



Tutorial

Report Designer

Updated on: 29 November 2023

Tested with: SDC Verifier 2023 R2

Report designer gives a possibility to completely control the structure of your report and easily preview and modify it.

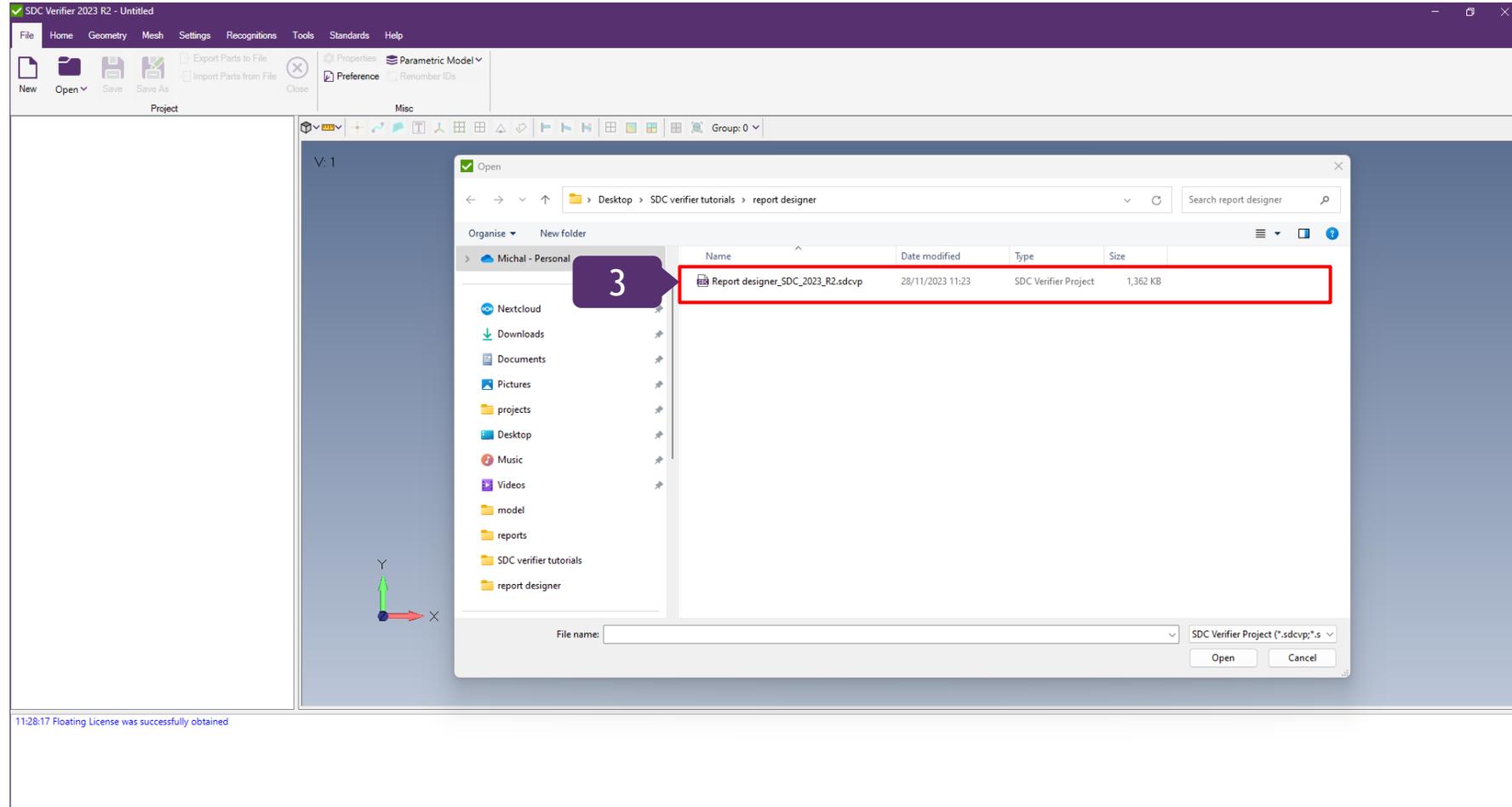
This tutorial demonstrates how to build reports using the Report Designer:

- Open predefined project;
- Model Setup Report (First Page, Preface, Materials, Properties, Fem Loads and Constraints);
- Result Report (Content items, Predefined Tables, Add Plots and Tables);
- Number Format, Legend Settings;
- Tables and Plots for Static Stress Check.

1 Launch SDC Verifier 

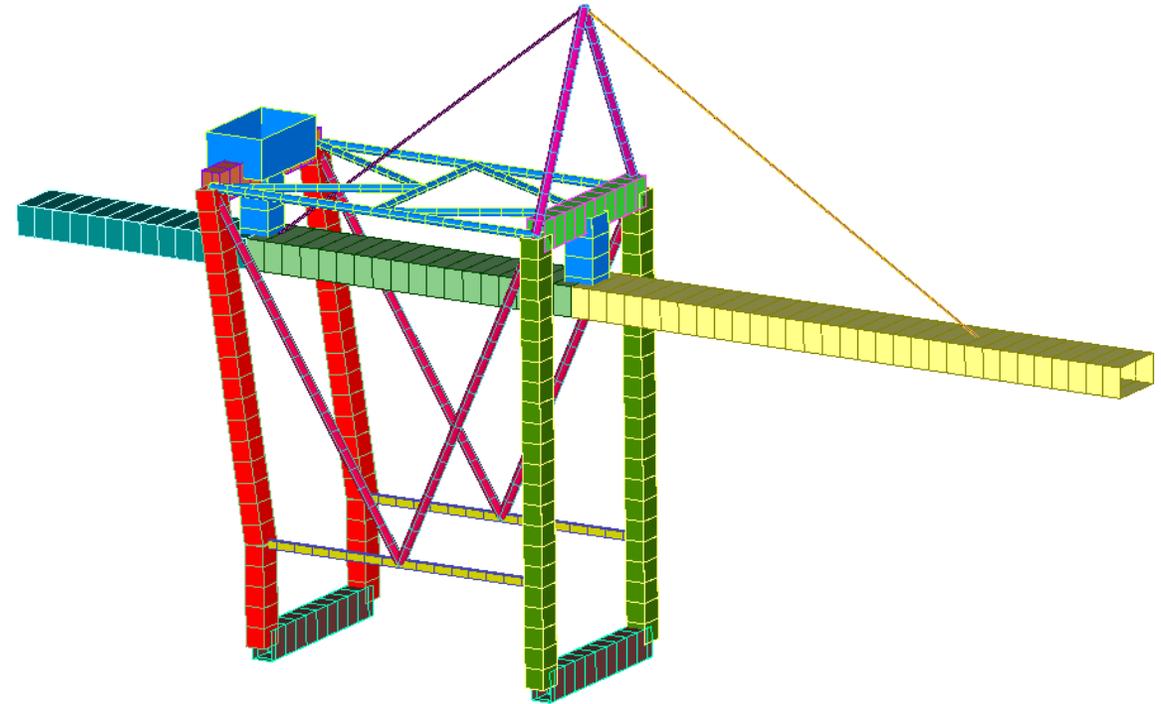
2 Execute **File - Open Project**

3 Project: Report designer.sdcpv



- ▶ Views (2)
 - ▶ Model
 - ▶ Recognition
 - ▶ Jobs (1)
 - ▶ 1..Static Structural
 - ▶ Individual Loads (13)
 - 1..gravity
 - 2..tip load
 - 3..middle_bridge
 - 4..back side
 - 5..at_forestay
 - 6..at_hinge_point
 - 7..Trolley_ride
 - 8..tip side_load
 - 9..middle_bridge_side_load
 - 10..back side_side_load
 - 11..at_forestay_side_load
 - 12..at_hinge_point_side_load
 - 13..Crane_ride
 - ▶ Load Sets (20)
 - ▶ Load Groups (1)
 - FG Fatigue Groups (0)
 - Tables (0)
 - Plots (0)
- ▶ Tools
- ▶ Standards (1)
- ▶ Post-Processing
- ▶ Optimizations (0)
- ▶ Reports (2)

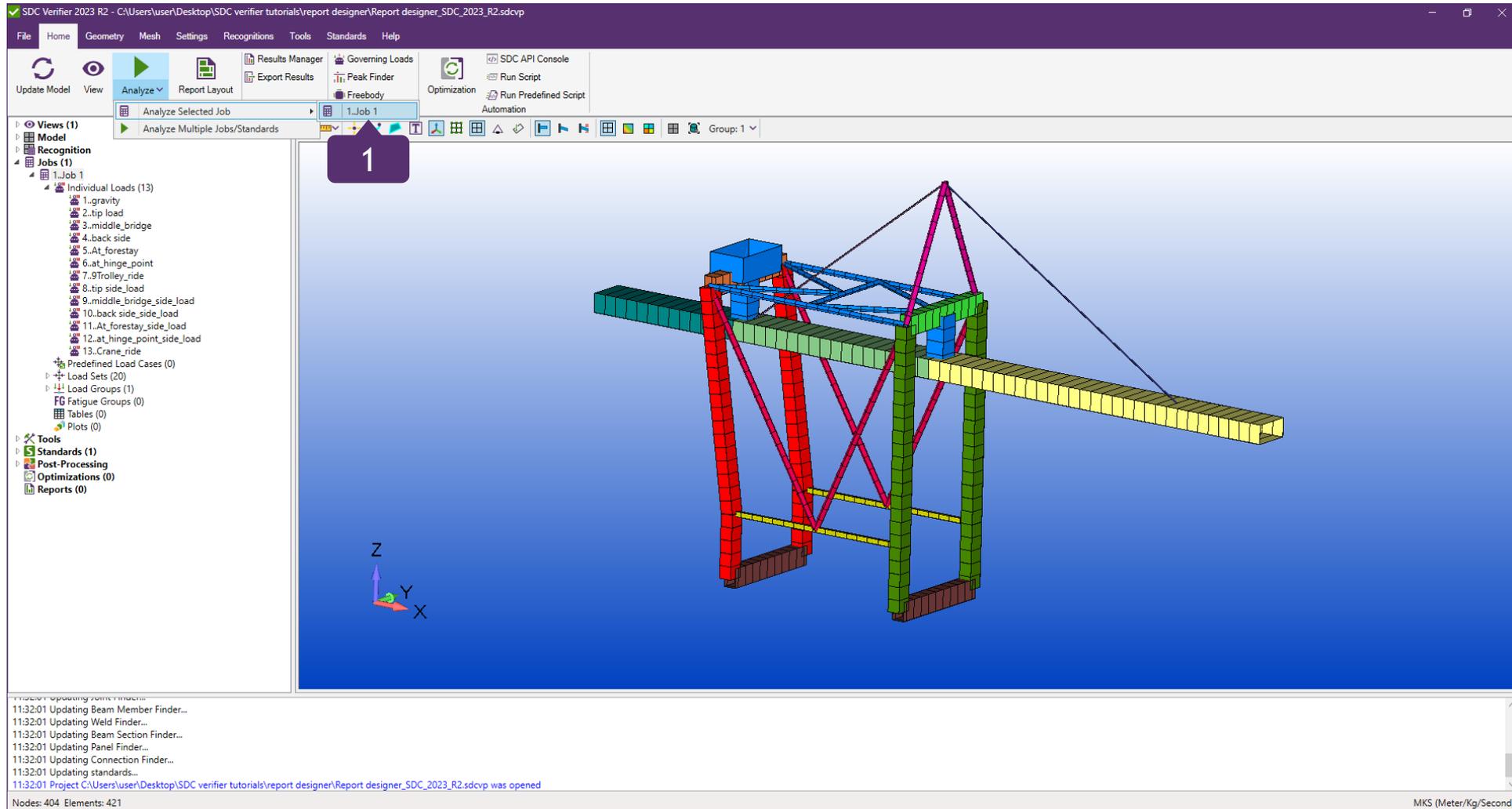
V: 2
L: 26
C: 4



This tutorial uses predefined project with the following created data: individual loads, loadsets, load groups and static stress check. The focus of this tutorial is on creating report.

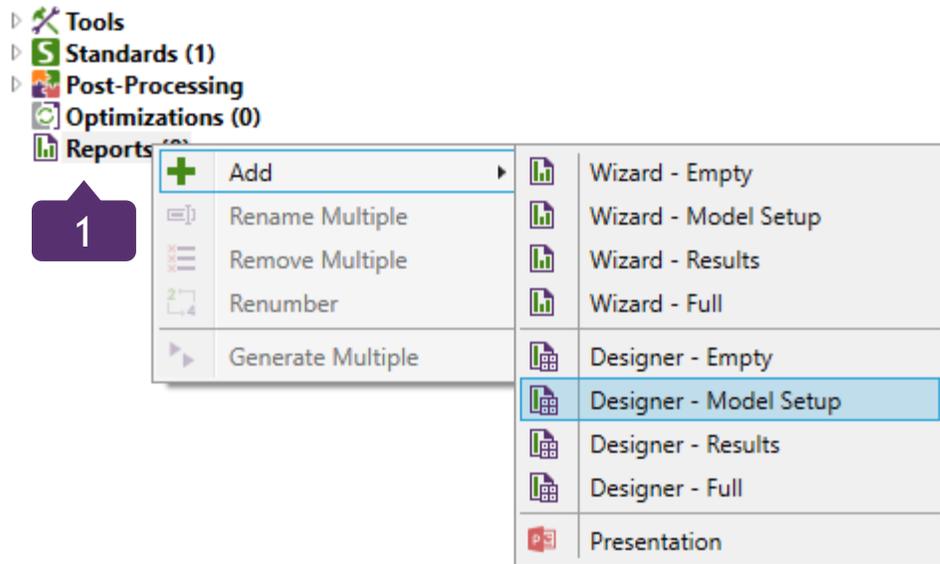
1

Press  and select **Analyze active job: 1..Job 1**



1 Press right mouse button

2 Execute *Add - Model Setup*

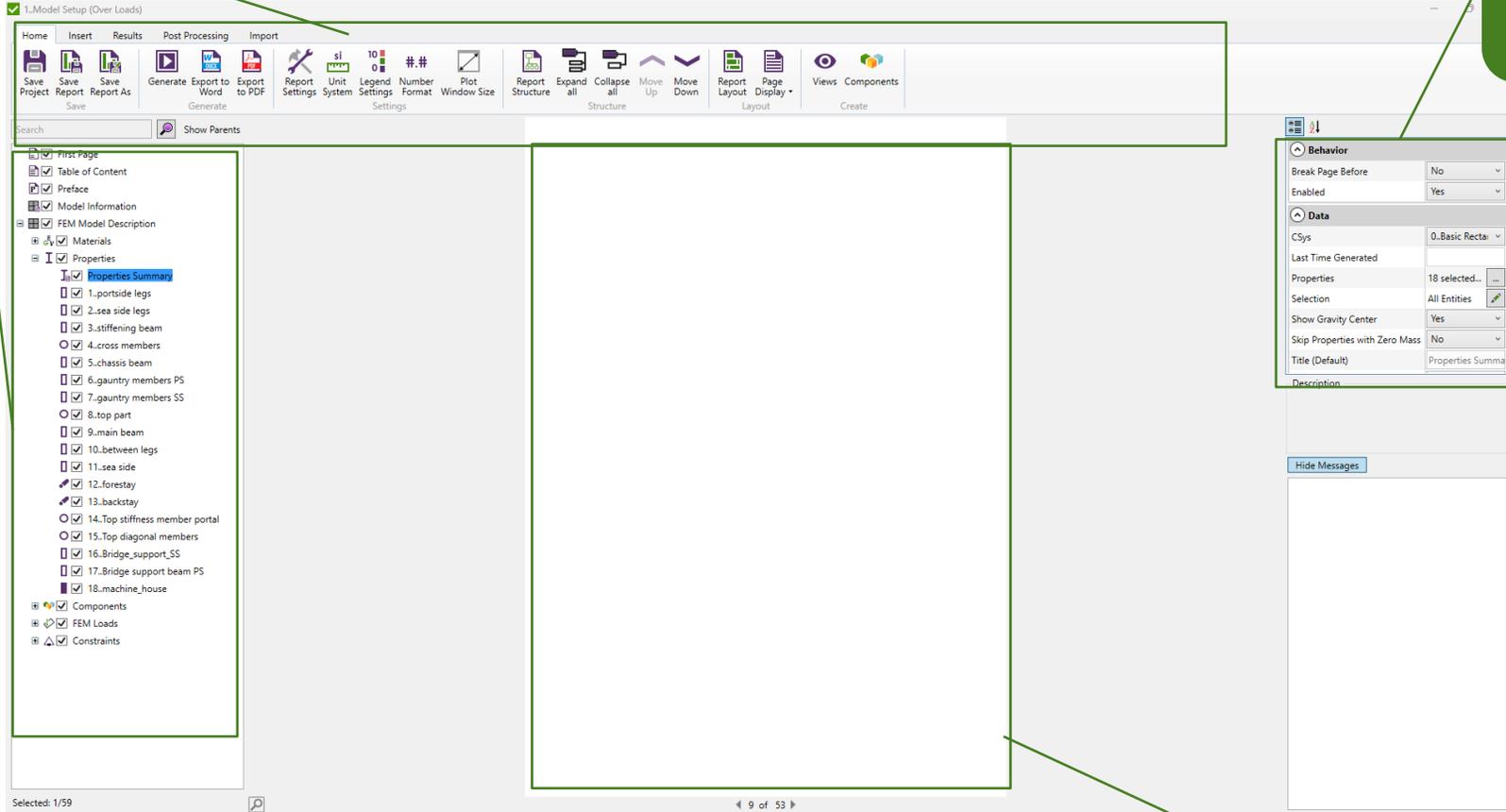


There are 4 templates of reports:

- Empty - only first page and preface items are included;
- Model Setup - description of model data (materials, properties, components) 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;
- Full - Model Setup + Results + all tables created in Job.

Report Designer Interface (Components)

Toolbar contains main functions



Displays properties of selected item. It is possible to modify them.

Report Structure - displays structure of the report

Report document

1

Execute **Edit** from First Page context menu

2

Press  and select Support Engineer from the library

3

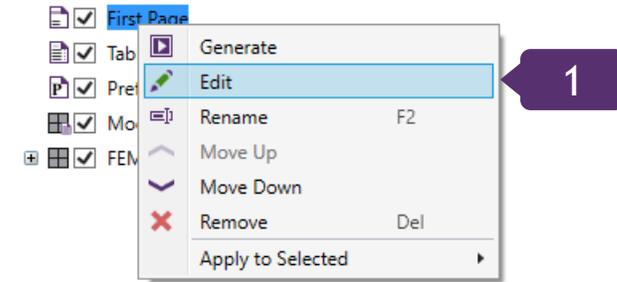
Press  and select Customer from the library

4

Image - From View: **Selected**

5

Press **OK**.



2

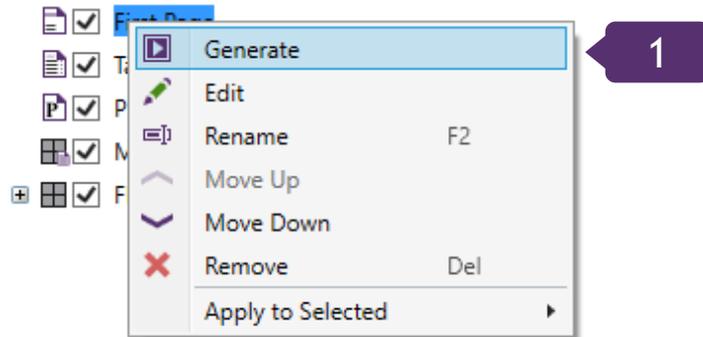
4

5

For an engineer and customer the default data from the library is used. It is possible to fill in your data and store it to the library  and reuse it in future projects.

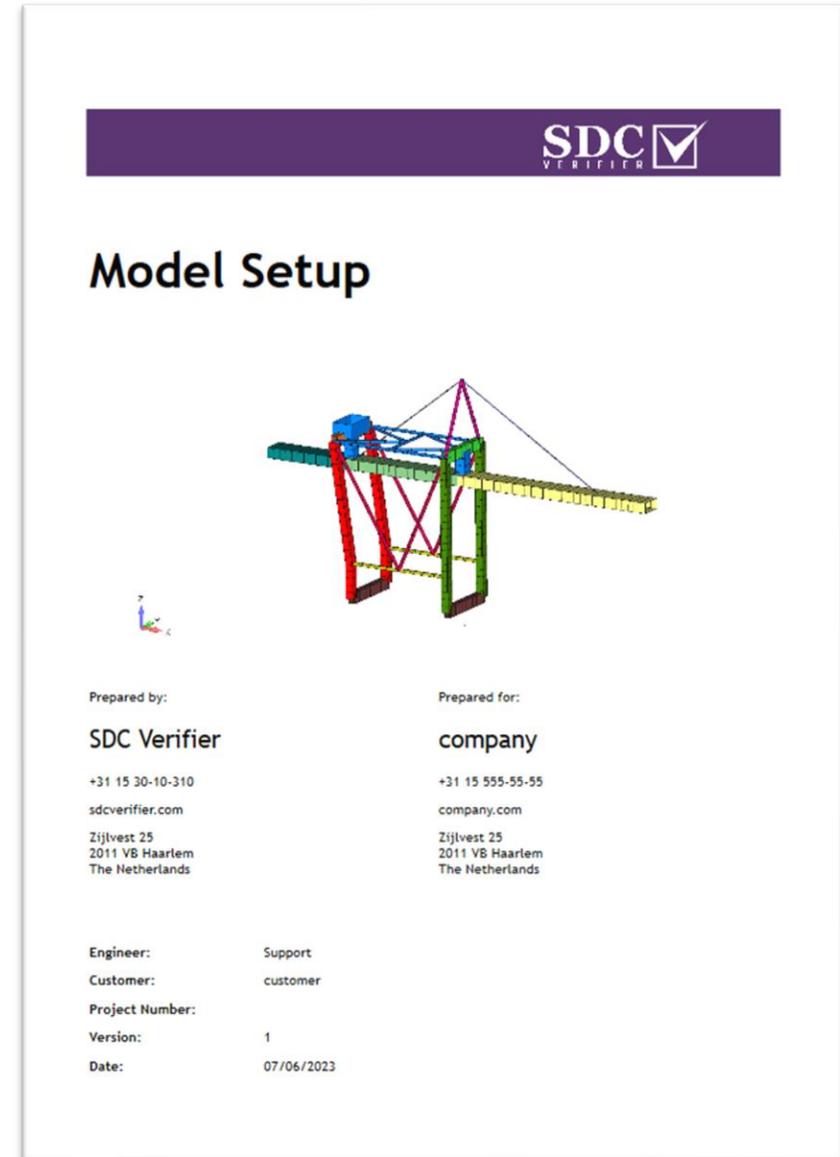
1

Execute **Generate** from First Page context menu



Company name and logo from engineer and customer are used in footer. All pages except first one have the footer.

Report in designer does not contain headers and footers, they are inserted when export to Word Document.



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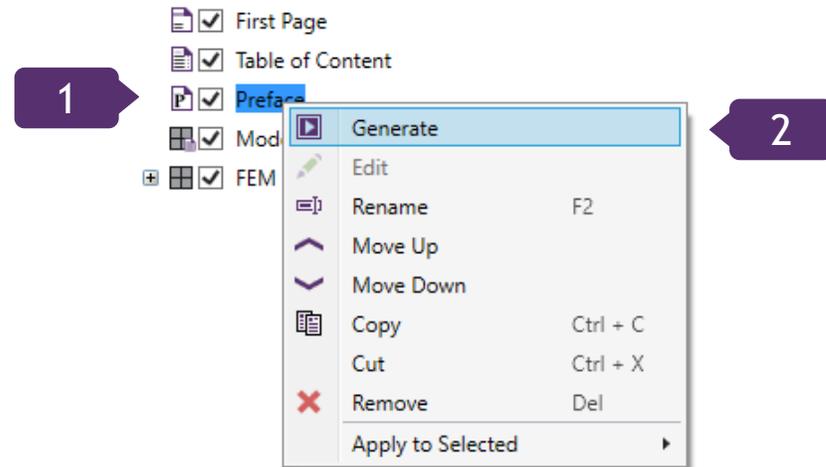


Prepared for
company

Company

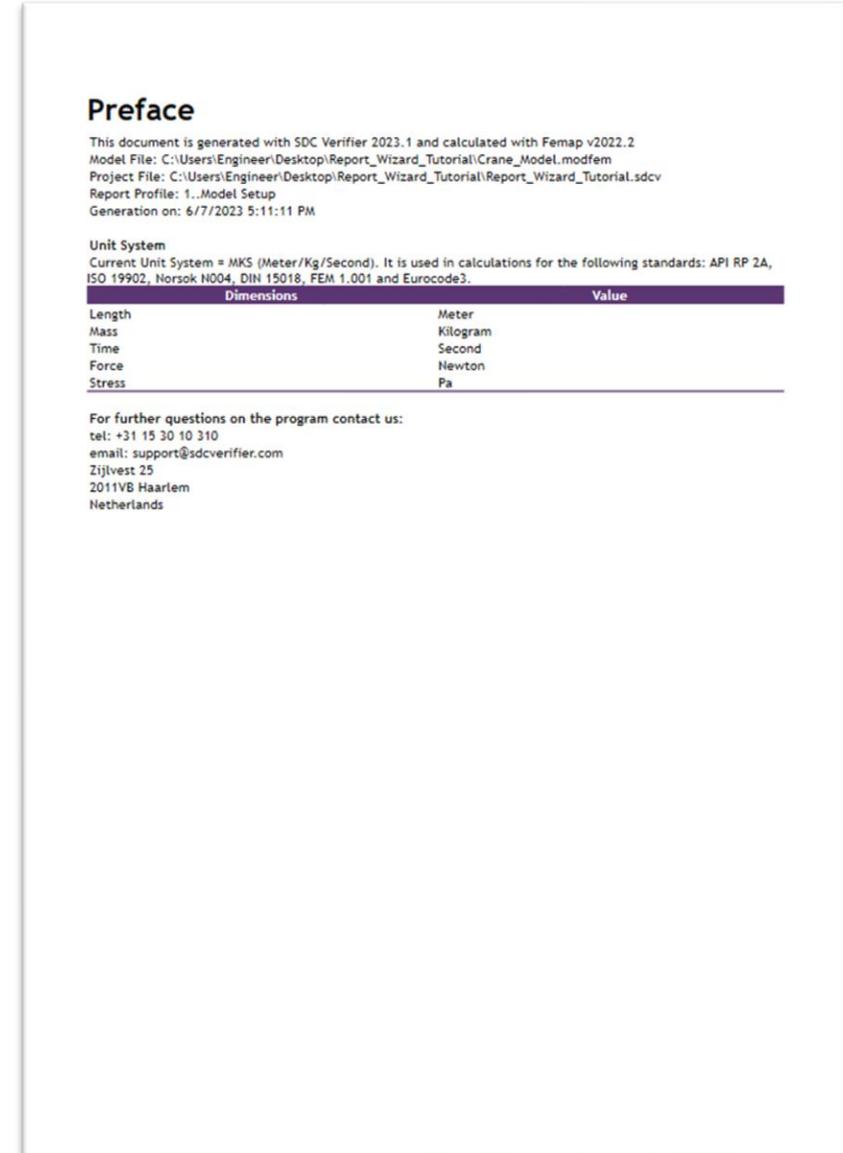
1 Select **Preface** item in report structure

2 Execute **Generate** from context menu



In first paragraph you can find what versions of SDC Verifier and Femap were used, full path to the model and project files and based on what profile report was generated.

Description on current unit system. It has an influence on calculations according to some standards.



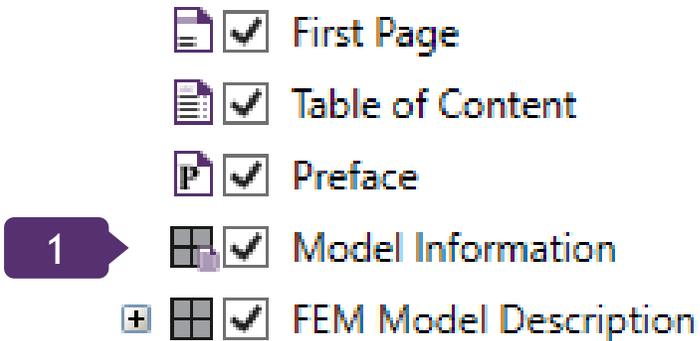
1

Select **Model Information** item in report structure

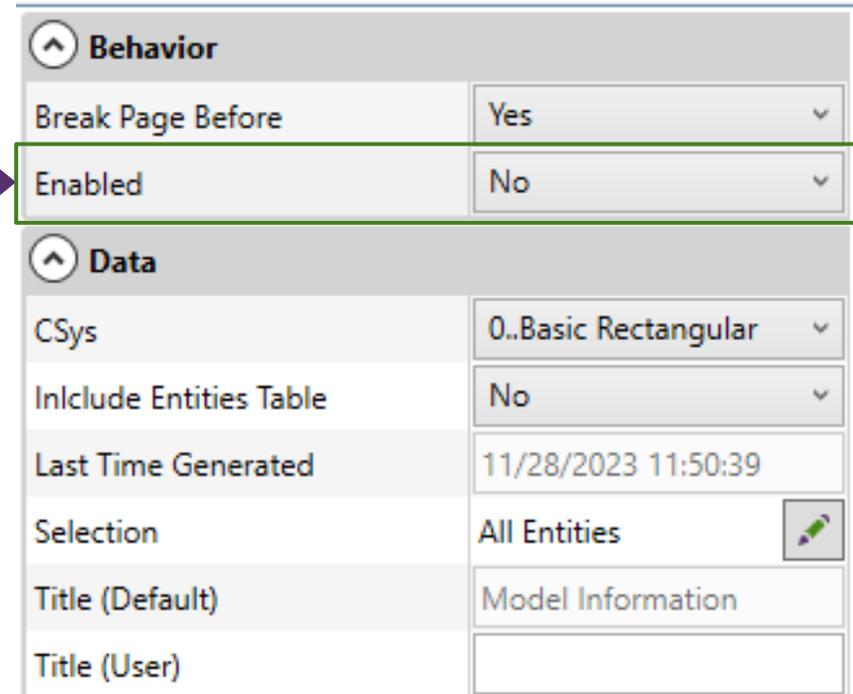
2

Set option Enabled: **No** in property toolbox

Model Information (with all sub items) are excluded from the report. The Model Information item will not be generated but remains in the report structure. Alternatively, it is possible to delete item from the context menu or using DEL button on keyboard.



2

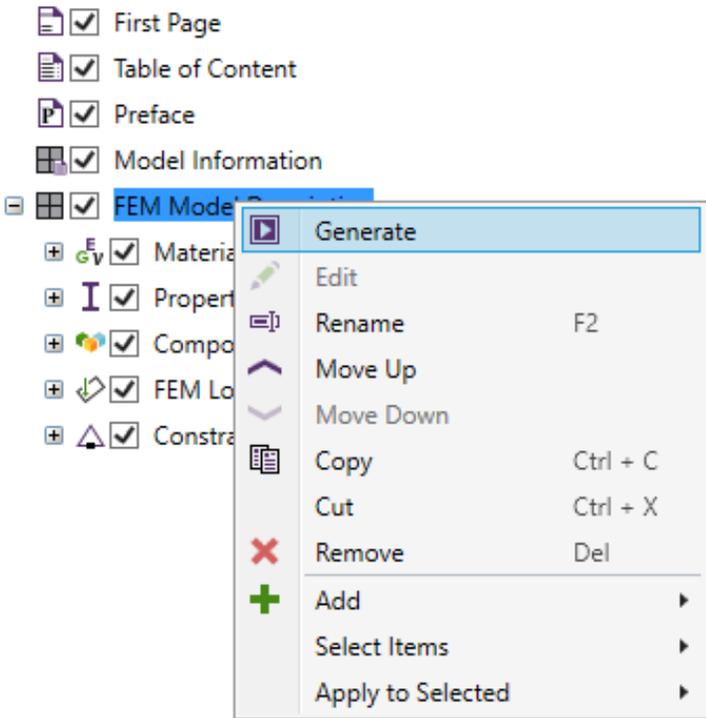


1

Select **FEM Model Description** item in report structure

2

Execute **Generate** from context menu



FEM Model Description

This paragraph shows detailed or brief model overview.

Materials

This paragraph contains materials information.

Materials Summary

Title	Elements	Mass [kg]	Mass Density [kg/m ³]	Gravity Center [m]
1..Structural Steel	420	1937142.8	9,812.50	[-13.85; 0.00; 34.29]
2..Machine_house	1	79999.9	333.33	[-35.48; 0.00; 52.00]
Overall	421	2017142.7		[-14.70; 0.00; 35.00]

1..Structural steel

Property	Value
Elements	420
Mass [kg]	1937142.8
Gravity Center [m]	[-13.85; 0.00; 34.29]
Young Modulus [Pa]	2.10e+11
Shear Modulus [Pa]	0
Poisson Ratio	0.30
Shear [Pa]	0
Mass Density [kg/m ³]	9812.50
Tensile Strength [Pa]	360.00e+6
Yield Stress [Pa]	240.00e+6



Material Summary - mass overview over materials

Detailed Material description with plots

1

Select Material: *1..Structural Steel* in report structure

2

Preview Mode: *Display Only Selected*

The screenshot shows the software's report structure on the left and the Material options dialog on the right. In the report structure, the 'Materials' folder is expanded, and '1..steel' is selected. In the dialog, the 'Preview Mode' dropdown is open, showing 'Highlight', 'Display Only Selected', and 'Display Only Selected' (repeated). A purple callout box with the number '2' points to the 'Display Only Selected' option.

Enabled	Yes
Include Plot	Yes
Include Selection Min/Max Coordinates	No
Data	
CSys	0..Basic Rectangul
Last Time Generated	
Selection	All Entities
Title (Default)	1..steel
Title (User)	
Plot	
Preview Mode	Highlight
Views	Highlight
	Display Only Selected

Preview Mode: *Highlight*



Preview Mode: *Display Only Selected*



1

Press to open *View Manager*

2

Press to add View

3

Title: *Isometric with filled edges*.

4

Locate View in Mechanical as shown on picture

5

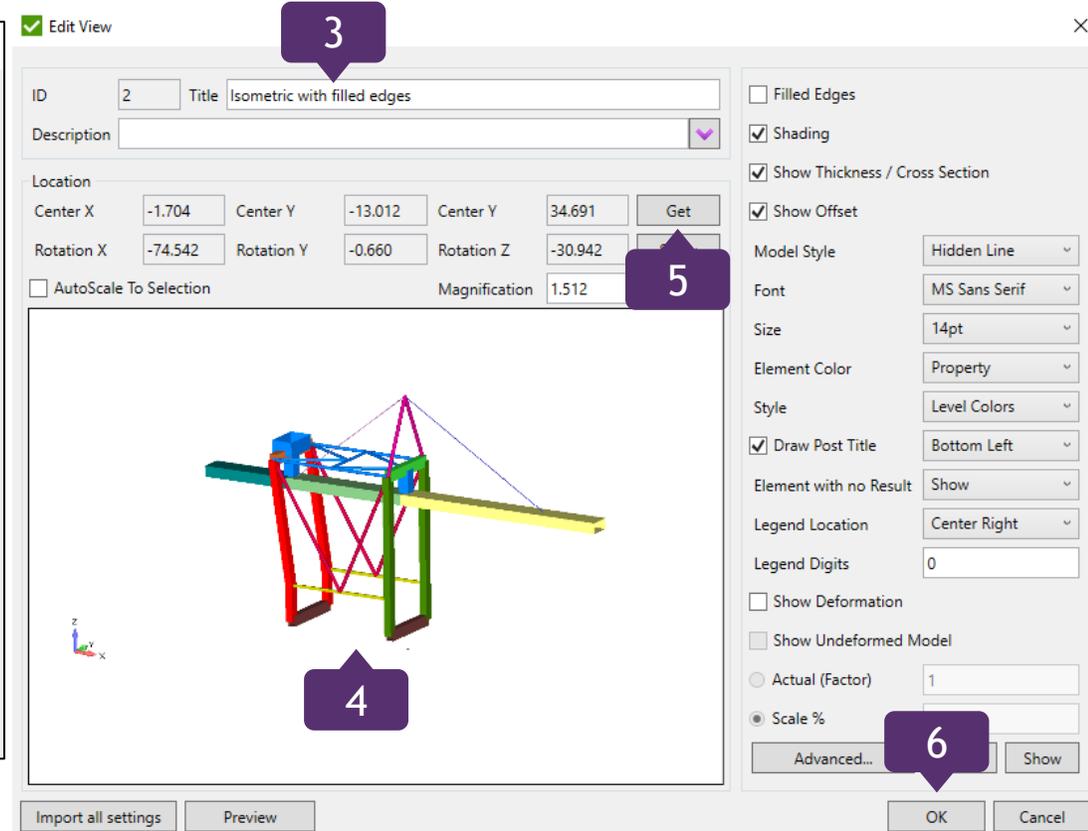
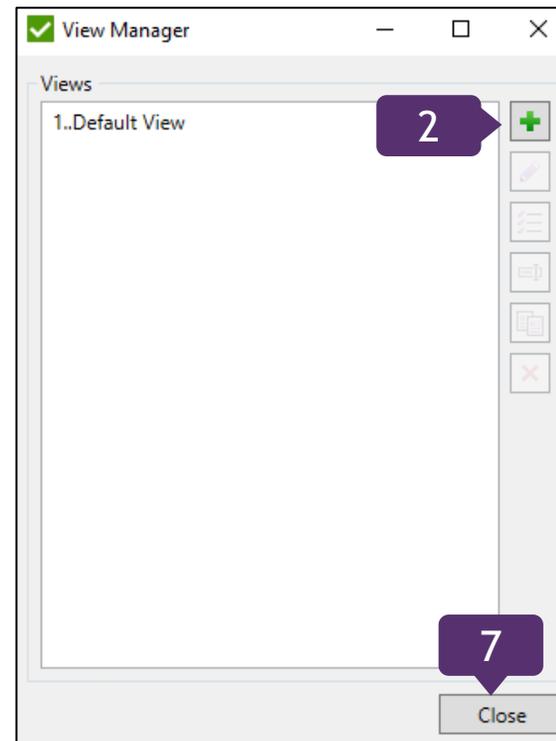
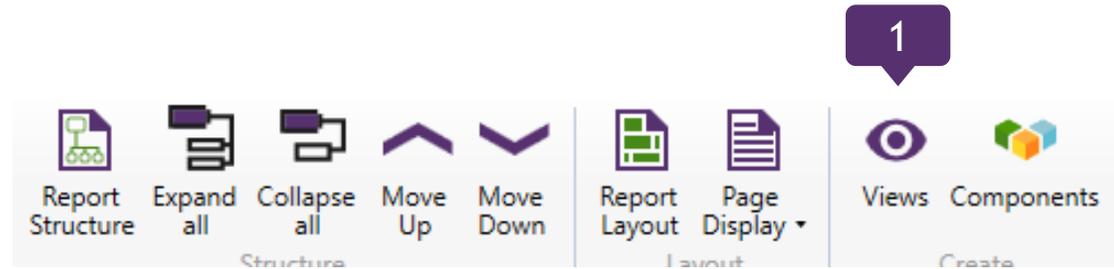
Press *Get*

6

Press *OK*

7

Press *Close*

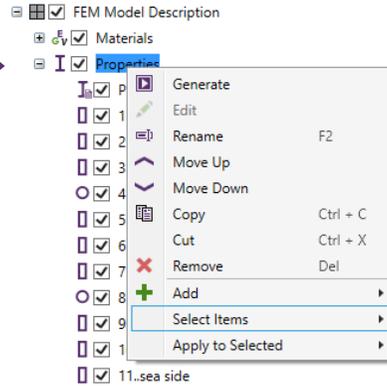


Apply View to Properties

1

Select **Properties** in report structure

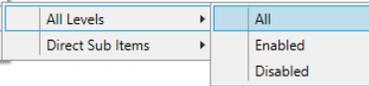
1



2

Execute **Select items - All Levels - All**

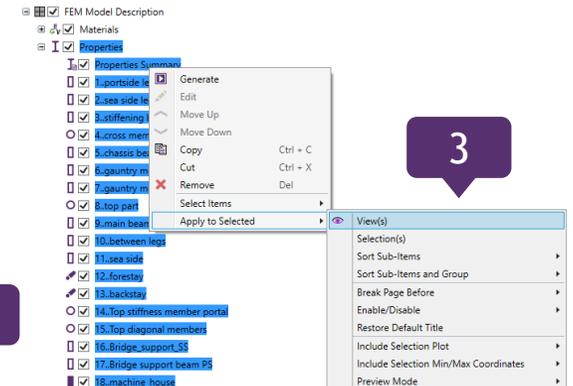
2



3

Execute **Apply to selected - Views**

3



4

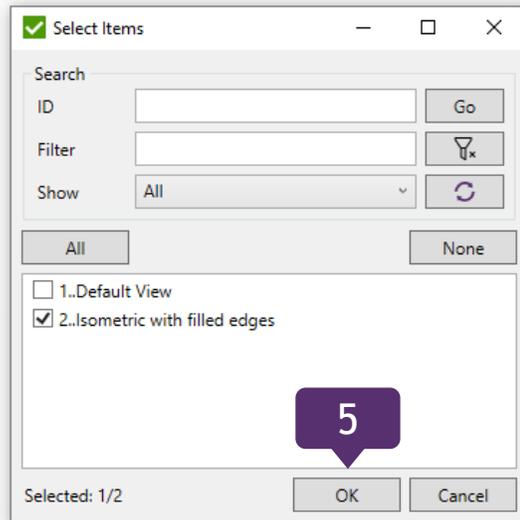
Select **Isometric with filled edges**

5

Press **Ok**

6

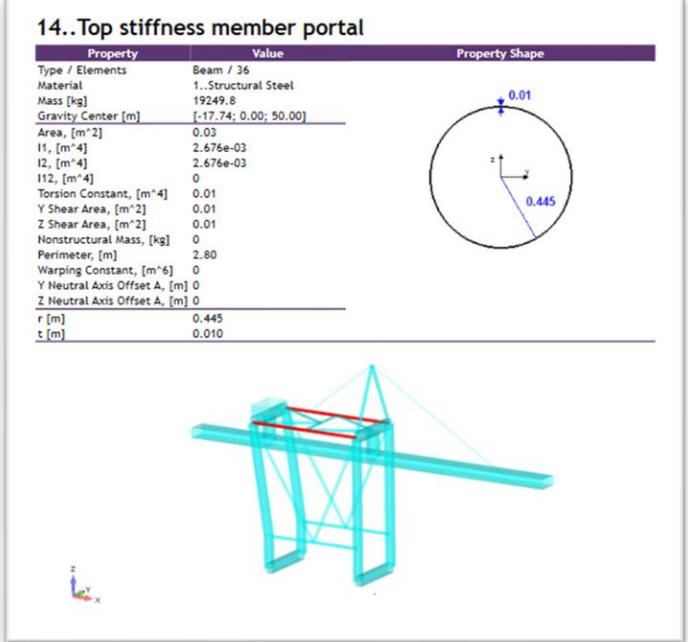
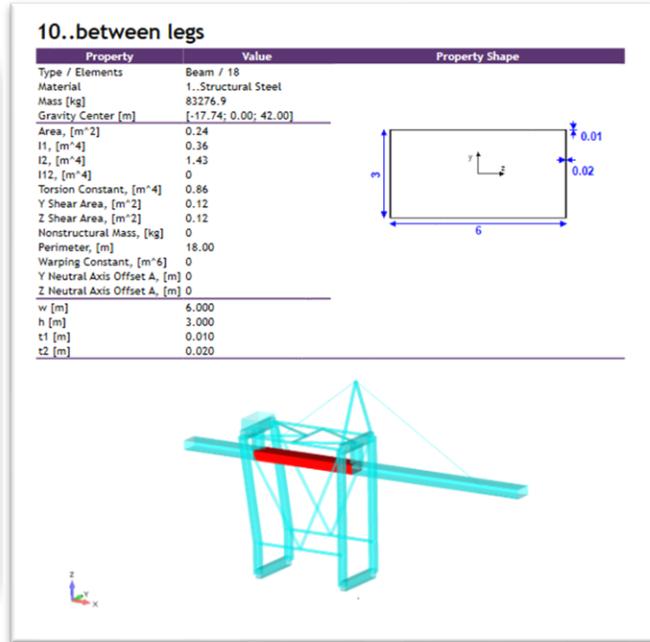
Press **Generate**



6

4

5



1

Press to generate report

2

Press to export report to Word

1

2

Model Setup

Prepared by:

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Zijlvest 25
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The Netherlands

Prepared for:

company

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Zijlvest 25
2011 VB Haarlem
The Netherlands

Engineer: Support

Customer: customer

Project Number:

Version: 1

Date: 08/06/2023

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14..Top stiffness member portal

Property	Value	Property Shape
Type / Elements	Beam / 36	
Material	1..Structural Steel	
Mass [kg]	19249.8	
Gravity Center [m]	[-17.74; 0.00; 50.00]	
Area, [m ²]	0.03	
I1, [m ⁴]	2.676e-03	
I2, [m ⁴]	2.676e-03	
I12, [m ⁴]	0	
Torsion Constant, [m ⁴]	0.01	
Y Shear Area, [m ²]	0.01	
Z Shear Area, [m ²]	0.01	
Nonstructural Mass, [kg]	0	
Perimeter, [m]	2.80	
Warping Constant, [m ⁶]	0	
Y Neutral Axis Offset A, [m]	0	
Z Neutral Axis Offset A, [m]	0	
r [m]	0.445	
t [m]	0.010	

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10..between legs

Property	Value	Property shape
Type / Elements	Beam / 18	
Material	1..Structural Steel	
Mass [kg]	83276.9	
Gravity Center [m]	[-17.74; 0.00; 42.00]	
Area, [m ²]	0.24	
I1, [m ⁴]	0.36	
I2, [m ⁴]	1.43	
I12, [m ⁴]	0	
Torsion Constant, [m ⁴]	0.86	
Y Shear Area, [m ²]	0.12	
Z Shear Area, [m ²]	0.12	
Nonstructural Mass, [kg]	0	
Perimeter, [m]	18.00	
Warping Constant, [m ⁶]	0	
Y Neutral Axis Offset A, [m]	0	
Z Neutral Axis Offset A, [m]	0	
w [m]	6.000	
h [m]	3.000	
t1 [m]	0.010	
t2 [m]	0.020	

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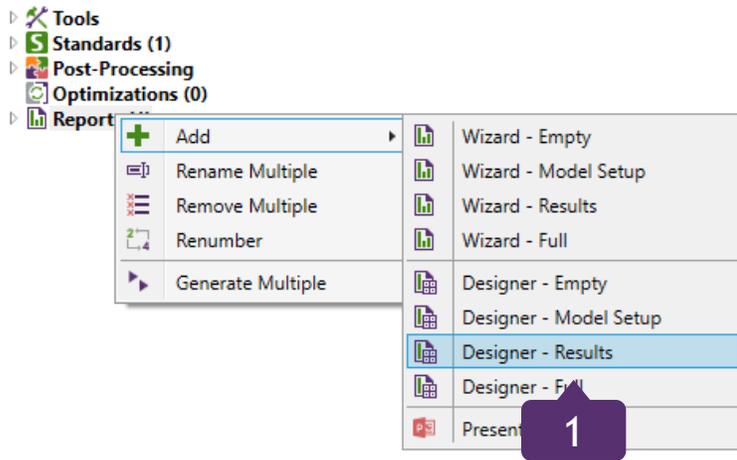
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1

Execute *Report - Add - Designer - Results* from report context menu

Result report includes predefined items



- Load Set '1..LC1s_Tip load.1'
- Displacement (LS1, All Entities)
- Usum (LS1, All Entities, v1)
- Seqv (LS1, All Entities, v1, Total [AbsMax])

For each load extreme displacement table, displacement and stress plots are created

- Results
 - 1..Job 1
 - Individual Loads
 - Load Sets
 - Load Groups
 - Summary
 - Stress (13 Loads, All Entities)
 - Stress (20 Loads, All Entities)
 - Displacement (13 Loads, All Entities)
 - Displacement (20 Loads, All Entities)
 - Applied Force Summation (13 Loads, All Entities)
 - Reaction Force Summation (13 Loads, All Entities)
 - Applied Force Summation (20 Loads, All Entities)
 - Reaction Force Summation (20 Loads, All Entities)

For individual loads and load sets the following summary tables are included: applied and reaction forces summation, displacement and stresses over loads

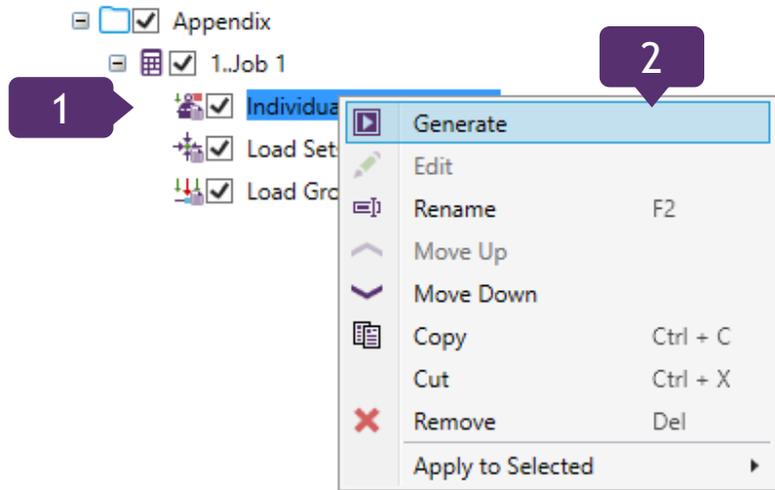
1

Select **Individual Loads Content** under Appendix item in report structure

2

Execute **Generate** from context menu

Content shows the list of Individual loads and referenced step.



Individual Loads Content

Individual Load [Safety Factor]	FemLoad / Output Set	Constraint
1..gravity [1]	1..gravity	4..Bogie_simple
2..tip load [1]	2..tip load	4..Bogie_simple
3..middle_bridge [1]	3..middle_bridge	4..Bogie_simple
4..back side [1]	4..back side	4..Bogie_simple
5..At_forestay [1]	5..At_forestay	4..Bogie_simple
6..at_hinge_point [1]	6..at_hinge_point	4..Bogie_simple
7..9Trolley_ride [1]	7..9Trolley_ride	4..Bogie_simple
8..tip side_load [1]	8..tip side_load	4..Bogie_simple
9..middle_bridge_side_load [1]	9..middle_bridge_side_load	4..Bogie_simple
10..back side_side_load [1]	10..back side_side_load	4..Bogie_simple
11..At_forestay_side_load [1]	11..At_forestay_side_load	4..Bogie_simple
12..at_hinge_point_side_load [1]	12..at_hinge_point_side_load	4..Bogie_simple
13..Crane_ride [1]	13..Crane_ride	4..Bogie_simple

- 1
- 2
- 3
- 4
- 5
- 6

Select **Content** under **Load Sets** item in report structure

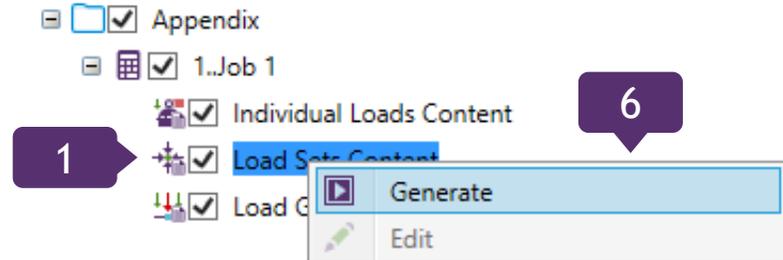
In Toolbox for **All Load Sets** choose **No**

Select **Load Sets** and press

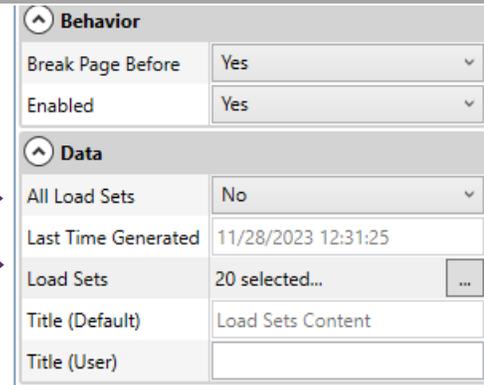
In menu **Select Items** select all load sets what should be displayed and press **All**

Press **OK**

Select **Load Sets Content** and Execute **Generate**

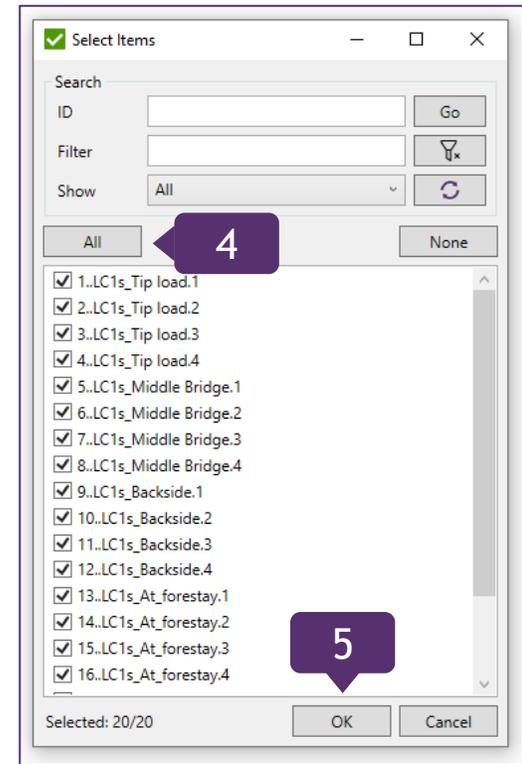


- 2
- 3



Load Sets Content		
Title [Safety Factor]	Count	Items [Partial Load Factor]
1..LC1s_Tip load.1 [1]	5	1..gravity [1.15] 2..tip load [1.35] 7..9Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
2..LC1s_Tip load.2 [1]	5	1..gravity [1.15] 2..tip load [1.35] 7..9Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
3..LC1s_Tip load.3 [1]	5	1..gravity [1.15] 2..tip load [1.35] 7..9Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
4..LC1s_Tip load.4 [1]	5	1..gravity [1.15] 2..tip load [1.35] 7..9Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
5..LC1s_Middle Bridge.1 [1]	5	1..gravity [1.15] 3..middle_bridge [1.35] 7..9Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
6..LC1s_Middle Bridge.2 [1]	5	1..gravity [1.15] 3..middle_bridge [1.35] 7..9Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
7..LC1s_Middle Bridge.3 [1]	5	1..gravity [1.15] 3..middle_bridge [1.35] 7..9Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
8..LC1s_Middle Bridge.4 [1]	5	1..gravity [1.15] 3..middle_bridge [1.35] 7..9Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
9..LC1s_Backside.1 [1]	5	1..gravity [1.15] 4..back side [1.35] 7..9Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
10..LC1s_Backside.2 [1]	5	1..gravity [1.15] 4..back side [1.35] 7..9Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
11..LC1s_Backside.3 [1]	5	1..gravity [1.15] 4..back side [1.35] 7..9Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
12..LC1s_Backside.4 [1]	5	1..gravity [1.15] 4..back side [1.35] 7..9Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]

13..LC1s_At_forestay.1 [1]	5	1..gravity [1.15] 5..At_forestay [1.35] 7..9Trolley_ride [1.15] 11..At_forestay_side_load [1.15] 13..Crane_ride [1.15]
14..LC1s_At_forestay.2 [1]	5	1..gravity [1.15] 5..At_forestay [1.35] 7..9Trolley_ride [1.15] 11..At_forestay_side_load [1.15] 13..Crane_ride [1.15]
15..LC1s_At_forestay.3 [1]	5	1..gravity [1.15] 5..At_forestay [1.35] 7..9Trolley_ride [1.15] 11..At_forestay_side_load [1.15] 13..Crane_ride [1.15]
16..LC1s_At_forestay.4 [1]	5	1..gravity [1.15] 5..At_forestay [1.35] 7..9Trolley_ride [1.15] 11..At_forestay_side_load [1.15] 13..Crane_ride [1.15]
17..LC1s_at_hinge_point.1 [1]	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..9Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]
18..LC1s_at_hinge_point.2 [1]	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..9Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]
19..LC1s_at_hinge_point.3 [1]	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..9Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]
20..LC1s_at_hinge_point.4 [1]	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..9Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]



- 5

1 Select **5..at_forestay** in report structure

2 Execute **Generate** from context menu

Results

1..Job 1

Individual Loads

- Individual Load '1..gravity'
- Individual Load '2..tip load'
- Individual Load '3..middle_bridge'
- Individual Load '4..back side'
- Individual Load '5..at_forestay' **1**
- Individual Load '6..a'
- Individual Load '7..0'

2

Generate

Edit

Individual Load includes Content and Sum of Forces. It is possible to control what should be displayed using the Options.

Options

Include Individual Load Plot	No
Include Load Item Content	No
Include Sum Of Forces	No
Selection	All Entities

Individual Load '5..At_forestay'

At_forestay ; Bogie_simple

Title	Value
Individual Load	5..At_forestay
FemLoad	5..At_forestay
Constraint	4..Bogie_simple
Output Set	19..At_forestay
Safety Factor	1

Load	Fx [N]	Fy [N]	Fz [N]	Fsum [N]	Mx [N m]	My [N m]	Mz [N m]	Msum [N m]
Constraint '4..Bogie_simple'	0.0	0.0	1220000.1	1220000.1	0.0	0.0	0.0	0.0

Individual Load Type	Selection Category				All Entities Displacement				
	Extreme	Ux [m]	Uy [m]	Uz [m]	Usum [m]	Rx	Ry	Rz	Rsum
Minimum	0.00	0.00	-0.11	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	0.03	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00
Absolute	0.03	0.00	-0.11	0.11	0.00	0.00	0.00	0.00	0.00

Usum (IL5, All Entities, v1)

Individual Load Selection	IL5..At_forestay All Entities	Parameter View	Displacement Usum 1..Default View
Limits	None	View	1..Default View

Seqv (IL5, All Entities, v1, Total [AbsMax])

Individual Load Selection	IL5..At_forestay All Entities	Parameter View	Stress Equivalent 1..Default View
Point	Total (AbsMax)	Limits	None

Number Formats

1

Generate Displacement (All Entities) under load *5..at_forestay*

2

Press **##** to open *Number Formats*

3

Digits after decimal point: 2 for *Displacement* and *General* category

4

Press *Close* and repeat 1 step

Digits after decimal point = 2

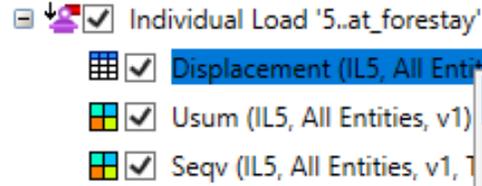
Displacement (IL5, All Entities)

Individual Load Type	5..At_forestay		Selection Category			All Entities Displacement			
	Extreme	Ux [m]	Uy [m]	Uz [m]	Usum [m]	Rx	Ry	Rz	Rsum
Minimum	0.00	0.00	-0.11	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	0.03	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00
Absolute	0.03	0.00	-0.11	0.11	0.00	0.00	0.00	0.00	0.00

Digits after decimal point = 3

Displacement (IL5, All Entities)

Individual Load Type	5..At_forestay		Selection Category			All Entities Displacement			
	Extreme	Ux [m]	Uy [m]	Uz [m]	Usum [m]	Rx	Ry	Rz	Rsum
Minimum	0.000	-0.004	-0.114	0.000	-0.001	0.000	0.000	0.000	0.000
Maximum	0.030	0.004	0.013	0.114	0.001	0.002	0.000	0.002	0.002
Absolute	0.030	0.004	-0.114	0.114	-0.001	0.002	0.000	0.000	0.002



1

3

3

Category	Type	Digits after decimal point	Fixed Power	Power Value	Example
Displacements	General	2	<input type="checkbox"/>		16000000.00
Stress	Scientific	2	<input checked="" type="checkbox"/>	6	160.00e+6
Strain	General	2	<input type="checkbox"/>		16000000.00
Utilization Factor	General	2	<input type="checkbox"/>		16000000.00
Buckling Factor	General	2	<input type="checkbox"/>		16000000.00
Forces	General	0	<input type="checkbox"/>		160000000
Coefficient	General	0	<input type="checkbox"/>		160000000
Scientific	General	2	<input type="checkbox"/>		16000000.00
General	General	2	<input type="checkbox"/>		16000000.00
Mass	General	1	<input type="checkbox"/>		160000000.0
Dimensions	General	3	<input type="checkbox"/>		160000000.000
Length	General	2	<input type="checkbox"/>		16000000.00
Area	General	2	<input type="checkbox"/>		16000000.00
Dimensions^3	General	2	<input type="checkbox"/>		16000000.00
Moment of Inertia	General	2	<input type="checkbox"/>		16000000.00
Dimensions^6	General	2	<input type="checkbox"/>		16000000.00
Number	General	0	<input type="checkbox"/>		160000000
Moments	General	1	<input type="checkbox"/>		160000000.0
Deflection	General	3	<input type="checkbox"/>		160000000.000

Number Format: General Scientific

Number Formats controls how numbers are displayed in tables for different categories. It is possible to save settings to library and reuse in another projects.

2

4

1

Select *Seqv (All Entities. V1. Total)* table under load *5..at_forestay*

2

Press to open *Legend Settings*

3

Max: *55000000* for *Stress* category

4

Press *Close*

5

Execute *Generate* from context menu

Legend Settings controls legend options for different categories. It is possible to save settings to the library and reuse in another projects.

1

6

2

3

Category	Mode	Min	Max	Number of Levels	Legend Format
Displacements	Automatic			12	General
Stress	Min Max	0	55000000	12	General
Strain	Automatic			12	General
Utilization Factor	Min Max	0	1.2	12	General
Buckling Factor	Min Max	0	1.2	12	General
Forces	Automatic			12	General
Coefficient	Automatic			12	General
Scientific	Automatic			12	General
General	Automatic			12	General
Mass	Automatic			12	General
Dimensions	Automatic			12	General
Length	Automatic			12	General
Area	Automatic			12	General
Dimensions 3	Automatic			12	General
Moment of Inertia	Automatic			12	General
Dimensions 6	Automatic			12	General
Number	Automatic			12	General
Moments	Automatic			12	General
Deflection	Automatic			12	General

5

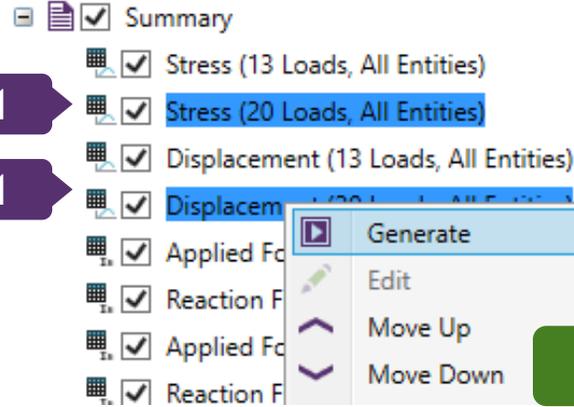
Stress and displacement tables over loads

1

Execute Abs *Displacement (LS)* under *Summary* item

2

In context menu select *Generate*



Stress and displacement extreme flow tables give nice results overview among loads.

Stresses for all load sets

Displacements for all load sets

Stress (20 Loads, All Entities)									
Loads Count	20	Category	Stress						
Selection	All Entities	Type	Extreme						
Parameter	Abs		X [Pa]	Y [Pa]	Z [Pa]	XY [Pa]	YZ [Pa]	ZX [Pa]	Equivalent [Pa]
LS1...LC1s_Tip load.1	-176.40e+6					-0.02e+6			176.40e+6
LS2...LC1s_Tip load.2	-176.40e+6					0.02e+6			176.40e+6
LS3...LC1s_Tip load.3	-172.95e+6					-0.02e+6			172.95e+6
LS4...LC1s_Tip load.4	-172.95e+6					0.02e+6			172.95e+6
LS5...LC1s_Middle Bridge.1	-113.16e+6					0.00e+6			113.16e+6
LS6...LC1s_Middle Bridge.2	-113.16e+6					0.00e+6			113.16e+6
LS7...LC1s_Middle Bridge.3	-115.13e+6					0.00e+6			115.13e+6
LS8...LC1s_Middle Bridge.4	-115.13e+6					0.00e+6			115.13e+6
LS9...LC1s_Backside.1	139.42e+6					0.00e+6			139.42e+6
LS10...LC1s_Backside.2	139.42e+6					0.00e+6			139.42e+6
LS11...LC1s_Backside.3	142.59e+6					0.00e+6			142.59e+6
LS12...LC1s_Backside.4	142.59e+6					0.00e+6			142.59e+6
LS13...LC1s_At_forestay.1	-148.02e+6					-0.01e+6			148.02e+6
LS14...LC1s_At_forestay.2	-148.02e+6					0.01e+6			148.02e+6
LS15...LC1s_At_forestay.3	-144.57e+6					-0.01e+6			144.57e+6
LS16...LC1s_At_forestay.4	-144.57e+6					0.01e+6			144.57e+6
LS17...LC1s_at_hinge_point.1	148.51e+6					-0.01e+6			148.51e+6
LS18...LC1s_at_hinge_point.2	148.39e+6					0.01e+6			148.39e+6
LS19...LC1s_at_hinge_point.3	145.20e+6					-0.01e+6			145.20e+6
LS20...LC1s_at_hinge_point.4	145.09e+6					0.01e+6			145.09e+6

Displacement (20 Loads, All Entities)										
Loads Count	20	Category	Displacement							
Selection	All Entities	Type	Extreme							
Parameter	Abs		Ux [m]	Uy [m]	Uz [m]	Usum [m]	Rx	Ry	Rz	Rsum
LS1...LC1s_Tip load.1	0.073	0.111	-0.352	0.369	-0.002	0.010	0.003	0.010		
LS2...LC1s_Tip load.2	0.073	-0.111	-0.352	0.369	0.002	0.010	-0.003	0.010		
LS3...LC1s_Tip load.3	0.059	0.111	-0.351	0.369	-0.002	0.010	0.003	0.010		
LS4...LC1s_Tip load.4	0.059	-0.111	-0.351	0.369	0.002	0.010	-0.003	0.010		
LS5...LC1s_Middle Bridge.1	-0.033	0.057	-0.079	0.098	-0.002	0.004	0.003	0.004		
LS6...LC1s_Middle Bridge.2	-0.033	-0.057	-0.079	0.098	0.002	0.004	-0.003	0.004		
LS7...LC1s_Middle Bridge.3	-0.044	0.057	-0.078	0.098	-0.002	0.004	0.003	0.004		
LS8...LC1s_Middle Bridge.4	-0.044	-0.057	-0.078	0.098	0.002	0.004	-0.003	0.004		
LS9...LC1s_Backside.1	-0.032	0.050	-0.144	0.152	-0.002	-0.005	-0.003	0.005		
LS10...LC1s_Backside.2	-0.032	-0.050	-0.144	0.152	0.002	-0.005	0.003	0.005		
LS11...LC1s_Backside.3	-0.043	0.050	-0.142	0.150	-0.002	-0.005	-0.003	0.005		
LS12...LC1s_Backside.4	-0.043	-0.050	-0.142	0.150	0.002	-0.005	0.003	0.005		
LS13...LC1s_At_forestay.1	0.059	0.100	-0.239	0.259	-0.002	0.004	0.003	0.004		
LS14...LC1s_At_forestay.2	0.059	-0.100	-0.239	0.259	0.002	0.004	-0.003	0.004		
LS15...LC1s_At_forestay.3	0.045	0.100	-0.238	0.259	-0.002	0.004	0.003	0.004		
LS16...LC1s_At_forestay.4	0.045	-0.100	-0.238	0.259	0.002	0.004	-0.003	0.004		
LS17...LC1s_at_hinge_point.1	-0.032	0.067	-0.089	0.111	-0.002	0.004	0.003	0.004		
LS18...LC1s_at_hinge_point.2	-0.032	-0.067	-0.089	0.112	0.002	0.004	-0.003	0.004		
LS19...LC1s_at_hinge_point.3	-0.044	0.067	-0.088	0.111	-0.002	0.004	0.003	0.004		
LS20...LC1s_at_hinge_point.4	-0.044	-0.067	-0.088	0.112	0.002	0.004	-0.003	0.004		



1

Select **Reaction Forces Summation** under **Summary**

2

Press **##** to open Number Format

3

Select category **Forces**

4

Set next settings for **Force**

5

Press **Set Format** and **Close**

6

Repeat step 1 and press **Generate**

Number format from general is changed to scientific with fixed power = 3. The numbers became more readable.

Type: Scientific
 Digits after decimal point: 0
 Fixed Power: ON
 Fixed Power Value: 3

Number Formats

Category	Type	Digits after decimal point	Fixed Power	Power Value	Example
Displacements	General	3	<input type="checkbox"/>		160000000.000
Stress	Scientific	2	<input checked="" type="checkbox"/>	6	160.00e+6
Strain	General	2	<input type="checkbox"/>		160000000.00
Utilization Factor	General	2	<input type="checkbox"/>		160000000.00
Buckling Factor	General	2	<input type="checkbox"/>		160000000.00
Forces	Scientific	0	<input checked="" type="checkbox"/>	3	1600000000
Coefficient	General	0	<input type="checkbox"/>		160000000
Scientific	General	2	<input type="checkbox"/>		160000000.00
General	General	3	<input type="checkbox"/>		160000000.000
Mass	General	1	<input type="checkbox"/>		160000000.0
Dimensions	General	3	<input type="checkbox"/>		160000000.000
Length	General	2	<input type="checkbox"/>		160000000.00
Area	General	2	<input type="checkbox"/>		160000000.00
Dimensions*3	General	2	<input type="checkbox"/>		160000000.00
Moment of Inertia	General	2	<input type="checkbox"/>		160000000.00
Dimensions*6	General	2	<input type="checkbox"/>		160000000.00
Number	General	0	<input type="checkbox"/>		160000000
Moments	General	1	<input type="checkbox"/>		160000000.0
Deflection	General	3	<input type="checkbox"/>		160000000.000

Number Format: General Scientific

Digits after decimal point: 0

Fixed power: 6

Example: 2e+8

Buttons: Set as Default, Restore from Default, Reset, Set Format, Close

Reaction Force Summation (20 Loads, All Entities)

Loads Count	All Entities	Category Type				Reaction Force Expand			
Selection		Fx [N]	Fy [N]	Fz [N]	Fsum [N]	Mx [N m]	My [N m]	Mz [N m]	Msum [N m]
LS1..LC1s_Tip load.1		-223100.0	-635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS2..LC1s_Tip load.2		-223100.0	635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS3..LC1s_Tip load.3		223100.0	-635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS4..LC1s_Tip load.4		223100.0	635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS5..LC1s_Middle Bridge.1		-223100.0	-635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS6..LC1s_Middle Bridge.2		-223100.0	635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS7..LC1s_Middle Bridge.3		223100.0	-635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS8..LC1s_Middle Bridge.4		223100.0	635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS9..LC1s_Backside.1		-223100.0	-635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS10..LC1s_Backside.2		-223100.0	635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS11..LC1s_Backside.3		223100.0	-635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS12..LC1s_Backside.4		223100.0	635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS13..LC1s_At_forestay.1		-223100.0	-635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS14..LC1s_At_forestay.2		-223100.0	635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS15..LC1s_At_forestay.3		223100.0	-635703.5	24403394.0	24412692.0	0.0	0.0	0.0	0.0
LS16..LC1s_At_forestay.4		223100.0	635703.5	24403396.0	24412694.0	0.0	0.0	0.0	0.0
LS17..LC1s_at_hinge_point.1		-223100.0	-691478.5	26050396.0	26060526.0	0.0	0.0	0.0	0.0
LS18..LC1s_at_hinge_point.2		-223100.0	691478.5	26050394.0	26060524.0	0.0	0.0	0.0	0.0
LS19..LC1s_at_hinge_point.3		223100.0	-691478.5	26050396.0	26060526.0	0.0	0.0	0.0	0.0
LS20..LC1s_at_hinge_point.4		223100.0	691478.5	26050394.0	26060524.0	0.0	0.0	0.0	0.0

Default

Reaction Force Summation (20 Loads, All Entities)

Loads Count	All Entities	Category Type				Reaction Force Expand			
Selection		Fx [N]	Fy [N]	Fz [N]	Fsum [N]	Mx [N m]	My [N m]	Mz [N m]	Msum [N m]
LS1..LC1s_Tip load.1		-2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS2..LC1s_Tip load.2		-2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS3..LC1s_Tip load.3		2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS4..LC1s_Tip load.4		2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS5..LC1s_Middle Bridge.1		-2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS6..LC1s_Middle Bridge.2		-2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS7..LC1s_Middle Bridge.3		2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS8..LC1s_Middle Bridge.4		2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS9..LC1s_Backside.1		-2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS10..LC1s_Backside.2		-2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS11..LC1s_Backside.3		2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS12..LC1s_Backside.4		2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS13..LC1s_At_forestay.1		-2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS14..LC1s_At_forestay.2		-2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS15..LC1s_At_forestay.3		2.2e+5	-6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS16..LC1s_At_forestay.4		2.2e+5	6.4e+5	2.4e+7	2.4e+7	0.0	0.0	0.0	0.0
LS17..LC1s_at_hinge_point.1		-2.2e+5	-6.9e+5	2.6e+7	2.6e+7	0.0	0.0	0.0	0.0
LS18..LC1s_at_hinge_point.2		-2.2e+5	6.9e+5	2.6e+7	2.6e+7	0.0	0.0	0.0	0.0
LS19..LC1s_at_hinge_point.3		2.2e+5	-6.9e+5	2.6e+7	2.6e+7	0.0	0.0	0.0	0.0
LS20..LC1s_at_hinge_point.4		2.2e+5	6.9e+5	2.6e+7	2.6e+7	0.0	0.0	0.0	0.0

Updated

1

Press **Results** on the toolbar and select  to open tables window

2

Use dropdown menu for load selector

3

Select all **Load Sets**

4

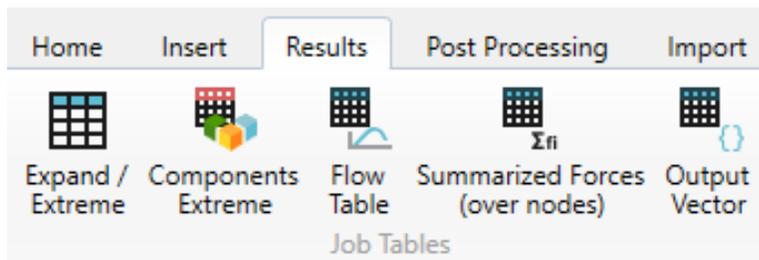
Press **All**

5

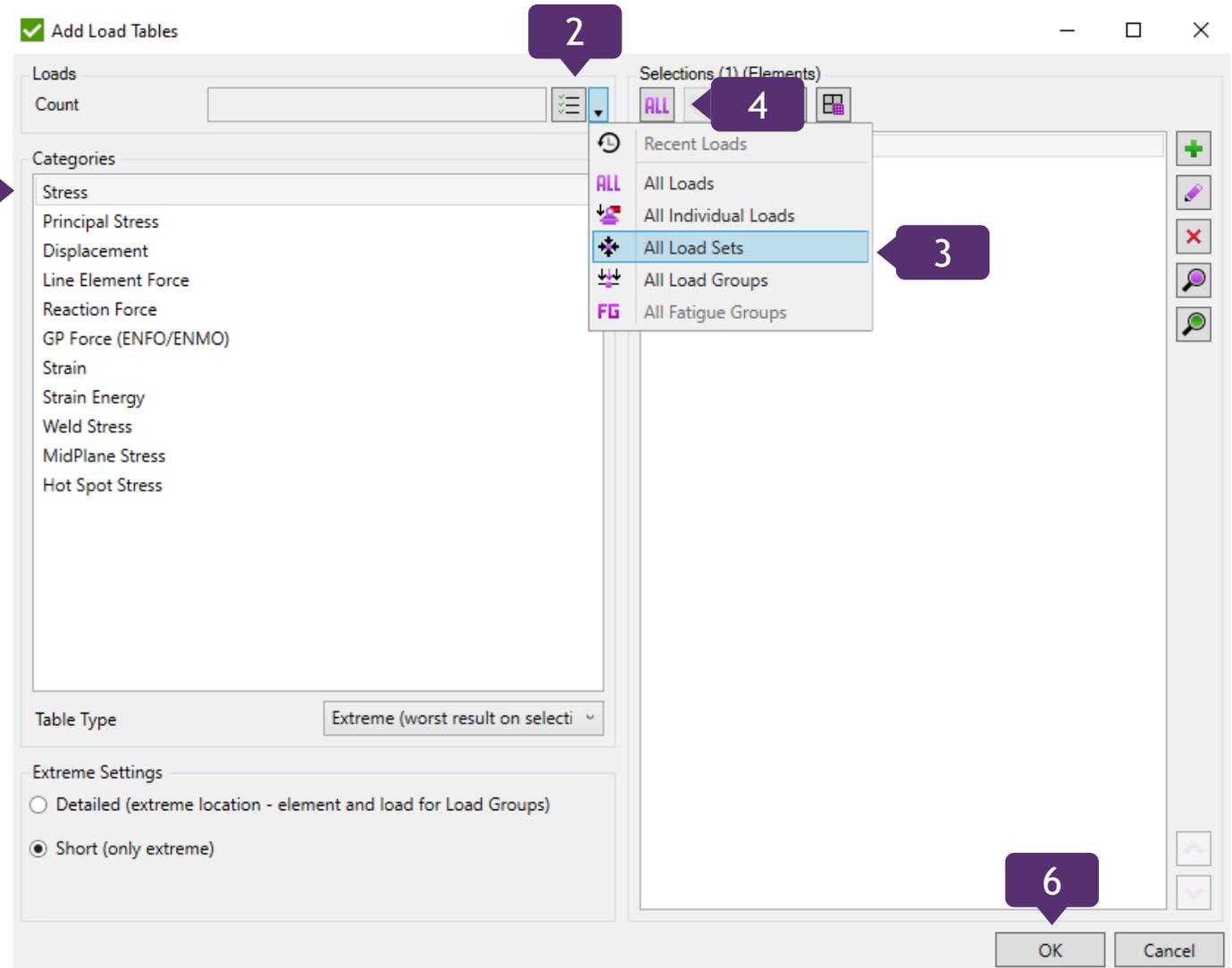
Categories: **Stress**

6

Press **OK**



1



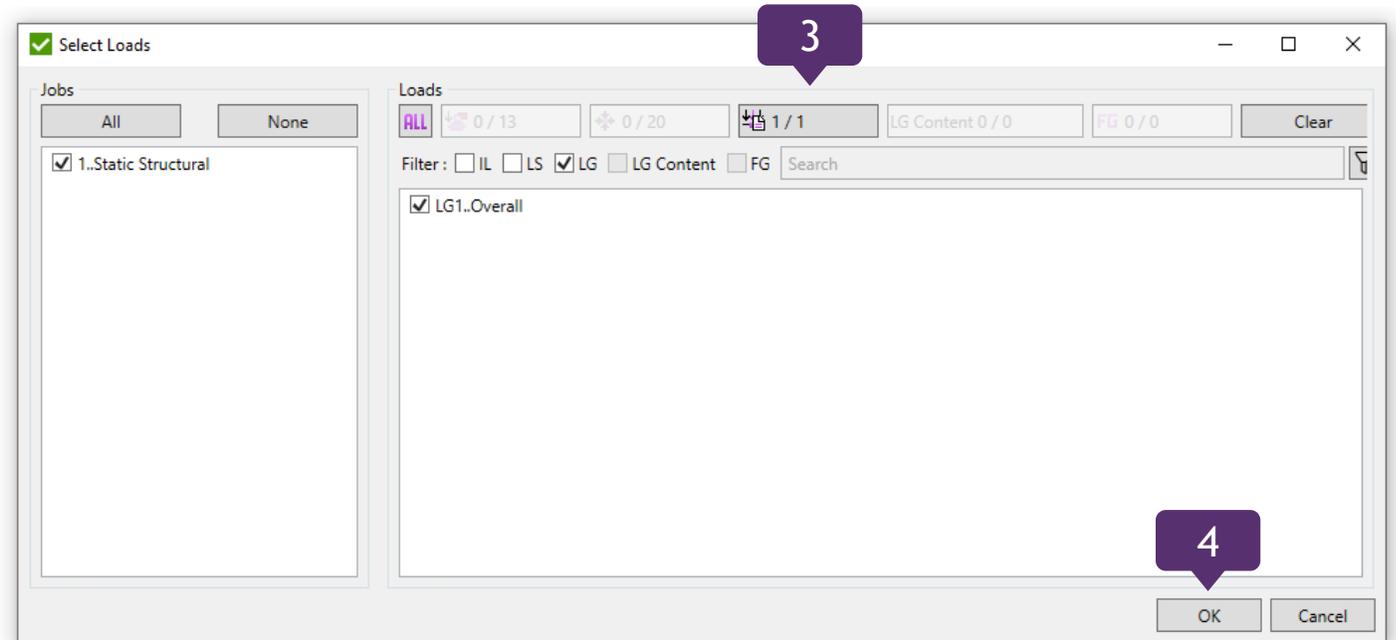
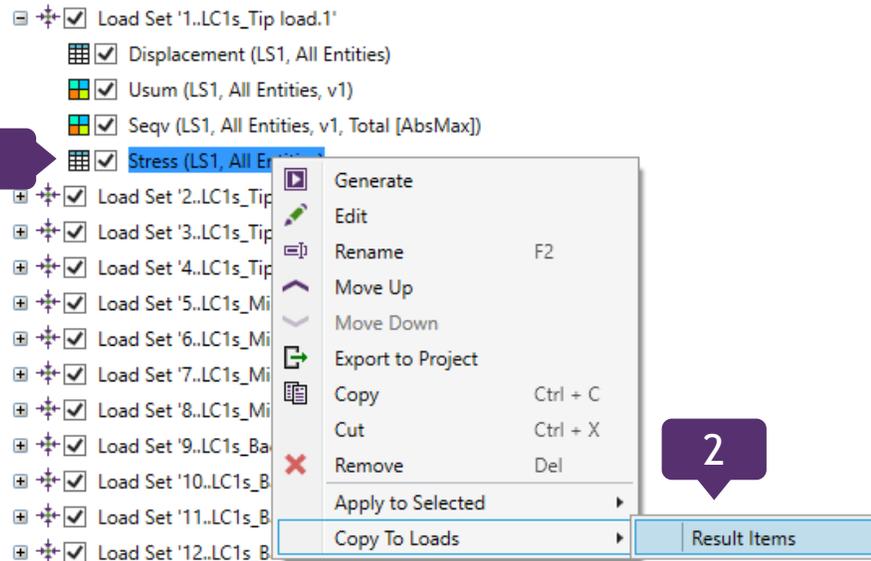
Copy Table to Load Group

1 Execute *Stress Table* under Load Set

2 Select *Result Items* from context menu

3 Table Type: *Load Group*

4 Press *OK*

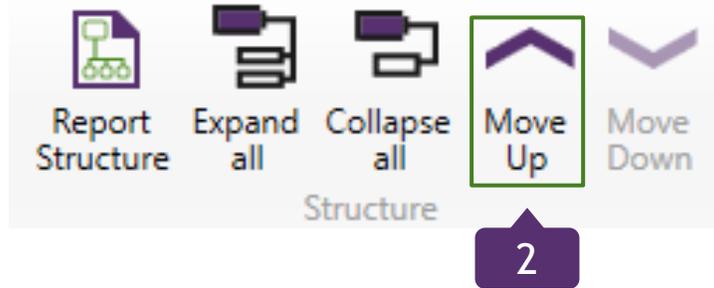


Move item in the structure

1 Select *Stress (LG1, All Entities)*

2 Press *Move Up* item

Move up and move down is possible using Ctrl + Up and Ctrl + Down



Add plots for Load Group

1

Execute *Stress Table* under Load Set tree

2

Select *Copy*

3

Execute *Load Set*

4

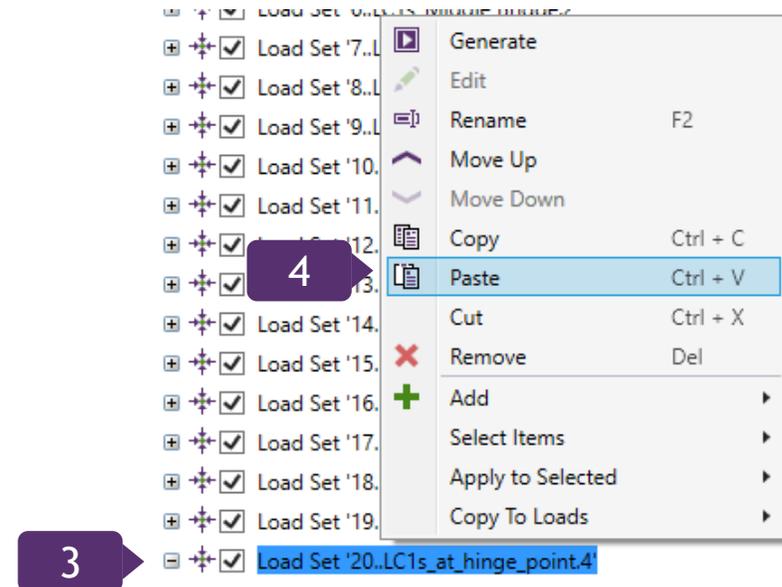
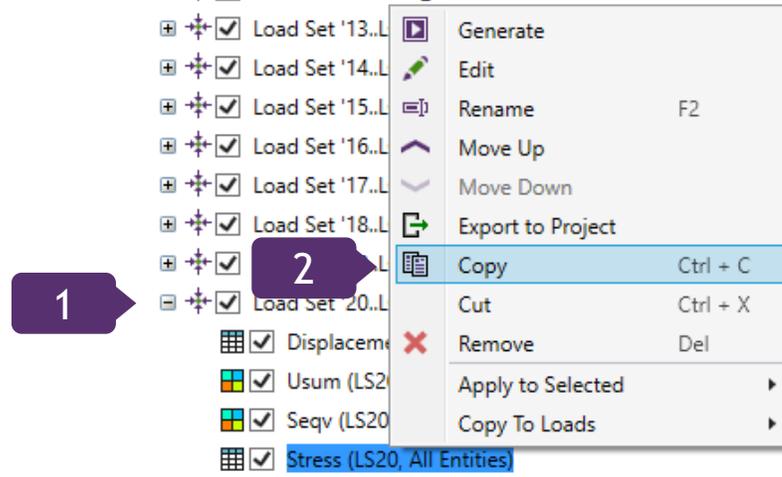
In context menu select *Paste*

5

For first Stress Table set View *1..Default View* in Property Grid

6

For second Stress Table set View *2..Isometric with filled edges*



5

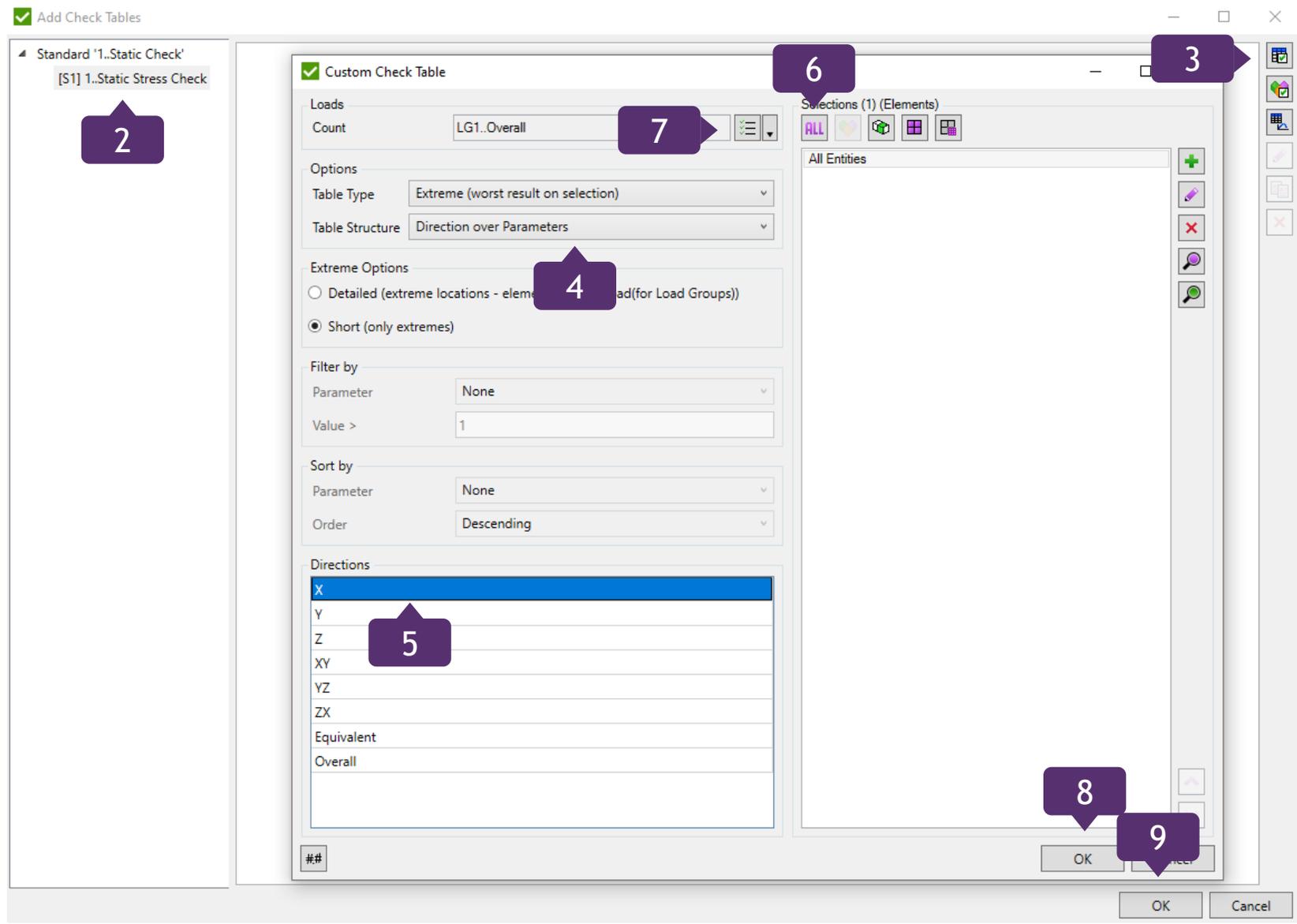
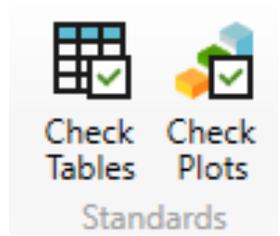
Behavior	
Break Page Before	Yes
Enabled	Yes
Data	
Job	1..Static Structural
Last Time Generate	
Load	LS19..LC1s_at_hinge_point.3
Title (Default)	Stress (LS19, All Entities)
Title (User)	
Options	
Category	Stress
Extreme Table Style	Short
Selection	All Entities
Type	Extreme (worst result on sele
Selection location plot	
Insert plot	Yes
View	1..Default View

6

Behavior	
Break Page Before	Yes
Enabled	Yes
Data	
Job	1..Static Structural
Last Time Generate	
Load	LS19..LC1s_at_hinge_point.3
Title (Default)	Stress (LS19, All Entities)
Title (User)	
Options	
Category	Stress
Extreme Table Style	Short
Selection	All Entities
Type	Extreme (worst result on sele
Selection location plot	
Insert plot	Yes
View	2..Isometric with filled edges

Add table for Static Stress Check

- 1 Select **Check Tables** from Toolbar
- 2 Select **Static Stress Check**
- 3 Select 
- 4 Select **Direction over Parameters**
- 5 Direction: **X**
- 6 Press **ALL** to add full model selection
- 7 Select all **Load Groups**
- 8 Press **OK**
- 9 Press **OK**



The screenshot shows the 'Add Check Tables' dialog box. The 'Standard '1..Static Check'' section is expanded to show '[S1] 1..Static Stress Check'. The 'Custom Check Table' section is active, with the following settings: Loads: Count (LG1..Overall), Options: Table Type (Extreme (worst result on selection)), Table Structure (Direction over Parameters), Extreme Options: Short (only extremes) selected, Filter by: Parameter (None), Value (> 1), Sort by: Parameter (None), Order (Descending), Directions: X selected. The 'Selections (1) (Elements)' section shows 'All Entities' selected. The 'OK' button is highlighted.

Add Plot for Static Stress Check

1

Select **Check Plots** from Toolbar

2

Select **Static Stress Check**

3

Press **Check Plots** 

4

Select Views with IDs 1-2

5

Press **ALL** to add full model selection

6

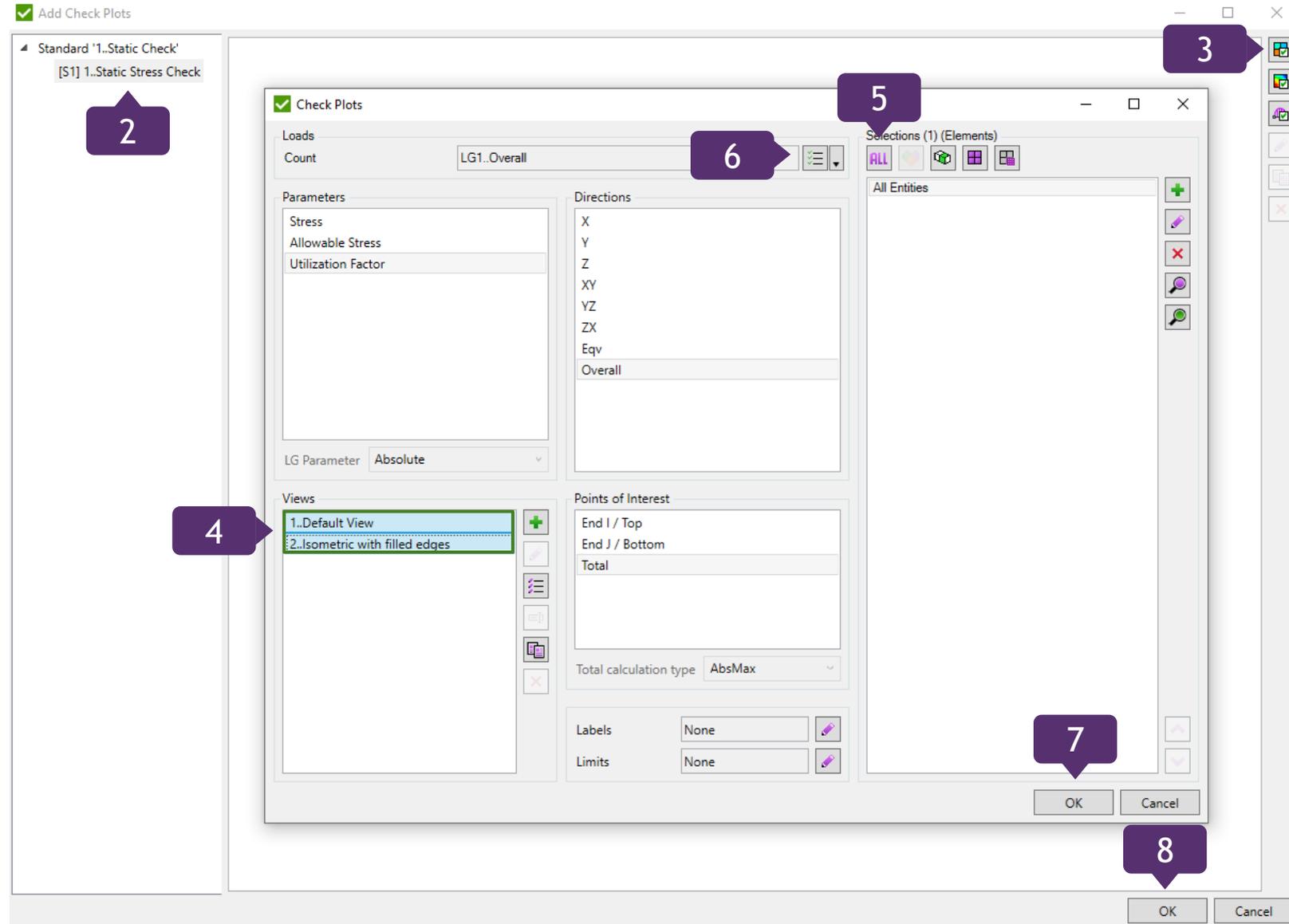
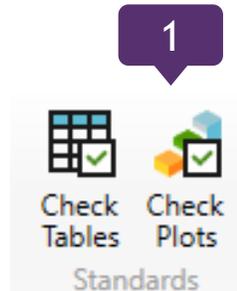
Select all **Load Groups**

7

Press **OK**

8

Press **OK**



Generate Static Stress Check results

1

Execute **Overall Utilization Factor (LG1, All Entities, v1, Total)**

2

Set **No**

3

Select **Static Stress Check**

4

Execute **Generate** from context menu

2

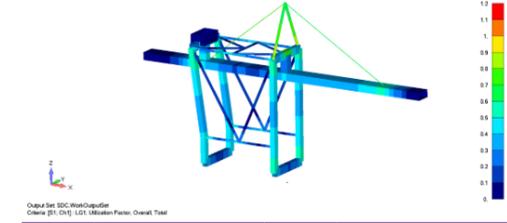
Behavior	
Break Page Before	No
Enabled	Yes
Data	
Check	1..Static Stress Check
Last Time Generated	
Load	LG1..Overall
Standard	1..Static Check
Title (Default)	Utilization Factor (LG1, All
Title (User)	
Options	

1..Static stress check

Unit System
Current Unit System = MKS (Meter/Kg/Second). It is used in calculations for the following standards: API RP 2A, ISO 19902, Norsok N004, DIN 15018, FEM 1.001 and Eurocode3.

X (LG1, All Entities)			
Standard	1..Static stress check	Check Selection	[S1] 1..Static Stress Check All Entities
Load Group	LG1..Overall		
Extreme	Allowable Static Stress		Utilization Factor
Minimum	20696544.00		0.00
Maximum	20696544.00		0.85
Absolute	20696544.00		0.85

Overall Utilization Factor (LG1, All Entities, v1, Total)



Check	[S1] 1..Static Stress Check	Point	
Load Group	LG1..Overall	Parameter	
Selection	All Entities	View	

3

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1..Static Check	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Utilization Factor (LG1, All Entities)	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Overall Utilization Factor (LG1, All Entities, v1, Total)	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Overall Utilization Factor (LG1, All Entities, v1, Total)	

Generate

Edit

Rename F2

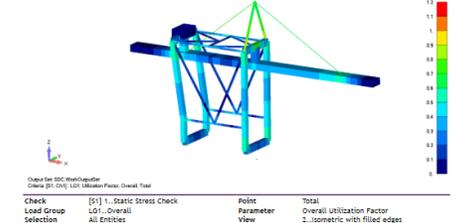
1

Utilization Factor (LG1, All Entities)

Overall Utilization Factor (LG1, All Entities, v1, Total)

Overall Utilization Factor (LG1, All Entities, v1, Total)

Overall Utilization Factor (LG1, All Entities, v2, Total)



Check	[S1] 1..Static Stress Check	Point	Total
Load Group	LG1..Overall	Parameter	Overall Utilization Factor
Selection	All Entities	View	2..Isometric with filled edges

Add Governing Loads

1

Select **Post - Processing - Governing Loads - Add GLT**

2

Select **Load Group 1.Overall**

3

Limits Criteria **100% of abs elements**

4

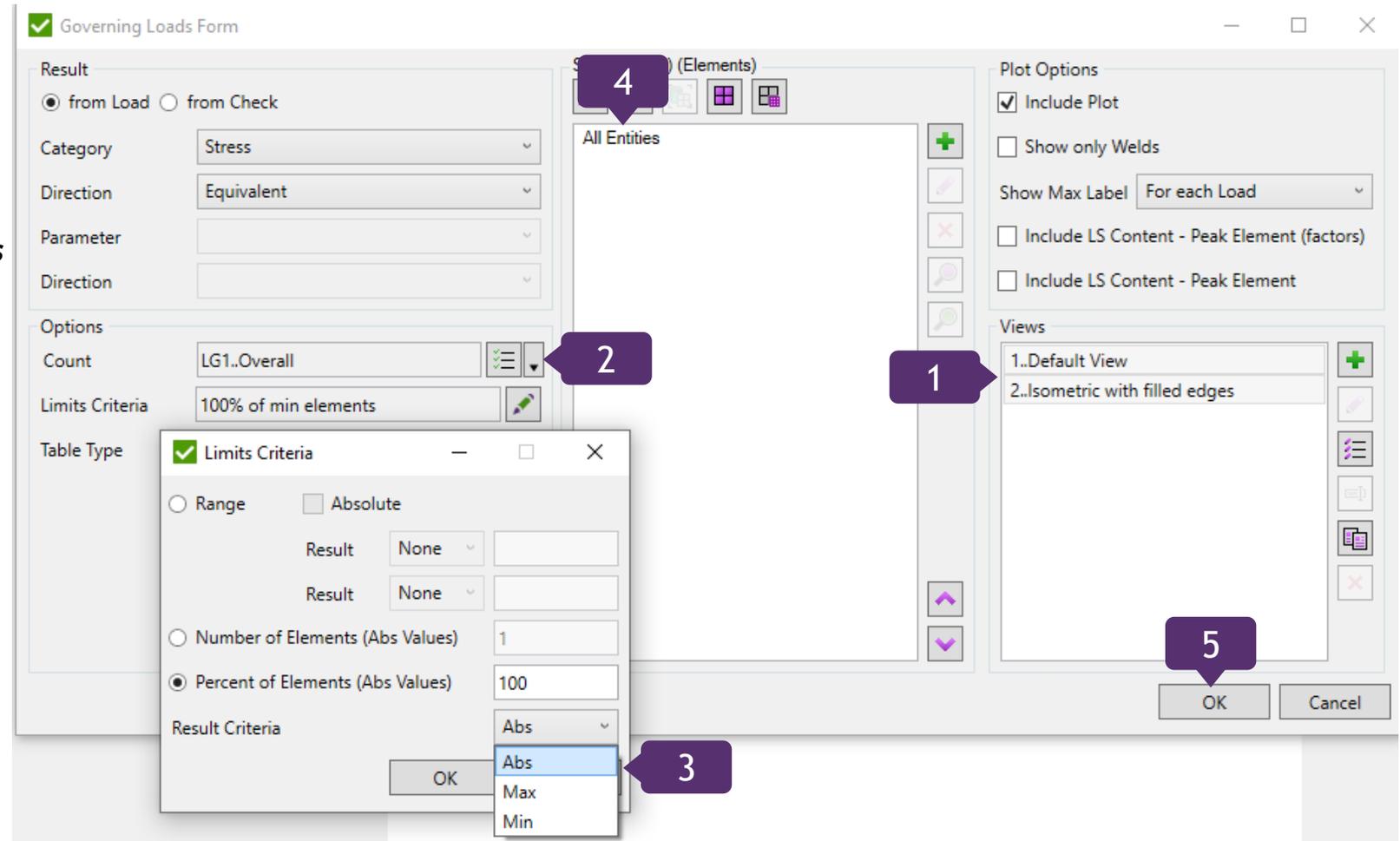
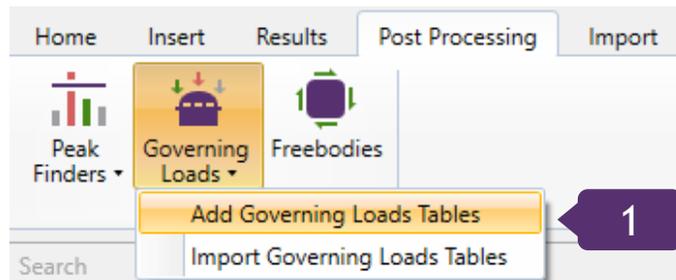
Press **ALL** to add full model selection

5

Select Views with IDs 1-2

6

Press **OK**



1

Select **Governing Loads (Seqv (LG1; All Entities))**

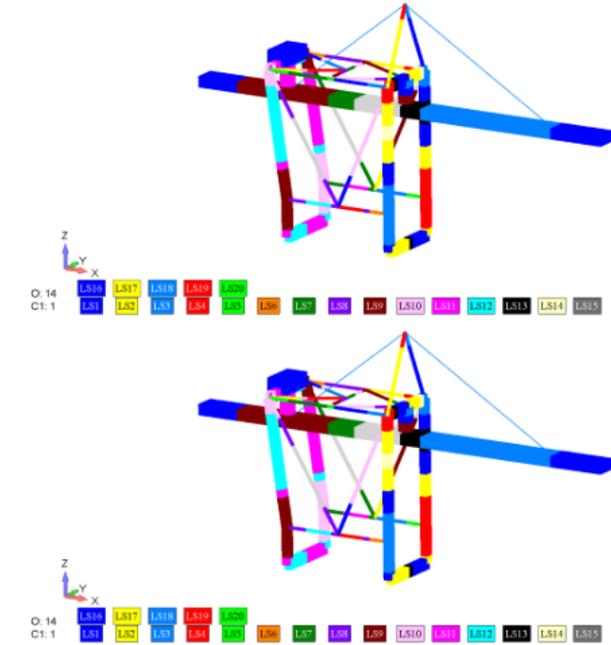
2

Execute **Generate** from context menu

- Load Groups
 - Load Group "1..Overall"
 - Displacement (LG1, All Entities)
 - Abs Usum (LG1, All Entities, v1)
 - Abs Seqv (LG1, All Entities, v1, Total [AbsMax])
 - Stress (LG1, All Entities)
 - Displacement (LG1, All Entities)
 - Seqv (LG1; All Entities)
- Summary

Generate

Seqv (LG1; All Entities)					
Category	Stress	Direction	Equivalent		
Criteria	100% of abs elements				
Selection	Elements Count	Abs Entity Id	Abs Value	Load	
All Entities	421 / 421	131	176.40e+6	LS1..LC15_Tip load.1	



2

1

1

Select **Insert** on the Toolbar and click on **Text** item

2

Select **Text** in model tree

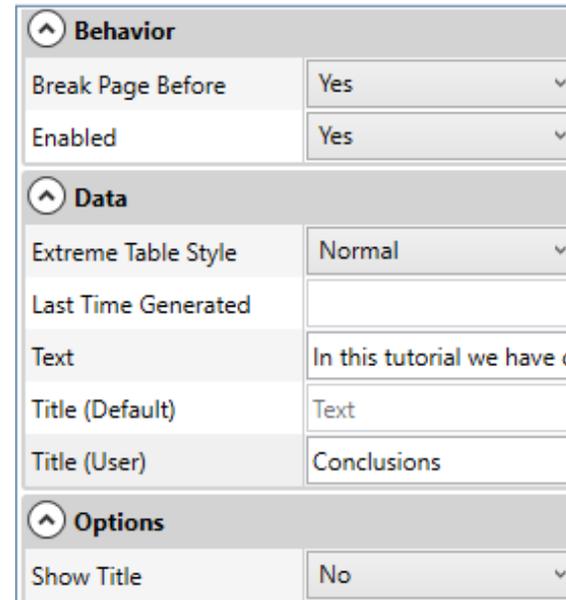
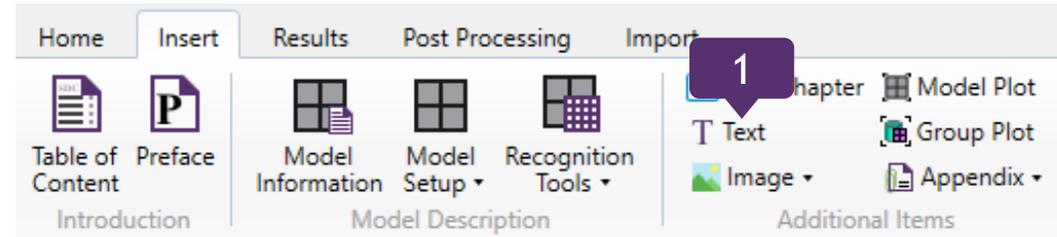
3

In display properties set the Title: **Conclusion**

4

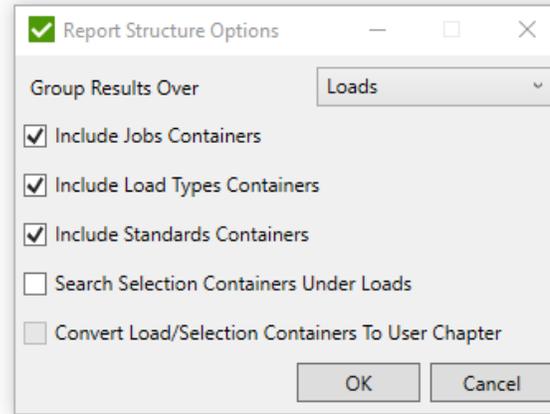
Text: *In this tutorial we have created 2 reports using Report Designer*

- Load Group '1..Overall'
 - Displacement (LG1, All Entities)
 - Abs Usum (LG1, All Entities, v1)
 - Abs Seqv (LG1, All Entities, v1, Total [AbsMax])
 - Stress (LG1, All Entities)
 - Displacement (LG1, All Entities)
 - Seqv (LG1; All Entities)
 - Conclusions** ← 2

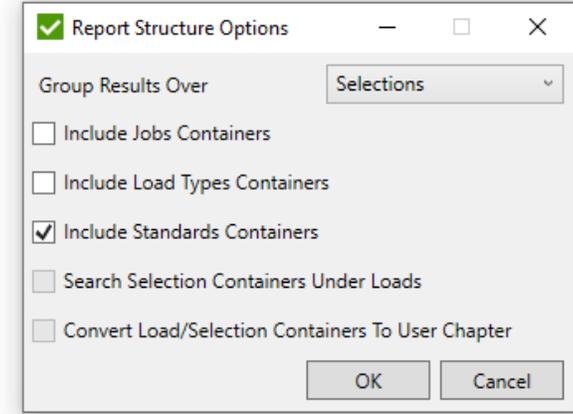
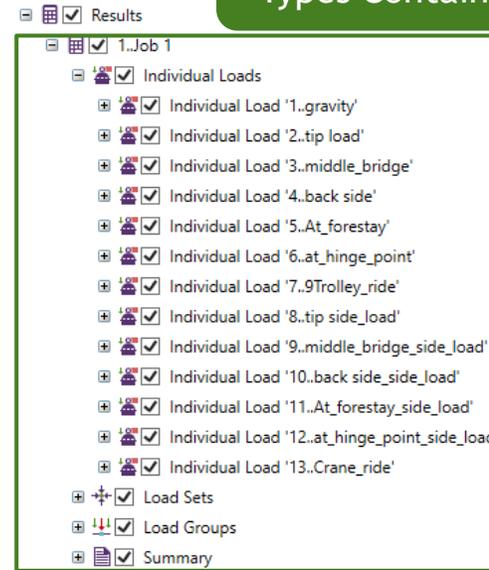


When Table/Plot is edited and load/selection is changed, the item is moved under correspondent Load/Selection automatically. Moreover, when the item is dropped under Load/Selection its load/selection is updated as well.

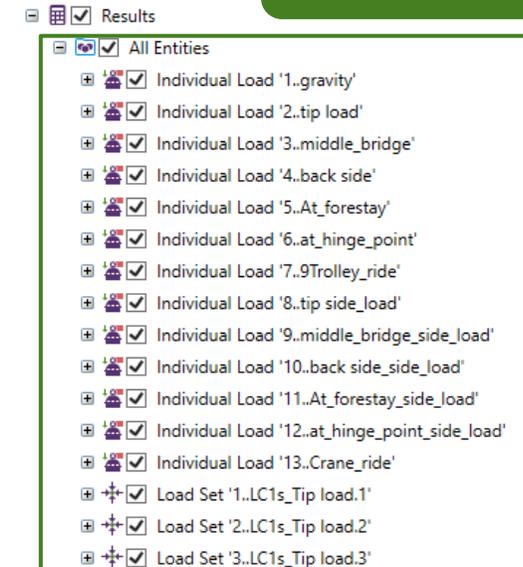
Tables/Plots with multiple loads of the same Job are placed under JobSummary Chapter (for loads from different Jobs in Summary under Results chapter):



Include Load Types Containers



Include Job Containers



Import from word document

1

Select **Import** on the Toolbar and click on **Word Document**

2

Select **Import document** in report structure

3

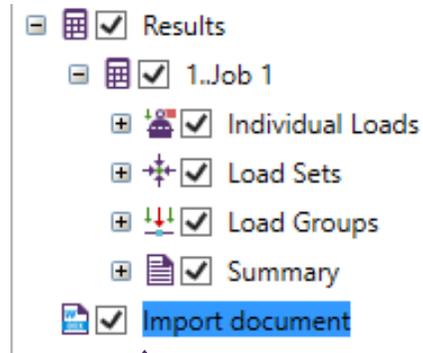
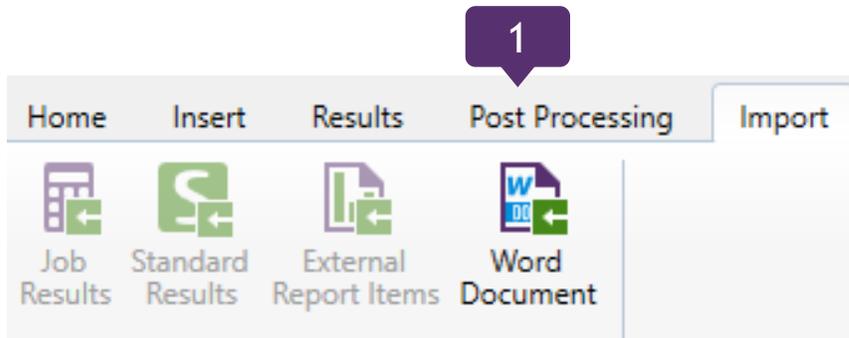
In display properties set the file path

4

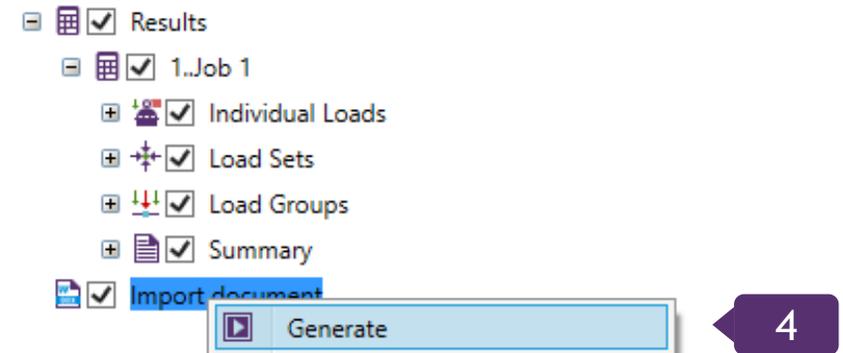
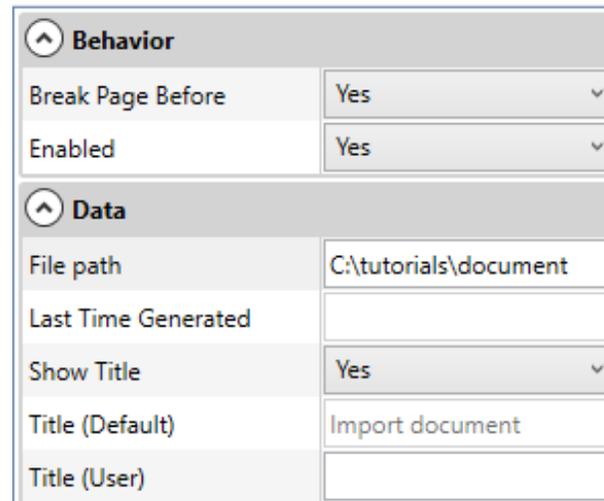
Press **Generate**

5

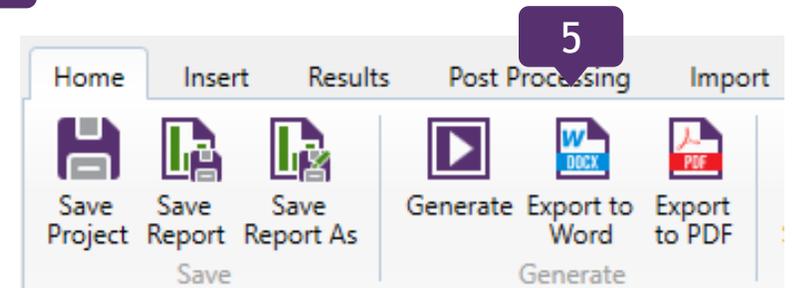
Your word file will be displayed after report is exported to word or PDF



2



4



5

Generated report

1 Select **First Page** and press **Edit**

2 Select **Default View** and press **Ok**

3 Press to generate report to generate entire report

4 After generation is finished press to export generated report to Word

