



Tutorial

# Report Designer

Updated on: 18 Apr 2023

Tested with: SDC Verifier 2023 R1

Ansys version 2022

# Preface

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

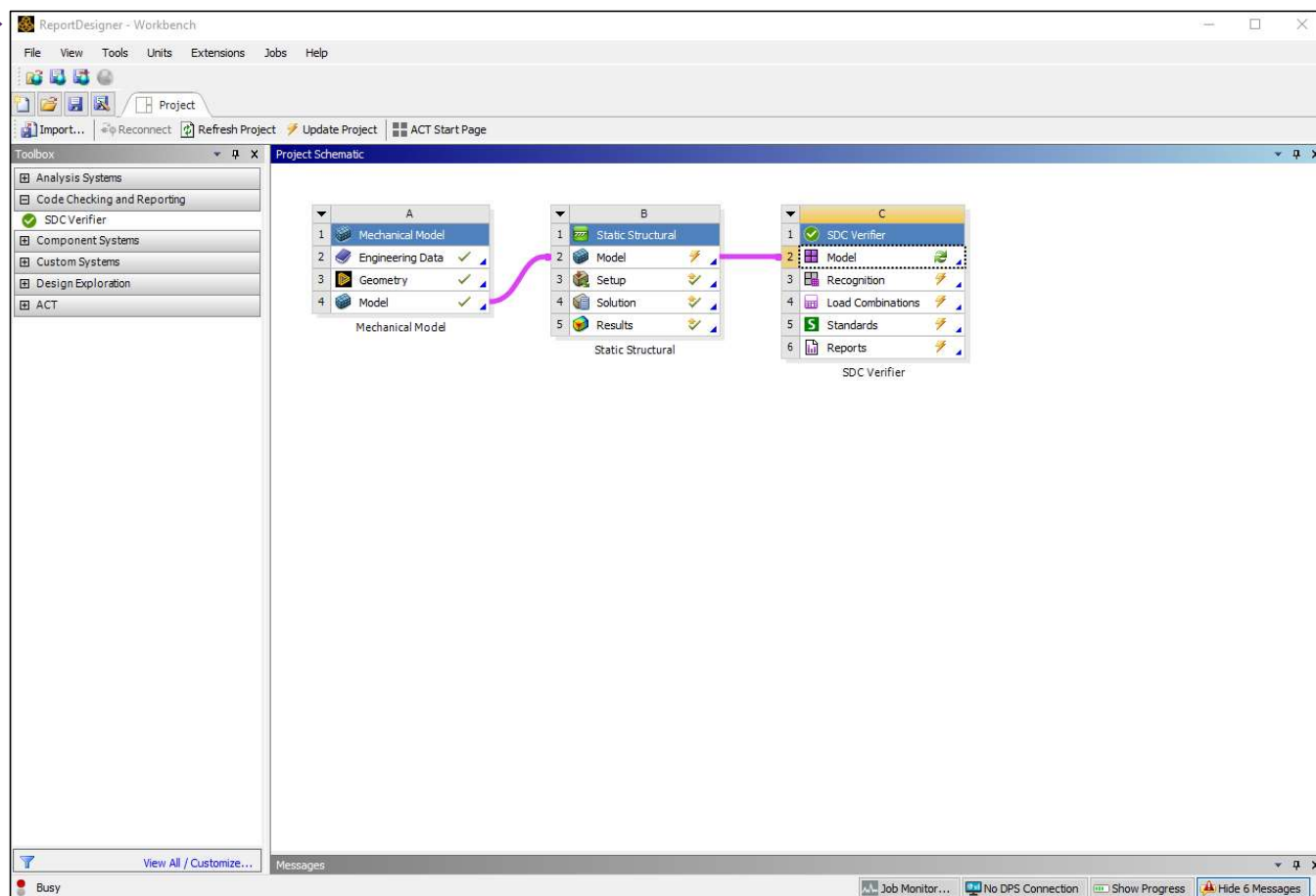
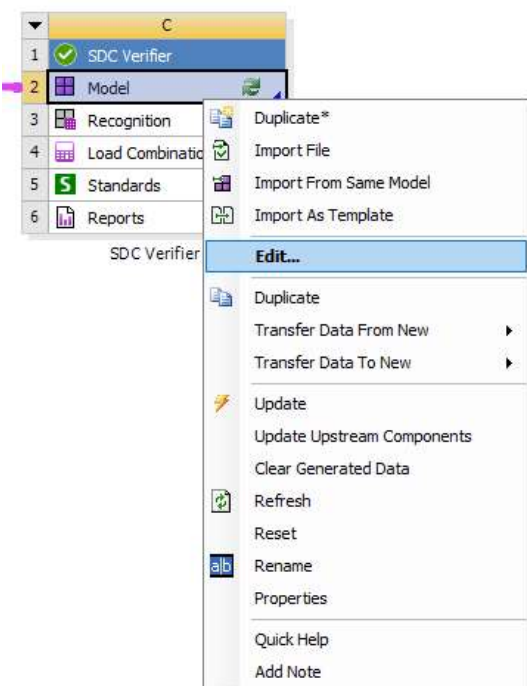
This tutorial demonstrates how to build reports using the Report Designer:

- 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

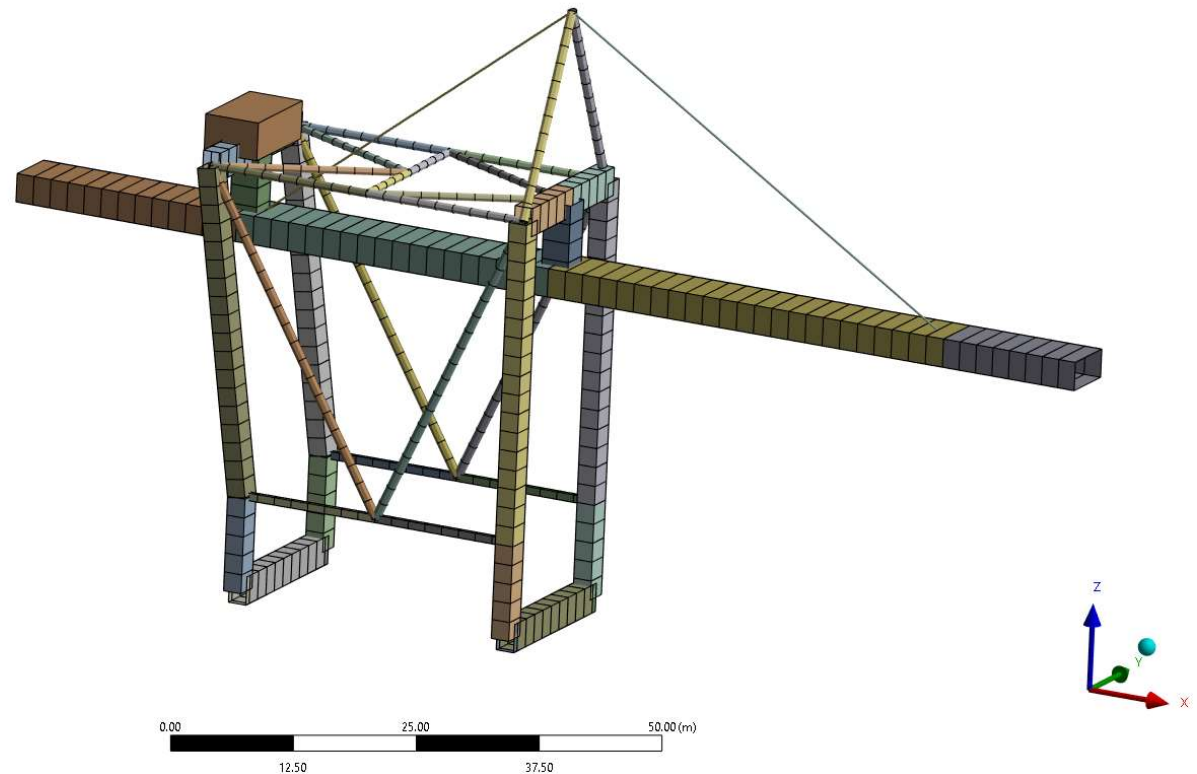
1 Open in Ansys Workbench AISC360 and Eurocode3.wbpj

2 Double Click on Model or in context menu click Edit



# Predefined project


- 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)

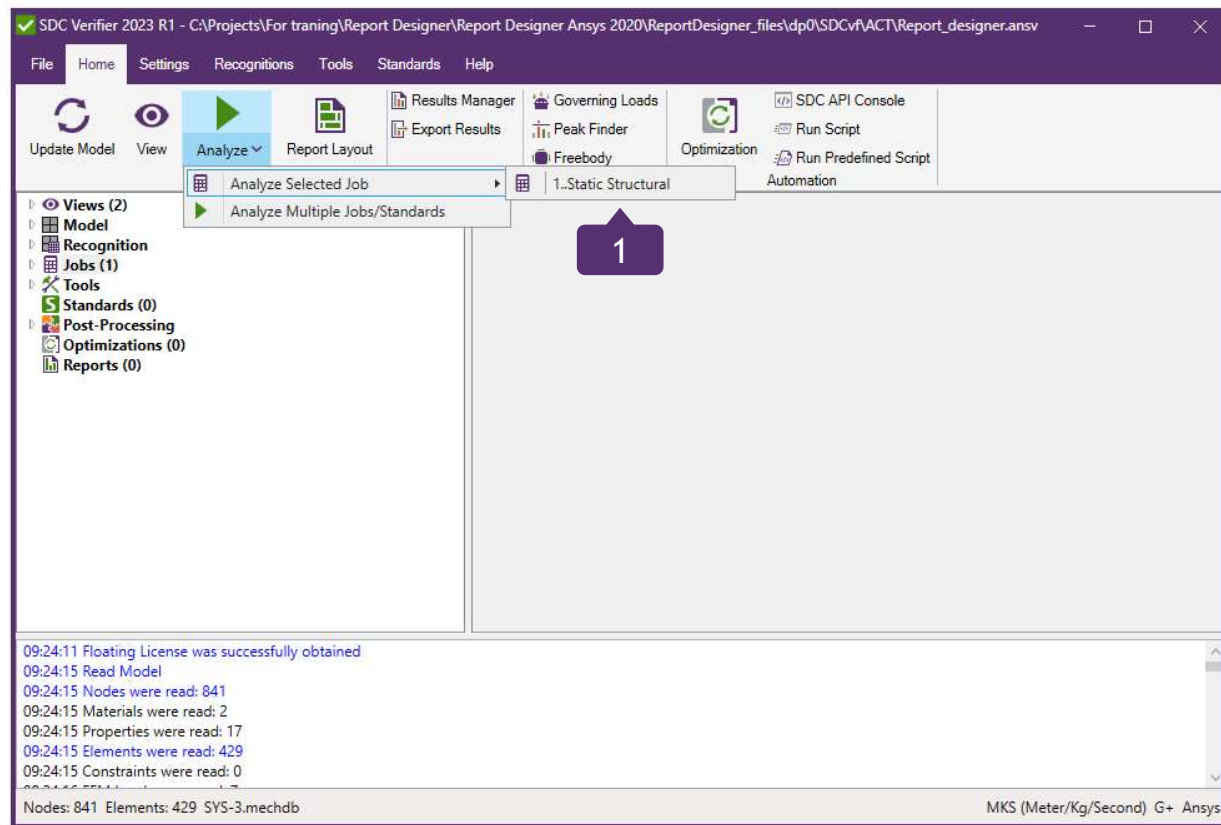


This tutorial uses predefined project with the following created data: individual loads, loadsets, load groups and static stress check. The focus of this tutorial is on creating report.


# Analyze Job

1

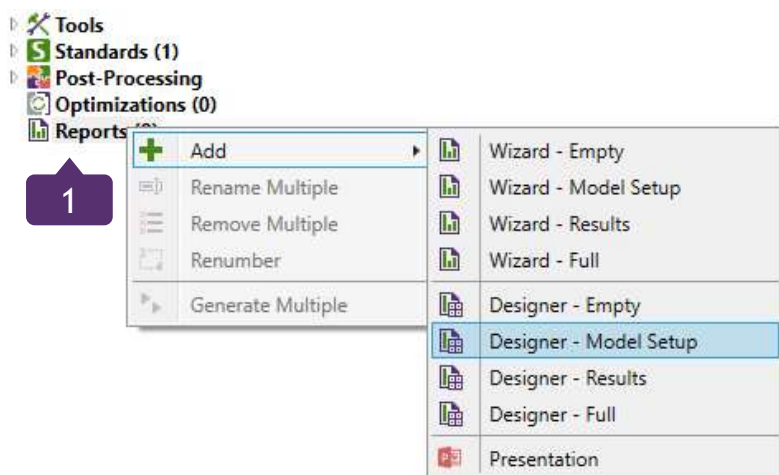
Press  and select Analyze active job: **1..Static Structural**



# Add Model Setup Report

1 Press right mouse button  Reports (0)

2 Execute **Add - Model Setup**



There are 4 templates of reports:

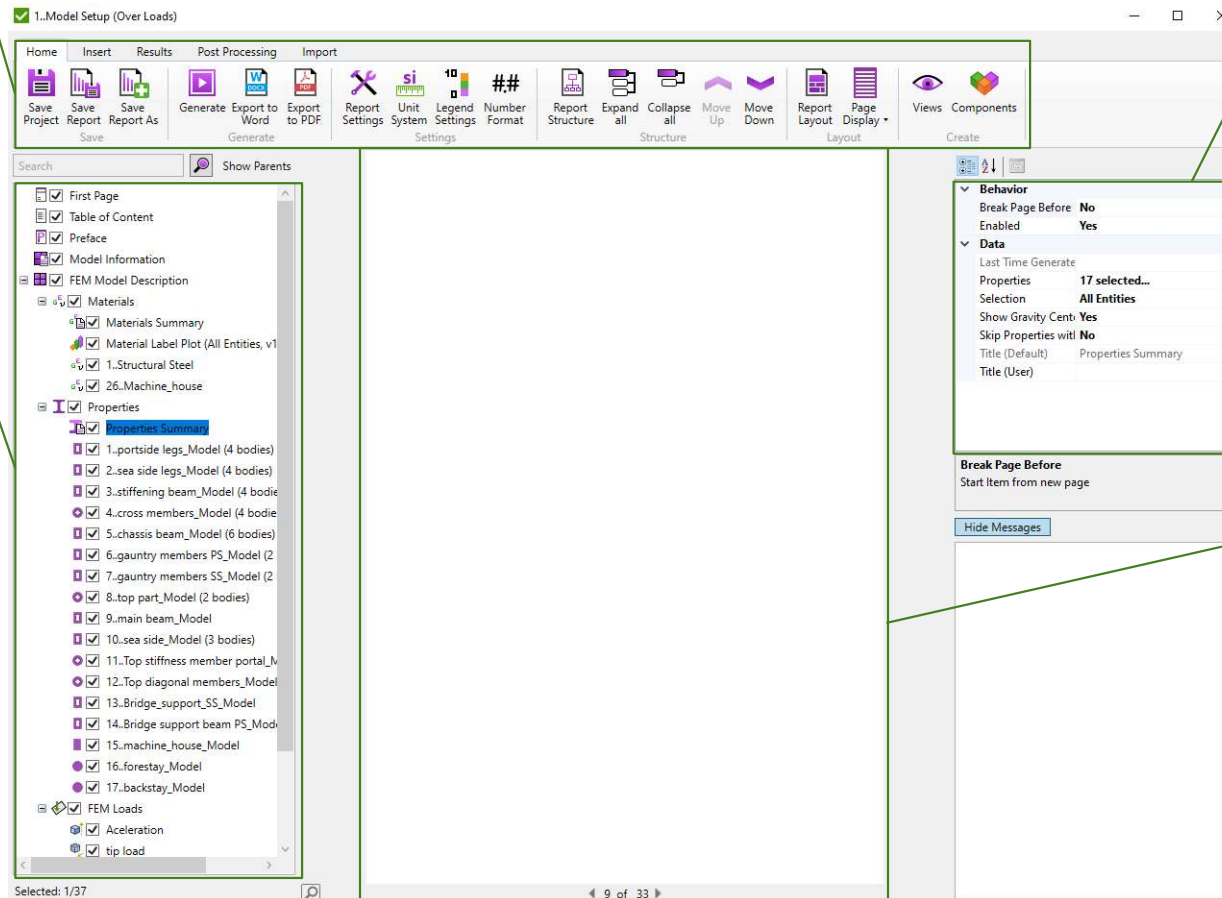
- Empty - only first page and preface items are included;
- Model Setup - description of model data (materials, properties, components) is included;
- Results - for each load extreme displacement tables, stress and displacement plots are included.
- Predefined tables: sum of reaction forces, stresses/displacements summary tables;
- Full - Model Setup + Results + all tables created in Job.

# Report Designer Interface (Components)

Toolbar contains main functions

Report Structure - displays structure of the report

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



Report document

# Editing First Page

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

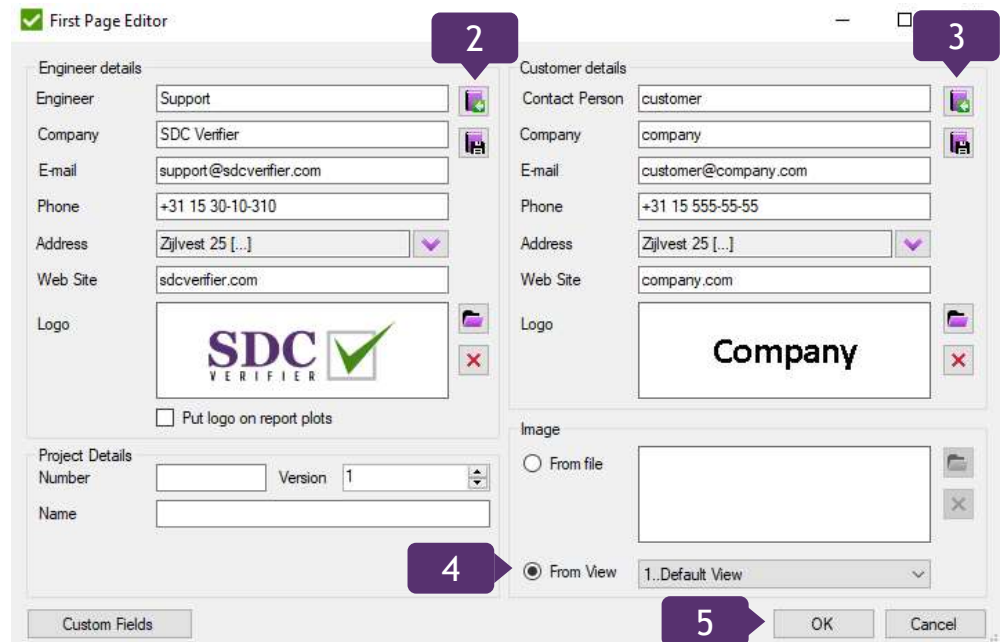
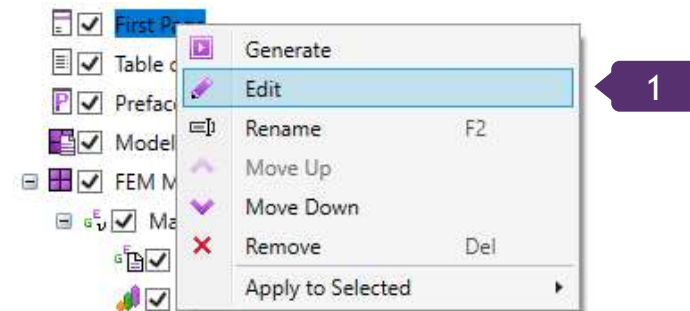
4

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.



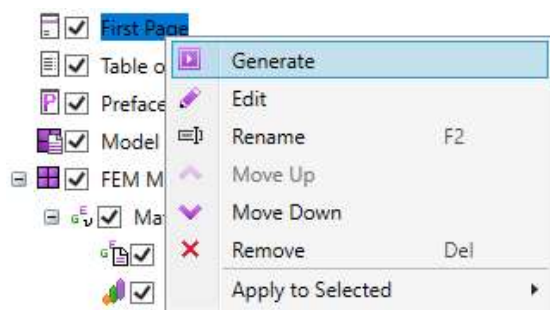
A screenshot of the 'First Page Editor' dialog box. The dialog is divided into two main sections: 'Engineer details' and 'Customer details'. Both sections have input fields for Contact Person, Company, E-mail, Phone, Address, Web Site, and Logo. The 'Engineer details' section has a 'Put logo on report plots' checkbox. The 'Customer details' section has an 'Image' section with 'From file' and 'From View' options. The 'From View' option is selected, and a dropdown menu shows '1..Default View'. A purple callout bubble with the number '2' points to the 'Library' icon in the 'Engineer details' section. A purple callout bubble with the number '3' points to the 'Library' icon in the 'Customer details' section. A purple callout bubble with the number '4' points to the 'From View' option. A purple callout bubble with the number '5' points to the 'OK' button. The 'Engineer details' section shows 'Support' as the contact person, 'SDC Verifier' as the company, and 'support@sdcverifier.com' as the email. The 'Customer details' section shows 'customer' as the contact person, 'company' as the company, and 'customer@company.com' as the email. The 'Image' section shows 'Company' as the selected image.



# Generate First Page

1

Execute **Generate** from First Page context menu



1

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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company

Company

## Model Setup

Prepared by:

**SDC Verifier**

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sdcverifier.com  
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2011 VB Haarlem  
The Netherlands

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**company**

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company.com  
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2011 VB Haarlem  
The Netherlands

Engineer:

Customer:

Project Number:

Version:

Date:

Support

customer

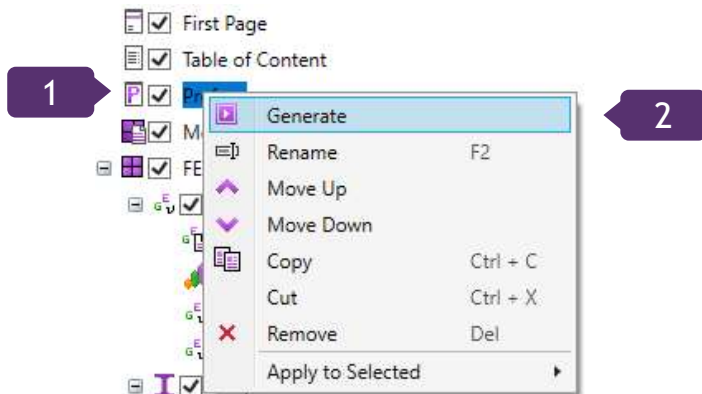
1

12/04/2023

# Generate Preface item

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 ANSYS 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 Ansys v2022 R2  
Model File: C:\Projects\For training\Report Designer\Report Designer Ansys 2020\ReportDesigner\_files\dp0\global\MECH\SYS-3.mechdb  
Project File: C:\Projects\For training\Report Designer\Report Designer Ansys 2020\ReportDesigner\_files\dp0\SDCvf\ACT\Report\_designer.ansv  
Report Profile: 1..Model Setup  
Generation on: 4/12/2023 12:10:45 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

# Exclude Item

1

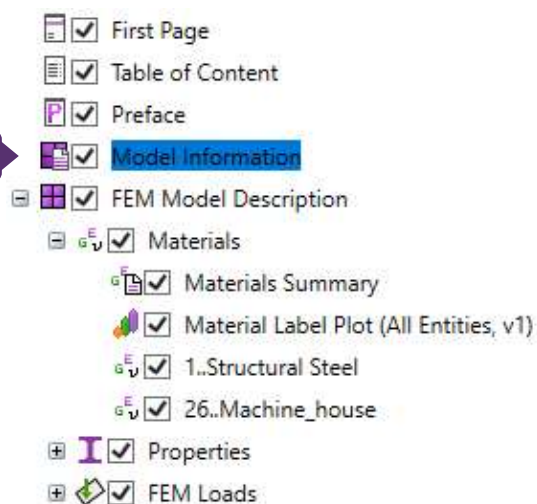
Select **Model Information** item in report structure

2

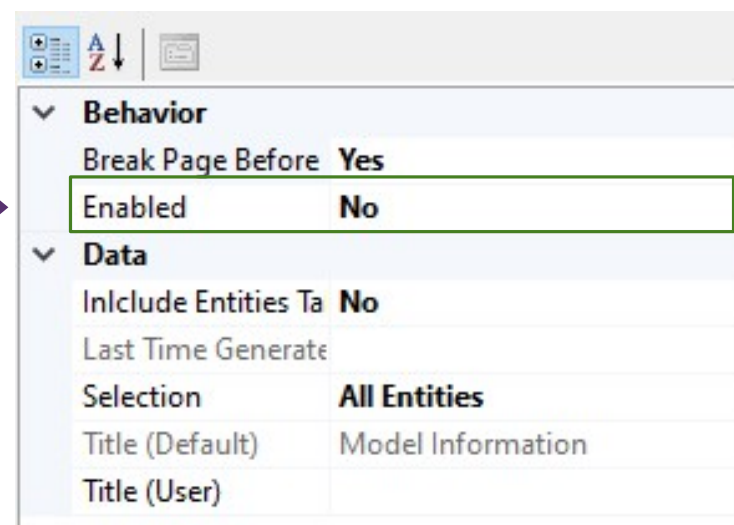
Set option Enabled: **No** in property toolbox

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.

1

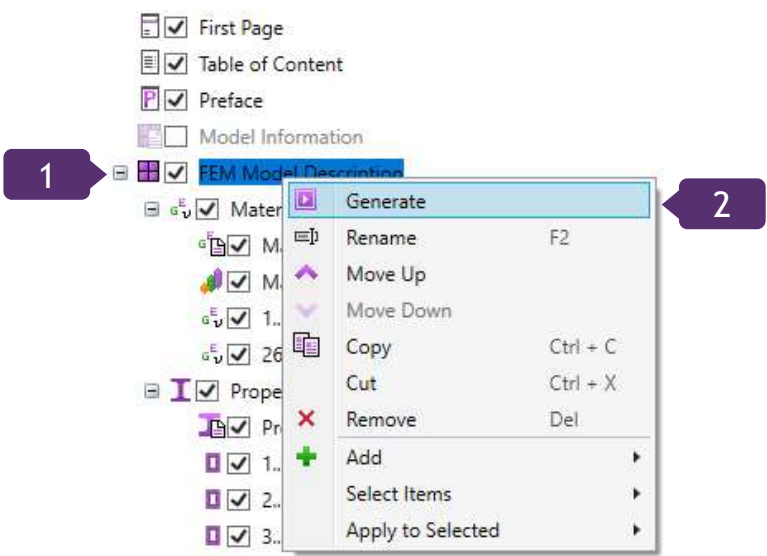


2



# Generate Model Setup items

- 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	Mass Density
1..Structural Steel	428	800265.7	9,812.50
26..Machine_house	1	79992.0	333.30
Summed Over Materials	429	880257.7	10,145.80
Full Model	429	880257.7	10,145.80

### 1..Structural Steel

Fatigue Data at zero mean stress comes from 1998 ASME BPV Code, Section 8, Div 2, Table S-110.1

Property	Value
Elements	428
Mass [kg]	800265.7
Young Modulus [Pa]	200000000000.00
Shear Modulus [Pa]	76923076923.08
Poisson Ratio	0.30
Shear [Pa]	1.00
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

# Material Options

1

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

2

Preview Mode: **Display Only Selected**

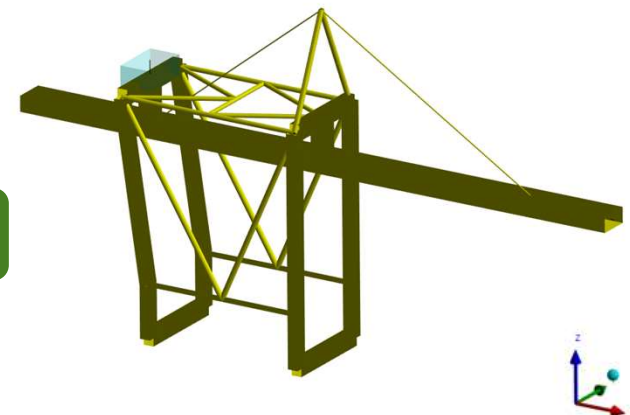
- ☒ FEM Model Description
- ☒ Materials
  - ☒ Materials Summary
  - ☒ Material Label Plot (All Entities, v1)
  - ☒ **1..Structural Steel**
  - ☒ 26..Machine\_house

1

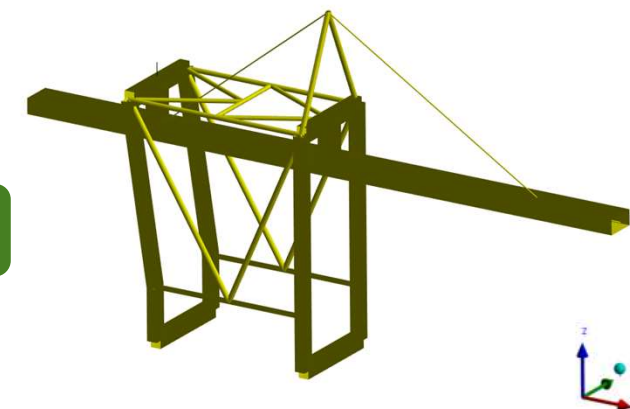
▼ Behavior	
Break Page Before	Yes
Enabled	Yes
Include Plot	Yes
Include Selection	No
▼ Data	
Last Time Generate	04/12/2023 12:41:05
Selection	All Entities
Title (Default)	1..Structural Steel
Title (User)	
▼ Plot	
Comments	Objects selected: 0
Preview Mode	Highlight
Views	Highlight
	Display Only Selected

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

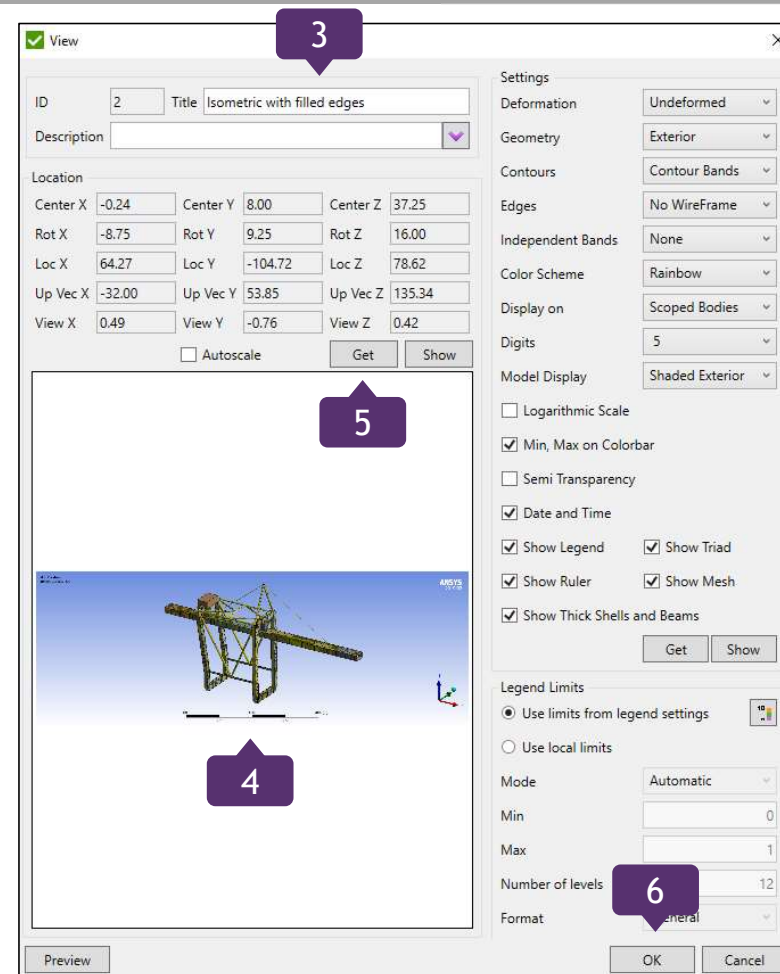
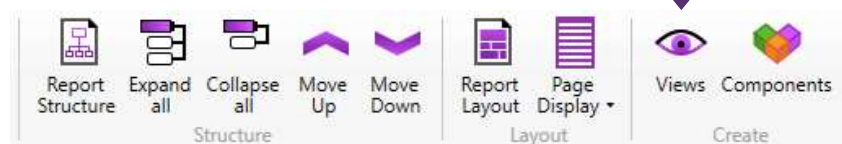
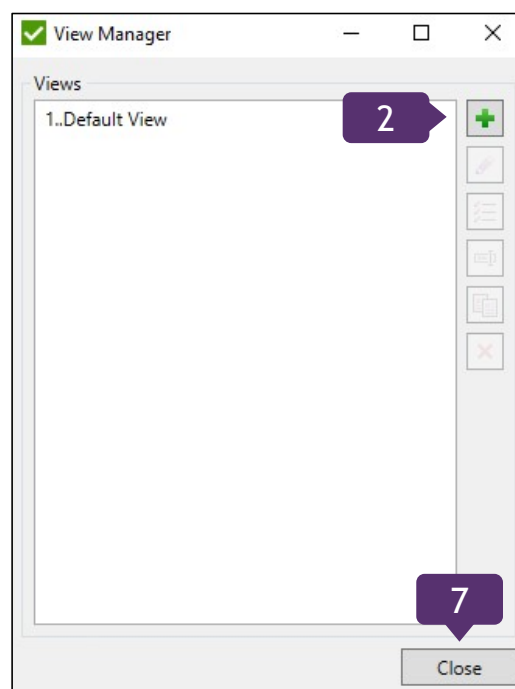
Press **Get**

6

Press **OK**

7

Press **Close**





# Apply View to Properties

1

Select **Properties** in report structure

2

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

3

Execute **Apply to selected - Views**

4

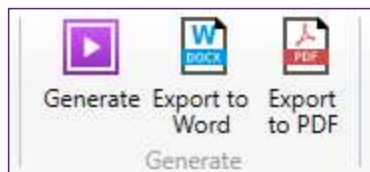
Select **Isometric with filled edges**

5

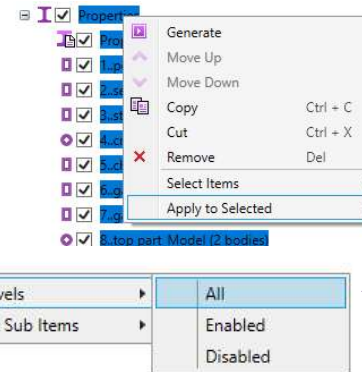
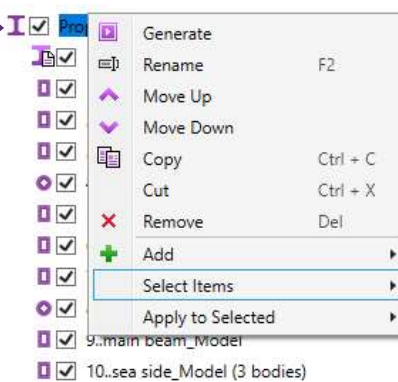
Press **Ok**

6

Press **Generate**

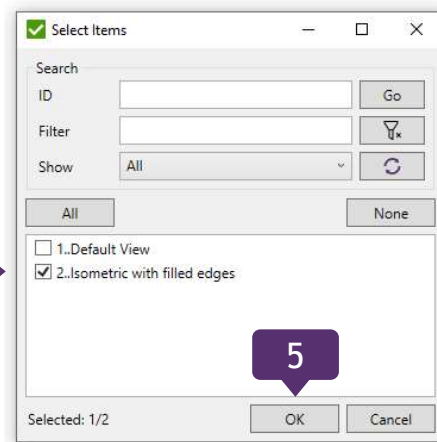


1



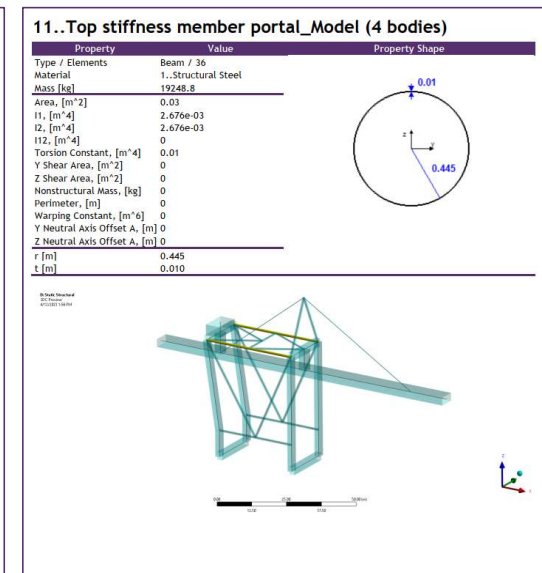
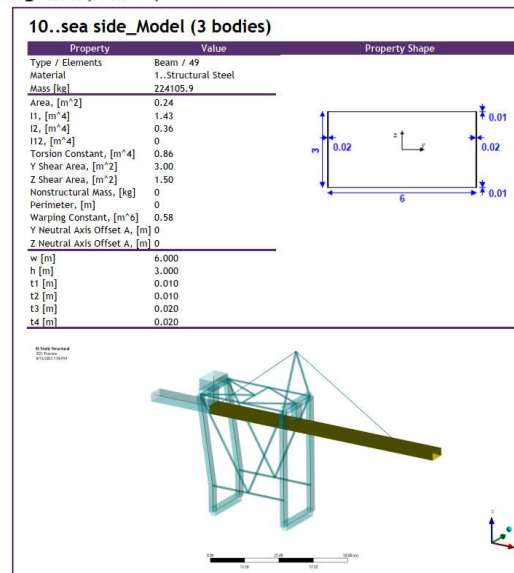
3

2





4


5





# Generate Report





- 1
- Press  to generate report
- 2
- Press  to export report to Word


  
Save Project

  
Save Report

  
Save Report As

  
Generate

  
Export to Word

  
Export to PDF

- 1
- 2



Report 1



Prepared by:  
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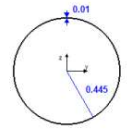
Engineer:  
Customer:  
Project Number:  
Version:  
Date:

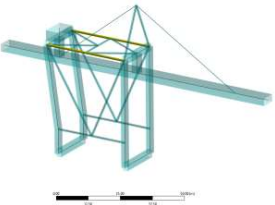
Support  
customer:  
  
1  
12/04/2023

Page 7 of 8

11..Top stiffness member portal\_Model (4 bodies)


Property	Value	Property Shape
Type / Elements	Beam / 36	
Material	1..Structural Steel	
Mass [kg]	19248.8	
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	
Z Shear Area, [m^2]	0	
Nonstructural Mass, [kg]	0	
Perimeter, [m]	0	
Warping Constant, [m^6]	0	
Y Neutral Axis Offset A, [m]	0	
Z Neutral Axis Offset A, [m]	0	
r [m]	0.445	
s [m]	0.010	





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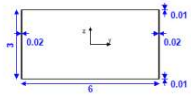
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company

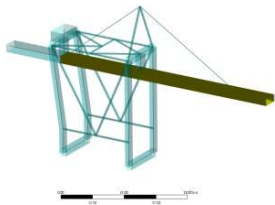
Company

Page 6 of 8

10..sea side\_Model (3 bodies)


Property	Value	Property Shape
Type / Elements	Beam / 49	
Material	1..Structural Steel	
Mass [kg]	224105.9	
Area, [m^2]	0.24	
I1, [m^4]	1.43	
I2, [m^4]	0.36	
I12, [m^4]	0	
Torsion Constant, [m^4]	0.86	
Y Shear Area, [m^2]	3.00	
Z Shear Area, [m^2]	1.50	
Nonstructural Mass, [kg]	0	
Perimeter, [m]	0	
Warping Constant, [m^6]	0.58	
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]	0.010	
t3 [m]	0.020	
t4 [m]	0.020	





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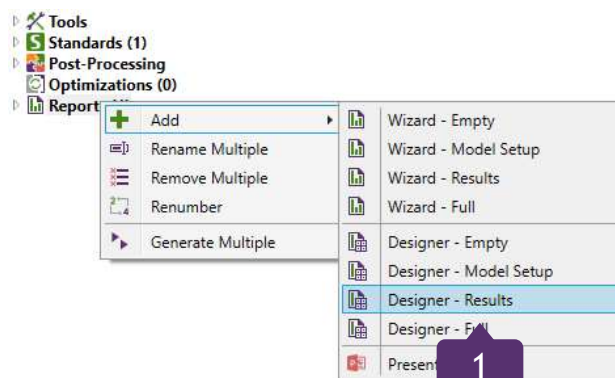


# Add Result Report

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

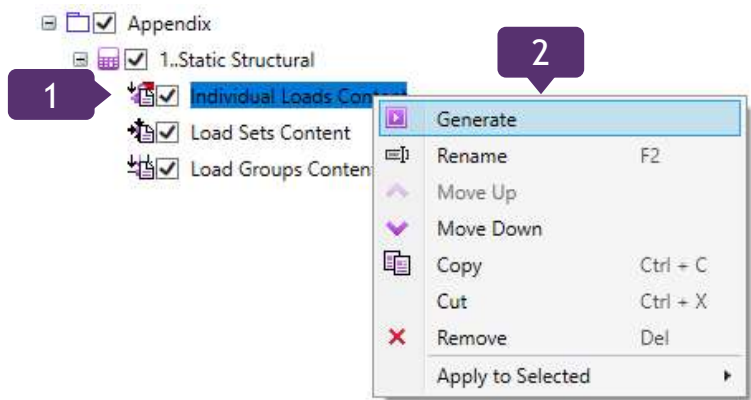
- ☒ Summary
  - ☒ Stress (13 Loads, All Entities)
  - ☒ Stress (20 Loads, All Entities)
  - ☒ Displacement (13 Loads, All Entities)
  - ☒ Displacement (20 Loads, All Entities)
  - ☒ Reaction Force Summation (13 Loads, All Entities)
  - ☒ Reaction Force Summation (20 Loads, All Entities)

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

# Individual Loads Content

- 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]	Result Case
1..gravity [1]	Static Structural - step: 1
2..tip load [1]	Static Structural - step: 2
3..middle_bridge [1]	Static Structural - step: 3
4..back side [1]	Static Structural - step: 4
5..at_forestay [1]	Static Structural - step: 5
6..at_hinge_point [1]	Static Structural - step: 6
7..Trolley_ride [1]	Static Structural - step: 7
8..tip side_load [1]	Static Structural - step: 8
9..middle_bridge_side_load [1]	Static Structural - step: 9
10..back side_side_load [1]	Static Structural - step: 10
11..at_forestay_side_load [1]	Static Structural - step: 11
12..at_hinge_point_side_load [1]	Static Structural - step: 12
13..Crane_ride [1]	Static Structural - step: 13

# 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

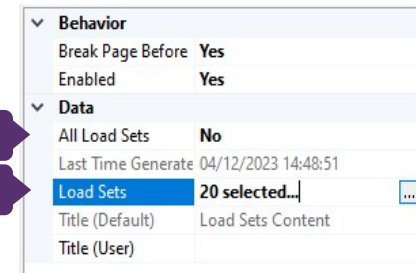
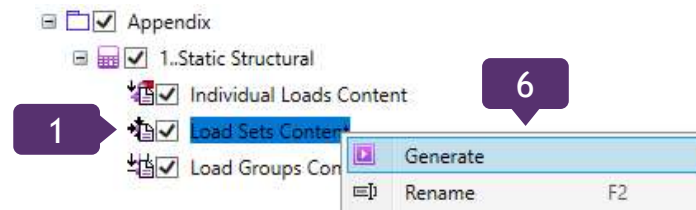
In menu **Select Items** select all load sets what should be displayed and press **All**

5

Press **OK**

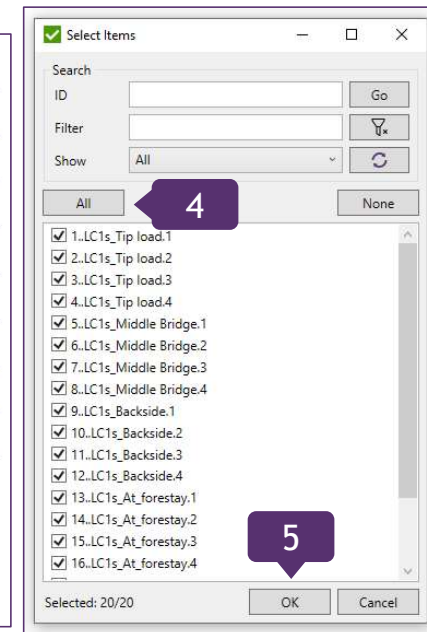
6

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	5	1..gravity [1.15] 2..tip load [1.35] 7..Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
2..LC1s_Tip load.2 [1]	5	5	1..gravity [1.15] 2..tip load [1.35] 7..Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
3..LC1s_Tip load.3 [1]	5	5	1..gravity [1.15] 2..tip load [1.35] 7..Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
4..LC1s_Tip load.4 [1]	5	5	1..gravity [1.15] 2..tip load [1.35] 7..Trolley_ride [1.15] 8..tip side_load [1.15] 13..Crane_ride [1.15]
5..LC1s_Middle Bridge.1 [1]	5	5	1..gravity [1.15] 2..middle_bridge [1.35] 7..Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
6..LC1s_Middle Bridge.2 [1]	5	5	1..gravity [1.15] 2..middle_bridge [1.35] 7..Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
7..LC1s_Middle Bridge.3 [1]	5	5	1..gravity [1.15] 2..middle_bridge [1.35] 7..Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
8..LC1s_Middle Bridge.4 [1]	5	5	1..gravity [1.15] 2..middle_bridge [1.35] 7..Trolley_ride [1.15] 9..middle_bridge_side_load [1.15] 13..Crane_ride [1.15]
9..LC1s_Backside.1 [1]	5	5	1..gravity [1.15] 4..back side [1.35] 7..Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
10..LC1s_Backside.2 [1]	5	5	1..gravity [1.15] 4..back side [1.35] 7..Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
11..LC1s_Backside.3 [1]	5	5	1..gravity [1.15] 4..back side [1.35] 7..Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
12..LC1s_Backside.4 [1]	5	5	1..gravity [1.15] 4..back side [1.35] 7..Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]

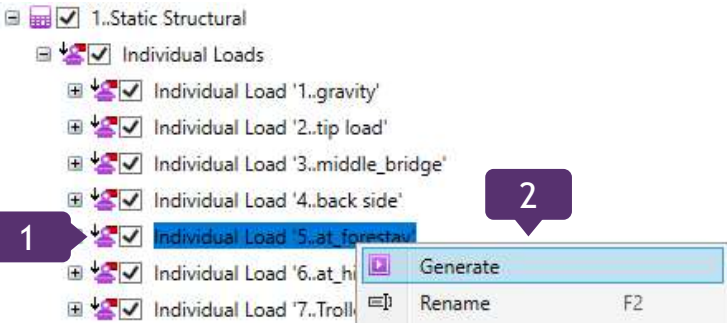
13..LC1s_At_forestay.1 [1]	5	5	4..back side [1.35] 7..Trolley_ride [1.15] 10..back side_side_load [1.15] 13..Crane_ride [1.15]
14..LC1s_At_forestay.2 [1]	5	5	1..gravity [1.15] 5..at_forestay [1.35] 7..Trolley_ride [1.15] 11..at_forestay_side_load [1.15] 13..Crane_ride [1.15]
15..LC1s_At_forestay.3 [1]	5	5	1..gravity [1.15] 5..at_forestay [1.35] 7..Trolley_ride [1.15] 11..at_forestay_side_load [1.15] 13..Crane_ride [1.15]
16..LC1s_At_forestay.4 [1]	5	5	1..gravity [1.15] 5..at_forestay [1.35] 7..Trolley_ride [1.15] 11..at_forestay_side_load [1.15] 13..Crane_ride [1.15]
17..LC1s_At_hinge_point.1 [1]	5	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]
18..LC1s_At_hinge_point.2 [1]	5	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]
19..LC1s_At_hinge_point.3 [1]	5	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]
20..LC1s_At_hinge_point.4 [1]	5	5	1..gravity [1.15] 6..at_hinge_point [1.35] 7..Trolley_ride [1.15] 12..at_hinge_point_side_load [1.15] 13..Crane_ride [1.15]



# Load Set Content

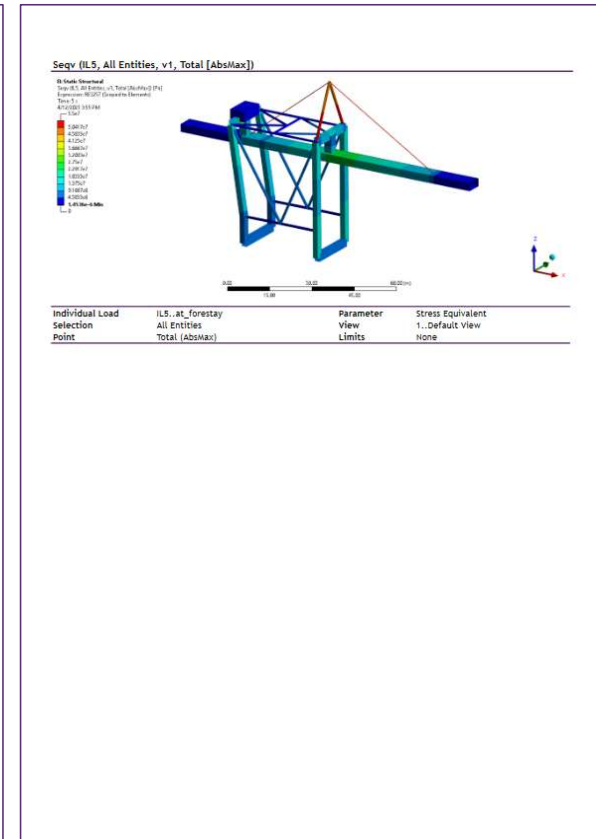
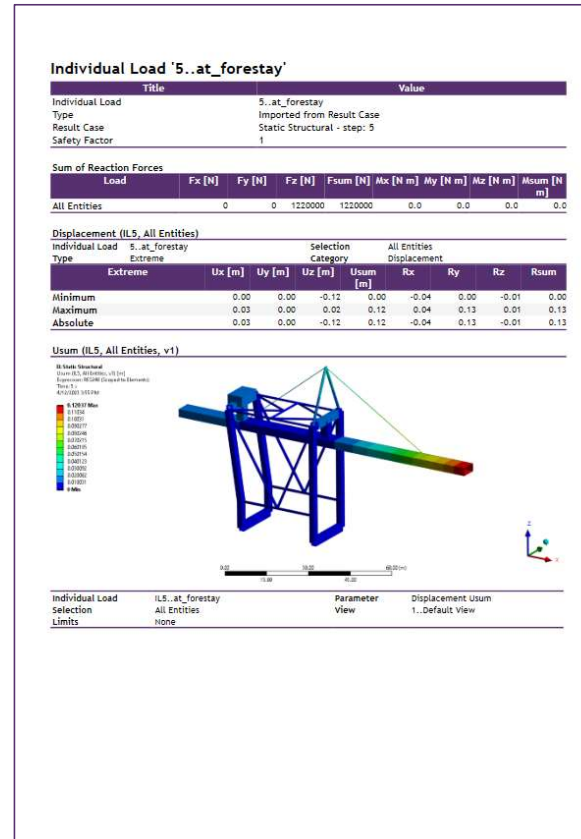
1 Select **5..at\_forestay** in report structure

2 Execute **Generate** from context menu



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

Options	
Include Load Item	Yes
Include Sum Of Fo	Yes
Selection	All Entities



# 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

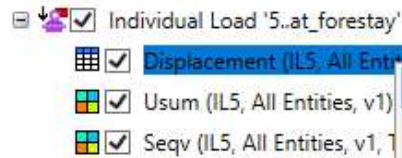
4 Press **Close** and repeat 1 step

Digits after decimal point = 2

Displacement (IL5, All Entities)									
Individual Load	5..at_forestay			Selection	All Entities				
Type	Extreme			Category	Displacement				
	Ux [m]	Uy [m]	Uz [m]		Usum [m]	Rx	Ry	Rz	Rsum
Minimum	0.00	0.00	-0.12		0.00	-0.04	0.00	-0.01	0.00
Maximum	0.03	0.00	0.02		0.12	0.04	0.13	0.01	0.13
Absolute	0.03	0.00	-0.12		0.12	-0.04	0.13	-0.01	0.13

Digits after decimal point = 3

Displacement (IL5, All Entities)									
Individual Load	5..at_forestay			Selection	All Entities				
Type	Extreme			Category	Displacement				
	Ux [m]	Uy [m]	Uz [m]		Usum [m]	Rx	Ry	Rz	Rsum
Minimum	0.000	-0.005	-0.120		0.000	-0.035	0.000	-0.013	0.000
Maximum	0.035	0.005	0.015		0.120	0.035	0.132	0.013	0.132
Absolute	0.035	-0.005	-0.120		0.120	-0.035	0.132	-0.013	0.132



Category	Type	Digits after decimal point	Fixed Power	Power Value	Example
Displacements	General	2	<input type="checkbox"/>		160000000.00
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	General	0	<input type="checkbox"/>		160000000
Coefficient	General	0	<input type="checkbox"/>		160000000
Scientific	General	2	<input type="checkbox"/>		160000000.00
General	General	2	<input type="checkbox"/>		160000000.00
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  
 Set as Default

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.



# Legend Settings

1

Select **Seqv (All Entities. V1. Total)** table under load **5..at\_forestay**

2

Press  to open **Legend Settings**

3

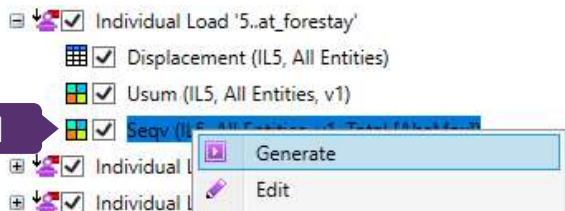
Max: **55000000** for **Stress** category

4

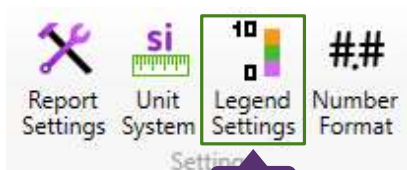
Press **Close**

5


Execute **Generate** from context menu



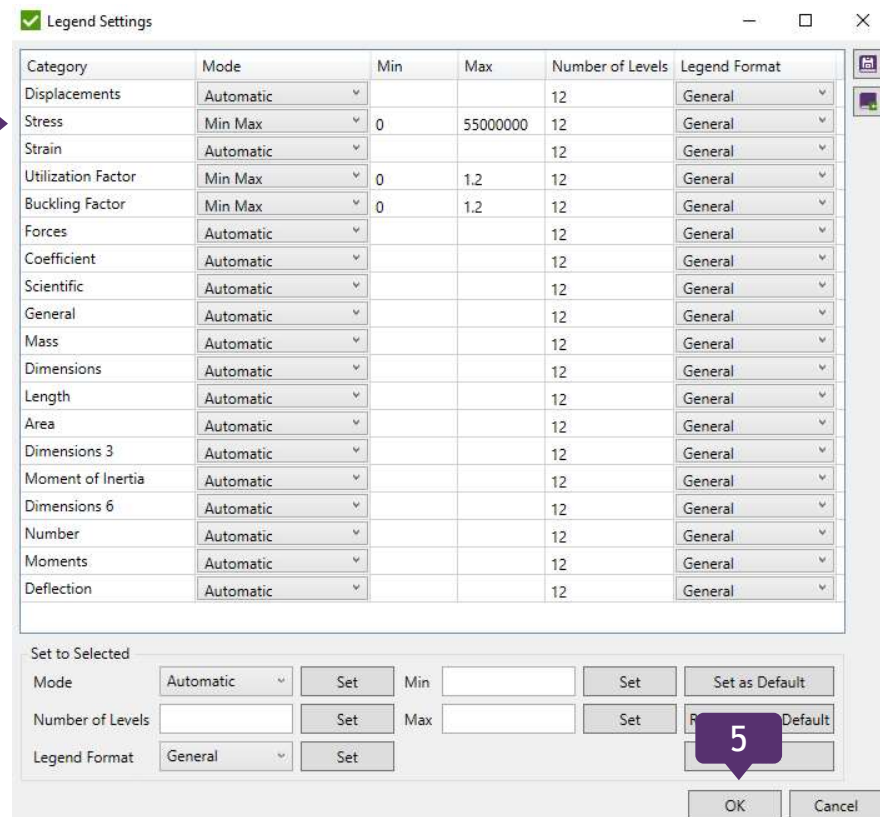
6



2

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**

Summary

Stress (13 Loads, All Entities)

Stress (20 Loads, All Entities)

Displacement (13 Loads, All Entities)

Displacement (20 Loads, All Entities)

Reaction Force Summation (13 Loads, All Entities)

Reaction Force Summation (20 Loads, All Entities)

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

Generate

Move Up

2

Stresses 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]
LS1...LC1s_Tip load.1	155.30e+6		155.30e+6
LS2...LC1s_Tip load.2	155.71e+6		155.71e+6
LS3...LC1s_Tip load.3	156.58e+6		156.58e+6
LS4...LC1s_Tip load.4	155.99e+6		155.99e+6
LS5...LC1s_Middle Bridge.1	105.49e+6		105.49e+6
LS6...LC1s_Middle Bridge.2	97.57e+6		97.57e+6
LS7...LC1s_Middle Bridge.3	100.21e+6		100.21e+6
LS8...LC1s_Middle Bridge.4	92.30e+6		92.30e+6
LS9...LC1s_Backside.1	-130.09e+6		130.09e+6
LS10...LC1s_Backside.2	-126.04e+6		126.04e+6
LS11...LC1s_Backside.3	-130.09e+6		130.09e+6
LS12...LC1s_Backside.4	-126.04e+6		126.04e+6
LS13...LC1s_At_forestay.1	130.94e+6		130.94e+6
LS14...LC1s_At_forestay.2	130.38e+6		130.38e+6
LS15...LC1s_At_forestay.3	131.22e+6		131.22e+6
LS16...LC1s_At_forestay.4	130.66e+6		130.66e+6
LS17...LC1s_at_hinge_point.1	124.25e+6		124.25e+6
LS18...LC1s_at_hinge_point.2	124.94e+6		124.94e+6
LS19...LC1s_at_hinge_point.3	128.97e+6		128.97e+6
LS20...LC1s_at_hinge_point.4	119.67e+6		119.67e+6

Displacements for all load sets

Displacement (20 Loads, All Entities)

Loads Count	20	Category	Displacement
Selection	All Entities	Type	Extreme
Parameter	Abs		
Load	Ux [m]	Uy [m]	Uz [m]
LS1...LC1s_Tip load.1	0.087	0.033	-0.367
LS2...LC1s_Tip load.2	0.087	-0.033	-0.367
LS3...LC1s_Tip load.3	0.064	0.033	-0.365
LS4...LC1s_Tip load.4	0.064	-0.033	-0.365
LS5...LC1s_Middle Bridge.1	0.019	-0.036	-0.076
LS6...LC1s_Middle Bridge.2	0.019	0.036	-0.076
LS7...LC1s_Middle Bridge.3	-0.028	-0.036	-0.074
LS8...LC1s_Middle Bridge.4	-0.028	0.036	-0.074
LS9...LC1s_Backside.1	-0.016	-0.054	-0.156
LS10...LC1s_Backside.2	-0.016	0.054	-0.156
LS11...LC1s_Backside.3	-0.035	-0.054	-0.155
LS12...LC1s_Backside.4	-0.035	0.054	-0.155
LS13...LC1s_At_forestay.1	0.071	-0.028	-0.246
LS14...LC1s_At_forestay.2	0.071	0.028	-0.246
LS15...LC1s_At_forestay.3	0.049	-0.028	-0.244
LS16...LC1s_At_forestay.4	0.049	0.028	-0.244
LS17...LC1s_at_hinge_point.1	0.027	-0.022	-0.087
LS18...LC1s_at_hinge_point.2	0.027	0.022	-0.087
LS19...LC1s_at_hinge_point.3	-0.024	-0.022	-0.085
LS20...LC1s_at_hinge_point.4	-0.024	0.022	-0.085

# Reaction Forces

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**

Summary

- ☒ Stress (13 Loads, All Entities)
- ☒ Stress (20 Loads, All Entities)
- ☒ Displacement (13 Loads, All Entities)
- ☒ Displacement (20 Loads, All Entities)
- ☒ Reaction Force Summation (13 Loads, All Entities)
- ☒ Reaction Force Summation (20 Loads, All Entities)

Generate



2

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	160000000
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

2e+8

Set as Default

Restore from Default

Reset

Set Format

Close

Reaction Force Summation (20 Loads, All Entities)

Loads/Selections	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	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS2..LC1s_Tip load.2	-223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS3..LC1s_Tip load.3	223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS4..LC1s_Tip load.4	223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS5..LC1s_Middle Bridge.1	-223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS6..LC1s_Middle Bridge.2	-223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS7..LC1s_Middle Bridge.3	223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS8..LC1s_Middle Bridge.4	223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS9..LC1s_Backside.1	-223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS10..LC1s_Backside.2	-223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS11..LC1s_Backside.3	223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS12..LC1s_Backside.4	223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS13..LC1s_At_forestay.1	-223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS14..LC1s_At_forestay.2	-223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS15..LC1s_At_forestay.3	223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS16..LC1s_At_forestay.4	223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS17..LC1s_at_hinge_point.1	-223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS18..LC1s_at_hinge_point.2	-223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0
LS19..LC1s_at_hinge_point.3	223100	197270	11576489	11580319	0.0	0.0	0.0	0.0
LS20..LC1s_at_hinge_point.4	223100	-197270	11576489	11580319	0.0	0.0	0.0	0.0

Default


Reaction Force Summation (20 Loads, All Entities)

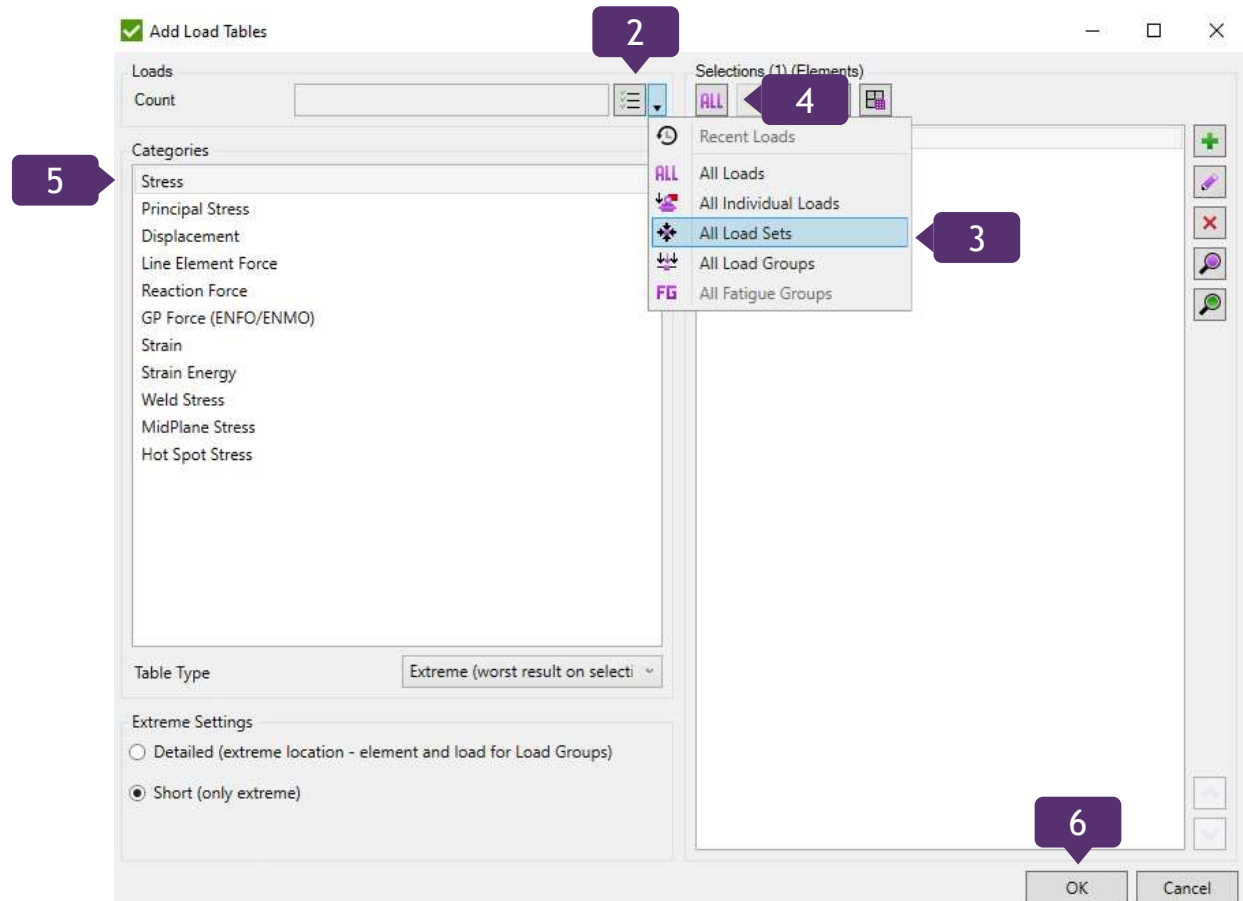
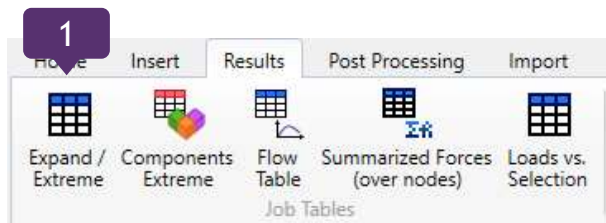
Loads/Selections	Fx [N]	Fy [N]	Fz [N]	Fsum [N]	Mx [N m]	My [N m]	Mz [N m]	Msum [N m]
LS1..LC1s_Tip load.1	-223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS2..LC1s_Tip load.2	-223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS3..LC1s_Tip load.3	223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS4..LC1s_Tip load.4	223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS5..LC1s_Middle Bridge.1	-223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS6..LC1s_Middle Bridge.2	-223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS7..LC1s_Middle Bridge.3	223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS8..LC1s_Middle Bridge.4	223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS9..LC1s_Backside.1	-223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS10..LC1s_Backside.2	-223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS11..LC1s_Backside.3	223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS12..LC1s_Backside.4	223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS13..LC1s_At_forestay.1	-223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS14..LC1s_At_forestay.2	-223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS15..LC1s_At_forestay.3	223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS16..LC1s_At_forestay.4	223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS17..LC1s_at_hinge_point.1	-223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS18..LC1s_at_hinge_point.2	-223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS19..LC1s_at_hinge_point.3	223e+3	197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0
LS20..LC1s_at_hinge_point.4	223e+3	-197e+3	11576e+3	11580e+3	0.0	0.0	0.0	0.0

Updated



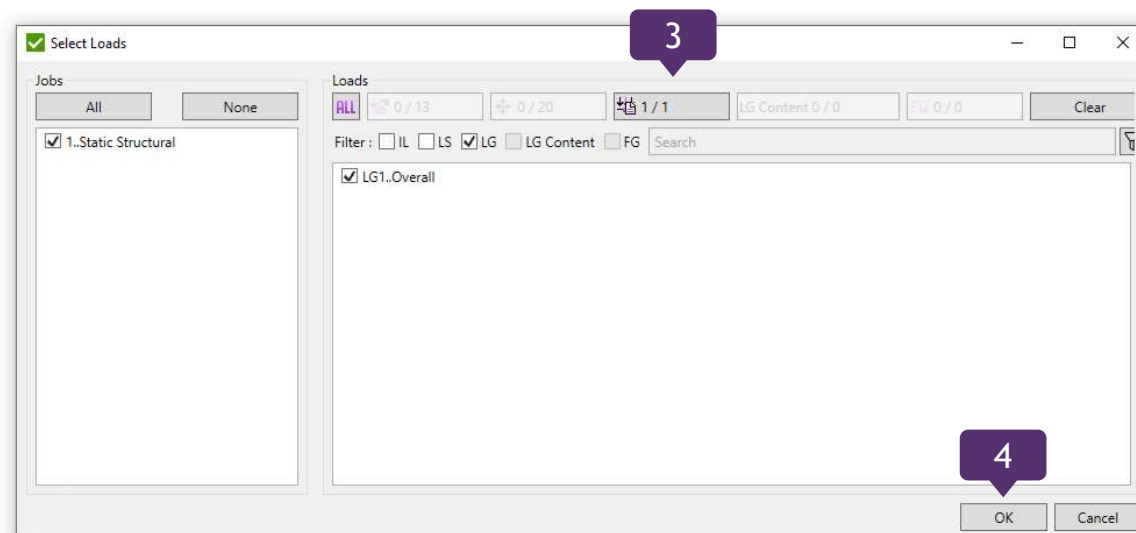
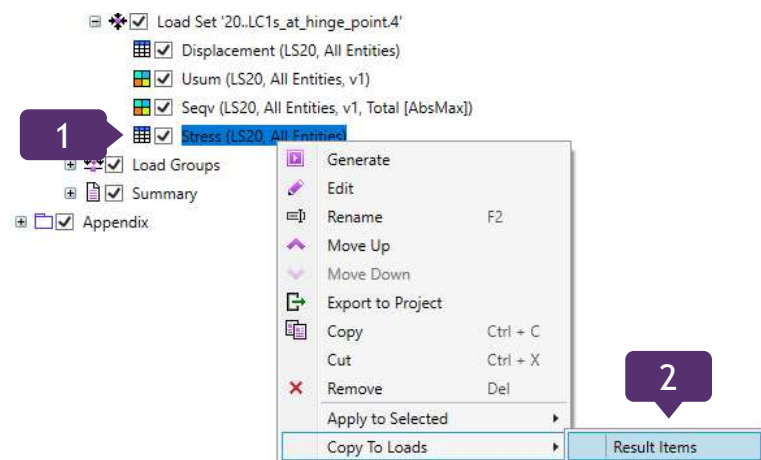
# Add Extreme Stress Tables

- 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**

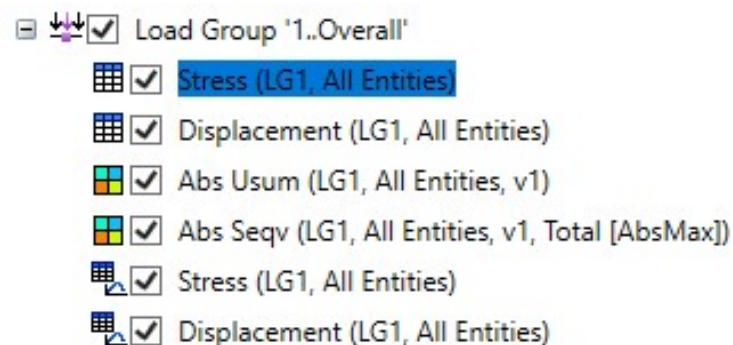
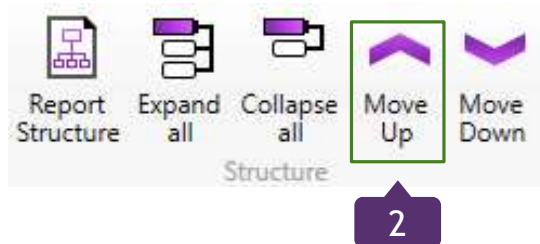


# Move item in the structure

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

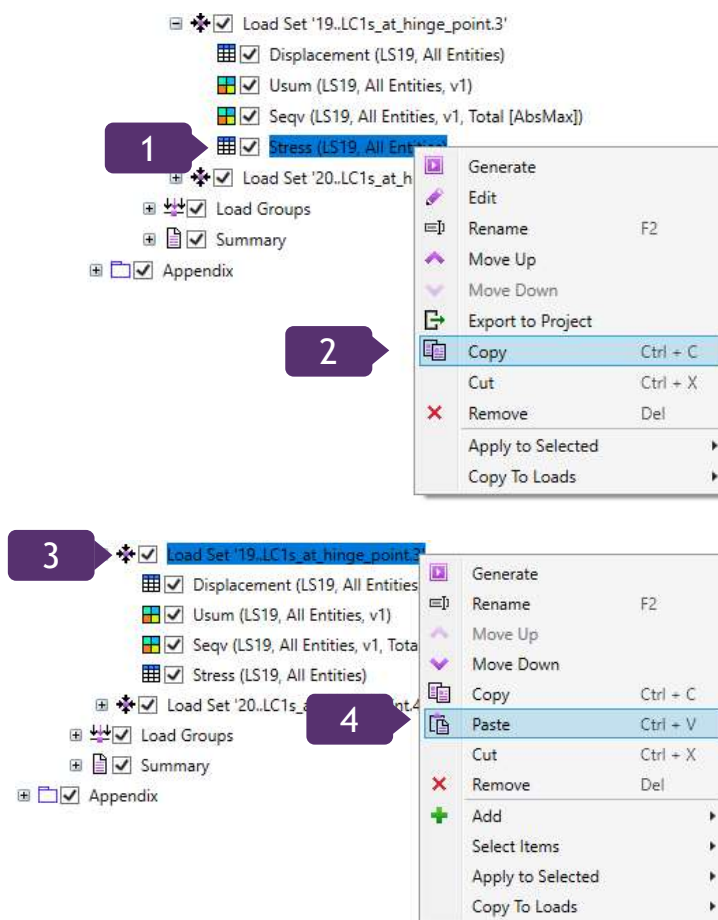
In context menu select **Paste**

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

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

6

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

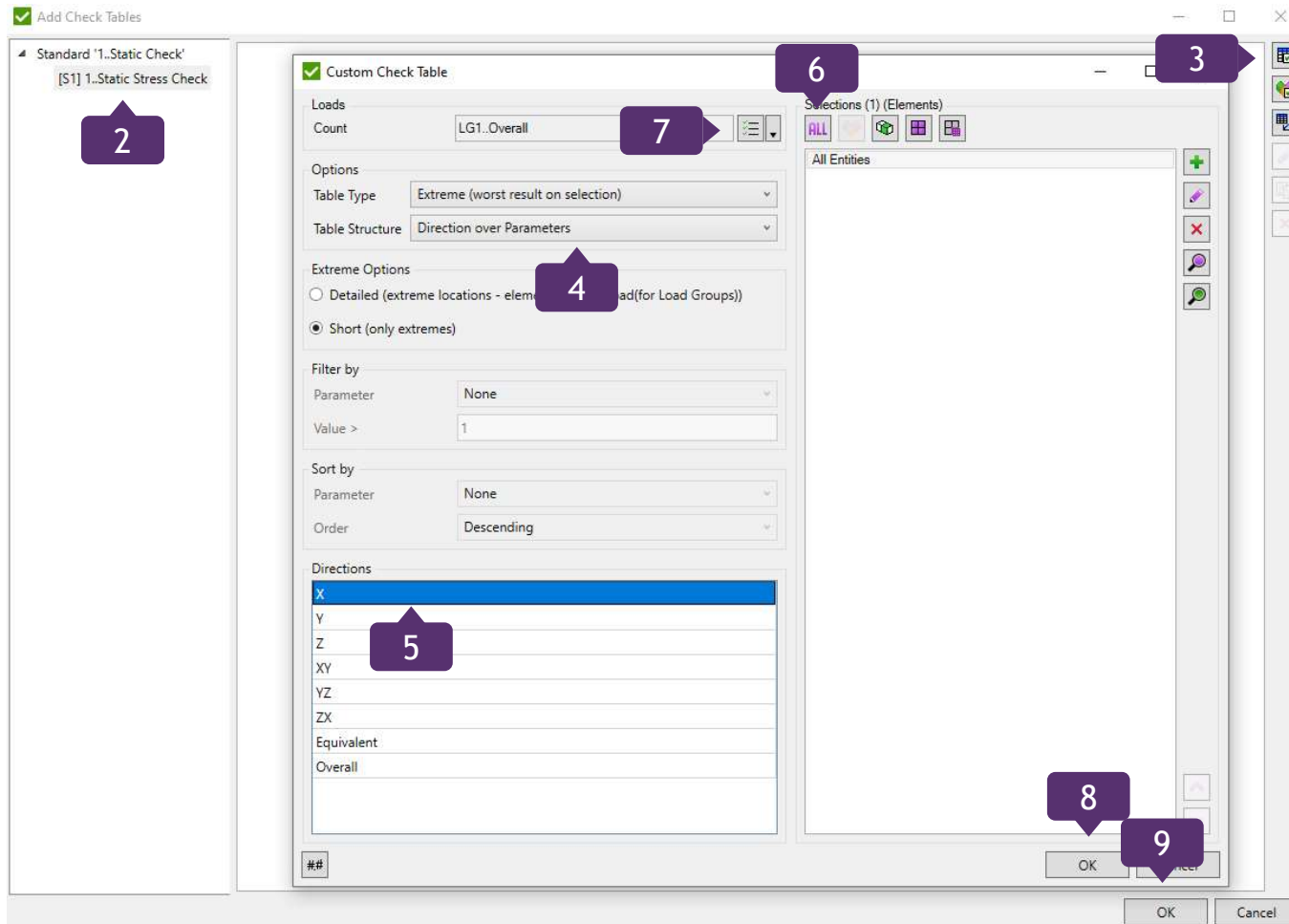
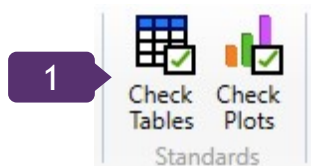
Select all **Load Groups**

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

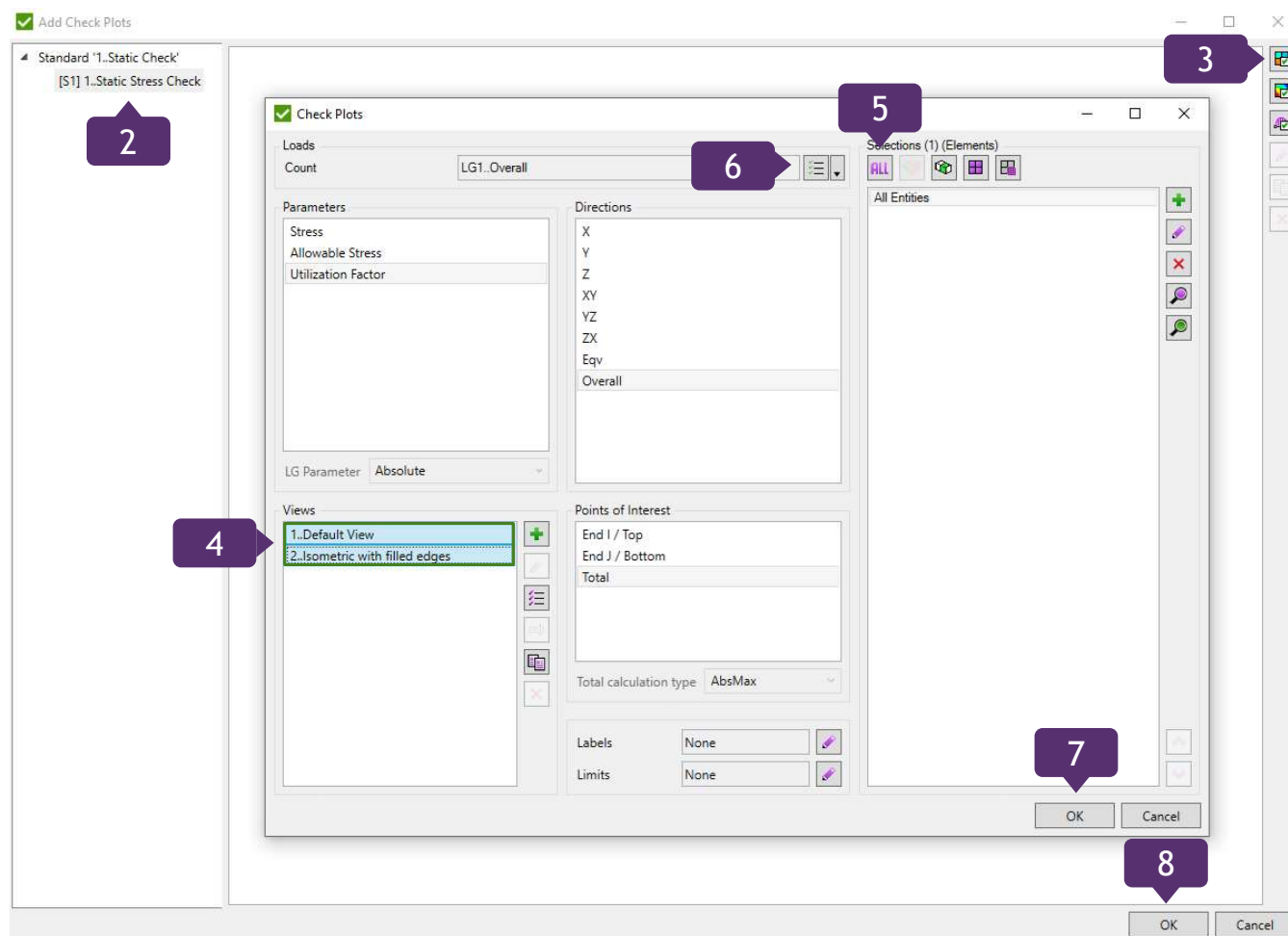
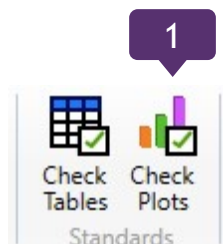
Select all **Load Groups**

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 Fac

Standard 1..Static Check

Title (Default) Overall Utilization Factor (LG1,

Title (User)

▼ Options

Point Total

Selection **All Entities**

View **1..Default View**



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

- 1..Static Check
- X (LG1, All Entities)
- Overall Utilization Factor (LG1, All Entities, v1, Total)
- Overall Utilization Factor (LG1, All Entities, v2, Total)
- Summary
- Appendix

- Generate
- Rename F2
- Move Up
- Move Down
- Copy Ctrl + C
- Cut Ctrl + X
- Remove Del
- Add
- Select Items
- Apply to Selected



# 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

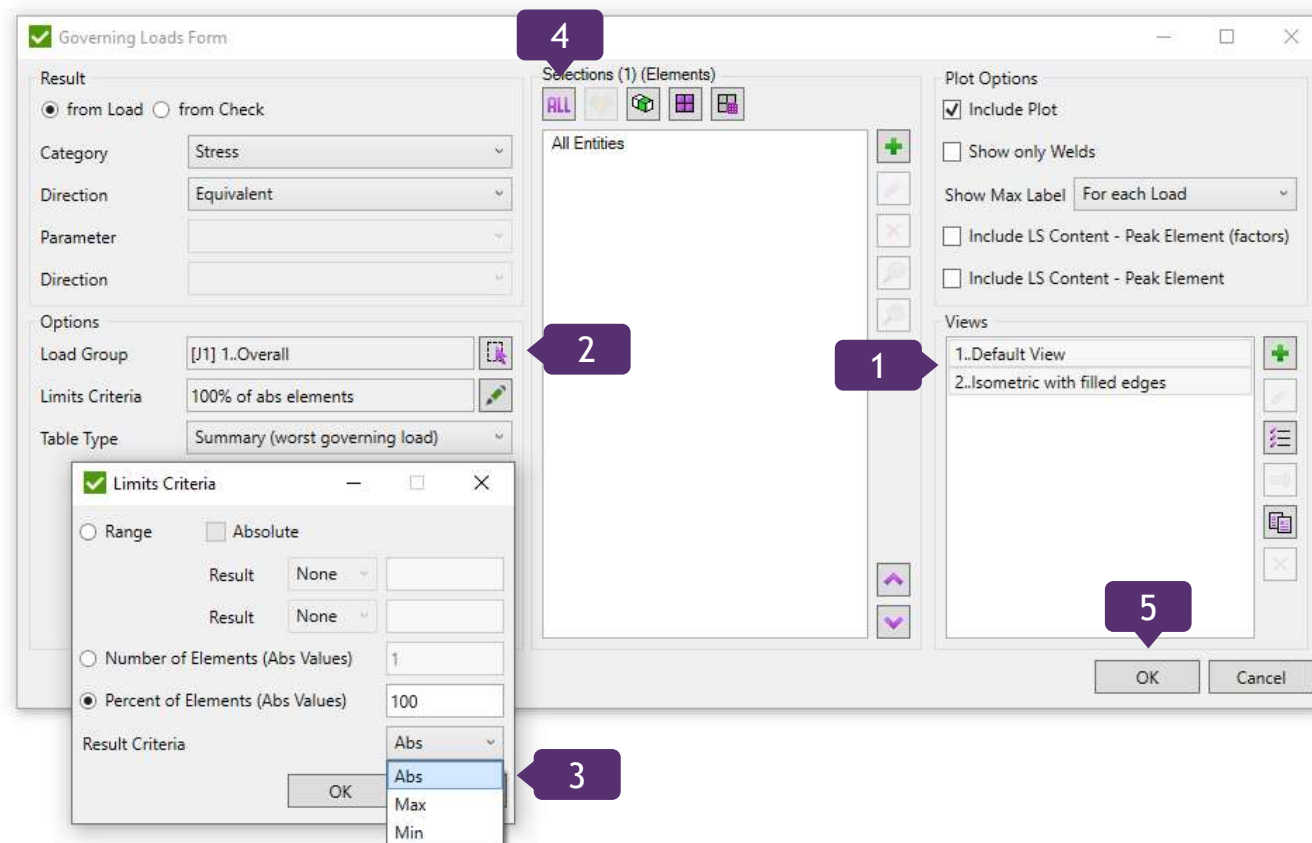
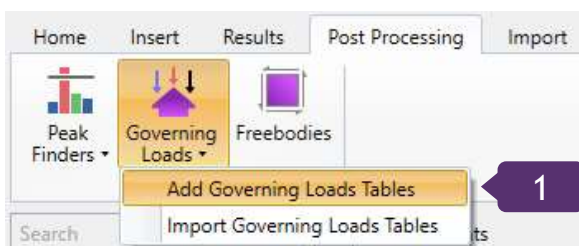
Press **ALL** to add full model selection

5

Select Views with IDs 1-2

6

Press **OK**





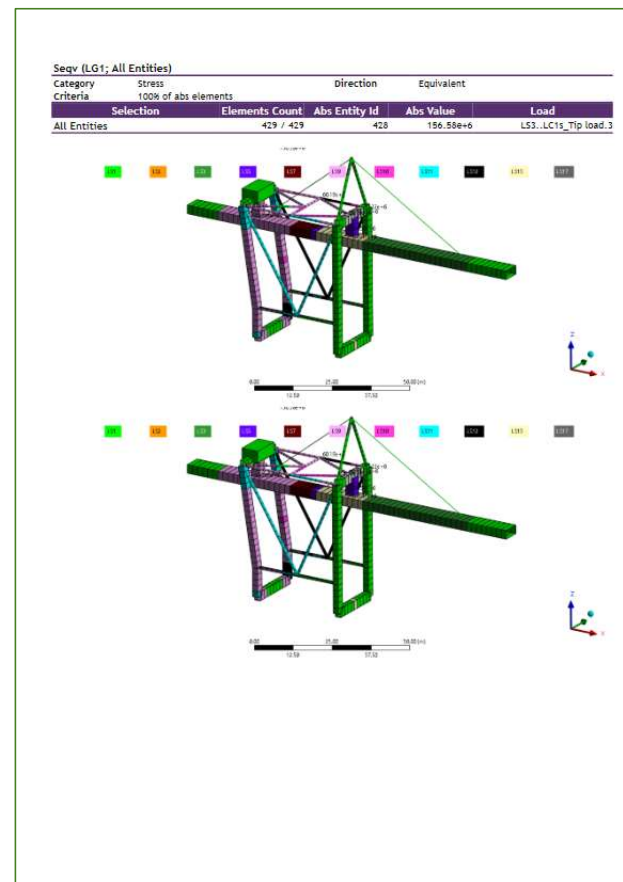
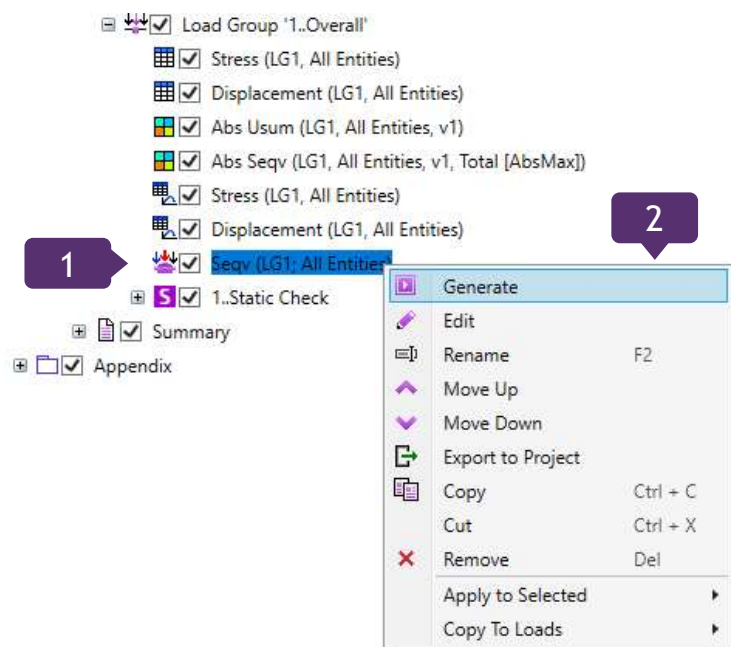
# Generate Governing Loads results

1

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

2

Execute **Generate** from context menu



# Add Conclusion

1

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

2

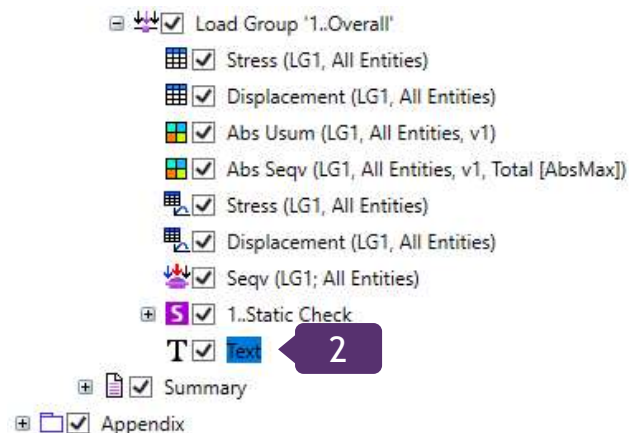
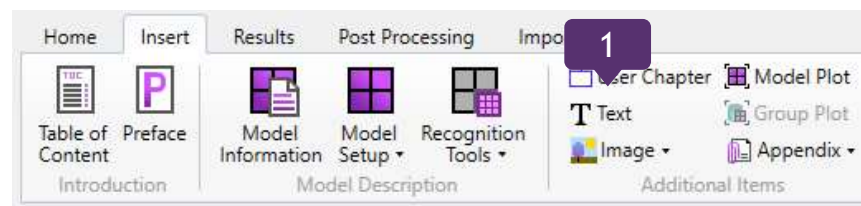
Select **Text** in model tree

3

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

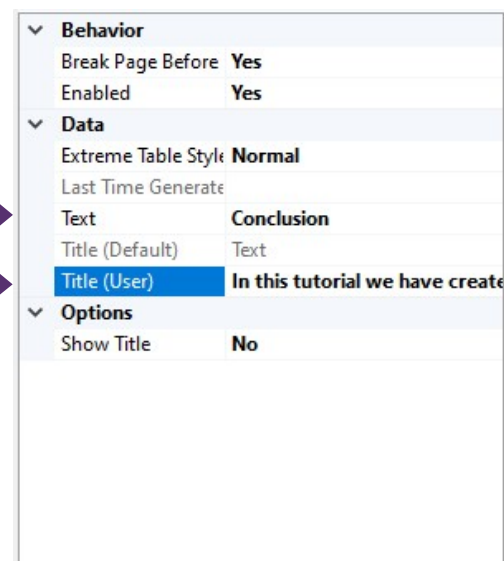
4

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



3

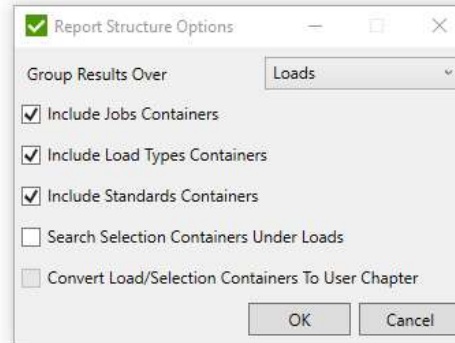
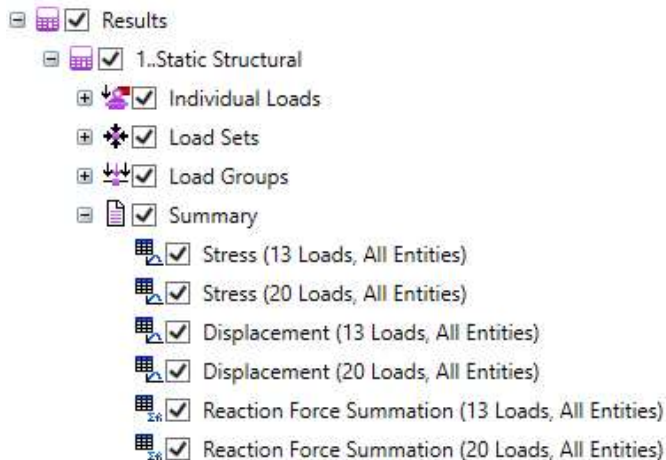
4



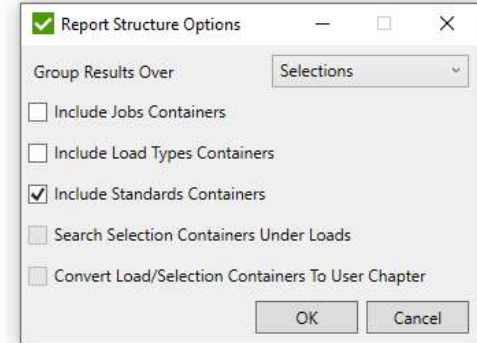
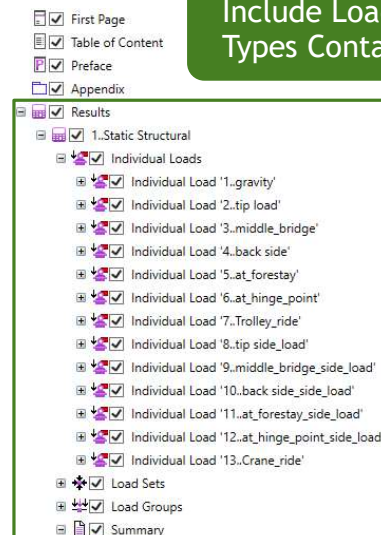
# Report Structure

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.

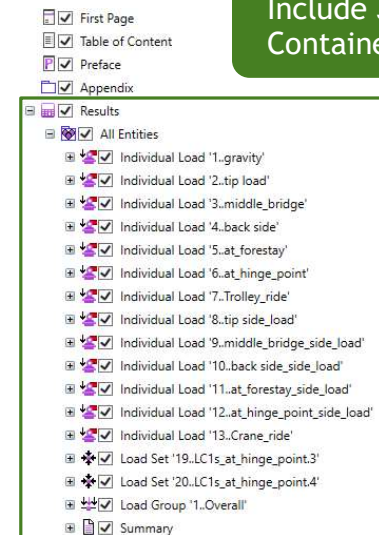
Tables/Plots with multiple loads of the same Job are placed under JobSummary Chapter (for loads from different Jobs in Summary under Results chapter):



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

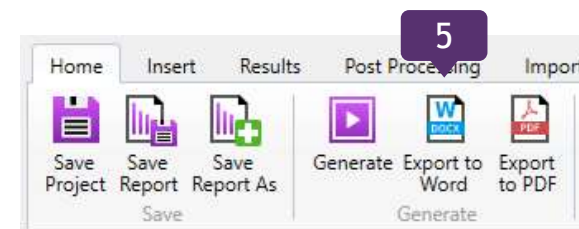
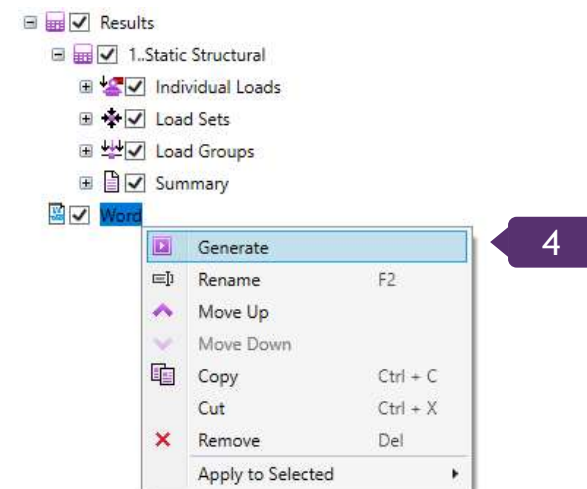
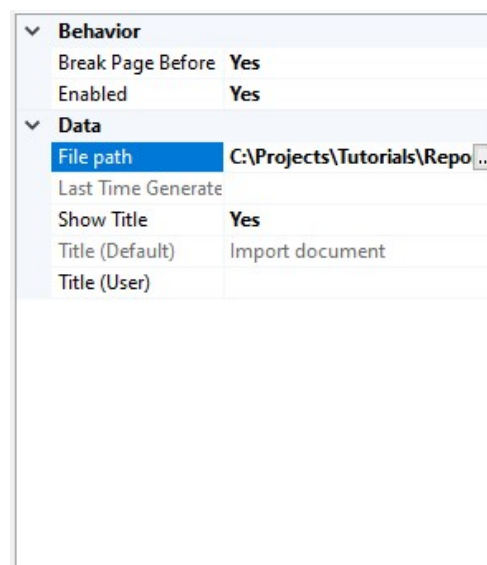
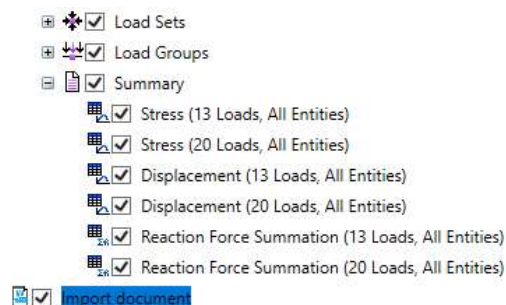
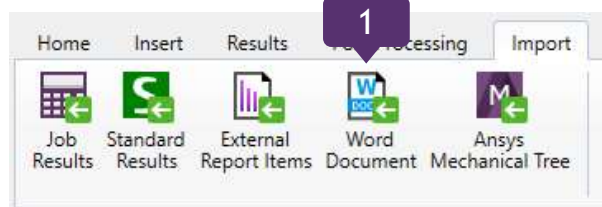
In display properties set the file path

4

Press **Generate**

5


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



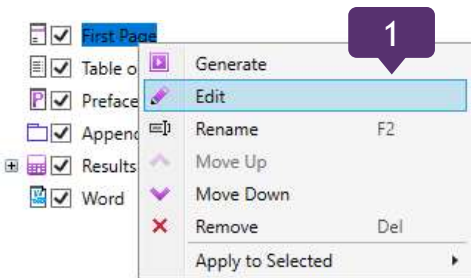
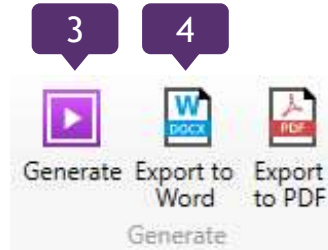
# Generated report

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

<b>Engineer details</b> Engineer: <input type="text" value="Support"/> Company: <input type="text" value="SDC Verifier"/> E-mail: <input type="text" value="support@sdcverifier.com"/> Phone: <input type="text" value="+31 15 30-10-310"/> Address: <input type="text" value="Zijlvest 25 [...]"/> Web Site: <input type="text" value="sdcverifier.com"/> Logo:  <input type="checkbox"/> Put logo on report plots	<b>Customer details</b> Contact Person: <input type="text" value="customer"/> Company: <input type="text" value="company"/> E-mail: <input type="text" value="customer@company.com"/> Phone: <input type="text" value="+31 15 555-55-55"/> Address: <input type="text" value="Zijlvest 25 [...]"/> Web Site: <input type="text" value="company.com"/> Logo: <input type="text" value="Company"/> Image: <input type="radio"/> From file <input checked="" type="radio"/> From View 1. Default View
<b>Project Details</b> Number: <input type="text" value=""/> Name: <input type="text" value=""/> Version: <input type="text" value="1"/>	<input type="button" value="OK"/> <input type="button" value="Cancel"/>

SDC  
VERIFIER

## Result Report



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Engineer: Support  
Customer: customer  
Project Number:  
Version: 1  
Date: 13/04/2023