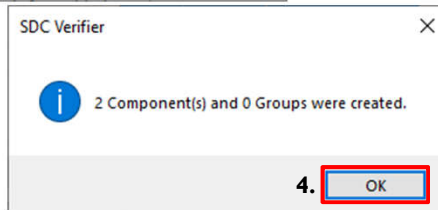
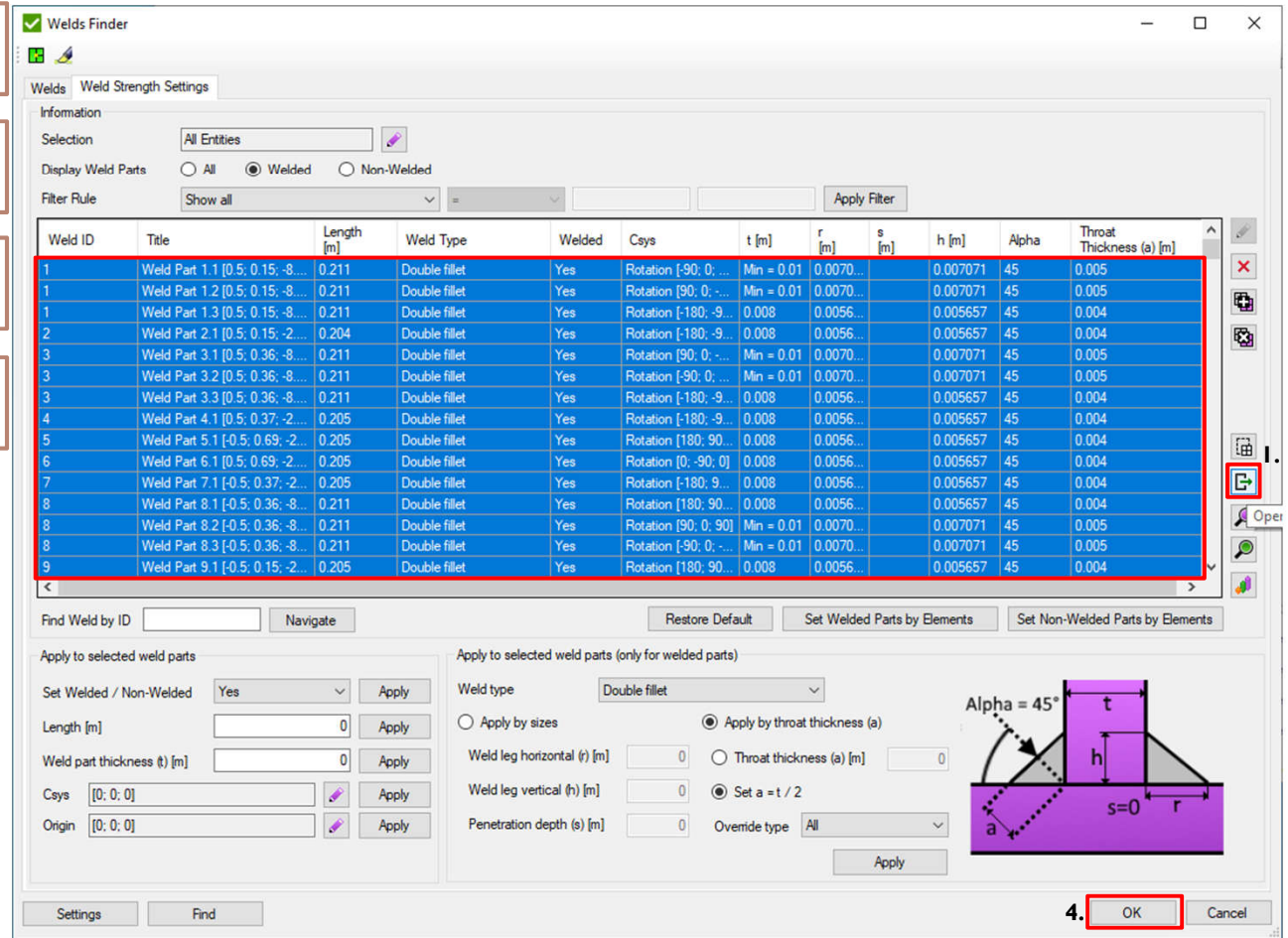
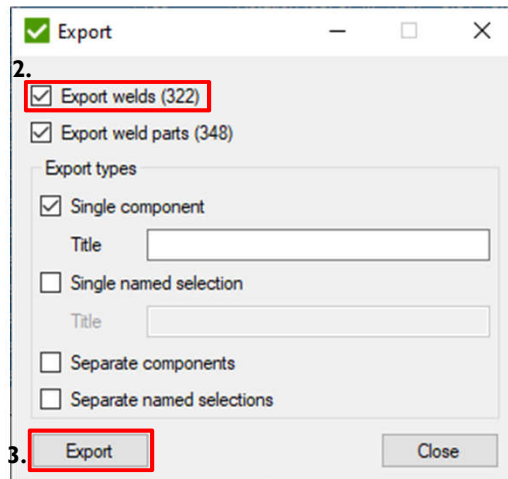
Export Welds

1 Press *Export weld*.

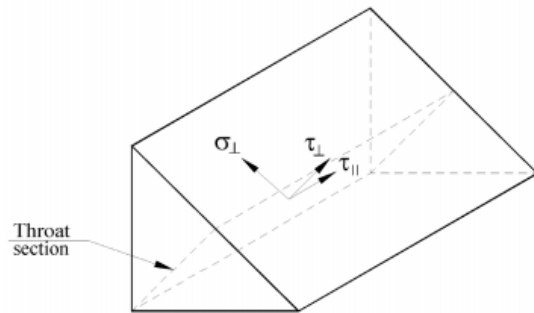
2 Select **Export welds**.

3 Press *Export*.

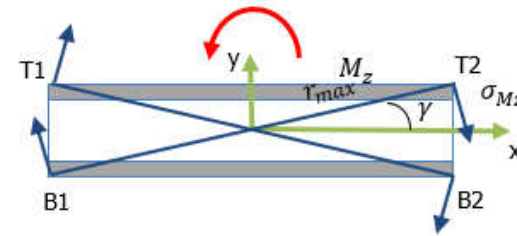
4 Press *OK* twice.



Weld Stresses Calculation



Moments depend on the axis in a weld plane and are also included in the weld strength calculations

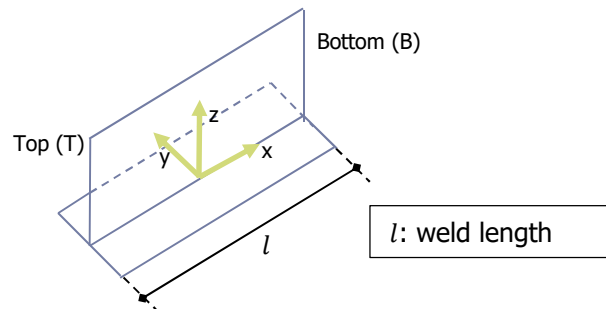


$\tau_{||}$ = shear design stress (in plane of the throat) parallel to the axis of the weld (equal to X direction in the check);
 σ_{\perp} = normal design stress perpendicular to the throat (equal to Y direction of the check);
 τ_{\perp} = shear design stress (in plane of the throat) perpendicular to the axis of the weld (equal to XY direction of the check)

The stresses $\tau_{||}$, σ_{β} and τ_{β} are evaluated at the points T1, T2, B1 and B2 as follows:

Angles matrix of rotations due to weld throat plane.

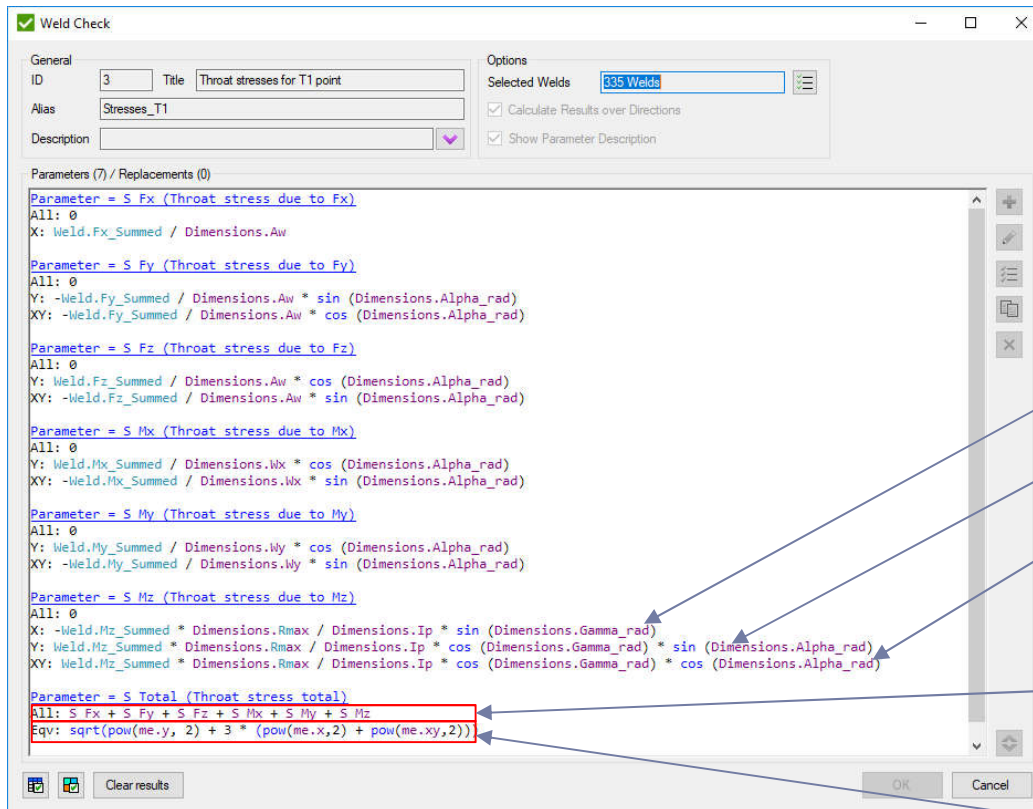
Stress calculations



$\tau_{ ,T1}$	1	0	0	0	0	$-\sin \gamma$
$\sigma_{\beta,T1}$	0	$-\sin \alpha$	$\cos \alpha$	$\cos \alpha$	$\cos \alpha$	$\cos \gamma * \sin \alpha$
$\tau_{\beta,T1}$	0	$-\cos \alpha$	$-\sin \alpha$	$-\sin \alpha$	$-\sin \alpha$	$\cos \gamma * \cos \alpha$
$\tau_{ ,T2}$	1	0	0	0	0	$-\sin \gamma$
$\sigma_{\beta,T2}$	0	$-\sin \alpha$	$\cos \alpha$	$\cos \alpha$	$-\cos \alpha$	$-\cos \gamma * \sin \alpha$
$\tau_{\beta,T2}$	0	$-\cos \alpha$	$-\sin \alpha$	$-\sin \alpha$	$\sin \alpha$	$-\cos \gamma * \cos \alpha$
$\tau_{ ,B1}$	1	0	0	0	0	$\sin \gamma$
$\sigma_{\beta,B1}$	0	$\sin \alpha$	$\cos \alpha$	$-\cos \alpha$	$\cos \alpha$	$-\cos \gamma * \sin \alpha$
$\tau_{\beta,B1}$	0	$\cos \alpha$	$-\sin \alpha$	$\sin \alpha$	$-\sin \alpha$	$-\cos \gamma * \cos \alpha$
$\tau_{ ,B2}$	1	0	0	0	0	$\sin \gamma$
$\sigma_{\beta,B2}$	0	$\sin \alpha$	$\cos \alpha$	$-\cos \alpha$	$-\cos \alpha$	$\cos \gamma * \sin \alpha$
$\tau_{\beta,B2}$	0	$\cos \alpha$	$-\sin \alpha$	$\sin \alpha$	$\sin \alpha$	$\cos \gamma * \cos \alpha$

$$= \begin{matrix} \frac{F_x}{A_w} \\ \frac{F_y}{A_w} \\ \frac{F_z}{A_w} \\ \frac{M_x}{I_x} d_y \\ \frac{M_y}{I_y} d_x \\ \frac{M_z * r_{max}}{I_p} \end{matrix} *$$

Implementation of weld stresses



$\tau_{||,Mz}$

$\sigma_{\beta,Mz}$

$\tau_{\beta,Mz}$

$$\begin{aligned}\tau_{||} &= \tau_{||,Fx} + \tau_{||,Fy} + \tau_{||,Fz} + \tau_{||,Mx} + \tau_{||,My} + \tau_{||,Mz} \\ \sigma_{\beta} &= \sigma_{\beta,Fx} + \sigma_{\beta,Fy} + \sigma_{\beta,Fz} + \sigma_{\beta,Mx} + \sigma_{\beta,My} + \sigma_{\beta,Mz} \\ \tau_{\beta} &= \tau_{\beta,Fx} + \tau_{\beta,Fy} + \tau_{\beta,Fz} + \tau_{\beta,Mx} + \tau_{\beta,My} + \tau_{\beta,Mz}\end{aligned}$$

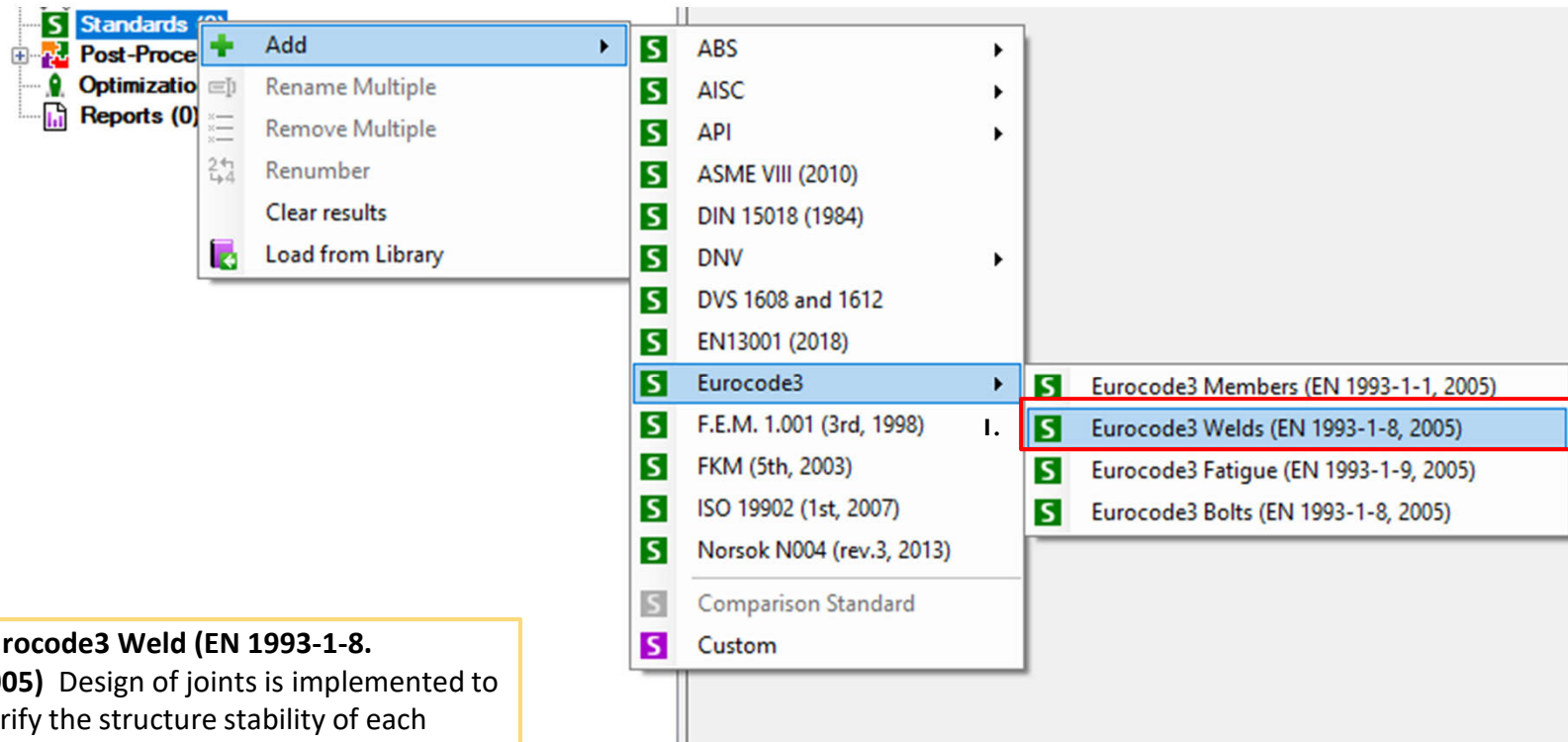
$$\sigma_{VM} = \sqrt{\sigma_{\perp}^2 + 3 * (\tau_{\perp}^2 + \tau_{||}^2)}$$

Von Mises stress at certain point.

Add Eurocode3 (EN1993-1-8)

1

Execute **Add => Eurocode3 Weld**
(EN 1993-1-8. 2005) in the Standards
context menu.



Eurocode3 Weld (EN 1993-1-8. 2005) Design of joints is implemented to verify the structure stability of each structural member (weld).

Eurocode3 Correction Factor

Weld Selection gives a possibility to include or exclude weld(s), preview chosen weld(s) or go to weld finder.

1

Press the button  to select the **Correction factor**.

2

Select materials for which the **Correction factor** will be applied.

3

Input value of the **Correction factor** according to the table 4.1, and press **Apply to selected**.

4

Press **OK**.

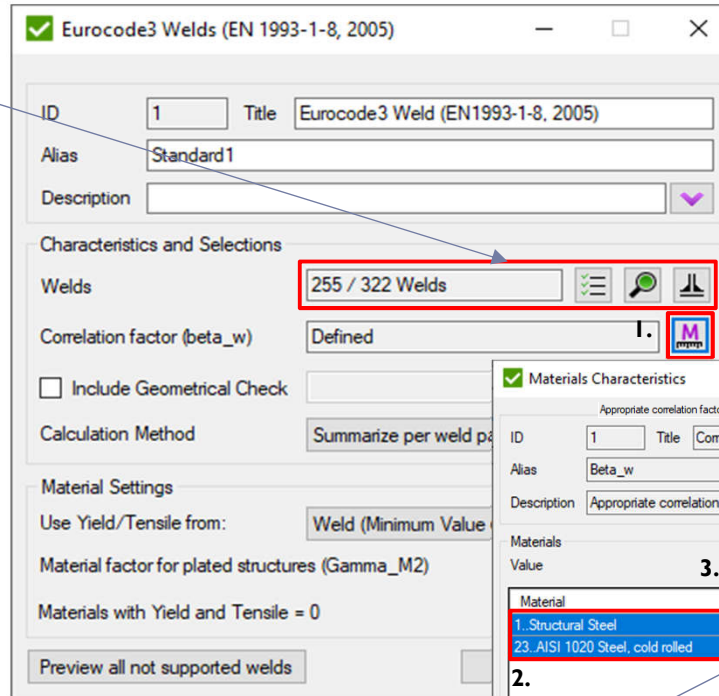
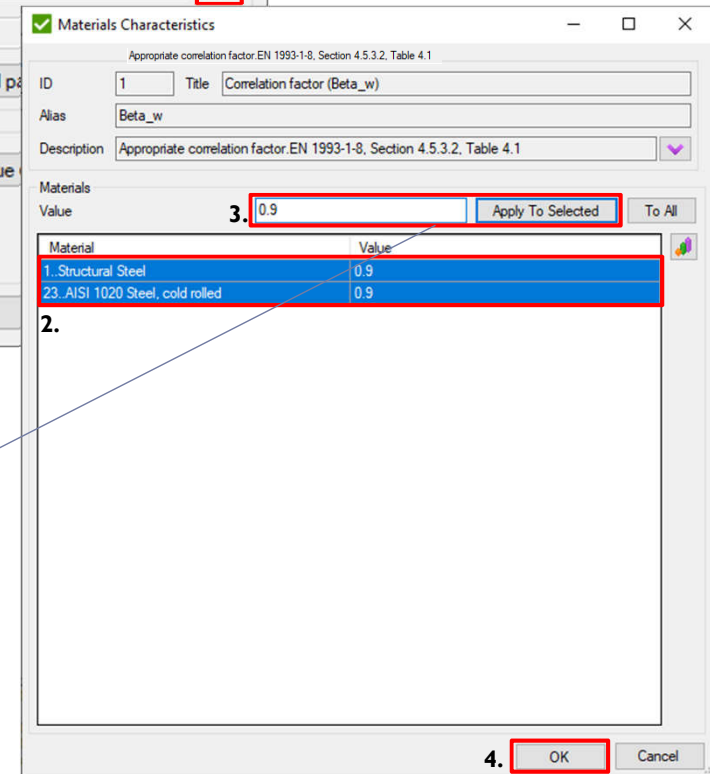



Table 4.1: Correlation factor β_w for fillet welds

Standard and steel grade			Correlation factor β_w
EN 10025	EN 10210	EN 10219	
S 235 S 235 W	S 235 H	S 235 H	0,8
S 275 S 275 N/NL S 275 M/ML	S 275 H S 275 NH/NLH	S 275 H S 275 NH/NLH S 275 MH/MLH	0,85
S 355 S 355 N/NL S 355 M/ML S 355 W	S 355 H S 355 NH/NLH	S 355 H S 355 NH/NLH S 355 MH/MLH	0,9
S 420 N/NL S 420 M/ML		S 420 MH/MLH	1,0
S 460 N/NL S 460 M/ML S 460 Q/QL/QL1	S 460 NH/NLH	S 460 NH/NLH S 460 MH/MLH	1,0

Eurocode3 Weld Strength

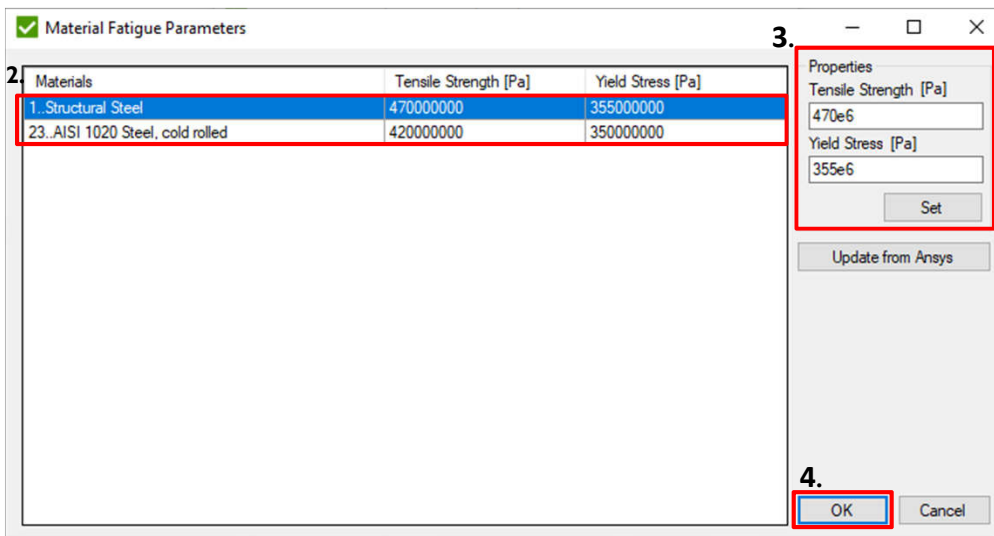
1 Press the button  to apply **Material Yield and Tensile** parameters.

2 Select the material for which the **Properties** will be applied.

3 Input value of the **Material Yield and Tensile** parameters, and press **Set**.

4 Press **OK**.

5 Press **OK**.



Material Fatigue Parameters

Materials	Tensile Strength [Pa]	Yield Stress [Pa]
1..Structural Steel	470000000	355000000
23..AISI 1020 Steel, cold rolled	420000000	350000000

Properties

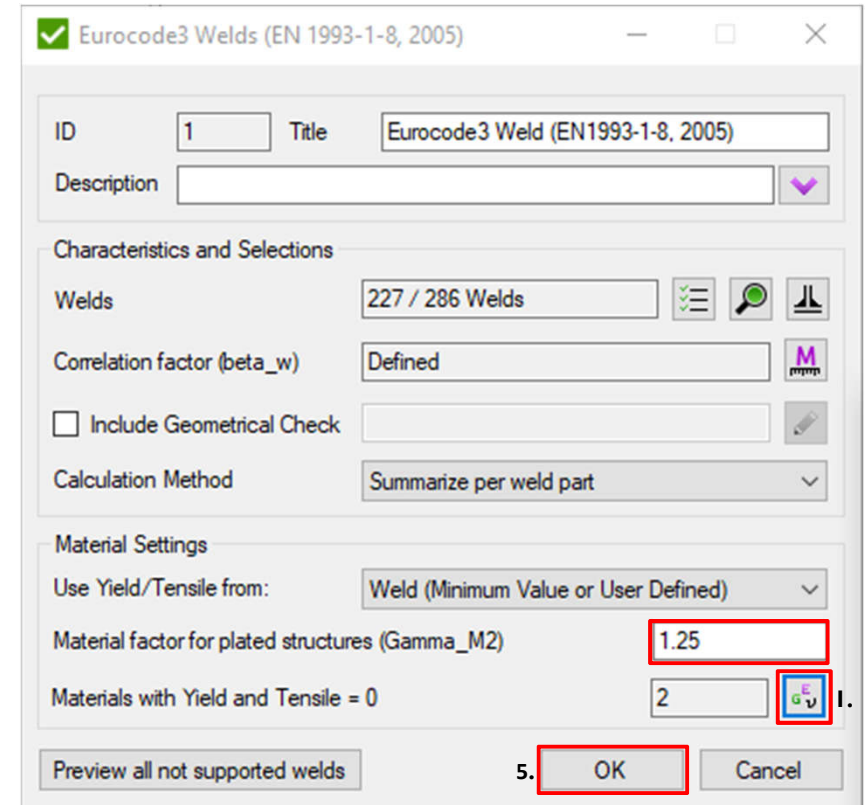
Tensile Strength [Pa]
470e6

Yield Stress [Pa]
355e6

Set

Update from Ansys

OK Cancel



Eurocode3 Welds (EN 1993-1-8, 2005)

ID 1 Title Eurocode3 Weld (EN1993-1-8, 2005)

Description

Characteristics and Selections

Welds 227 / 286 Welds

Correlation factor (beta_w) Defined

☐ Include Geometrical Check

Calculation Method Summarize per weld part

Material Settings

Use Yield/Tensile from: Weld (Minimum Value or User Defined)

Material factor for plated structures (Gamma_M2) 1.25

Materials with Yield and Tensile = 0 2

Preview all not supported welds

OK Cancel

Gamma_M2 - material resistance factor for plated structures is a constant value (≈ 1.25) and used in calculations to check a base material strength.

Create extreme table

1 Execute **Extreme Table** in the **Weld Check Total** context menu.

2 Press the  button and select **Load Group 1**

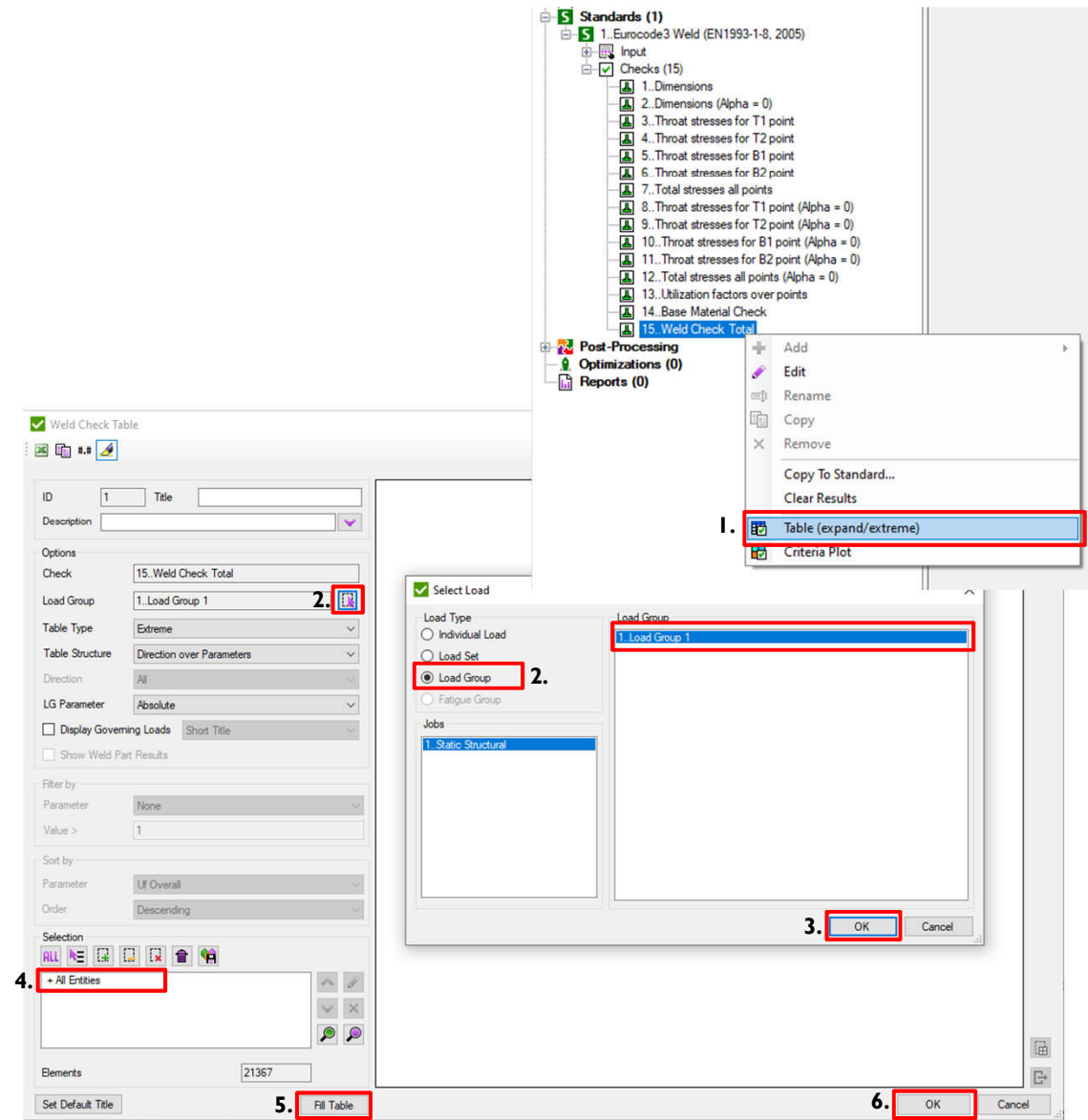
3 Press **OK**.

4 Selection: **All Entities**.

5 Press **Fill Table**.

6 Press **OK**.

Extreme table for '1..Load Group 1' can be added to DNV OS-C101 and DNV OS-C201 standards respectively.



The screenshot illustrates the steps to create an extreme table in SDC Verifier. The main window shows the 'Weld Check Table' dialog with '1..Load Group 1' selected. A context menu is open over the '15..Weld Check Total' item, with 'Table (expand/extreme)' highlighted. A 'Select Load' dialog is also open, showing '1..Load Group 1' selected. The 'Fill Table' button is highlighted in the main dialog.

Create criteria plot

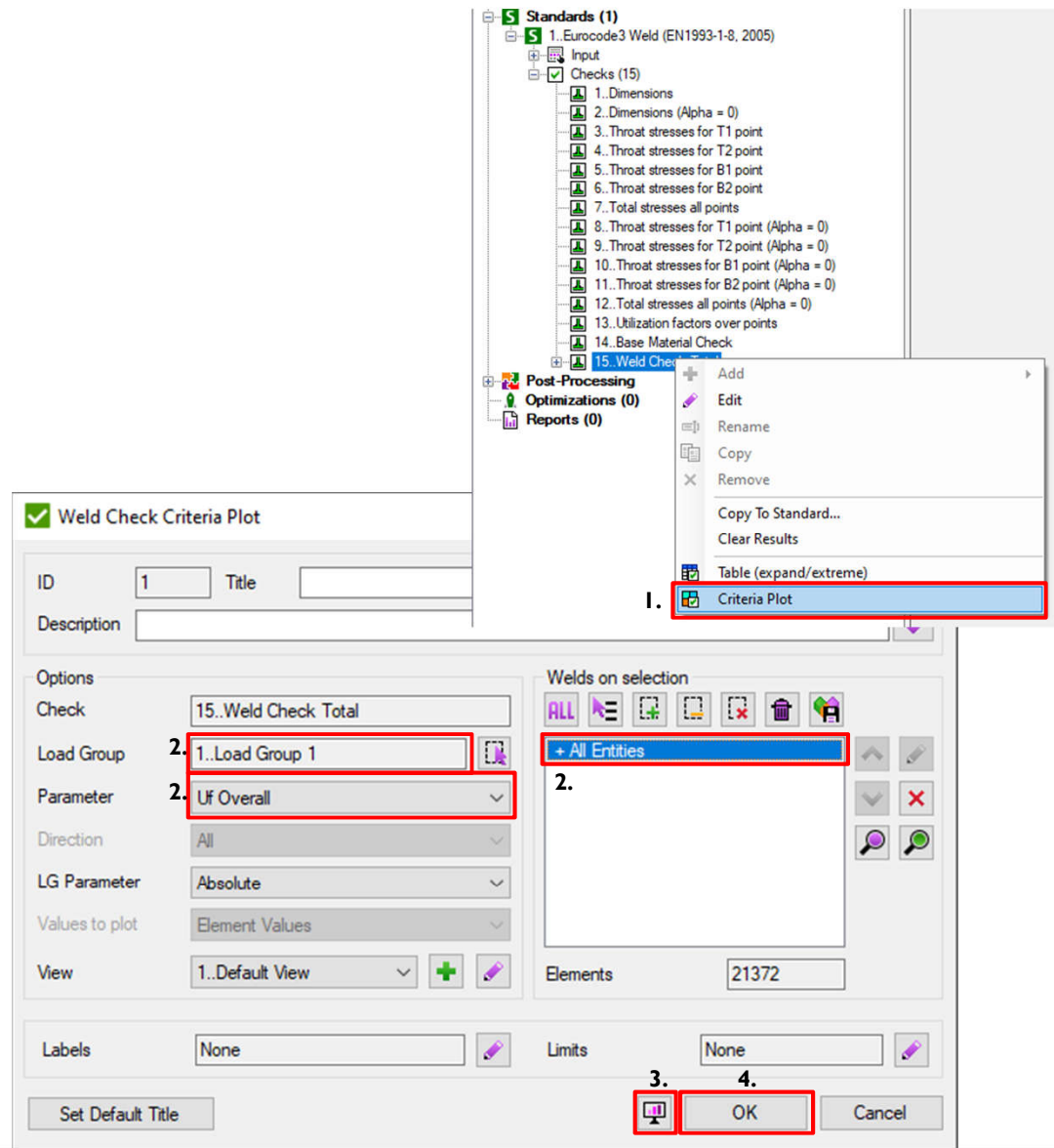
1 Execute **Criteria Plot** in the **Weld Strength Check** context menu

2 Load: **Load Group 1**;
Parameter: **UF Overall**;
Selection: **All Entities**.

3 Press the  to preview Plot in Ansys

4 Press **OK**.

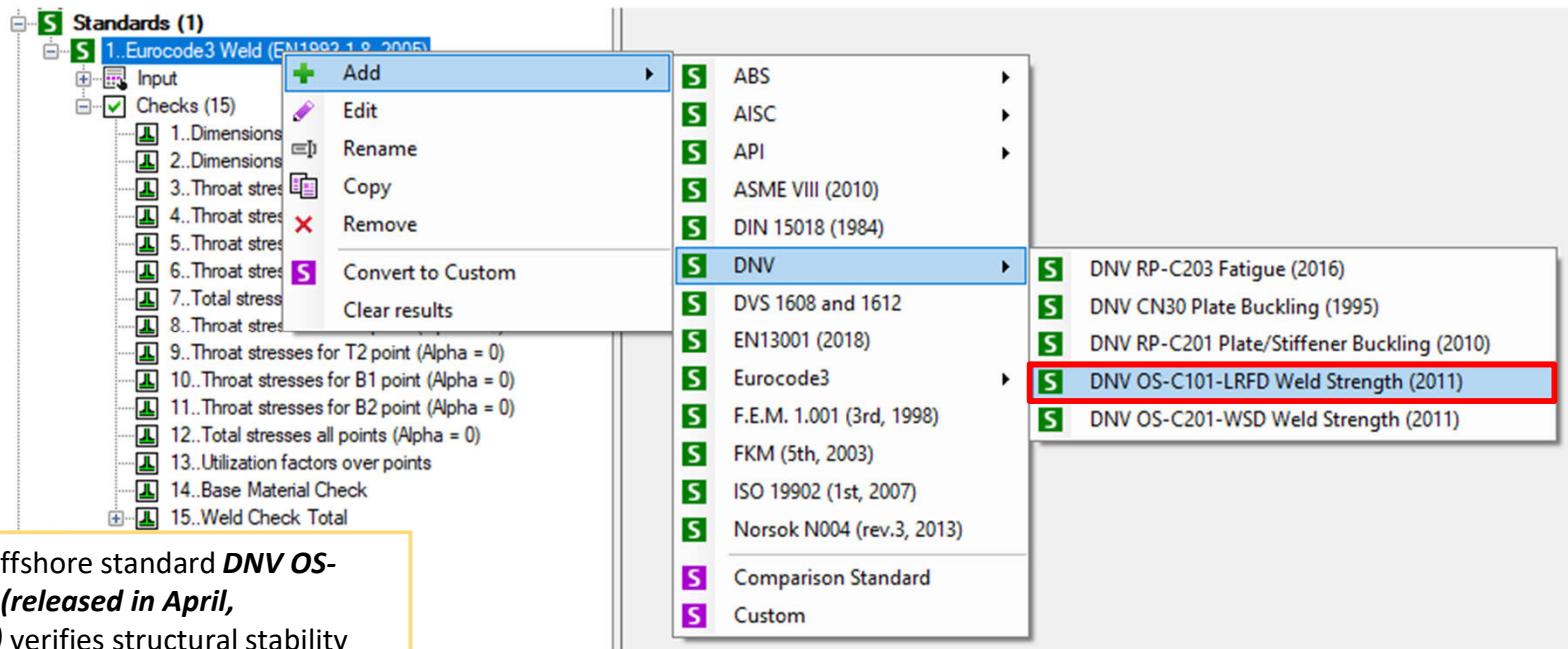
Criteria plot for '1..Load Group 1' can be added to DNV OS-C101 and DNV OS-C201 standards respectively.



Add DNV OS-C101-LRFD

1

Execute **Criteria Plot** in the **Weld Strength Check** context menu



The offshore standard **DNV OS-C101 (released in April, 2011)** verifies structural stability for each structural member (weld).

DNV OS-C101. Correction Factor

Weld Selection gives a possibility to include or exclude weld(s), preview chosen weld(s) or go to weld finder.

1

Press the button  select **Correction factor**.

2

Select the materials for which the **Correction factor** will be applied.

3

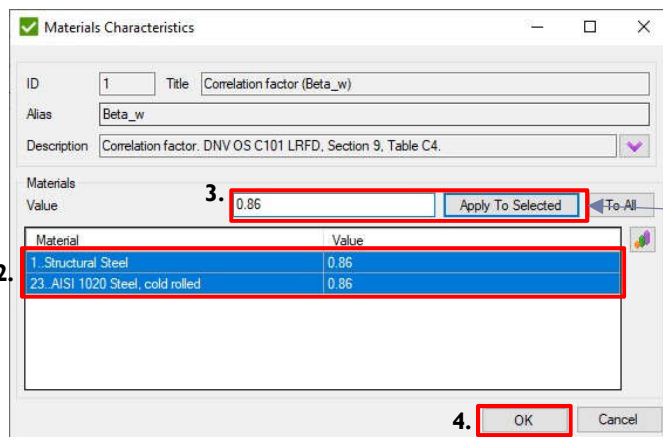
Input value of the **Correction factor** according to the table, and press *Apply to selected*.

4

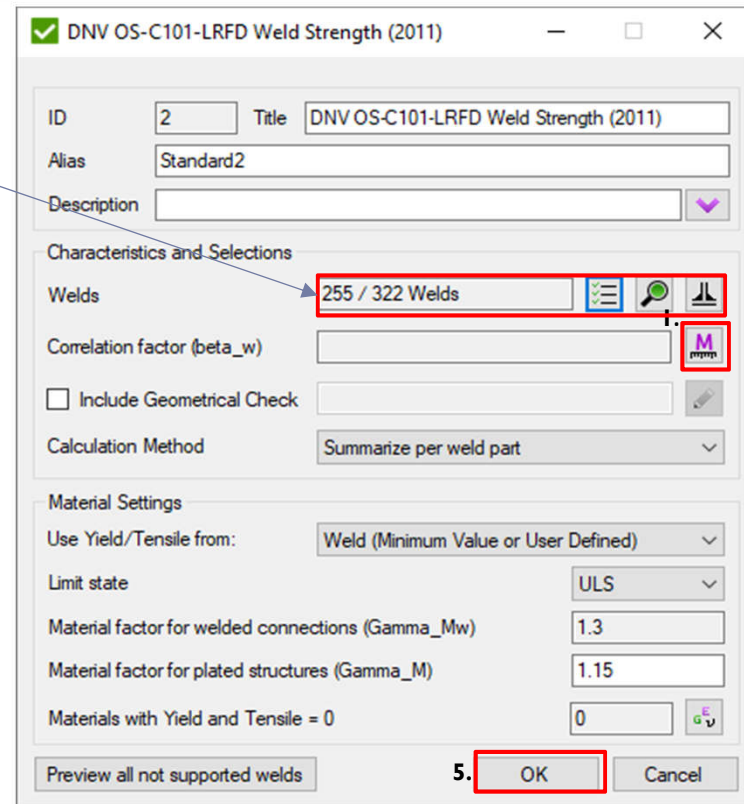
Press *OK*.

5

Press *OK*.



Materials Characteristics dialog box. ID: 1, Title: Correlation factor (Beta_w), Alias: Beta_w, Description: Correlation factor. DNV OS C101 LRFD, Section 9, Table C4. Materials Value: 0.86. Material list: 1. Structural Steel (0.86), 23. AISI 1020 Steel, cold rolled (0.86). Buttons: Apply To Selected, To All, OK, Cancel.



DNV OS-C101-LRFD Weld Strength (2011) dialog box. ID: 2, Title: DNV OS-C101-LRFD Weld Strength (2011), Alias: Standard2, Description: [empty]. Characteristics and Selections: Welds: 255 / 322 Welds, Correlation factor (beta_w): [empty], Include Geometrical Check: [unchecked], Calculation Method: Summarize per weld part. Material Settings: Use Yield/Tensile from: Weld (Minimum Value or User Defined), Limit state: ULS, Material factor for welded connections (Gamma_Mw): 1.3, Material factor for plated structures (Gamma_M): 1.15, Materials with Yield and Tensile = 0. Buttons: Preview all not supported welds, OK, Cancel.

Steel grade	Lowest ultimate tensile strength f_u	Correlation factor β_w
NV NS	400	0.83
NV 27	400	0.83
NV 32	440	0.86
NV 36	490	0.89
NV 40	510	0.9
NV 420	530	1.0
NV 460	570	1.0

DNV OS-C101. Safety Factors

DNV OS-C101-LRFD Weld Strength (2011)

ID: 2 Title: DNV OS-C101-LRFD Weld Strength (2011)

Alias: Standard2

Description:

Characteristics and Selections

Welds: 255 / 322 Welds

Correlation factor (beta_w):

☐ Include Geometrical Check

Calculation Method: Summarize per weld part

Material Settings

Use Yield/Tensile from: Weld (Minimum Value or User Defined)

Limit state: ULS

Material factor for welded connections (Gamma_Mw): 1.3

Material factor for plated structures (Gamma_M): 1.15

Materials with Yield and Tensile = 0

Preview all not supported welds

OK Cancel

Gamma_Mw - material factor that is used for DNV OS C 101 calculation can be found in Table C1, section 9 of the standard.

101 The material factors γ_{Mw} for welded connections are given in Table C1.

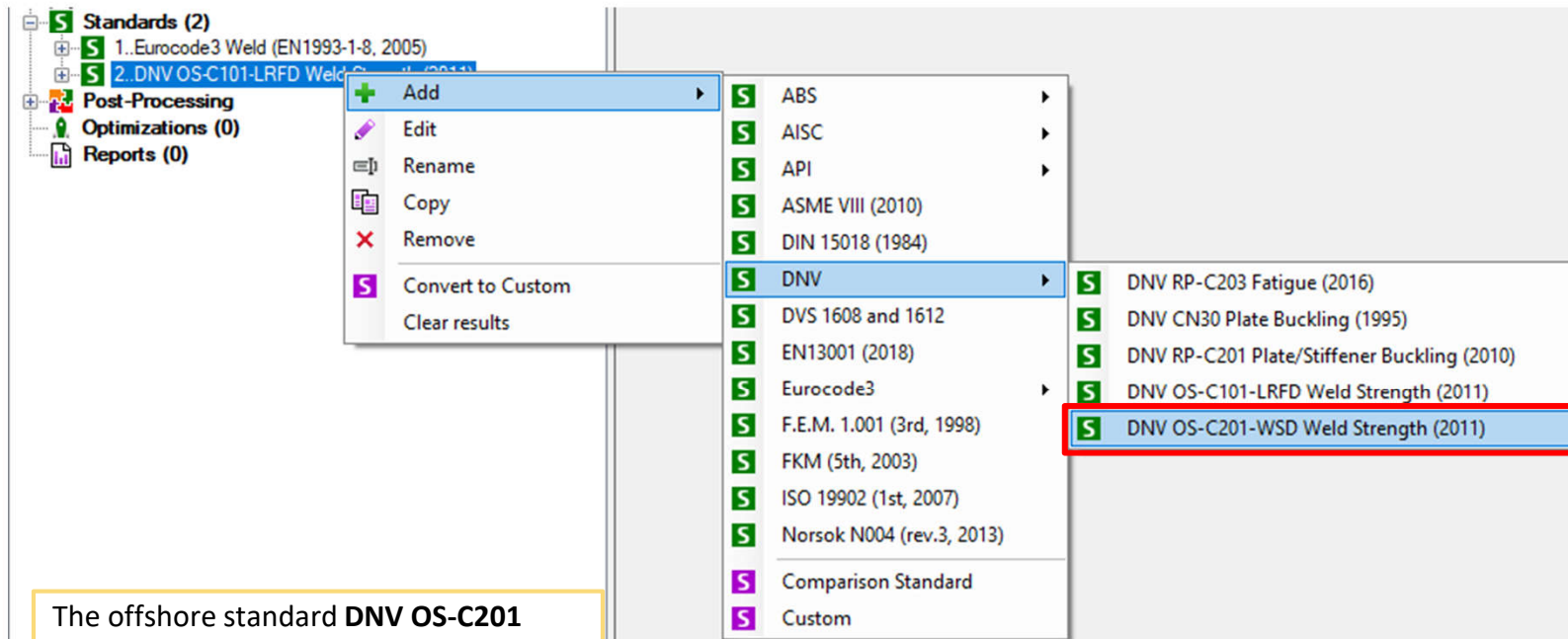
Table C1 Material factors γ_{Mw} for welded connections	
Limit states	Material factor
ULS	1.3
ALS	1.0

Gamma_M - material resistance factor for plated structures is a constant value (=1.15) and used in calculations to check base material strength.

Add DNV OS-C201 WSD

1

Execute Add => DNV OS-C201 WSD
Weld Strength (2011) in the Standards
context menu.



The offshore standard **DNV OS-C201**
(released in April, 2011) verifies
structural stability for each structural
member (weld)

DNV OS C201. Correction Factor

Weld Selection gives a possibility to include or exclude weld(s), preview chosen weld(s) or go to weld finder.

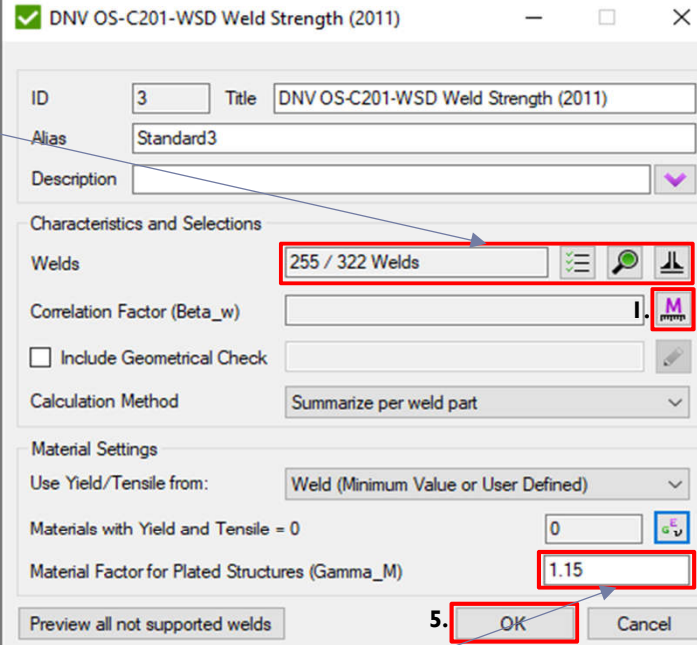
1 Press the button  to select **Correction factor**.

2 Select the material for which the **Correction factor** will be applied.

3 Input value of the **Correction factor** according to the table, and press *Apply to selected*.

4 Press *OK*.

5 Press *OK*.



DNV OS-C201-WSD Weld Strength (2011)

ID: 3 Title: DNV OS-C201-WSD Weld Strength (2011)

Alias: Standard3

Description: [empty]

Characteristics and Selections

Welds: 255 / 322 Welds

Correlation Factor (Beta_w): [empty]

☐ Include Geometrical Check

Calculation Method: Summarize per weld part

Material Settings

Use Yield/Tensile from: Weld (Minimum Value or User Defined)

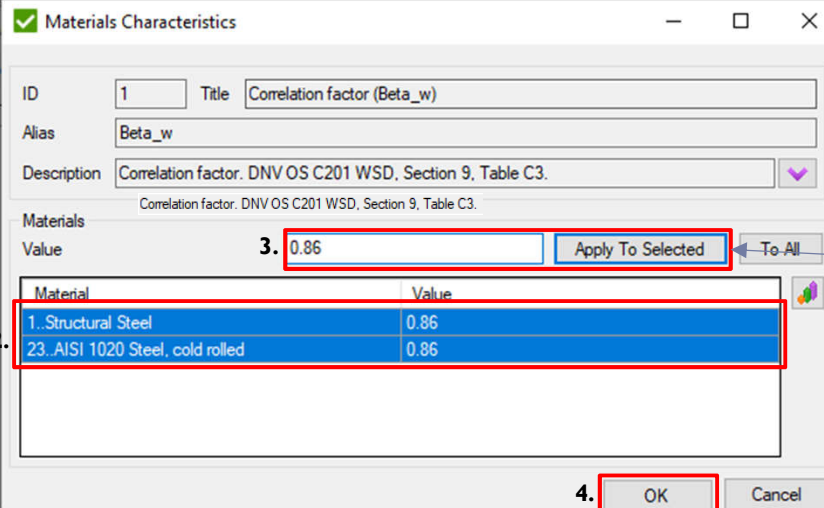
Materials with Yield and Tensile = 0: 0

Material Factor for Plated Structures (Gamma_M): 1.15

Preview all not supported welds

5. OK Cancel

Gamma_M - material resistance factor for plated structures is a constant value (≈ 1.15) and used in calculations to check base material strength.



Materials Characteristics

ID: 1 Title: Correlation factor (Beta_w)

Alias: Beta_w

Description: Correlation factor. DNV OS C201 WSD, Section 9, Table C3.

Materials

Value: 0.86


Apply To Selected To All

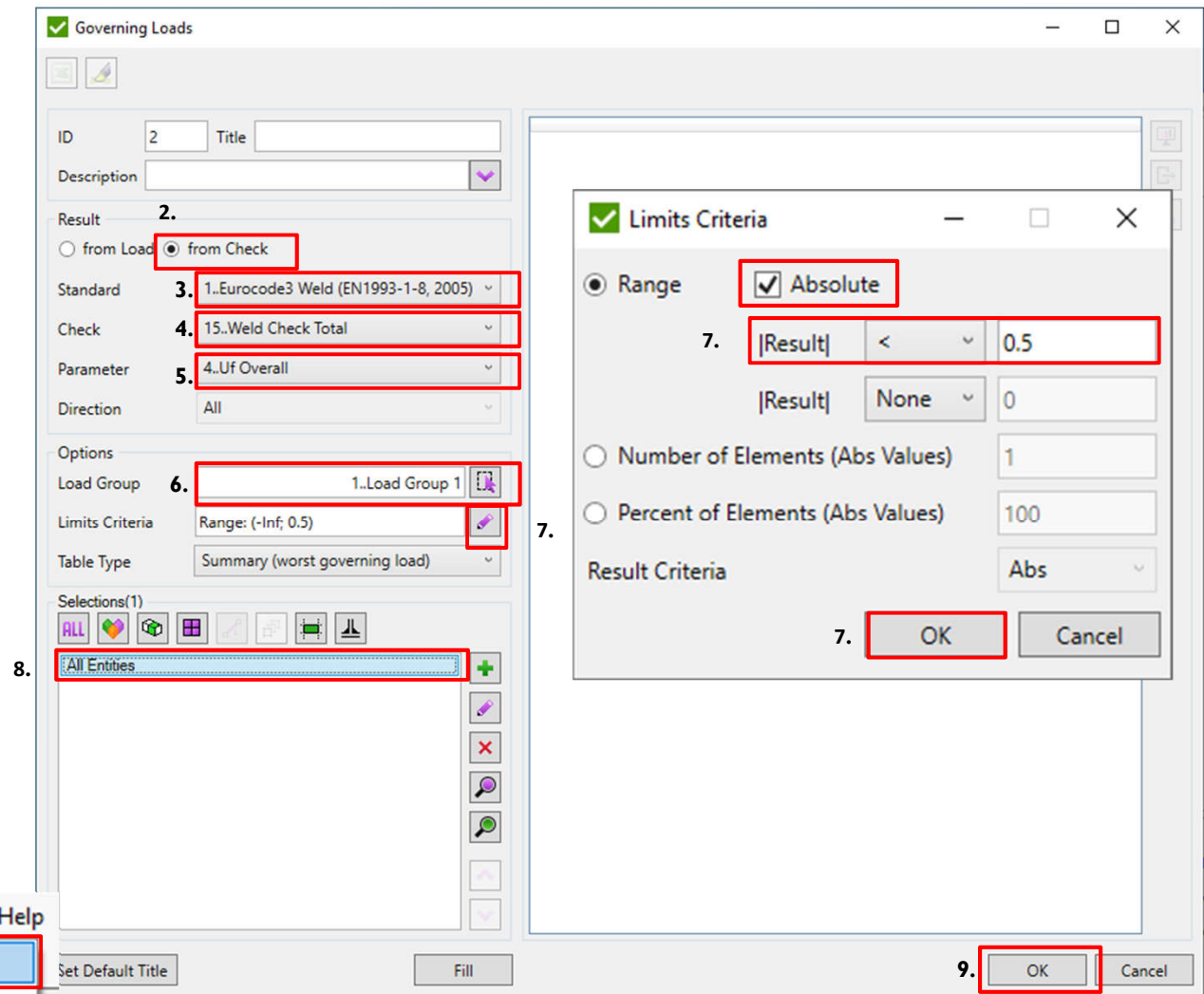
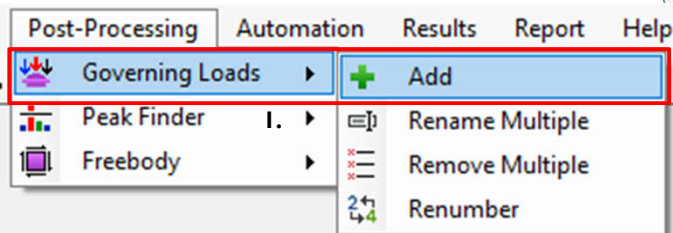
Material	Value
1. Structural Steel	0.86
23. AISI 1020 Steel, cold rolled	0.86

4. OK Cancel

Steel grade	Lowest ultimate tensile strength f_u	Correlation factor β_w
NV NS	400	0.83
NV 27	400	0.83
NV 32	440	0.86
NV 36	490	0.89
NV 40	510	0.9
NV 420	530	1.0
NV 460	570	1.0

Add Governing Load

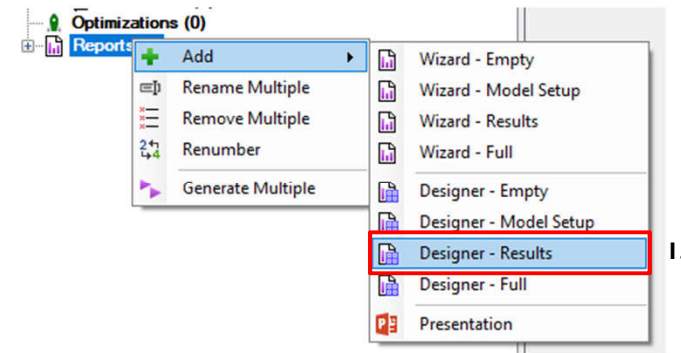
- 1 Post Processing => Governing Loads => Add
- 2 Result: from Check;
- 3 Standard: Eurocode 3 Weld.
- 4 Check: Weld Check Total.
- 5 Parameter: Uf Overall.
- 6 Load Group: Load Group 1.
- 7 Press  in Limits Criteria => Absolute; Result < 0.5 => OK
- 8 Selection: All Entities.
- 9 Press OK.



Add Report

1

Execute Reports => **Add** => **Designer - Results**



There are 4 templates of the reports:

Empty – only first page and preface items are included;

Model Setup – description of the model data (materials, properties, components, boundary conditions) is included;

Results – for each load extreme displacement tables, stress and displacement plots are included. Predefined tables: sum of reaction forces, stresses/displacements summary tables. In addition all standards are included with a set of tables/plots created in the project;

Full – Model Setup + Results + all tables/plots created in jobs.

Report - Governing Load

1

Post Processing => Governing Loads
=> Import

2

Select **Governing Loads(LG1)** => OK

3

Include Plot: **Yes**.
Show only welds: **Yes**.

Add Governing Load for '1..Load Group 1' also possible for DNV OS-C101 and DNV OS-C201 standards.

2.

Select Items

Search

ID Go

Filter X

Show All Refresh

All None

☒ 2..Governing Loads (LG1; All Entities)

2. OK Cancel

Report Designer

Home Insert Results **Post Processing** Import

Peak Finders Governing Loads Freebodies

Add Governing Loads Tables

1. Import Governing Loads Tables

Behavior

Break Page Before Yes

Enabled Yes

Data

Load LG1..Load Group 1

Title (Default) 2..Governing Loads (LG1; All Entities)

Title (User) 2..Governing Loads (LG1; All Entities)

Misc

Standard

Options

Include Descriptor Yes

Limits Criteria Range: (-Inf; 0.5)

Table Type Summary (worst governing load)

Plot

3. Include Plot Yes

Show Max Label None

Show only welds Yes

Views 1 selected...

Report - First Page

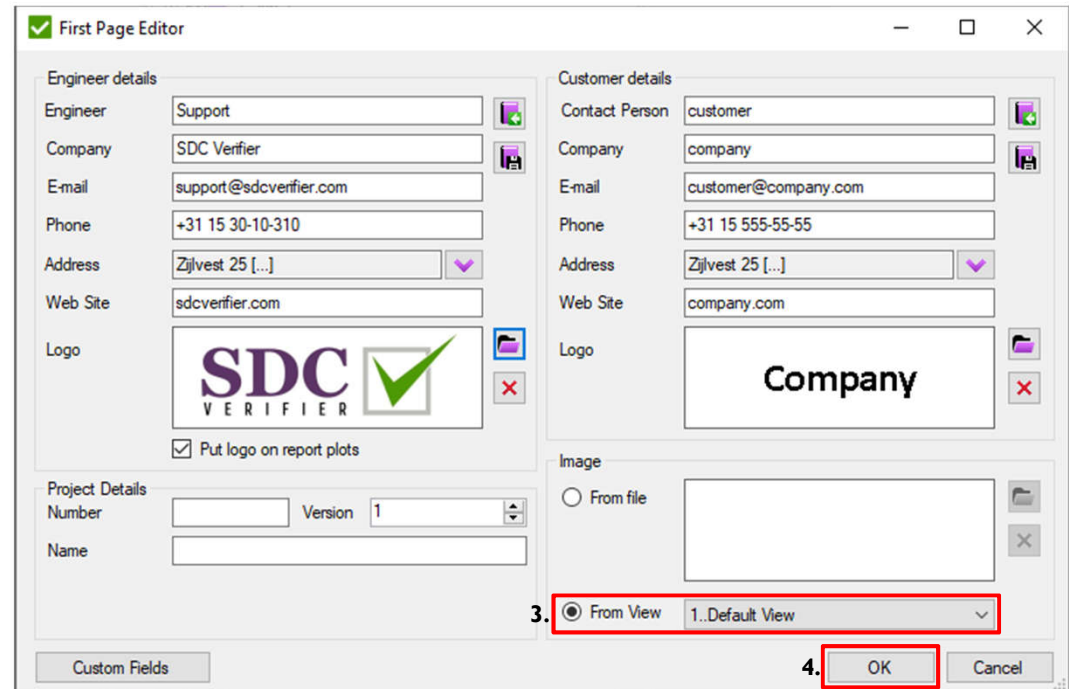
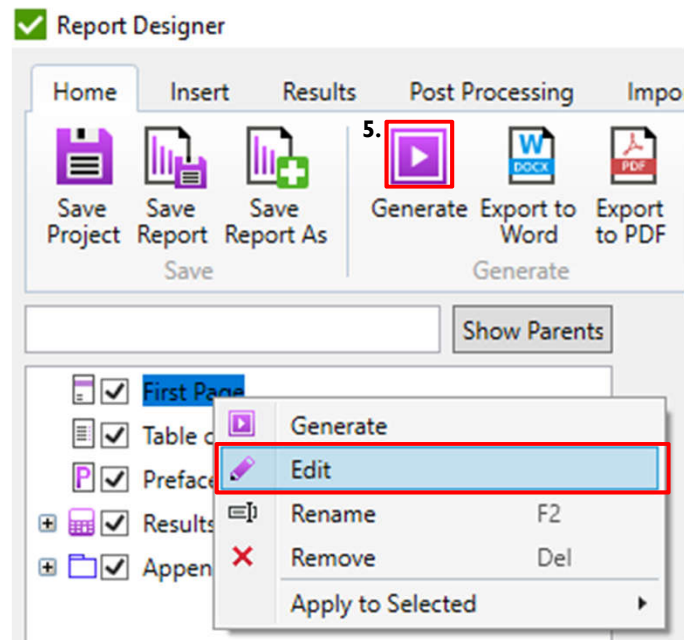
1 Right click on *First Page* => **Edit**.

2 Fill in information about project.

3 Select Image **From View** and pick.

4 Press **OK**.

5 Press button  to generate report.



The 'First Page Editor' dialog box is shown. It contains two main sections: 'Engineer details' and 'Customer details'. The 'Engineer details' section includes fields for Engineer (Support), Company (SDC Verifier), E-mail (support@sdcverifier.com), Phone (+31 15 30-10-310), Address (Zijlvest 25 [...]), Web Site (sdcverifier.com), and Logo (SDC Verifier logo). The 'Customer details' section includes fields for Contact Person (customer), Company (company), E-mail (customer@company.com), Phone (+31 15 555-55-55), Address (Zijlvest 25 [...]), Web Site (company.com), and Logo (Company logo). Below these sections are 'Project Details' (Number, Version 1, Name) and an 'Image' section with radio buttons for 'From file' and 'From View'. The 'From View' option is selected and highlighted with a red box and labeled '3.'. A dropdown menu next to 'From View' shows '1..Default View'. At the bottom right, the 'OK' button is highlighted with a red box and labeled '4.'. There is also a 'Cancel' button.

Report - Results

Eurocode3

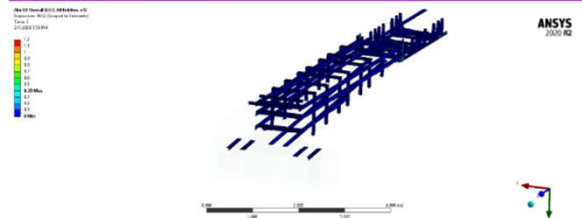
15..Weld Check Total

Property	Value
Category	Weld Check
Parameter Count	4

1..Weld Extreme (LG1, All Entities)

Standard	1..Eurocode3 Weld (EN1993-1-8, 2005)	Check Selection	[S1] 15..Weld Check Total		
Load Group	LG1..Load Group 1		All Entities		
Extreme	Uf VM total	Uf N total	Uf material total	Uf Overall	
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	0.39	0.24	0.29	0.29	0.39
Absolute	0.39	0.24	0.29	0.29	0.39

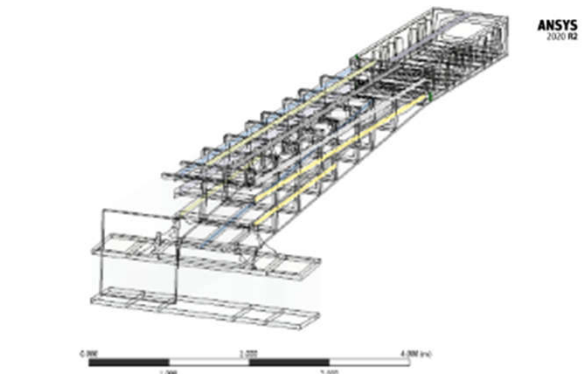
1..Abs Uf Overall (LG1, All Entities, v3)



Check Parameter View	[S1] 15..Weld Check Total Absolute Uf Overall 3..View 3	Load Group Selection	LG1..Load Group 1 All Entities
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Governing Loads (LG1; All Entities)

Standard	1..Eurocode3 Weld (EN1993-1-8, 2005)	Direction	All
Check	15..Weld Check Total	Parameter	4..Uf Overall
Criteria	5 elements with Max Abs value		
Load	Element Count	Abs Element Id	Abs Value
LS1..LS1	5	1452	0.39



DNV OS-C101

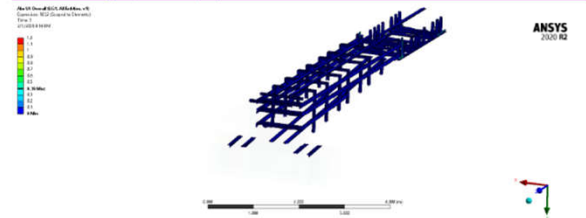
15..Weld Check Total

Property	Value
Category	Weld Check
Parameter Count	4

1..Weld Extreme (LG1, All Entities)

Standard	2..DNV OS-C101-LRFD Weld Strength (2011)		Check	[S2] 15..Weld Check Total	
Load Group	LG1..Load Group 1		Selection	All Entities	
Extreme	Uf VM total	Uf N total	Uf material total	Uf Overall	
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	0.39	0.22	0.27	0.27	0.39
Absolute	0.39	0.22	0.27	0.27	0.39

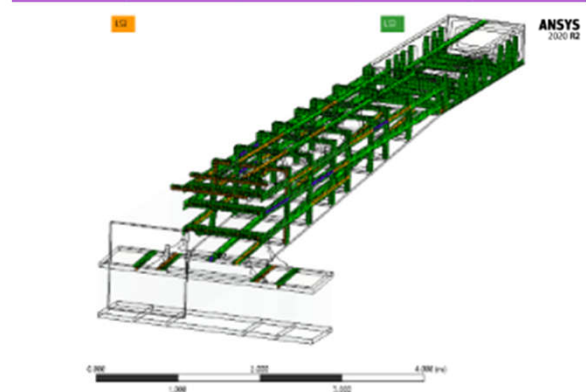
1..Abs Uf Overall (LG1, All Entities, v3)



Check Parameter View	[S2] 15..Weld Check Total Absolute Uf Overall 3..View 3	Load Group Selection	LG1..Load Group 1 All Entities
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Governing Loads (LG1; All Entities)

Standard	2..DNV OS-C101-LRFD Weld Strength (2011)	Direction	All
Check	15..Weld Check Total	Parameter	4..Uf Overall
Criteria	Abs(value) < Abs(0.5)		
Load	Element Count	Peak Element Id	Peak Value
LS1..LS1	5107	2020	0.00
LS2..LS2	544	998	0.00
LS3..LS3	148	890	0.00
LS4..LS4	68	594	0.00



DNV OS-C201

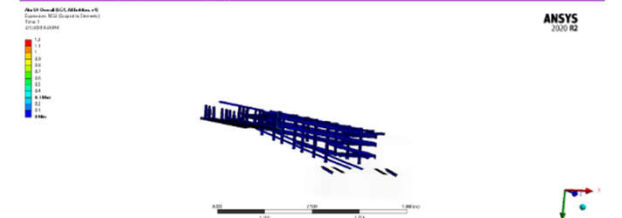
15..Weld Check Total

Property	Value
Category	Weld Check
Parameter Count	4

1..Weld Extreme (LG1, All Entities)

Standard	3..DNV OS-C201-WSD Weld Strength (2011)		Check	[S3] 15..Weld Check Total	
Load Group	LG1..Load Group 1		Selection	All Entities	
Extreme	Uf VM total	Uf N total	Uf material total	Uf Overall	
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	0.30	0.17	0.27	0.27	0.30
Absolute	0.30	0.17	0.27	0.27	0.30

1..Abs Uf Overall (LG1, All Entities, v1)



Check Parameter View	[S3] 15..Weld Check Total Absolute Uf Overall 1..Default View	Load Group Selection	LG1..Load Group 1 All Entities
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Governing Loads (LG1; All Entities)

Standard	3..DNV OS-C201-WSD Weld Strength (2011)	Direction	All
Check	15..Weld Check Total	Parameter	4..Uf Overall
Criteria	Abs(value) < Abs(0.5)		
Load	Element Count	Peak Element Id	Peak Value
LS1..LS1	5107	2020	0.00
LS2..LS2	544	998	0.00
LS3..LS3	148	890	0.00
LS4..LS4	68	594	0.00

