



Tutorial

Report Designer

5 Jan 2021
Version 2020.0.2

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

This tutorial demonstrates how to build reports using 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

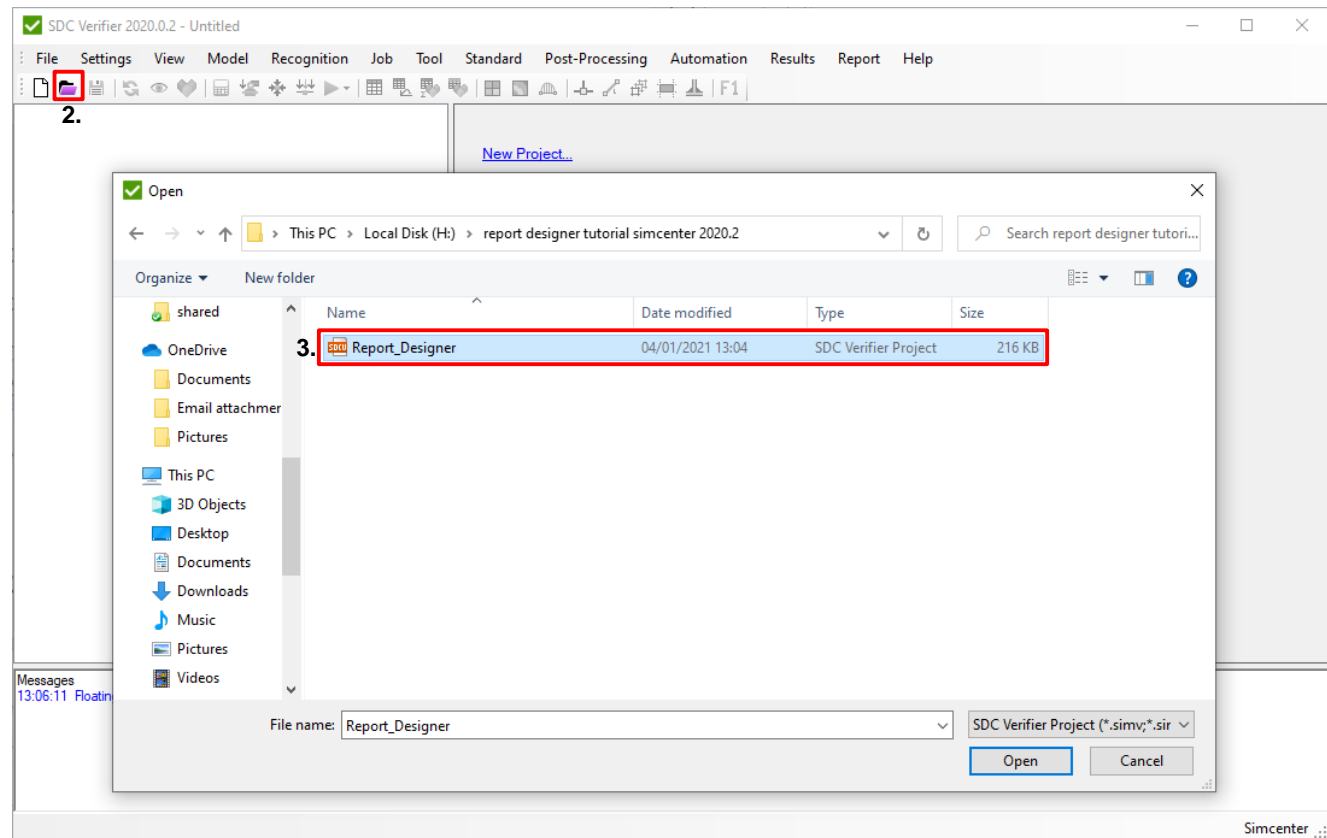
Launch **SDC Verifier** 

2

Execute *File - Open Project*.

3

Project: **Report_Designer**



Predefined project



Views (3)


- Model
- Recognition
- Jobs (1)
 - 1..Job 1
 - Individual Loads (13)
 - Load Sets (20)
 - 1..LC1s_Tip load.1
 - 2..LC1s_Tip load.2
 - 3..LC1s_Tip load.3
 - 4..LC1s_Tip load.4
 - 5..LC1s_Middle Bridge.1
 - 6..LC1s_Middle Bridge.2
 - 7..LC1s_Middle Bridge.3
 - 8..LC1s_Middle Bridge.4
 - 9..LC1s_Backside.1
 - 10..LC1s_Backside.2
 - 11..LC1s_Backside.3
 - 12..LC1s_Backside.4
 - 13..LC1s_At_forestay.1
 - 14..LC1s_At_forestay.2
 - 15..LC1s_At_forestay.3
 - 16..LC1s_At_forestay.4
 - 17..LC1s_at_hinge_point.1
 - 18..LC1s_at_hinge_point.2
 - 19..LC1s_at_hinge_point.3
 - 20..LC1s_at_hinge_point.4
 - Load Groups (1)
 - Fatigue Groups (0)
 - Tables (0)
 - Plots (0)

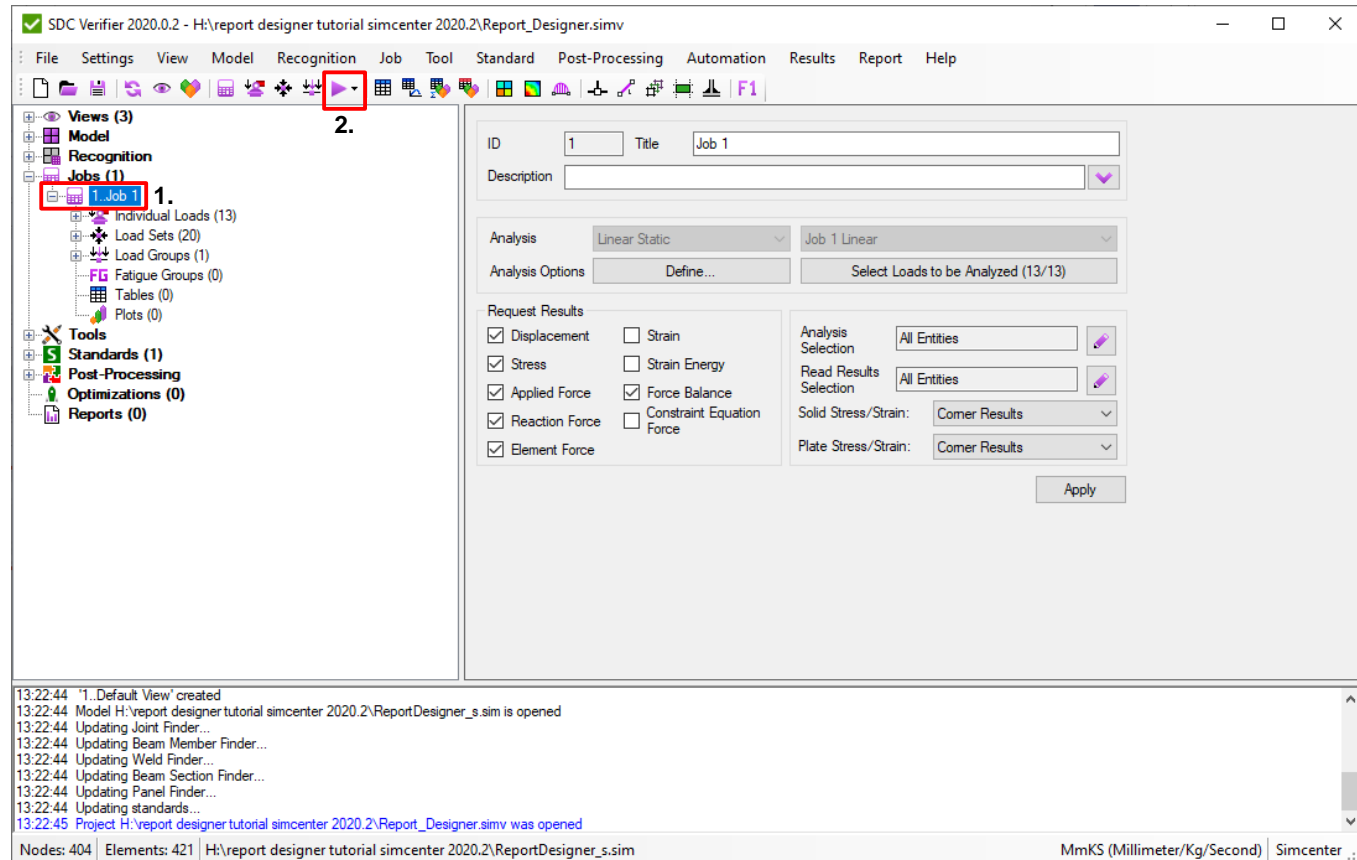
Standards (1)

- 1..Static Check
 - Input
 - Constants (0)
 - Types (1)
 - Characteristic (0)
 - Classifications (0)
 - Standard Tables (0)
 - Checks (1)
 - 1..Static Stress Check

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

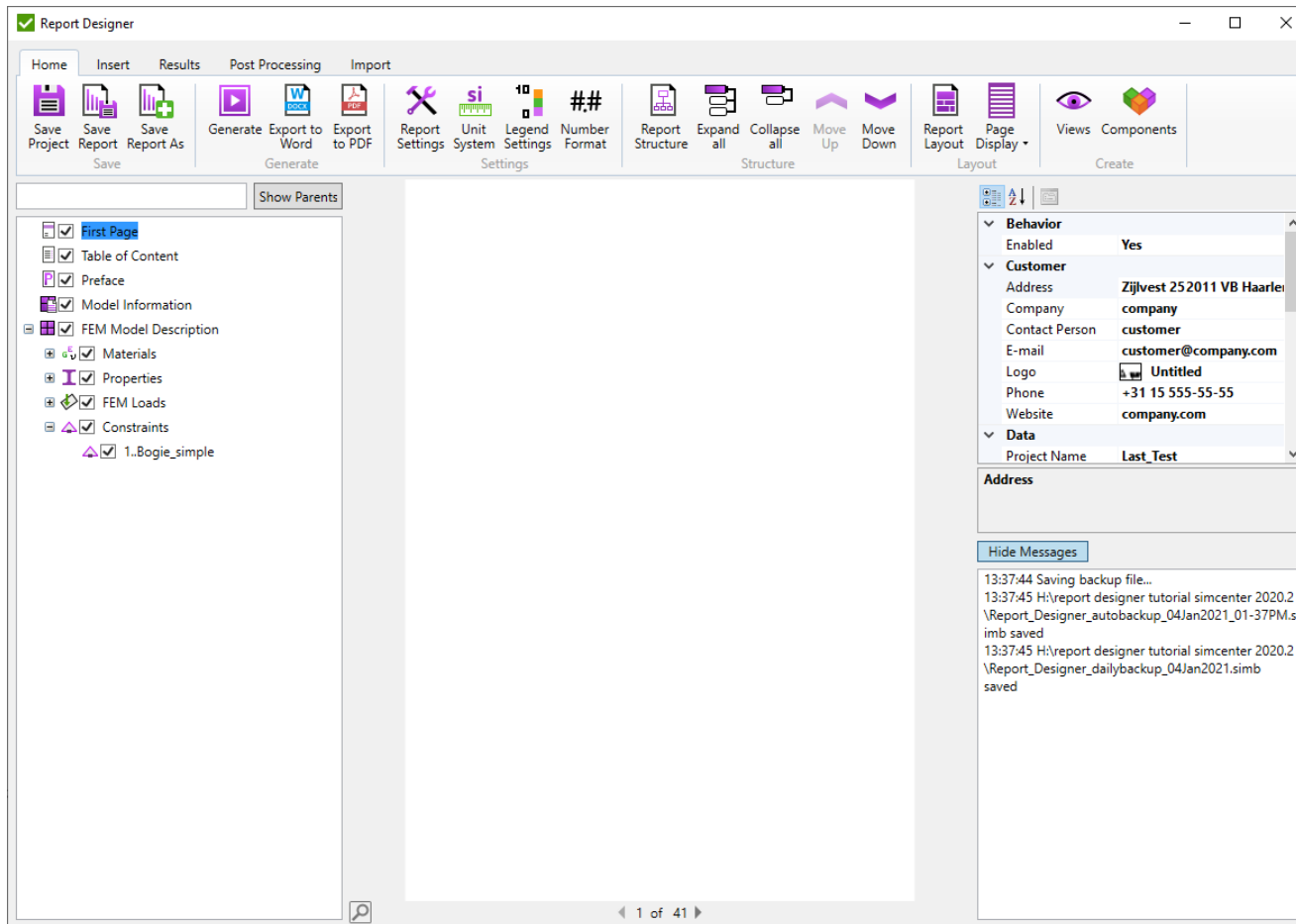
Analyze Job

- 1 Select **1..Job1** in the *Model Tree*.
- 2 Press  on toolbar to analyze job.



Report Designer Interface

Toolbar – contains main functions



Report Structure – displays structure of the report

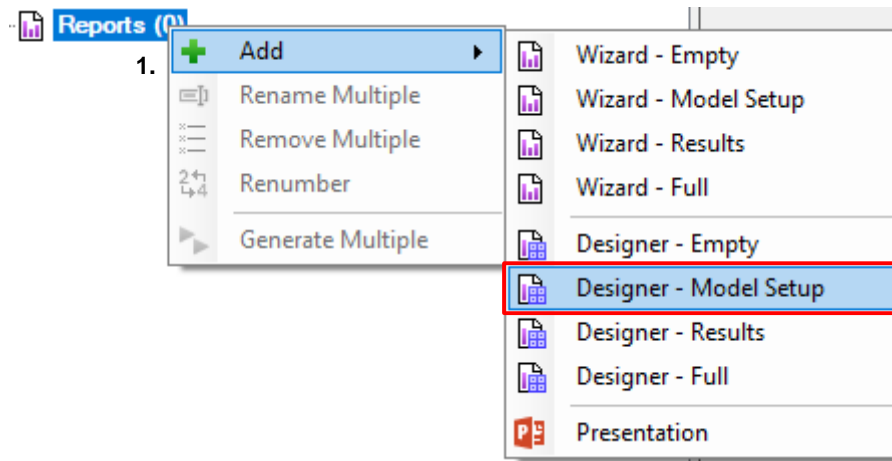
Displays properties of selected item. It is possible to modify them.

Report document

Add Model Setup Report

1

Execute Reports – Add – Designer -
Model Setup from report context menu



There are 4 templates of reports:

Empty – only first page and preface items are included;


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


Results – for each load extreme displacement tables, stress and displacement plots are included. Predefined tables: sum of reaction forces, stresses/displacements summary tables;

Full – Model Setup + Results + all tables created in Job.

Editing First Page


1 Execute *Edit* from First Page context menu

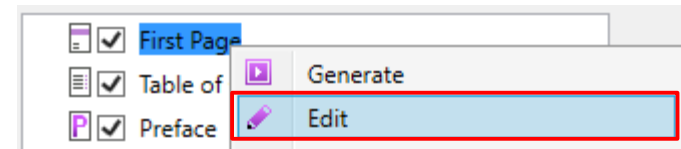
2 Press  and select Support Engineer from the library

3 Press  and select Customer from the library

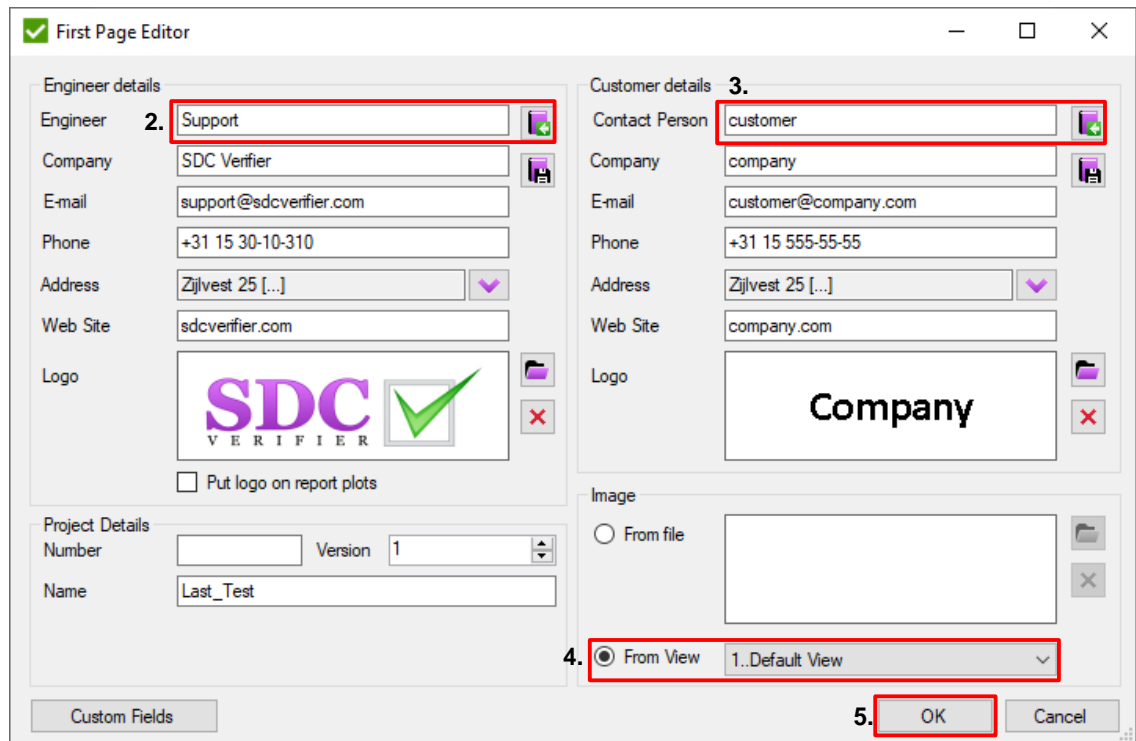
4 Image – From View: **Selected**

5 Press *OK*.

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



1.



First Page Editor

Engineer details

Engineer 2. Support

Company SDC Verifier

E-mail support@sdcverfier.com

Phone +31 15 30-10-310

Address Zijvest 25 [...]

Web Site sdcverfier.com

Logo SDC VERIFIER

☐ Put logo on report plots

Project Details

Number Version 1

Name Last_Test

Customer details 3.

Contact Person customer

Company company

E-mail customer@company.com

Phone +31 15 555-55-55

Address Zijvest 25 [...]

Web Site company.com

Logo Company

Image

☐ From file

☒ From View 1..Default View

4.

5. OK

Generate First Page

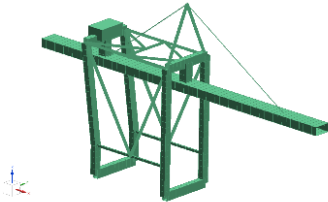
1

Execute *Generate* from First Page context menu



Model Setup

Report Designer Tutorial



Prepared by:
SDC Verifier
+31 15 30-10-310
sdoverifier.com
Zijlvest 25
2011 VB Haarlem
The Netherlands

Prepared for:
company
+31 15 555-55-55
company.com
Zijlvest 25
2011 VB Haarlem
The Netherlands

Engineer: Support
Customer: customer
Project Number:
Version: 1
Date: 04/01/2021

Report in Report designer



Model Setup

Report Designer Tutorial

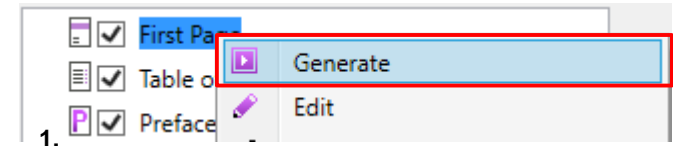


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SDC Verifier
+31 15 30-10-310
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Zijlvest 25
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Engineer: Support
Customer: customer
Project Number:
Version: 1
Date: 04/01/2021

Exported report to Microsoft Word



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

Generate Preface item

1 Select **Preface** item in report structure

2 Execute *Generate* from context menu

Preface

This document is generated with SDC Verifier 2020.0.2 and calculated with Simcenter v2020.2
Model File: H:\report designer tutorial simcenter 2020.2\ReportDesigner_s_sim
Project File: H:\report designer tutorial simcenter 2020.2\Report_Designer.simv
Report Profile: 1_Model Setup
Generation on: 1/4/2021 2:34:35 PM

Unit System

Current Unit System = MmKS (Millimeter/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	Millimeter
Mass	Kilogram
Time	Second
Force	mN (Millinewton)
Stress	KPa

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.

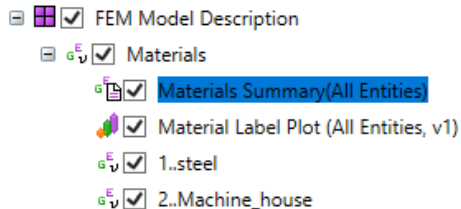
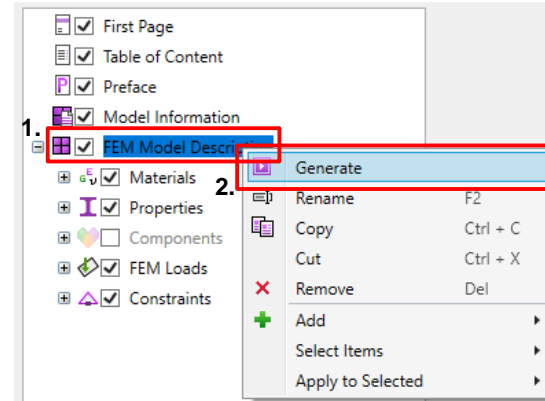
Description on current unit system. It has an influence on calculations according to some standards.

Introduction section – how to use and navigate in the report. By default is OFF.

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.

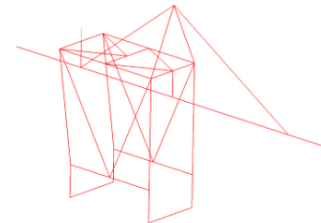
Materials Summary(All Entities)

Title	Elements	Mass [kg]	Mass Density [kg/m³]	Gravity Center [m]
1..steel	420	1937142.8	9.812.50	[-13.85; 0.00; 34.29]
2..Machine_house	1	78999.9	333.33	[-35.48; 0.00; 52.00]
Overall	421	2017142.7		[-14.70; 0.00; 35.00]

Material Summary – mass and gravity center overview over materials

1..steel

Property	Value
Elements	420
Mass [kg]	1937143.0
Gravity Center [mm]	[-13848.00; 0.00; 34294.77]
Young Modulus [KPa]	2.10e+8
Shear Modulus [KPa]	0
Poisson Ratio	0.30
Shear [KPa]	0
Mass Density [kg/mm³]	9.813e-06
Tensile Strength [KPa]	0.36e+8
Yield Stress [KPa]	0.24e+8



Detailed Material description with plot

Material Options

1

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

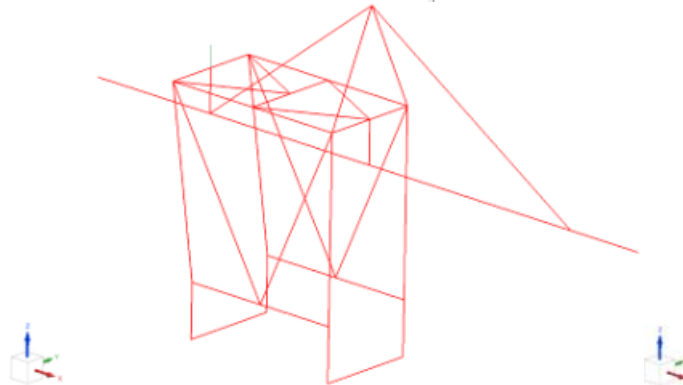
2

Preview Mode: **Display Only Selected**

2.

▼ Behavior	
Break Page Before	Yes
Enabled	Yes
Include Plot	Yes
Include Selection	No
▼ Data	
Selection	All Entities
Title (Default)	1..steel
Title (User)	
▼ Plot	
Comments	Objects selected: 0
Preview Mode	Highlight
Views	1 selected...

It is possible to exclude plot using option – Include Plot.
Using View option it is possible to change display options for the plot.




Preview Mode: Highlight



Preview Mode: Display Only Selected

Create View for Fem Loads

1 Press  on the toolbar to open View Manager

2 Select View: **1..Default View**

3 Press  to copy view.

4 Select: **4..Default View.(Copy)**

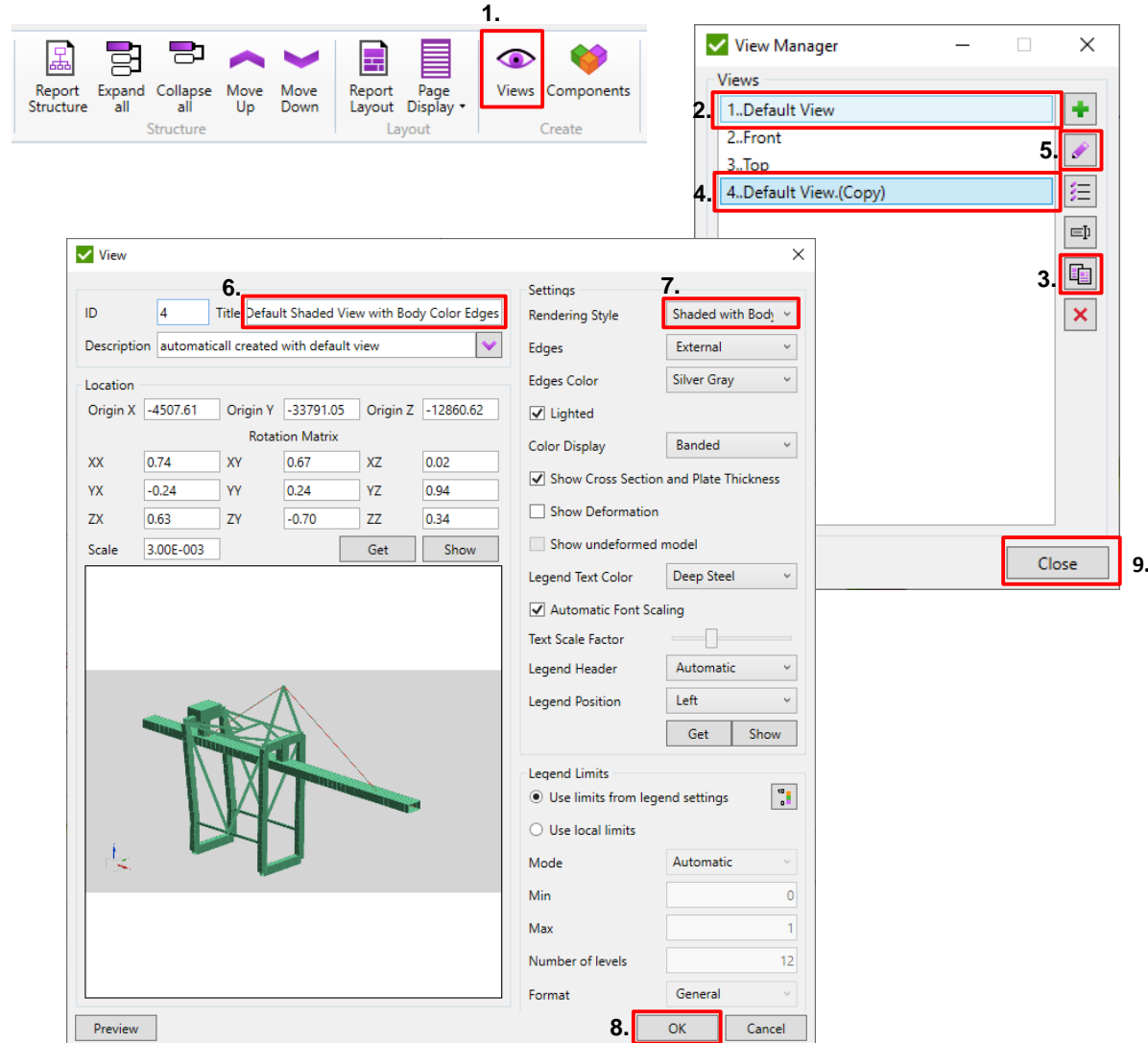
5 Press  to edit view

6 Title: **Default Shaded View with Body Color Edges**

7 **Rendering Style: Shaded with Body Color Edges**

8 Press **OK**.

9 Press **Close**.



The screenshot displays the SDC Verifier software interface. At the top, a toolbar contains icons for Report Structure, Expand all, Collapse all, Move Up, Move Down, Report Layout, Page Display, and Views (highlighted with a red box and labeled '1.'). Below the toolbar, the View Manager dialog box is open, showing a list of views: 1..Default View, 2..Front, 3..Top, and 4..Default View.(Copy) (highlighted with a red box and labeled '4.'). The '4..Default View.(Copy)' view is selected, and its 'Edit' icon (highlighted with a red box and labeled '5.') is visible. The 'Close' button at the bottom right of the View Manager is also highlighted with a red box and labeled '9.'. The View dialog box is open for the selected view, showing the 'Title' field with the text 'Default Shaded View with Body Color Edges' (highlighted with a red box and labeled '6.'). The 'Rendering Style' dropdown is set to 'Shaded with Body' (highlighted with a red box and labeled '7.'). The 'Edges' dropdown is set to 'External', and the 'Edges Color' is 'Silver Gray'. The 'Lighted' checkbox is checked. The 'Color Display' dropdown is set to 'Banded'. The 'Show Cross Section and Plate Thickness' checkbox is checked. The 'Show Deformation' checkbox is unchecked. The 'Show undeformed model' checkbox is unchecked. The 'Legend Text Color' dropdown is set to 'Deep Steel'. The 'Automatic Font Scaling' checkbox is checked. The 'Text Scale Factor' slider is set to 1. The 'Legend Header' dropdown is set to 'Automatic'. The 'Legend Position' dropdown is set to 'Left'. The 'Legend Limits' section has 'Use limits from legend settings' selected. The 'Mode' dropdown is set to 'Automatic'. The 'Min' value is 0, the 'Max' value is 1, and the 'Number of levels' is 12. The 'Format' dropdown is set to 'General'. The 'OK' button at the bottom right of the View dialog is highlighted with a red box and labeled '8.'. The 'Preview' button is visible at the bottom left of the View dialog.

Apply View to all Fem Loads

1. Select **FEM Loads** in report structure

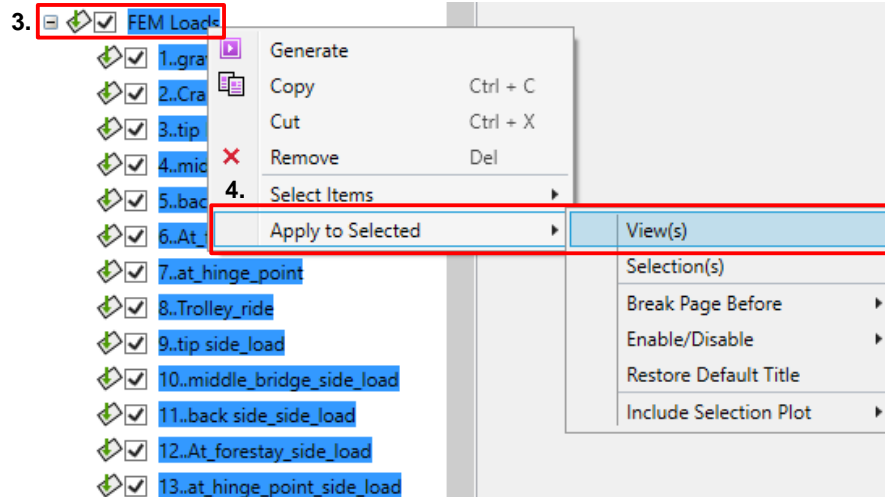
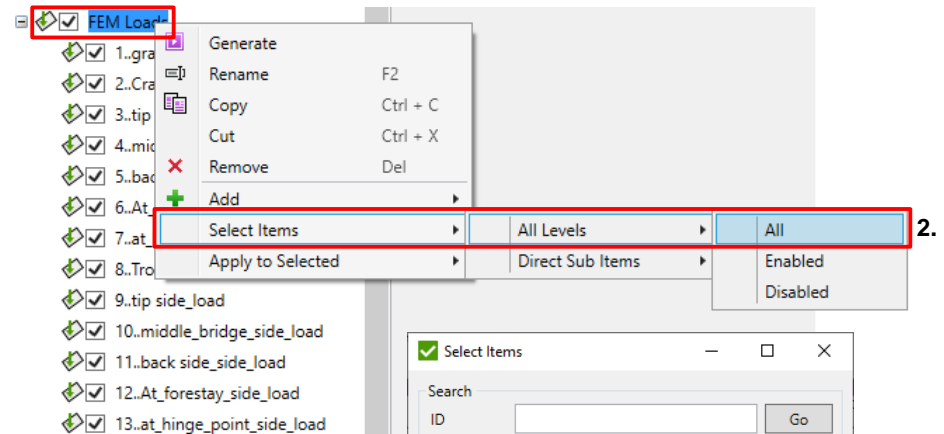
2. Execute *Select Items – All levels – All*

3. Select **FEM Loads** in report structure

4. Execute – *Apply to selected – Views*

5. Select: Default Shaded View with Body Color Edges

6. Press **OK**



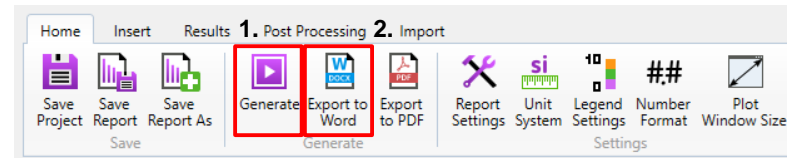
Generate Report

1

Press  to generate report

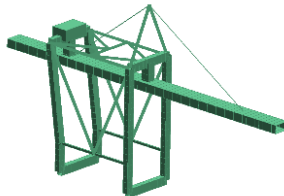
2

Press  to export report to Word



Model Setup

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Prepared by:

SDC Verifier

+31 15 30-10-310

sdoverifier.com

Zijlvest 25
2011 VB Haarlem
The Netherlands

Prepared for:

company

+31 15 555-55-55

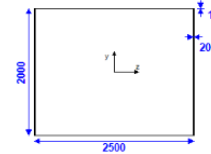
company.com

Zijlvest 25
2011 VB Haarlem
The Netherlands

Engineer: Support
Customer: customer
Project Number:
Version: 1
Date: 04/01/2021

1..portside legs

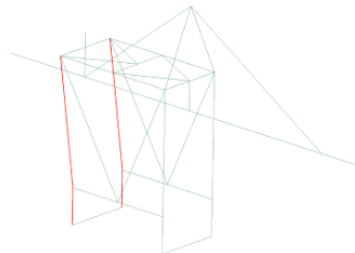
Property	Value	Property Shape
Type / Elements	Beam / 44	
Material	1..steel	
Mass [kg]	112491.4	
Gravity Center [mm]	[-32410.50; 0.00; 28041.21]	
Area, [mm ²]	129200.00	
I1, [mm ⁴]	7537830999.67	
I2, [mm ⁴]	147822226999.67	
I12, [mm ⁴]	6.974e-05	
Torsion Constant, [mm ⁴]	140675346147.14	
Y Shear Area, [mm ²]	0	
Z Shear Area, [mm ²]	0	
Nonstructural Mass, [kg]	0	
Perimeter, [mm]	0	
Warping Constant, [mm ⁶]	12011140169998100.00	
Y Neutral Axis Offset A, [mm]	0	
Z Neutral Axis Offset A, [mm]	0	
w [mm]	2500.000	
h [mm]	2000.000	
t1 [mm]	10.000	
t2 [mm]	20.000	



3..tip load

Definition	Load Type	Applied On	Values
------------	-----------	------------	--------

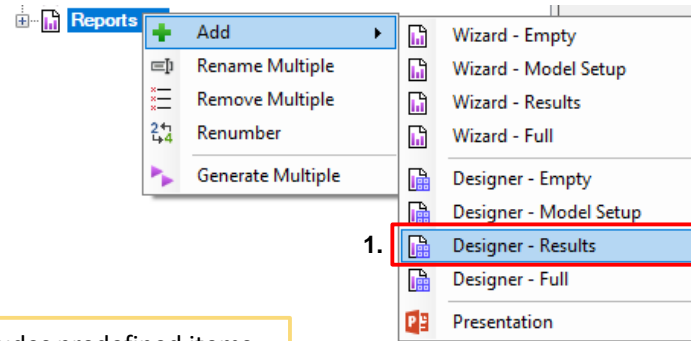
tip load	Force	Nodes: 325;	ScalingForce: 1000;
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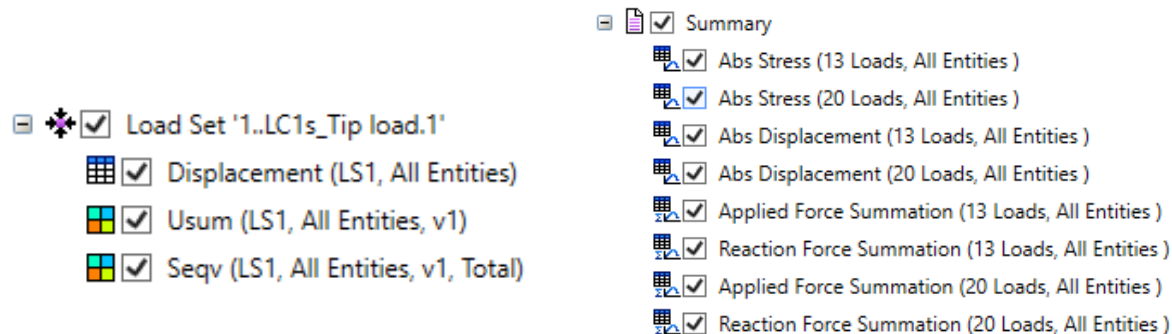
Add Result Report

1

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



Result report includes predefined items



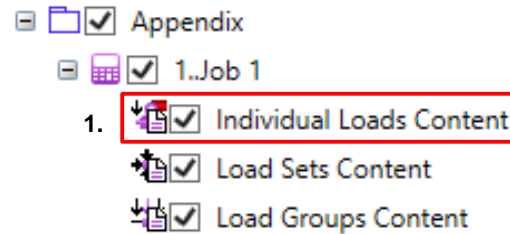
For each load extreme displacement table,
displacement and stress plots are created

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

Individual Loads Content

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

2 Execute *Generate* from context menu



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

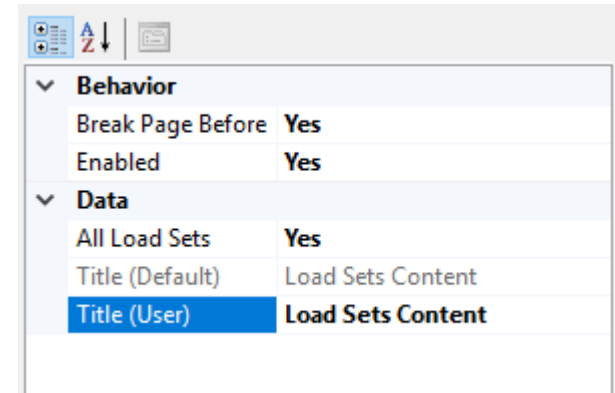
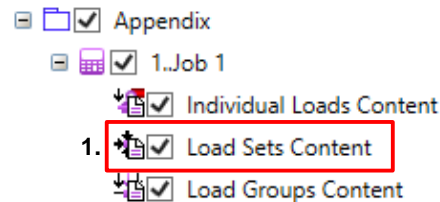
Content shows what boundary conditions are for Individual Load. If Individual Load was created based on results than Output Set is shown instead of FemLoad.

1

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

2

Execute *Generate* from context menu



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]

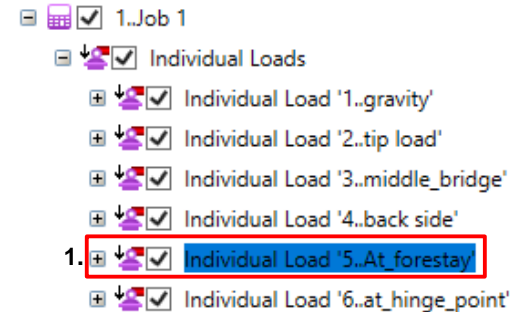
Individual Load Options

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

2 Execute *Generate* from context menu

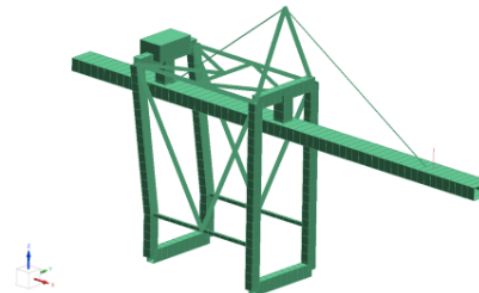
Individual Load includes Plot, Content and Sum of Reaction forces. It is possible to control what should be displayed using Options

Behavior	
Break Page Before	Yes
Enabled	Yes
Data	
Job	1..Job 1
Load Type	IndividualLoad
Title (Default)	Individual Load '5..A
Title (User)	
Options	
Include Individual Red Plot	Yes
Include Load Item Content	Yes
Include Sum Of Forces	Yes
Selection	All Entities
Plot	
View	1..Default View



Individual Load '5..At_forestay'

At_forestay Bogie_simple



Title		Value									
Individual Load	5..At_forestay										
FemLoad	6..At_forestay										
Constraint	1..Bogie_simple										
Result Case	Job 1 Linear - At_forestay										
Safety Factor	1										

Sum of Reaction Forces											
Load	Fx [mN]	Fy [mN]	Fz [mN]	Fsum [mN]	Mx [mN mm]	My [mN mm]	Mz [mN mm]	Msum [mN mm]			
Constraint '1..Bogie_simple'	0e+3	0e+3	1220000e+3	1220000e+3	0.0	0.0	0.0	0.0			

Displacement (IL5, All Entities)											
Individual Load	5..At_forestay	Selection		All Entities							
Type	Extreme	Category		Displacement							
	Extreme	Ux [mm]	Uy [mm]	Uz [mm]	Usum [mm]	Rx	Ry	Rz	Rsum		
Minimum		-0.72	-3.70	-112.66	0.00	0.00	0.00	0.00	0.00		
Maximum		29.00	3.70	112.66	112.66	0.00	0.00	0.00	0.00		
Absolute		29.00	3.70	-112.66	112.66	0.00	0.00	0.00	0.00		

Number Formats

1. Select **Displacement (All Entities)** table under load **5..At_forestay**

2. Press **##** to open Number Formats

3. Digits after decimal point: **3** for Displacement category

4. Press *Close*

5. Execute *Generate* from context menu

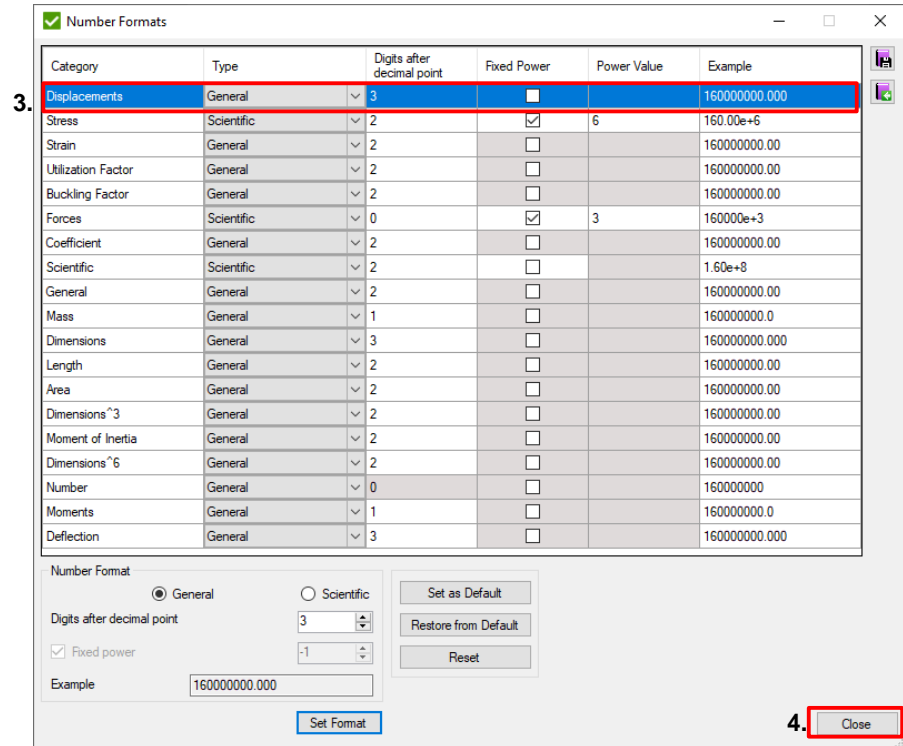
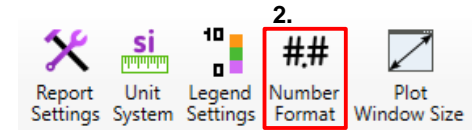
Displacement (IL5, All Entities)									
Individual Load Type	5..At_forestay Extreme	Selection Category				All Entities Displacement			
	Extreme	Ux [m]	Uy [m]	Uz [m]	Usum [m]	Rx	Ry	Rz	Rsum
Minimum		0.00	0.00	-0.11	0.00	0.00	0.00	0.00	0.00
Maximum		0.03	0.00	0.01	0.11	0.00	0.00	0.00	0.00
Absolute		0.03	0.00	-0.11	0.11	0.00	0.00	0.00	0.00

Digits after decimal point = 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		0.000	-0.004	-0.114	0.000	0.00	0.00	0.00	0.00
Maximum		0.030	0.004	0.013	0.114	0.00	0.00	0.00	0.00
Absolute		0.030	0.004	-0.114	0.114	0.00	0.00	0.00	0.00

Digits after decimal point = 3

- Individual Load '5..At_forestay'
1. **Displacement (IL5, All Entities)**
 - ☒ Usun (IL5, All Entities, v1)
 - ☒ Seqv (IL5, All Entities, v1, Total)




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 Equivalent Stress – **Seqv(All Entities)** under load **5..At_forestay**

2

Press  to open Legend Settings

3

Max: **180e+3** for Stress category

4

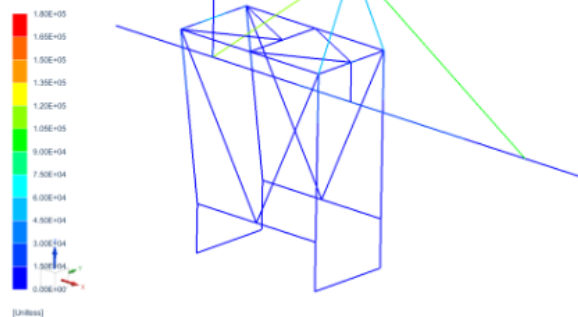
Press *Close*

5





Execute *Generate* from context menu

Seqv (IL5, All Entities, v1, Total)

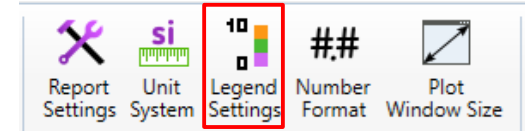
Report Designer - Job 1 Linear Result
Set Data, Static Step 1
Members - Elemental, Scalar
Formula Used: SDE Expression
Min: 0.00E+00, Max: 1.10E+05, Units: Unitless



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

-  Individual Load '5..At_forestay'
 -  Displacement (IL5, All Entities)
 -  Usun (IL5, All Entities, v1)
 - 1.  **Seqv (IL5, All Entities, v1, Total)**

2.



3.

Legend Settings

Category	Mode	Min	Max	Number of Levels	Legend Format
Displacements	Automatic			12	General
Stress	Min Max	0	180e+3	12	Exponent
Strain	Automatic			12	General
Utilization Factor	Min Max	0	1.2	12	General
Buckling Factor	Min Max	0	1.2	12	General
Forces	Automatic			12	General
Coefficient	Automatic			12	General
Scientific	Automatic			12	General
General	Automatic			12	General
Mass	Automatic			12	General
Dimensions	Automatic			12	General
Length	Automatic			12	General
Area	Automatic			12	General
Dimensions^3	Automatic			12	General
Moment of Inertia	Automatic			12	General
Dimensions^6	Automatic			12	General
Number	Automatic			12	General
Moments	Automatic			12	General
Deflection	Automatic			12	General

Set to Selected

Mode

Automatic

Set

Number of Levels

12

Set

Legend Format

General

Set

Min

0

Set

Max

0

Set


Set as Default

Restore from Default

Reset

4.

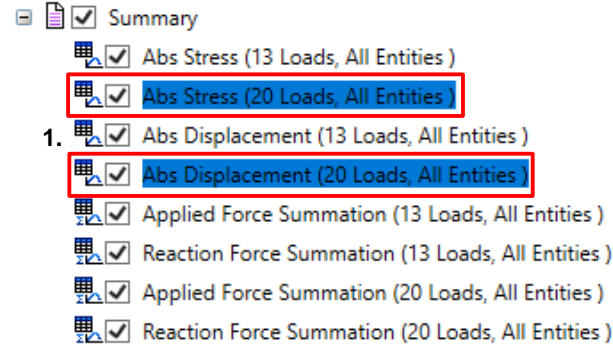
Close

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

Stress and displacement tables over loads

1 Select **Abs stress** and **Abs displacement** together, under Summary item

2 Execute *Generate* from context menu



Stress and displacement extreme flow tables give nice results overview among loads.
For each direction min and max values are highlighted. Min = aqua, Max = red.

Abs 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	-178.40e+6			-0.02e+6			178.40e+6
LS2.LC1s_Tip load.2	-178.40e+6			0.02e+6			178.40e+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

Stresses for all load sets

Abs 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	0.359	0.00	0.01	0.00	0.01		
LS2.LC1s_Tip load.2	0.073	-0.111	-0.352	0.359	0.00	0.01	0.00	0.01		
LS3.LC1s_Tip load.3	0.059	0.111	-0.351	0.359	0.00	0.01	0.00	0.01		
LS4.LC1s_Tip load.4	0.059	-0.111	-0.351	0.359	0.00	0.01	0.00	0.01		
LS5.LC1s_Middle Bridge.1	-0.033	0.057	-0.079	0.098	0.00	0.00	0.00	0.00		
LS6.LC1s_Middle Bridge.2	-0.033	-0.057	-0.079	0.098	0.00	0.00	0.00	0.00		
LS7.LC1s_Middle Bridge.3	-0.044	0.057	-0.078	0.098	0.00	0.00	0.00	0.00		
LS8.LC1s_Middle Bridge.4	-0.044	-0.057	-0.078	0.098	0.00	0.00	0.00	0.00		
LS9.LC1s_Backside.1	-0.032	0.050	-0.144	0.152	0.00	-0.01	0.00	0.01		
LS10.LC1s_Backside.2	-0.032	-0.050	-0.144	0.152	0.00	-0.01	0.00	0.01		
LS11.LC1s_Backside.3	-0.043	0.050	-0.142	0.150	0.00	-0.01	0.00	0.01		
LS12.LC1s_Backside.4	-0.043	-0.050	-0.142	0.150	0.00	-0.01	0.00	0.01		
LS13.LC1s_At_forestay.1	0.059	0.100	-0.239	0.259	0.00	0.00	0.00	0.00		
LS14.LC1s_At_forestay.2	0.059	-0.100	-0.239	0.259	0.00	0.00	0.00	0.00		
LS15.LC1s_At_forestay.3	0.045	0.100	-0.238	0.259	0.00	0.00	0.00	0.00		
LS16.LC1s_At_forestay.4	0.045	-0.100	-0.238	0.259	0.00	0.00	0.00	0.00		
LS17.LC1s_at_hinge_point.1	-0.032	0.087	-0.089	0.111	0.00	0.00	0.00	0.00		
LS18.LC1s_at_hinge_point.2	-0.032	-0.087	-0.089	0.112	0.00	0.00	0.00	0.00		
LS19.LC1s_at_hinge_point.3	-0.044	0.087	-0.088	0.111	0.00	0.00	0.00	0.00		
LS20.LC1s_at_hinge_point.4	-0.044	-0.087	-0.088	0.112	0.00	0.00	0.00	0.00		

Displacements for all load sets

Reaction Forces

1

Select (LS) Reaction Forces Summation under Summary

2

Press ## to open Number Format

3

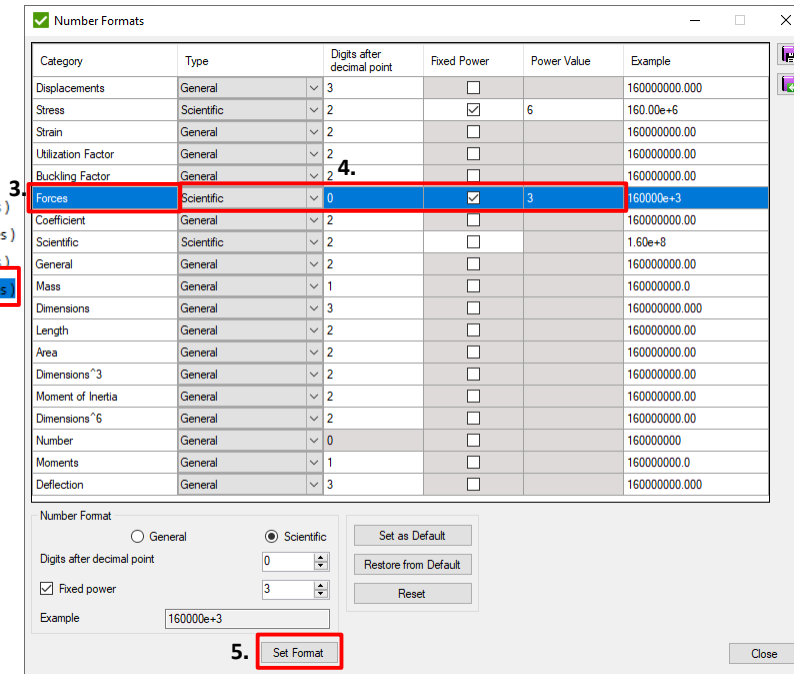
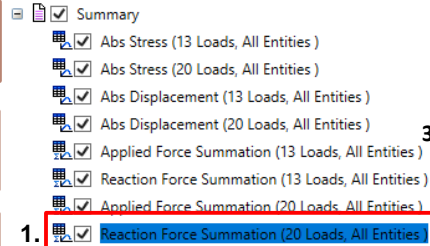
Select category Forces

4

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

5

Press *Set Format*



Reaction Force Summation (20 Loads, All Entities)

Loads Count Selection	20 All Entities	Category Type				Reaction Force 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	-635704	24403398	24412894	0.0	0.0	0.0	0.0	0.0
LS2..LC1s_Tip load.2		-223100	635704	24403398	24412894	0.0	0.0	0.0	0.0	0.0
LS3..LC1s_Tip load.3		223100	-635704	24403398	24412894	0.0	0.0	0.0	0.0	0.0
LS4..LC1s_Tip load.4		223100	635704	24403398	24412894	0.0	0.0	0.0	0.0	0.0
LS5..LC1s_Middle Bridge.1		-223100	-635704	24403394	24412892	0.0	0.0	0.0	0.0	0.0




Reaction Force Summation (20 Loads, All Entities)

Loads Count Selection	20 All Entities	Category Type				Reaction Force 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		-223e+3	-636e+3	24403e+3	24413e+3	0.0	0.0	0.0	0.0	0.0
LS2..LC1s_Tip load.2		-223e+3	636e+3	24403e+3	24413e+3	0.0	0.0	0.0	0.0	0.0
LS3..LC1s_Tip load.3		223e+3	-636e+3	24403e+3	24413e+3	0.0	0.0	0.0	0.0	0.0
LS4..LC1s_Tip load.4		223e+3	636e+3	24403e+3	24413e+3	0.0	0.0	0.0	0.0	0.0
LS5..LC1s_Middle Bridge.1		-223e+3	-636e+3	24403e+3	24413e+3	0.0	0.0	0.0	0.0	0.0

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

Add Extreme Stress Tables

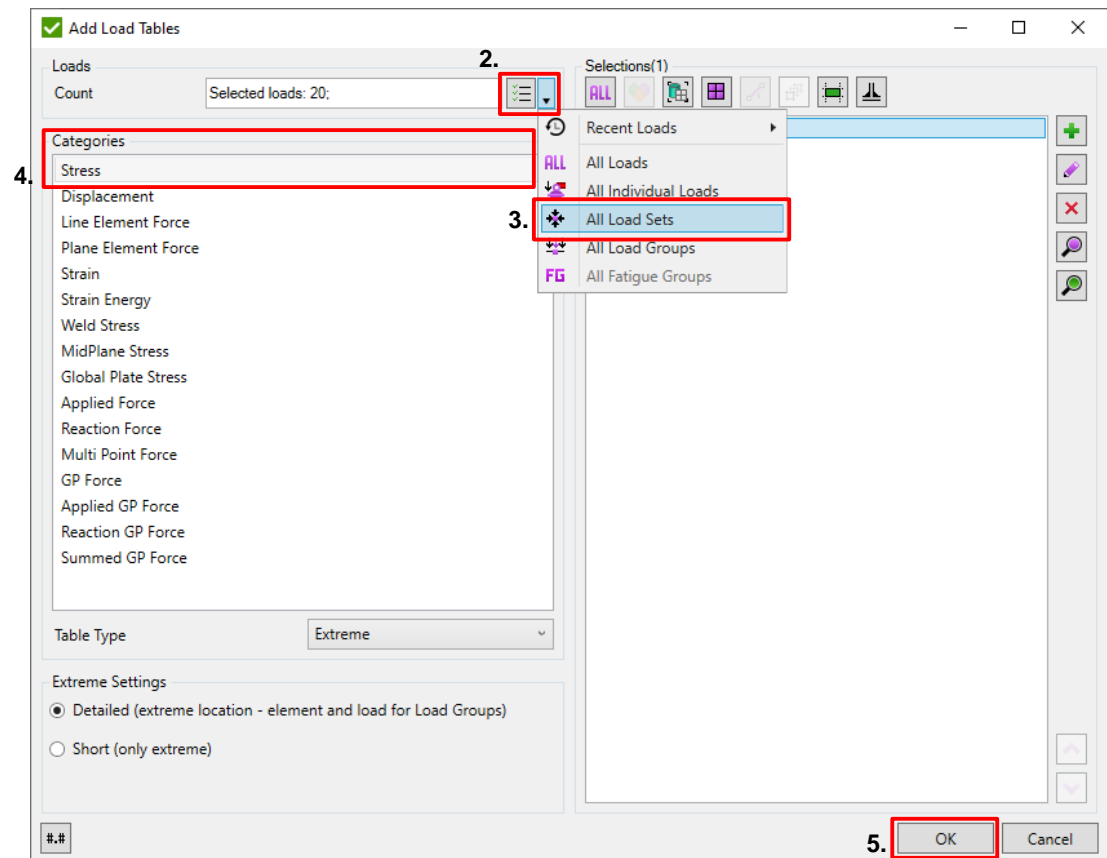
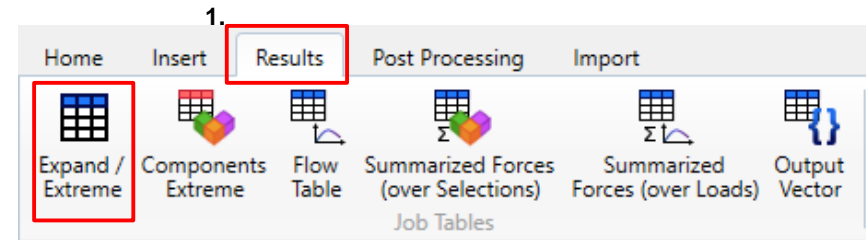
1. Press Results on the toolbar and select  to open tables window

2. Use dropdown menu for load selector

3. Select all Load Sets

4. Categories: **Stress**

5. Press OK



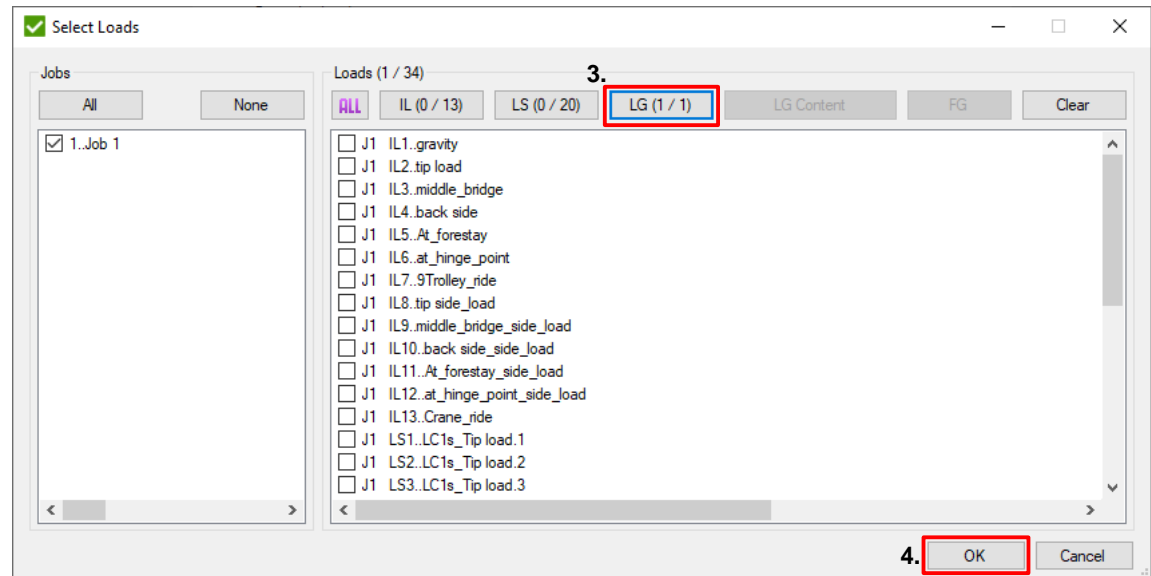
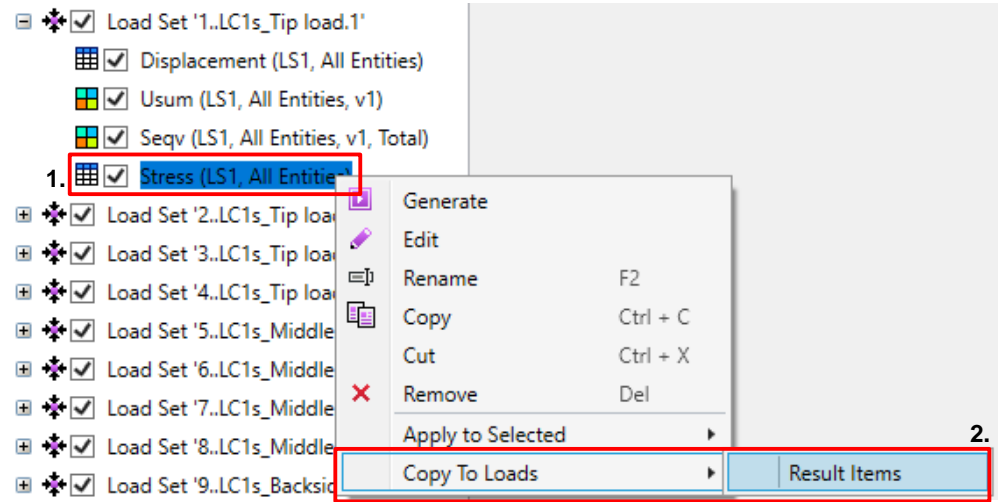
Copy Table to Load Group

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

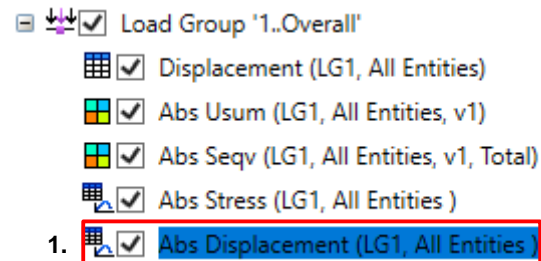
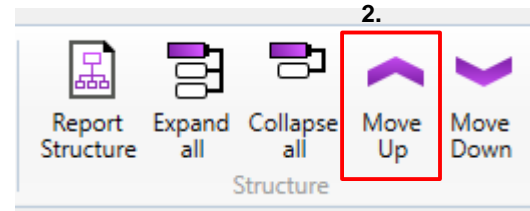
1

Select **Abs Displacement (LG1, All Entities)**

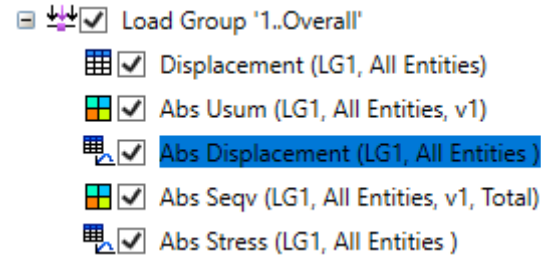
2

Press  twice to move item up

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



1.



Add plots for Load Group

1 Execute **Stress Table** under **Load Set** tree

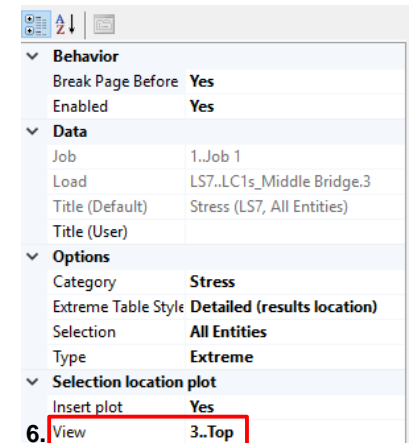
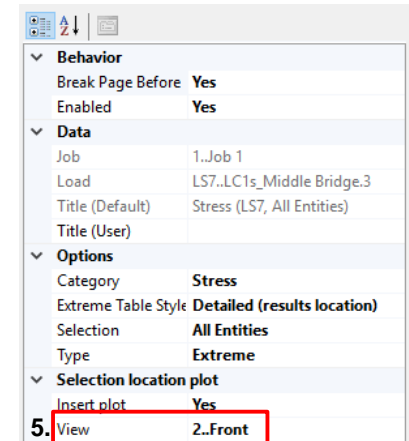
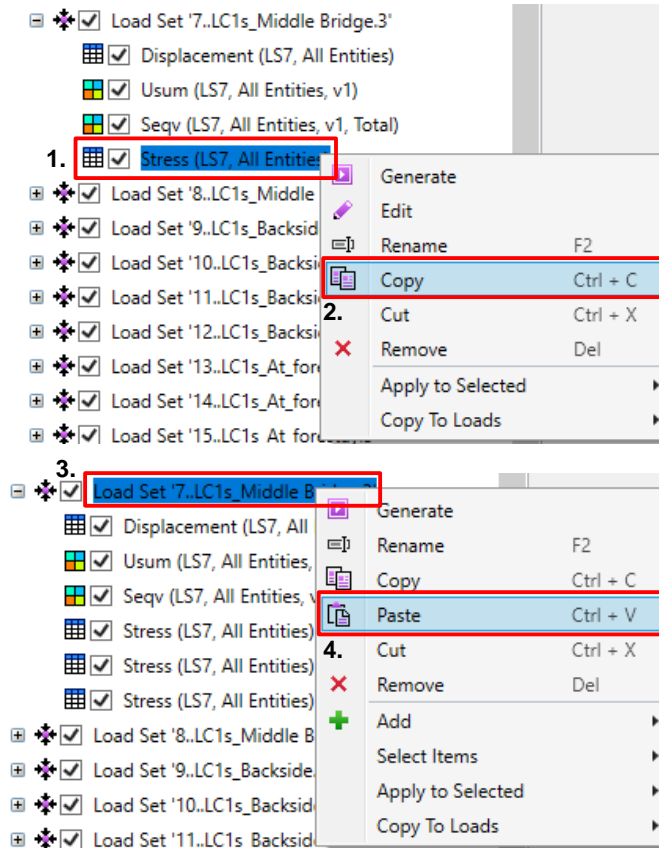
2 Select **Copy**

3 Execute **Load Set**

4 In context menu select **Paste** (twice)

5 For second **Stress Table** set View **2..Front** in Property Grid

6 For third Stress Table set View = **3..Top** in Property Grid



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

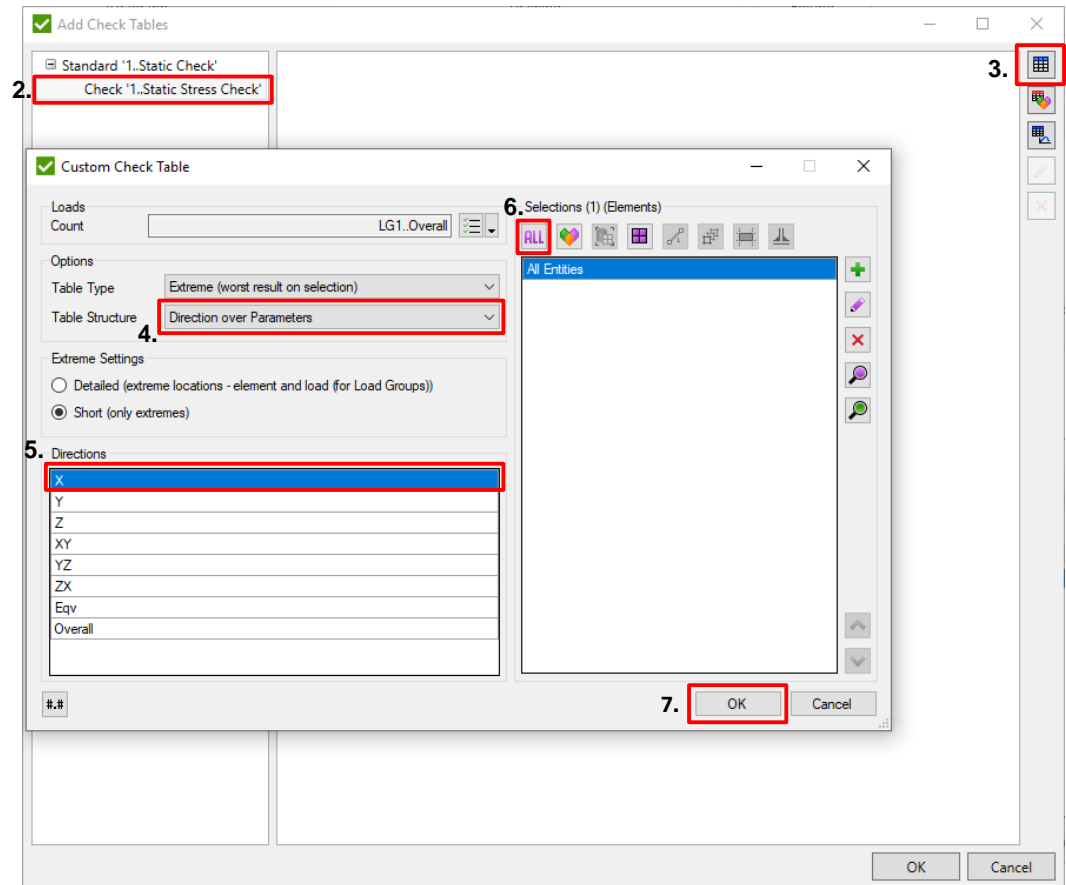
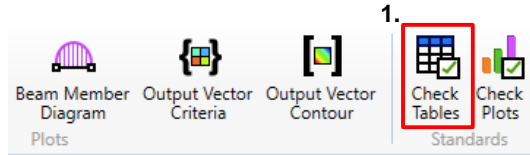
Direction: **X**

6

Press  to add full model selection

7

Press **OK**



Add Plot for Static Stress check

1

Select **Check Plots** on the Toolbar

2

Select **Static Stress Check**

3

Press **Check Plots**

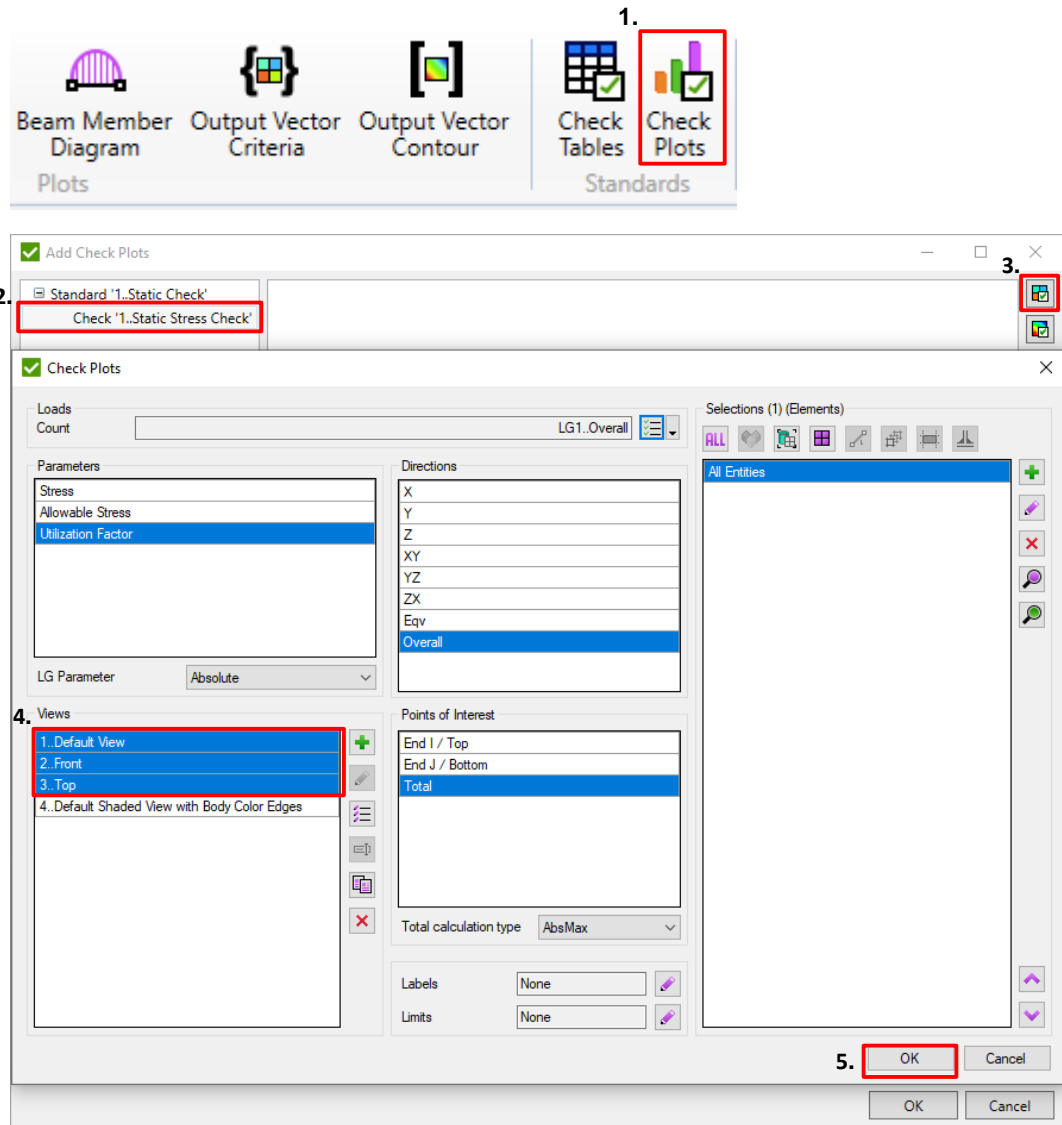


4

Select Views with IDs 1-3

5

Press **OK**



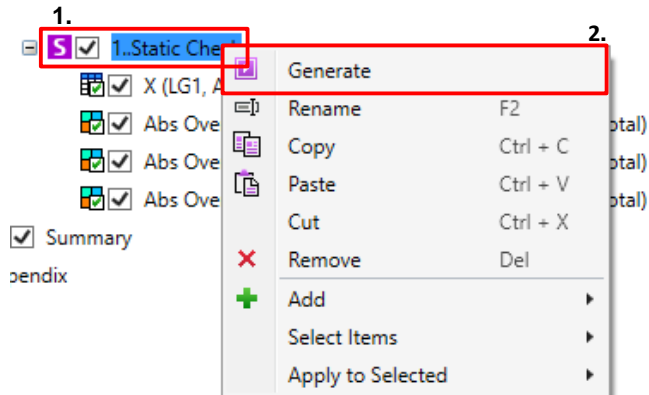
Generate Static Stress Check results

1

Select **Static Stress Check**

2

Execute *Generate* from context menu



1..Static Check

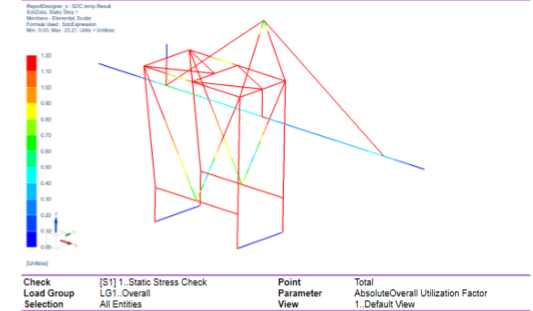
Unit System

Current Unit System = Mm/KS (Millimeter/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 Check	Check Selection	[S1] 1..Static Stress Check
Load Group	LG1..Overall	All Entities	All Entities
Extreme	Stress [KPa]	Allowable Stress [KPa]	Utilization Factor
Minimum	-5.57e+8	0.24e+0	0.00
Maximum	5.51e+8	0.24e+0	23.21
Absolute	-5.57e+8	0.24e+0	23.21

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



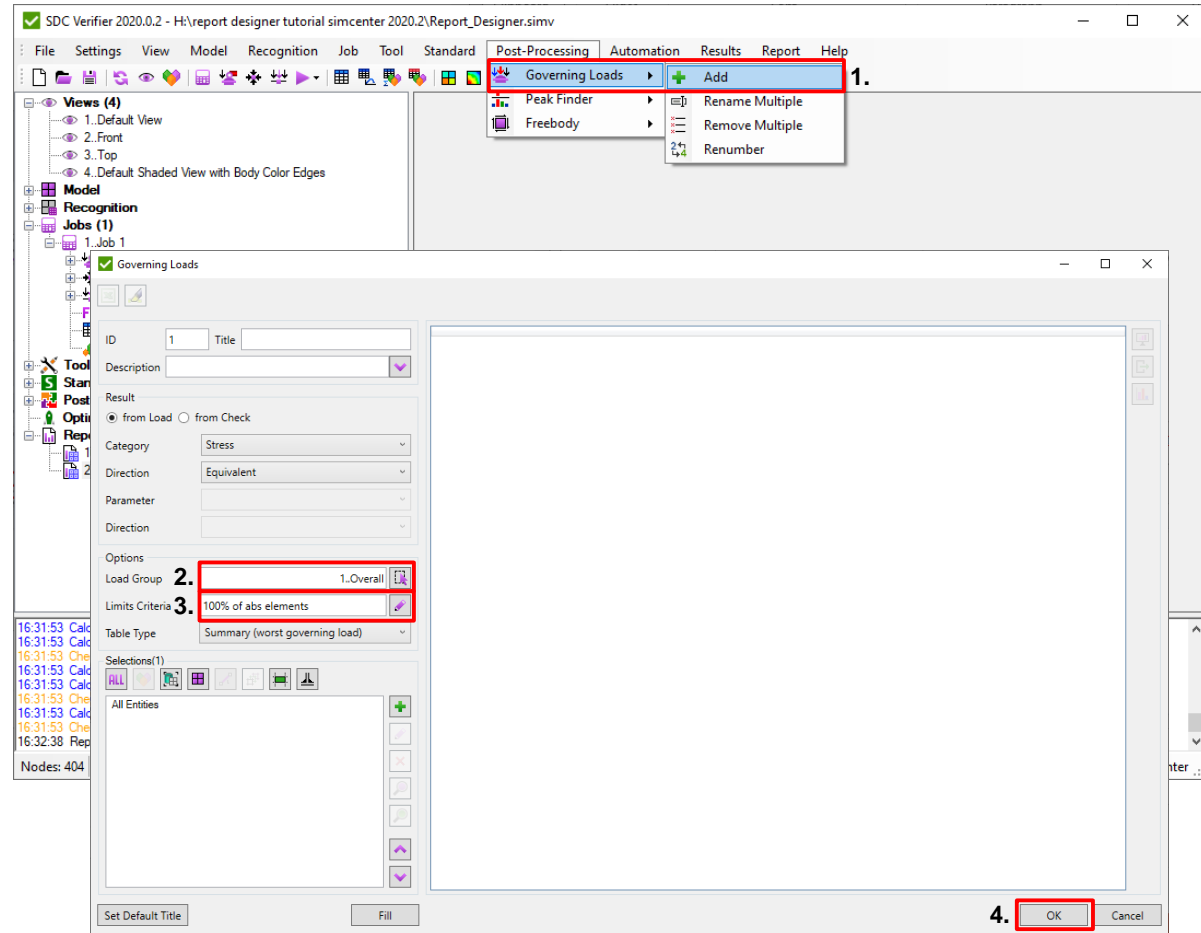
Add Governing Loads

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

2 Load Group **1.Overall**

3 Limits Criteria **100% of abs elements**

4 Press *OK*



Add table for Governing Loads

1. Select **Post-Processing** from Toolbar

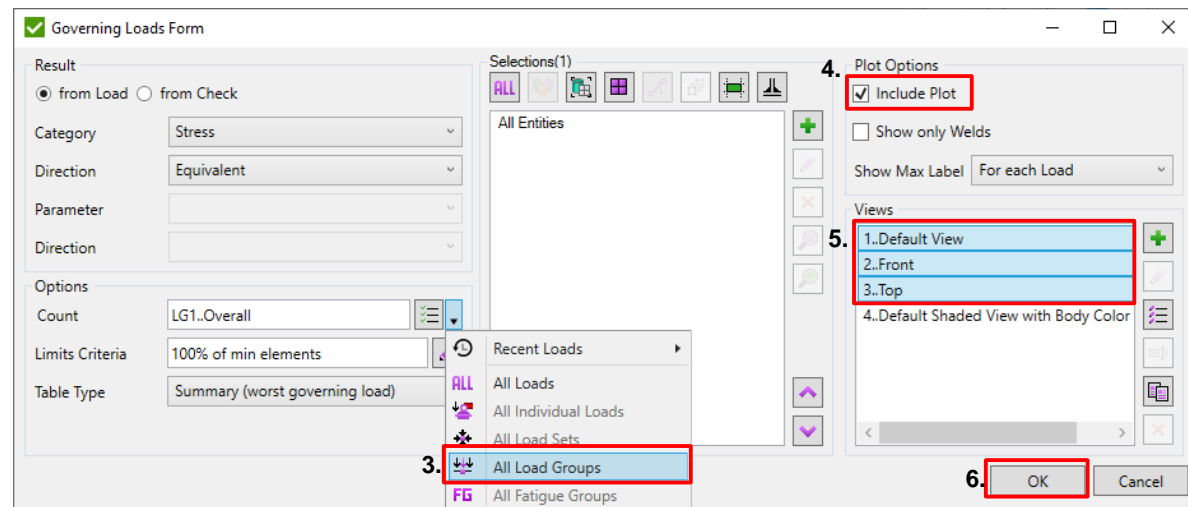
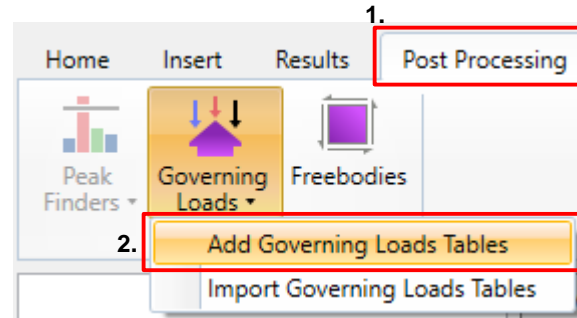
2. Select **Add Governing Load Tables**

3. In dropdown menu select **All Load Groups**

4. Press **Include Plot**

5. Select Views with IDs 1-3

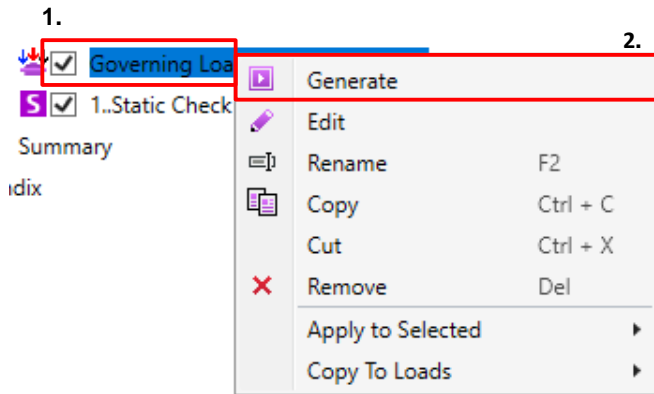
6. Press **OK**



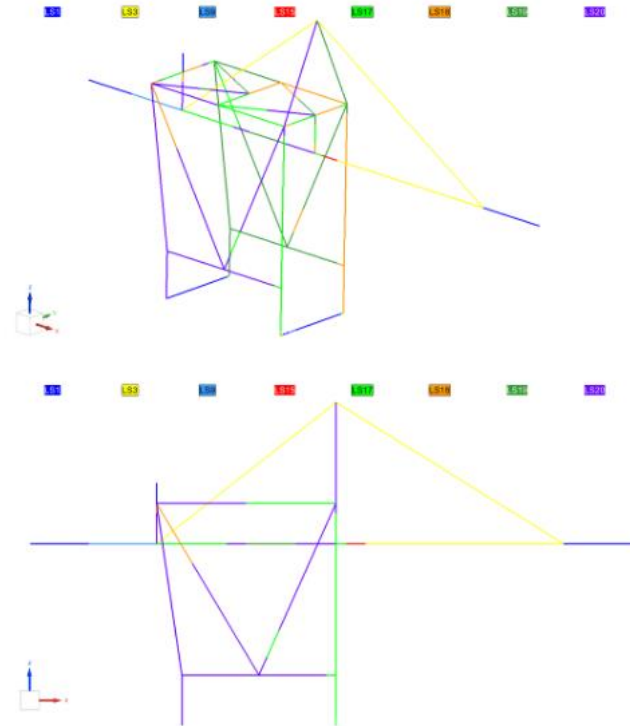
Generate Governing Loads results

1. Select **Governing Loads**

2. Execute *Generate* from context menu



Governing Loads (LG1; All Entities)				
Category	Stress	Direction		Equivalent
Criteria	100% of min elements			
Selection	Elements Count	Min Entity Id	Min Value	Load
All Entities	421 / 421	184	5.57e+8	LS17_LC1s_at_hinge_point.1



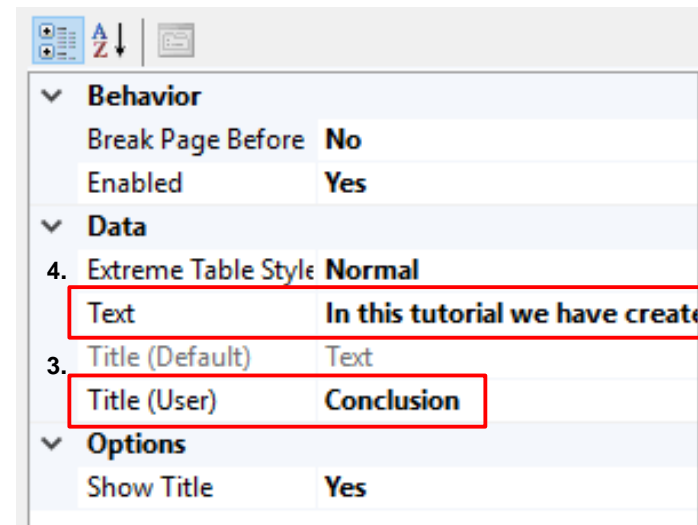
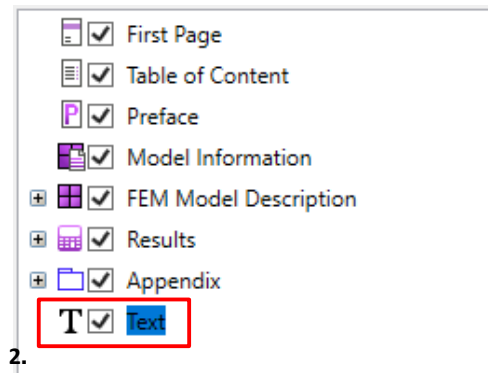
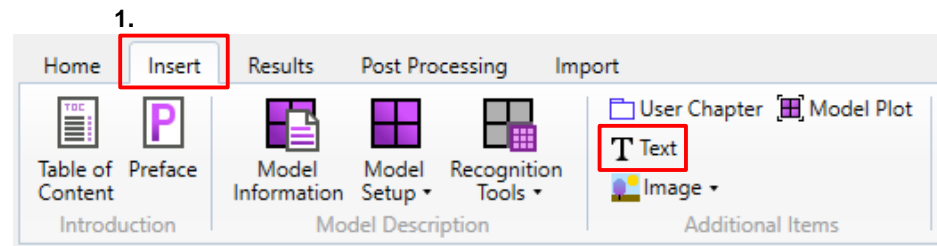
Add Conclusion

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**

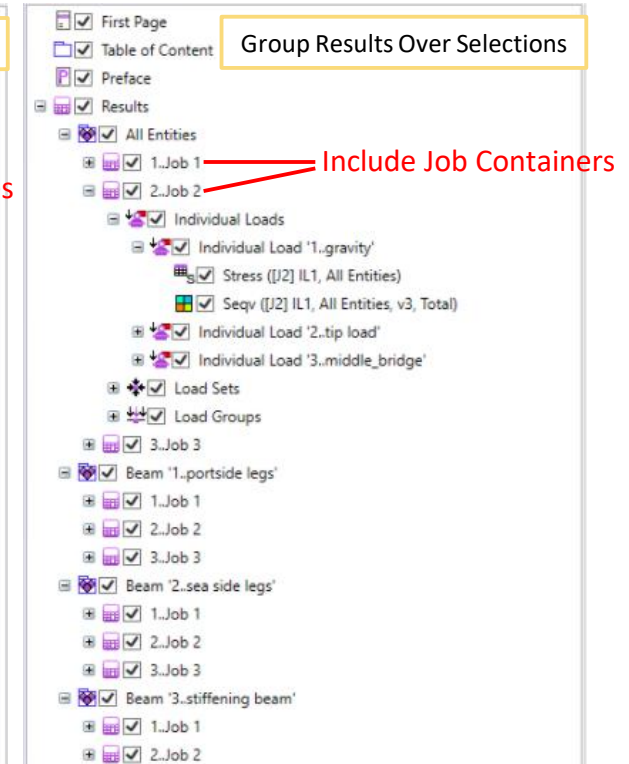
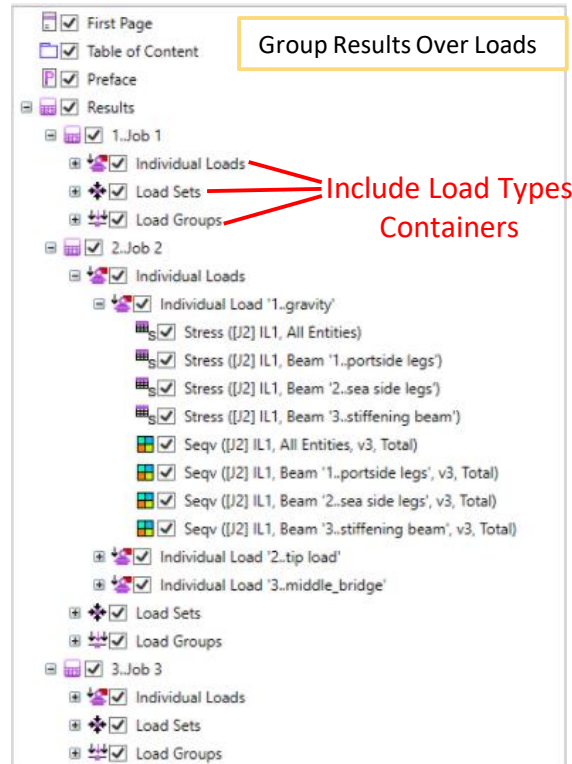
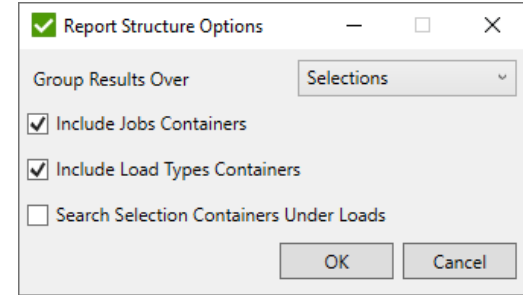
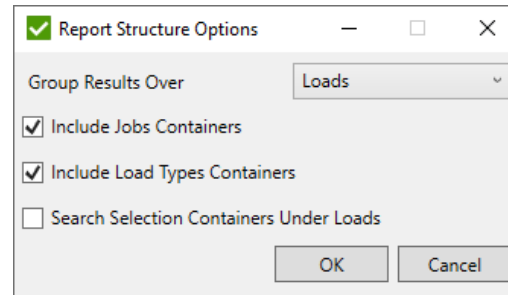
4. Text: **In this tutorial we have created 2 reports using Report Designer**



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 Job Summary Chapter (for loads from different Jobs in Summary under Results chapter):



Import from word document

1

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

2

Select **Import document** in report structure

3

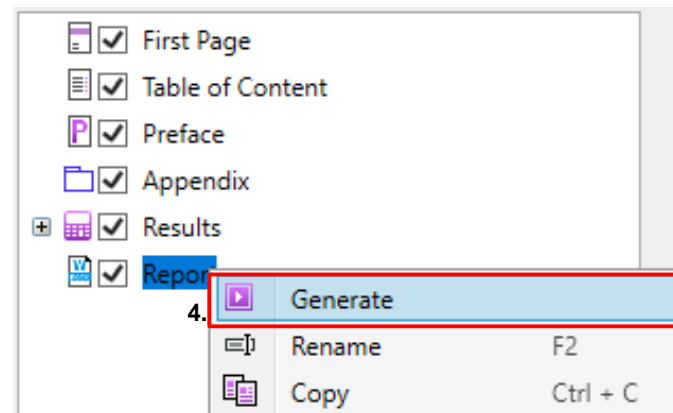
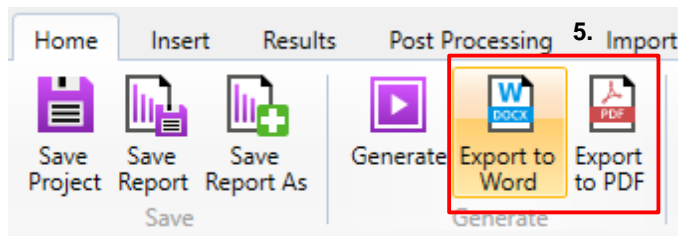
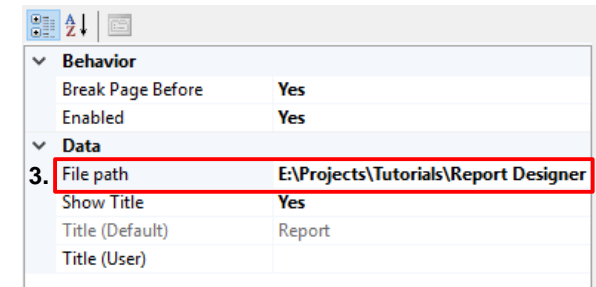
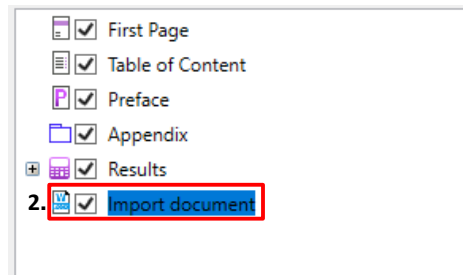
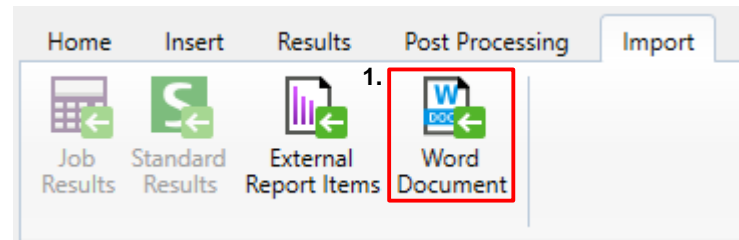
In display properties set the file path

4

Generate

5

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




Generated report

1

Press  to generate report

2

After generation is finished press  to export generated report to Word

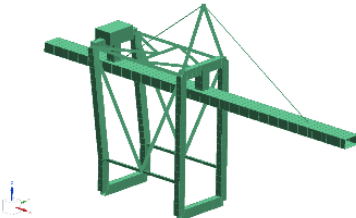
1.

2.



Model Setup

Report Designer Tutorial



Prepared by:

SDC Verifier

+31 15 30-10-310

sdcoverifier.com

Zijlvest 25
2011 VS Haarlem
The Netherlands

Prepared for:

company

+31 15 555-55-55

company.com

Zijlvest 25
2011 VS Haarlem
The Netherlands

Engineer:

Support

Customer:

customer

Project Number:

1

Version:

1

Date:

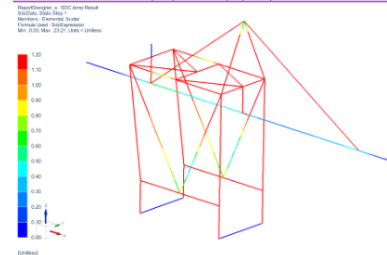
04/01/2021

1..Static Check

Unit System
Current Unit System = MmKS (Millimeter/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.

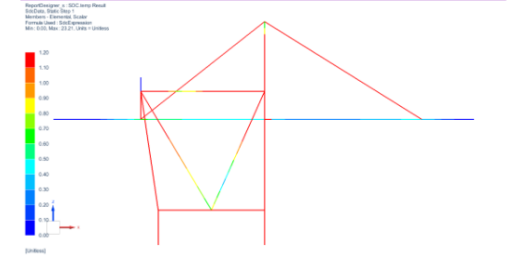
X (LG1, All Entities)				
Standard	1..Static Check	Check Selection	[S1] 1..Static Stress Check	
Load Group	LG1..Overall		All Entities	
Extreme	Stress [KPa]	Allowable Stress [KPa]	Utilization Factor	
Minimum	-5.57e+0	0.24e+0	0.00	
Maximum	5.51e+0	0.24e+0	23.21	
Absolute	-5.57e+0	0.24e+0	23.21	

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



Check Load Group Selection	[S1] 1..Static Stress Check LG1..Overall All Entities	Point Parameter View	Total Absolute/Overall Utilization Factor 1..Default View
----------------------------	---	----------------------	---

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



Check Load Group Selection	[S1] 1..Static Stress Check LG1..Overall All Entities	Point Parameter View	Total Absolute/Overall Utilization Factor 2..Front
----------------------------	---	----------------------	--