



Tutorial

Report Designer

Updated on: 8 June 2023

Tested with: SDC Verifier 2023 R1

Femap version 2022.1

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.

Open Project

1

Launch SDC Verifier

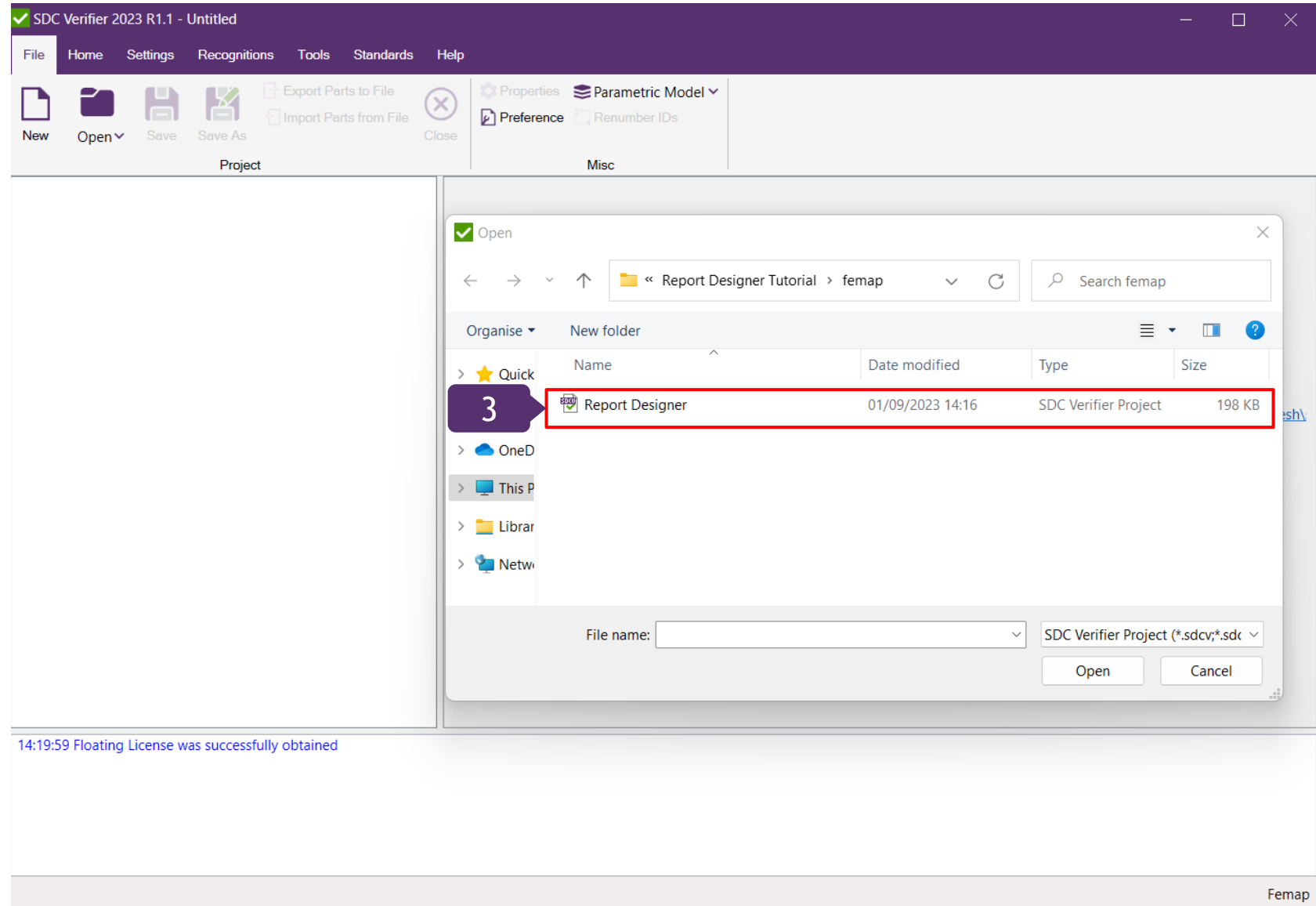


2

Execute **File - Open Project**

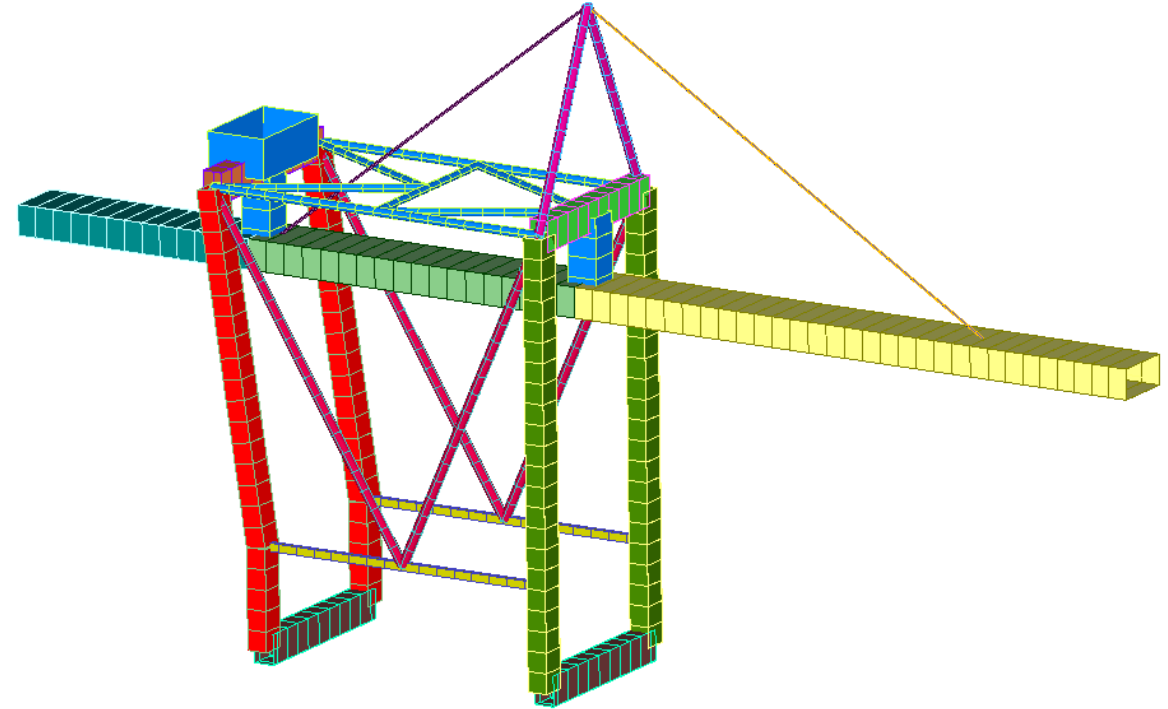
3

Project: **Report Designer.sdcv**




- ▶ 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)

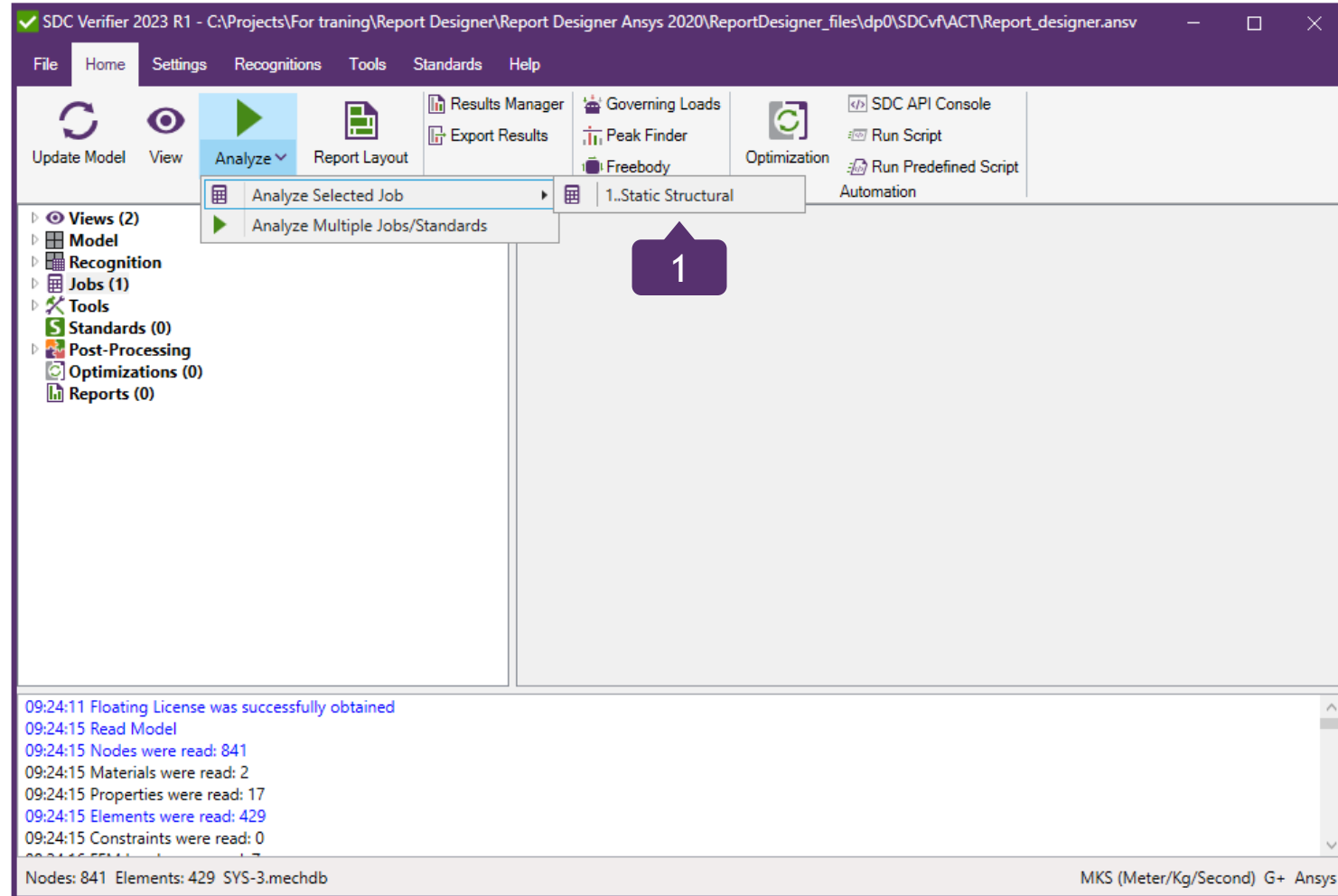
V: 2
L: 26
C: 4




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..Static Structural**

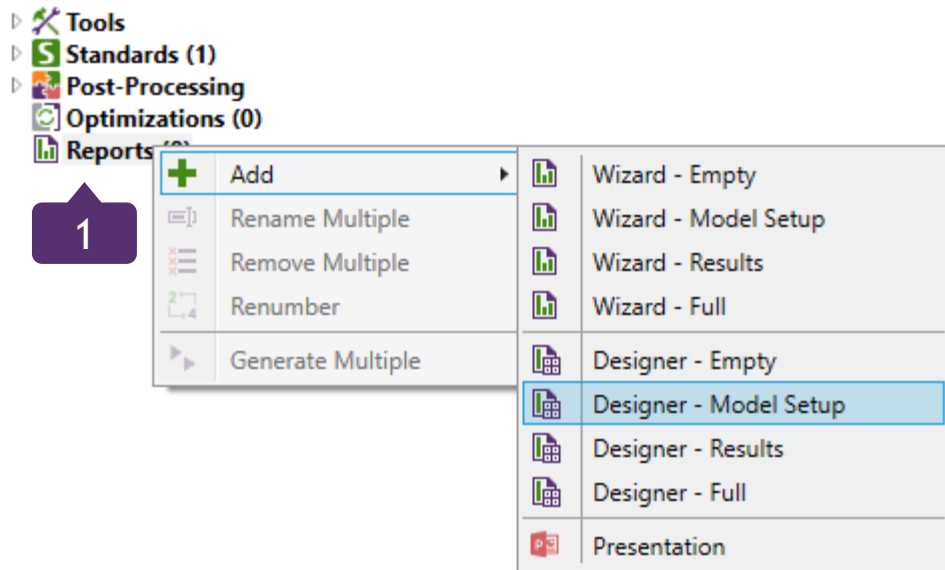


1

Press right mouse button  Reports (0)

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

The screenshot displays the SDC Verifier Report Designer interface. At the top, a toolbar contains various icons for file operations (Save Project, Save Report, Save Report As), generation (Generate, Export to Word, Export to PDF), settings (Report Settings, Unit System, Legend Settings, Number Format, Plot Window Size), structure manipulation (Report Structure, Expand all, Collapse all, Move Up, Move Down), layout (Report Layout, Page Display), and views (Views, Components). Below the toolbar is a search bar and a 'Show Parents' button. The main area is divided into three panes. The left pane, titled 'Report Structure', shows a tree view of the report contents, including 'First Page', 'Table of Content', 'Preface', 'Model Information', 'FEM Model Description', 'Materials', 'Properties', and 'Properties Summary'. The 'Properties Summary' is expanded, showing a list of 18 items, including '1..portside legs', '2..sea side legs', '3..stiffening beam', '4..cross members', '5..chassis beam', '6..gantry members PS', '7..gantry members SS', '8..top part', '9..main beam', '10..between legs', '11..sea side', '12..forestay', '13..backstay', '14..Top stiffness member portal', '15..Top diagonal members', '16..Bridge_support_SS', '17..Bridge support beam PS', and '18..machine house'. The right pane displays the properties of the selected item, '18..machine house'. The properties are organized into sections: 'Behavior' (Break Page Before: No, Enabled: Yes), 'Data' (Last Time Generate, Properties: 18 selected..., Selection: All Entities, Show Gravity Cent: Yes, Skip Properties wit: No, Title (Default): Properties Summary, Title (User): Properties Summary), and 'Break Page Before' (Start item from new page). The bottom status bar shows 'Selected: 1/63' and a page indicator '9 of 57'.

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

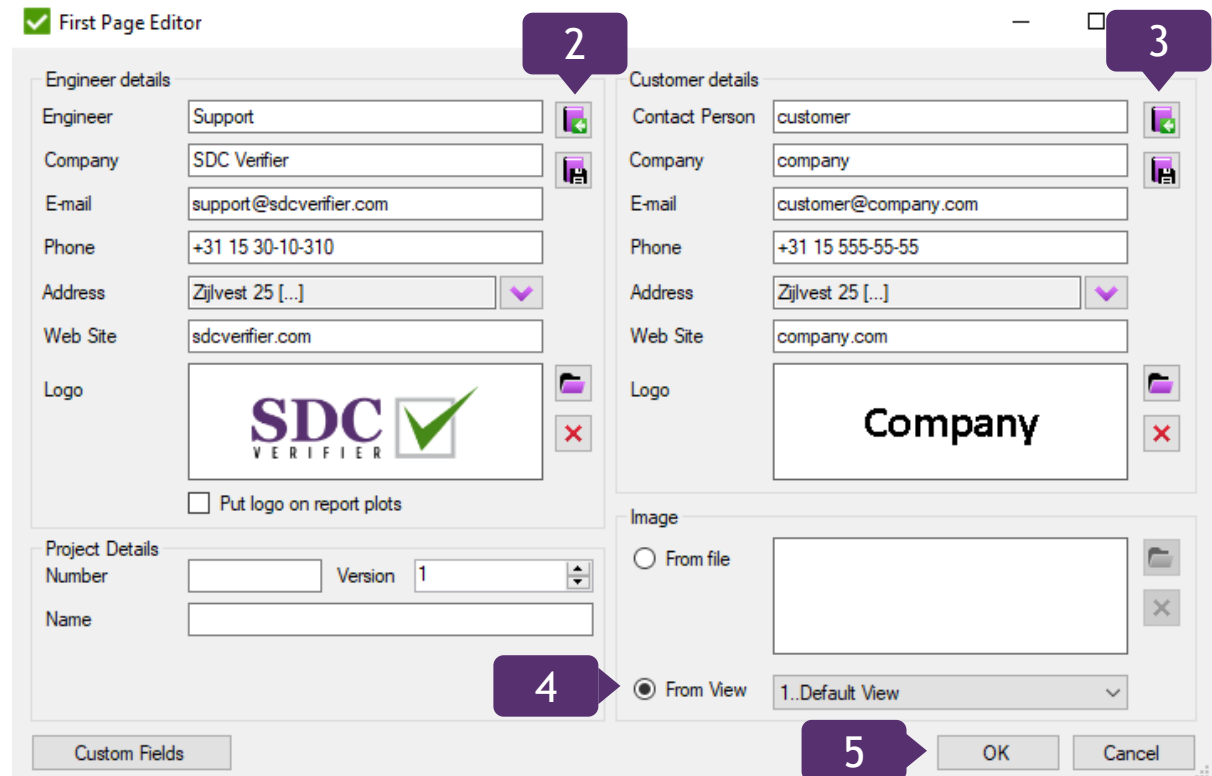
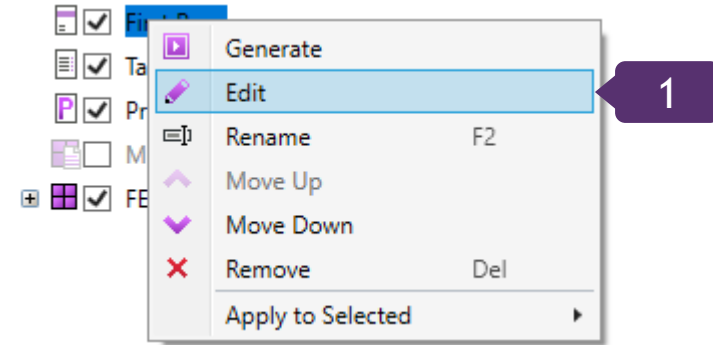
4

Image - From View: **Selected**

5

Press **OK**.

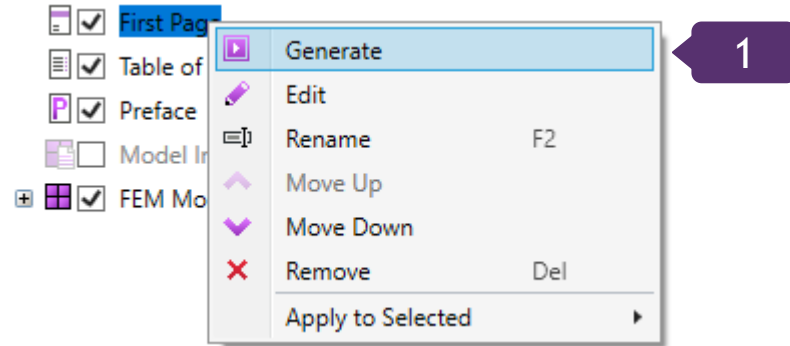
For an engineer and customer the default data from the library is used. It is possible to fill in your data and store it to the library  and reuse it in future projects.



A screenshot of the 'First Page Editor' dialog box. The dialog is divided into 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 options 'From file' and 'From View' (selected, showing '1..Default View'). At the bottom are 'Custom Fields', 'OK', and 'Cancel' buttons. Numbered callouts are present: '2' points to the Engineer details section, '3' points to the Customer details section, '4' points to the 'From View' radio button, and '5' points to the 'OK' button.

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.

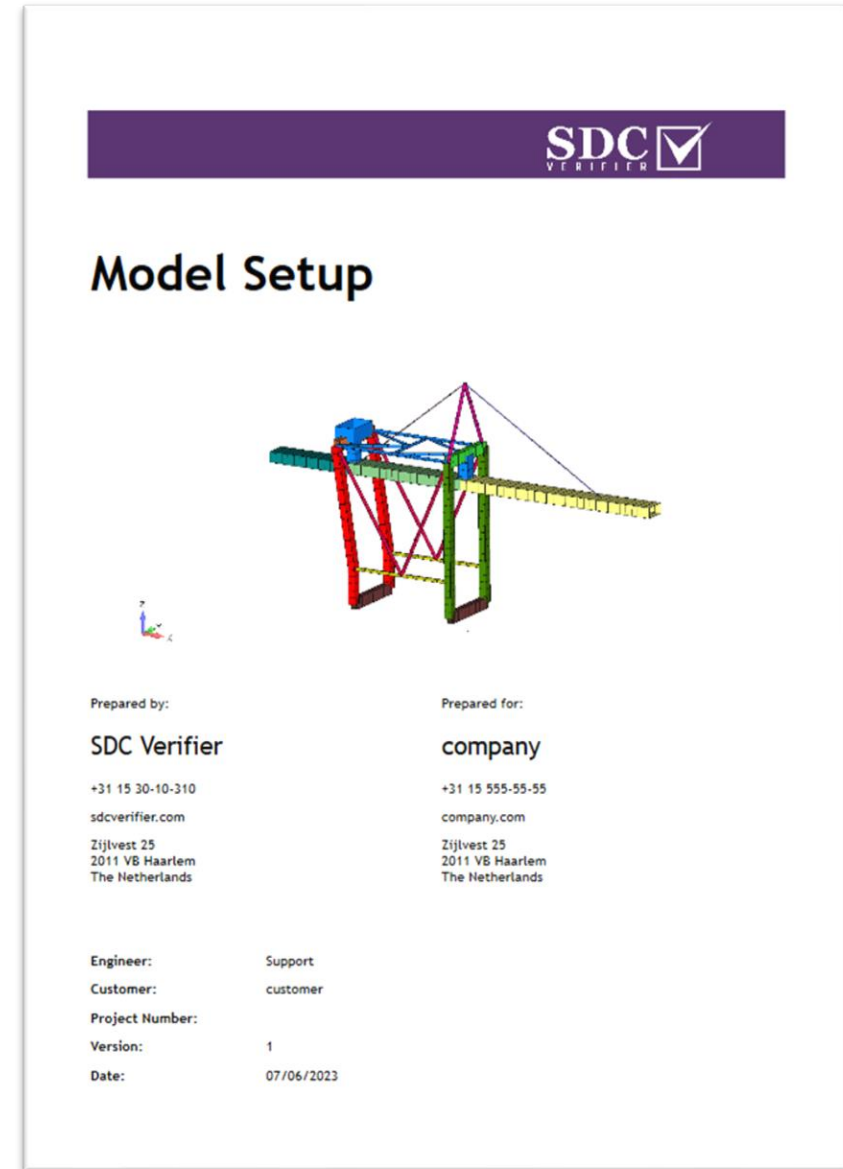
<https://sdcverifier.com>

Prepared by
SDC Verifier



Prepared for
company

Company

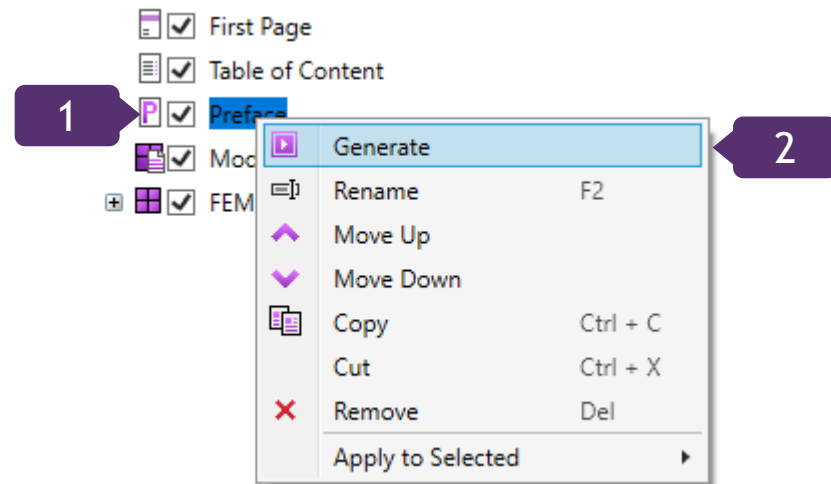


1

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.

Preface

This document is generated with SDC Verifier 2023.1 and calculated with Femap v2022.2
Model File: C:\Users\Engineer\Desktop\Report_Wizard_Tutorial\Crane_Model.modfem
Project File: C:\Users\Engineer\Desktop\Report_Wizard_Tutorial\Report_Wizard_Tutorial.sdcv
Report Profile: 1...Model Setup
Generation on: 6/7/2023 5:11:11 PM

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.

Dimensions	Value
Length	Meter
Mass	Kilogram
Time	Second
Force	Newton
Stress	Pa

For further questions on the program contact us:

tel: +31 15 30 10 310
email: support@sdcverifier.com
Zijlvest 25
2011VB Haarlem
Netherlands

1

Select **Model Information** item in report structure

2

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

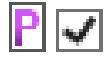
Model Information (with all sub items) are excluded from the report. The Model Information item will not be generated but remains in the report structure. Alternatively, it is possible to delete item from the context menu or using DEL button on keyboard.



☒ First Page



☒ Table of Content



☒ Preface

1



☒ **Model Information**



☒ FEM Model Description

Behavior

Break Page Before **Yes**

2

Enabled **No**

Data

Include Entities Ta **No**

Last Time Generate 06/07/2023 17:38:09

Selection **All Entities**

Title (Default) Model Information

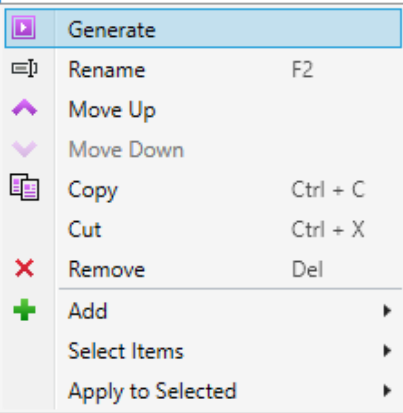
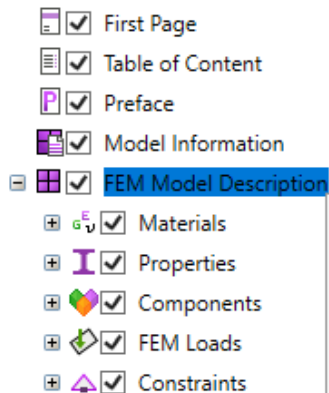
Title (User)

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

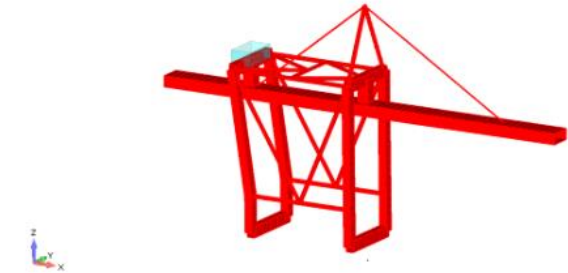
This paragraph contains materials information.

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*

☒ FEM Model Description

☒ Materials

☒ Materials Summary

☒ Material Label Plot (All Entities, v1)

1

☒ 1..Structural steel

☒ 2..Machine_house

▼ Behavior	
Break Page Before	Yes
Enabled	Yes
Include Plot	Yes
Include Selection	No
▼ Data	
Last Time Generate	06/08/2023 10:13:55
Selection	All Entities
Title (Default)	1..steel
Title (User)	1..Structural steel
▼ Plot	
Preview Mode	Display Only Selected
Views	Highlight
	Display Only Selected

2

Preview Mode: *Highlight*



Preview Mode: *Display Only Selected*



Create View

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

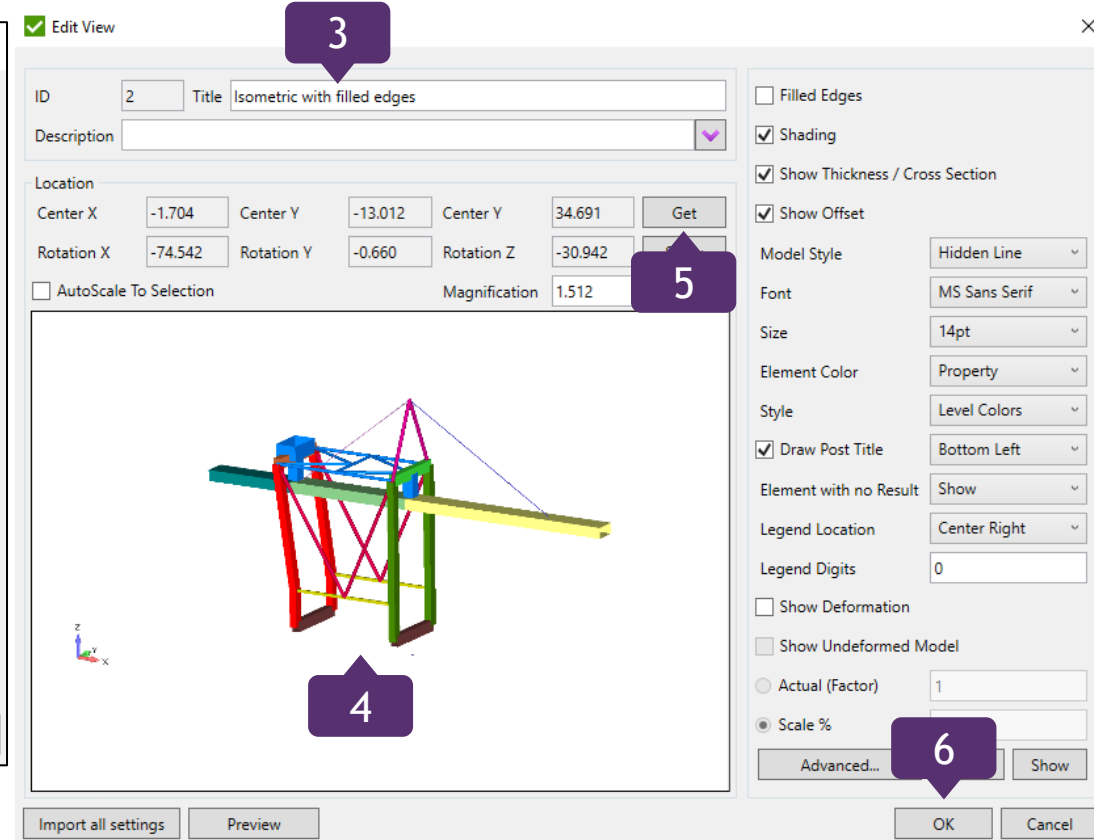
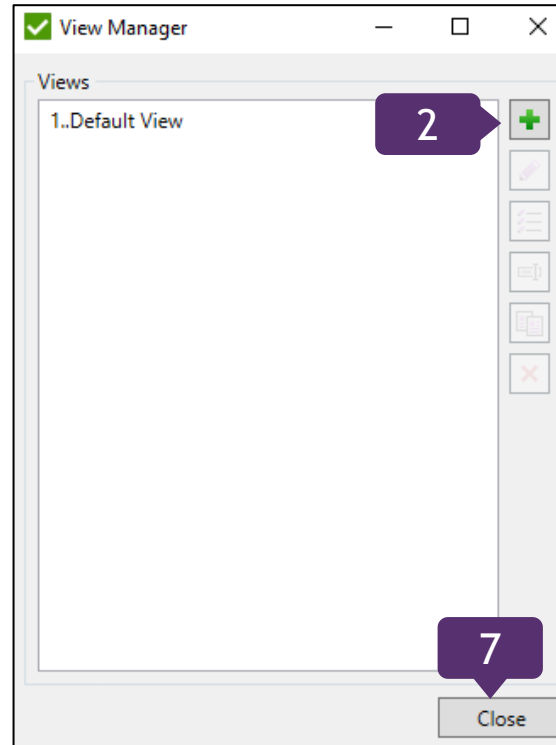
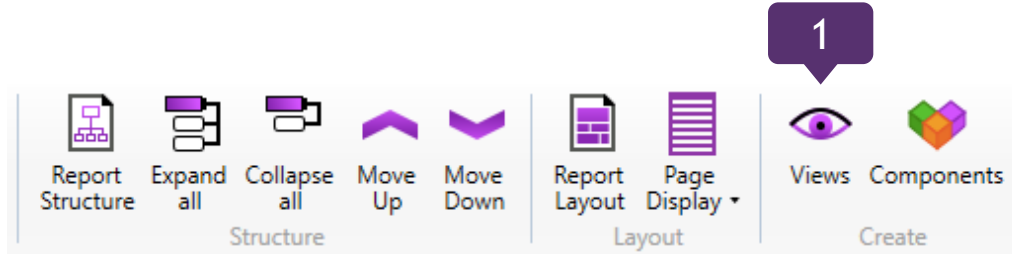
Press **Get**

6

Press **OK**

7

Press **Close**



Apply View to Properties

1

Select **Properties** in report structure

1

2

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

3

Execute **Apply to selected - Views**

4

Select **Isometric with filled edges**

5

Press **Ok**

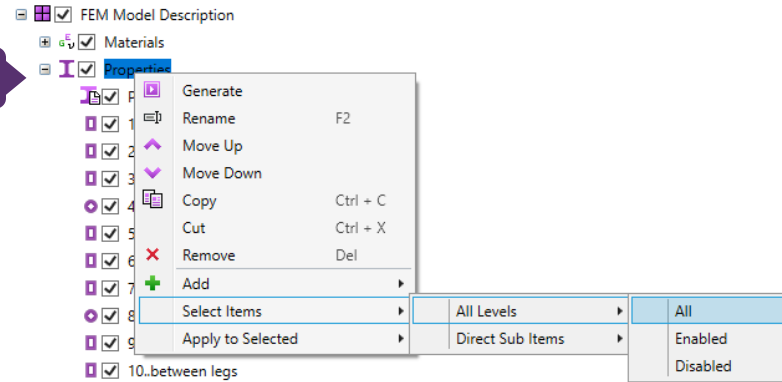
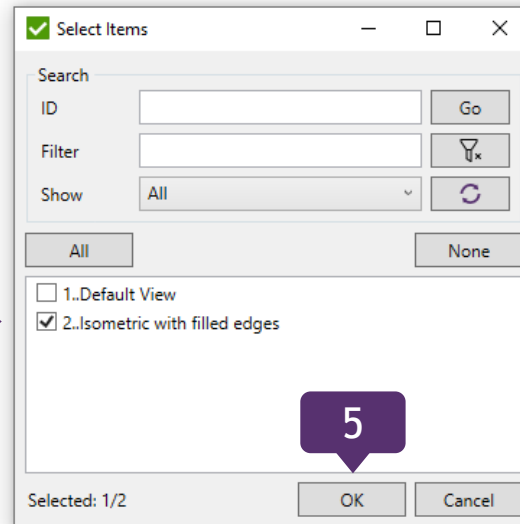
6

Press **Generate**

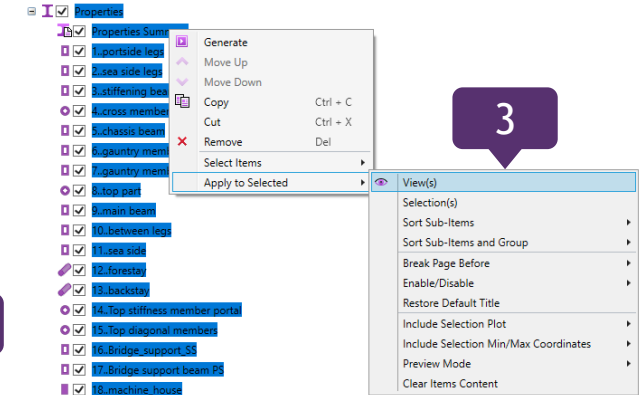
6

4

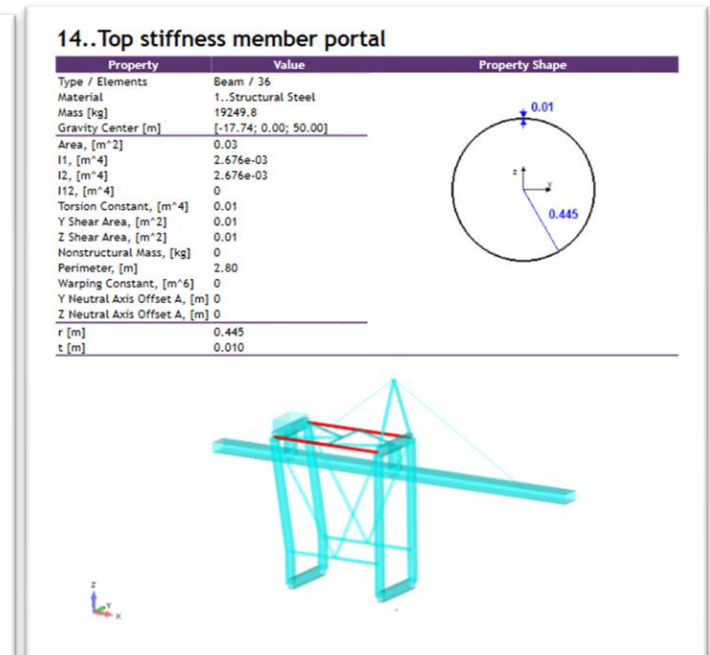
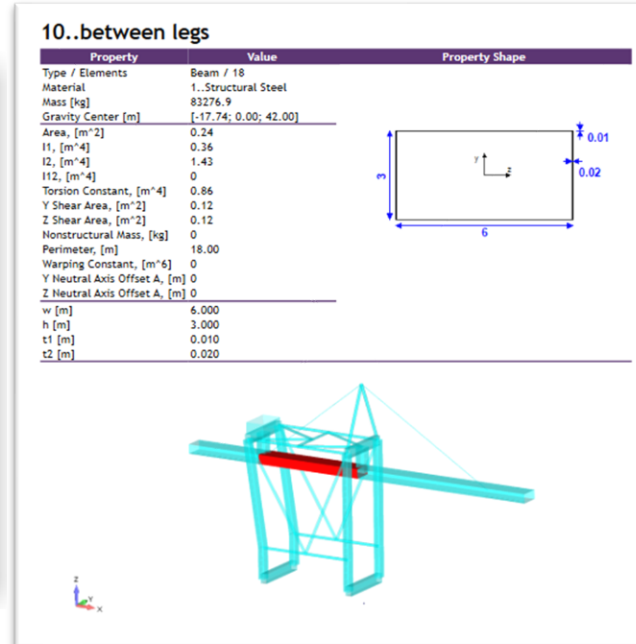
5



2



3

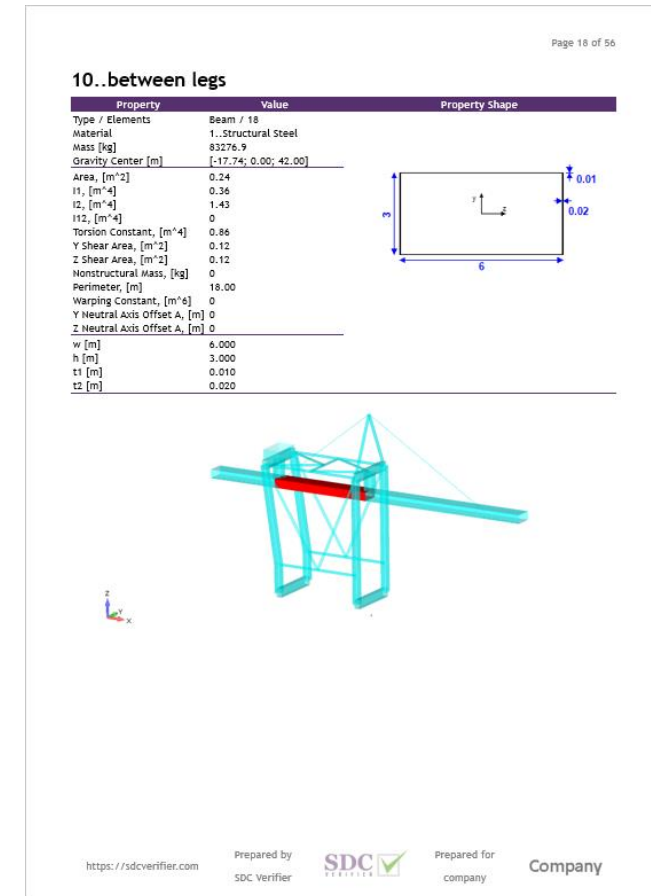
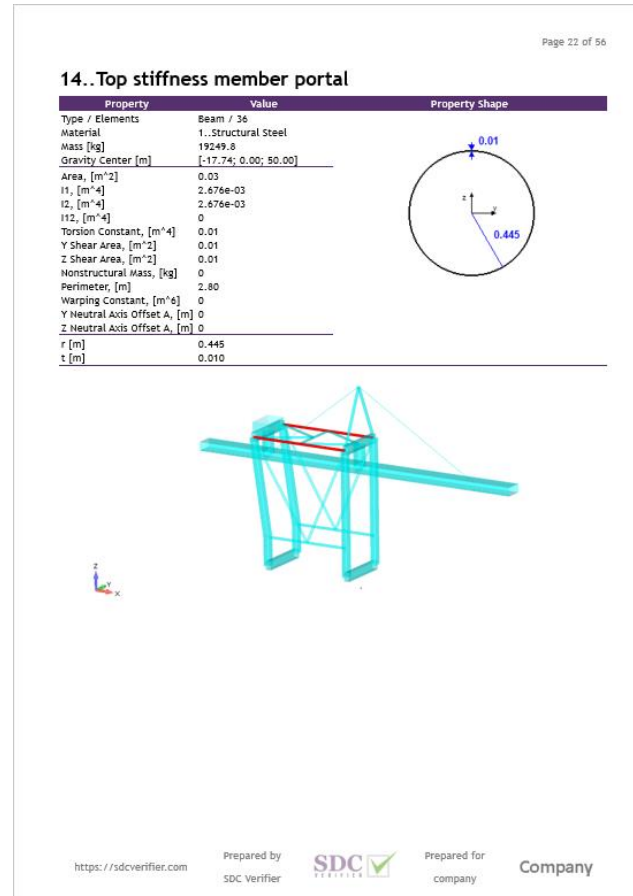
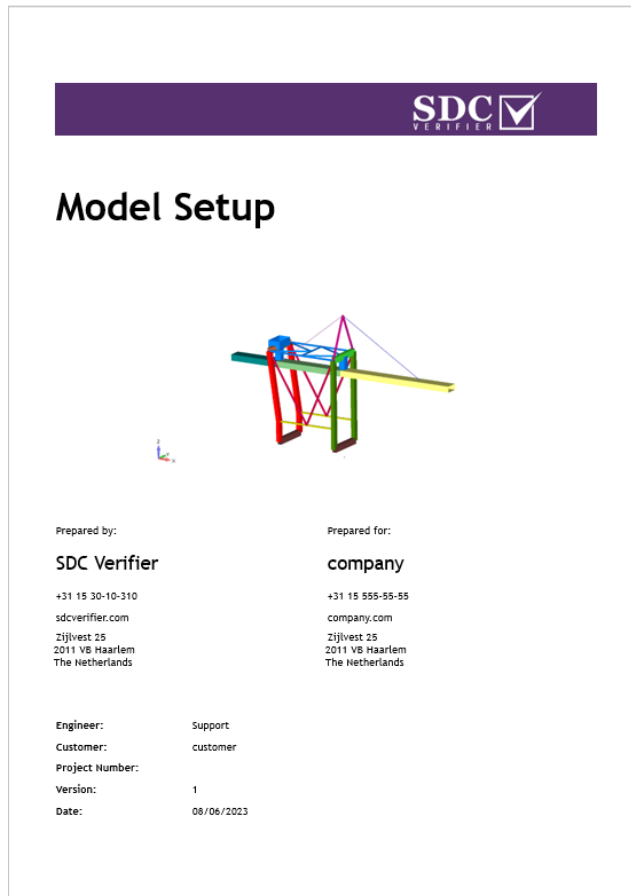
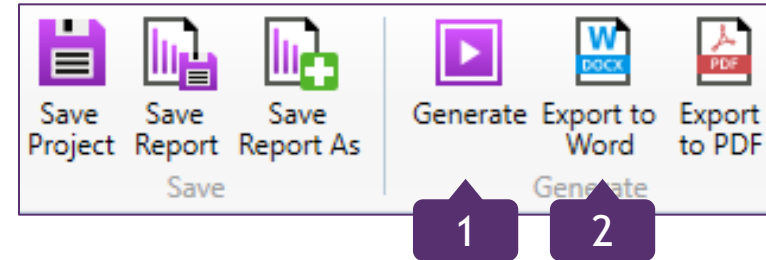


1

Press  to generate report

2

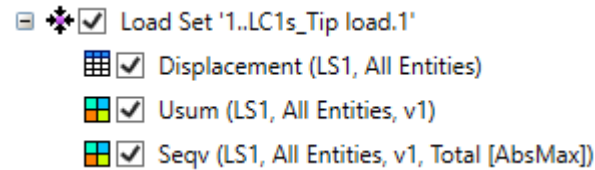
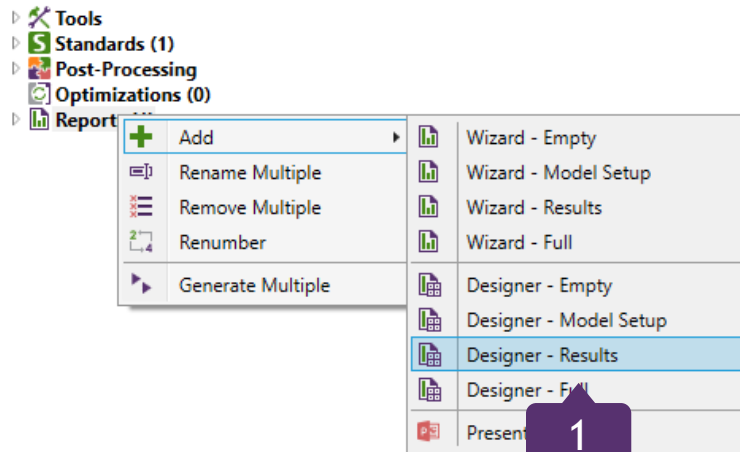
Press  to export report to Word



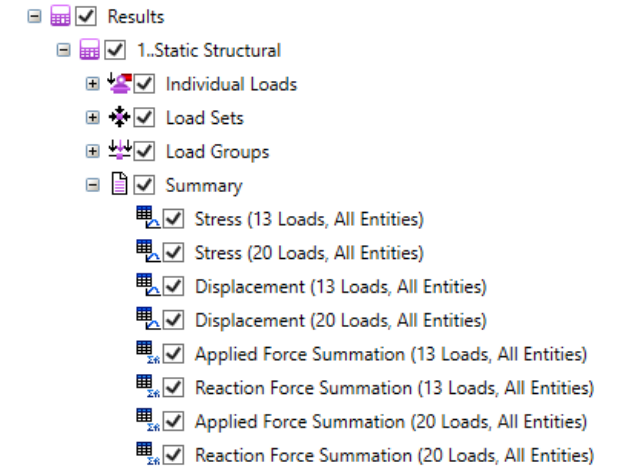
1

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

Result report includes predefined items



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



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

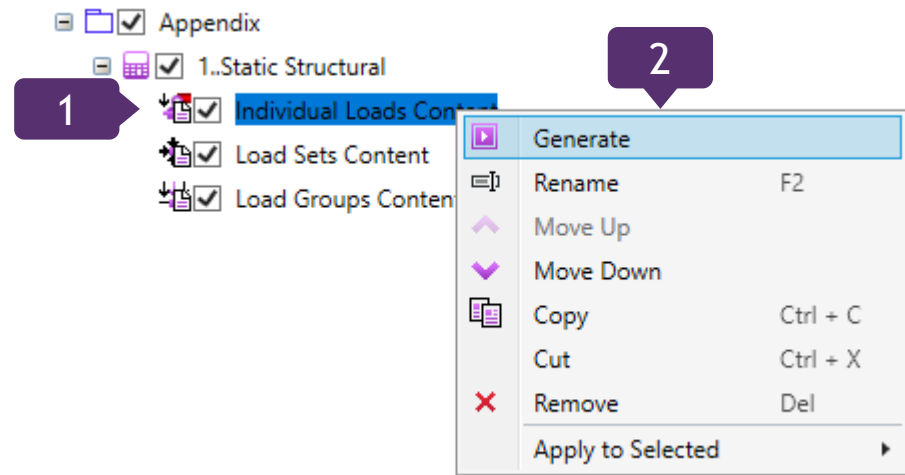
1

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

Load Set Content

1

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

2

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

3

Select **Load Sets** and press 

4

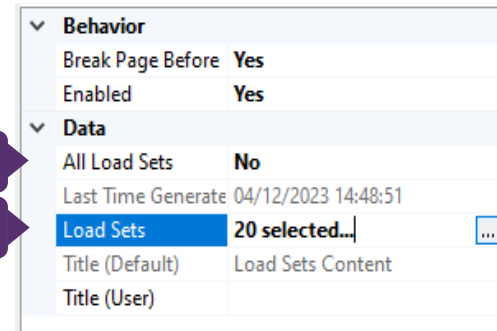
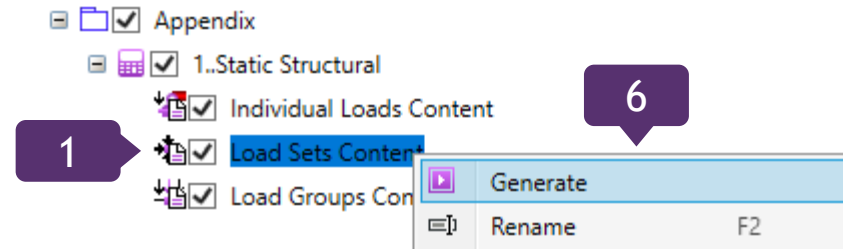
In menu **Select Items** select all load sets what should be displayed and press **All**

5

Press **OK**

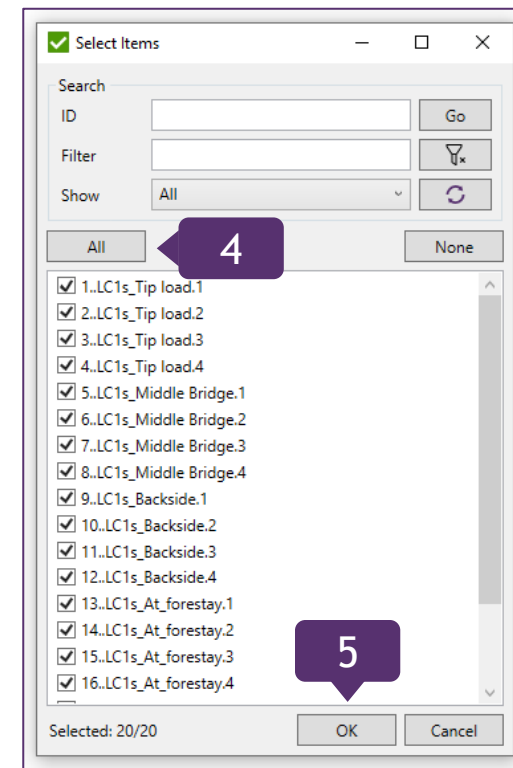
6

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



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]



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

2 Execute **Generate** from context menu

1..Static Structural

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'

Individual Load '6..at_hi'

Individual Load '7..Troll'

2

Generate

Rename

F2

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	Yes
Include Sum Of Forces	Yes
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

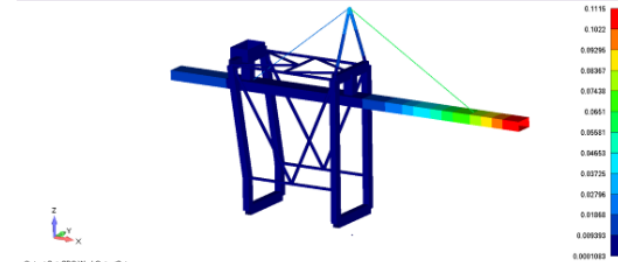
Sum of Reaction Forces

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

Displacement (IL5, All Entities)

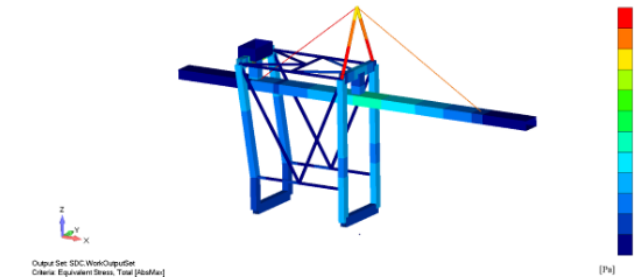
Individual Load Type	5_Ar_forestay Extreme	Selection Category				All Entities Displacement			
	Extreme	Ux [m]	Uy [m]	Uz [m]	Usum [m]	Rx	Ry	Rz	Rsum
Minimum		0.00	0.00	-0.11	0.00	0.00	0.00	0.00	0.00
Maximum		0.03	0.00	0.01	0.11	0.00	0.00	0.00	0.00
Absolute		0.03	0.00	-0.11	0.11	0.00	0.00	0.00	0.00

Usum (IL5, All Entities, v1)



Individual Load Selection Limits	IL5..At_forestay All Entities	Parameter View	Displacement Usum 1..Default View
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Seqv (IL5, All Entities, v1, Total [AbsMax])



Individual Load Selection Point	IL5..At_forestay All Entities Total (AbsMax)	Parameter View Limits	Stress Equivalent 1..Default View 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

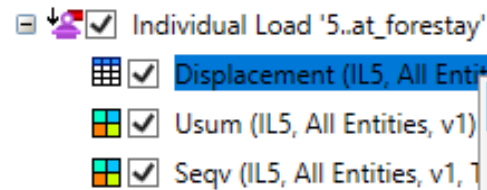
Displacement (IL5, All Entities)

Individual Load Type	5..At_forestay Extreme	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
Maximum		0.03	0.00	0.01	0.11	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

Digits after decimal point = 3

Displacement (IL5, All Entities)

Individual Load Type	5..At_forestay Extreme	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
Maximum	0.030	0.004	0.013	0.114	0.001	0.002	0.000	0.002
Absolute	0.030	0.004	-0.114	0.114	-0.001	0.002	0.000	0.002



Generate

Edit

Number Formats

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

Set as Default

Digits after decimal point

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.

4

Close

1

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

2

Press  to open *Legend Settings*

3

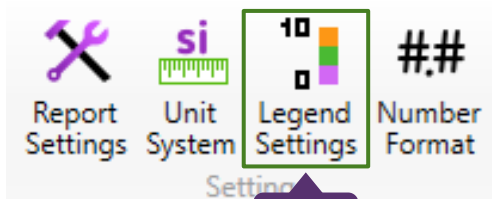
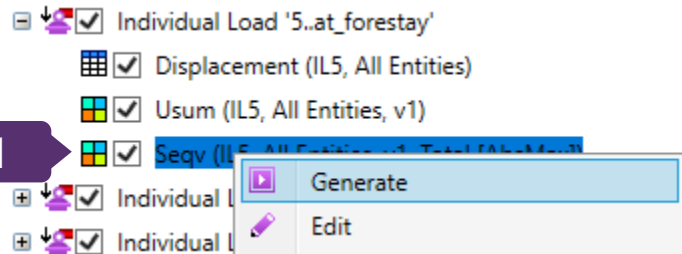
Max: *55000000* for Stress category


4

Press *Close*

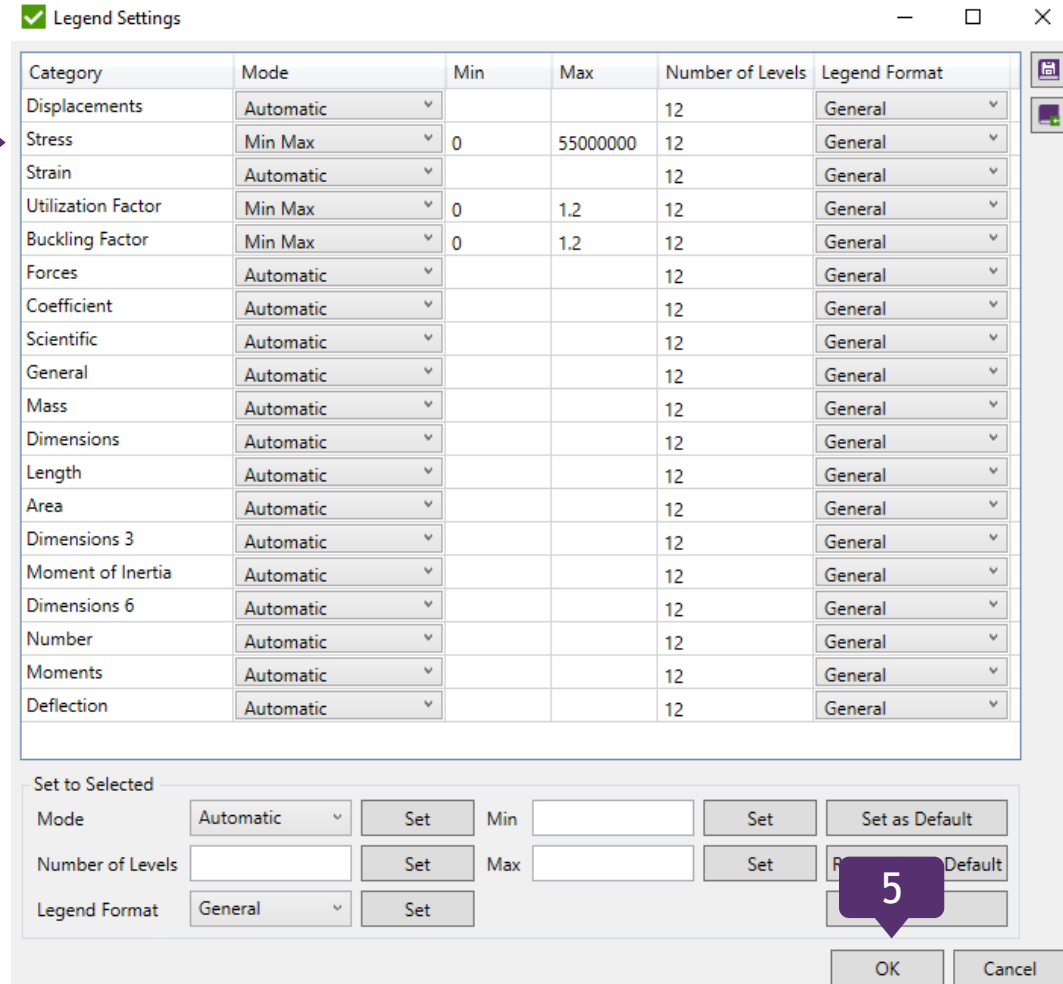
5

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. 

3



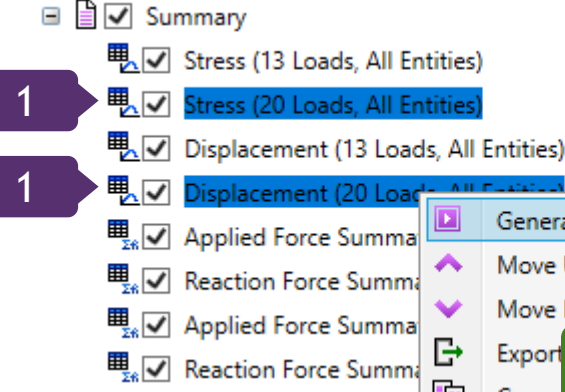
Stress and displacement tables over loads

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						
Load	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								
Load	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

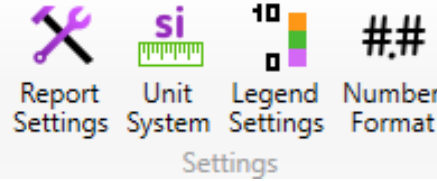
Set next settings for **Force**

5

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

6

Repeat step 1 and press **Generate**

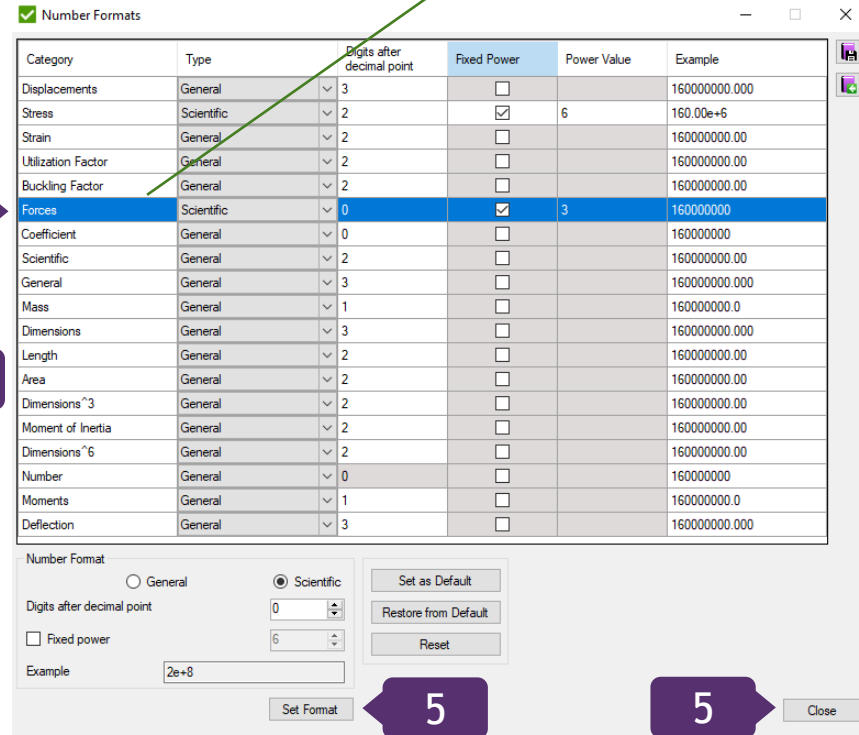


2

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

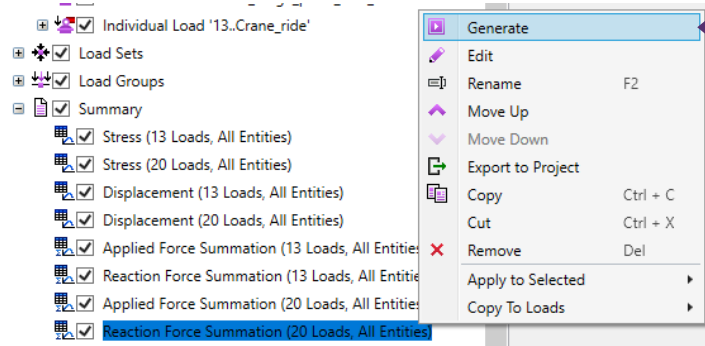
4

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



5

5



1

Reaction Force Summation (20 Loads, All Entities)

Loads Count	20	Category		Reaction Force						
Selection	All Entities	Type	Expand							
Load	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	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	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	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	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	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	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	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	0.0	0.0
LS9...LC1s_Backside.1	-223100.0	-635703.5	24403396.0	24412694.0	0.0	0.0	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	0.0	0.0
LS11...LC1s_Backside.3	223100.0	-635703.5	24403396.0	24412694.0	0.0	0.0	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	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	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	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	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	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	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	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	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	0.0	0.0

Default


Reaction Force Summation (20 Loads, All Entities)

Loads Count	20	Category		Reaction Force						
Selection	All Entities	Type	Expand							
Load	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.0	0.0

Updated

Add Extreme Stress Tables

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

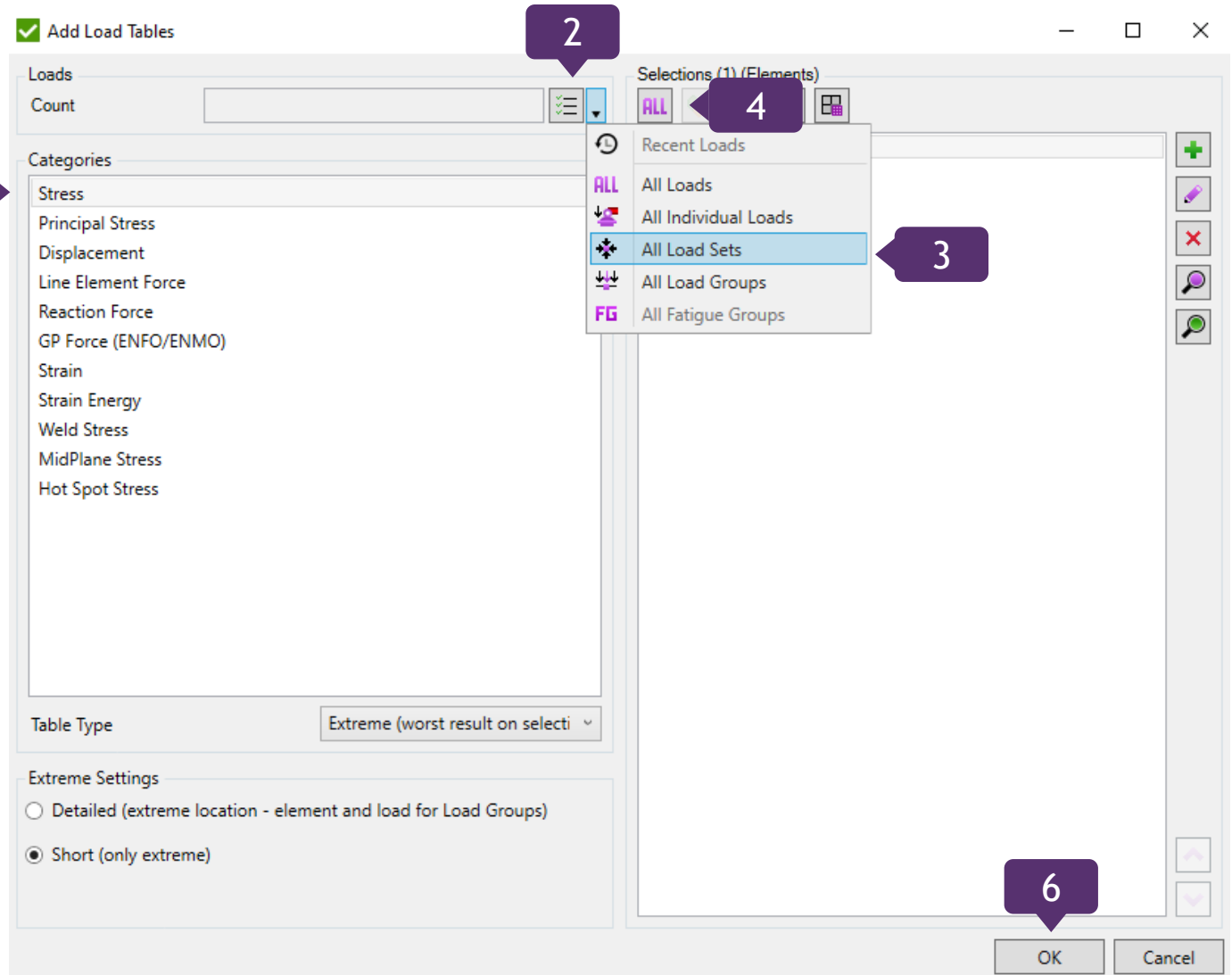
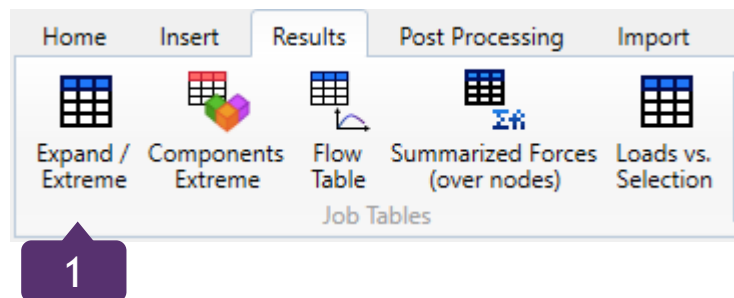
Press **All**

5

Categories: **Stress**

6

Press **OK**



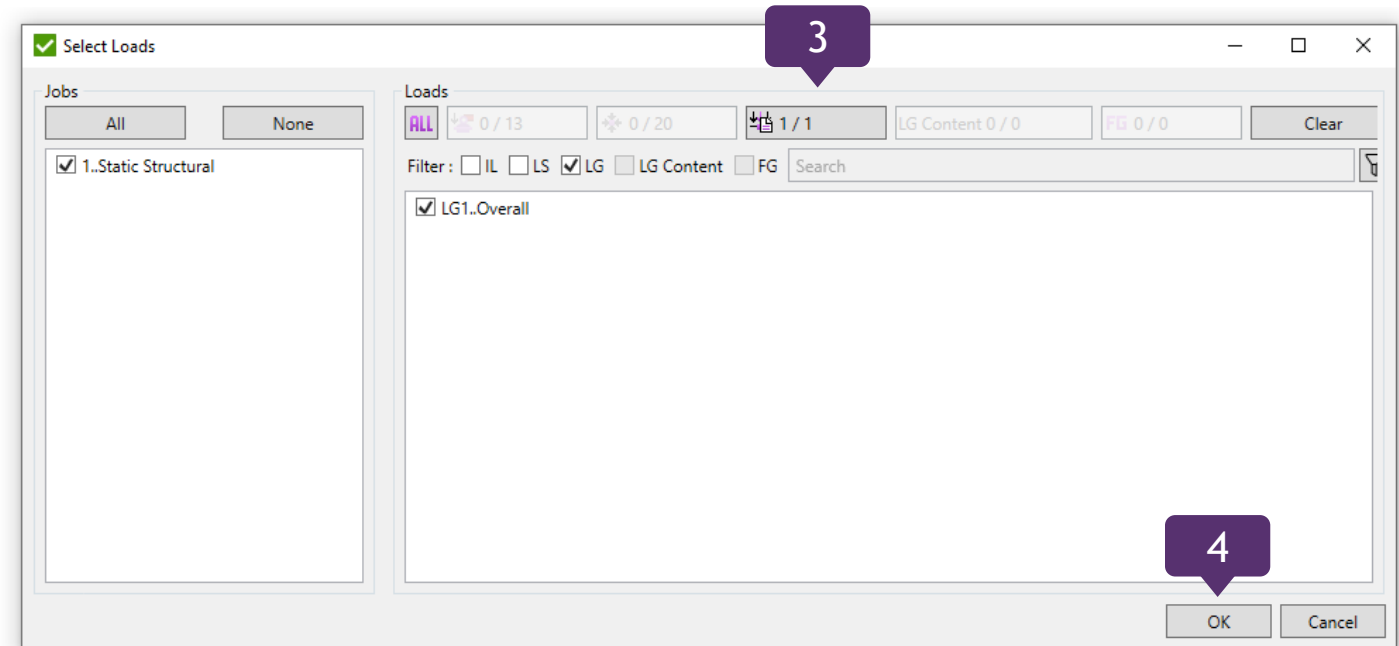
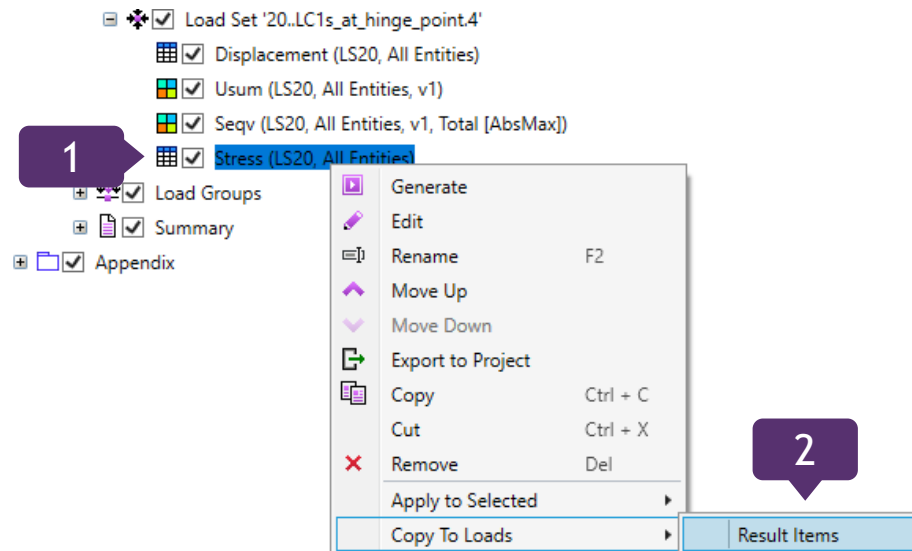
Copy Table to Load Group

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

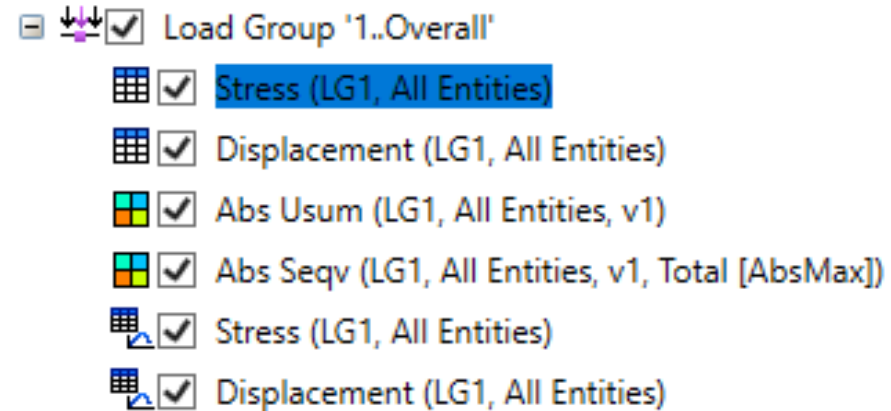
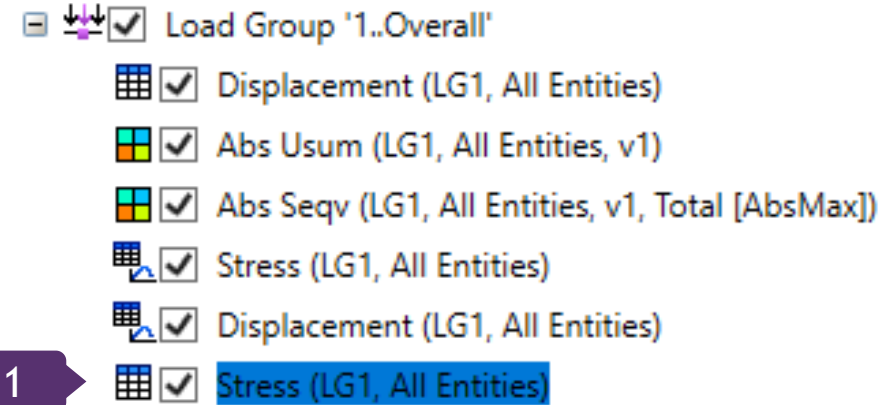
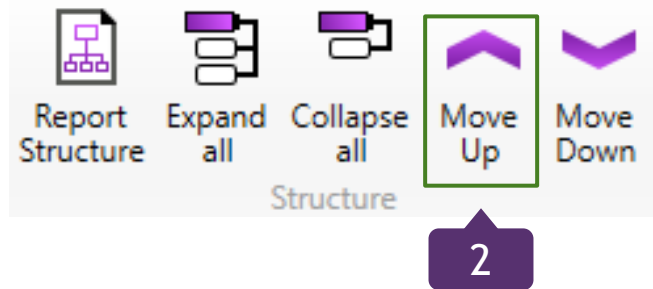
1

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

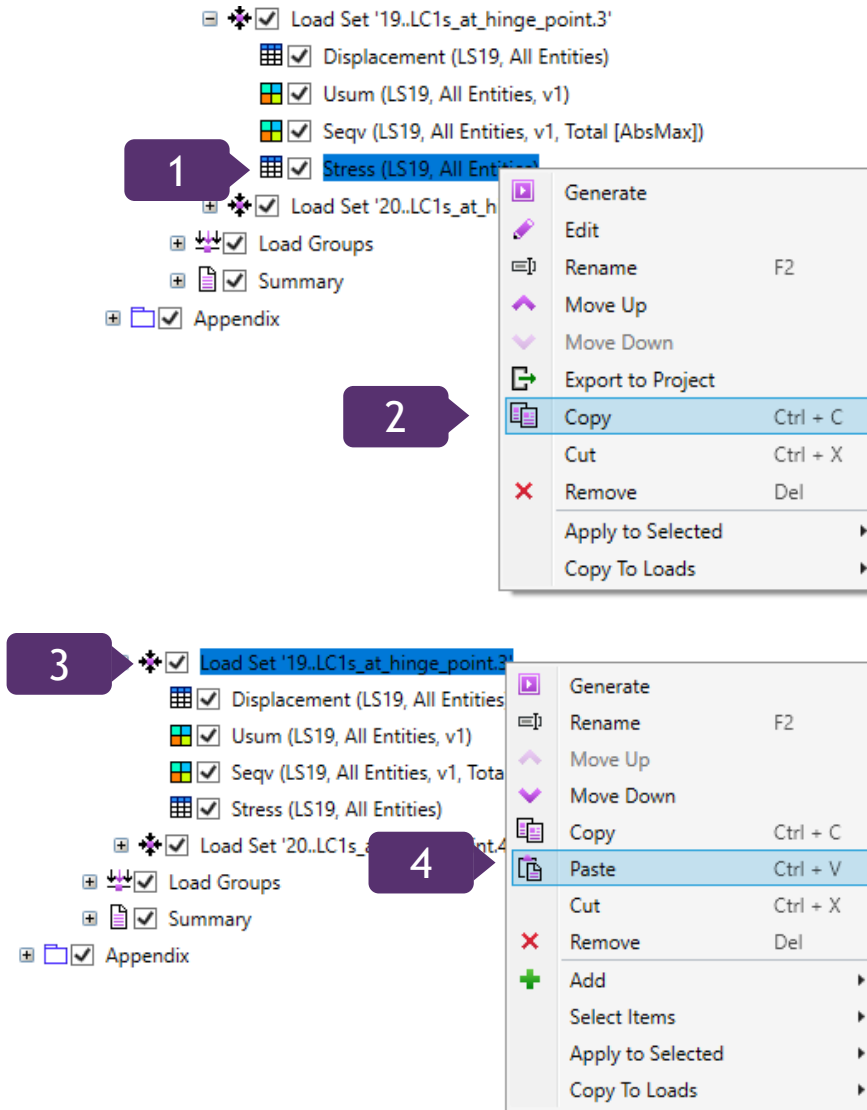
In context menu select **Paste**

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  to add full model selection

7

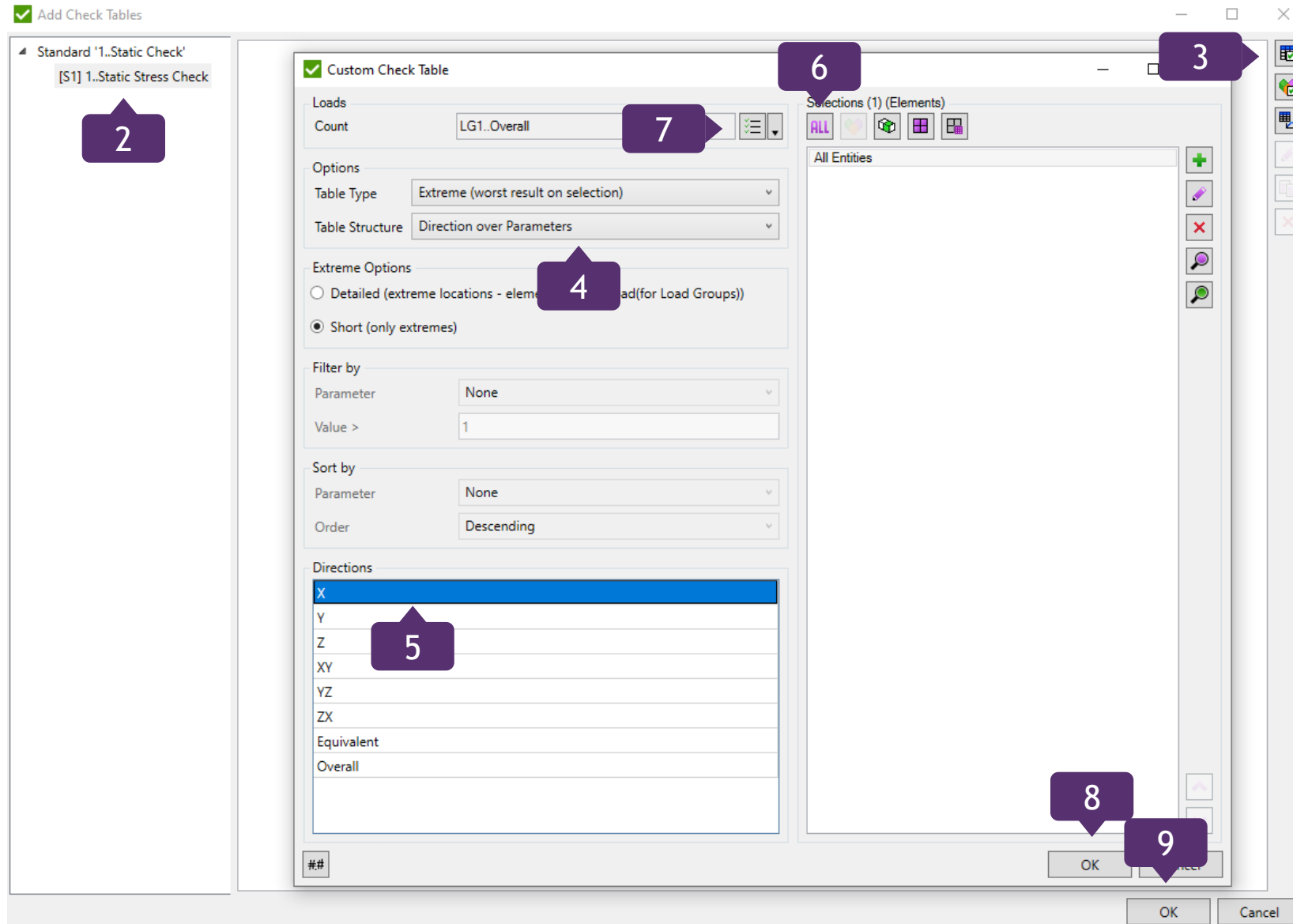
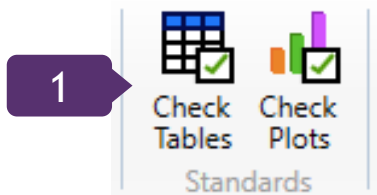
Select all **Load Groups**

8

Press **OK**

9

Press **OK**



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

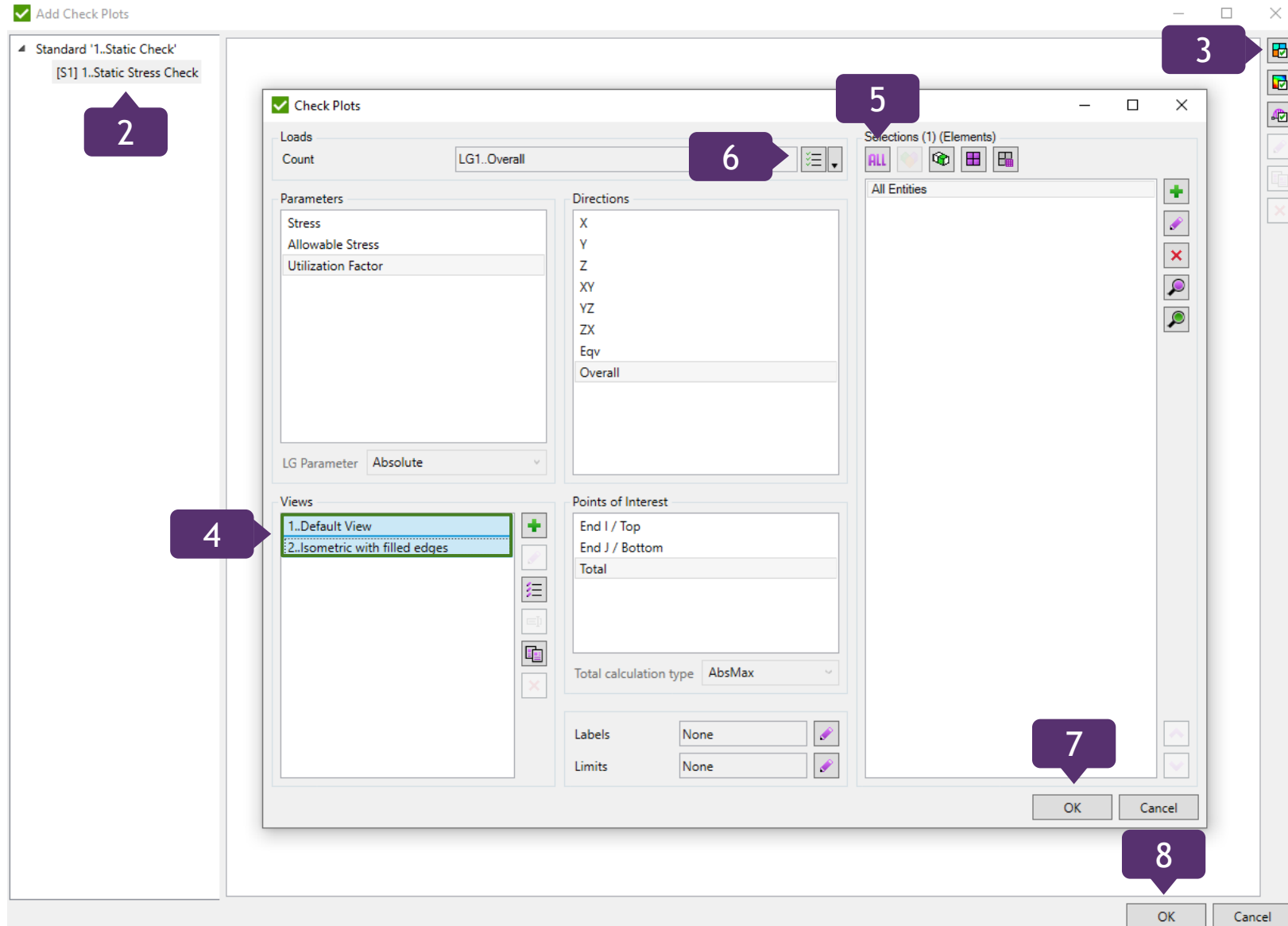
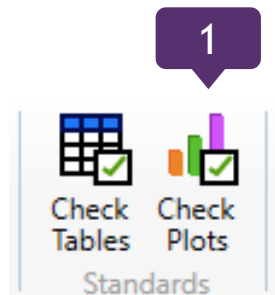
Select all **Load Groups**

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

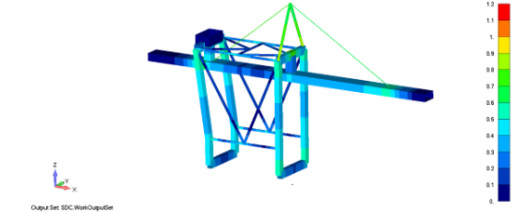
▼ Behavior	
Break Page Before	No
Enabled	Yes
▼ Data	
Check	1..Static Stress Check
Last Time Generate	04/13/2023 09:54:56
Load	LG1..Overall
Parameter	Absolute Overall Utilization Factor
Standard	1..Static Check
Title (Default)	Overall Utilization Factor (LG1, All Entities, v1, Total)
Title (User)	
▼ Options	
Point	Total
Selection	All Entities
View	1..Default View

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.

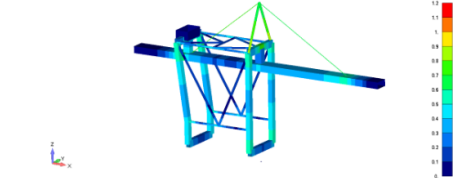
X (LG1, All Entities)			
Standard	1..Static stress check	Check Selection	[S1] 1..Static Stress Check
Load Group	LG1..Overall		All Entities
Extreme	Allowable Static Stress		Utilization Factor
Minimum	20696544.00		0.00
Maximum	20696544.00		0.85
Absolute	20696544.00		0.85

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



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

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



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

3

4

- ☒ 1..Static stress check
- ☒ X (LG1, All Entities)
- ☒ Overall Utilization Factor (LG1, All Entities, v1, Total)
- ☒ Overall Utilization Factor (LG1, All Entities, v2, Total)

1

Generate	
Rename	F2
Move Up	

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

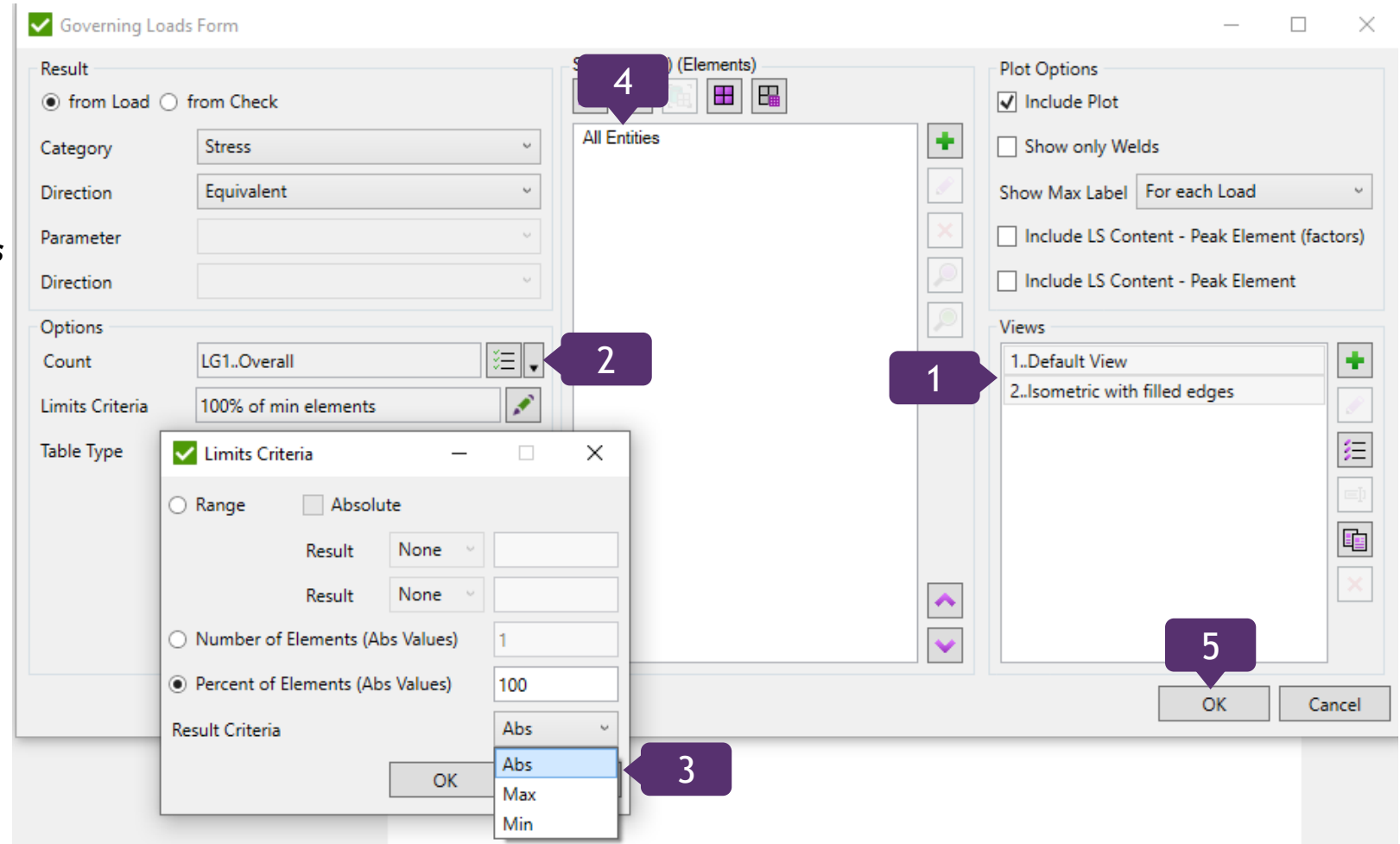
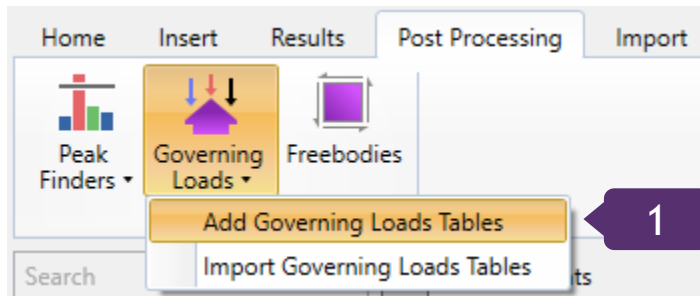
Press **ALL** to add full model selection

5

Select Views with IDs 1-2

6

Press **OK**



Generate Governing Loads results

1

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

2

Execute **Generate** from context menu

☒ Load Group '1..Overall'

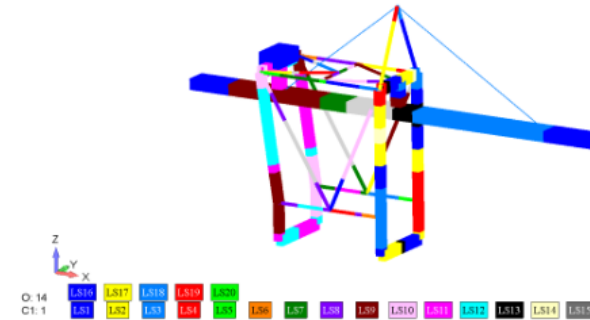
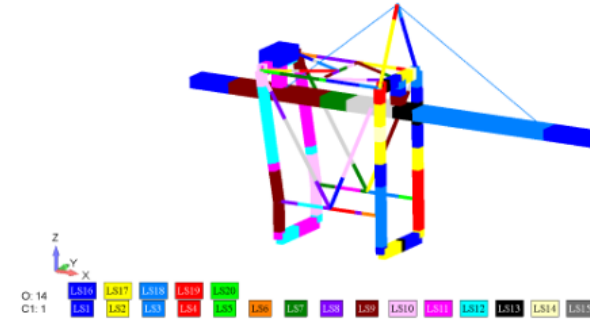
- ☒ Stress (LG1, All Entities)
- ☒ Displacement (LG1, All Entities)
- ☒ Abs Usum (LG1, All Entities, v1)
- ☒ Abs Seqv (LG1, All Entities, v1, Total [AbsMax])
- ☒ Stress (LG1, All Entities)
- ☒ Displacement (LG1, All Entities)
- ☒ Seqv (LG1; All Entities)
- ☒ 1..Static stress c

1

2

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



1

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

2

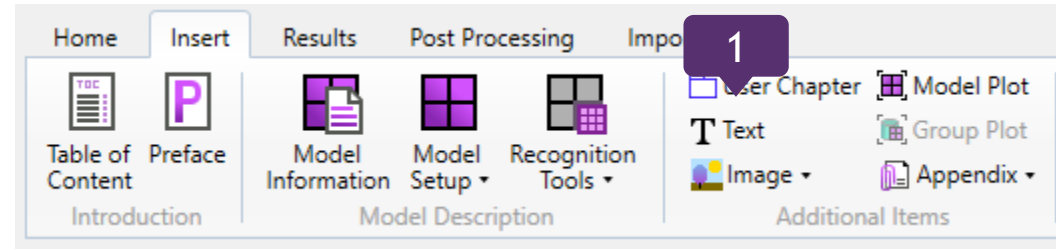
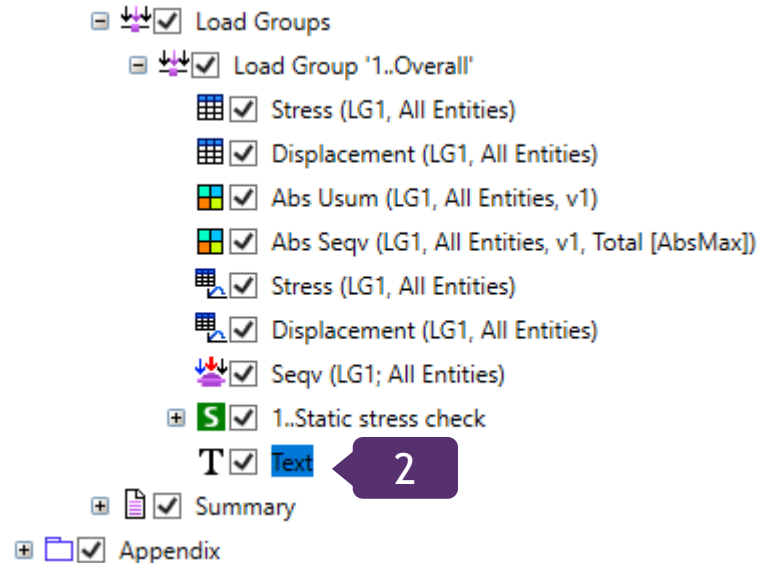
Select **Text** in model tree

3

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

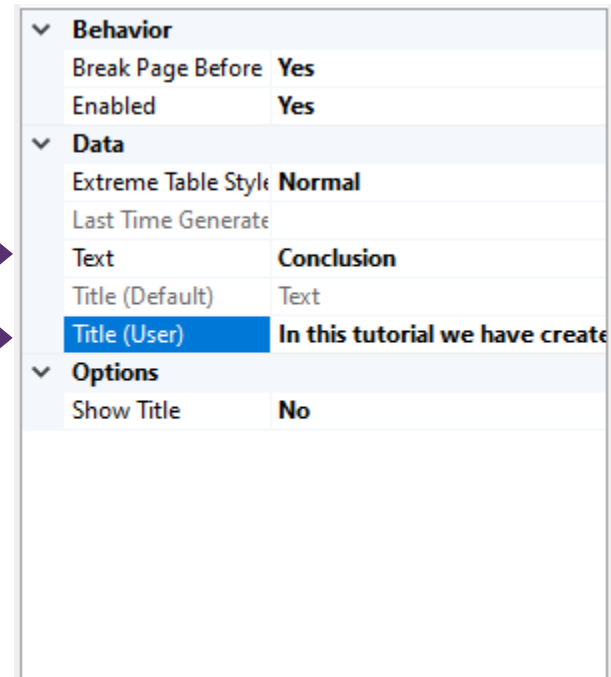
4

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



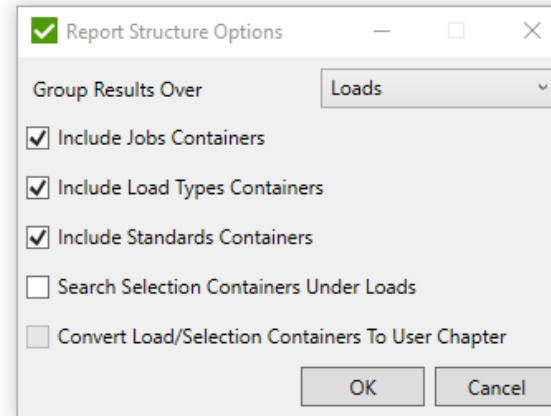
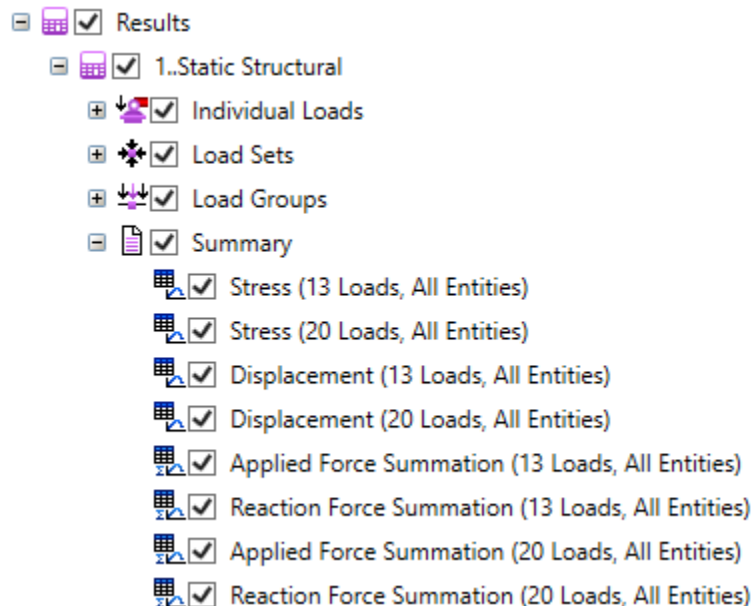
3

4

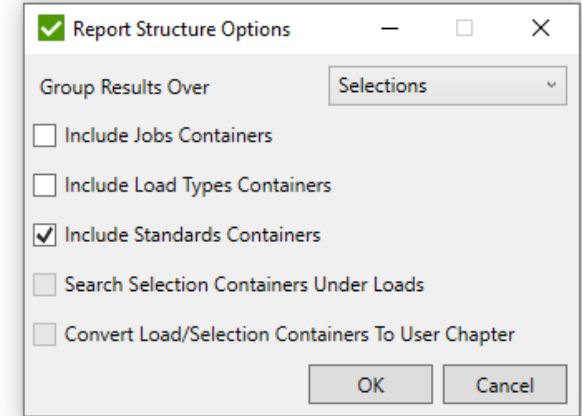
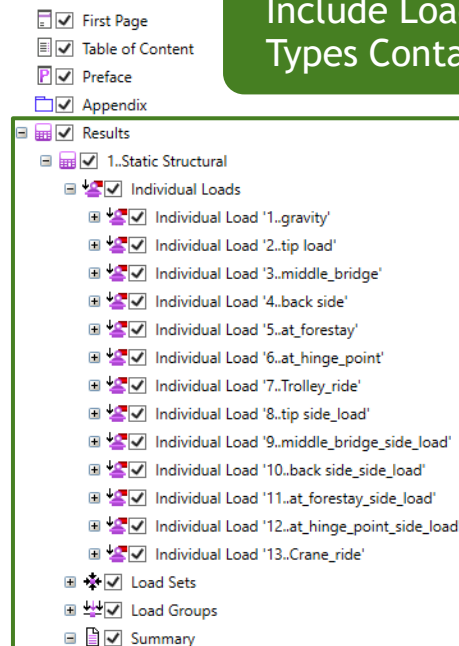


When Table/Plot is edited and load/selection is changed, the item is moved under correspondent Load/Selection automatically. Moreover, when the item is dropped under Load/Selection its load/selection is updated as well.

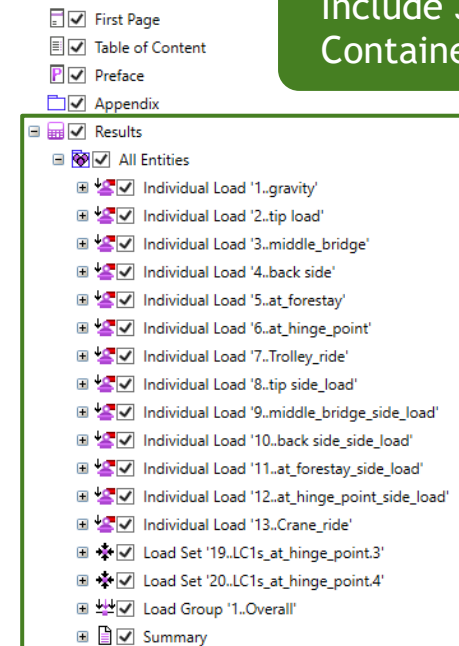
Tables/Plots with multiple loads of the same Job are placed under JobSummary Chapter (for loads from different Jobs in Summary under Results chapter):



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

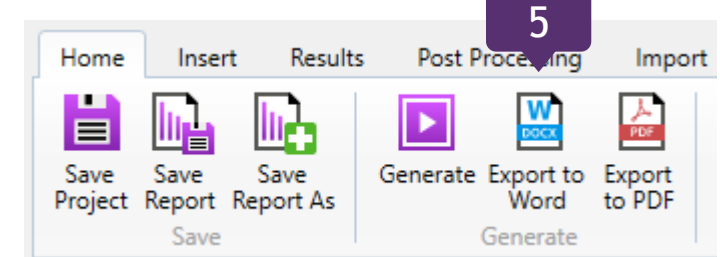
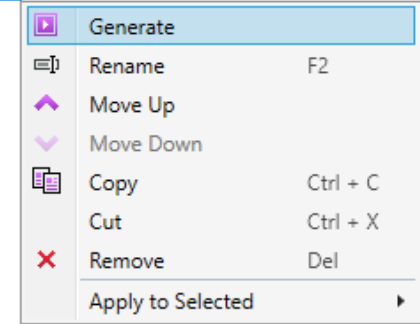
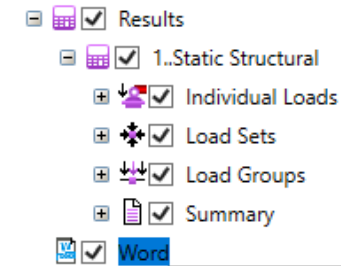
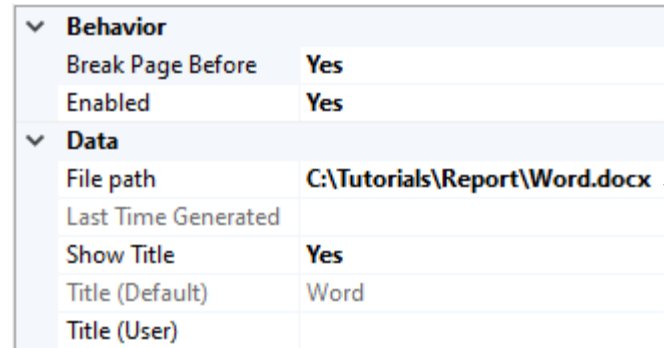
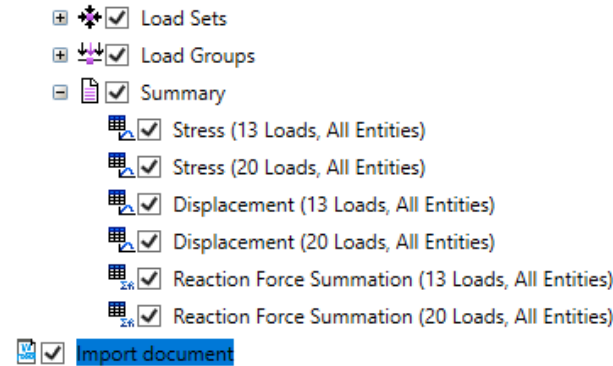
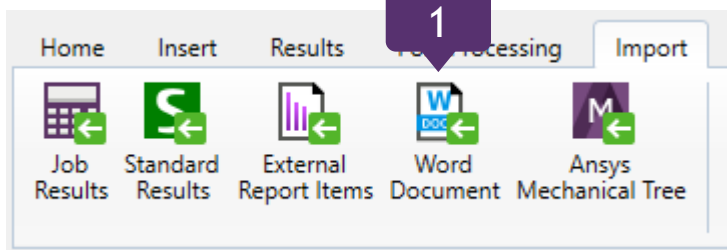
In display properties set the file path

4

Press **Generate**

5

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



Generated report


1

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


2

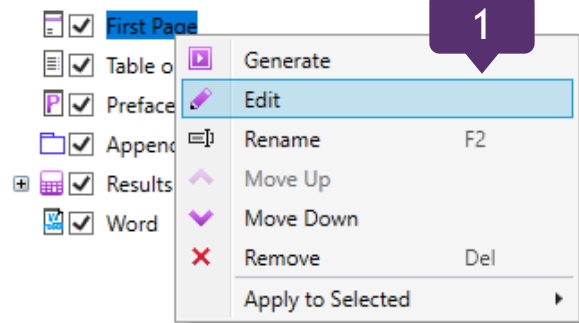
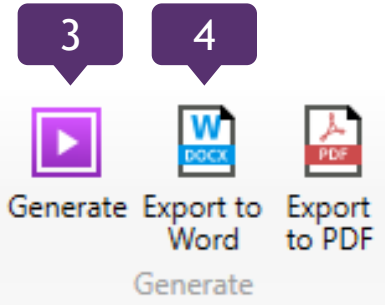
Select **Default View** and press **Ok**

3

Press  to generate report to generate entire report

4

After generation is finished press to  export generated report to Word



First Page Editor

Engineer details

Engineer: Support


Company: SDC Verifier

E-mail: support@sdcverifier.com

Phone: +31 15 30-10-310

Address: Zijlvest 25 [...]

Web Site: sdcverifier.com

Logo: 

☐ Put logo on report plots

Project Details

Number: Version: 1

Name:

Customer details

Contact Person: customer


Company: company

E-mail: customer@company.com

Phone: +31 15 555-55-55

Address: Zijlvest 25 [...]

Web Site: company.com

Logo: 

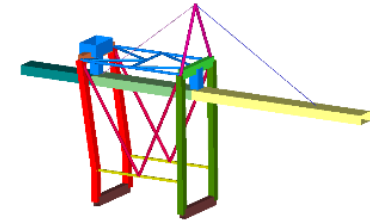
Image

☐ From file

☒ From View 1..Default View

OK Cancel

Result report



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Engineer: Support
Customer: customer
Project Number:
Version: 1
Date: 08/06/2023