B02g
Fundering Luchtkoelers

SPA WNP Ingenieurs
Fundering
6. Luchtkoelers

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Yara Sluiskil - Project CCS

Plant Description	**Carbon Capture Storage Plant, Sluiskil**
Linde Project No. **3710 A3T8**	Client Project No. **16471**
Linde Project Code **Sluiskil**	Client Project Code **CACTUS**
Linde Doc. No. **0542FA5490 2001 C-CS 1002 (EN)**	Client Doc. No. **16471-Y16-00007** / Client Revision **00**

PRE-CALCULATION FOR PILING AND MAIN FOUNDATIONS for AIR COOLER

	Vendor Doc. No.	
	Vendor Revision	

Status	Issue	Date	Prepared	Reviewed	Approved	Remarks
IFD	2	23-11-2022	5.1.2.e	5.1.2.e	5.1.2.e	
IFD	1	17-11-2022	5.1.2.e	5.1.2.e	5.1.2.e	

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B Determining snowloads
C Determining windloads
D Calculation reports
E Overview of codes and Literature

1. Constructive principles

1.1. General principles

1.1.1. Basic

This document contains the preliminary design calculation for the coolerbank foundation of the "YARA CCS" project at the YARA SLUISKIL PLANT. The following principles are applied:

- Calculations are performed in 3D as much as possible, with 2D controls.
- The main calculation of the structure is preformed by using the 3D finite element program Scia Engineer
- Detail calculations are preformed by using programs as GEO5 (piling), IDEA StatiCA (steel connections)
- The cross-section and stability checks of the various beam and plate elements are performed within the program according to Eurocode. Which are supplemented with checks via verified Excel worksheets.

In this report, in addition to a description of the further design principles, a description is given of the structural design, whereby the design of the supporting structure is recorded by means of images.

In addition to the profiles for the main construction, the starting points for the final design are provided.

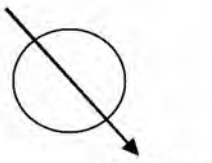
1.1.2. General project data

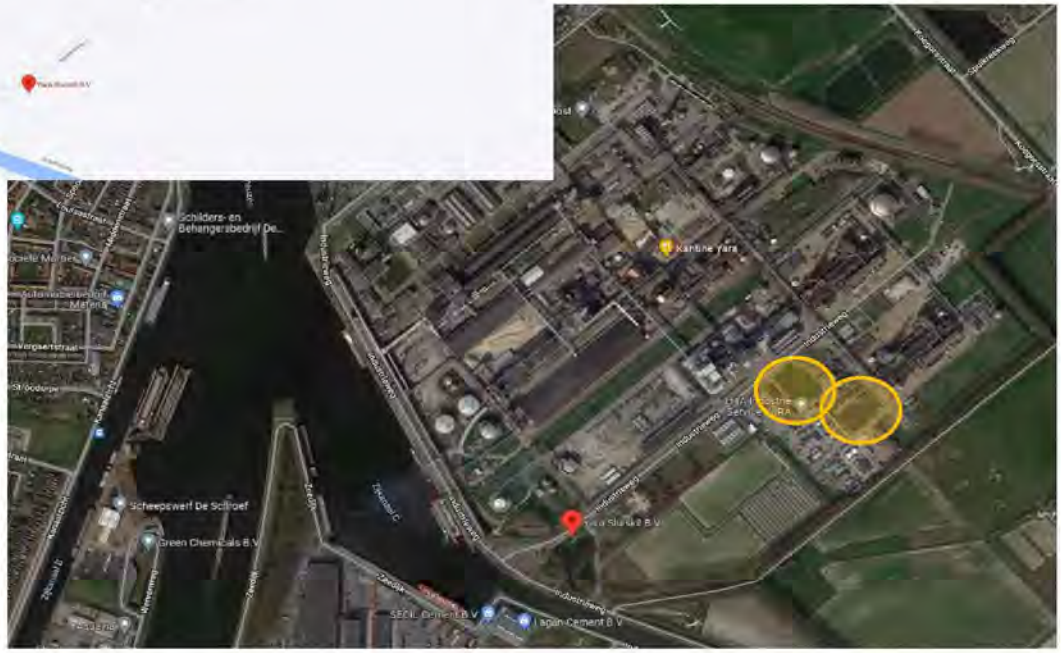
As part of the larger YARA CCS project, partial reports are prepared of construction parts for the tender phase in wich this project curently is.

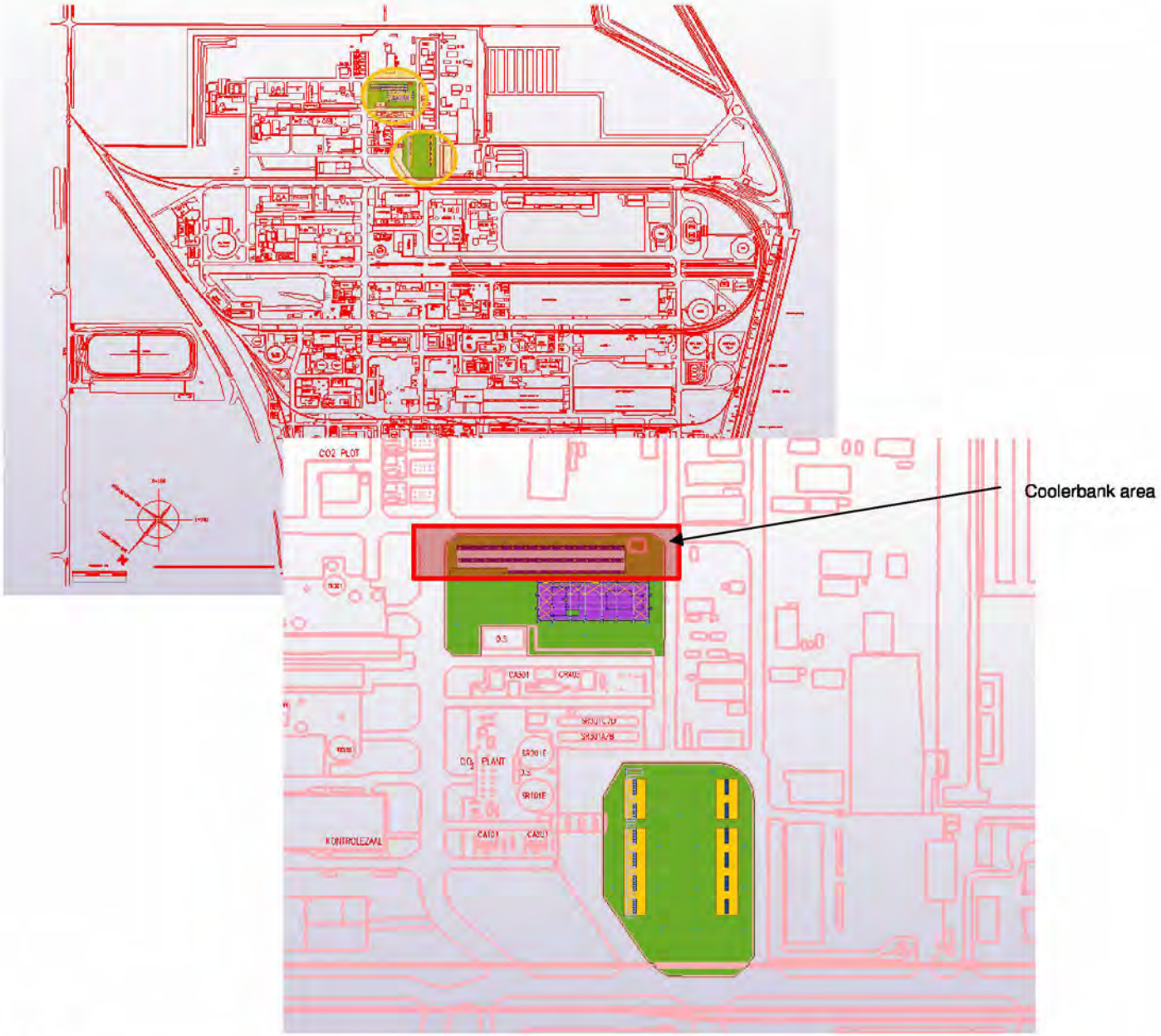
The design in this document contains the foundation and pile design for the coolerbank foundation of the CCS project. The steelstructure on top is not in the scoop. That design will be provided by the vender of the coolerbanks.

The coolerbanks are located to the plant north side of the project area.

In this calculation, a global test is made of the construction, whereby the principles are checked for feasibility. In addition, a preliminary design of the basic reinforcement is made, which is the basis for the kg/m³ ratio for the tender documents.







1.1.3. definition

The advisory task of Konstruktis in this report relates to the aspects of the structural support structure of the project. The following definitions are used for the work to be carried out:

Structural support structure

The structural support structure is understood to be the elements as described in En 1990 + NA & the dutch Bouwbesluit

Definition according to EN 1990 + NA:

art. 1.5.1.6. construction

Systematic assembly of interconnected structural elements designed to withstand loads and provide sufficient rigidity.

art. 1.5.1.7. structural element (structural elements)

part of a structure that can be distinguished physically, eg a column, a beam / beam, a plate, a foundation pile

Definition according to the Bouwbesluit

- Building construction: part of a building that is intended to bear loads

Building construction intended for bearing horizontal loads, with the exception of stabilizing elements are not part of the structural bearing structure. E.g. handrails etc.

1.1.4. Set-up structure

The foundation consists of:

Type of foundation: Foundation on piles
Beams: 1000x800 mm²
Slab: d = 1000 mm
Approximate pile size: Fundexpiles ø460-560

The set-up of the various components is in accordance with the main calculation.

The determination of the weights, and other structures according to weight calculation §"5. Loads on structure".

1.1.5. Mechanics of the structure

The structure is considerd to be staticly undetermined, due to the springsupports for the foundationpiles, as wel as the continius foundationbeam. Also the foundation slab is modelled as 2D element.

1.2. Purpose of the report / Principles of calculation / Execution Requirements

1.2.1. Purpose of the report / Principles of calculation

The purpose of the underlying document is to show that the calculated structure complies with the conditions laid out by the applicable Laws/codes/company standards. For this the following principles are applied:

The distribution of forces in the beams and the reaction forces are determined by a finite element model, consisting of all primary components (columns, beams and bracings).

Eccentricity and offsets of bars are modelled if these differences between the actual operating points is greater than 25% of the column or beam size.

Checks of deflection, displacement, etc. are performed by the calculaton program. Additional checks are provided where required, by means of Excel sheets of orther programs. The forces / displacements used in these checks are according to the results of the main 3D model.

1.2.2. Execution requirements

1.2.2.1. Concrete

Concrete works should be carried out in accordance with EN 13670 + NA

Material -> according to EN 206-1 +NA, min. quality according to §4.1.
The workability of the concrete is determined by the contractor. The chosen plasticity should be attuned to the implementation method , however, taking into account the permissible water / cement ratio with respect to the environmental class .

Finishes of the various elements, if applicable must be included on the drawings and should take minimum concrete cover into account.

1.2.2.2. Foundations

Pile foundations must be carried out in accordance with EN 1997-1 +NA, in combination with the requirements of the NEN 6742 and the implementation of the chosen pile type standard.

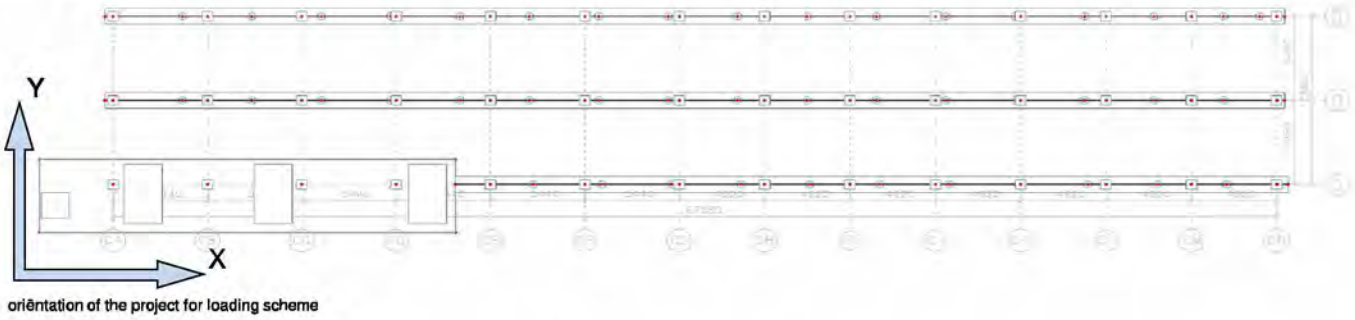
For further requirements see §8.2.3. Execution of foundation on piles

1.3. Software

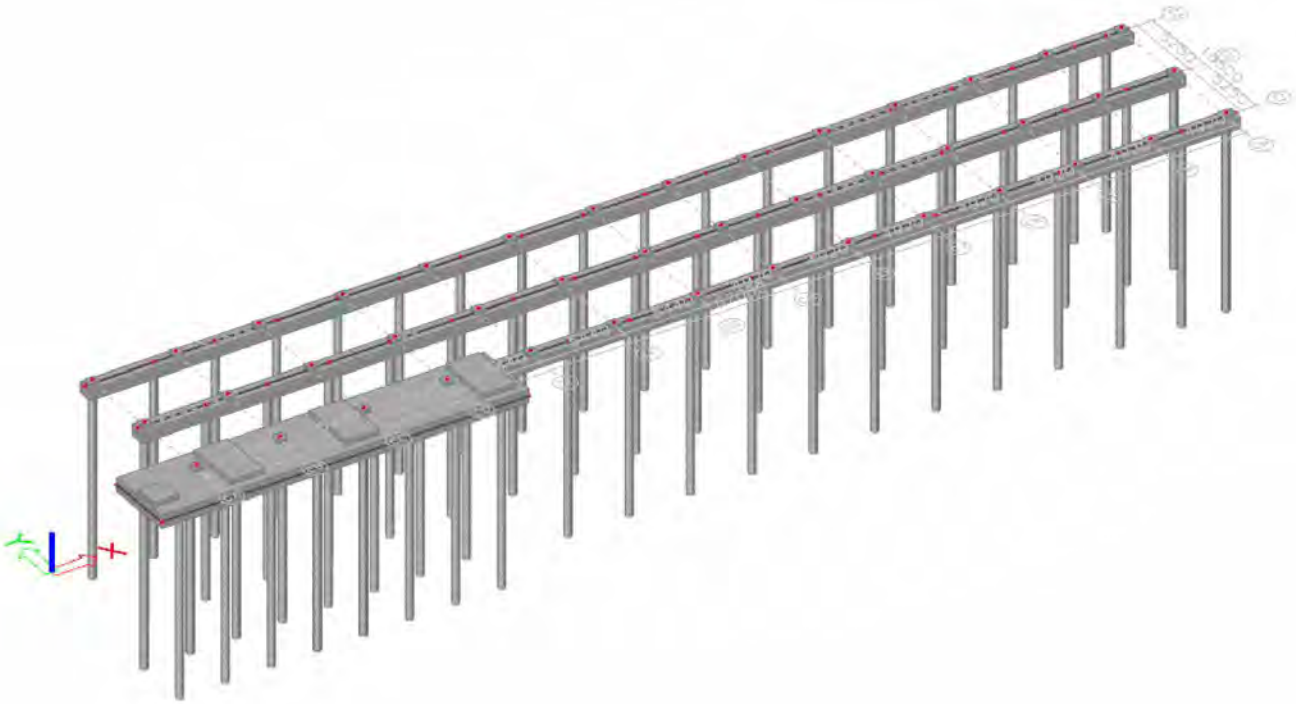
The following software is used in the execution of the work:

Microsoft Office Excel	
Microsoft Office Word	
Scia Engineer	See output for current version
GEO5 Pile CPT	See output for current version

1.4. Design overview



oriëntation of the project for loading scheme



2. General

2.1. *Remarks*

This report contains constructive calculations and principle sketches and constraints.

These calculations are both (in if possible) in 3D done with any 2D controls for the most accurate possible understanding of the structure, the forces and displacements.

It is recommended to mention these principle sketches and conditions on the relevant applicable drawings before start of construction. So that the instructions in this document are properly handled on site.

The overall alignment and accuracy on the basis of the data have being issued to us is outside of our responsibility.

The assumptions made in this report should be monitored (on site) and, if necessary, be fed back.

If abnormalities are found with this report, or unexpected findings on site are established, these should be reported as soon as possible to the structural engineer His instructions with regard to these findings should be followed, or a suitable alternative is to be provide as an alternative, which is to be submitted for approval.

The builders of the project are expected to work with skill and good constructive insight. They must be aware of all the applicable performance standards.

On all our advice set out in both calculations, mail or telephone are the standard conditions of our tender applicable in respect to of the relationship between the client and advisory engineering : The DNR 2011 with the supplement provision, as stated in the quote / on the website.

2.2. *System of units / coordinate system*

2.2.1. Used system of units

Unless noted otherwise the following units are used throughout this calculation:

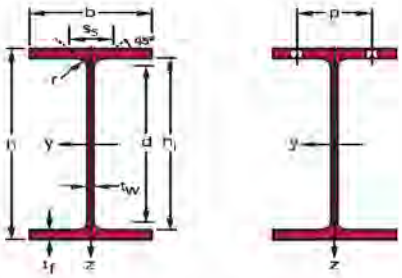
General dimensioning	in mm
Spans	in m[1]
Areas	in mm and/or mm²
Loads	in kN/m², in kN/m and/or in kN
Spring constant	in kN/m and/or in MNm/rad
Stress	in N/mm² and/or Mpa
Section modulus	in mm³
Deflections	in mm and/or mrad

2.2.2. Coordinate system

The coordinate system used for 3D calculation consists of the X-axis and Y-axis in the horizontal plane and the Z-axis as the vertical axis

2.2.3. Notation of forces

Direction of force			Unit
+ N	=	Tension in connection / beam	kN
- N	=	Compression in connection / beam	kN
Vy	=	Shear in weak axis connection / beam	kN
Vz	=	Shear in strong axis connection / beam	kN
Mx	=	Torsion in connection / beam	kNm
My	=	Moment in strong axis of connection / beam	kNm
Mz	=	Moment in weak axis of connection / beam	kNm



2.3. *Applicable Standards / Literature*

The calculations are preformed in accordance with the Eurocode (EN) in concjuction with the applicable National Annex (NA)
The applicable main standards (bold & italic) are:

EN 1990 +NA	***Basic code for structural design***
EN 1991 +NA	***Code for Actions/Loads on structures***
EN 1992 +NA	***Code for design of Concrete structures***
EN 1993 +NA	***Code for design of Steel structures***
EN 1994 +NA	Code for Hybride Steel-Concrete design
EN 1995 +NA	Code for design of Timber structures
EN 1996 +NA	Code for design of Masonry structures
EN 1997 +NA	***Code for Geotechnical design***
EN 1998 +NA	Code for design of Earthquake resistance
EN 1999 +NA	Code for design of Aluminium structures

A full overview of the applicable main / sub codes are provided in appendix E
Also in appendix E an overview of the applicable standards for excecution, materials and connections, as well as an overview of the used professional literature can be found.

In some instances the calculation will refere to the NA of other countries / old codes. Thise is done for special cases, where design data (such as ψ-values for, for example, excecution) are missing. In these cases the National Annex / Codes of other countries / withdrawn codes are used.

Yara Specifications:

Nr.	Name	Rev.:	Date:
10000-Y50-00026	SPECIFICATION FOR CIVIL AND STRUCTURAL STEEL DESIGN	5.0	22-2-2021
10000-Y50-00028	SPECIFICATION FOR ARCHITECTURAL DESIGN	7.0	22-2-2021
10000-Y50-00029	SPECIFICATION FOR PILING	6.0	10-10-2019
10000-Y50-00032	SPECIFICATION FOR ACID PROOFING	4.0	7-5-2021
10000-Y50-00033	SPECIFICATION FOR ANCHORING IN CONCRETE	03M	8-10-2019
10000-Y50-00034	SPECIFICATION FOR CLADDING	4.0	18-6-2021
10000-Y50-00035	SPECIFICATION FOR CONCRETE WORKS	8.0	5-5-2021
10000-Y50-00036	SPECIFICATION FOR GRP GRATING, LADDERS AND HANDRAILS	8.0	22-2-2021
10000-Y50-00037	SPECIFICATION OF INFRASTRUCTURE	01M	31-10-2018
10000-Y50-00038	SPECIFICATION FOR STRUCTURAL STEEL	2.0	16-6-2021
10000-Y50-00042	SPECIFICATION FOR SURFACE PROTECTION	6.0	27-4-2021
10000-Y50-00044	SPECIFICATION FOR STEEL FIRE PROOFING	1.0	22-2-2021
10000-E50-00003	DESIGN AND INSTALLATION OF PROTECTIVE EARTHING	6.0	1-7-2021

2.4. *Referentie drawings and documents*

Drawings/doc.:	Discription:	Rev.:	Date:
Pages from NE.OF.5124.01	Design data of air coolers	-	05-10-2022
Pages from NE.OF.5124.01-2 &AE-200X-C-ZA 1001 (EN)	General Arrangement Drawing - Foundations Pilling - CO2 Liquification	1.0	19-09-2022

3. Design principles of the construction

3.1. General assumptions

This chapter sets out the design principles that form the basis for the constructive elaboration of the project.
The calculations are carried out in accordance with the standards specified in §2.3. "Applicable Standards / Literature".
In addition, the design data are included that follow from the interaction between the various design disciplines that apply to the work.

3.2. Function construction, consequence class and design life

3.1.1. Function construction

		design lifetime class	concequence class	category of use	combination value of variable loads	frequent value of variable loads	quasi-permanent value of variable loads	correction factor for design lifetime F_t/F_{to}
Industrial supporting function					ψ_0	ψ_1	ψ_2	ψ_t
main function =	Coolerbank foundation	3	CC2	E2	0.0	0	0	1
1st add. function =	Paving	3	CC2	E2	0.0	0	0	1
	maatgevend =	3	CC2					1

	ψ *value according EN 1990, annex A + NA*	ψ_0	ψ_1	ψ_2	
A	Domestic, residential areas	0.4	0.5	0.3	
B	Office areas	0.5	0.5	0.3	
C	Congregation areas	0.4 / 0.6 **	0.7	0.6	
D	Shopping areas	0.4	0.7	0.6	
E1	Storage areas	1	0.9	0.8	
E2	Industrial use	1	0.9	0.8	
F	Traffic area, vehicle weight ≤ 30kN	0.7	0.7	0.6	
G	Traffic area, 30kN < vehicle weight ≤ 160kN	0.7	0.5	0.3	
H	Roofs, not accessible, or only for maintance (H1 angle a<15°, H2 angle 15°<a<20°, H3 angle a > 20°)	0	0	0	
I	Roofs, accessible according to category A t/m D	0	0	0	
J	Roof, special use	0	0	0	
K	Roof, landing area for helicopters	0	0	0	
S	Snow	0.5	0.2	0	
Wa	Water accumulation	0	0	0	
Wi	Wind loads	0	0.2	0	
T	Temperature (non fire)	0	0.5	0	
Sp	Special loads during construction	1	1	0.2	Acc. NA Belgium
Z	Settlements	1	1	1	Acc. NA Germany

3.1.2. Scope of application

Design lifetime class	Primary structure	= 3		According EN 1990 + NA, § A1.1
Design lifetime		= 50	years	According EN 1990 + NA, § A1.1
Reduced design lifetime		=	years	
Applied design lifetime		= 50	years	According EN 1990 + NA, § A1.1
Design lifetime for snow/wind		= 50	years	According EN 1991-1-6 + NA
Design lifetime class	Secondary construction	= 3		According EN 1990 + NA, § A1.1
Design lifetime		= 50	years	According EN 1990 + NA, § A1.1

The following constructions fall under the secondary construction:

- Handrails
- Ladders / cage ladders
- Non-primary bearing parts

3.1.3. Concequence- & Reliability class

		Main construction	Secondary construction	
Concequence class	=	CC2	CC1	According EN 1990 + NA, § B3.1
Reliability class	=	RC2	RC1	According EN 1990 + NA, § B3.2
K_{fi}-factor	=	1.0	0.9	According EN 1990 + NA, § B3.3
Reliability factor	=	3.8	3.3	According EN 1990 + NA, § B3.2
Description MC	=	medium consequence for loss of human life, economic, social or environmental consequences considerable		

Description SC = low consequence for loss of human life, and economic, social or environmental consequences small or negligible

3.1.4. Design & Inspection level

Design supervision level = DSL2 According EN 1990 + NA, § B4
(combined with RC2, normal supervision)
medium consequence for loss of human life, economic, social or environmental consequences considerable

Inspection level = IL2 According EN 1990 + NA, § B5
(combined with RC2, normal supervision)
Inspection according to the working method of the organization

3.1.5. Performance classes

3.1.5.1. Steel main construction

Load category	= BC1	According EN 1993-1-1 + NA, §C
Production category	= PC1	According EN 1993-1-1 + NA, §C
Excecution class	= EXC2	According EN 1993-1-1 + NA, §C

3.1.5.2. Steel secondairy construction

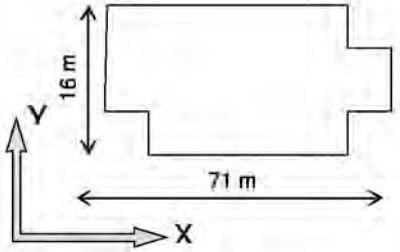
Load category	= BC1	According EN 1993-1-1 + NA, §C
Production category	= PC1	According EN 1993-1-1 + NA, §C
Excecution class	= EXC1	According EN 1993-1-1 + NA, §C

3.1.5.3. Concrete

Design lifetime	=	50 years
Construction class	=	S4

3.1.6. Dimensions

Number of levels		=	1 stk
Level height		=	8800 mm
Width of structure	X-axis	=	71000 mm
Depth of structure	Y-axis	=	16000 mm
Height of structure		=	14200 mm
Gutter height		= -	mm
Height of structure above level 0+		=	0 mm
Pitch of roof		= -	°
Roofarea		=	1136 m²



project orientation for loads, general illustration for how dimensioning is applied

3.3. Loadcombinations + factors

3.3.1. New construction according to EN 1990, Annex A + NA

Limit state	Favorable / unfavorable	Permanent loads	Leading variable load	Variable loads, simultaneous with the leading variable load
Ultimate Limit State EQU (set A)	Favorable	$1.1 * G_k$	$+ 1.5 * Q_k$	$+ 1.5 * \psi_{0,i} * Q_{k,i}$
	Unfavorable	$0.9 * G_k$	$+ 1.5 * Q_k$	$+ 1.5 * \psi_{0,i} * Q_{k,i}$
Ultimate Limit State STR/GEO (set B)	Favorable	$1.35 * G_k$	$+ 1.5 * Q_k$	$+ 1.5 * \psi_{0,i} * Q_{k,i}$
	Unfavorable	$0.9 * G_k$	$+ 1.5 * Q_k$	$+ 1.5 * \psi_{0,i} * Q_{k,i}$
	Favorable	$1.35 * G_k$	+	$+ 1.5 * \psi_{0,i} * Q_{k,i}$
	Unfavorable	$1.2 * G_k$	+	$+ 1.5 * \psi_{0,i} * Q_{k,i}$
Ultimate Limit State STR/GEO (set C)	Favorable	$1 * G_k$	$+ 1.3 * Q_k$	$+ 1.3 * \psi_{0,i} * Q_{k,i}$
	Unfavorable	$1 * G_k$	$+ 1.3 * Q_k$	$+ 1.3 * \psi_{0,i} * Q_{k,i}$

Limit state	Permanent loads	Accidental load / earthquake	Leading variable load	Variable loads, simultaneous with the leading variable load
Ultimate Limit State accidental loads	$1 * G_k$	$+ 1 * Q_{kb}$	$+ 1 * \psi_{1,1} * Q_{k,1}$	$+ 1 * \psi_{2,i} * Q_{k,i}$
Ultimate Limit State earthquake	$1 * G_k$	$+ 1 * Q_{ka}$	$+ 1 * \psi_{2,1} * Q_{k,1}$	$+ 1 * \psi_{2,i} * Q_{k,i}$

3.3.2. Combinations for serviceability

Serviceability Limit State	Permanent loads	Leading variable load	Variable loads, simultaneous with the leading variable load
Characteristic	$1 * G_k$	$+ 1 * Q_k$	$+ \Sigma 1 * \psi_{0,i} * Q_{k,i}$

Frequent	$1 * G_k$	$+ \quad 1 * \psi_{1,1} * Q_{k,1}$	$+ \quad \Sigma \quad 1 * \psi_{2,i} * Q_{k,i}$
Quasi-permanent	$1 * G_k$	$+ \quad 1 * \psi_{2,1} * Q_{k,1}$	$+ \quad \Sigma \quad 1 * \psi_{2,i} * Q_{k,i}$

3.4. Deflection requirements

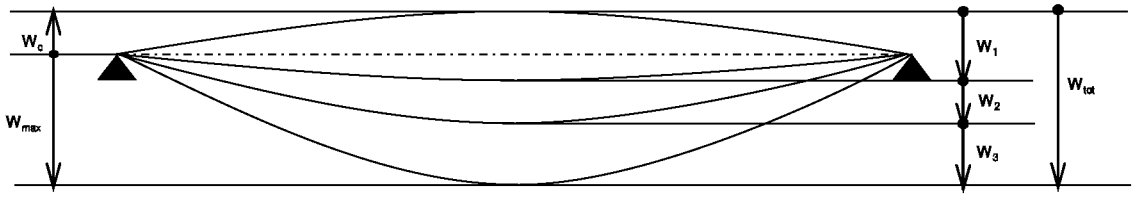
The building must meet the requirements for deflection, to accomodate a safe feeling.
For elements not coverd by the YARA specifications, the following basic requirements are set:

Determination vertical deflection beams / floors

General requirement	L/300	(L/150 voor uitkraging)
Floorbeams with intensive use by people	L/333.33	(L/166.665 voor uitkraging)
Beam that carries partitions	L/500 **	(L/250 voor uitkraging)
Roofbeams with intensive use by people	L/333.33	(L/166.665 voor uitkraging)
Other roofbeams	L/250	(L/125 voor uitkraging)
Column general	L/300	(L/150 voor uitkraging)
Facade column	L/300	(L/150 voor uitkraging)
Secondary column	L/300	(L/150 voor uitkraging)
Purlin	L/250	(L/125 voor uitkraging)
Support beams for cranes	L/600	(L/300 voor uitkraging)

** For floors and beams that carry partitionwalls a limited deflection of maximum 15 mm is adviced. The additional deflections for cantilevers should be limited to 10 mm.

According to EN-1990 + NA nl A1.4.3 + EN-1993-6 + NA



W_c = The calculated value of the camber for the structural component in serviceability limit state (SLS);

W_{max} = Permanent total deflection minus the camber;

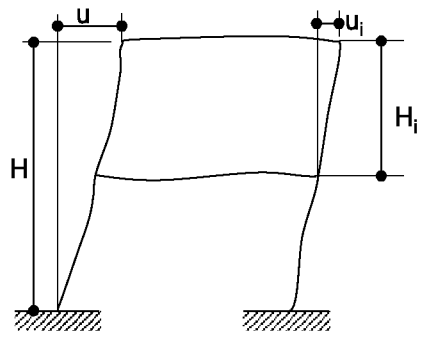
W_1 = Initial part of the deflection under permanent loads from the applicable load combinations according to the formulas (6.14a) to (6.16b) determined by the short-term properties;

W_2 = Long-term part of the deflection under the permenent loads equal to the deflection at the quasi-permanent load combination determined by long-term proberties, minus the deflection athe the quasi-permanent load combination determined by short-term properties of the quasi-permanent load combination (effects of creep);

W_3 = Additional part of the deflection caused by the variable loads from the applicable load combination determined by the short-term properties;

W_{tot} = The calculated value of the total deflection of the structure or structural component in the serviceability limit state.

Determination of horizontal displacement



H = height of building
Hi = height of 1 floorlevel
u = total horizontal displacement
u1 = displacement of 1 floorlevel
Allowable for buildings with 1 level:
h/150 for industrial buildings
h/300 for all others
Allowable for buildings with more than 1 level
h/300 per level
h/500 for total building
According to EN-1990 + NA nl A1.4.3

Handrails / railings

The deflections must meet the following requirements:

All deformations should remain elastic.

The vertical deflection of the top edge, or bottom edge and the top egde, or bottom line must be smaller than L/150 of the distance between 2 supportpoints.

At floor partitions, the horizontal deflection of the upper edge may not be greater than 20 mm.

According to EN-1990 + NA nl A1.4.3

3.5. Load arrangements

In EN 1991-1-1 art. 6.2.1. and 6.2.2. the following rules are set:

Art. 6.2.1: Floors, beams and roofs (also applies to foundations):

1.) For the design of a floor structure within one storey or a roof, the imposed load shall be taken into account as a free action applied at the most unfavourable part of the influence area of the action effects considered.

2.) Where the loads on other storeys are relevant, they may be assumed to be distributed uniformly (fixed actions).

3.) To ensure a minimum local resistance of the floor structure a separate verification shall be performed with a concentrated load that, unless stated otherwise, shall not be combined with the uniformly distributed loads or other variable actions.

Art. 6.2.2: Columns and walls (also applies to foundation piles):

For the design of columns and walls, the imposed load should be placed at all unfavourable locations.

2.) Where imposed loads from several storeys act on columns and walls, the total imposed loads may be reduced by a factor α_n according to 6.3.1.2(11) and 3.3.1(2)P.

3.6. Imperfections

The following imperfections must be taken into account in the design and elaboration:

Foundation piles	Tubular piles	Non; Installation deviation smaller than 1/8 of the diameter of the steel tubular pile is considered to fall within the margin of the calculations and does not have to be designed separately.
Concrete structures		Imperfections are included in the calculation method. Dimensional deviations from the implementation must fall within the dimension tolerances of the applicable standards. Deviations that fall outside of this must be reported and checked if the structure complied with the standards.

4. Applied Materials & Sustainability

4.1. *Materials*

For the materials that are used, unless otherwise noted, the following principles apply:

Concrete structures -> Poured into the work C35/45

Reinforcement steel Bars B500B

Point-welded reinforcement nets B500A

Cement type Hoogovencement CEM III/B 42,5 LH/HS

Grouting -> Low shrink grouting min. K70 grade

Properties of materials according to Annex A

4.2. *Sustainability / conservation*

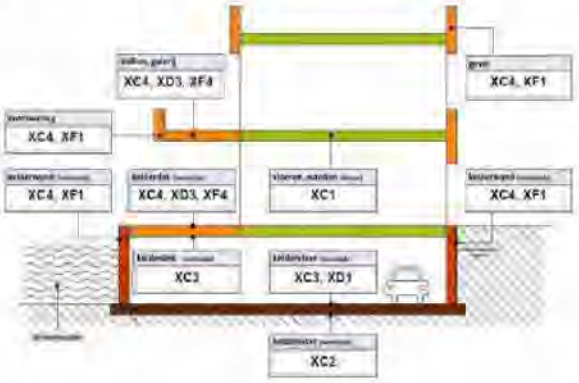
4.2.1. Steel

N.A.

4.2.2. Concrete

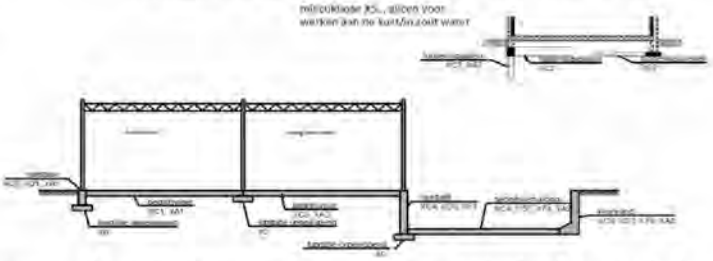
4.2.2.1. *Environmental class & concrete cover*

For the composition of the concrete and detail of the reinforcement, the following environmental classes + cover must be used:



Others, not shown in picture:

- Foundation piles XC2, XA2 u.n.o.
- Floor (production building) XC1, XA1 u.n.o.
- Floor (storage) XC3, XA2 u.n.o.
- Foundation (not reinforced) XC0
- Foundation beams XC3, XD1, XA2 u.n.o.



Part	Construction class	Environmental classes, u.n.o. on drawings	c_{minb} [mm]	c_{mindur} [mm]	Δc_{dev} [mm]	c_{nom} required [mm]	c_{nom} applied [mm]
For Funderingspalen							
Drilled	S4	XC2 / XA3	16	40	5	45	50
Foundation beams							
Top	S4	XC4 / XD3 / XF2 / XA3	16	50	10	60	60
Side	S4	XC2 / XD3 / XF2 / XA3	16	50	10	60	60
Bottom	S4	XC2 / XA 3	16	45	10	55	60
Ground floor							
Top	S3	XC4 / XD3 / XF2 / XA3	16	40	10	50	50
Side	S3	XC2 / XD3 / XF2 / XA3	16	40	10	50	50
Bottom	S3	XC2 / XA 3	16	40	10	50	50

4.2.2.2. *General remarks*

Concrete works must be carried out in accordance with EN 13670 + NA;

Concrete works must also comply with 10000-Y50-00035;

Material -> acc. EN 206-1 + NA, min. grade in acc. to §4.1.

The workability of the concrete is determined by the contractor. The chosen plasticity should be attuned to the implementation method , however, taking into account the permissible water / cement ratio with respect to the environmental class .

Finishes of the various elements, if applicable must be included on the drawings and should take minimum concrete cover into account.

Piling design (Dimensions and reinforcement) to be checked by contractor

For all new concrete KOMO Certification is Mandatory for New Concrete

5. Loads on structure

5.1. Dead and imposed floorloads according EN 1991-1-1 + NA

5.1.1. General, summary table

The self-weight of the modeld structure is calculated by Scia.

These loads are determined based on the following secific mass:

Concrete	dry	unreinforced	=	2400 kg/m³
	wet	unreinforced	=	2500 kg/m³
	dry	reinforced	=	2500 kg/m³
	wet	reinforced	=	2600 kg/m³
Rebar			=	7850 kg/m³
Construction steel			=	8000 kg/m³

The remaining permanent loads are entered according to the schedule below.

Part	Description	g_k [kN/m²]	q_k [kN/m²]	Q_k [kN]	ψ_0	area pointload mm²
V01	Floor		3.00	7.00	1	50*50

5.1.2. Floors

V01 Floor		h/d [mm]	g_k kN/m²	q_k kN/m²	Q_k kN
Floor type:	massive slab	1000 mm	by scia		
Category:	E2 industrial use	E2		3.00	7.00
	ψ_0 = 1	1000		3.00	7.00
	Area Q_k : 50*50 mm²				

5.1.3. Walls

Not applicable

5.1.4. Beam elements

Are determined by Scia

5.1.5. Loads provided by client

ATTACHMENT No. 1
TECHNICAL DATA OF AIR-COOLERS 1/1

Pos	ITEM	OFFER DWG.	QTY [PC]	UNIT WEIGHT ca kg/PC	BUNDLE: SECTION SIZE Width x Height x Length [ca m]	BUNDLE: QTY. [PC]	BUNDLE: UNIT WEIGHT ca kg/PC	BUNDLE: MATERIAL TUBE/ HEADER	BUNDLE: TUBE Dia x Thtx Length [mm]	BUNDLE: FINNING TYPE	BUNDLE: HEADER TYPE	FAN: DIA [mm]	FAN: MOTOR POWER [kW] / rpm	FAN: QTY [PC]	VIBR. SENS. [PC]	TUBE TO TUBE SHEET JOINT
1	E-605	OF.5124.1 Rev.1	1	255 500	2,453 x 0,90 x 11,90	14	11 550	P275NL1-TC1 P355NH	25,4 x 2,11(av) x 11 500	EXTRUDED	PLUG	3 962	45/1000 rpm	14	YES	welded + expanded
2	E-613	OF.5124.2	1	235 400	2,715 x 0,90 x 11,95	12	12 700	P275NL1-TC1 P355NH	25,4 x 2,11(av) x 11 500	EXTRUDED	PLUG	3 962	45/1000 rpm	12	YES	welded + expanded
TOTAL:			2	490 900												

	deadload	liveload water	liveload opp.
The loads are divided in:	60.8 kN for 1 support	6.08 kN for 1 support	7.89 kN for 1 support
	122 kN for 2 on 1 support	12.2 kN for 2 on 1 support	15.8 kN for 2 on 1 support
	65.4 kN for 1 support	5.23 kN for 1 support	3.14 kN for 1 support
	131 kN for 2 on 1 support	10.5 kN for 2 on 1 support	6.3 kN for 2 on 1 support

Liveload for the walkways is calculated as 25 kN

5.1.6. Loads due to imperfections

For concrete elements, these effects are taken in to account by Scia

5.2. Horizontal load on partitions: handrails/railings according to EN 1991-1-1 +NB

Not applicable on this structure

5.3. Special floor load according to EN 1991-1-1 +NB

Not applicable on this structure

5.4. *Special floorloads due to vehicles acc. EN 1991-1-1 +NA*

Not applicable on this structure

5.5. *Loads due to fire acc. EN 1991-1-2 +NA*

Loads due to fire are not checked in this calculation.

5.6. *Snowloads acc. EN 1991-1-3 +NA*

Snow loads as determined in Annex B. The loads that are applicable are:

Loads for flat / monopitch roofs is q_{sn} = **0.56** kN/m²

5.7. *Wateraccumulation acc. EN 1991-1-3 +NA*

Wateraccumulation is not taken in to account. A sufficient drainage system will be provided.

5.8. *Windloads acc. EN 1991-1-4 +NA*

Windloads are determined in Annex C, following the basic points:

Country	=	Nederland
Location	=	Sluiskil
Windarea	=	2
Ref. height	=	14.2 m
The windpressure that follows	=	**0.96** kN/m²

Other factors are acc. to Annex C.

5.9. *Temperature loads acc. EN 1991-1-5 +NA*

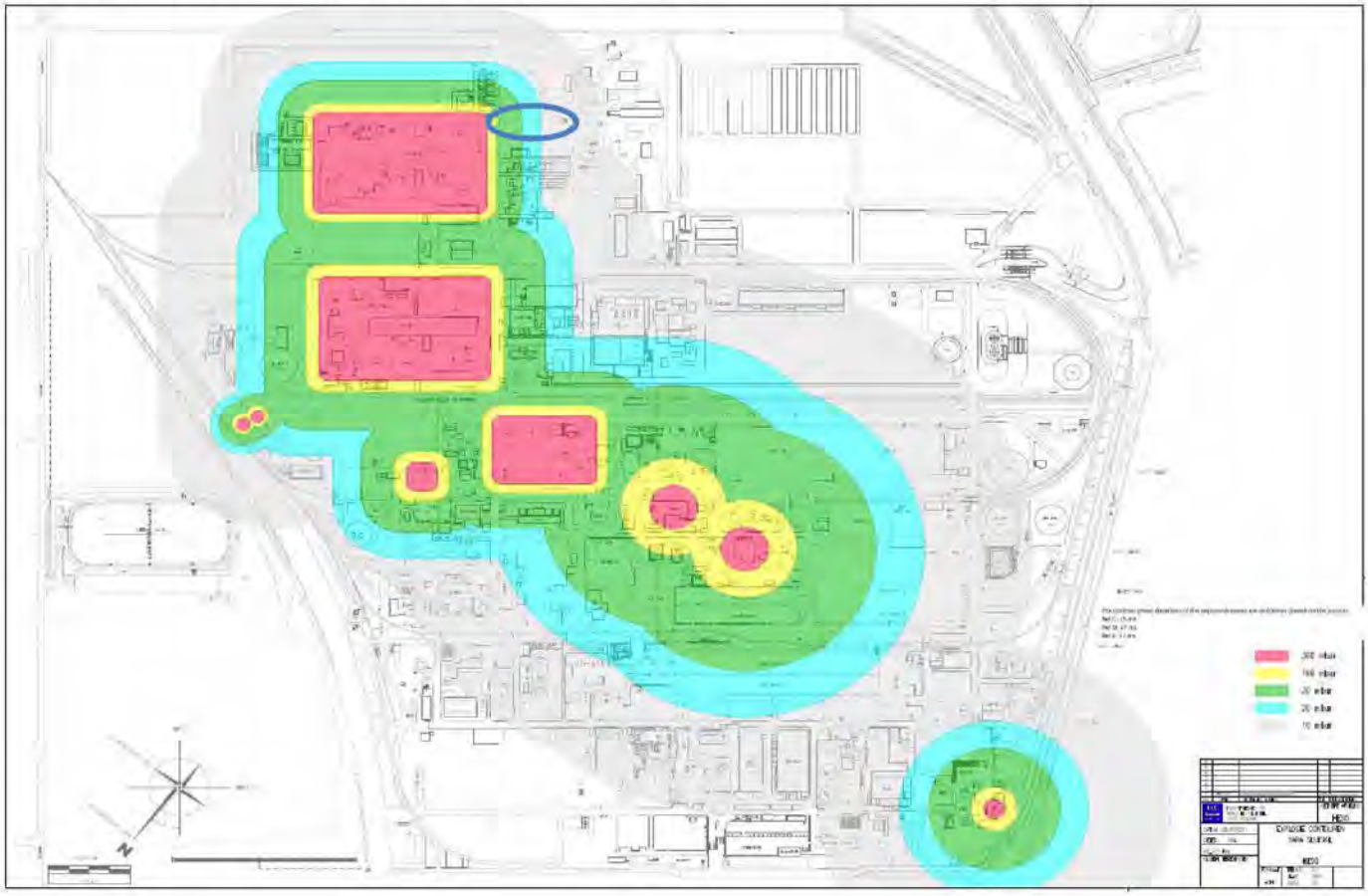
For the concrete structure the temperature loads are not applicable, as the concrete is surrounded by soil, it is provided with an initial insulation so that no strong temperature fluctuations are to be expected. For the steelstructure the temperature loads will be applied.

5.10. *Impact loads EN 1991-1-7 +NA*

For the concrete stucture no loads from an inpact will be taken in to account.

5.11. *Explosive force according to EN 1991-1-7 +NB*

For the concrete coolerbank structure no explosive loads will be calculated



5.12. Load due to geotechnical causes

5.12.1. Load due to earth pressure according to EN 1991-1-1 +NA / EN 1997-1 +NA

The foundations have no unequal loads on the sides. Thus no special getechnical loads are applied on the foundations.

5.12.2. Earthquake load EN 1991-1-1 +NA / EN 1997-1 +NA / EN 1998-1 +NA

For this location and construction it is not vital to calculate with an earthquake load.

5.13. Loads due to cranes acc. EN 1991-3 +NA

Not applicable on this structure

5.14. Loads on piperacks

Not applicable on this structure

5.15. Load due to water flow acc. EN 1991-1-6 +NA

Not applicable on this structure

6. Calculation model

6.1. Model setup

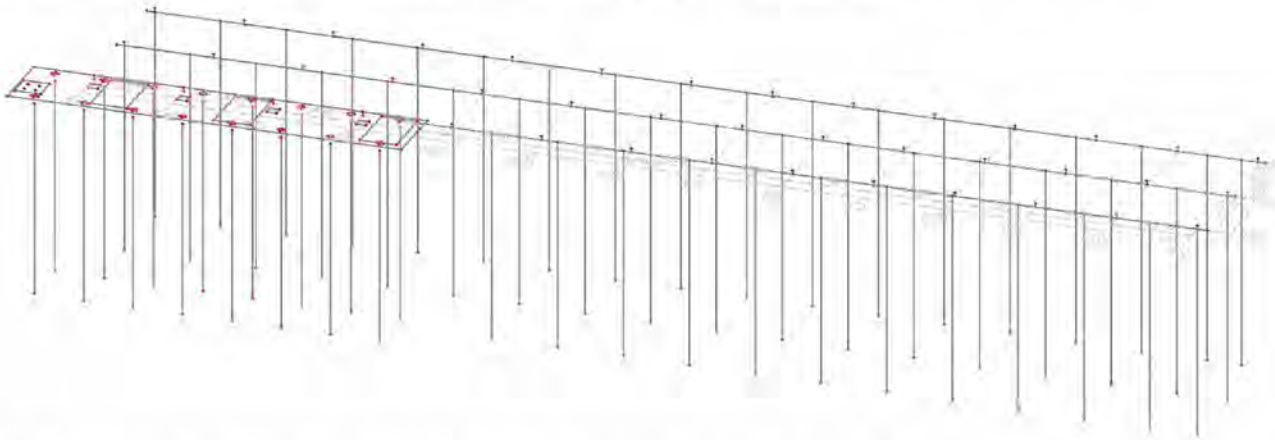
6.1.1. General

6.1.1.1. Basic

The model contains the 3 foundationbeams, incl. the piles and a foundation slab for some machines + foundation of the coolers.
The beams are modeld as 1D bar elements. The slab is a 2D element.

6.1.1.2. 1D & 2D elements

For the design of the beams simpel rectangle beams are used. In reality T-beams will be applied for supporting a precast floor.
This precast floor is not considerd as part of the calculation. The weight is applied on the beams.

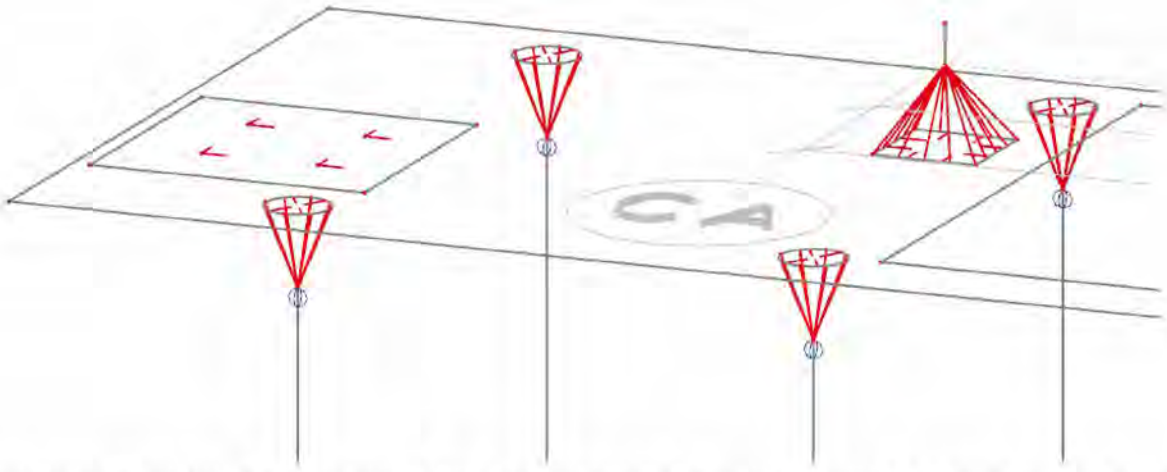


For the floorslab local raised area's for where the machines will be placed are taken in to account.

6.1.2. Characteristics

6.1.2.1. Hinges & beampropertys

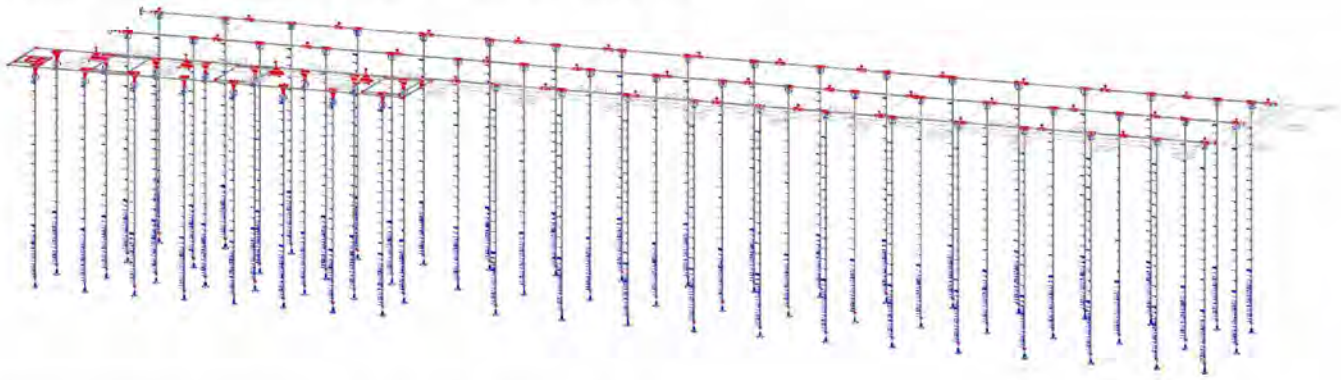
All founationpiles are moddeld with hinged connections.
Also for the slab design an offset in the pileheads is modeld with rigid link elements



The same technic is used for the columnsupports. This is also done to insure no unwanted stresses due to local points are applied.

6.1.2.2. Supports

All supports are placed on the piles. These are calculated as springsupports.



The stiffness of the springs is based on calculation 4921002-B01 rev-

In addition to these spring, on 2 of the main beams a suport Rx is placed to prevent local torsioneffects.
In reality the soil, combined with the precast floor will support the beams against these torsional displacement which now is applied.

6.2. Loadcases

In the model te following loadcases are applied:

Name	Description	Action type	Load group	Load type	Master load case	Specification	Duration
BG101	Self weight modelled str	Permanent	LG1	Self weight			
BG102	Dead load	Permanent	LG1	Standard			
BG111	Live load (water)	Variable	LG2	Static	None	Standard	Short
BG112	Live load (opperating)	Variable	LG2	Static	None	Standard	Short
BG113	Live load (walkways)	Variable	LG3	Static	None	Standard	Short
BG114	Live load traffic	Variable	LG3	Static	None	Standard	Short
BG115	Equipment	Variable	LG3	Static	None	Standard	Short
BG121	Snow	Variable	LG4	Static	None	Standard	Short
BG122	Wind x-axis	Variable	LG5	Static	None	Standard	Short
BG123	Wind y-axis	Variable	LG5	Static	None	Standard	Short

6.3. Combinaties

Due to the large number of load cases, which lead to a large number of load combinations, only a summary table of the main combinations is given in the overview below.

		Comb ID	1	2	3
		Type	ULS	BGT	BGT
		Name	UGT-Set B	BGT-Kar	BGT-quasi
LC Name	LC Description				
BG101	Self weight modelled structure		1.00	1.00	1.00
BG102	Dead load		1.00	1.00	1.00
BG111	Live load (water)		1.00	1.00	1.00
BG112	Live load (opperating)		1.00	1.00	1.00
BG113	Live load (walkways)		1.00	1.00	1.00
BG114	Live load traffic		1.00	1.00	1.00
BG115	Equipment		1.00	1.00	1.00
BG121	Snow		1.00	1.00	1.00
BG122	Wind x-axis		1.00	1.00	1.00
BG123	Wind y-axis		1.00	1.00	1.00

7. Results

7.1. *Strength control*

7.1.1. General

For all strength checks, the basic requirement is that all Unity Checks (u.c.'s) must be less than or equal to 1.00.
E.e.a. in accordance with the requirements of formula (6.8) of EN 1990 + NB.

7.1.2. Steel design

Not applicable on this structure

7.1.3. Concrete design

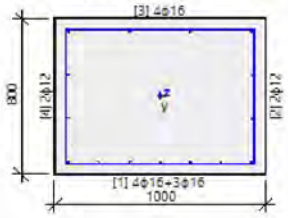
For the preliminairy design of the rebar only a simpel design is preformed.

7.1.3.1. Concrete Beams

Based on the forces in the model Scia provides a first draft of the required reinforcement:

Beam S8 | **Rechthoek (800; 1000)**
NEN EN 1992-1-1+C2/NB+A1:2020 | Section 9 [dx = 1.58 m]

Member length: L = 48 m
Buckling y-y: L_y = 4.04 m (sway)
Buckling z-z: L_z = 103 m (sway)

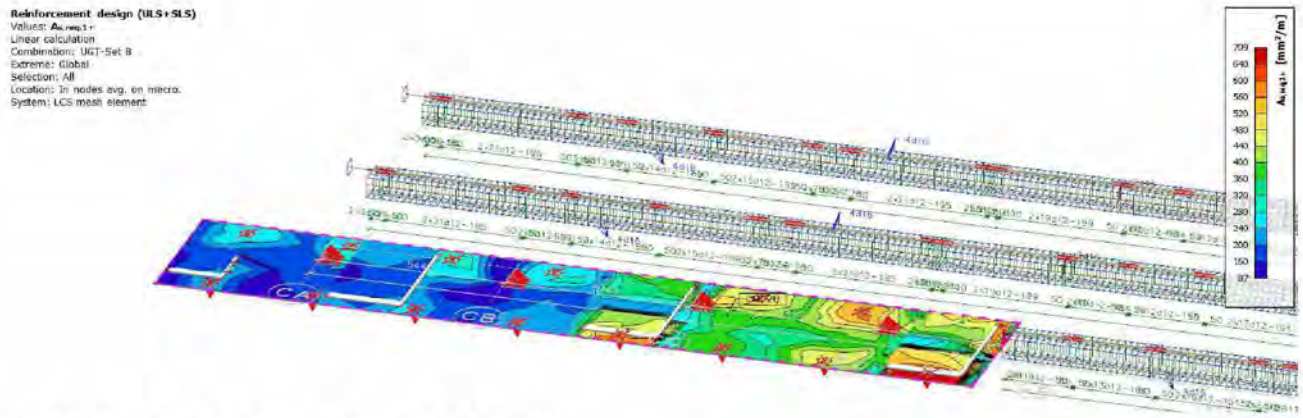


Concrete: C35/45
Bi-linear stress-strain diagram
Exposure class: XC3, XS1, XF3, XA3
Longitudinal reinforcement: B 500B
Bi-linear with an inclined top branch
11ϕ16+4ϕ12 (2664 mm²)
ρ_l = 0.333 % (20.9 kg/m)
Shear reinforcement: B 500B
Bi-linear with an inclined top branch
2L ϕ8/100 (101 mm²)
ρ_w = 0.101 % (7.89 kg/m³)
Cover (stirrup)
Top: 50 mm
Bottom: 50 mm
Sides: 50 mm

Full report in annex D

Based on this a first rebar design is made which commutes to = 48.7 kg/m³
As additional local effect need to be taken in to account for the final design. For this fase of the works, an amount of 80 kg/m³ is adviesed to be used for quotations.

7.1.3.2. Concrete Slab



The slab design results in a required rebarmesh of #ø12-150
Because of the thickniss of the slab/minimal design the calculation is based on using ø16.
So for the preperation of works a amount of 80 kg/m² sould also be used for the design of the slabs.

Further results are accoording annes D.

7.2. *Deformations*

7.2.1. General

The requirements for checking the permissible deformation are in accordance with §"3.4. Deflection requirements" applicable.
This is tested on 3 different parts:

- Node displacement — Testing against the maximum displacement of the structure in SLS situation.
- Relative displacement — Primary test for distortion in the uz of the profile, in accordance with the requirements
  Secondary test for deformation in the uy of the profile, whereby the permissible values in accordance with the uz are observed.
- 3D displacement — No direct testing, mainly for insight into how the profiles deform, are no direct requirements for the applicable standards.

7.2.2. Node displacement

Node	BG	U_x [mm]	U_y [mm]	U_z [mm]	Fi_x [mrad]	Fi_y [mrad]	Fi_z [mrad]	U_{total} [mm]
K94	BGT-kar/1	-0.4	0	-4.6	0	-0.6	0	4.6
K374	BGT-kar/2	0.8	-0.2	-5.7	-0.6	0.2	0	5.8
K96	BGT-kar/3	0	8.8	-4.7	-1.5	0	0.1	9.9
K23	BGT-kar/4	0.1	0.2	-8.7	-0.6	0.2	0	8.7
K188	BGT-kar/3	0	0.1	-2.4	0.1	0	0	2.4
K450	BGT-kar/5	0	0.1	-4.2	0.1	0	0	4.2
K4	BGT-kar/6	1.9	0	-5	0	0.5	0	5.4
K3	BGT-kar/3	0.2	8.1	-4.3	0	0.4	-0.1	9.2
K43	BGT-kar/5	-0.1	5.2	-5.1	-0.6	-0.2	0.2	7.3
K78	BGT-kar/7	0	8.5	-7.4	-1.4	0	0	11.2
	min. verpl.	**-0.4**	**-0.2**	**-8.7**	**-1.5**	**-0.6**	**-0.1**	**2.4**
	max. verpl.	**1.9**	**8.8**	**-2.4**	**0.1**	**0.5**	**0.2**	**11.2**

The allowable vertical displacement is 25 mm
The maximum displacement is 8.7 mm, the uc is 0.35

7.2.3. Relative displacement

Name	dx [m]	Case	Cross-section	uy [mm]	uy,rel [1/xx]	uz [mm]	uz,rel [1/xx]
S2	0.25	BGT-kar/1	CT-12 - Rechthoek (600; 600)	0	0	-0.1	-1/1859
S45	0.25	BGT-kar/2	CT-12 - Rechthoek (600; 600)	0	0	0.1	1/1768
S10	20.460-	BGT-kar/3	CT-11 - Rechthoek (800; 1000)	-0.8	-1/10000	0	0
S8	22.750-	BGT-kar/4	CT-11 - Rechthoek (800; 1000)	2.1	1/10000	0	-1/10000
S9	2.460+	BGT-kar/5	CT-11 - Rechthoek (800; 1000)	0	0	-0.1	-1/10000
S8	48	BGT-kar/6	CT-11 - Rechthoek (800; 1000)	0	-1/10000	0.3	1/2357
S10	68	BGT-kar/7	CT-11 - Rechthoek (800; 1000)	0	0	0	-1/10000
S9	68	BGT-kar/2	CT-11 - Rechthoek (800; 1000)	0	0	0.3	1/1774
S141	5.25	BGT-kar/4	ST-23 - Cirkel (460)	-4.7	-1/2954	0	1/10000
S108	4.83	BGT-kar/8	ST-23 - Cirkel (460)	0.1	1/10000	-0.4	-1/10000
S49	8.52	BGT-kar/1	ST-23 - Cirkel (460)	0	0	-1.9	-1/7499
S83	8.52	BGT-kar/2	ST-23 - Cirkel (460)	0	0	0.2	1/10000

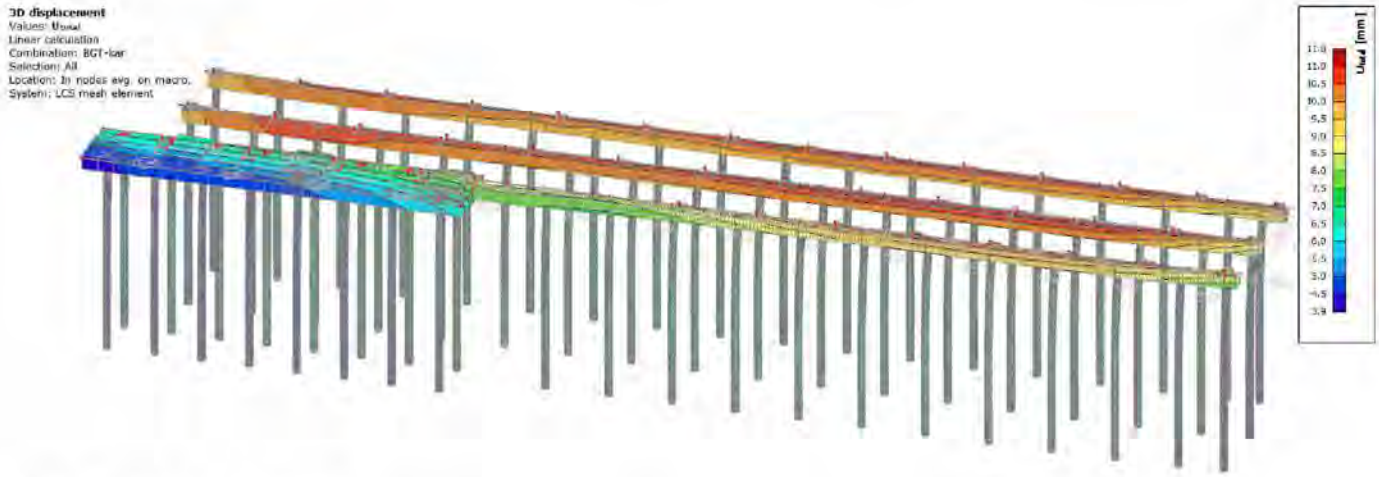
The full list is acc. to annex

7.2.4. 3D displacement

Name	dx [mm]	fiber	LC	ux [mm]	uy [mm]	uz [mm]	φx [mrad]	φy [mrad]	φz [mrad]	U global [mm]
S82	14	6	BGT-kar/1	2.4	0.1	0	0	0	0.1	2.4
S39	0.25	3	BGT-kar/2	-8.2	8.5	0	0	0	1.4	11.8

Name	Net	Position [m]	Lc	ux+ ux- [mm]	uy+ uy- [mm]	uz+ uz- [mm]	φx [mrad]	φy	φz	U total+ U total- [mm]
E1	Element: 84; Node: 2	x 8 y 6 z -0.5	BGT-kar/3	-0.2 -0.2	1.1 0.8	-5.8 -5.8	-0.3	0	0.1	5.9 5.9
E1	Element: 766; Node: 10	x 32 y 6 z -0.5	BGT-kar/4	1 0.8	0.5 -0.3	-8.2 -8.2	-0.6	0.2	0	8.3 8.2
E1	Element: 1; Node: 1	x 32 y 6 z -0.5	BGT-kar/5	-0.1 -0.3	3.8 3.2	-8 -8	-0.6	0.2	0.1	8.9 8.6
E1	Element: 84; Node: 2	x 8 y 6 z -0.5	BGT-kar/6	0.9 0.9	0.7 0.2	-6.7 -6.7	-0.5	0	0	6.8 6.7
E1	Element: 2; Node: 1707	x 32 y 6 z -0.5	BGT-kar/7	0.9 0.8	0.3 -0.1	-7.1 -7.1	-0.4	0.1	0	7.2 7.2
E1	Element: 749; Node: 7	x 32 y 2 z -0.5	BGT-kar/8	0.3 0.1	3.9 3	-5.5 -5.5	-0.6	0.1	0.1	6.7 6.2
E1	Element: 749; Node: 7	x 32 y 2 z -0.5	BGT-kar/4	1 0.7	0.5 -0.3	-5.9 -5.9	-0.6	0.2	0	6 6
E1	Element: 2; Node: 1707	x 32 y 6 z -0.5	BGT-kar/3	-0.1 -0.2	3.7 3.3	-6.7 -6.7	-0.4	0.1	0.1	7.6 7.4
E1	Element: 1; Node: 1	x 32 y 6 z -0.5	BGT-kar/9	0.1 0	0.5 -0.2	-8.7 -8.7	-0.6	0.2	0	8.7 8.7
E1	Element: 142; Node: 1674	x 28 y 2 z -0.5	BGT-kar/9	0.1 -0.1	0.5 -0.1	-5.1 -5.1	-0.7	0.2	0	5.1 5.1
E1	Element: 91; Node: 3	x 8 y 2 z -0.5	BGT-kar/10	0.3 0.3	1.3 0.8	-4.1 -4.1	-0.5	0	0.1	4.3 4.2
E1	Element: 176; Node: 5	x 32 y 4 z -0.5	BGT-kar/3	0 0	3.7 3.3	-6.1 -6.1	-0.4	0.1	0.1	7.1 6.9
E1	Element: 91; Node: 3	x 8 y 2 z -0.5	BGT-kar/4	0.9 0.8	0.7 0.1	-4.1 -4.1	-0.6	0	0	4.2 4.1
E1	Element: 1; Node: 1	x 32 y 6 z -0.5	BGT-kar/8	-0.1 -0.3	3.8 3.2	-8 -8	-0.6	0.2	0.1	8.9 8.6
E1	Element: 91; Node: 3	x 8 y 2 z -0.5	BGT-kar/11	0.3 0.3	1.4 0.8	-4 -4	-0.5	0	0.1	4.2 4.1

Name	Combinationkey
BGT-kar/1	BG101 + BG102 + BG123
BGT-kar/2	BG101 + BG102 + BG113 + BG114 + BG123 + BG112
BGT-kar/3	BG101 + BG102 + BG115 + BG123
BGT-kar/4	BG101 + BG102 + BG111 + BG113 + BG114 + BG122
BGT-kar/5	BG101 + BG102 + BG111 + BG113 + BG114 + BG115 + BG123
BGT-kar/6	BG101 + BG102 + BG111 + BG113 + BG114 + BG115 + BG122
BGT-kar/7	BG101 + BG102 + BG115 + BG122
BGT-kar/8	BG101 + BG102 + BG111 + BG113 + BG114 + BG123
BGT-kar/9	BG101 + BG102 + BG111 + BG113 + BG114 + BG121
BGT-kar/10	BG101 + BG102 + BG114 + BG115 + BG123
BGT-kar/11	BG101 + BG102 + BG111 + BG114 + BG123



7.3. *Internal forces and stresses*

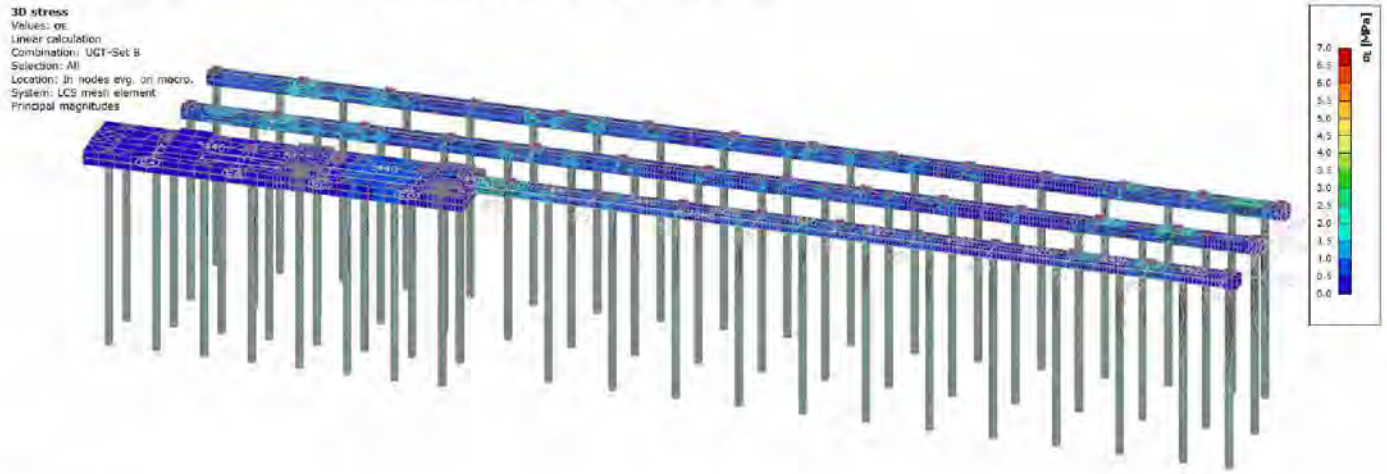
7.3.1. 3D stresses

Name	dx [mm] [mm]	fiber	CSS	Combination	σE [MPa]	σ1 [MPa]	σ2 [MPa]	τtot [MPa]
S4	0	1	CT-12 - Rechthoek (600	UGT-Set B/1	0.9	0	-0.9	0
S8	2.030-	5	CT-11 - Rechthoek (800	UGT-Set B/2	3.2	0	-3.2	0
S135	3.427+	6	ST-23 - Cirkel (460)	UGT-Set B/3	7	0	-7	0

Name	Net	Position [mm]		Combination	σ_{E+} [MPa]	σ_{E-} [MPa]	σ_{1+} [MPa]	σ_{1-} [MPa]	σ_{2+} [MPa]	σ_{2-} [MPa]	α+ [deg]	α+ [deg]	$\tau_{max,b}$ [MPa]
E1	Element: 385; Node: 25	x	13	UGT-Set B/4	0	0	0	0	0	0	-31.3	-83.1	0
		y	5										
		z	-0.5										
E1	Element: 932; Node: 109	x	22	UGT-Set B/5	0	0	0	0	0	0	49.5	-19.9	0
		y	6										
		z	-0.5										
E1	Element: 177; Node: 6	x	32	UGT-Set B/6	1.6	0.9	-0.3	0.5	-1.7	-0.5	63.6	-50.8	0.4
		y	5										
		z	-0.5										
E1	Element: 249; Node: 1772	x	31	UGT-Set B/7	0.2	0.3	0.2	-0.2	0.2	-0.3	39.7	-78.5	0.3
		y	6										
		z	-0.5										
E1	Element: 176; Node: 5	x	32	UGT-Set B/8	0.5	1.2	0.2	1.3	-0.3	0.1	-89.5	2.2	0.1
		y	4										
		z	-0.5										
E1	Element: 177; Node: 6	x	32	UGT-Set B/8	1.7	0.9	-0.3	0.6	-1.9	-0.4	67.5	-44.5	0.3
		y	5										
		z	-0.5										
E1	Element: 29; Node: 88	x	28	UGT-Set B/2	0.9	0.9	1	0	0	-1	8.07	-81.8	0.3
		y	6										
		z	-0.5										
E1	Element: 176; Node: 1794	x	32	UGT-Set B/9	0.3	0.3	-0.2	0.3	-0.3	0.3	84.6	-65.3	0.2
		y	5										
		z	-0.5										
E1	Element: 719; Node: 102	x	31	UGT-Set B/10	0	0	0	0	0	0	8.73	-72.3	0
		y	6										
		z	-0.5										
E1	Element: 27; Node: 86	x	28	UGT-Set B/2	0.7	0.8	0.8	0	0	-0.8	7.59	-82.1	0.5
		y	6										
		z	-0.5										

Name	Combinationkey
UGT-Set B/1	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG123
UGT-Set B/2	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/3	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG114 + 1.50*BG123
UGT-Set B/4	0.90*BG101 + 0.90*BG102 + 1.50*BG114 + 1.50*BG123

UGT-Set B/5	0.90*BG101 + 0.90*BG102 + 1.50*BG123
UGT-Set B/6	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115 + 1.50*BG123
UGT-Set B/7	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/8	1.20*BG101 + 1.20*BG102 + 1.50*BG123
UGT-Set B/9	1.35*BG101 + 1.35*BG102
UGT-Set B/10	0.90*BG101 + 0.90*BG102 + 1.50*BG122



7.3.2. Reactions

Support	BG	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn61/K366	UGT-Set B/1	0	0	573.73	0	0	0
Sn47/K16	UGT-Set B/2	0	0	0	78.75	0	0
	min. Force	**0**	**0**	**0**	**0**	**0**	**0**
	max. Force	**0**	**0**	**573.73**	**78.75**	**0**	**0**

Support / Name	BG	dx [mm]	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Slb36/S49	UGT-Set B/3	2.155	-1.32	0	0	0	0	0
Slb39/S49	UGT-Set B/3	8.82	0.44	0	0	0	0	0
Slb1464/S141	UGT-Set B/5	2.155	0.03	-6.22	0	0	0	0
Slb1467/S141	UGT-Set B/5	8.82	-0.01	2.09	0	0	0	0
	min. Force		**-1.32**	**-6.22**	**0**	**0**	**0**	**0**
	max. Force		**0.44**	**2.09**	**0**	**0**	**0**	**0**

7.3.3. Piling design

Based on the reactionforces and document 4921002-B01 rev- a Fundex pile ø460-560 of 14 m is choosen for these foundations.

8. Conclusion

8.1. Conclusions

8.1.1. Conclusion rev. -

The results in this calculation provide the the basic reïnforcements that will be required for the execution of the concrete structure.
Also a design of the piling is provided.

8.2. Remarks

8.2.1. General u.n.o.

- The calculation only includes the following parts of the main structure::
  - Foundation on piles
  - Concrete frame
- The calculation includes the following parts of the secondary construction:
  - N.A.
- The calculation does not include provisions for architectural "ornamental" elements;
- All prefabricated / order parts must be processed according to manufacturer's instructions;

8.2.2. Concretestructures u.n.o.

- Concrete works must be carried out in accordance with EN 13670 + NA;

- Finishing of the various concrete elements must be indicated on the drawing. In the calculated concrete cover, e.e.a. has been determined on the basis of the known data. If special finishes are applied, appropriate measures must be applied, in consultation with the manufacturer.

- The workability of the concrete is determined by the contractor. The chosen consistency must be adjusted to the execution method, taking into account the permissible water/cement factor in relation to the environmental class.

-If a hollow-core slab floor has a stone-like finish, it must be provided with a pressure layer d = 50 mm, with a cross net B335 (# ø8-150) B500A

- Drawings with the course of the pipes must be sent to both the constructor and the floor supplier for checking/adjustment.
- System floors must be calculated/signed by the supplier, taking into account the basic principles set out in this document.

8.2.3. Execution of foundation on piles

- Pile reinforcement according to calculation supplier;
- Piles should be drilled accurately in place;
- Checking of piles after insertion should be done, if one of the following situations occurs this must be reported to the engineer:
  - Deviations larger than 50 mm must be stated on the drawing and must be reported;
  - If there is doubt as to whether a pile has been driven, it must be measured acoustically and if broken please mention this.
- Piling operations must be carried out in accordance with EN 1997-1 + NB. In doing so, also adhere to the guidelines and principles of NEN 6742;

- First pile serves on the probing to be driven at depth. The payment made here is for all other piles. When several probes are present, the piles must be driven first at these locations and the average balancing must be used for the most distant piles.

Annex A
Overview material properties

Content

A. Overview material properties

A.1. Overview steel

n.a.

A.2. Overview Aluminium

n.a.

A.3. Overview Wood

n.a.

A.4. Overview Concrete & Rebar

Concrete

Name	cylinder pressure strength f_{ck} MPa	cube compressive strength $f_{ck,cube}$ MPa	design value cylinder pressure strength f_{cd} MPa	average cylinder compressive strength f_{cm} MPa	characteristic tensile strength f_{ctm} MPa	design value tensile strength f_{ctd} MPa	Secant modulus of elasticity at 0.4 fcm E_{cm} MPa	min. reinforcement percentage ρ_{min} %	max.reinforcement percentage ρ_{max} %	α	β	
C12/15	12	15	8	20	1.57	0.73	27000	0.13	0.62	0.75	0.39	=> concrete for basefloor
C16/20	16	20	10.7	24	1.9	0.89	29000	0.13	0.82	0.75	0.39	
C20/25	20	25	13.3	28	2.21	1.03	30000	0.13	1.03	0.75	0.39	
C25/30	25	30	16.7	33	2.56	1.2	31000	0.13	1.29	0.75	0.39	
C30/37	30	37	20	38	2.9	1.35	33000	0.15	1.55	0.75	0.39	
C35/45	35	45	23.3	43	3.21	1.5	34000	0.17	1.8	0.75	0.39	=> standard concrete
C40/50	40	50	26.7	48	3.51	1.64	35000	0.18	2.06	0.75	0.39	
C45/55	45	55	30	53	3.8	1.77	36000	0.2	2.32	0.75	0.39	=> standard prefabricated concrete
C50/60	50	60	33.3	58	4.07	1.9	37000	0.21	2.58	0.75	0.39	
C53/65	53	65	35.3	61	4.16	1.94	38000	0.22	2.12	0.72	0.38	
C55/67	55	67	36.7	63	4.21	1.97	38000	0.22	2.1	0.71	0.37	
C60/75	60	75	40	68	4.35	2.03	39000	0.23	2.1	0.67	0.36	
C70/85	70	85	46.7	78	4.61	2.15	41000	0.24	2.22	0.62	0.35	
C80/95	80	95	53.3	88	4.84	2.26	42000	0.25	2.28	0.58	0.34	
C90/105	90	105	60	98	5.04	2.35	44000	0.26	2.49	0.56	0.34	

Rebar

General data for steel

Mass per unit	m =	7850	kg/m³
Modulus of elasticity	E =	210000	MPa
Shear modulus	G =	80769	MPa
Poisson coëfficient	ν =	0.3	
Linear thermal expansion coëfficient	α =	0.000012	per °C (voor T ≤ 100 °C)

name	f_{yk} MPa	f_{yd} MPa	
FEB200	220	191	=> only for excisting concrete
B 400A	400	348	
B 500A	500	435	=> for basic pointweldednets
B 600A	600	522	
B 400B	400	348	
B 500B	500	435	=> standard for rebar beams/stirups
B 600B	600	522	
B 400C	400	348	
B 500C	500	435	=> standard for earthquake area's
B 600C	600	522	

A.5. Overview of bolts and anchors

name	f_{yb} MPa	f_{tb} MPa
4.6	240	400
4.8	320	400
5.6	300	500
5.8	400	500
6.8	480	600
8.8	640	800
10.9	900	1000
12.9	1080	1200
A4-50	210	500
A4-70	450	700
A4-80	600	800

=> not applicable in the Netherlands in accordance with NEN-EN 1993-1-8

=> for Hilti Lijmankers, otherwise not applicable in the Netherlands in accordance with NEN-EN 1993-1-8

A.6. Overview masonry

n.a.

A.7. Overview Stainless Steel

n.a.

Annex B
Determining snowloads

Content

B.1. Snowloads acc. Eurocode EN-1991-1-3 + NA

B.1.1. Basic snow load

Characteristic value snow	=	ρ_{sk} =	0.7 kN/m²
Exposure coëfficient	=	C_e =	1
Thermal coëfficient	=	C_t =	1
Design lifetime	=	n =	50 jr
Probability factor	=	P_n =	0.020
Variance coëfficient	=	V =	0.8
Factor for frequent value of a variable action:			
$\psi_1 = \frac{1 - V * \sqrt{6} / \pi * (\ln(-\ln(Pn)) + 0.5722)}{1 + 2.5923 * V}$	=	=	1.001
Basic snow load	=	ρ_{sn} =	0.70 kN/m²

B.1.2. Roof shape coëfficients

B.1.2.1. Algemene bepalingsmethode voor coëfficienten

Roof angle/pitch α	for 0° ≤ α ≤ 30°	for 30° < α ≤ 60°	for α ≤ 60°
μ_1	0.8	0.8 * (60 - α) / 30	0
μ_2	0.8 + 0.8 * α / 30	1.6	0

B.1.2.2. Monopitch roofs according to EN-1991-1-3 + NA, § 5.3.2

α = 1 °

μ_1 = 0.8

$q_{snow} = \rho_{sn} * \mu_1$

q_{snow} = 0.56 kN/m²

B.1.2.3. Saddle roofs according to EN-1991-1-3 + NA, § 5.3.3 — N.A

B.1.2.4. Roofs with more than one span, according to EN-1991-1-3 + NA, § 5.3.4 — N.A

B.1.2.5. Cylinder roofs according to EN 1991-1-3 + NA, § 5.3.5 — N.A

B.1.2.6. Roofs adjacent to higher buildings, according to EN-1991-1-3 + NA, § 5.3.6 — N.A

B.1.2.7. Snow accumulation at protruding part/obstacles, according to EN-1991-1-3 + NA, § 6.2 — N.A

Annex C
Determining windloads

Content

C.1. *Windloads acc Eurocode EN-1991-1-4 + NA*

C.1.1. General data for winddesign

Country		=	Nederland	
Location		=	Sluiskil	
Windarea		=	2	
Terrain category		=	2	
Shape of structure		=	b	
nr. of floors		=	1	
Building width	b_{gem} / x-as	=	71	m
Building depth	d_{gem} / y-as	=	16	m
Heigth above level 0+	h_1	=	0	m
Building height	h	=	14.2	m
Total building height	z_i	=	14.2	m
Angle of roof		=	0	°
Type of structure	= Steel buildings			

Terrain category

		z_0	z_{min}
0	Sea or coastal area exposed to the open sea.	0.01	1
1	Lakes or flat and horizontal area with negligible vegetation and without obstacles.	n.v.t.	n.v.t.
2	Area with low vegetation such as grass and isolated obstacles (trees, buildings) with separations of at least 20 obstacle heights.	0.2	4
	Gebied met regelmatige begroeiing of Area		
3	with regular cover of vegetation or buildings or with isolated obstacles with separations of maximum 20 obstacle heights (such as villages, suburban terrain, permanent forest).	0.5	7
4	Area in which at least 15 % of the surface is covered with buildings and their average height exceeds 15 m.	n.v.t.	n.v.t.

General shapes of structures

		z_s
a	vertical structures such as buildings etc.	$0.6*h > z_{min}$
b	parallel oscillator, i.e. horizontal structures such as beams etc.	$h_1+h/2 > z_{min}$
c	pointlike structures such as signboards etc.	$h_1+h/2 > z_{min}$
d	other structures	h

roughness length, acc. to terrain category	z_0	=	0.2 m
minimum value for heigt	z_{min}	=	4.0 m
maximum value for heigt	z_{max}	=	200 m
reference height for building factor, according to Figure 6.1 of EN-1991-1-4	z_s	=	7.1 m
normative value for calculation height	z	=	14.2 m

C.1.2. Wind pressure

basic windspeed § 4.2

v_b	= $C_{prob} * C_{dir} * C_{season} * v_{b0}$	=	27.0	m/s
C_{dir}	=		1	
C_{season}	=		1	
v_{b0}	=		27.0	m/s
C_{prob}	= $\left(\frac{1 - K * \ln(-\ln(1-p))}{1 - K * \ln(-\ln(0.98))}\right)^n$	=	1.0	
K	=		0.2	
n	=		0.5	
p	= 1 / reference time	=	0.02	

average windspeed § 4.3

$v_{m(z)}$	= $c_{r(z)} * c_{o(z)} * v_b$	=	24.10	m/s
$c_{o(z)}$	=	=	1	
v_b	=	=	27.00	m/s
$c_{r(z)}$	= $k_r * \ln(z/z_0)$ for $z_{min}<z<z_{max}$			
	$c_r(z_{min})$ for $z<z_{min}$			
k_r	= $0.19*(z_0/0.05)^{0.07}$	=	0.21	
$c_{r(z)}$	=	=	0.89	

wind turbulence § 4.4

$I_{v(z)}$	= $(k_r*v_b*k_I)/v_{m(z)}$	=	0.23	
k_I	=		1.00	

extreme trust § 4.5

$q_{p(z)}$	= $(1+7*I_{v(z)}) * 0.5 * \rho * v_{m(z)}^2$	=	0.96	kN/m²
ρ	=		1.25	kg/m³

C.1.3. Determination of CsCd

Determination according to § 6.3.1 + Annex B

Wind direction

		X-axis	Y-axis
c_sc_d	= $(1 + 2 * k_p * I_{v(zs)} * (B^2 + R^2)^{0.5})/(1 + 7 * I_{v(zs)})$	0.85	1.01
B^2	=	0.42	0.58
R^2	=	0.08	0.32
k_p	=	3.63	3.74
$I_{v(zs)}$	=	0.28	0.28

C.2. Windvormfactoren volgens EN-1991-1-4 + NB

C.2.1. Algemene gegevens wind

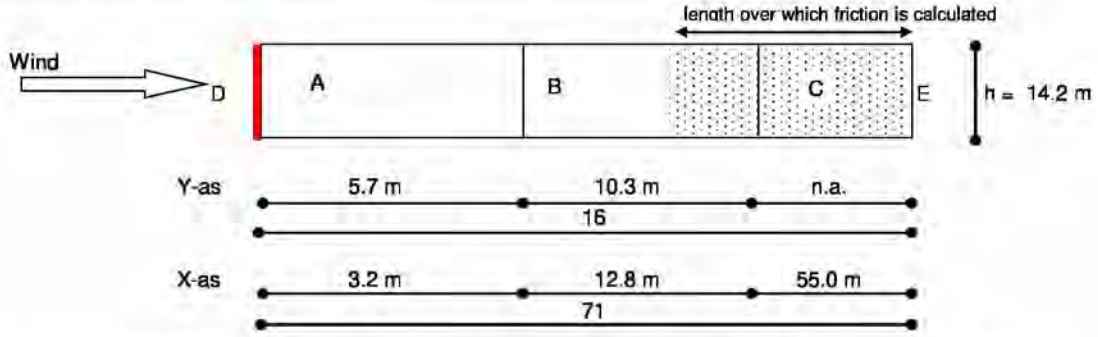
building width	b_{gem} / x-as	=	71 m	ratio X-axis	=	0.20	
depth building	d_{gem} / y-as	=	16 m	ratio Y-axis	=	0.89	
height relative to level	$h_{w.r.t.\ 0+}$	=	0 m	wind pressure on X axis	=	0.81	kN/m²
building height	h_{gb}	=	14.2 m	wind pressure on Y axis	=	0.97	kN/m²
total building height	h_{gem}	=	14.2 m	e_{vg}= min(x ; 2*h)	=	28	m
roof slope		=	0 °	e_{zg}= min(y ; 2*h)	=	16	m
	z	=	0 m				
	A	=	1008 m²	Factors for Under pressure	=	-0.30	
				Over pressure	=	0.20	

C.2.2. Determination Cpe value on facades

C.2.2.1. External wind pressure coefficient for buildings with a surface between 1 and 10 m², according to § 7.2.1 + fig. 7.2

There are no facades present that comply with this part

C.2.2.2. External wind pressure coefficient for buildings + wind friction coefficient, according to § 7.2.2 + fig. 7.5 + § 7.5



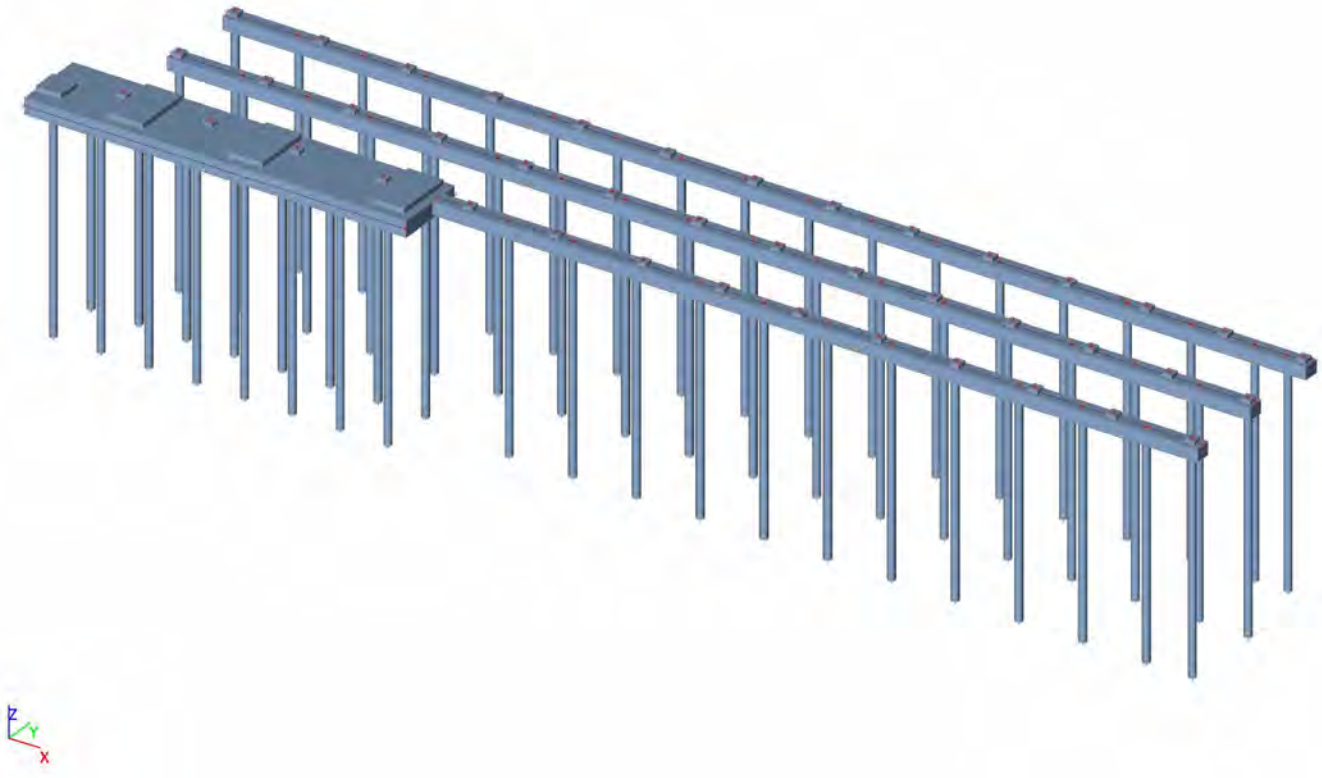
Values for wind perpendicular to mainfacade		Values for wind perpendicular to side wall	
C_{pe10} = D =	0.80	C_{pe10} = D =	0.80
C_{pe10} = E =	-0.50	C_{pe10} = E =	-0.50

Structure is considerd as a big beam on supports. Windfactor is considerd as 0.8 + - 0.7 = 1.5

Annex D
Calculation reports

Content

Annex D.1.
Input Scia



1. Table of contents

2. Calculation model

2.1. Setup manager

Combination setup

Category H loading not to be combined with snow or wind	✓

Psi factors

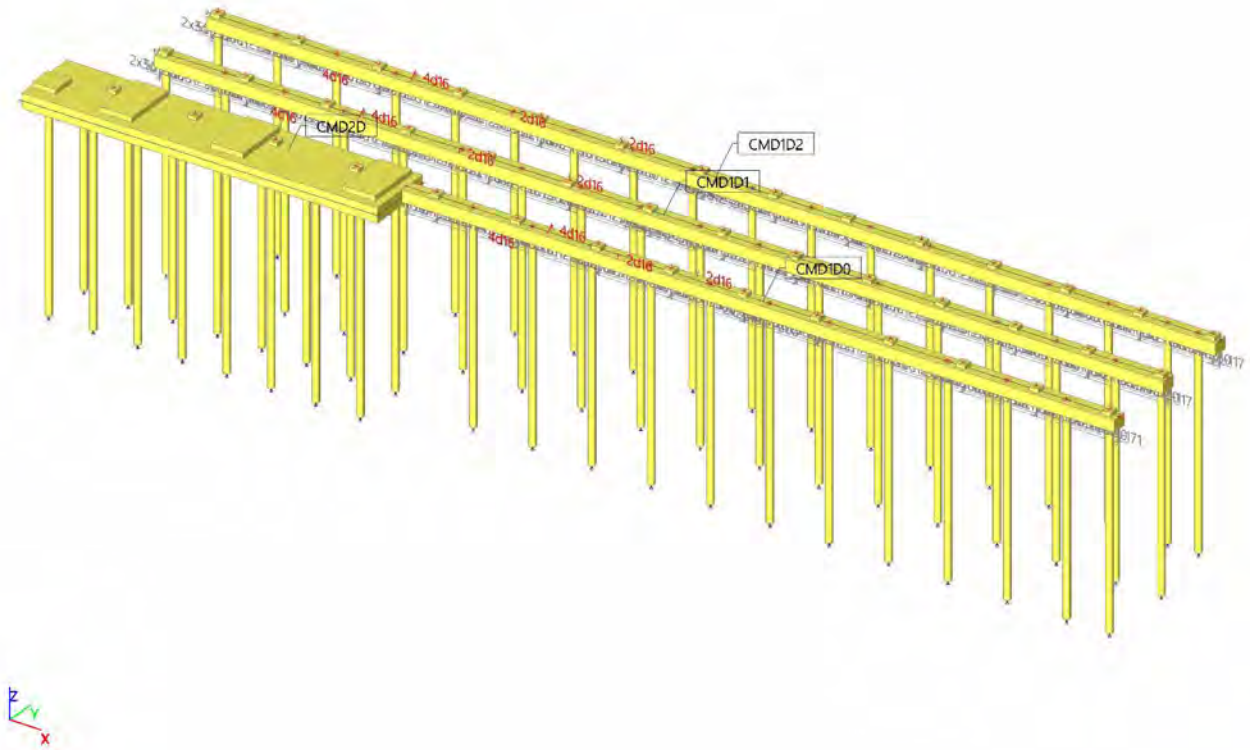
Load	Psi0	Psi1	Psi2
CategoryA	0.4	0.5	0.3
CategoryB	0.5	0.5	0.3
CategoryC	0.6	0.7	0.6
CategoryD	0.4	0.7	0.6
CategoryE	1	0.9	0.8
CategoryF	0.7	0.7	0.6
CategoryG	0.7	0.5	0.3
CategoryH	0	0	0
Snow	0	0.2	0
Wind	0	0.2	0
Temperature	0	0.5	0
Rain water	0	0	0
Construction loads	1	0	0.2

Load combination factors

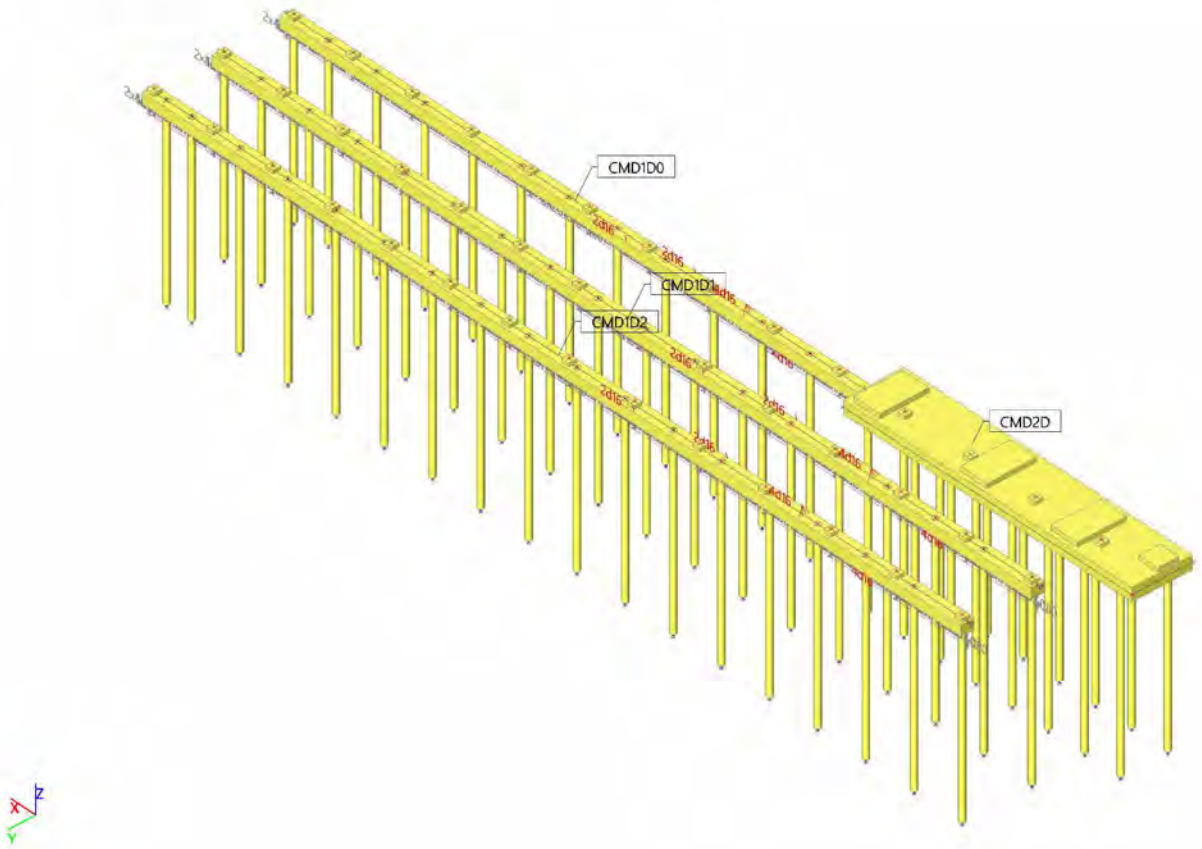
Permanent action - unfavorable	1.35
Permanent action - favorable [-]	0.90
Leading variable action	1.50
Accompanying variable action	1.50
Reduction factor ksi [-]	0.89
Permanent action - unfavorable	1.00
Permanent action - favorable	1.00
Leading variable action	1.30
Accompanying variable action	1.30

2.2. General model discription

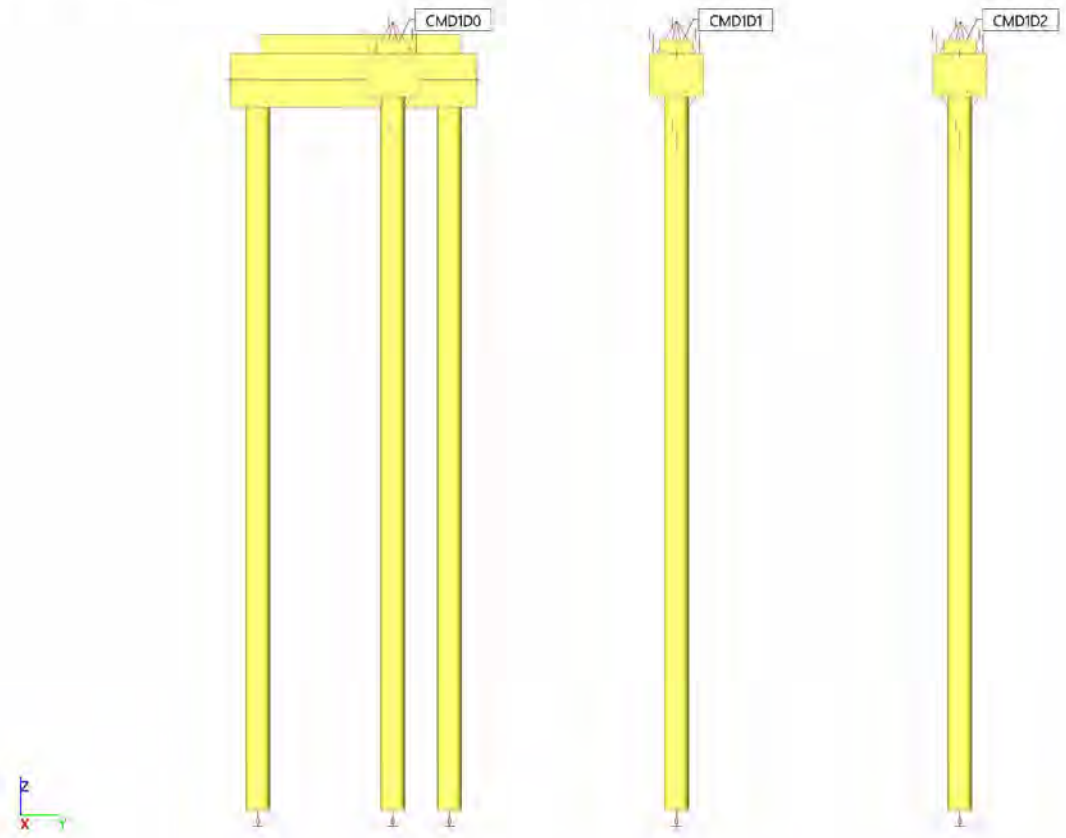
2.2.1. Isometric view



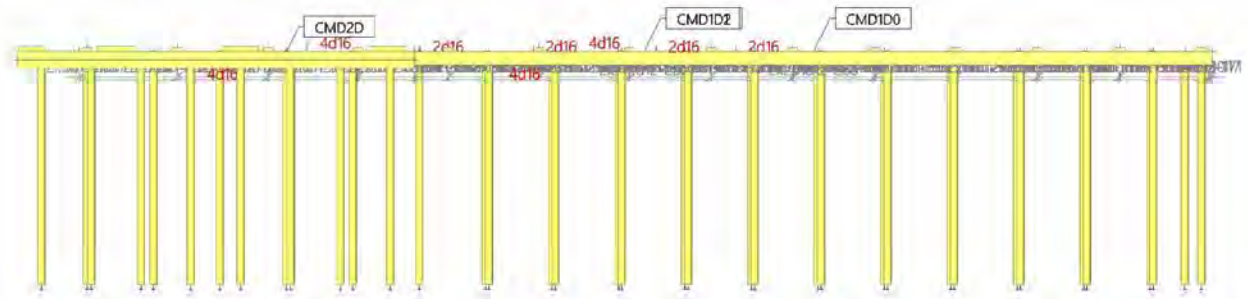
2.2.2. Isometric view



2.2.3. X view



2.2.4. Y view



2.2.5. Z view

2.2.6. Materials

Steel EC3

Name	Unit mass [kg/m³]	E mod [MPa] / G mod [MPa]	Poisson - nu / Thermal exp [m/mK]	Lower limit [mm]	Upper limit [mm]	Fy (range) [MPa]	Fu (range) [MPa]
S 235 JR (EN 10025-2)	8000.0	2.1000e+05 8.0769e+04	0.3 0.00	0 3 16 40 63 80 100 150 200	3 16 40 63 80 100 150 200 250	235.0 235.0 225.0 215.0 215.0 215.0 195.0 185.0 175.0	360.0 360.0 360.0 360.0 360.0 360.0 350.0 340.0 340.0
S 355 J2 (EN 10025-2)	8000.0	2.1000e+05 8.0769e+04	0.3 0.00	0 3 16 40 63 80 100 150 200 250	3 16 40 63 80 100 150 200 250 400	355.0 355.0 345.0 335.0 325.0 315.0 295.0 285.0 275.0 265.0	510.0 470.0 470.0 470.0 470.0 470.0 450.0 450.0 450.0 450.0

Concrete EC2

Name	Type	Unit mass [kg/m³]	E mod [MPa]	Poisson - nu	Thermal exp [m/mK]	Characteristic compressive cylinder strength fck(28) [MPa]
C35/45	Concrete	2500.0	3.4100e+04	0.2	0.00	35.00

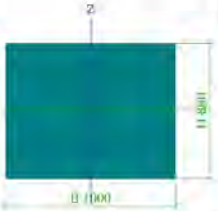
Reinforcement EC2

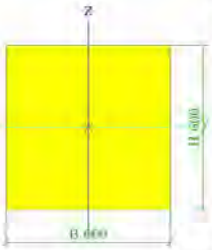
Name	Type	Unit mass [kg/m³]	E mod [MPa]	G mod [MPa]	Thermal exp [m/mK]	Characteristic yield strength fyk [MPa]
B 500B	Reinforcement steel	7850.0	2.0000e+05	8.3333e+04	0.00	500.0

Name / Type	E mod [MPa] / G mod [MPa]	Poisson - nu	Unit mass [kg/m³]	Log. decrement (non-uniform damping only)	Specific heat [J/gK]
Rigid	1.0000e+12	0.3	0.0	0.15	6.0000e-01
General material	3.8462e+11				

Explanations of symbols	
Log. decrement (non-uniform damping only)	This material damping property is used only in case non uniform damping is enabled for dynamic analysis (see project functionality). Please note, that non uniform damping require a specific license, which is not part of the standard dynamic pack.

2.2.7. Cross-sections

CT-11		
Type	Rechthoek	
Detailed	800; 1000	
Shape type	Thick-walled	
Item material	C35/45	
Fabrication	concrete	
A [m²]	8.0000e-01	
A_y [m²], A_z [m²]	6.6722e-01	6.6753e-01
I_y [m⁴], I_z [m⁴]	4.2667e-02	6.6667e-02
W_{ely} [m³], W_{elz} [m³]	1.0667e-01	1.3333e-01
W_{ply} [m³], W_{plz} [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	2.2824e-04	8.7808e-02
d_y [mm], d_z [mm]	0	0
c_{yucs} [mm], c_{zucs} [mm]	500	400
α [deg]	0.00	
M_{ply+} [Nm], M_{ply-} [Nm]	0.00e+00	0.00e+00
M_{plz+} [Nm], M_{plz-} [Nm]	0.00e+00	0.00e+00
AL [m²/m], AD [m²/m]	3.6000e+00	3.6000e+00
β y [mm], β z [mm]	0	0
Picture		

CT-12		
Type	Rechthoek	
Detailed	600; 600	
Shape type	Thick-walled	
Item material	C35/45	
Fabrication	concrete	
A [m²]	3.6000e-01	
A_y [m²], A_z [m²]	3.0037e-01	3.0037e-01
I_y [m⁴], I_z [m⁴]	1.0800e-02	1.0800e-02
W_{ely} [m³], W_{elz} [m³]	3.6000e-02	3.6000e-02
W_{ply} [m³], W_{plz} [m³]	0.0000e+00	0.0000e+00
I_w [m⁶], I_t [m⁴]	5.8328e-06	1.8190e-02
d_y [mm], d_z [mm]	0	0
c_{yucs} [mm], c_{zucs} [mm]	300	300
α [deg]	0.00	
M_{ply+} [Nm], M_{ply-} [Nm]	0.00e+00	0.00e+00
M_{plz+} [Nm], M_{plz-} [Nm]	0.00e+00	0.00e+00
AL [m²/m], AD [m²/m]	2.4000e+00	2.4000e+00
β y [mm], β z [mm]	0	0
Picture		

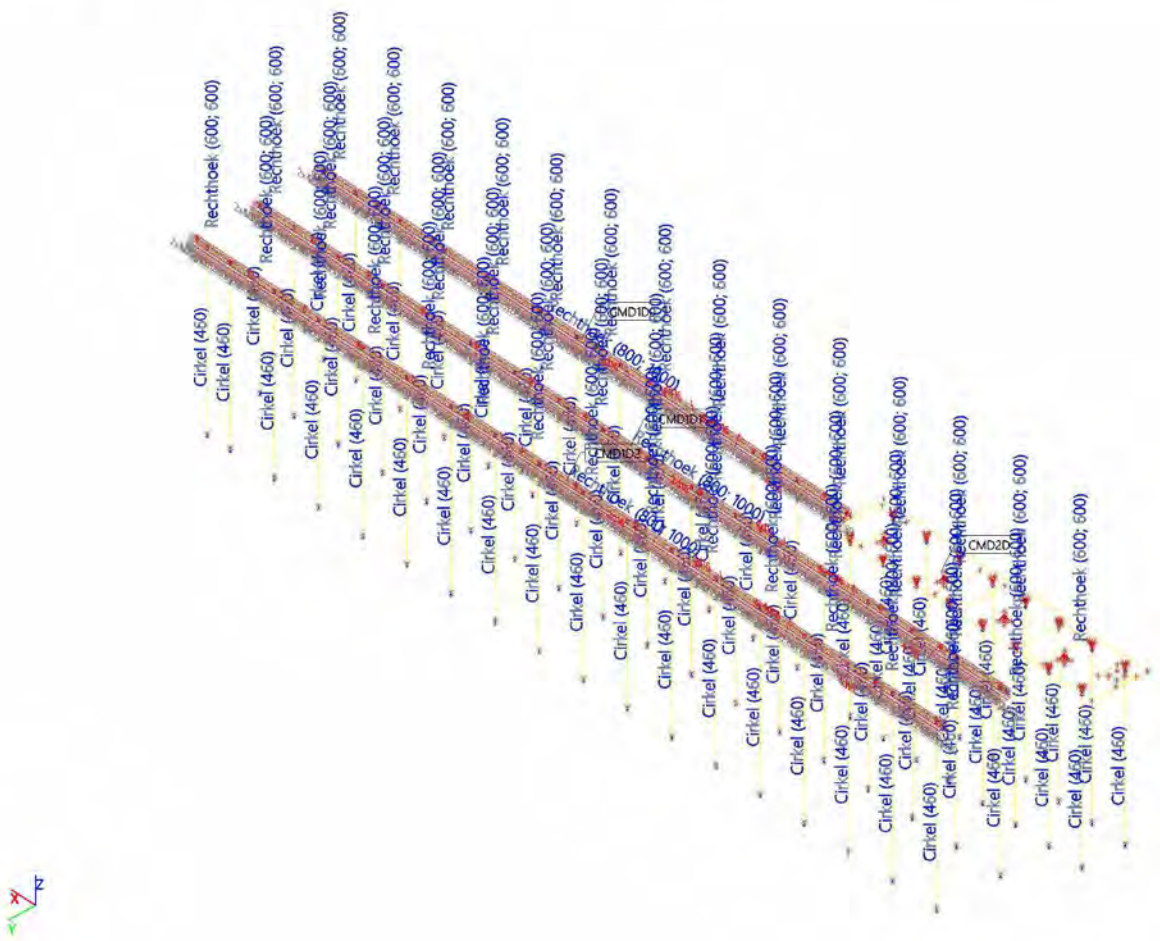
ST-23		
Type	Cirkel	
Detailed	460	
Shape type	Thick-walled	
Item material	C35/45	
Fabrication	concrete	
A [m²]	1.6619e-01	
A_y [m²], A_z [m²]	1.4936e-01	1.4936e-01
I_y [m⁴], I_z [m⁴]	2.1979e-03	2.1979e-03
W_{ely} [m³], W_{elz} [m³]	9.5559e-03	9.5559e-03
W_{ply} [m³], W_{plz} [m³]	1.6223e-02	1.6223e-02
I_w [m⁶], I_t [m⁴]	6.1807e-15	4.4047e-03
d_y [mm], d_z [mm]	0	0
c_{yucs} [mm], c_{zucs} [mm]	230	230

α [deg]	0.00	
M_{ply+} [Nm], M_{ply-} [Nm]	0.00e+00	0.00e+00
M_{plz+} [Nm], M_{plz-} [Nm]	0.00e+00	0.00e+00
AL [m²/m], AD [m²/m]	1.4451e+00	1.4451e+00
β y [mm], β z [mm]	0	0
Picture		

Explanations of symbols	
A	Area
A_y	Shear Area in principal y-direction - Calculated by 2D FEM analysis
A_z	Shear Area in principal z-direction - Calculated by 2D FEM analysis
I_y	Second moment of area about the principal y-axis
I_z	Second moment of area about the principal z-axis
W_{ely}	Elastic section modulus about the principal y-axis
W_{elz}	Elastic section modulus about the principal z-axis
W_{ply}	Plastic section modulus about the principal y-axis
W_{plz}	Plastic section modulus about the principal z-axis
I_w	Warping constant - Calculated by 2D FEM analysis
I_t	Torsional constant - Calculated by 2D FEM analysis
d_y	Shear center coordinate in principal y-direction measured from the centroid - Calculated by 2D FEM analysis
d_z	Shear center coordinate in principal z-direction measured from the centroid - Calculated by 2D FEM analysis

Explanations of symbols	
c_{YUCS}	Centroid coordinate in Y-direction of Input axis system
c_{ZUCS}	Centroid coordinate in Z-direction of Input axis system
α	Rotation angle of the principal axis system
I_{YZLCS}	Product moment of area in the LCS system
M_{ply+}	Plastic moment about the principal y-axis for a positive My moment
M_{ply-}	Plastic moment about the principal y-axis for a negative My moment
M_{plz+}	Plastic moment about the principal z-axis for a positive Mz moment
M_{plz-}	Plastic moment about the principal z-axis for a negative Mz moment
AL	Circumference per unit length
AD	Drying surface per unit length
β y	Mono-symmetry constant about the principal y-axis
β z	Mono-symmetry constant about the principal z-axis

2.2.8. Analysis model



2.2.9. Layers

Name	Structural model only
Foundation	×
Stairs	×
Dummy	×
Walkway	×

2.2.10. UCS

Current UCS			
Type	vector		
X [m], Y [m], Z [m]	0.000	0.000	0.000
X-X, X-Y, X-Z	1	0	0
Y-X, Y-Y, Y-Z	0	1	0
Z-X, Z-Y, Z-Z	0	0	1

2.3. Model data

2.3.1. Mesh setup

Name	NetInstelling1
Minimal distance between definition point and line [m]	0.001
Average number of 1D mesh elements on straight 1D members	1
Average size of 2D mesh element [m]	1.000
Definition of mesh element size for panels	Manual
Average size of panel element [m]	1.000
Elastic mesh	✓
Use automatic mesh refinement	×
Minimal length of beam element [m]	0.100
Maximal length of beam element [m]	1000.000
Average size of tendons, elements on subsoil, nonlinear soil spring [m]	1.000
Generation of nodes in connections of beam elements	×
Generation of variable eccentricities on members instead of constant ones	×
Division on haunches and arbitrary members	5
Division for integration strip and 2D-1D upgrade	50
Mesh refinement following the beam type	None
Maximal out of plane angle of a quadrilateral [mrad]	30.0
Predefined mesh ratio	1.5

2.3.2. Solver setup

Name	SolverSetup1
Neglect shear force deformation (Ay, Az >> A)	×
Initial stress	×
Use IRS (Improved Reduced System) method	×
Apply property modifiers	✓
Number of thicknesses of rib plate	20
Maximum soil interaction iterations	10
Maximum iterations	20
Number of increments	1
Number of buckling modes	2
Number of sections on average member	10
Number of eigenmodes	10
Step for soil/water pressure [m]	0.500
C1x [MN/m^3]	1.0000e-01
C1y [MN/m^3]	1.0000e-01
C1z [MN/m^3]	1.0000e+01
C2x [MN/m]	5.0000e+00
C2y [MN/m]	5.0000e+00
Coefficient for reinforcement	1
Warning when maximal translation is greater than [mm]	1000.0
Warning when maximal rotation is greater than [mrad]	100.0
Parallelism tolerance [deg]	10.00
Span length ratio Le/beff,i,max (1 side) [-]	8.00
Simply supported beam [-]	1.00
Inner span [-]	0.70
End span [-]	0.85
Cantilever [-]	2.00
Solver precision ratio	1
Soil combination	None
Plastic hinge code	No code
Bending theory of plate/shell analysis	Mindlin
Type of solver	Direct
Type of eigen value solver	Lanczos
Type of eigen value solver	Lanczos
Method of calculation	Picard

2.3.3. 1D

2.3.3.1. Nodes

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
K1	12.500	4.750	0.000
K2	12.500	4.750	0.250
K3	12.500	10.000	0.000
K4	12.500	10.000	0.250
K5	12.500	15.250	0.000
K6	12.500	15.250	0.250
K7	17.940	15.250	0.000
K8	17.940	15.250	0.250
K9	17.940	10.000	0.000

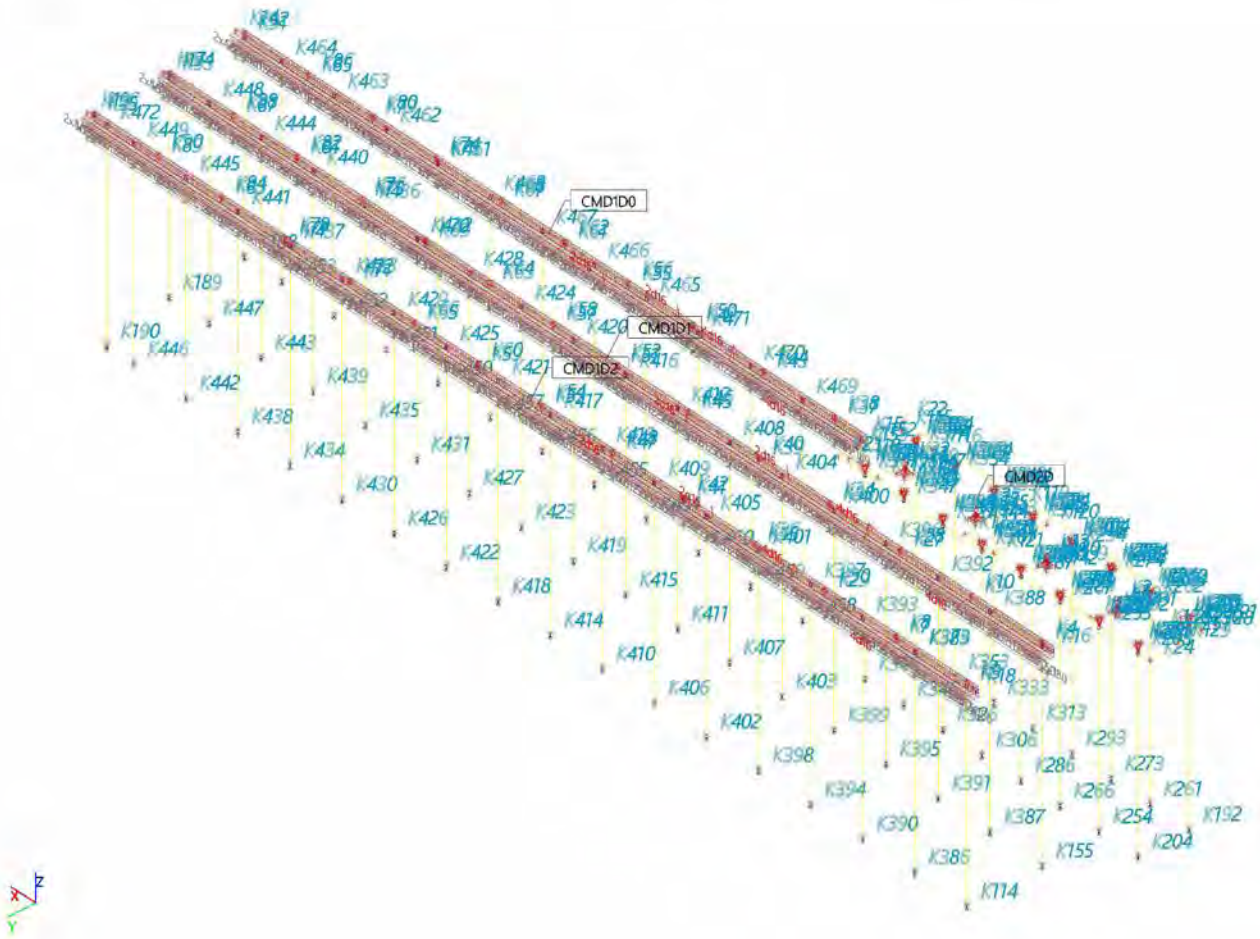
Name	Coord X [m]	Coord Y [m]	Coord Z [m]
K10	17.940	10.000	0.250
K11	17.940	4.750	0.000
K12	17.940	4.750	0.250
K14	80.230	4.750	0.000
K15	32.230	4.750	0.000
K16	12.040	10.000	0.000
K17	80.040	10.000	0.000
K18	12.040	15.250	0.000
K19	80.040	15.250	0.000
K21	8.280	1.750	-0.500
K22	32.230	1.750	-0.500
K23	32.230	6.300	-0.500
K24	8.280	6.300	-0.500
K25	23.380	4.750	0.000
K26	23.380	4.750	0.250
K27	23.380	10.000	0.000
K28	23.380	10.000	0.250
K29	23.380	15.250	0.000
K30	23.380	15.250	0.250
K31	28.820	4.750	0.000
K32	28.820	4.750	0.250
K33	28.820	10.000	0.000
K34	28.820	10.000	0.250
K35	28.820	15.250	0.000
K36	28.820	15.250	0.250
K37	34.260	4.750	0.000
K38	34.260	4.750	0.250
K39	34.260	10.000	0.000
K40	34.260	10.000	0.250
K41	34.260	15.250	0.000
K42	34.260	15.250	0.250
K43	39.700	4.750	0.000
K44	39.700	4.750	0.250
K45	39.700	10.000	0.000
K46	39.700	10.000	0.250
K47	39.700	15.250	0.000
K48	39.700	15.250	0.250
K49	45.140	4.750	0.000
K50	45.140	4.750	0.250
K51	45.140	10.000	0.000
K52	45.140	10.000	0.250
K53	45.140	15.250	0.000
K54	45.140	15.250	0.250
K55	50.060	4.750	0.000
K56	50.060	4.750	0.250
K57	50.060	10.000	0.000
K58	50.060	10.000	0.250
K59	50.060	15.250	0.000
K60	50.060	15.250	0.250
K61	54.980	4.750	0.000
K62	54.980	4.750	0.250
K63	54.980	10.000	0.000
K64	54.980	10.000	0.250
K65	54.980	15.250	0.000
K66	54.980	15.250	0.250
K67	59.900	4.750	0.000
K68	59.900	4.750	0.250
K69	59.900	10.000	0.000
K70	59.900	10.000	0.250
K71	59.900	15.250	0.000
K72	59.900	15.250	0.250
K73	64.820	4.750	0.000
K74	64.820	4.750	0.250
K75	64.820	10.000	0.000
K76	64.820	10.000	0.250
K77	64.820	15.250	0.000
K78	64.820	15.250	0.250
K79	69.740	4.750	0.000
K80	69.740	4.750	0.250
K81	69.740	10.000	0.000
K82	69.740	10.000	0.250
K83	69.740	15.250	0.000
K84	69.740	15.250	0.250
K85	74.660	4.750	0.000
K86	74.660	4.750	0.250
K87	74.660	10.000	0.000
K88	74.660	10.000	0.250
K89	74.660	15.250	0.000
K90	74.660	15.250	0.250
K91	79.580	4.750	0.000
K92	79.580	4.750	0.250
K93	79.580	10.000	0.000
K94	79.580	10.000	0.250
K95	79.580	15.250	0.000
K96	79.580	15.250	0.250
K114	12.500	15.250	-14.000
K115	31.730	2.300	-0.500
K116	29.530	2.300	-0.500
K117	29.530	6.000	-0.500
K118	31.730	6.000	-0.500
K119	22.830	2.300	-0.500
K120	20.630	2.300	-0.500
K121	20.630	6.000	-0.500
K122	22.830	6.000	-0.500
K123	15.330	2.300	-0.500
K124	13.130	2.300	-0.500
K125	13.130	6.000	-0.500
K126	15.330	6.000	-0.500
K127	9.980	2.650	-0.500
K128	8.380	2.650	-0.500
K129	8.380	4.250	-0.500
K130	9.980	4.250	-0.500
K131	12.200	4.450	-0.500
K132	12.200	5.050	-0.500
K133	12.800	4.450	-0.500
K134	12.800	5.050	-0.500
K139	17.640	4.450	-0.500
K140	18.240	4.450	-0.500
K141	18.240	5.050	-0.500
K142	17.640	5.050	-0.500
K143	23.080	4.450	-0.500
K144	23.080	5.050	-0.500
K145	23.680	4.450	-0.500
K146	23.680	5.050	-0.500
K147	28.520	4.450	-0.500
K148	28.520	5.050	-0.500
K149	29.120	4.450	-0.500
K150	29.120	5.050	-0.500
K152	32.230	4.450	-0.500
K153	32.230	5.050	-0.500
K155	12.500	10.000	-14.000
K188	79.580	4.750	-14.000
K189	79.580	10.000	-14.000
K190	78.580	15.250	-14.000
K192	9.755	2.250	-14.000
K203	9.755	2.250	-1.000
K204	9.755	5.800	-14.000
K205	9.755	5.800	-1.000
K218	9.945	2.250	-0.500
K219	9.565	2.250	-0.500
K220	9.755	2.440	-0.500
K221	9.755	2.060	-0.500
K222	9.945	5.800	-0.500
K223	9.565	5.800	-0.500
K224	9.755	5.990	-0.500
K225	9.755	5.610	-0.500
K250	8.841	3.111	-0.500
K251	8.841	3.789	-0.500
K252	9.519	3.789	-0.500
K253	9.519	3.111	-0.500
K254	12.755	5.800	-14.000
K255	12.755	5.800	-1.000
K256	12.945	5.800	-0.500
K257	12.565	5.800	-0.500
K258	12.755	5.990	-0.500
K259	12.755	5.610	-0.500
K260	12.755	2.060	-0.500
K261	12.755	2.250	-14.000
K262	12.755	2.250	-1.000
K263	12.945	2.250	-0.500
K264	12.565	2.250	-0.500
K265	12.755	2.440	-0.500
K266	15.755	5.800	-14.000
K267	15.755	5.800	-1.000
K273	15.755	2.250	-14.000
K274	15.755	2.250	-1.000
K278	15.945	5.800	-0.500
K279	15.565	5.800	-0.500
K280	15.755	5.990	-0.500
K281	15.755	5.610	-0.500
K282	15.565	2.250	-0.500
K283	15.945	2.250	-0.500
K284	15.755	2.060	-0.500
K285	15.755	2.440	-0.500
K286	18.755	5.800	-14.000
K287	18.755	5.800	-1.000
K293	18.755	2.250	-14.000
K294	18.755	2.250	-1.000
K298	18.945	5.800	-0.500
K299	18.565	5.800	-0.500
K300	18.755	5.990	-0.500
K301	18.755	5.610	-0.500
K302	18.565	2.250	-0.500
K303	18.945	2.250	-0.500
K304	18.755	2.060	-0.500
K305	18.755	2.440	-0.500
K306	21.755	5.800	-14.000
K307	21.755	5.800	-1.000
K313	21.755	2.250	-14.000
K314	21.755	2.250	-1.000
K318	21.945	5.800	-0.500
K319	21.565	5.800	-0.500
K320	21.755	5.990	-0.500
K321	21.755	5.610	-0.500
K322	21.565	2.250	-0.500
K323	21.945	2.250	-0.500
K324	21.755	2.060	-0.500
K325	21.755	2.440	-0.500
K326	24.755	5.800	-14.000
K327	24.755	5.800	-1.000
K333	24.755	2.250	-14.000
K334	24.755	2.250	-1.000
K338	24.945	5.800	-0.500
K339	24.565	5.800	-0.500
K340	24.755	5.990	-0.500
K341	24.755	5.610	-0.500
K342	24.565	2.250	-0.500
K343	24.945	2.250	-0.500
K344	24.755	2.060	-0.500
K345	24.755	2.440	-0.500
K346	27.755	5.800	-14.000

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
K347	27.755	5.800	-1.000
K353	27.755	2.250	-14.000
K354	27.755	2.250	-1.000
K358	27.945	5.800	-0.500
K359	27.565	5.800	-0.500
K360	27.755	5.990	-0.500
K361	27.755	5.610	-0.500
K362	27.565	2.250	-0.500
K363	27.945	2.250	-0.500
K364	27.755	2.060	-0.500
K365	27.755	2.440	-0.500
K366	30.755	5.800	-14.000
K367	30.755	5.800	-1.000
K373	30.755	2.250	-14.000
K374	30.755	2.250	-1.000
K378	30.945	5.800	-0.500
K379	30.565	5.800	-0.500
K380	30.755	5.990	-0.500
K381	30.755	5.610	-0.500
K382	30.565	2.250	-0.500
K383	30.945	2.250	-0.500
K384	30.755	2.060	-0.500
K385	30.755	2.440	-0.500
K386	16.500	15.250	-14.000
K387	16.500	10.000	-14.000
K388	16.500	10.000	0.000
K389	16.500	15.250	0.000
K390	20.500	15.250	-14.000
K391	20.500	10.000	-14.000
K392	20.500	10.000	0.000
K393	20.500	15.250	0.000
K394	24.500	15.250	-14.000
K395	24.500	10.000	-14.000
K396	24.500	10.000	0.000
K397	24.500	15.250	0.000
K398	28.500	15.250	-14.000
K399	28.500	10.000	-14.000

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
K400	28.500	10.000	0.000
K401	28.500	15.250	0.000
K402	32.500	15.250	-14.000
K403	32.500	10.000	-14.000
K404	32.500	10.000	0.000
K405	32.500	15.250	0.000
K406	36.500	15.250	-14.000
K407	36.500	10.000	-14.000
K408	36.500	10.000	0.000
K409	36.500	15.250	0.000
K410	40.500	15.250	-14.000
K411	40.500	10.000	-14.000
K412	40.500	10.000	0.000
K413	40.500	15.250	0.000
K414	44.500	15.250	-14.000
K415	44.500	10.000	-14.000
K416	44.500	10.000	0.000
K417	44.500	15.250	0.000
K418	48.500	15.250	-14.000
K419	48.500	10.000	-14.000
K420	48.500	10.000	0.000
K421	48.500	15.250	0.000
K422	52.500	15.250	-14.000
K423	52.500	10.000	-14.000
K424	52.500	10.000	0.000
K425	52.500	15.250	0.000
K426	56.500	15.250	-14.000
K427	56.500	10.000	-14.000
K428	56.500	10.000	0.000
K429	56.500	15.250	0.000
K430	60.500	15.250	-14.000
K431	60.500	10.000	-14.000
K432	60.500	10.000	0.000
K433	60.500	15.250	0.000
K434	64.500	15.250	-14.000
K435	64.500	10.000	-14.000
K436	64.500	10.000	0.000

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
K437	64.500	15.250	0.000
K438	68.500	15.250	-14.000
K439	68.500	10.000	-14.000
K440	68.500	10.000	0.000
K441	68.500	15.250	0.000
K442	72.500	15.250	-14.000
K443	72.500	10.000	-14.000
K444	72.500	10.000	0.000
K445	72.500	15.250	0.000
K446	76.500	15.250	-14.000
K447	76.500	10.000	-14.000
K448	76.500	10.000	0.000
K449	76.500	15.250	0.000
K450	64.690	4.750	-14.000
K451	68.690	4.750	-14.000
K452	72.690	4.750	-14.000
K453	76.690	4.750	-14.000
K454	48.690	4.750	-14.000
K455	52.690	4.750	-14.000
K456	56.690	4.750	-14.000
K457	60.690	4.750	-14.000
K458	36.690	4.750	-14.000
K459	40.690	4.750	-14.000
K460	44.690	4.750	-14.000
K461	64.690	4.750	0.000
K462	68.690	4.750	0.000
K463	72.690	4.750	0.000
K464	76.690	4.750	0.000
K465	48.690	4.750	0.000
K466	52.690	4.750	0.000
K467	56.690	4.750	0.000
K468	60.690	4.750	0.000
K469	36.690	4.750	0.000
K470	40.690	4.750	0.000
K471	44.690	4.750	0.000
K472	78.580	15.250	0.000

2.3.3.2. Knopen



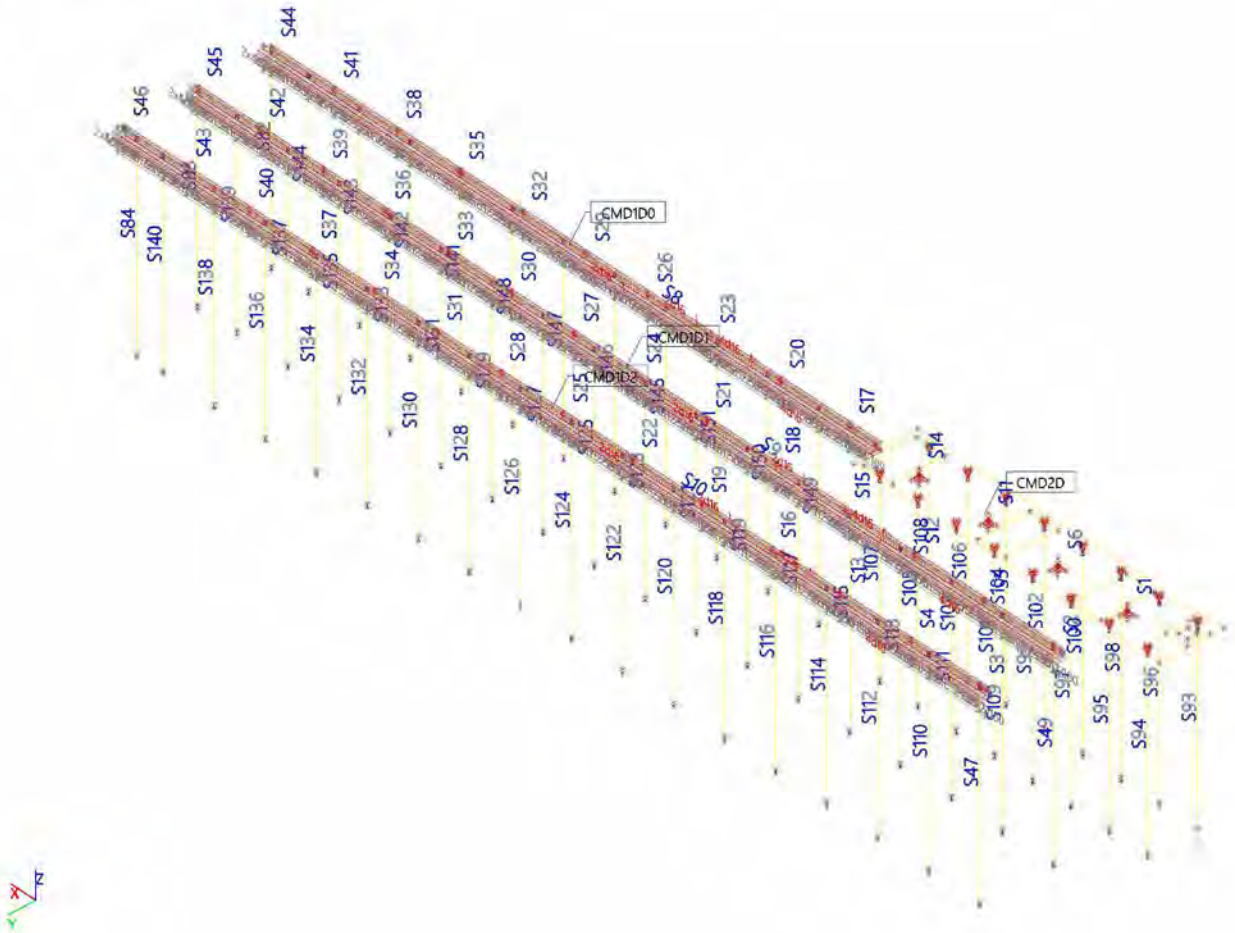
2.3.3.3. Members

Name	Cross-section	Material	Length [m]	Beg. node	End node	Type
S1	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K1	K2	column (100)
S2	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K3	K4	column (100)
S3	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K5	K6	column (100)
S4	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K7	K8	column (100)
S5	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K9	K10	column (100)
S6	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K11	K12	column (100)
S8	CT-11 - Rechthoek (800; 1000)	C35/45	48.000	K15	K14	beam (80)
S9	CT-11 - Rechthoek (800; 1000)	C35/45	68.000	K16	K17	beam (80)
S10	CT-11 - Rechthoek (800; 1000)	C35/45	68.000	K18	K19	beam (80)
S11	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K25	K26	column (100)
S12	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K27	K28	column (100)
S13	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K29	K30	column (100)
S14	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K31	K32	column (100)
S15	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K33	K34	column (100)
S16	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K35	K36	column (100)
S17	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K37	K38	column (100)
S18	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K39	K40	column (100)
S19	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K41	K42	column (100)
S20	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K43	K44	column (100)
S21	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K45	K46	column (100)
S22	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K47	K48	column (100)
S23	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K49	K50	column (100)
S24	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K51	K52	column (100)
S25	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K53	K54	column (100)
S26	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K55	K56	column (100)

Name	Cross-section	Material	Length [m]	Beg. node	End node	Type
S27	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K57	K58	column (100)
S28	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K59	K60	column (100)
S29	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K61	K62	column (100)
S30	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K63	K64	column (100)
S31	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K65	K66	column (100)
S32	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K67	K68	column (100)
S33	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K69	K70	column (100)
S34	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K71	K72	column (100)
S35	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K73	K74	column (100)
S36	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K75	K76	column (100)
S37	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K77	K78	column (100)
S38	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K79	K80	column (100)
S39	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K81	K82	column (100)
S40	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K83	K84	column (100)
S41	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K85	K86	column (100)
S42	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K87	K88	column (100)
S43	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K89	K90	column (100)
S44	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K91	K92	column (100)
S45	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K93	K94	column (100)
S46	CT-12 - Rechthoek (600; 600)	C35/45	0.250	K95	K96	column (100)
S47	ST-23 - Cirkel (460)	C35/45	14.000	K5	K114	column (100)
S49	ST-23 - Cirkel (460)	C35/45	14.000	K3	K155	column (100)
S82	ST-23 - Cirkel (460)	C35/45	14.000	K91	K188	column (100)
S83	ST-23 - Cirkel (460)	C35/45	14.000	K93	K189	column (100)
S84	ST-23 - Cirkel (460)	C35/45	14.000	K472	K190	column (100)
S93	ST-23 - Cirkel (460)	C35/45	13.000	K203	K192	column (100)
S94	ST-23 - Cirkel (460)	C35/45	13.000	K205	K204	column (100)
S95	ST-23 - Cirkel (460)	C35/45	13.000	K255	K254	column (100)
S96	ST-23 - Cirkel (460)	C35/45	13.000	K262	K261	column (100)
S97	ST-23 - Cirkel (460)	C35/45	13.000	K267	K266	column (100)
S98	ST-23 - Cirkel (460)	C35/45	13.000	K274	K273	column (100)
S99	ST-23 - Cirkel (460)	C35/45	13.000	K287	K286	column (100)
S100	ST-23 - Cirkel (460)	C35/45	13.000	K294	K293	column (100)
S101	ST-23 - Cirkel (460)	C35/45	13.000	K307	K306	column (100)
S102	ST-23 - Cirkel (460)	C35/45	13.000	K314	K313	column (100)
S103	ST-23 - Cirkel (460)	C35/45	13.000	K327	K326	column (100)
S104	ST-23 - Cirkel (460)	C35/45	13.000	K334	K333	column (100)
S105	ST-23 - Cirkel (460)	C35/45	13.000	K347	K346	column (100)
S106	ST-23 - Cirkel (460)	C35/45	13.000	K354	K353	column (100)
S107	ST-23 - Cirkel (460)	C35/45	13.000	K367	K366	column (100)
S108	ST-23 - Cirkel (460)	C35/45	13.000	K374	K373	column (100)
S109	ST-23 - Cirkel (460)	C35/45	14.000	K388	K387	column (100)
S110	ST-23 - Cirkel (460)	C35/45	14.000	K389	K386	column (100)
S111	ST-23 - Cirkel (460)	C35/45	14.000	K392	K391	column (100)
S112	ST-23 - Cirkel (460)	C35/45	14.000	K393	K390	column (100)
S113	ST-23 - Cirkel (460)	C35/45	14.000	K396	K395	column (100)
S114	ST-23 - Cirkel (460)	C35/45	14.000	K397	K394	column (100)
S115	ST-23 - Cirkel (460)	C35/45	14.000	K400	K399	column (100)
S116	ST-23 - Cirkel (460)	C35/45	14.000	K401	K398	column (100)
S117	ST-23 - Cirkel (460)	C35/45	14.000	K404	K403	column (100)
S118	ST-23 - Cirkel (460)	C35/45	14.000	K405	K402	column (100)
S119	ST-23 - Cirkel (460)	C35/45	14.000	K408	K407	column (100)
S120	ST-23 - Cirkel (460)	C35/45	14.000	K409	K406	column (100)
S121	ST-23 - Cirkel (460)	C35/45	14.000	K412	K411	column (100)
S122	ST-23 - Cirkel (460)	C35/45	14.000	K413	K410	column (100)
S123	ST-23 - Cirkel (460)	C35/45	14.000	K416	K415	column (100)
S124	ST-23 - Cirkel (460)	C35/45	14.000	K417	K414	column (100)
S125	ST-23 - Cirkel (460)	C35/45	14.000	K420	K419	column (100)
S126	ST-23 - Cirkel (460)	C35/45	14.000	K421	K418	column (100)
S127	ST-23 - Cirkel (460)	C35/45	14.000	K424	K423	column (100)
S128	ST-23 - Cirkel (460)	C35/45	14.000	K425	K422	column (100)
S129	ST-23 - Cirkel (460)	C35/45	14.000	K428	K427	column (100)
S130	ST-23 - Cirkel (460)	C35/45	14.000	K429	K426	column (100)
S131	ST-23 - Cirkel (460)	C35/45	14.000	K432	K431	column (100)
S132	ST-23 - Cirkel (460)	C35/45	14.000	K433	K430	column (100)
S133	ST-23 - Cirkel (460)	C35/45	14.000	K436	K435	column (100)
S134	ST-23 - Cirkel (460)	C35/45	14.000	K437	K434	column (100)

Name	Cross-section	Material	Length [m]	Beg. node	End node	Type
S135	ST-23 - Cirkel (460)	C35/45	14.000	K440	K439	column (100)
S136	ST-23 - Cirkel (460)	C35/45	14.000	K441	K438	column (100)
S137	ST-23 - Cirkel (460)	C35/45	14.000	K444	K443	column (100)
S138	ST-23 - Cirkel (460)	C35/45	14.000	K445	K442	column (100)
S139	ST-23 - Cirkel (460)	C35/45	14.000	K448	K447	column (100)
S140	ST-23 - Cirkel (460)	C35/45	14.000	K449	K446	column (100)
S141	ST-23 - Cirkel (460)	C35/45	14.000	K461	K450	column (100)
S142	ST-23 - Cirkel (460)	C35/45	14.000	K462	K451	column (100)
S143	ST-23 - Cirkel (460)	C35/45	14.000	K463	K452	column (100)
S144	ST-23 - Cirkel (460)	C35/45	14.000	K464	K453	column (100)
S145	ST-23 - Cirkel (460)	C35/45	14.000	K465	K454	column (100)
S146	ST-23 - Cirkel (460)	C35/45	14.000	K466	K455	column (100)
S147	ST-23 - Cirkel (460)	C35/45	14.000	K467	K456	column (100)
S148	ST-23 - Cirkel (460)	C35/45	14.000	K468	K457	column (100)
S149	ST-23 - Cirkel (460)	C35/45	14.000	K469	K458	column (100)
S150	ST-23 - Cirkel (460)	C35/45	14.000	K470	K459	column (100)
S151	ST-23 - Cirkel (460)	C35/45	14.000	K471	K460	column (100)

2.3.3.4. Staven



2.3.3.5. Hinges

Name	Member Position	ux Fun - ux Stiff - ux [MN/m]	uy Fun - uy Stiff - uy [MN/m]	uz Fun - uz Stiff - uz [MN/m]	fix Fun - fix Stiff - fix [MNm/rad]	fiy Fun - fiy Stiff - fiy [MNm/rad]	fiz Fun - fiz Stiff - fiz [MNm/rad]
H1	S47 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H3	S49 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H36	S82 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H37	S83 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H38	S84 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H47	S93 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H48	S94 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H49	S95 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H50	S96 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H51	S97 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H52	S98 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H53	S99 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H54	S100 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H55	S101 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H56	S102 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H57	S103 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H58	S104 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H59	S105 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H60	S106 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H61	S107 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H62	S108 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H63	S109	Rigid	Rigid	Rigid	Rigid	Free	Free

Name	Member Position	ux Fun - ux Stiff - ux [MN/m]	uy Fun - uy Stiff - uy [MN/m]	uz Fun - uz Stiff - uz [MN/m]	fix Fun - fix Stiff - fix [MNm/rad]	fiy Fun - fiy Stiff - fiy [MNm/rad]	fiz Fun - fiz Stiff - fiz [MNm/rad]
	Begin						
H64	S110 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H65	S111 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H66	S112 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H67	S113 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H68	S114 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H69	S115 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H70	S116 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H71	S117 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H72	S118 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H73	S119 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H74	S120 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H75	S121 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H76	S122 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H77	S123 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H78	S124 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H79	S125 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H80	S126 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H81	S127 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H82	S128 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H83	S129 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H84	S130 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free

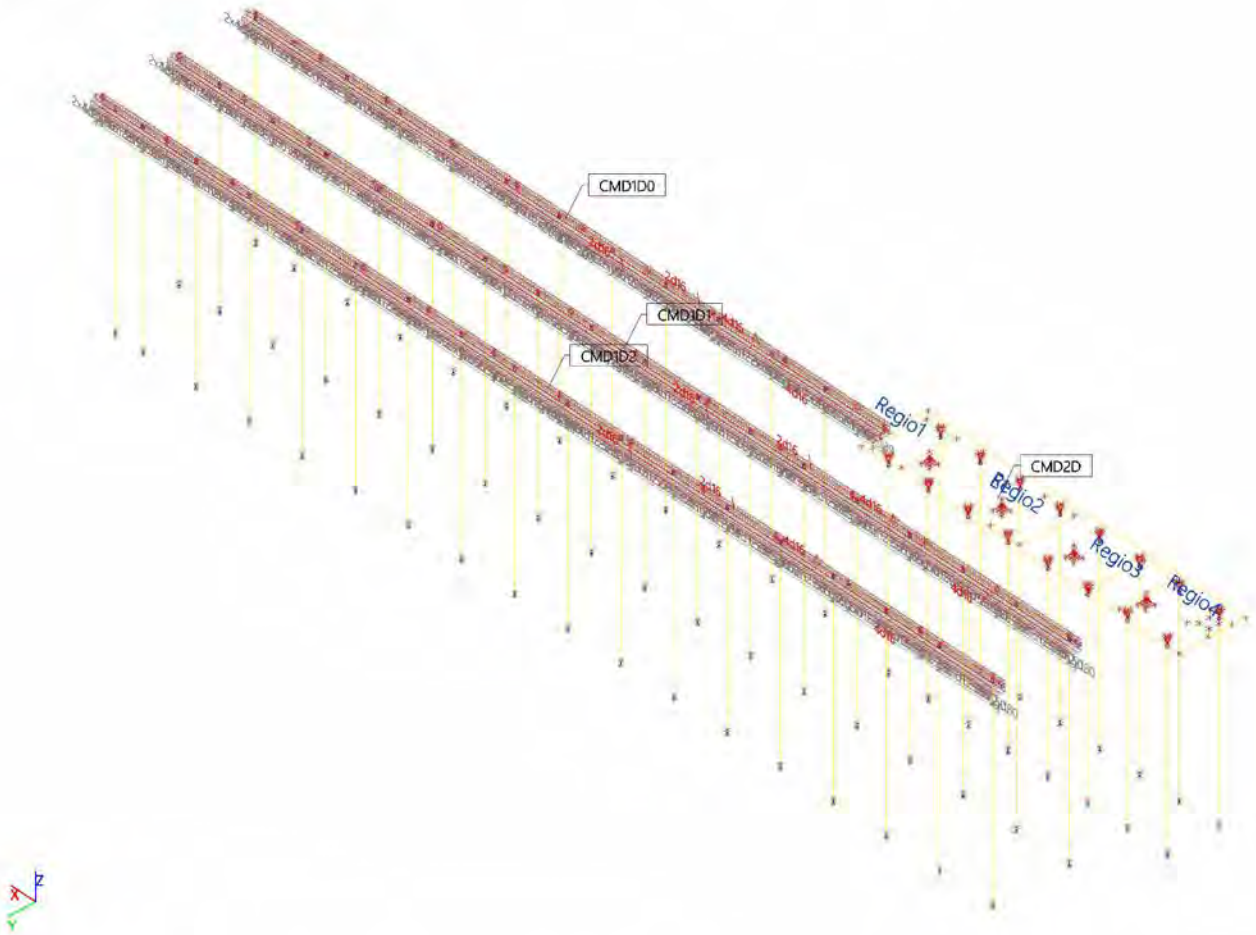
Name	Member Position	ux Fun - ux Stiff - ux [MN/m]	uy Fun - uy Stiff - uy [MN/m]	uz Fun - uz Stiff - uz [MN/m]	fix Fun - fix Stiff - fix [MNm/rad]	fiy Fun - fiy Stiff - fiy [MNm/rad]	fiz Fun - fiz Stiff - fiz [MNm/rad]
H85	S131 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H86	S132 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H87	S133 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H88	S134 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H89	S135 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H90	S136 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H91	S137 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H92	S138 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H93	S139 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H94	S140 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H95	S141 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H96	S142 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H97	S143 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H98	S144 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H99	S145 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H100	S146 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H101	S147 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H102	S148 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H103	S149 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H104	S150 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free
H105	S151 Begin	Rigid	Rigid	Rigid	Rigid	Free	Free

2.3.4. 2D

2.3.4.1. 2D members

Name	Layer	Type	Element type	Material	Thickness type	Th. [mm]
E1	Foundation	plate (90)	Standard	C35/45	constant	1000

2.3.4.2. Platen



2.3.4.3. 2D member regions

Regio1			
2D member, Material, Thickness type	E1	C35/45	constant
MSP at, Ecc. z [mm]	Centre	175	
Th. [mm]	1350		
Node, Edge, Weight	K115	Line	
	K116	Line	
	K117	Line	
	K118	Line	
Regio2			
2D member, Material, Thickness type	E1	C35/45	constant
MSP at, Ecc. z [mm]	Centre	175	
Th. [mm]	1350		
Node, Edge, Weight	K119	Line	
	K120	Line	
	K121	Line	
	K122	Line	
Regio3			
2D member, Material, Thickness type	E1	C35/45	constant
MSP at, Ecc. z [mm]	Centre	175	
Th. [mm]	1350		

Node, Edge, Weight	K123 K124 K125 K126	Line Line Line Line	
Regio4			
2D member, Material, Thickness type MSP at, Ecc. z [mm] Th. [mm] Node, Edge, Weight	E1 Centre 1300 K127 K128 K129 K130	C35/45 150 Line Line Line Line	constant

2.3.4.4. 2D member internal edges

Name	Member 1	Length [m]	Shape	Node	Edge
Rand2	E1	0.600	Line	K131 K133	Line
Rand3	E1	0.600	Line	K133 K134	Line
Rand4	E1	0.600	Line	K134 K132	Line
Rand5	E1	0.600	Line	K132 K131	Line
Rand6	E1	0.600	Line	K139 K140	Line
Rand7	E1	0.600	Line	K140 K141	Line
Rand8	E1	0.600	Line	K141 K142	Line
Rand9	E1	0.600	Line	K142 K139	Line
Rand10	E1	0.600	Line	K143 K145	Line
Rand11	E1	0.600	Line	K145 K146	Line
Rand12	E1	0.600	Line	K146 K144	Line
Rand13	E1	0.600	Line	K144 K143	Line
Rand14	E1	0.600	Line	K147 K149	Line
Rand15	E1	0.600	Line	K149 K150	Line
Rand16	E1	0.600	Line	K150 K148	Line
Rand17	E1	0.600	Line	K148 K147	Line
Rand18	E1	0.597	Arc	K218 K220 K219	Circle arc
Rand19	E1	0.597	Arc	K219 K221 K218	Circle arc
Rand20	E1	0.597	Arc	K222 K224 K223	Circle arc
Rand21	E1	0.597	Arc	K223 K225 K222	Circle arc
Rand22	E1	0.597	Arc	K256 K258 K257	Circle arc
Rand23	E1	0.597	Arc	K257 K259 K256	Circle arc
Rand24	E1	0.597	Arc	K264 K260	Circle arc

Name	Member 1	Length [m]	Shape	Node	Edge
				K263	
Rand25	E1	0.597	Arc	K263 K265 K264	Circle arc
Rand26	E1	0.597	Arc	K278 K280 K279	Circle arc
Rand27	E1	0.597	Arc	K279 K281 K278	Circle arc
Rand28	E1	0.597	Arc	K282 K284 K283	Circle arc
Rand29	E1	0.597	Arc	K283 K285 K282	Circle arc
Rand30	E1	0.597	Arc	K298 K300 K299	Circle arc
Rand31	E1	0.597	Arc	K299 K301 K298	Circle arc
Rand32	E1	0.597	Arc	K302 K304 K303	Circle arc
Rand33	E1	0.597	Arc	K303 K305 K302	Circle arc
Rand34	E1	0.597	Arc	K318 K320 K319	Circle arc
Rand35	E1	0.597	Arc	K319 K321 K318	Circle arc
Rand36	E1	0.597	Arc	K322 K324 K323	Circle arc
Rand37	E1	0.597	Arc	K323 K325 K322	Circle arc
Rand38	E1	0.597	Arc	K338 K340 K339	Circle arc
Rand39	E1	0.597	Arc	K339 K341 K338	Circle arc
Rand40	E1	0.597	Arc	K342 K344 K343	Circle arc
Rand41	E1	0.597	Arc	K343 K345 K342	Circle arc
Rand42	E1	0.597	Arc	K358 K360 K359	Circle arc
Rand43	E1	0.597	Arc	K359 K361 K358	Circle arc
Rand44	E1	0.597	Arc	K362 K364 K363	Circle arc
Rand45	E1	0.597	Arc	K363 K365 K362	Circle arc
Rand46	E1	0.597	Arc	K378 K380 K379	Circle arc

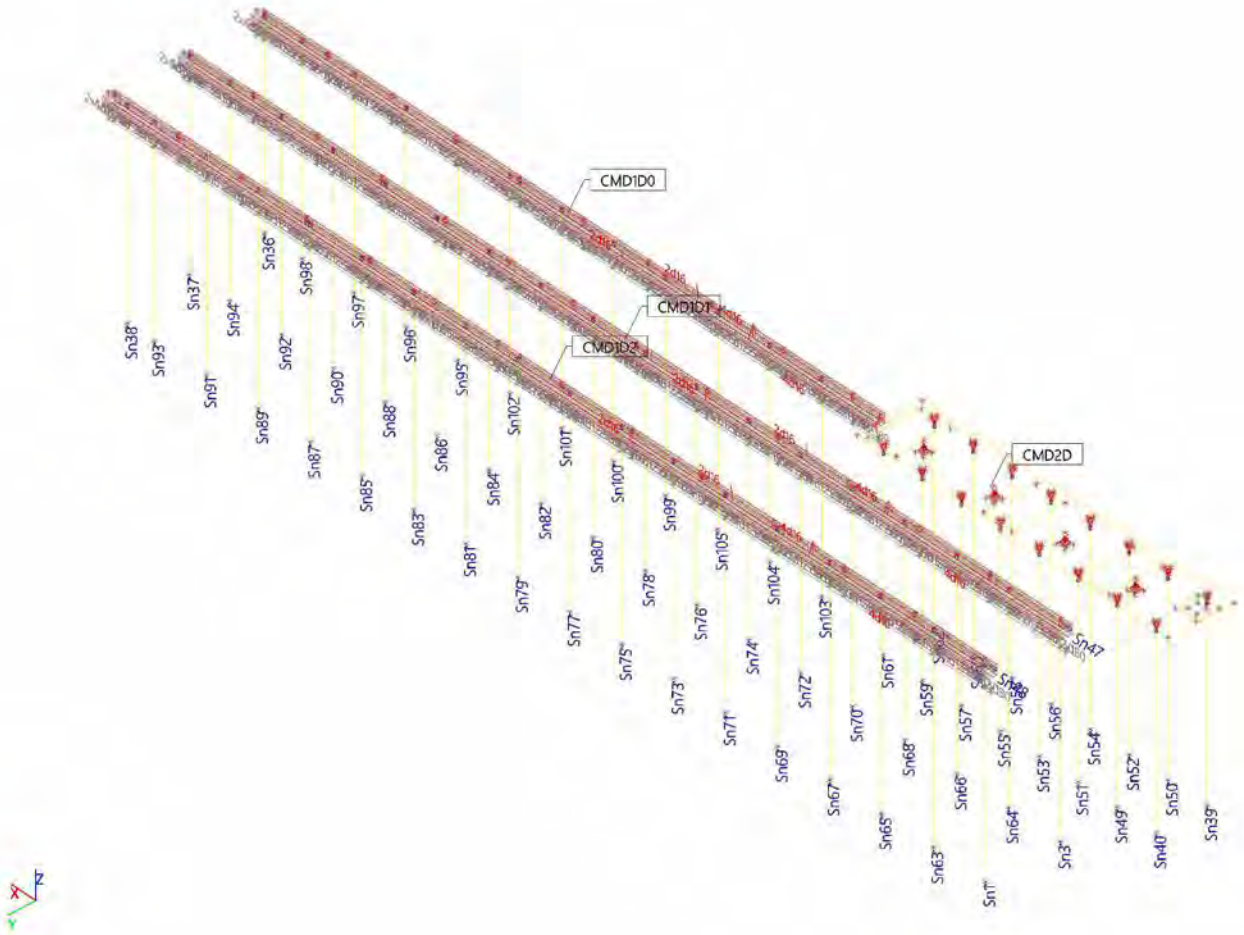
Name	Member 1	Length [m]	Shape	Node	Edge
Rand47	E1	0.597	Arc	K379 K381 K378	Circle arc
Rand48	E1	0.597	Arc	K382 K384 K383	Circle arc
Rand49	E1	0.597	Arc	K383 K385 K382	Circle arc

2.3.4.5. Line rigid links

Name	2D member	Edge	Master	Slave	Hinge on master	Hinge on slave
RS1		1	K1	Rand2	×	×
RS2		1	K1	Rand5	×	×
RS3		1	K1	Rand3	×	×
RS4		1	K1	Rand4	×	×
RS5		1	K11	Rand6	×	×
RS6		1	K11	Rand9	×	×
RS7		1	K11	Rand7	×	×
RS8		1	K11	Rand8	×	×
RS9		1	K25	Rand10	×	×
RS10		1	K25	Rand13	×	×
RS11		1	K25	Rand11	×	×
RS12		1	K25	Rand12	×	×
RS13		1	K31	Rand14	×	×
RS14		1	K31	Rand17	×	×
RS15		1	K31	Rand15	×	×
RS16		1	K31	Rand16	×	×
RS17	E1	5	K15	E1	×	×
RS18		1	K203	Rand18	×	×
RS19		1	K203	Rand19	×	×
RS20		1	K205	Rand21	×	×
RS21		1	K205	Rand20	×	×
RS22		1	K262	Rand25	×	×
RS23		1	K262	Rand24	×	×
RS24		1	K255	Rand23	×	×
RS25		1	K255	Rand22	×	×
RS26		1	K274	Rand29	×	×
RS27		1	K274	Rand28	×	×
RS28		1	K267	Rand27	×	×
RS29		1	K267	Rand26	×	×
RS30		1	K294	Rand33	×	×
RS31		1	K294	Rand32	×	×
RS32		1	K287	Rand31	×	×
RS33		1	K287	Rand30	×	×
RS34		1	K314	Rand37	×	×
RS35		1	K314	Rand36	×	×
RS36		1	K307	Rand35	×	×
RS37		1	K307	Rand34	×	×
RS38		1	K334	Rand41	×	×
RS39		1	K334	Rand40	×	×
RS40		1	K327	Rand39	×	×
RS41		1	K327	Rand38	×	×
RS42		1	K354	Rand45	×	×
RS43		1	K354	Rand44	×	×
RS44		1	K347	Rand43	×	×
RS45		1	K347	Rand42	×	×
RS46		1	K374	Rand49	×	×
RS47		1	K374	Rand48	×	×
RS48		1	K367	Rand47	×	×
RS49		1	K367	Rand46	×	×

2.3.5. Supports

2.3.5.1. Steunpunten



2.3.5.2. Nodal supports

Name Node	System User UCS	Type Angle [deg]	X Stiffness X [MN/m]	Y Stiffness Y [MN/m]	Z Stiffness Z [MN/m]	Rx Stiffness Rx [MNm/rad]	Ry Stiffness Ry [MNm/rad]	Rz Stiffness Rz [MNm/rad]
Sn1 K114	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn3 K155	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn36 K188	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn37 K189	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn38 K190	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn39 K192	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn40 K204	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn47 K16	GCS	Standard	Free	Free	Free	Rigid	Free	Free
Sn48 K18	GCS	Standard	Free	Free	Free	Rigid	Free	Free
Sn49 K254	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn50 K261	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn51	GCS	Standard	Free	Free	Flexible	Free	Free	Free

Name Node	System User UCS	Type Angle [deg]	X Stiffness X [MN/m]	Y Stiffness Y [MN/m]	Z Stiffness Z [MN/m]	Rx Stiffness Rx [MNm/rad]	Ry Stiffness Ry [MNm/rad]	Rz Stiffness Rz [MNm/rad]
K266					6.0000e+01			
Sn52 K273	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn53 K286	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn54 K293	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn55 K306	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn56 K313	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn57 K326	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn58 K333	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn59 K346	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn60 K353	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn61 K366	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn62 K373	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn63 K386	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn64 K387	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn65 K390	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn66 K391	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn67 K394	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn68 K395	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn69 K398	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn70 K399	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn71 K402	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn72 K403	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn73 K406	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn74 K407	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn75 K410	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn76 K411	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn77 K414	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn78 K415	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn79 K418	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn80 K419	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn81 K422	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn82 K423	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn83 K426	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn84	GCS	Standard	Free	Free	Flexible	Free	Free	Free

Name	System	Type	X	Y	Z	Rx	Ry	Rz
Node	User UCS	Angle [deg]	Stiffness X [MN/m]	Stiffness Y [MN/m]	Stiffness Z [MN/m]	Stiffness Rx [MNm/rad]	Stiffness Ry [MNm/rad]	Stiffness Rz [MNm/rad]
K427					6.0000e+01			
Sn85 K430	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn86 K431	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn87 K434	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn88 K435	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn89 K438	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn90 K439	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn91 K442	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn92 K443	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn93 K446	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn94 K447	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn95 K450	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn96 K451	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn97 K452	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn98 K453	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn99 K454	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn100 K455	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn101 K456	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn102 K457	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn103 K458	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn104 K459	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free
Sn105 K460	GCS	Standard	Free	Free	Flexible 6.0000e+01	Free	Free	Free

2.3.5.3. Line supports on member

Name	Type	Member	Pos x_1 [m]	Coor	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		System	Pos x_2 [m]	Orig								
Slb1	Line	S47 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb2	Line	S47 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb3	Line	S47 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb4	Line	S47 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb5	Line	S47 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb6	Line	S47 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb7	Line	S47 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb8	Line	S47 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb9	Line	S47	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb10	Line	S47	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb11	Line	S47	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb12	Line	S47	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb13	Line	S47	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb14	Line	S47	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb15	Line	S47	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb16	Line	S47	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb17	Line	S47	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb35	Line	S49	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb36	Line	S49	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb37	Line	S49	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb38	Line	S49	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb39	Line	S49	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb40	Line	S49	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb41	Line	S49	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb42	Line	S49	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb43	Line	S49	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb44	Line	S49	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb45	Line	S49	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb46	Line	S49	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb47	Line	S49	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb48	Line	S49	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb49	Line	S49	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb50	Line	S49	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb51	Line	S49	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb596	Line	S82	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb597	Line	S82	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb598	Line	S82	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb599	Line	S82	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb600	Line	S82	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb601	Line	S82	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb602	Line	S82	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	11.280	From start								
Slb603	Line	S82	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb604	Line	S82	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb605	Line	S82	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb606	Line	S82	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb607	Line	S82	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb608	Line	S82	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb609	Line	S82	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb610	Line	S82	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb611	Line	S82	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb612	Line	S82	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb613	Line	S83	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb614	Line	S83	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb615	Line	S83	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb616	Line	S83	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb617	Line	S83	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb618	Line	S83	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb619	Line	S83	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb620	Line	S83	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb621	Line	S83	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb622	Line	S83	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb623	Line	S83	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb624	Line	S83	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb625	Line	S83	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb626	Line	S83	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb627	Line	S83	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb628	Line	S83	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb629	Line	S83	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb630	Line	S84	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb631	Line	S84	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb632	Line	S84	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb633	Line	S84	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb634	Line	S84	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_2 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb635	Line	S84	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb636	Line	S84	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb637	Line	S84	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb638	Line	S84	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb639	Line	S84	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb640	Line	S84	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb641	Line	S84	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb642	Line	S84	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb643	Line	S84	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb644	Line	S84	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb645	Line	S84	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb646	Line	S84	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb647	Line	S93	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb648	Line	S93	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb649	Line	S93	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb650	Line	S93	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb651	Line	S93	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb652	Line	S93	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb653	Line	S93	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb654	Line	S93	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb655	Line	S93	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb656	Line	S93	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb657	Line	S93	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb658	Line	S93	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb659	Line	S93	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb660	Line	S93	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb661	Line	S93	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb662	Line	S93	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb663	Line	S93	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb664	Line	S94	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb665	Line	S94	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb666	Line	S94	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb667	Line	S94	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	5.120	From start								
Slb668	Line	S94	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb669	Line	S94	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb670	Line	S94	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb671	Line	S94	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb672	Line	S94	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb673	Line	S94	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb674	Line	S94	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb675	Line	S94	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb676	Line	S94	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb677	Line	S94	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb678	Line	S94	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb679	Line	S94	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb680	Line	S94	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb681	Line	S95	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb682	Line	S95	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb683	Line	S95	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb684	Line	S95	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb685	Line	S95	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb686	Line	S95	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb687	Line	S95	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb688	Line	S95	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb689	Line	S95	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb690	Line	S95	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb691	Line	S95	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb692	Line	S95	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb693	Line	S95	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb694	Line	S95	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb695	Line	S95	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb696	Line	S95	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb697	Line	S95	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb698	Line	S96	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb699	Line	S96	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb700	Line	S96 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb701	Line	S96 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb702	Line	S96 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb703	Line	S96 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb704	Line	S96 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb705	Line	S96 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb706	Line	S96 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb707	Line	S96 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb708	Line	S96 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb709	Line	S96 GCS	11.120 11.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb710	Line	S96 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb711	Line	S96 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb712	Line	S96 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb713	Line	S96 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb714	Line	S96 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb715	Line	S97 GCS	0.500 0.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb716	Line	S97 GCS	0.650 1.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb717	Line	S97 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb718	Line	S97 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb719	Line	S97 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb720	Line	S97 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb721	Line	S97 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb722	Line	S97 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb723	Line	S97 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb724	Line	S97 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb725	Line	S97 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb726	Line	S97 GCS	11.120 11.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb727	Line	S97 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb728	Line	S97 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb729	Line	S97 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb730	Line	S97 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb731	Line	S97 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb732	Line	S98	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	0.650	From start								
Slb733	Line	S98	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb734	Line	S98	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb735	Line	S98	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb736	Line	S98	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb737	Line	S98	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb738	Line	S98	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb739	Line	S98	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb740	Line	S98	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb741	Line	S98	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb742	Line	S98	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb743	Line	S98	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb744	Line	S98	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb745	Line	S98	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb746	Line	S98	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb747	Line	S98	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb748	Line	S98	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb749	Line	S99	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb750	Line	S99	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb751	Line	S99	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb752	Line	S99	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb753	Line	S99	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb754	Line	S99	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb755	Line	S99	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb756	Line	S99	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb757	Line	S99	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb758	Line	S99	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb759	Line	S99	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb760	Line	S99	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb761	Line	S99	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb762	Line	S99	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb763	Line	S99	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb764	Line	S99	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb765	Line	S99	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb766	Line	S100	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb767	Line	S100	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb768	Line	S100	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb769	Line	S100	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb770	Line	S100	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb771	Line	S100	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb772	Line	S100	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb773	Line	S100	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb774	Line	S100	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb775	Line	S100	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb776	Line	S100	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb777	Line	S100	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb778	Line	S100	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb779	Line	S100	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb780	Line	S100	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb781	Line	S100	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb782	Line	S100	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb783	Line	S101	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb784	Line	S101	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb785	Line	S101	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb786	Line	S101	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb787	Line	S101	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb788	Line	S101	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb789	Line	S101	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb790	Line	S101	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb791	Line	S101	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb792	Line	S101	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb793	Line	S101	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb794	Line	S101	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb795	Line	S101	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb796	Line	S101	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb797	Line	S101	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	12.400	From start								
Slb798	Line	S101	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb799	Line	S101	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb800	Line	S102	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb801	Line	S102	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb802	Line	S102	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb803	Line	S102	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb804	Line	S102	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb805	Line	S102	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb806	Line	S102	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb807	Line	S102	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb808	Line	S102	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb809	Line	S102	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb810	Line	S102	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb811	Line	S102	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb812	Line	S102	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								
Slb813	Line	S102	11.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb814	Line	S102	12.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	12.400	From start								
Slb815	Line	S102	12.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.560	From start								
Slb816	Line	S102	12.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	12.900	From start								
Slb817	Line	S103	0.500	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	0.650	From start								
Slb818	Line	S103	0.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	1.660	From start								
Slb819	Line	S103	1.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	3.960	From start								
Slb820	Line	S103	3.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	5.120	From start								
Slb821	Line	S103	5.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	9.620	From start								
Slb822	Line	S103	9.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	9.720	From start								
Slb823	Line	S103	9.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.280	From start								
Slb824	Line	S103	10.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	10.580	From start								
Slb825	Line	S103	10.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	10.780	From start								
Slb826	Line	S103	10.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	10.840	From start								
Slb827	Line	S103	10.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	11.120	From start								
Slb828	Line	S103	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	11.460	From start								
Slb829	Line	S103	11.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	11.700	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb830	Line	S103 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb831	Line	S103 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb832	Line	S103 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb833	Line	S103 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb834	Line	S104 GCS	0.500 0.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb835	Line	S104 GCS	0.650 1.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb836	Line	S104 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb837	Line	S104 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb838	Line	S104 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb839	Line	S104 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb840	Line	S104 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb841	Line	S104 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb842	Line	S104 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb843	Line	S104 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb844	Line	S104 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb845	Line	S104 GCS	11.120 11.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb846	Line	S104 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb847	Line	S104 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb848	Line	S104 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb849	Line	S104 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb850	Line	S104 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb851	Line	S105 GCS	0.500 0.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb852	Line	S105 GCS	0.650 1.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb853	Line	S105 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb854	Line	S105 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb855	Line	S105 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb856	Line	S105 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb857	Line	S105 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb858	Line	S105 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb859	Line	S105 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb860	Line	S105 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb861	Line	S105 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb862	Line	S105	11.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	11.460	From start								
Slb863	Line	S105 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb864	Line	S105 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb865	Line	S105 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb866	Line	S105 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb867	Line	S105 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb868	Line	S106 GCS	0.500 0.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb869	Line	S106 GCS	0.650 1.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb870	Line	S106 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb871	Line	S106 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb872	Line	S106 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb873	Line	S106 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb874	Line	S106 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb875	Line	S106 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb876	Line	S106 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb877	Line	S106 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb878	Line	S106 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb879	Line	S106 GCS	11.120 11.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb880	Line	S106 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb881	Line	S106 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb882	Line	S106 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb883	Line	S106 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb884	Line	S106 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb885	Line	S107 GCS	0.500 0.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb886	Line	S107 GCS	0.650 1.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb887	Line	S107 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb888	Line	S107 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb889	Line	S107 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb890	Line	S107 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb891	Line	S107 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb892	Line	S107 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb893	Line	S107 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb894	Line	S107 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb895	Line	S107 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb896	Line	S107 GCS	11.120 11.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb897	Line	S107 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb898	Line	S107 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb899	Line	S107 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb900	Line	S107 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb901	Line	S107 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb902	Line	S108 GCS	0.500 0.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb903	Line	S108 GCS	0.650 1.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb904	Line	S108 GCS	1.660 3.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb905	Line	S108 GCS	3.960 5.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb906	Line	S108 GCS	5.120 9.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb907	Line	S108 GCS	9.620 9.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb908	Line	S108 GCS	9.720 10.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb909	Line	S108 GCS	10.280 10.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb910	Line	S108 GCS	10.580 10.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb911	Line	S108 GCS	10.780 10.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb912	Line	S108 GCS	10.840 11.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb913	Line	S108 GCS	11.120 11.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb914	Line	S108 GCS	11.460 11.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb915	Line	S108 GCS	11.700 12.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb916	Line	S108 GCS	12.120 12.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb917	Line	S108 GCS	12.400 12.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb918	Line	S108 GCS	12.560 12.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb919	Line	S109 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb920	Line	S109 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb921	Line	S109 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb922	Line	S109 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb923	Line	S109 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb924	Line	S109 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb925	Line	S109 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb926	Line	S109 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb927	Line	S109	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	11.780	From start								
Slb928	Line	S109	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb929	Line	S109	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb930	Line	S109	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb931	Line	S109	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb932	Line	S109	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb933	Line	S109	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb934	Line	S109	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb935	Line	S109	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb936	Line	S110	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb937	Line	S110	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb938	Line	S110	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb939	Line	S110	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb940	Line	S110	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb941	Line	S110	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb942	Line	S110	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb943	Line	S110	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb944	Line	S110	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb945	Line	S110	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb946	Line	S110	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb947	Line	S110	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb948	Line	S110	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb949	Line	S110	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb950	Line	S110	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb951	Line	S110	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb952	Line	S110	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb953	Line	S111	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb954	Line	S111	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb955	Line	S111	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb956	Line	S111	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb957	Line	S111	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb958	Line	S111	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb959	Line	S111	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb960	Line	S111 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb961	Line	S111 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb962	Line	S111 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb963	Line	S111 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb964	Line	S111 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb965	Line	S111 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb966	Line	S111 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb967	Line	S111 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb968	Line	S111 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb969	Line	S111 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb970	Line	S112 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb971	Line	S112 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb972	Line	S112 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb973	Line	S112 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb974	Line	S112 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb975	Line	S112 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb976	Line	S112 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb977	Line	S112 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb978	Line	S112 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb979	Line	S112 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb980	Line	S112 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb981	Line	S112 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb982	Line	S112 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb983	Line	S112 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb984	Line	S112 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb985	Line	S112 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb986	Line	S112 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb987	Line	S113 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb988	Line	S113 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb989	Line	S113 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb990	Line	S113 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb991	Line	S113 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb992	Line	S113	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	10.720	From start								
Slb993	Line	S113	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb994	Line	S113	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb995	Line	S113	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb996	Line	S113	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb997	Line	S113	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb998	Line	S113	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb999	Line	S113	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1000	Line	S113	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1001	Line	S113	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1002	Line	S113	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1003	Line	S113	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1004	Line	S114	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1005	Line	S114	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1006	Line	S114	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1007	Line	S114	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1008	Line	S114	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1009	Line	S114	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1010	Line	S114	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1011	Line	S114	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1012	Line	S114	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1013	Line	S114	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1014	Line	S114	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1015	Line	S114	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1016	Line	S114	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1017	Line	S114	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1018	Line	S114	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1019	Line	S114	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1020	Line	S114	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1021	Line	S115	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1022	Line	S115	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1023	Line	S115	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1024	Line	S115	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1025	Line	S115 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1026	Line	S115 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1027	Line	S115 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1028	Line	S115 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1029	Line	S115 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1030	Line	S115 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1031	Line	S115 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1032	Line	S115 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1033	Line	S115 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1034	Line	S115 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1035	Line	S115 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1036	Line	S115 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1037	Line	S115 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1038	Line	S116 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1039	Line	S116 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1040	Line	S116 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1041	Line	S116 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1042	Line	S116 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1043	Line	S116 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1044	Line	S116 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1045	Line	S116 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1046	Line	S116 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1047	Line	S116 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1048	Line	S116 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1049	Line	S116 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1050	Line	S116 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1051	Line	S116 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1052	Line	S116 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1053	Line	S116 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1054	Line	S116 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1055	Line	S117 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1056	Line	S117 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1057	Line	S117	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	4.960	From start								
Slb1058	Line	S117	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1059	Line	S117	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1060	Line	S117	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1061	Line	S117	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1062	Line	S117	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1063	Line	S117	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1064	Line	S117	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1065	Line	S117	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1066	Line	S117	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1067	Line	S117	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1068	Line	S117	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1069	Line	S117	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1070	Line	S117	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1071	Line	S117	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1072	Line	S118	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1073	Line	S118	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1074	Line	S118	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1075	Line	S118	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1076	Line	S118	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1077	Line	S118	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1078	Line	S118	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1079	Line	S118	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1080	Line	S118	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1081	Line	S118	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1082	Line	S118	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1083	Line	S118	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1084	Line	S118	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1085	Line	S118	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1086	Line	S118	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1087	Line	S118	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1088	Line	S118	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1089	Line	S119	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1090	Line	S119 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1091	Line	S119 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1092	Line	S119 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1093	Line	S119 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1094	Line	S119 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1095	Line	S119 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1096	Line	S119 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1097	Line	S119 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1098	Line	S119 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1099	Line	S119 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1100	Line	S119 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1101	Line	S119 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1102	Line	S119 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1103	Line	S119 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1104	Line	S119 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1105	Line	S119 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1106	Line	S120 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1107	Line	S120 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1108	Line	S120 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1109	Line	S120 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1110	Line	S120 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1111	Line	S120 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1112	Line	S120 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1113	Line	S120 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1114	Line	S120 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1115	Line	S120 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1116	Line	S120 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1117	Line	S120 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1118	Line	S120 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1119	Line	S120 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1120	Line	S120 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1121	Line	S120 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1122	Line	S120	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	13.900	From start								
Slb1123	Line	S121	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1124	Line	S121	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1125	Line	S121	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1126	Line	S121	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1127	Line	S121	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1128	Line	S121	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1129	Line	S121	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1130	Line	S121	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1131	Line	S121	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1132	Line	S121	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1133	Line	S121	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1134	Line	S121	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1135	Line	S121	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1136	Line	S121	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1137	Line	S121	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1138	Line	S121	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1139	Line	S121	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1140	Line	S122	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1141	Line	S122	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1142	Line	S122	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1143	Line	S122	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1144	Line	S122	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1145	Line	S122	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1146	Line	S122	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1147	Line	S122	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1148	Line	S122	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1149	Line	S122	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1150	Line	S122	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1151	Line	S122	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1152	Line	S122	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1153	Line	S122	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1154	Line	S122	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1155	Line	S122 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1156	Line	S122 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1157	Line	S123 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1158	Line	S123 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1159	Line	S123 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1160	Line	S123 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1161	Line	S123 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1162	Line	S123 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1163	Line	S123 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1164	Line	S123 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1165	Line	S123 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1166	Line	S123 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1167	Line	S123 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1168	Line	S123 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1169	Line	S123 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1170	Line	S123 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1171	Line	S123 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1172	Line	S123 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1173	Line	S123 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1174	Line	S124 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1175	Line	S124 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1176	Line	S124 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1177	Line	S124 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1178	Line	S124 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1179	Line	S124 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1180	Line	S124 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1181	Line	S124 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1182	Line	S124 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1183	Line	S124 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1184	Line	S124 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1185	Line	S124 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1186	Line	S124 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1187	Line	S124	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	13.120	From start								
Slb1188	Line	S124	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1189	Line	S124	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1190	Line	S124	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1191	Line	S125	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1192	Line	S125	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1193	Line	S125	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1194	Line	S125	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1195	Line	S125	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1196	Line	S125	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1197	Line	S125	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1198	Line	S125	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1199	Line	S125	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1200	Line	S125	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1201	Line	S125	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1202	Line	S125	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1203	Line	S125	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1204	Line	S125	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1205	Line	S125	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1206	Line	S125	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1207	Line	S125	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1208	Line	S126	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1209	Line	S126	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1210	Line	S126	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1211	Line	S126	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1212	Line	S126	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1213	Line	S126	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1214	Line	S126	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1215	Line	S126	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1216	Line	S126	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1217	Line	S126	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1218	Line	S126	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1219	Line	S126	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1220	Line	S126 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1221	Line	S126 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1222	Line	S126 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1223	Line	S126 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1224	Line	S126 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1225	Line	S127 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1226	Line	S127 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1227	Line	S127 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1228	Line	S127 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1229	Line	S127 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1230	Line	S127 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1231	Line	S127 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1232	Line	S127 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1233	Line	S127 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1234	Line	S127 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1235	Line	S127 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1236	Line	S127 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1237	Line	S127 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1238	Line	S127 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1239	Line	S127 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1240	Line	S127 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1241	Line	S127 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1242	Line	S128 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1243	Line	S128 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1244	Line	S128 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1245	Line	S128 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1246	Line	S128 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1247	Line	S128 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1248	Line	S128 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1249	Line	S128 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1250	Line	S128 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1251	Line	S128 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1252	Line	S128	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	12.120	From start								
Slb1253	Line	S128	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1254	Line	S128	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1255	Line	S128	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1256	Line	S128	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1257	Line	S128	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1258	Line	S128	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1259	Line	S129	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1260	Line	S129	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1261	Line	S129	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1262	Line	S129	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1263	Line	S129	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1264	Line	S129	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1265	Line	S129	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1266	Line	S129	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1267	Line	S129	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1268	Line	S129	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1269	Line	S129	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1270	Line	S129	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1271	Line	S129	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1272	Line	S129	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1273	Line	S129	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1274	Line	S129	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1275	Line	S129	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1276	Line	S130	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1277	Line	S130	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1278	Line	S130	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1279	Line	S130	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1280	Line	S130	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1281	Line	S130	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1282	Line	S130	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1283	Line	S130	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1284	Line	S130	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1285	Line	S130 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1286	Line	S130 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1287	Line	S130 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1288	Line	S130 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1289	Line	S130 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1290	Line	S130 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1291	Line	S130 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1292	Line	S130 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1293	Line	S131 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1294	Line	S131 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1295	Line	S131 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1296	Line	S131 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1297	Line	S131 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1298	Line	S131 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1299	Line	S131 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1300	Line	S131 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1301	Line	S131 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1302	Line	S131 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1303	Line	S131 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1304	Line	S131 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1305	Line	S131 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1306	Line	S131 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1307	Line	S131 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1308	Line	S131 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1309	Line	S131 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1310	Line	S132 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1311	Line	S132 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1312	Line	S132 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1313	Line	S132 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1314	Line	S132 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1315	Line	S132 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1316	Line	S132 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1317	Line	S132	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	11.580	From start								
Slb1318	Line	S132	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1319	Line	S132	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1320	Line	S132	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1321	Line	S132	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1322	Line	S132	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1323	Line	S132	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1324	Line	S132	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1325	Line	S132	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1326	Line	S132	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1327	Line	S133	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1328	Line	S133	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1329	Line	S133	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1330	Line	S133	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1331	Line	S133	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1332	Line	S133	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1333	Line	S133	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1334	Line	S133	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1335	Line	S133	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1336	Line	S133	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1337	Line	S133	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1338	Line	S133	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1339	Line	S133	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1340	Line	S133	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1341	Line	S133	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1342	Line	S133	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1343	Line	S133	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1344	Line	S134	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1345	Line	S134	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1346	Line	S134	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1347	Line	S134	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1348	Line	S134	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1349	Line	S134	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1350	Line	S134 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1351	Line	S134 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1352	Line	S134 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1353	Line	S134 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1354	Line	S134 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1355	Line	S134 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1356	Line	S134 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1357	Line	S134 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1358	Line	S134 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1359	Line	S134 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1360	Line	S134 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1361	Line	S135 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1362	Line	S135 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1363	Line	S135 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1364	Line	S135 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1365	Line	S135 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1366	Line	S135 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1367	Line	S135 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1368	Line	S135 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1369	Line	S135 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1370	Line	S135 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1371	Line	S135 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1372	Line	S135 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1373	Line	S135 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1374	Line	S135 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1375	Line	S135 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1376	Line	S135 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1377	Line	S135 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1378	Line	S136 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1379	Line	S136 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1380	Line	S136 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1381	Line	S136 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1382	Line	S136	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	10.620	From start								
Slb1383	Line	S136	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1384	Line	S136	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1385	Line	S136	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1386	Line	S136	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1387	Line	S136	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1388	Line	S136	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1389	Line	S136	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1390	Line	S136	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1391	Line	S136	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1392	Line	S136	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1393	Line	S136	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1394	Line	S136	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1395	Line	S137	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1396	Line	S137	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1397	Line	S137	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1398	Line	S137	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1399	Line	S137	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1400	Line	S137	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1401	Line	S137	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1402	Line	S137	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1403	Line	S137	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1404	Line	S137	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1405	Line	S137	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1406	Line	S137	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1407	Line	S137	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1408	Line	S137	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1409	Line	S137	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1410	Line	S137	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1411	Line	S137	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1412	Line	S138	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1413	Line	S138	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1414	Line	S138	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1415	Line	S138 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1416	Line	S138 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1417	Line	S138 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1418	Line	S138 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1419	Line	S138 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1420	Line	S138 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1421	Line	S138 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1422	Line	S138 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1423	Line	S138 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1424	Line	S138 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1425	Line	S138 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1426	Line	S138 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1427	Line	S138 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1428	Line	S138 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1429	Line	S139 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1430	Line	S139 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1431	Line	S139 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1432	Line	S139 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1433	Line	S139 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1434	Line	S139 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1435	Line	S139 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1436	Line	S139 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1437	Line	S139 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1438	Line	S139 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1439	Line	S139 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1440	Line	S139 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1441	Line	S139 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1442	Line	S139 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1443	Line	S139 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1444	Line	S139 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1445	Line	S139 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1446	Line	S140 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1447	Line	S140	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	2.660	From start								
Slb1448	Line	S140	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1449	Line	S140	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1450	Line	S140	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1451	Line	S140	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1452	Line	S140	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1453	Line	S140	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1454	Line	S140	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1455	Line	S140	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1456	Line	S140	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1457	Line	S140	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1458	Line	S140	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1459	Line	S140	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1460	Line	S140	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1461	Line	S140	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1462	Line	S140	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1463	Line	S141	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1464	Line	S141	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1465	Line	S141	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1466	Line	S141	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1467	Line	S141	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1468	Line	S141	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1469	Line	S141	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1470	Line	S141	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1471	Line	S141	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1472	Line	S141	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1473	Line	S141	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1474	Line	S141	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1475	Line	S141	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1476	Line	S141	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1477	Line	S141	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1478	Line	S141	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1479	Line	S141	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1480	Line	S142	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1481	Line	S142	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1482	Line	S142	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1483	Line	S142	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1484	Line	S142	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1485	Line	S142	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1486	Line	S142	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1487	Line	S142	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1488	Line	S142	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1489	Line	S142	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1490	Line	S142	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1491	Line	S142	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1492	Line	S142	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1493	Line	S142	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1494	Line	S142	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1495	Line	S142	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1496	Line	S142	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1497	Line	S143	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1498	Line	S143	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1499	Line	S143	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1500	Line	S143	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1501	Line	S143	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1502	Line	S143	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1503	Line	S143	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1504	Line	S143	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1505	Line	S143	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1506	Line	S143	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1507	Line	S143	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1508	Line	S143	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1509	Line	S143	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1510	Line	S143	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1511	Line	S143	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1512	Line	S143	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	13.560	From start								
Slb1513	Line	S143	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1514	Line	S144	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1515	Line	S144	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1516	Line	S144	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1517	Line	S144	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1518	Line	S144	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1519	Line	S144	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1520	Line	S144	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1521	Line	S144	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1522	Line	S144	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1523	Line	S144	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1524	Line	S144	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1525	Line	S144	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1526	Line	S144	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1527	Line	S144	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1528	Line	S144	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1529	Line	S144	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1530	Line	S144	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1531	Line	S145	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1532	Line	S145	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1533	Line	S145	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1534	Line	S145	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1535	Line	S145	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1536	Line	S145	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1537	Line	S145	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1538	Line	S145	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1539	Line	S145	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1540	Line	S145	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1541	Line	S145	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1542	Line	S145	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1543	Line	S145	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1544	Line	S145	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1545	Line	S145 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1546	Line	S145 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1547	Line	S145 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1548	Line	S146 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1549	Line	S146 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1550	Line	S146 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1551	Line	S146 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1552	Line	S146 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1553	Line	S146 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1554	Line	S146 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1555	Line	S146 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1556	Line	S146 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1557	Line	S146 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1558	Line	S146 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1559	Line	S146 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1560	Line	S146 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1561	Line	S146 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1562	Line	S146 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1563	Line	S146 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1564	Line	S146 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1565	Line	S147 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1566	Line	S147 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1567	Line	S147 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1568	Line	S147 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1569	Line	S147 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1570	Line	S147 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1571	Line	S147 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1572	Line	S147 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1573	Line	S147 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1574	Line	S147 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1575	Line	S147 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1576	Line	S147 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1577	Line	S147	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	12.700	From start								
Slb1578	Line	S147	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1579	Line	S147	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1580	Line	S147	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1581	Line	S147	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1582	Line	S148	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1583	Line	S148	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1584	Line	S148	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1585	Line	S148	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1586	Line	S148	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1587	Line	S148	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1588	Line	S148	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1589	Line	S148	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1590	Line	S148	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1591	Line	S148	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1592	Line	S148	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1593	Line	S148	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1594	Line	S148	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1595	Line	S148	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1596	Line	S148	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1597	Line	S148	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1598	Line	S148	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								
Slb1599	Line	S149	1.600	Abso	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
		GCS	1.650	From start								
Slb1600	Line	S149	1.650	Abso	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
		GCS	2.660	From start								
Slb1601	Line	S149	2.660	Abso	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
		GCS	4.960	From start								
Slb1602	Line	S149	4.960	Abso	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
		GCS	6.120	From start								
Slb1603	Line	S149	6.120	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	10.620	From start								
Slb1604	Line	S149	10.620	Abso	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
		GCS	10.720	From start								
Slb1605	Line	S149	10.720	Abso	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
		GCS	11.280	From start								
Slb1606	Line	S149	11.280	Abso	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
		GCS	11.580	From start								
Slb1607	Line	S149	11.580	Abso	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
		GCS	11.780	From start								
Slb1608	Line	S149	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
		GCS	11.840	From start								
Slb1609	Line	S149	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								

Name	Type	Member System	Pos x_1 [m] Pos x_1 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
Slb1610	Line	S149 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1611	Line	S149 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1612	Line	S149 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1613	Line	S149 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1614	Line	S149 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1615	Line	S149 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1616	Line	S150 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1617	Line	S150 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1618	Line	S150 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1619	Line	S150 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1620	Line	S150 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1621	Line	S150 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1622	Line	S150 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1623	Line	S150 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1624	Line	S150 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1625	Line	S150 GCS	11.780 11.840	Abso From start	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free
Slb1626	Line	S150 GCS	11.840 12.120	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1627	Line	S150 GCS	12.120 12.460	Abso From start	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
Slb1628	Line	S150 GCS	12.460 12.700	Abso From start	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
Slb1629	Line	S150 GCS	12.700 13.120	Abso From start	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
Slb1630	Line	S150 GCS	13.120 13.400	Abso From start	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
Slb1631	Line	S150 GCS	13.400 13.560	Abso From start	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
Slb1632	Line	S150 GCS	13.560 13.900	Abso From start	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
Slb1633	Line	S151 GCS	1.600 1.650	Abso From start	Flexible	3.9000e+00	Flexible	3.9000e+00	Free	Free	Free	Free
Slb1634	Line	S151 GCS	1.650 2.660	Abso From start	Flexible	2.0000e+00	Flexible	2.0000e+00	Free	Free	Free	Free
Slb1635	Line	S151 GCS	2.660 4.960	Abso From start	Flexible	1.4000e+00	Flexible	1.4000e+00	Free	Free	Free	Free
Slb1636	Line	S151 GCS	4.960 6.120	Abso From start	Flexible	7.7000e+00	Flexible	7.7000e+00	Free	Free	Free	Free
Slb1637	Line	S151 GCS	6.120 10.620	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1638	Line	S151 GCS	10.620 10.720	Abso From start	Flexible	5.4000e+00	Flexible	5.4000e+00	Free	Free	Free	Free
Slb1639	Line	S151 GCS	10.720 11.280	Abso From start	Flexible	5.6000e+00	Flexible	5.6000e+00	Free	Free	Free	Free
Slb1640	Line	S151 GCS	11.280 11.580	Abso From start	Flexible	7.4000e+00	Flexible	7.4000e+00	Free	Free	Free	Free
Slb1641	Line	S151 GCS	11.580 11.780	Abso From start	Flexible	4.5000e+00	Flexible	4.5000e+00	Free	Free	Free	Free
Slb1642	Line	S151	11.780	Abso	Flexible	5.1000e+00	Flexible	5.1000e+00	Free	Free	Free	Free

Name	Type	Member System	Pos x_1 [m] Pos x_2 [m]	Coor Orig	X	Stiffness X [MN/m²]	Y	Stiffness Y [MN/m²]	Z	Rx	Ry	Rz
		GCS	11.840	From start								
Slb1643	Line	S151	11.840	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	12.120	From start								
Slb1644	Line	S151	12.120	Abso	Flexible	1.0800e+01	Flexible	1.0800e+01	Free	Free	Free	Free
		GCS	12.460	From start								
Slb1645	Line	S151	12.460	Abso	Flexible	1.2300e+01	Flexible	1.2300e+01	Free	Free	Free	Free
		GCS	12.700	From start								
Slb1646	Line	S151	12.700	Abso	Flexible	6.4000e+00	Flexible	6.4000e+00	Free	Free	Free	Free
		GCS	13.120	From start								
Slb1647	Line	S151	13.120	Abso	Flexible	6.6000e+00	Flexible	6.6000e+00	Free	Free	Free	Free
		GCS	13.400	From start								
Slb1648	Line	S151	13.400	Abso	Flexible	7.5000e+00	Flexible	7.5000e+00	Free	Free	Free	Free
		GCS	13.560	From start								
Slb1649	Line	S151	13.560	Abso	Flexible	1.8500e+01	Flexible	1.8500e+01	Free	Free	Free	Free
		GCS	13.900	From start								

3. Loads

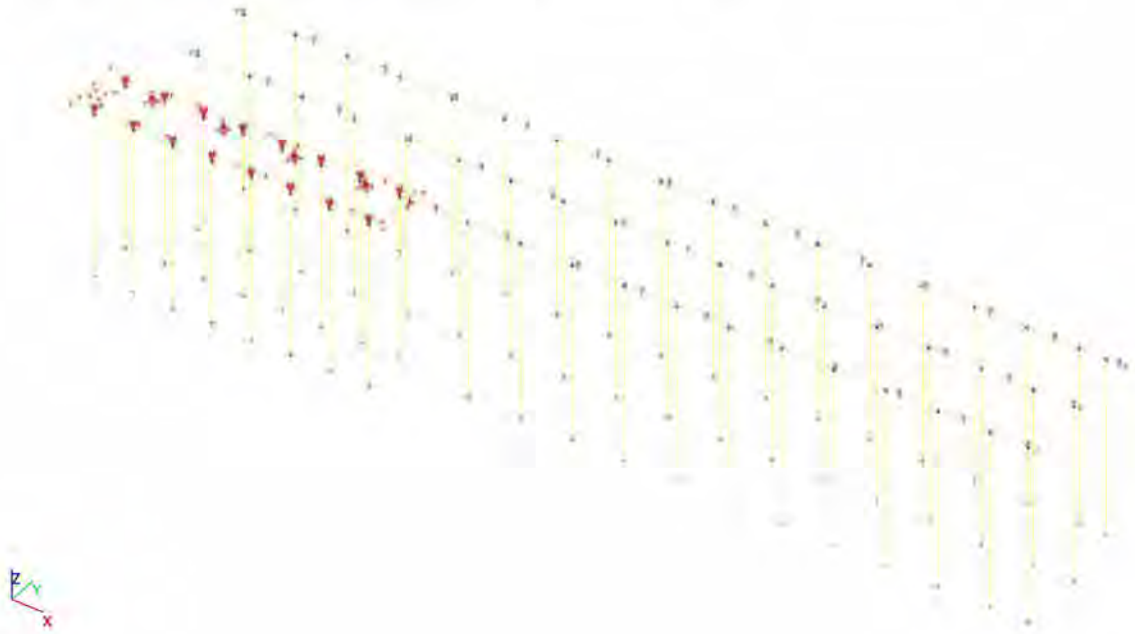
3.1. Load cases

Name	Description	Action type	Load group	Load type	Spec	Direction	Duration	Master load case
BG101	Self weight modelled structure	Permanent	LG1	Self weight		-Z		
BG102	Dead load	Permanent	LG1	Standard				
BG111	Live load (water)	Variable	LG2	Static	Standard		Short	None
BG112	Live load (opperating)	Variable	LG2	Static	Standard		Short	None
BG113	Live load (walkways)	Variable	LG3	Static	Standard		Short	None
BG114	Live load traffic	Variable	LG3	Static	Standard		Short	None
BG115	Equipment	Variable	LG3	Static	Standard		Short	None
BG121	Snow	Variable	LG4	Static	Standard		Short	None
BG122	Wind x-axis	Variable	LG5	Static	Standard		Short	None
BG123	Wind y-axis	Variable	LG5	Static	Standard		Short	None

3.2. Load cases

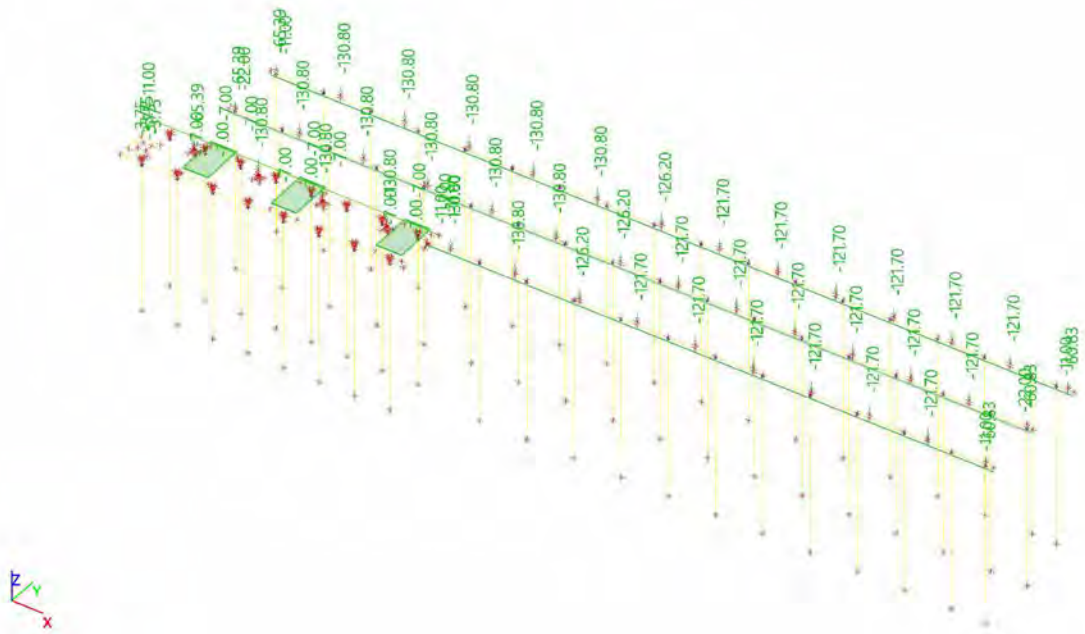
3.2.1. Load cases - BG101

Name	Description	Action type	Load group	Load type	Direction
BG101	Self weight modelled structure	Permanent	LG1	Self weight	-Z



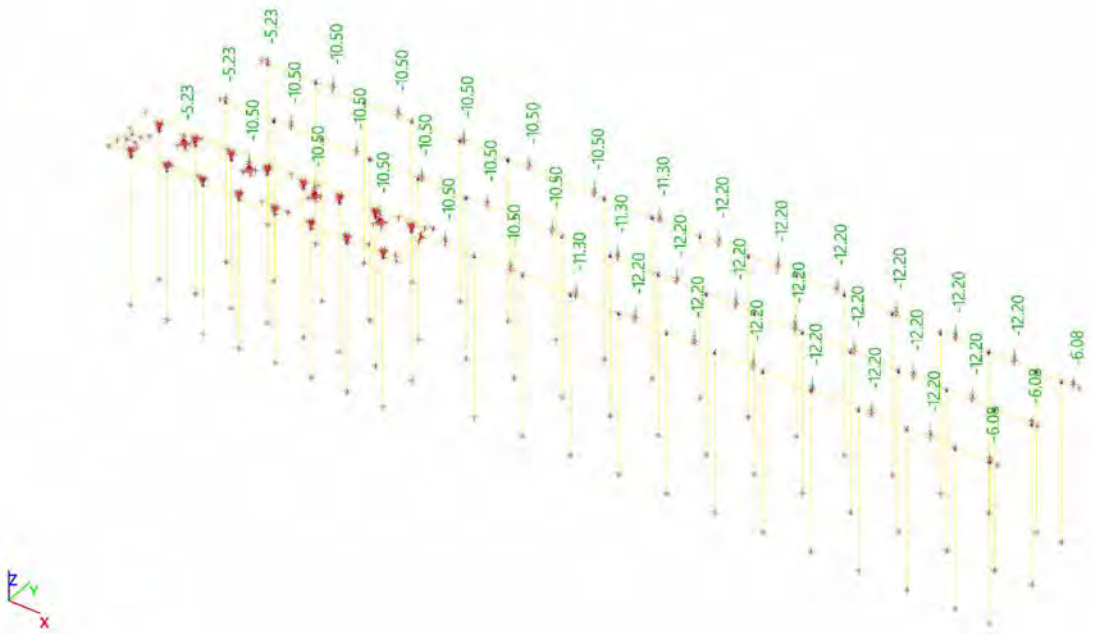
3.2.2. Load cases - BG102

Name	Description	Action type	Load group	Load type
BG102	Dead load	Permanent	LG1	Standard



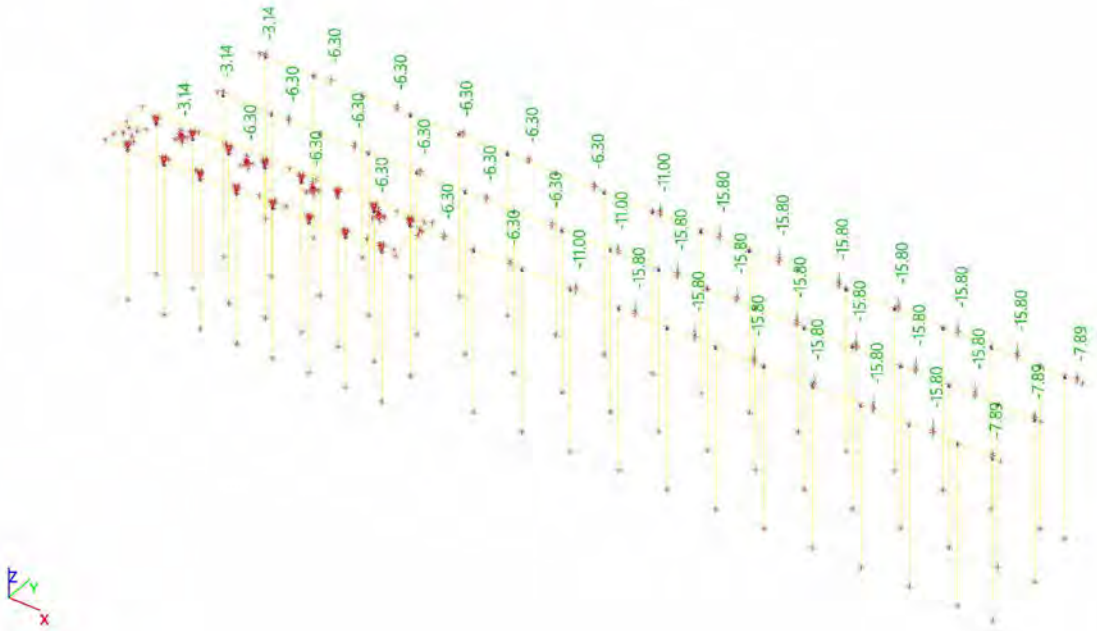
3.2.3. Load cases - BG111

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG111	Live load (water)	Variable	LG2	Static	Standard	Short	None



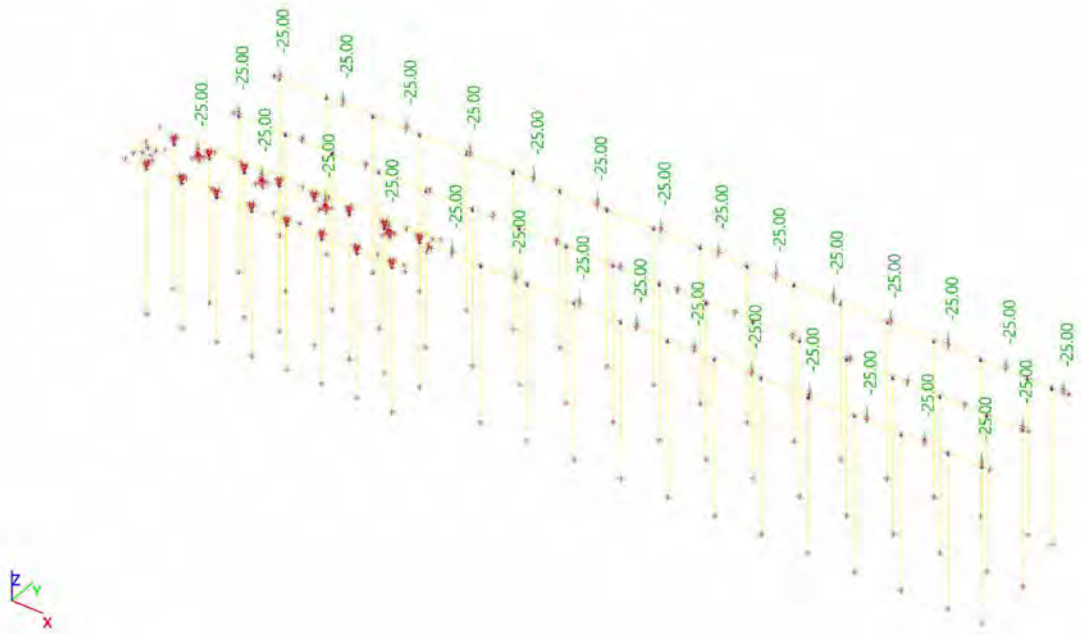
3.2.4. Load cases - BG112

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG112	Live load (opperating)	Variable	LG2	Static	Standard	Short	None



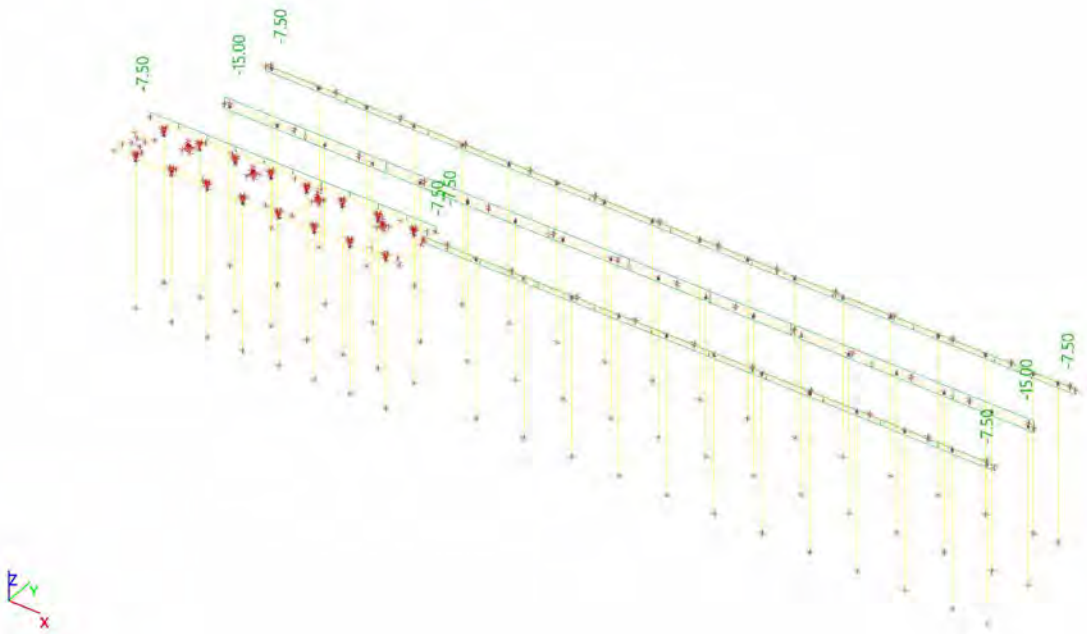
3.2.5. Load cases - BG113

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG113	Live load (walkways)	Variable	LG3	Static	Standard	Short	None



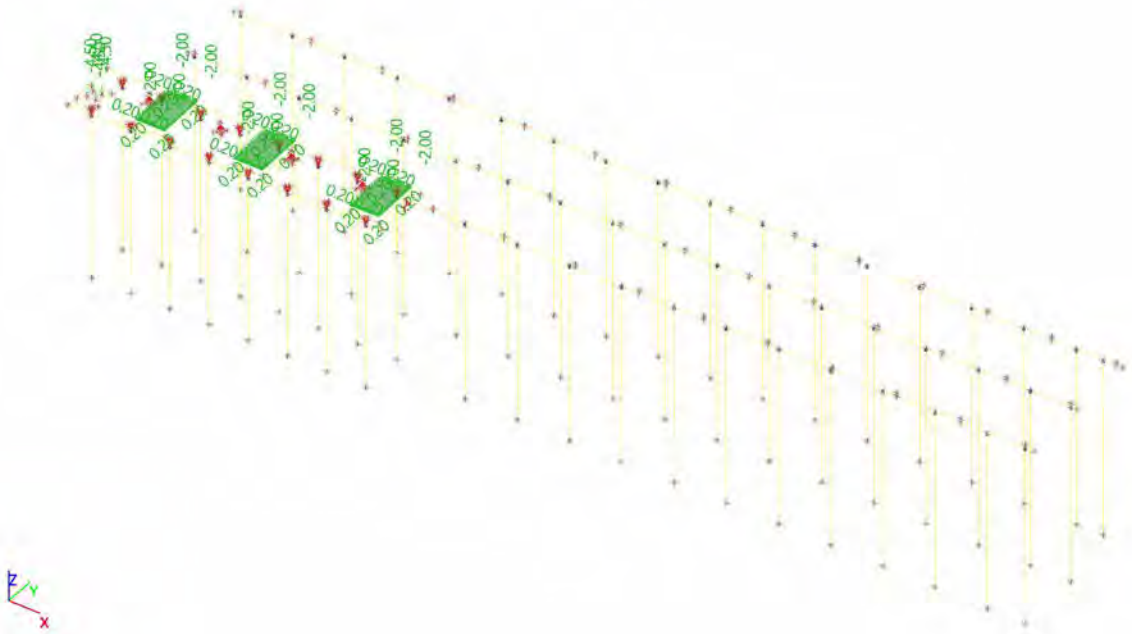
3.2.6. Load cases - BG114

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG114	Live load traffic	Variable	LG3	Static	Standard	Short	None



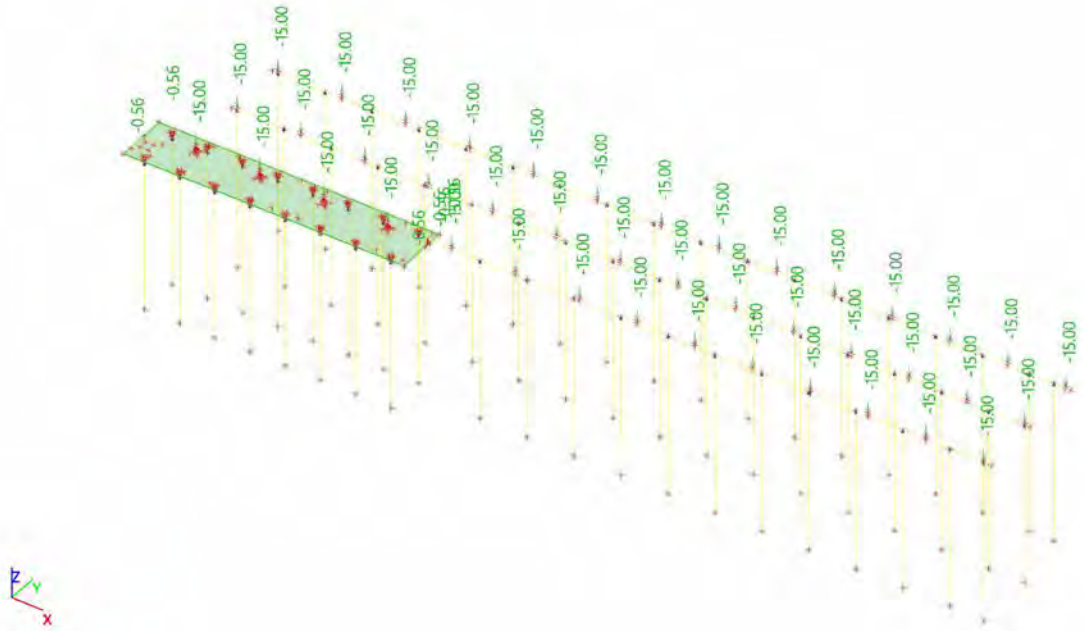
3.2.7. Load cases - BG115

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG115	Equipment	Variable	LG3	Static	Standard	Short	None



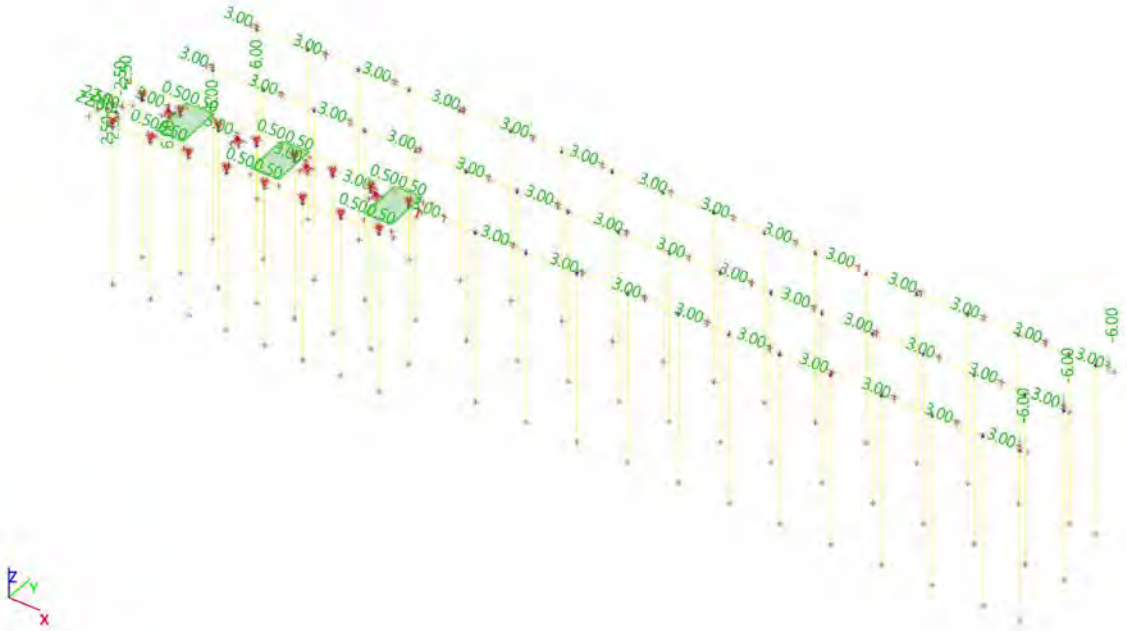
3.2.8. Load cases - BG121

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG121	Snow	Variable	LG4	Static	Standard	Short	None



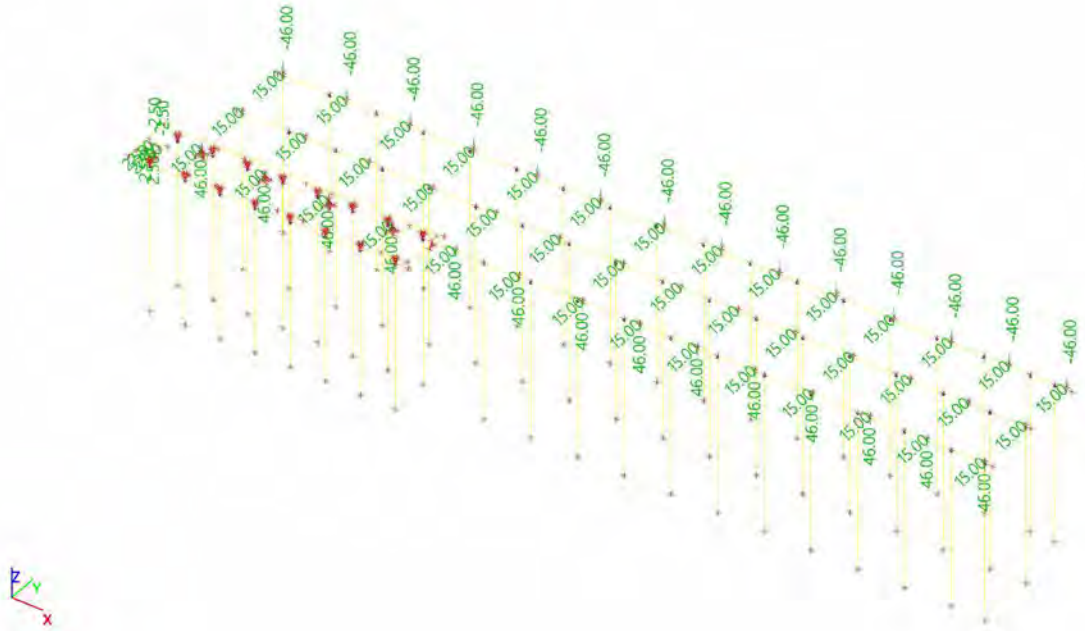
3.2.9. Load cases - BG122

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG122	Wind x-axis	Variable	LG5	Static	Standard	Short	None



3.2.10. Load cases - BG123

Name	Description	Action type	Load group	Load type	Spec	Duration	Master load case
BG123	Wind y-axis	Variable	LG5	Static	Standard	Short	None



3.3. Load groups

Name	Load	Relation	Type
LG1	Permanent		
LG2	Variable	Exclusive	Cat E : Storage
LG3	Variable	Standard	Cat E : Storage
LG4	Variable	Standard	Snow
LG5	Variable	Exclusive	Wind

3.4. Combinations

Name	Type	Load cases	Coeff. [-]
UGT-Set B	EN-ULS (STR/GEO) Set B	BG101 - Self weight modelled structure	1.00
		BG102 - Dead load	1.00
		BG111 - Live load (water)	1.00
		BG113 - Live load (walkways)	1.00
		BG114 - Live load traffic	1.00
		BG115 - Equipment	1.00
		BG121 - Snow	1.00
		BG122 - Wind x-axis	1.00
		BG123 - Wind y-axis	1.00
BGT-kar	EN-SLS Characteristic	BG101 - Self weight modelled structure	1.00
		BG102 - Dead load	1.00
		BG111 - Live load (water)	1.00
		BG113 - Live load (walkways)	1.00
		BG114 - Live load traffic	1.00
		BG115 - Equipment	1.00
		BG121 - Snow	1.00
		BG122 - Wind x-axis	1.00
		BG123 - Wind y-axis	1.00
		BG112 - Live load (opperating)	1.00
BGT-quasi	EN-SLS Quasi-permanent	BG101 - Self weight modelled structure	1.00
		BG102 - Dead load	1.00
		BG111 - Live load (water)	1.00
		BG113 - Live load (walkways)	1.00
		BG114 - Live load traffic	1.00
		BG115 - Equipment	1.00
		BG121 - Snow	1.00
		BG122 - Wind x-axis	1.00
		BG123 - Wind y-axis	1.00
		BG112 - Live load (opperating)	1.00

3.5. Result classes

Name	List
GEO	UGT-Set B - EN-ULS (STR/GEO) Set B
Alle UGT	UGT-Set B - EN-ULS (STR/GEO) Set B
Alle BGT	BGT-kar - EN-SLS Characteristic BGT-quasi - EN-SLS Quasi-permanent
Alle UGT+BGT	UGT-Set B - EN-ULS (STR/GEO) Set B BGT-kar - EN-SLS Characteristic BGT-quasi - EN-SLS Quasi-permanent

4. Calculation protocol

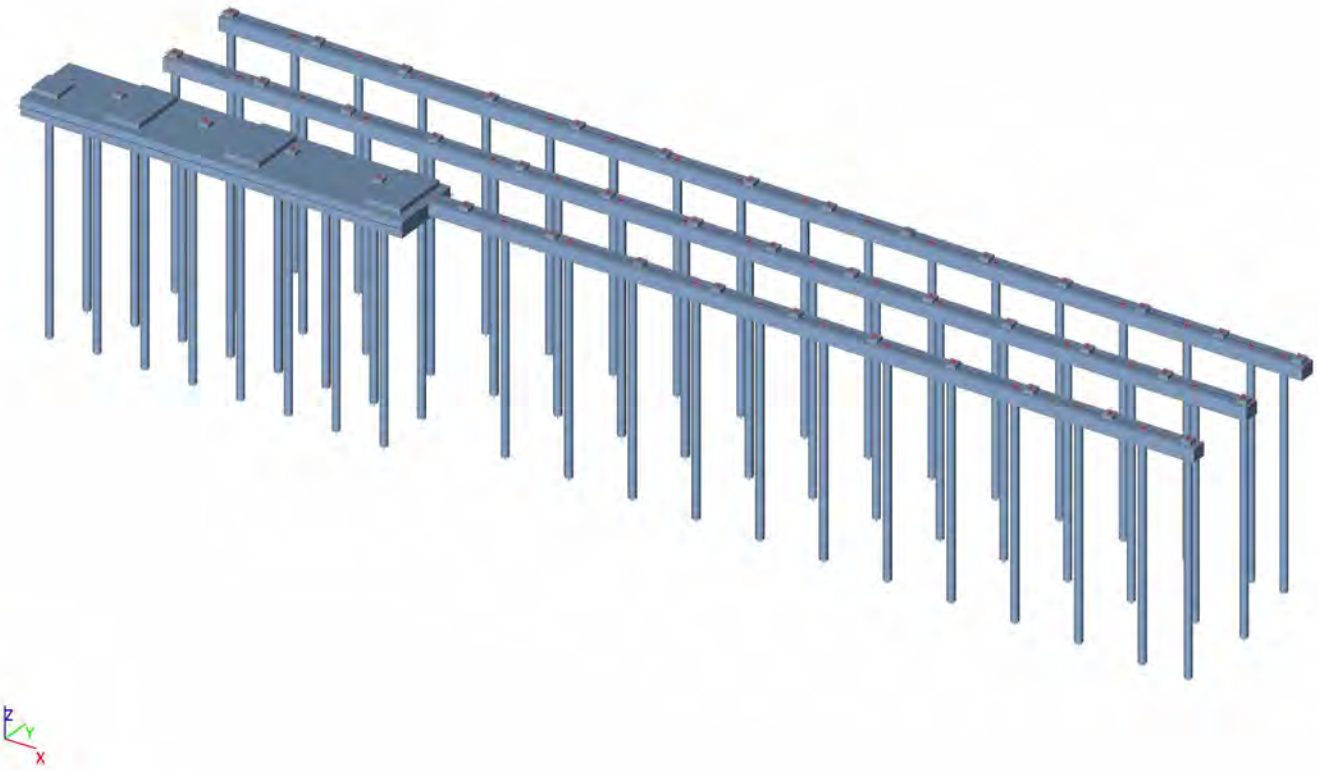
Linear calculation

Number of 2D elements	1152
Number of 1D elements	1919
Number of mesh nodes	2993
Number of equations	17958
Bending theory	Mindlin
Load cases	BG101, BG102, BG111, BG113, BG114, BG115, BG121, BG122, BG123, BG112
Start of calculation	01.11.2022 07:39
End of calculation	01.11.2022 07:39

Sum of loads and reactions

Load case	Value	X [kN]	Y [kN]	Z [kN]
BG101	loads	0.00	0.00	-10387.87
	reaction in nodes	0.00	0.00	10387.87
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG102	loads	0.00	0.00	-7960.31
	reaction in nodes	0.00	0.00	7960.31
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG111	loads	0.00	0.00	-444.93
	reaction in nodes	0.00	0.00	444.93
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG113	loads	0.00	0.00	-750.00
	reaction in nodes	0.00	0.00	750.00
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG114	loads	0.00	0.00	-2069.63
	reaction in nodes	0.00	0.00	2069.63
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG115	loads	0.00	0.00	-18.00
	reaction in nodes	0.00	0.00	18.00
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG121	loads	0.00	0.00	-691.02
	reaction in nodes	0.00	0.00	691.02
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG122	loads	136.00	0.00	0.00
	reaction in nodes	0.00	0.00	0.00
	reaction on lines	-136.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG123	loads	0.00	640.00	0.00
	reaction in nodes	0.00	0.00	0.00
	reaction on lines	0.00	-640.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00
BG112	loads	0.00	0.00	-444.99
	reaction in nodes	0.00	0.00	444.99
	reaction on lines	0.00	0.00	0.00
	contact 1D	0.00	0.00	0.00
	contact 2D	0.00	0.00	0.00

Annex D.2.
Results Scia



1. Table of contents

2. Results

2.1. Deformations

2.1.1. Node displacements

2.1.1.1. Displacement of nodes

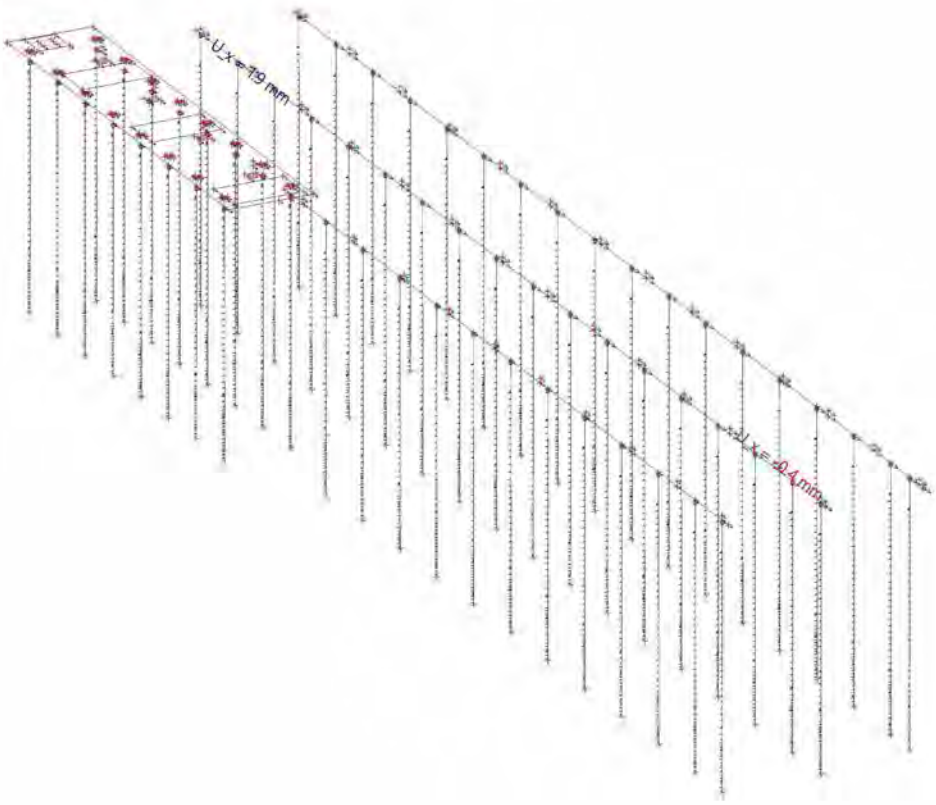
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All

Name	Case	U_x [mm]	U_y [mm]	U_z [mm]	Φ_x [mrad]	Φ_y [mrad]	Φ_z [mrad]	U_{total} [mm]
K94	BGT-kar/1	**-0.4**	0.0	-4.6	0.0	**-0.6**	0.0	4.6
K374	BGT-kar/2	0.8	**-0.2**	-5.7	-0.6	0.2	0.0	5.8
K96	BGT-kar/3	0.0	**8.8**	-4.7	**-1.5**	0.0	0.1	9.9
K23	BGT-kar/4	0.1	0.2	**-8.7**	-0.6	0.2	0.0	8.7
K188	BGT-kar/3	0.0	0.1	**-2.4**	0.1	0.0	0.0	2.4
K450	BGT-kar/5	0.0	0.1	-4.2	**0.1**	0.0	0.0	4.2
K4	BGT-kar/6	**1.9**	0.0	-5.0	0.0	**0.5**	0.0	5.4
K3	BGT-kar/3	0.2	8.1	-4.3	0.0	0.4	**-0.1**	9.2
K43	BGT-kar/5	-0.1	5.2	-5.1	-0.6	-0.2	**0.2**	7.3
K78	BGT-kar/7	0.0	8.5	-7.4	-1.4	0.0	0.0	**11.2**

Name	Combination key
BGT-kar/1	BG101 + BG102 + BG114 + BG112
BGT-kar/2	BG101 + BG102 + BG111 + BG113 + BG114 + BG122
BGT-kar/3	BG101 + BG102 + BG123
BGT-kar/4	BG101 + BG102 + BG111 + BG113 + BG114 + BG121
BGT-kar/5	BG101 + BG102 + BG115 + BG123
BGT-kar/6	BG101 + BG102 + BG111 + BG114 + BG122
BGT-kar/7	BG101 + BG102 + BG113 + BG114 + BG123 + BG112

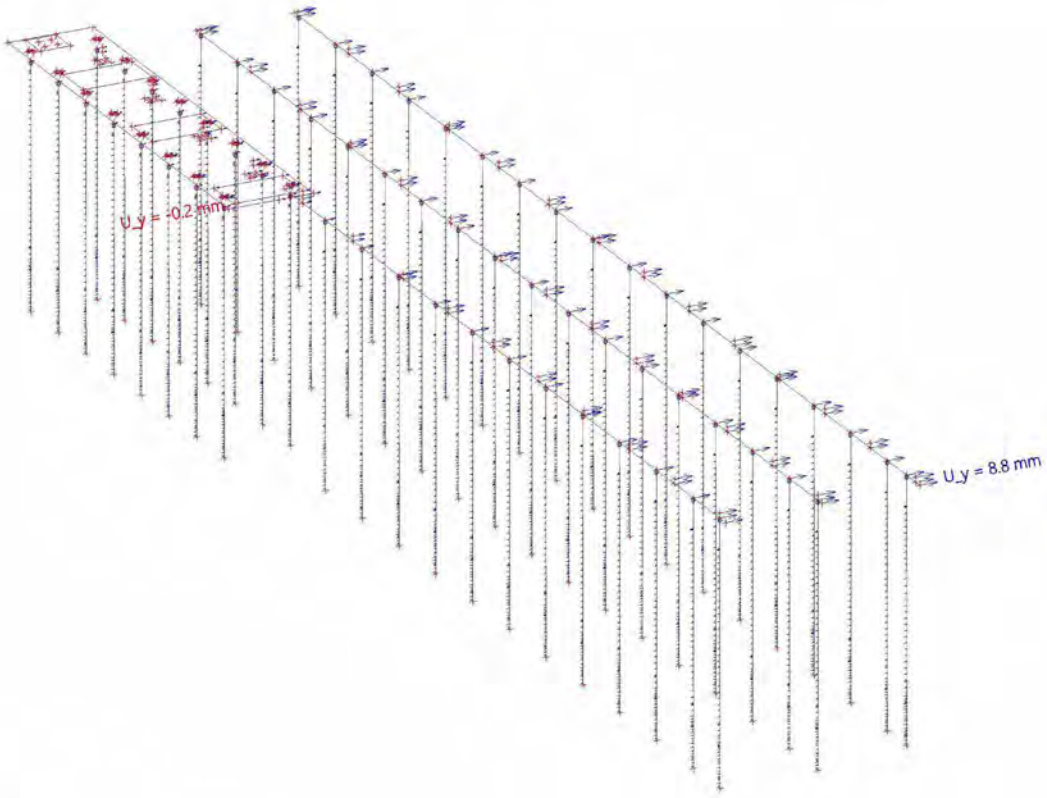
2.1.1.2. Resultaten - U_x

Values: U_x
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



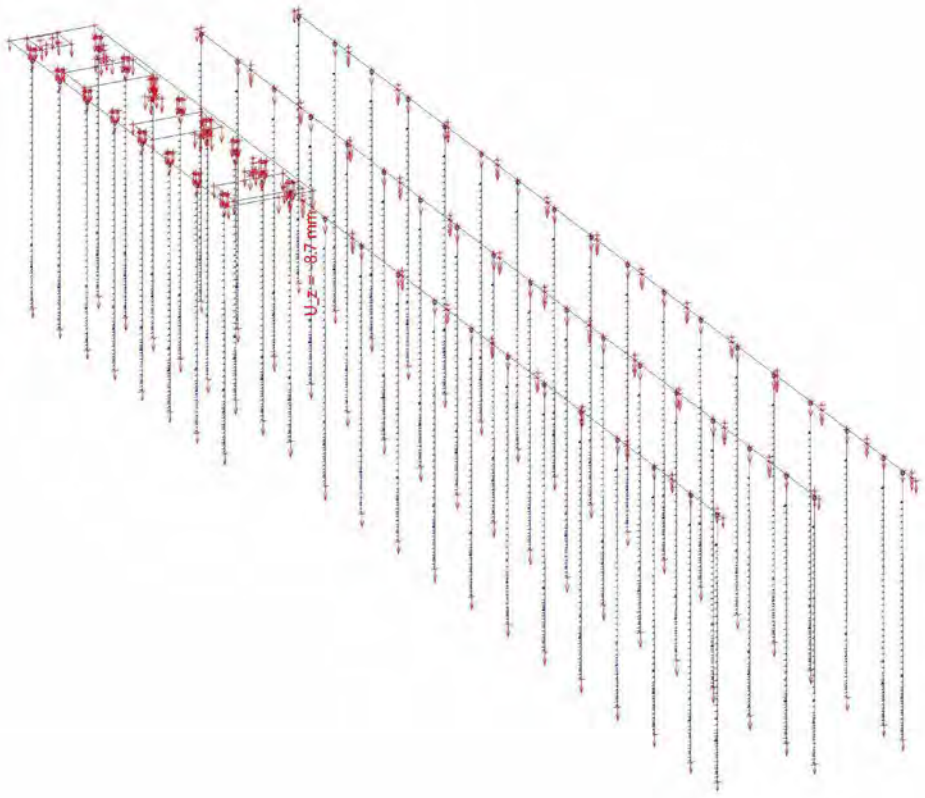
2.1.1.3. Resultaten - U_y

Values: **U_y**
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



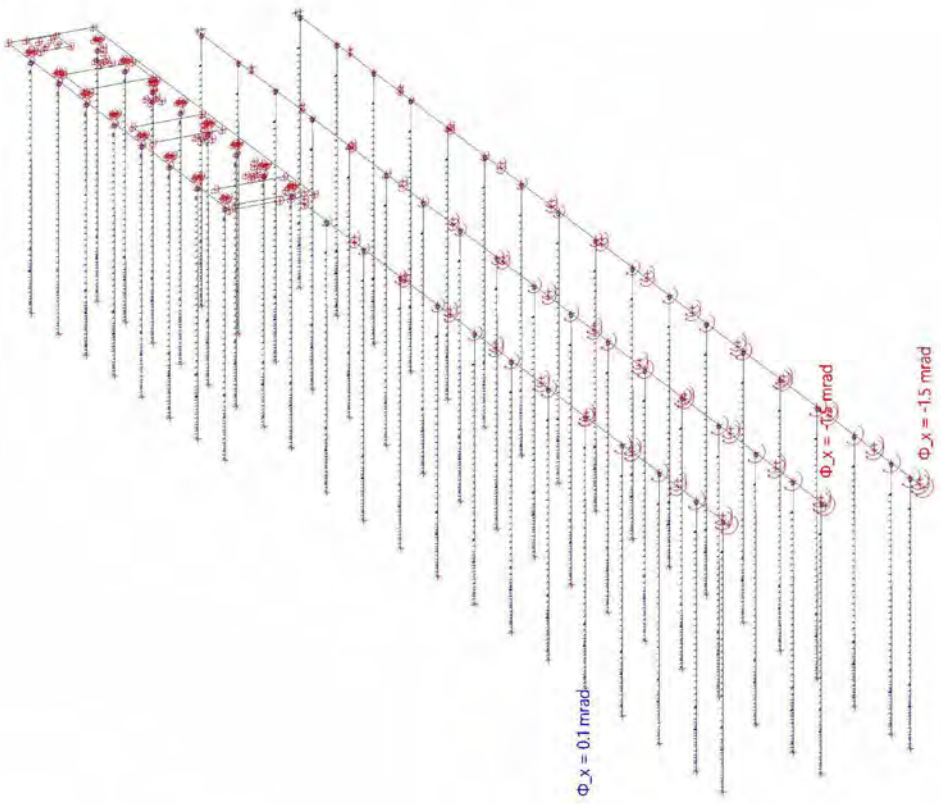
2.1.1.4. Resultaten - U_z

Values: **U_z**
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



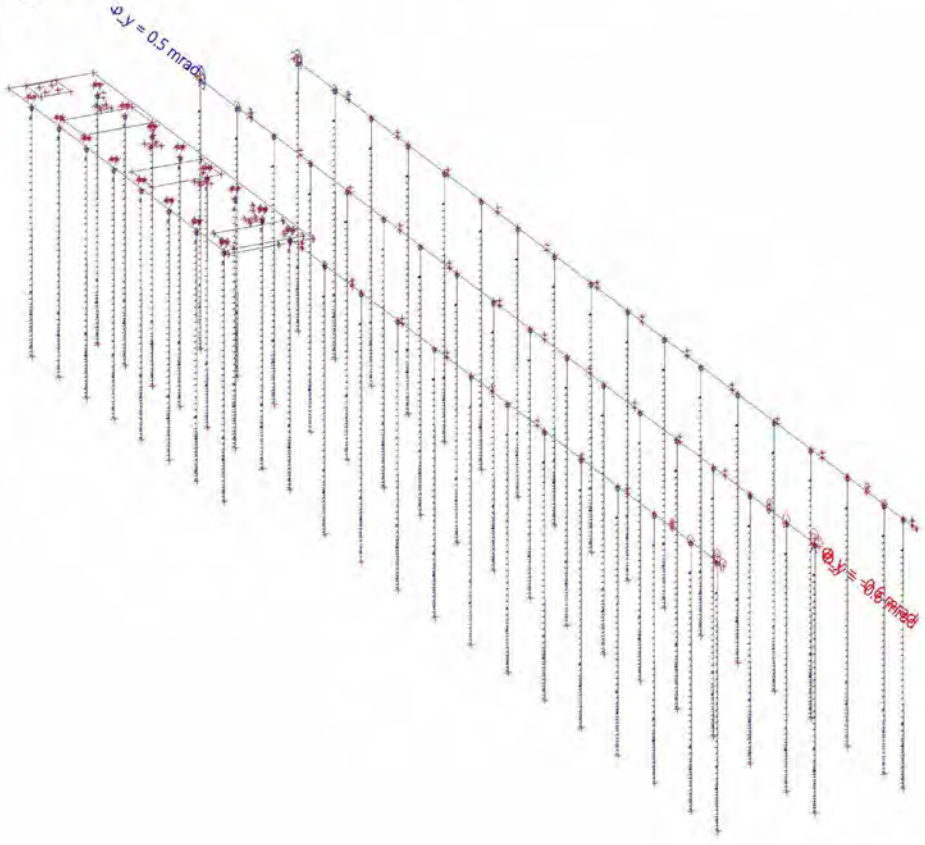
2.1.1.5. Resultaten - Φ_x

Values: Φ_x
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



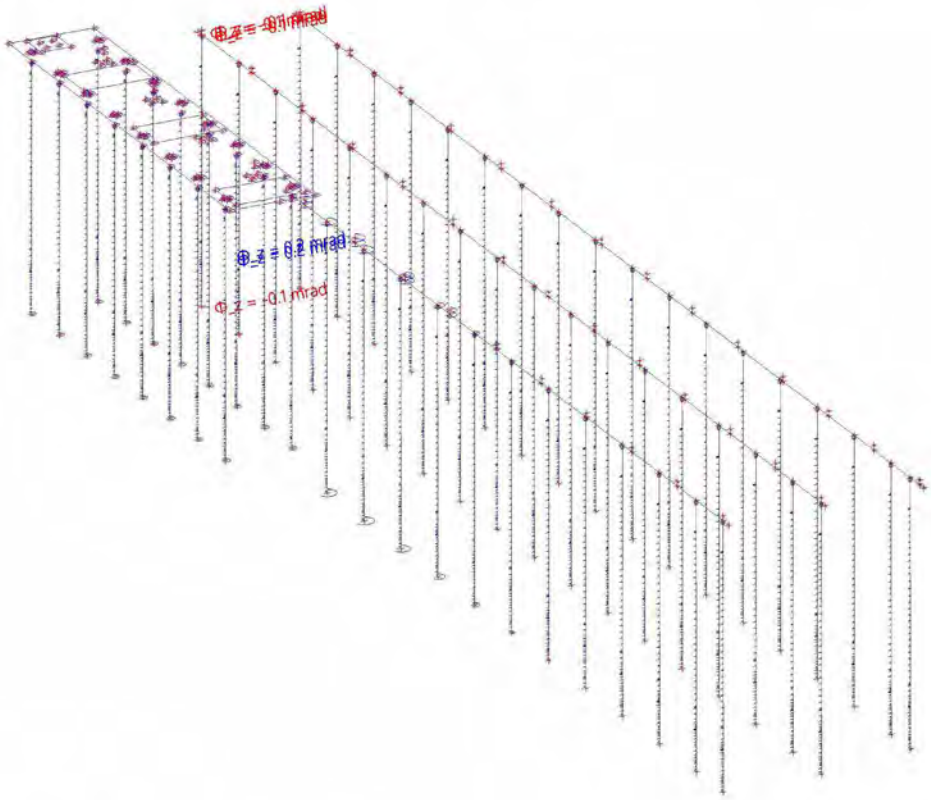
2.1.1.6. Resultaten - Φ_y

Values: Φ_y
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



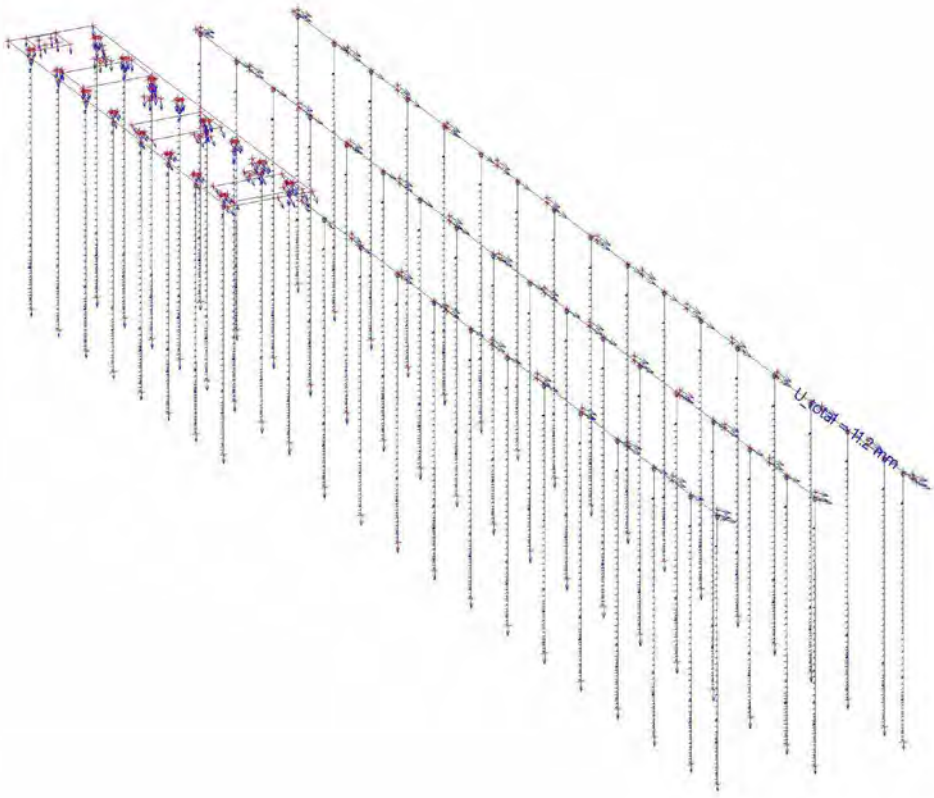
2.1.1.7. Resultaten - Φ_z

Values: Φ_z
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



2.1.1.8. Resultaten - U_total

Values: U_{total}
Linear calculation
Class: Alle BGT
Extreme: Global
Selection: All



2.1.2. 3D Deformation

2.1.2.1. 3D displacement

Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element

Results on 1D member:

Extreme 1D: Global

Name	dx [m]	Fibre	Case	u_x [mm]	u_y [mm]	u_z [mm]	φ_x [mrad]	φ_y [mrad]	φ_z [mrad]	U_{total} [mm]
S82	14.000	6	BGT-kar/1	2.4	0.1	0.0	0.0	0.0	0.1	**2.4**
S39	0.250	3	BGT-kar/2	-8.2	8.5	0.0	0.0	0.0	1.4	**11.8**

Results on 2D member:

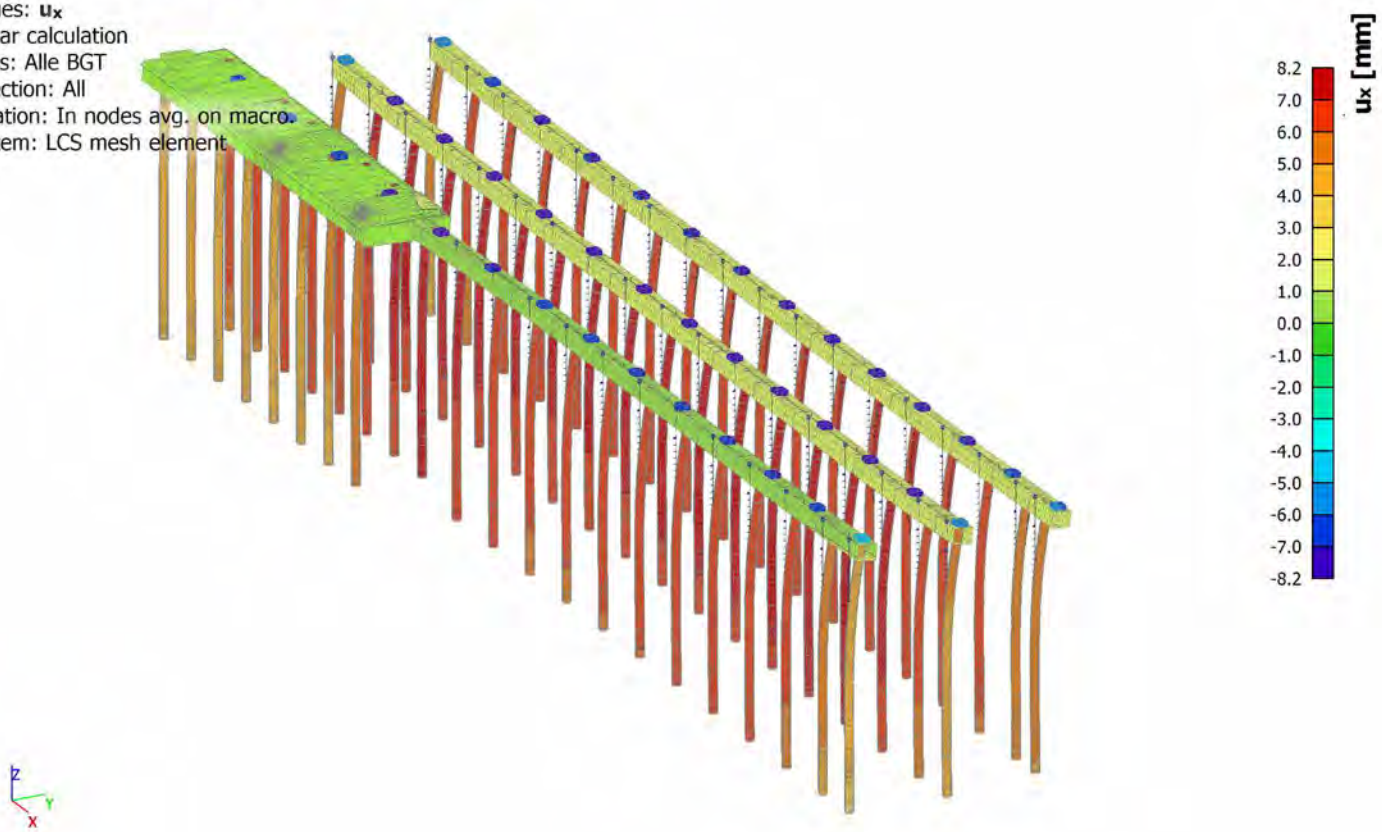
Extreme 2D: Global

Name	Mesh	Position [m]	Case	ux+ [mm] ux- [mm]	uy+ [mm] uy- [mm]	uz+ [mm] uz- [mm]	φ_x [mrad]	φ_y [mrad]	φ_z [mrad]	U total+ [mm] U total- [mm]
E1	Element: 84 Node: 2	8.280 6.300 -0.500	BGT-kar/3	**-0.2** -0.2	1.1 0.8	-5.8 -5.8	**-0.3**	0.0	0.1	5.9 5.9
E1	Element: 766 Node: 10	31.730 6.000 -0.500	BGT-kar/4	**1.0** 0.8	0.5 -0.3	-8.2 -8.2	-0.6	0.2	**0.0**	8.3 8.2
E1	Element: 1 Node: 1	32.230 6.300 -0.500	BGT-kar/5	-0.1 **-0.3**	3.8 3.2	-8.0 -8.0	-0.6	0.2	0.1	8.9 8.6
E1	Element: 84 Node: 2	8.280 6.300 -0.500	BGT-kar/6	0.9 **0.9**	0.7 0.2	-6.7 -6.7	-0.5	0.0	0.0	6.8 6.7
E1	Element: 2 Node: 1707	32.230 5.987 -0.500	BGT-kar/7	0.9 0.8	**0.3** -0.1	-7.1 -7.1	-0.4	0.1	0.0	7.2 7.2
E1	Element: 749 Node: 7	31.730 2.300 -0.500	BGT-kar/8	0.3 0.1	**3.9** 3.0	-5.5 -5.5	-0.6	0.1	0.1	6.7 6.2
E1	Element: 749 Node: 7	31.730 2.300 -0.500	BGT-kar/4	1.0 0.7	0.5 **-0.3**	-5.9 -5.9	-0.6	0.2	0.0	6.0 6.0
E1	Element: 2 Node: 1707	32.230 5.987 -0.500	BGT-kar/3	-0.1 -0.2	3.7 **3.3**	-6.7 -6.7	-0.4	0.1	0.1	7.6 7.4
E1	Element: 1 Node: 1	32.230 6.300 -0.500	BGT-kar/9	0.1 0.0	0.5 -0.2	**-8.7** **-8.7**	-0.6	**0.2**	0.0	8.7 **8.7**
E1	Element: 142 Node: 1674	28.238 1.750 -0.500	BGT-kar/9	0.1 -0.1	0.5 -0.1	-5.1 -5.1	**-0.7**	0.2	0.0	5.1 5.1
E1	Element: 91 Node: 3	8.280 1.750 -0.500	BGT-kar/10	0.3 0.3	1.3 0.8	-4.1 -4.1	-0.5	**0.0**	0.1	4.3 4.2
E1	Element: 176 Node: 5	32.230 4.450 -0.500	BGT-kar/3	0.0 0.0	3.7 3.3	-6.1 -6.1	-0.4	0.1	**0.1**	7.1 6.9
E1	Element: 91 Node: 3	8.280 1.750 -0.500	BGT-kar/4	0.9 0.8	0.7 0.1	-4.1 -4.1	-0.6	0.0	0.0	**4.2** 4.1
E1	Element: 1 Node: 1	32.230 6.300 -0.500	BGT-kar/8	-0.1 -0.3	3.8 3.2	-8.0 -8.0	-0.6	0.2	0.1	**8.9** 8.6
E1	Element: 91 Node: 3	8.280 1.750 -0.500	BGT-kar/11	0.3 0.3	1.4 0.8	**-4.0** **-4.0**	-0.5	0.0	0.1	4.2 **4.1**

Name	Combination key
BGT-kar/1	BG101 + BG102 + BG123
BGT-kar/2	BG101 + BG102 + BG113 + BG114 + BG123 + BG112
BGT-kar/3	BG101 + BG102 + BG115 + BG123
BGT-kar/4	BG101 + BG102 + BG111 + BG113 + BG114 + BG122
BGT-kar/5	BG101 + BG102 + BG111 + BG113 + BG114 + BG115 + BG123
BGT-kar/6	BG101 + BG102 + BG111 + BG113 + BG114 + BG115 + BG122
BGT-kar/7	BG101 + BG102 + BG115 + BG122
BGT-kar/8	BG101 + BG102 + BG111 + BG113 + BG114 + BG123
BGT-kar/9	BG101 + BG102 + BG111 + BG113 + BG114 + BG121
BGT-kar/10	BG101 + BG102 + BG114 + BG115 + BG123
BGT-kar/11	BG101 + BG102 + BG111 + BG114 + BG123

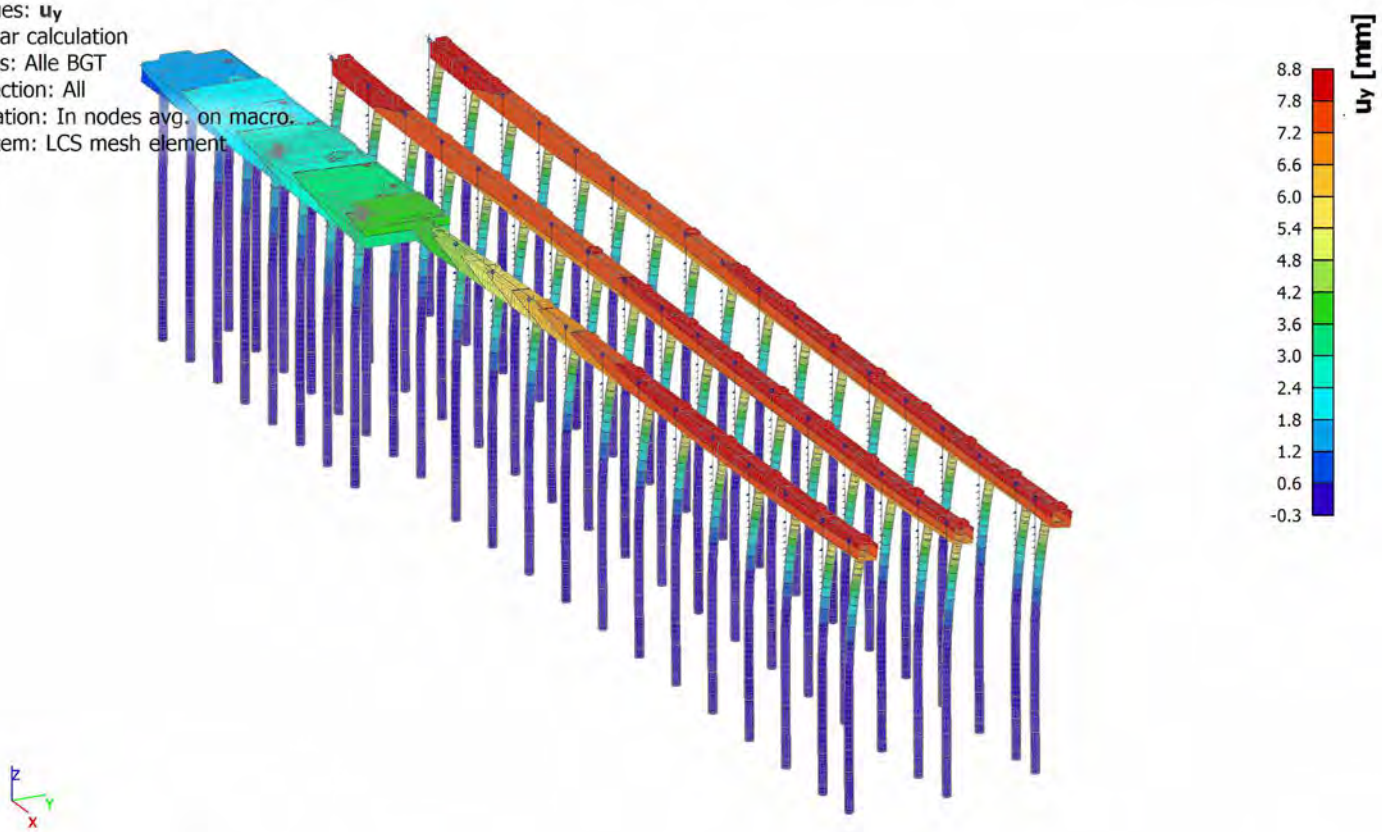
2.1.2.2. Resultaten - u_x

Values: u_x
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro
System: LCS mesh element



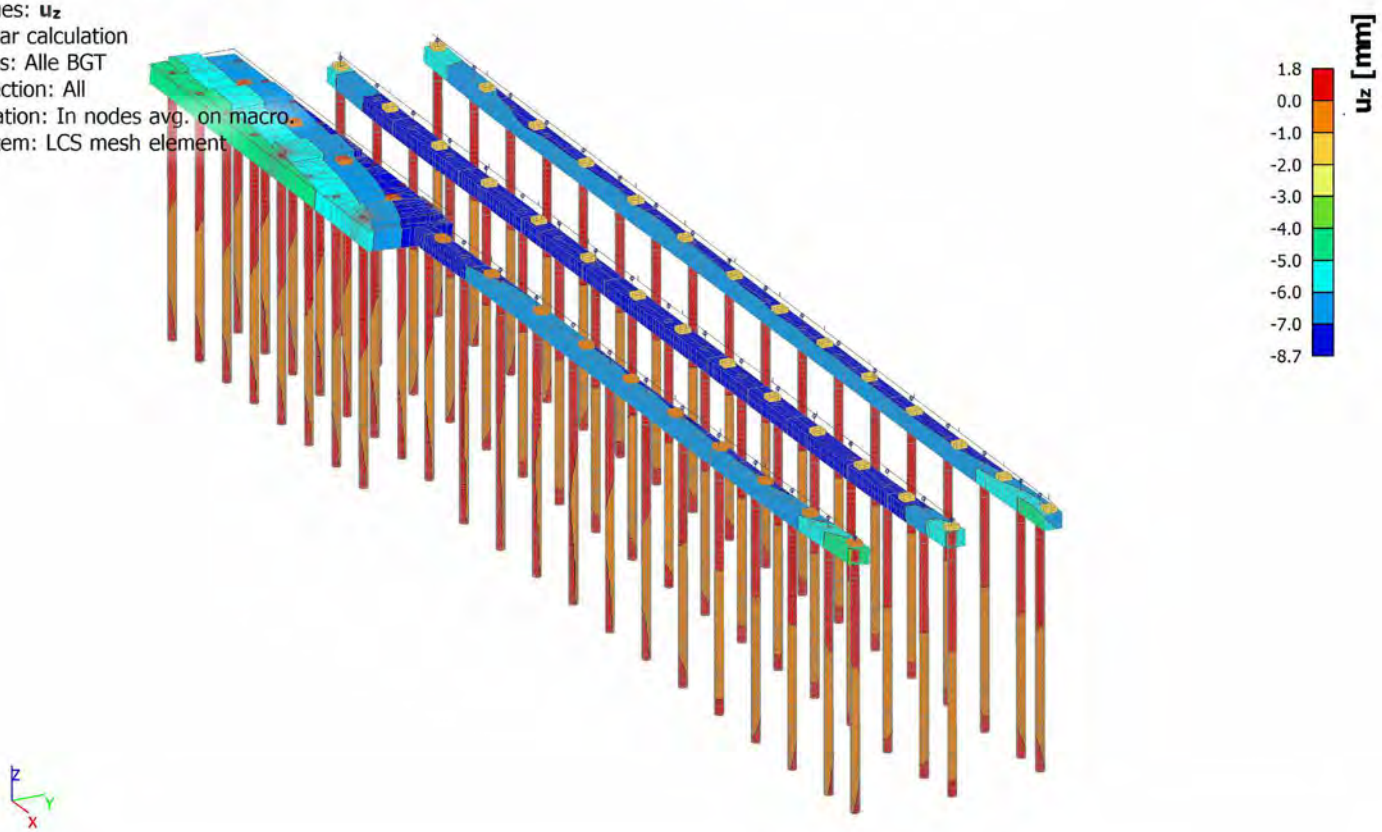
2.1.2.3. Resultaten - u_y

Values: u_y
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



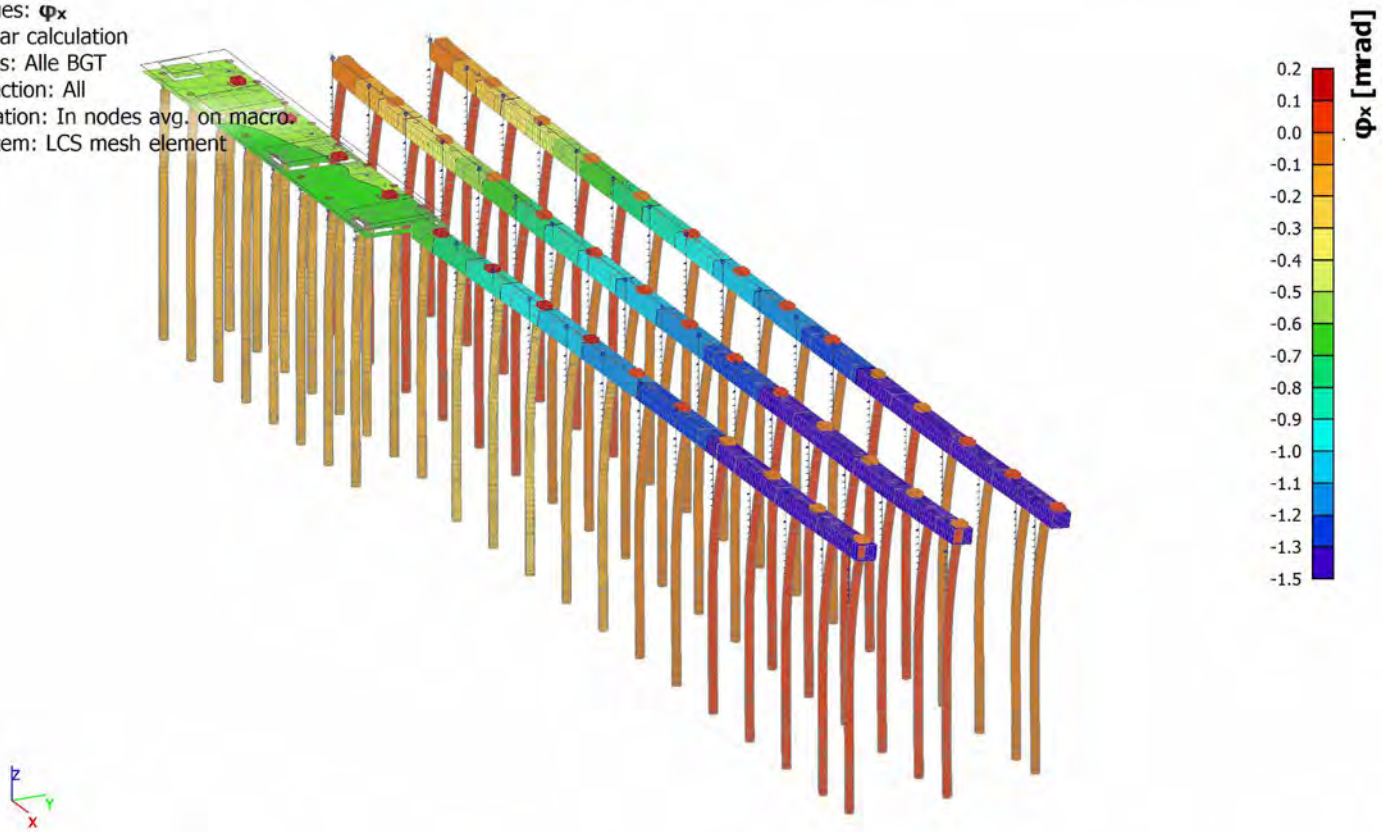
2.1.2.4. Resultaten - u_z

Values: u_z
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



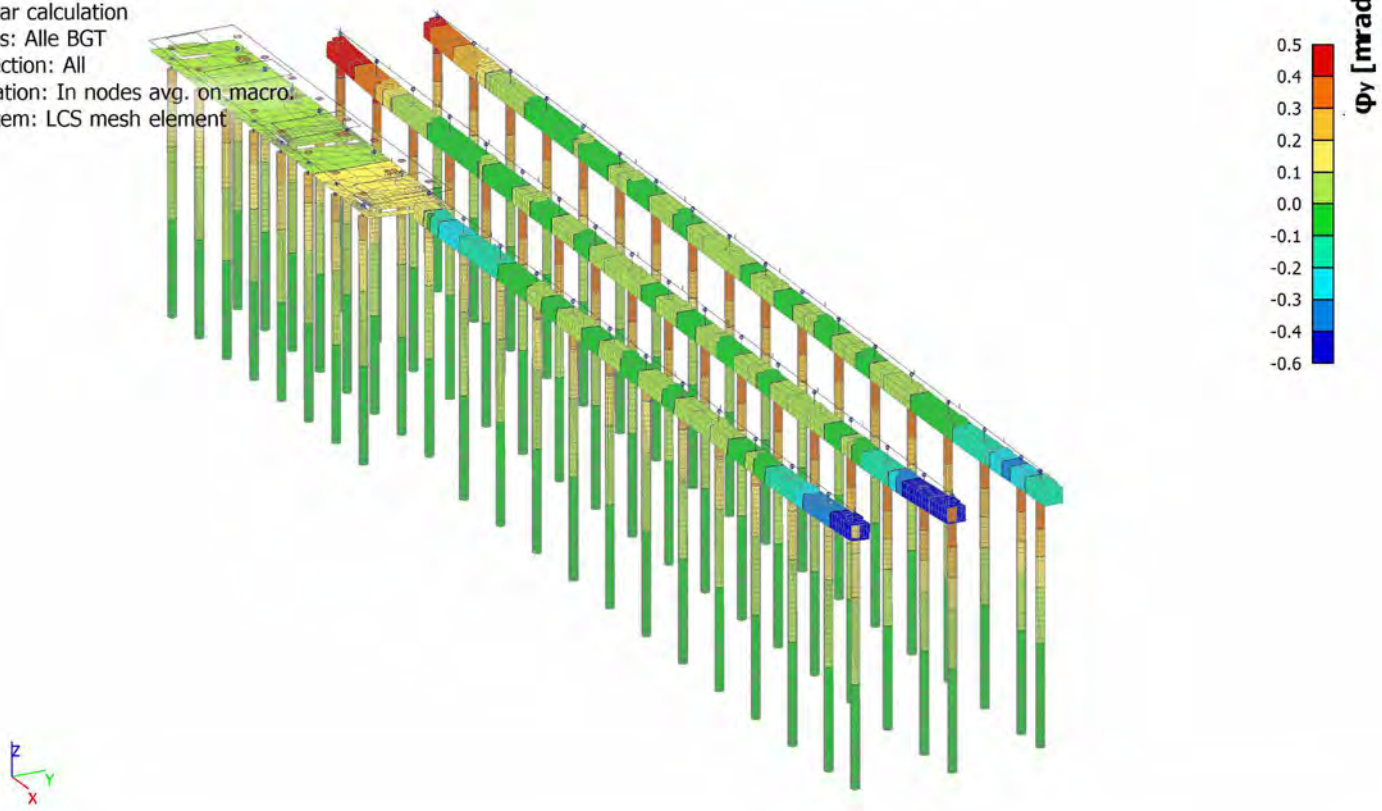
2.1.2.5. Resultaten - φ_x

Values: φ_x
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro
System: LCS mesh element



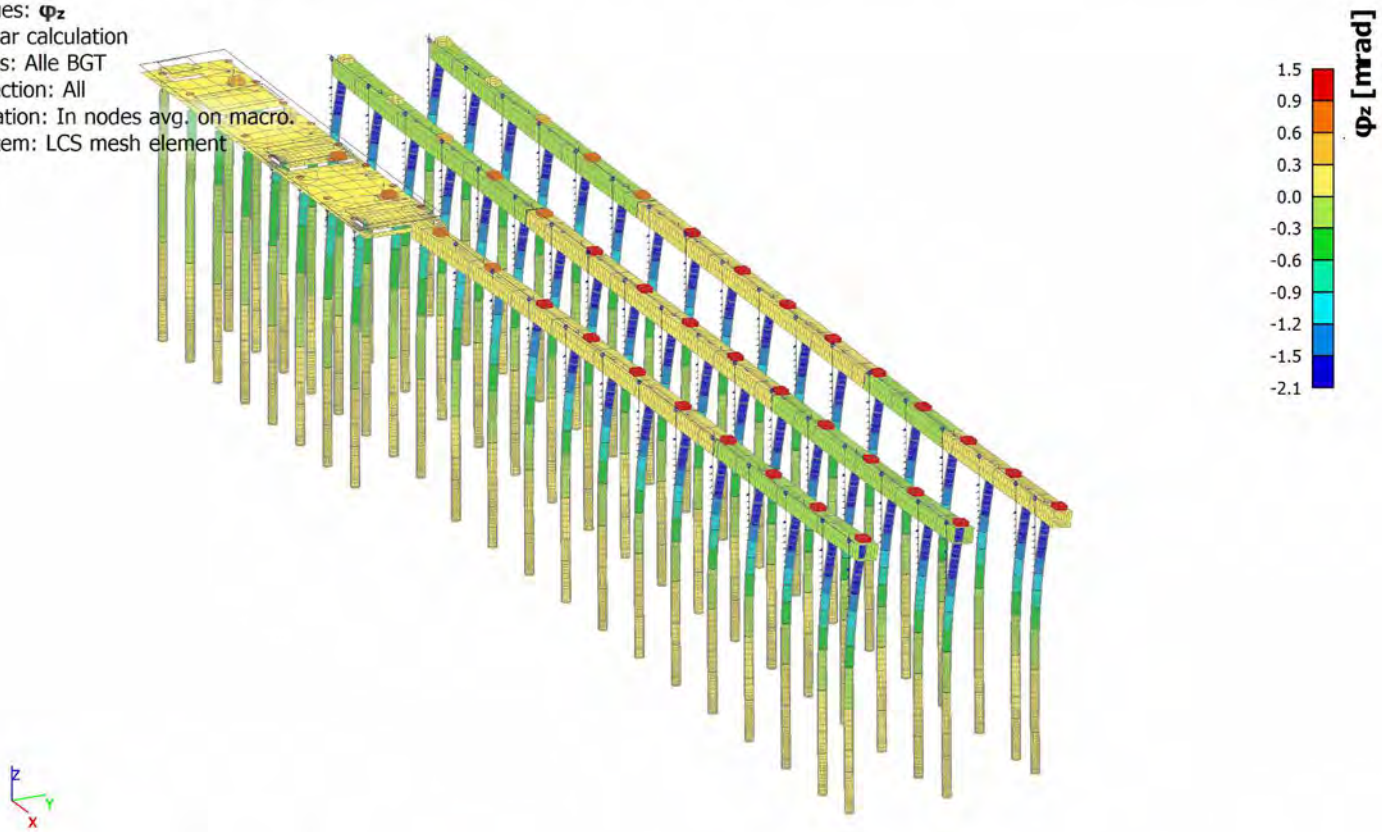
2.1.2.6. Resultaten - φ_y

Values: φ_y
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro
System: LCS mesh element



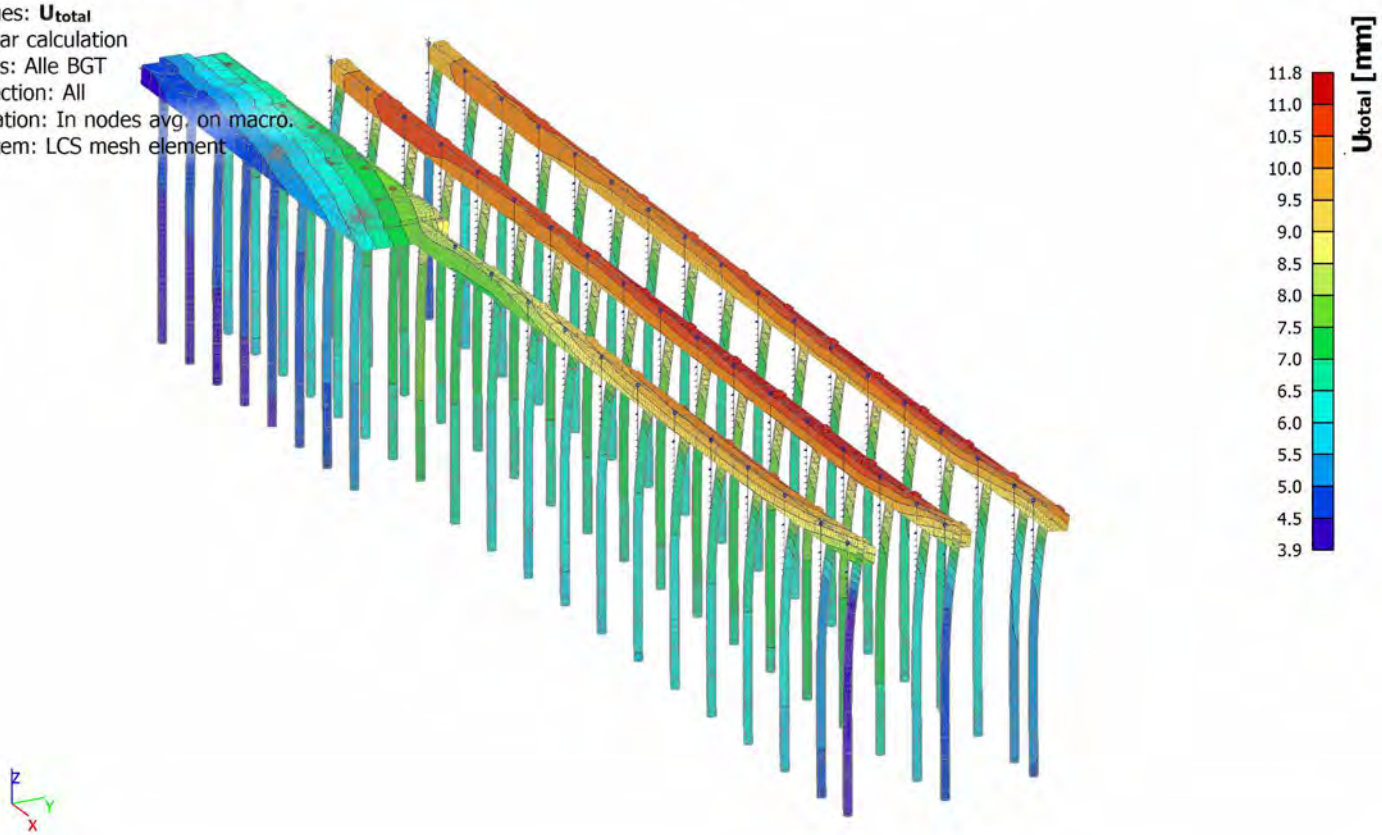
2.1.2.7. Resultaten - φ_z

Values: φ_z
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.1.2.8. Resultaten - U_total

Values: U_{total}
Linear calculation
Class: Alle BGT
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.1.3. 1D-Deformations

2.1.3.1. 1D deformations

Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All

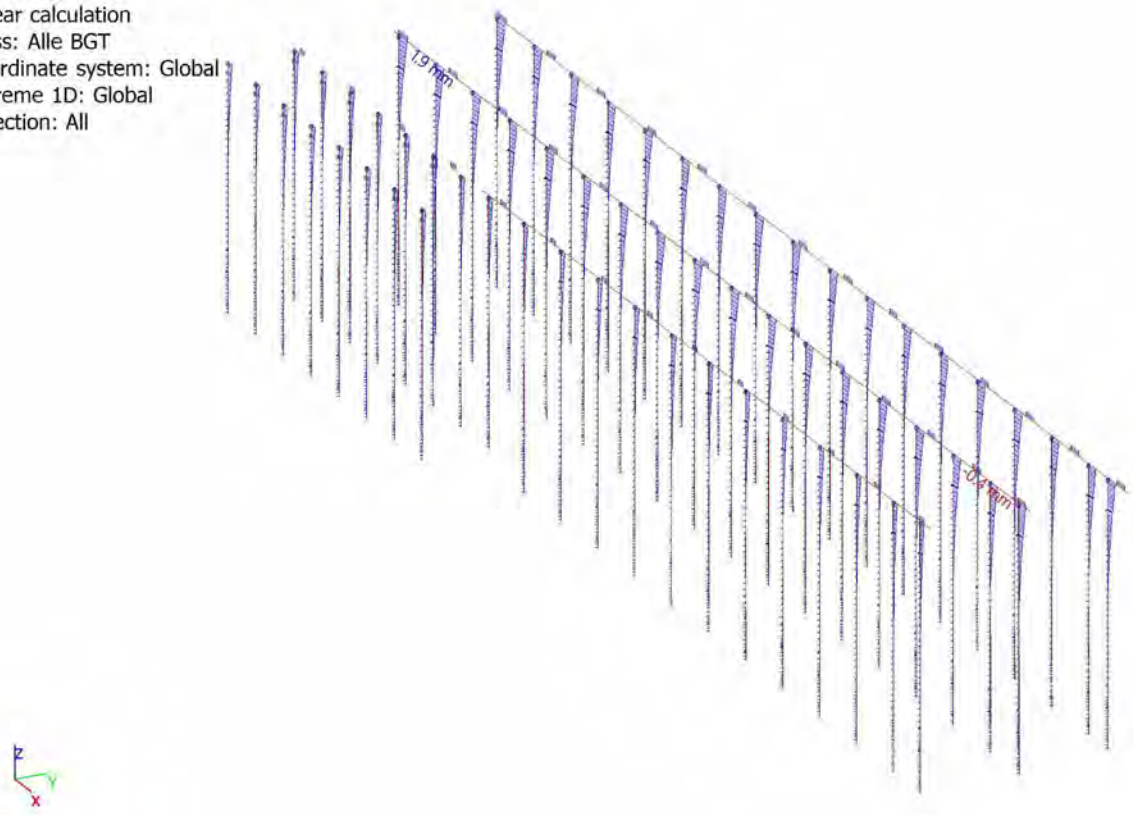
Deformations

Name	dx [m]	Case	u_x [mm]	u_y [mm]	u_z [mm]	φ_x [mrad]	φ_y [mrad]	φ_z [mrad]	U_{total} [mm]
S45	0.250	BGT-kar/1	**-0.4**	0.0	-4.6	0.0	**-0.6**	0.0	4.6
S141	8.520	BGT-kar/2	0.0	**-0.3**	-4.4	0.0	0.0	0.0	4.4
S46	0.250	BGT-kar/3	0.0	**8.8**	-4.7	-1.5	0.0	0.1	9.9
S107	0.000	BGT-kar/4	0.0	-0.1	**-8.1**	0.0	0.0	0.0	8.1
S82	14.000	BGT-kar/3	0.0	0.1	**-2.4**	0.1	0.0	0.0	2.4
S141	0.000	BGT-kar/2	0.0	8.4	-4.7	**-2.1**	0.0	0.0	9.6
S141	11.000-	BGT-kar/2	0.0	-0.1	-4.3	**0.1**	0.0	0.0	4.3
S2	0.250	BGT-kar/5	**1.9**	0.0	-5.0	0.0	**0.5**	0.0	5.4
S2	0.000	BGT-kar/3	0.2	8.1	-4.3	0.0	0.4	**-0.1**	9.2
S8	6.775	BGT-kar/2	0.0	4.8	-5.2	-0.6	-0.2	**0.2**	7.1
S39	0.250	BGT-kar/6	0.0	8.5	-7.8	-1.4	0.0	0.0	**11.5**

Name	Combination key
BGT-kar/1	BG101 + BG102 + BG114 + BG112
BGT-kar/2	BG101 + BG102 + BG115 + BG123
BGT-kar/3	BG101 + BG102 + BG123
BGT-kar/4	BG101 + BG102 + BG111 + BG113 + BG114 + BG121
BGT-kar/5	BG101 + BG102 + BG111 + BG114 + BG122
BGT-kar/6	BG101 + BG102 + BG113 + BG114 + BG123 + BG112

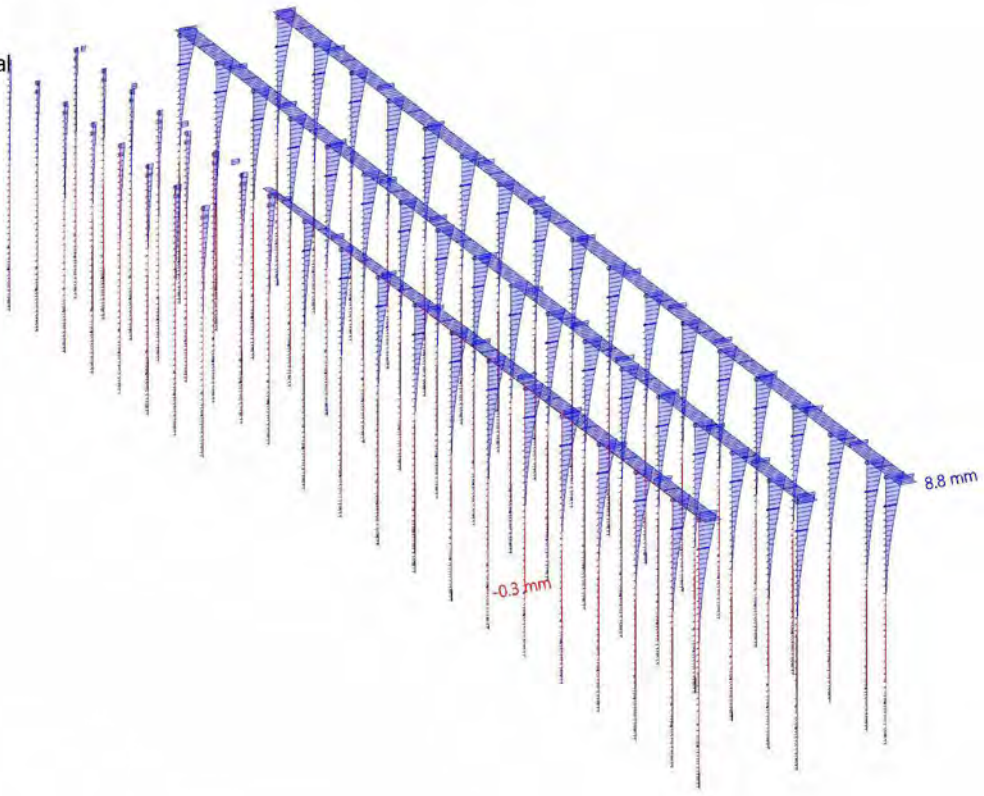
2.1.3.2. Resultaten - u_x

Values: u_x
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



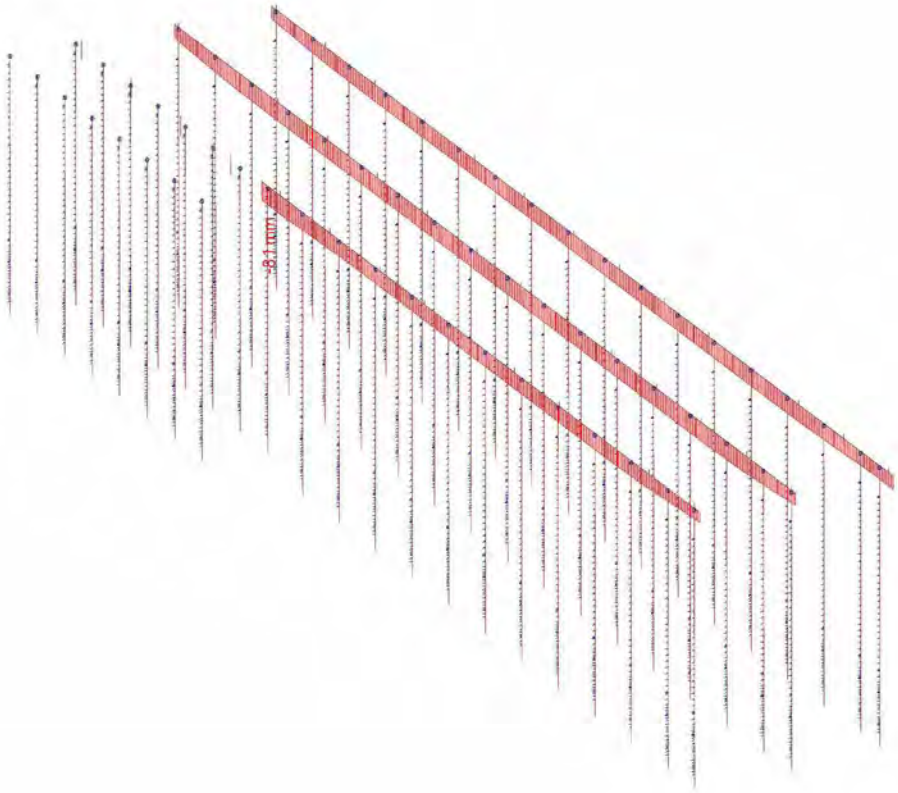
2.1.3.3. Resultaten - u_y

Values: u_y
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



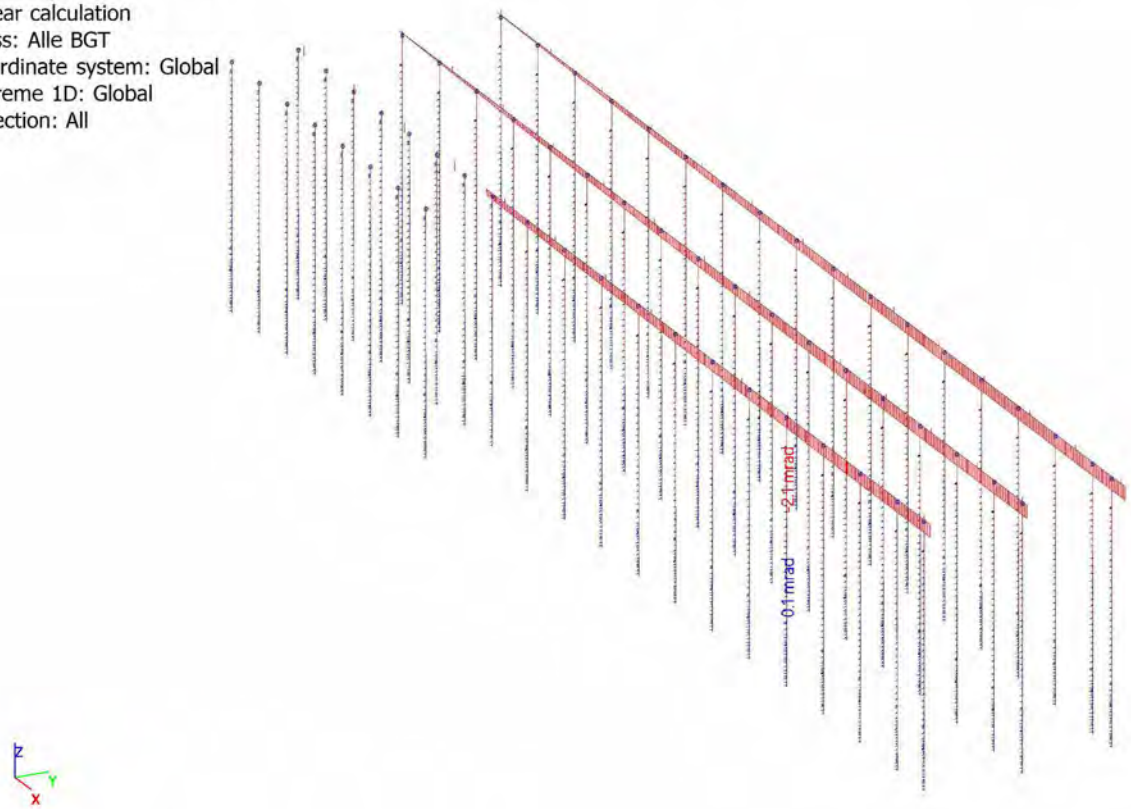
2.1.3.4. Resultaten - u_z

Values: u_z
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



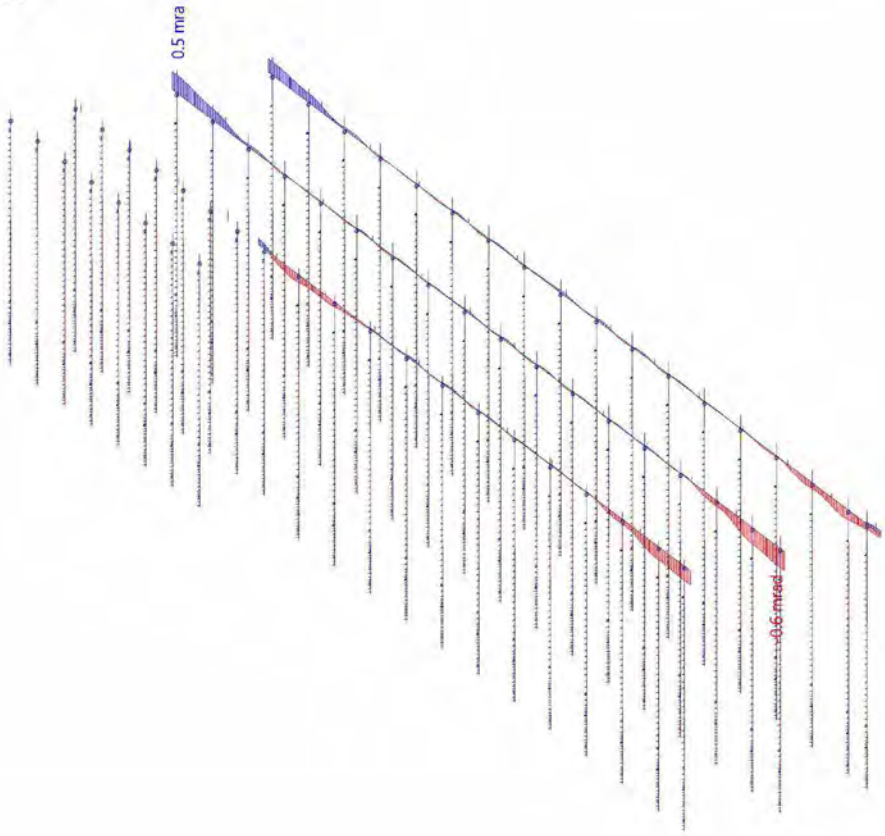
2.1.3.5. Resultaten - φ_x

Values: φ_x
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



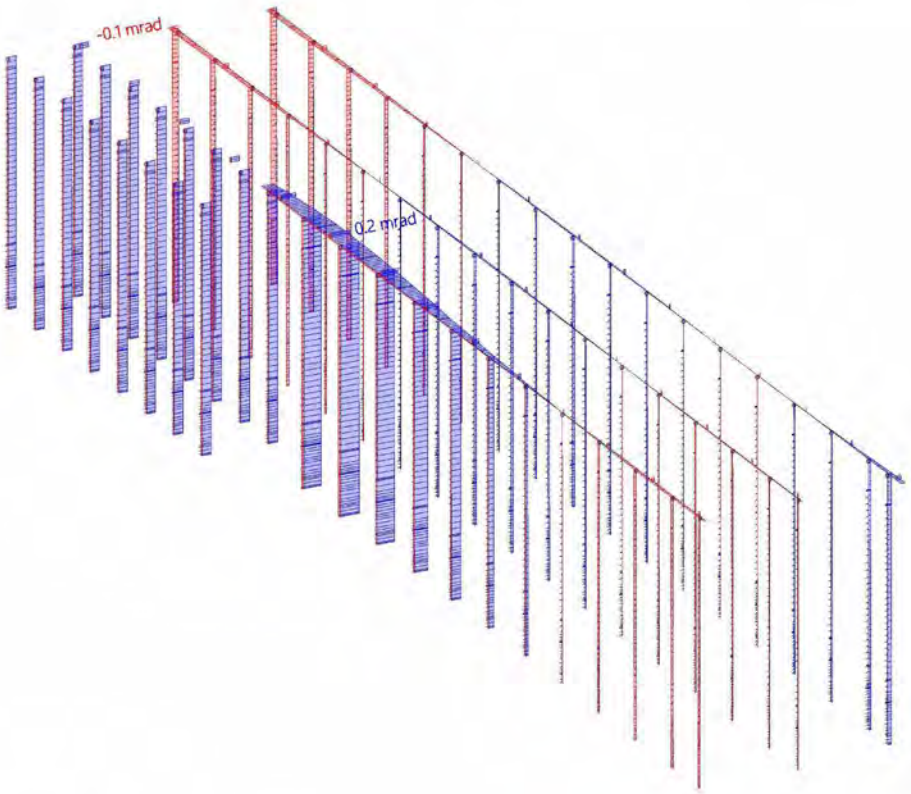
2.1.3.6. Resultaten - φ_y

Values: φ_y
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



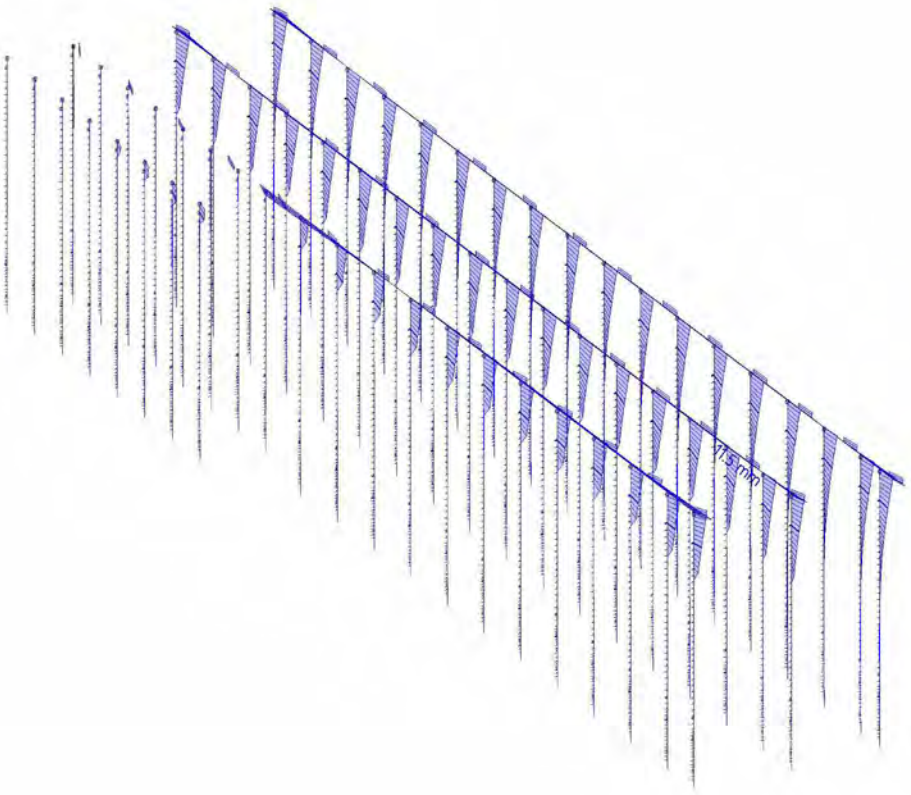
2.1.3.7. Resultaten - φ_z

Values: φ_z
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



2.1.3.8. Resultaten - U_total

Values: U_{total}
Linear calculation
Class: Alle BGT
Coordinate system: Global
Extreme 1D: Global
Selection: All



2.1.4. 2D-Deformations

2.1.4.1. 2D displacement

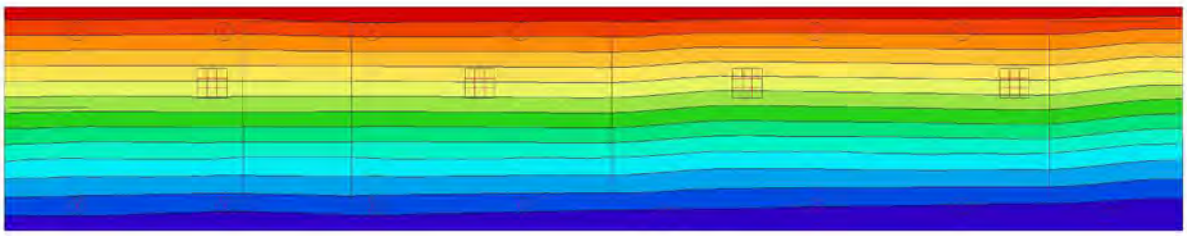
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element

Name	Mesh	Position [m]	Case	u_x [mm]	u_Y [mm]	u_z [mm]	φ_x [mrad]	φ_Y [mrad]	φ_z [mrad]	u_{total} [mm]
E1	Element: 1 Node: 1	32.230 6.300 -0.500	BGT-kar/1	**-0.2**	3.5	-6.8	-0.4	0.1	0.1	7.6
E1	Element: 70 Node: 1608	15.265 6.300 -0.500	BGT-kar/2	**0.9**	0.3	-6.8	-0.6	0.0	0.0	6.9
E1	Element: 169 Node: 1701	32.230 2.650 -0.500	BGT-kar/3	0.8	**0.1**	-5.8	-0.4	0.1	0.0	5.9
E1	Element: 176 Node: 5	32.230 4.450 -0.500	BGT-kar/4	0.0	**3.5**	-6.9	-0.6	0.1	0.1	7.7
E1	Element: 1 Node: 1	32.230 6.300 -0.500	BGT-kar/5	0.1	0.2	**-8.7**	-0.6	**0.2**	0.0	8.7
E1	Element: 142 Node: 1674	28.238 1.750 -0.500	BGT-kar/5	0.0	0.2	-5.1	**-0.7**	0.2	0.0	5.1
E1	Element: 84 Node: 2	8.280 6.300 -0.500	BGT-kar/1	-0.2	1.0	-5.8	**-0.3**	0.0	0.1	5.9
E1	Element: 91 Node: 3	8.280 1.750 -0.500	BGT-kar/6	0.3	1.1	-4.1	-0.5	**0.0**	0.1	4.3
E1	Element: 261 Node: 10	31.730 6.000 -0.500	BGT-kar/2	0.9	0.1	-8.2	-0.6	0.2	**0.0**	8.2
E1	Element: 176 Node: 5	32.230 4.450 -0.500	BGT-kar/1	0.0	3.5	-6.1	-0.4	0.1	**0.1**	7.0
E1	Element: 91 Node: 3	8.280 1.750 -0.500	BGT-kar/7	0.3	1.1	**-4.0**	-0.5	0.0	0.1	**4.1**
E1	Element: 1 Node: 1	32.230 6.300 -0.500	BGT-kar/4	-0.2	3.5	-8.0	-0.6	0.2	0.1	**8.7**

Name	Combination key
BGT-kar/1	BG101 + BG102 + BG115 + BG123
BGT-kar/2	BG101 + BG102 + BG111 + BG113 + BG114 + BG122
BGT-kar/3	BG101 + BG102 + BG115 + BG122
BGT-kar/4	BG101 + BG102 + BG111 + BG113 + BG114 + BG123
BGT-kar/5	BG101 + BG102 + BG111 + BG113 + BG114 + BG121
BGT-kar/6	BG101 + BG102 + BG114 + BG115 + BG123
BGT-kar/7	BG101 + BG102 + BG111 + BG114 + BG123

2.1.4.2. Resultaten - u_x

Values: u_x
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

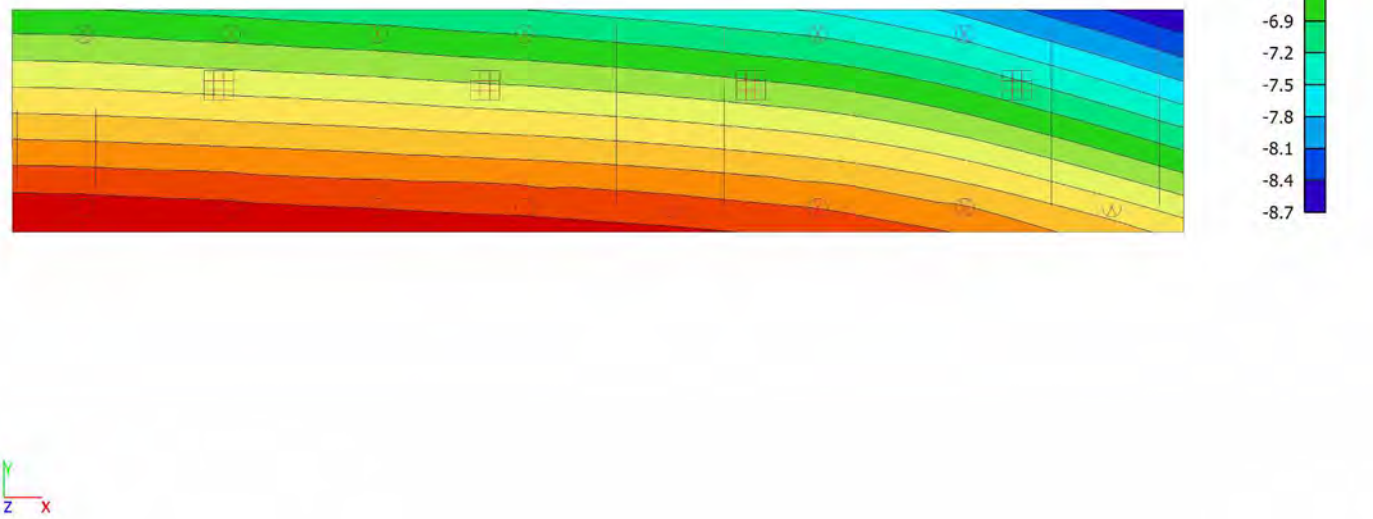


2.1.4.3. Resultaten - u_y

Values: u_y
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

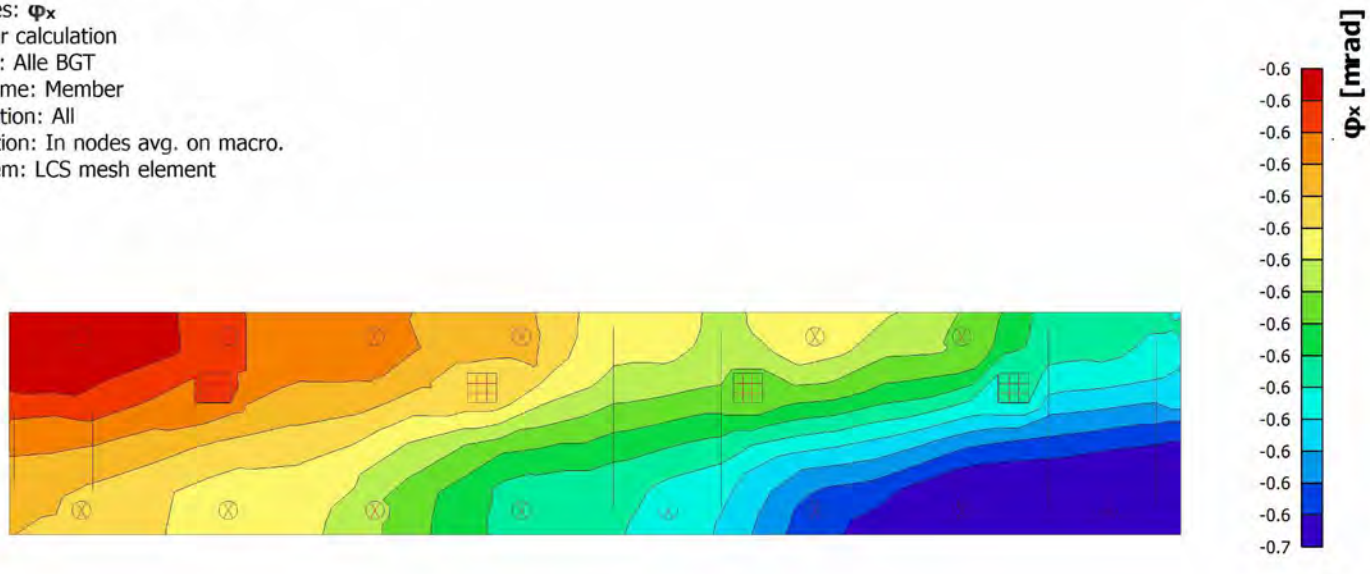
2.1.4.4. Resultaten - u_z

Values: u_z
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.1.4.5. Resultaten - φ_x

Values: φ_x
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

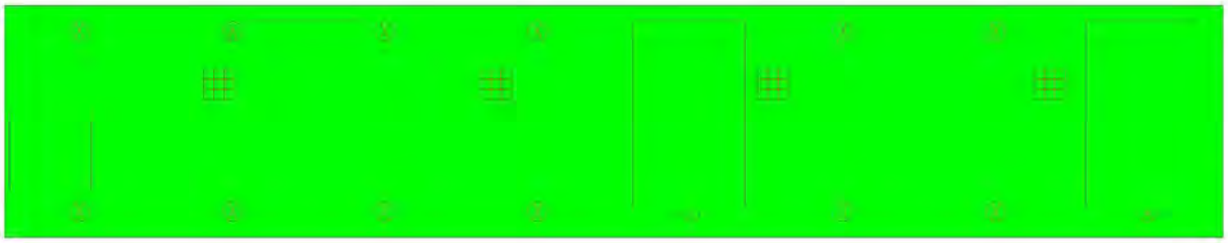


2.1.4.6. Resultaten - φ_y

Values: φ_y
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

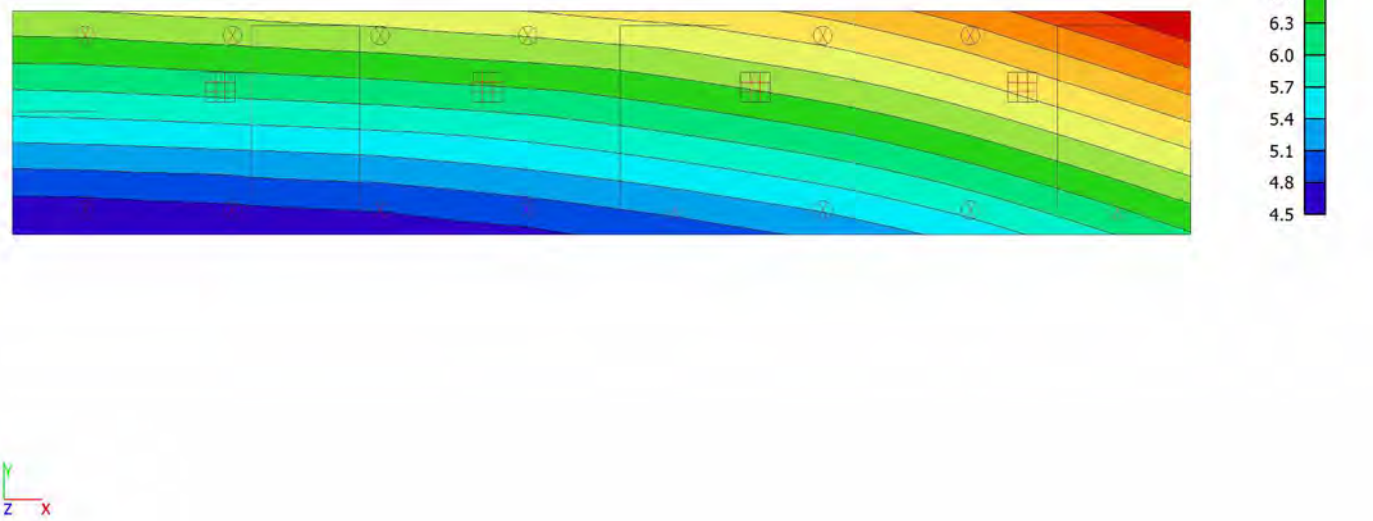
2.1.4.7. Resultaten - φ_z

Values: φ_z
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.1.4.8. Resultaten - U_total

Values: U_{total}
Linear calculation
Class: Alle BGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2. Forces

2.2.1. Reaction forces

2.2.1.1. Reactions

Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All

Nodal reactions

Name	Case	R_x [kN]	R_y [kN]	R_z [kN]	M_x [kNm]	M_y [kNm]	M_z [kNm]	e_x [mm]	e_r [mm]
Sn61/K366	UGT-Set B/1	**0.00**	**0.00**	**573.73**	**0.00**	**0.00**	**0.00**	0.0	0.0
Sn47/K16	UGT-Set B/2	0.00	0.00	**0.00**	**78.75**	0.00	0.00	-	-

Linear Intensity

Name	dx [m]	Case	R_x [kN/m]	R_y [kN/m]	R_z [kN/m]	M_x [kNm/m]	M_y [kNm/m]	M_z [kNm/m]
Slb35/S49	1.600	UGT-Set B/3	**-6.35**	0.00	0.00	0.00	0.00	0.00
Slb885/S107	0.500	UGT-Set B/4	**1.03**	-15.47	**0.00**	**0.00**	**0.00**	**0.00**
Slb1463/S141	1.600	UGT-Set B/5	0.14	**-29.89**	0.00	0.00	0.00	0.00
Slb1467/S141	8.820	UGT-Set B/5	-0.01	**2.32**	0.00	0.00	0.00	0.00

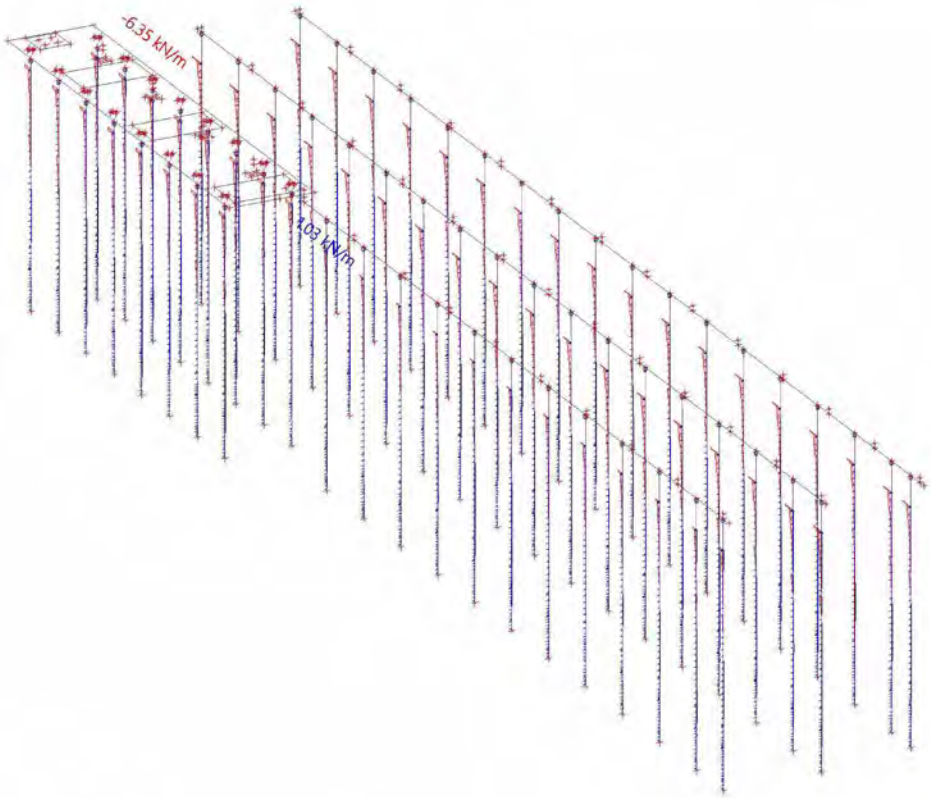
Reactions on line supports

Name	dx [m]	Case	R_x [kN]	R_y [kN]	R_z [kN]	M_x [kNm]	M_y [kNm]	M_z [kNm]	e [mm]
Slb36/S49	2.155	UGT-Set B/3	**-1.32**	0.00	0.00	0.00	0.00	0.00	0.0
Slb39/S49	8.820	UGT-Set B/3	**0.44**	0.00	**0.00**	**0.00**	**0.00**	**0.00**	0.0
Slb1464/S141	2.155	UGT-Set B/5	0.03	**-6.22**	0.00	0.00	0.00	0.00	0.0
Slb1467/S141	8.820	UGT-Set B/5	-0.01	**2.09**	0.00	0.00	0.00	0.00	0.0

Name	Combination key
UGT-Set B/1	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/2	1.20*BG101 + 1.20*BG102 + 1.50*BG123
UGT-Set B/3	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG114 + 1.50*BG122
UGT-Set B/4	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115 + 1.50*BG123
UGT-Set B/5	0.90*BG101 + 0.90*BG102 + 1.50*BG115 + 1.50*BG123

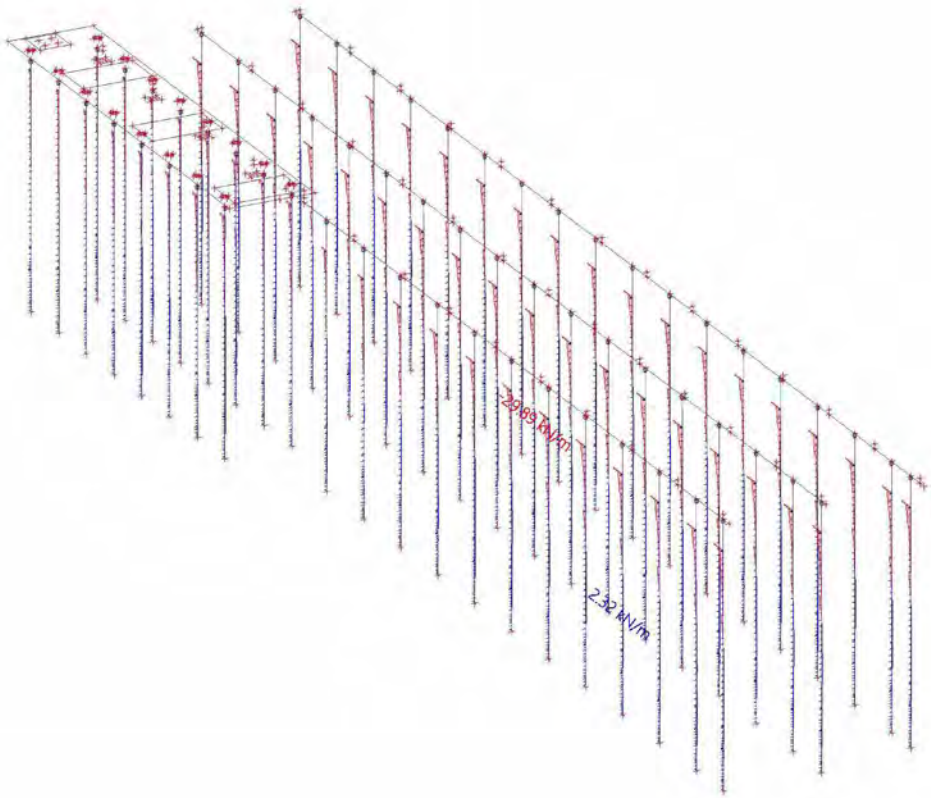
2.2.1.2. Resultaten - R_x

Values: R_x
Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All



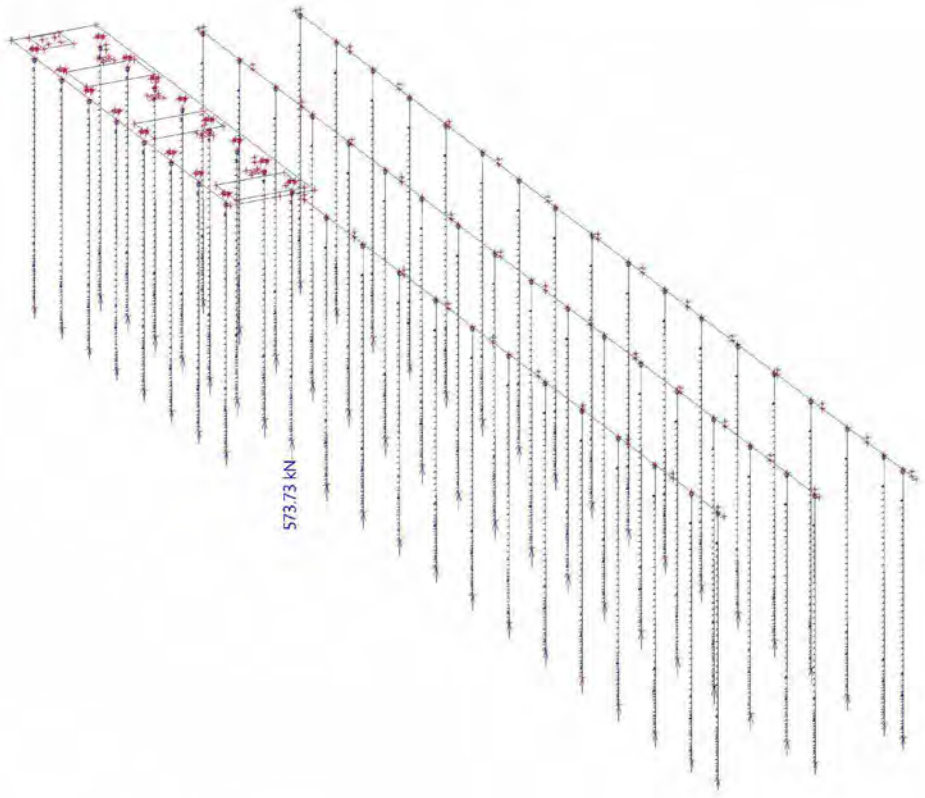
2.2.1.3. Resultaten - R_y

Values: R_y
Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All



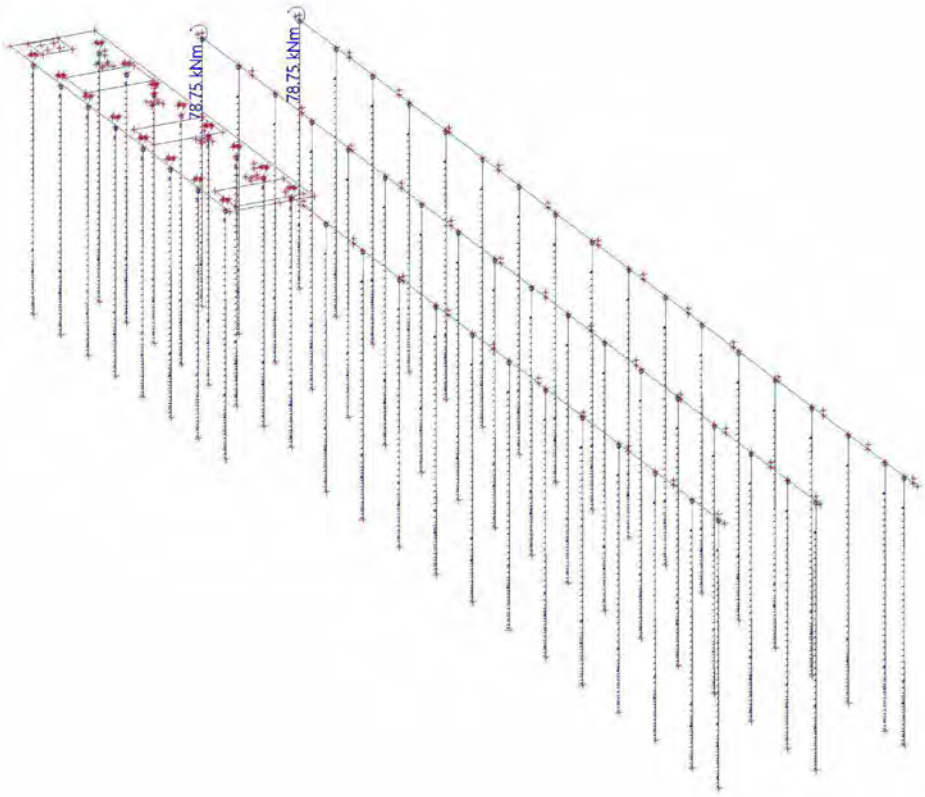
2.2.1.4. Resultaten - R_z

Values: R_z
Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All



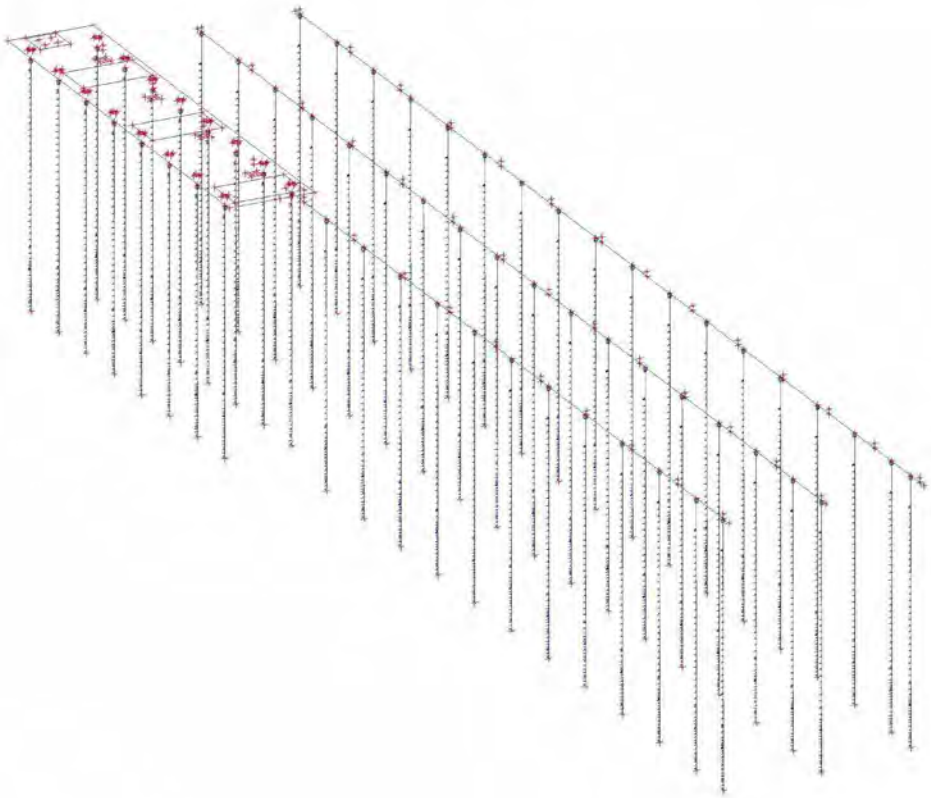
2.2.1.5. Resultaten - M_x

Values: M_x
Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All



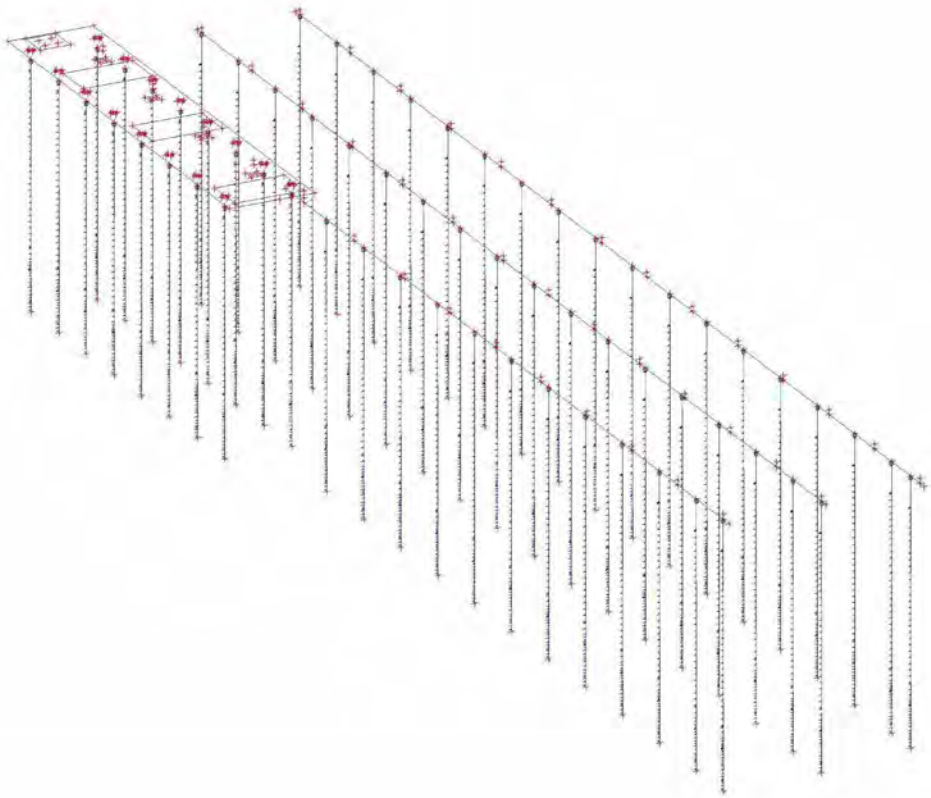
2.2.1.6. Resultaten - M_y

Values: M_y
Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All



2.2.1.7. Resultaten - M_z

Values: M_z
Linear calculation
Class: Alle UGT
System: Global
Extreme: Global
Selection: All



2.2.2. Internal beamforces

2.2.2.1. 1D internal forces

Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All

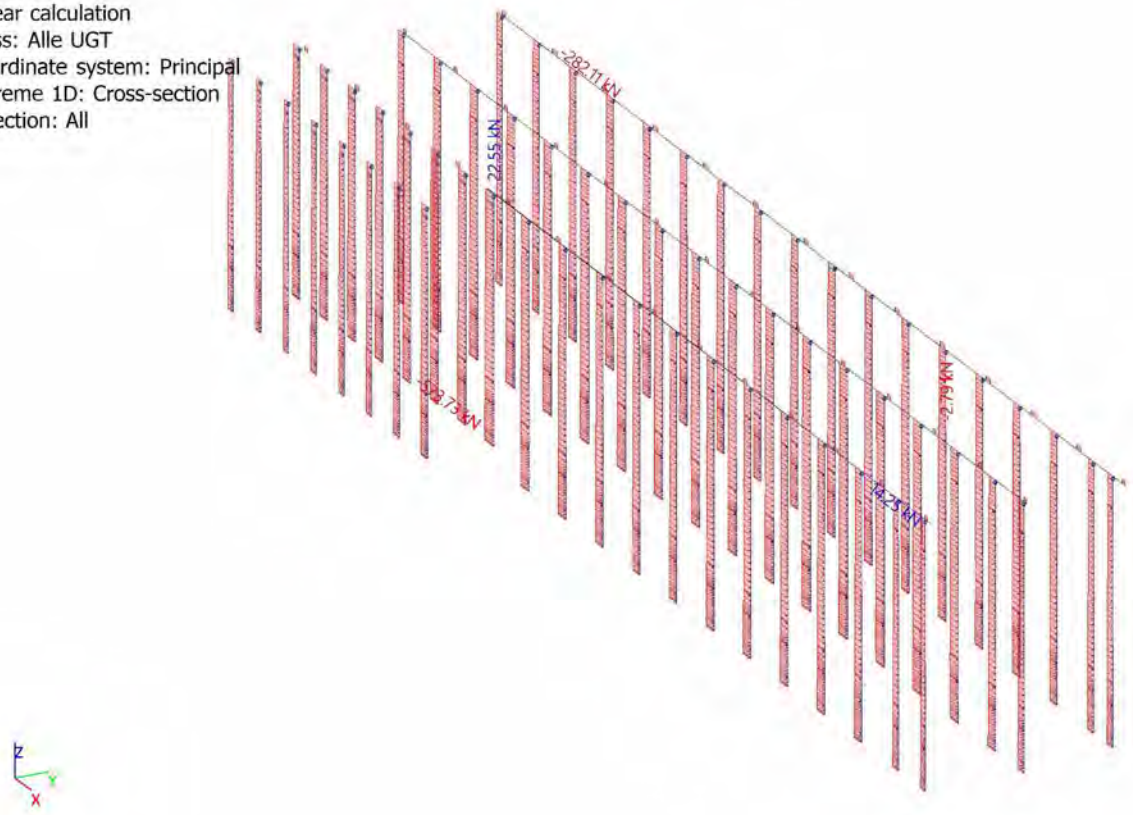
Name	dx [m]	Case	Cross-section	N [kN]	V_y [kN]	V_z [kN]	M_x [kNm]	M_y [kNm]	M_z [kNm]
S4	0.000	UGT-Set B/1	CT-12 - Rechthoek (600; 600)	**-282.11**	-22.50	0.00	0.00	0.00	**5.63**
S44	0.250	UGT-Set B/2	CT-12 - Rechthoek (600; 600)	**14.25**	**-22.50**	**0.00**	**0.00**	**0.00**	**0.00**
S1	0.000	UGT-Set B/3	CT-12 - Rechthoek (600; 600)	-72.27	**0.00**	**4.50**	0.00	**-1.13**	0.00
S10	47.860+	UGT-Set B/4	CT-11 - Rechthoek (800; 1000)	**-2.79**	0.00	-156.44	0.00	43.18	0.00
S8	0.000	UGT-Set B/5	CT-11 - Rechthoek (800; 1000)	**22.55**	0.42	86.99	-0.17	73.87	-1.40
S8	0.000	UGT-Set B/6	CT-11 - Rechthoek (800; 1000)	1.76	**-30.13**	46.99	68.30	106.80	**121.76**
S8	27.670+	UGT-Set B/6	CT-11 - Rechthoek (800; 1000)	0.98	**18.82**	-66.21	14.97	12.64	-38.83
S10	48.460-	UGT-Set B/7	CT-11 - Rechthoek (800; 1000)	0.34	18.25	**-312.19**	15.20	-101.78	-0.84
S10	52.460+	UGT-Set B/7	CT-11 - Rechthoek (800; 1000)	0.32	-17.55	**336.03**	29.52	-57.28	0.61
S8	0.000	UGT-Set B/8	CT-11 - Rechthoek (800; 1000)	-0.32	1.88	187.86	**-0.75**	75.35	-11.79
S9	0.000	UGT-Set B/9	CT-11 - Rechthoek (800; 1000)	0.00	0.00	0.00	**78.75**	0.00	0.00
S10	66.540+	UGT-Set B/7	CT-11 - Rechthoek (800; 1000)	0.00	-22.50	262.22	14.63	**-243.10**	22.50
S8	2.030-	UGT-Set B/10	CT-11 - Rechthoek (800; 1000)	-0.27	1.87	80.16	-0.75	**347.40**	-7.96
S8	17.830+	UGT-Set B/6	CT-11 - Rechthoek (800; 1000)	1.17	8.58	2.86	30.32	32.76	**-54.53**
S107	13.000	UGT-Set B/8	ST-23 - Cirkel (460)	**-573.73**	0.00	0.00	0.00	0.00	0.00
S82	0.000	UGT-Set B/2	ST-23 - Cirkel (460)	**-55.09**	17.74	-0.29	**0.00**	0.00	0.00
S141	6.120+	UGT-Set B/6	ST-23 - Cirkel (460)	-174.61	**-9.57**	0.04	0.00	-0.13	28.30
S141	0.000	UGT-Set B/6	ST-23 - Cirkel (460)	-150.04	**18.42**	-0.09	0.00	0.00	0.00
S49	6.120+	UGT-Set B/11	ST-23 - Cirkel (460)	-293.20	0.00	**-2.03**	0.00	6.01	0.00
S49	0.000	UGT-Set B/11	ST-23 - Cirkel (460)	-260.41	0.00	**3.91**	0.00	0.00	0.00
S107	3.193-	UGT-Set B/12	ST-23 - Cirkel (460)	-435.81	0.85	-0.06	0.00	**-1.21**	18.06
S49	3.427+	UGT-Set B/11	ST-23 - Cirkel (460)	-279.43	0.00	-0.37	0.00	**8.88**	0.00
S108	3.193-	UGT-Set B/13	ST-23 - Cirkel	-319.59	-0.05	0.21	0.00	4.48	**-1.00**

Name	dx [m]	Case	Cross-section	N [kN]	V_y [kN]	V_z [kN]	M_x [kNm]	M_y [kNm]	M_z [kNm]
			(460)						
S141	3.427-	UGT-Set B/6	ST-23 - Cirkel (460)	-161.42	1.79	-0.01	0.00	-0.19	**41.85**

Name	Combination key
UGT-Set B/1	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG123
UGT-Set B/2	0.90*BG101 + 0.90*BG102 + 1.50*BG123
UGT-Set B/3	1.20*BG101 + 1.20*BG102 + 1.50*BG122
UGT-Set B/4	0.90*BG101 + 0.90*BG102 + 1.50*BG113 + 1.50*BG122
UGT-Set B/5	0.90*BG101 + 0.90*BG102 + 1.50*BG115 + 1.50*BG122
UGT-Set B/6	0.90*BG101 + 0.90*BG102 + 1.50*BG115 + 1.50*BG123
UGT-Set B/7	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG123
UGT-Set B/8	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/9	1.20*BG101 + 1.20*BG102 + 1.50*BG123
UGT-Set B/10	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/11	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG114 + 1.50*BG122
UGT-Set B/12	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115 + 1.50*BG123
UGT-Set B/13	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG122

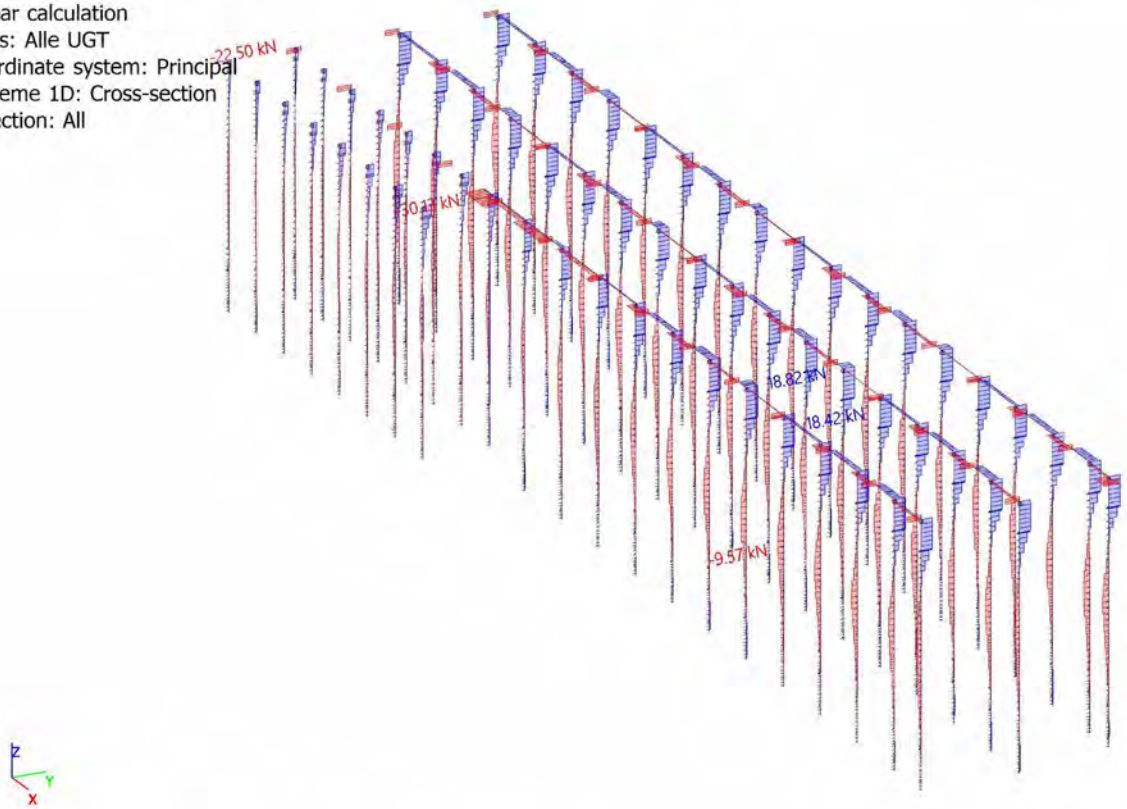
2.2.2.2. Resultaten - N

Values: **N**
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



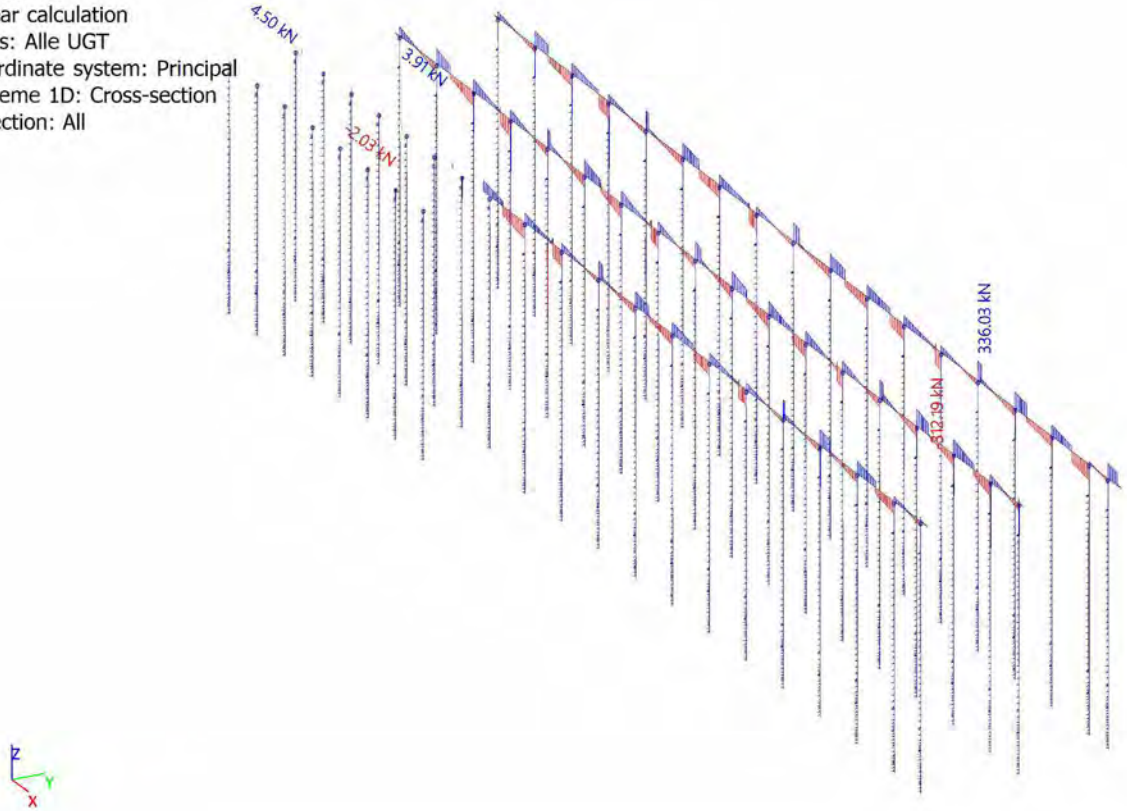
2.2.2.3. Resultaten - V_y

Values: V_y
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



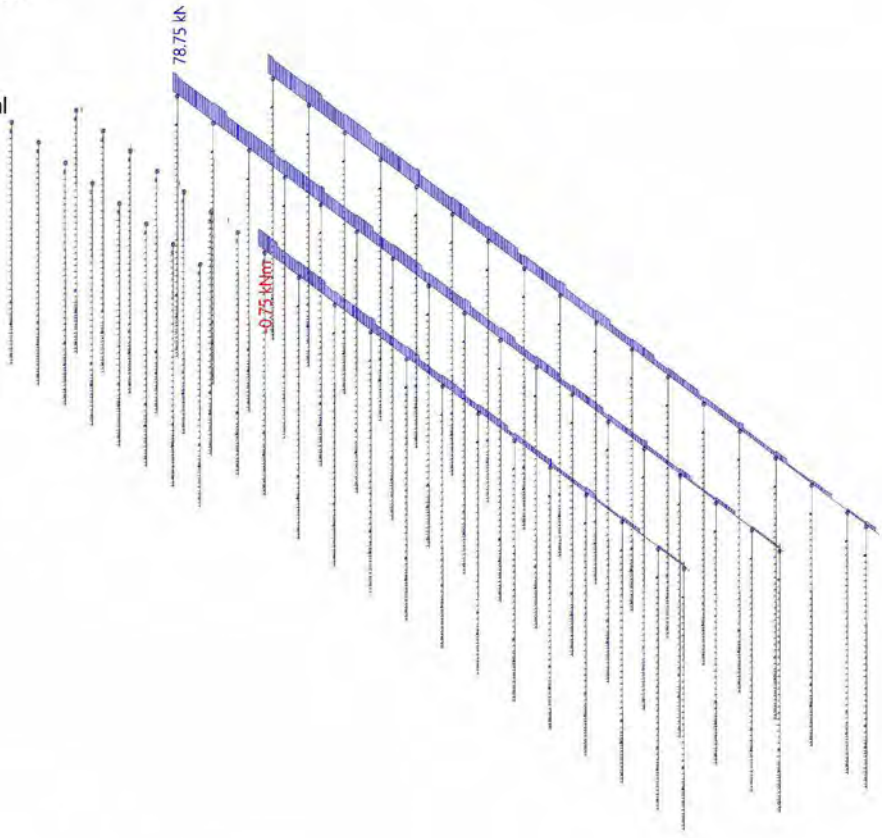
2.2.2.4. Resultaten - V_z

Values: V_z
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



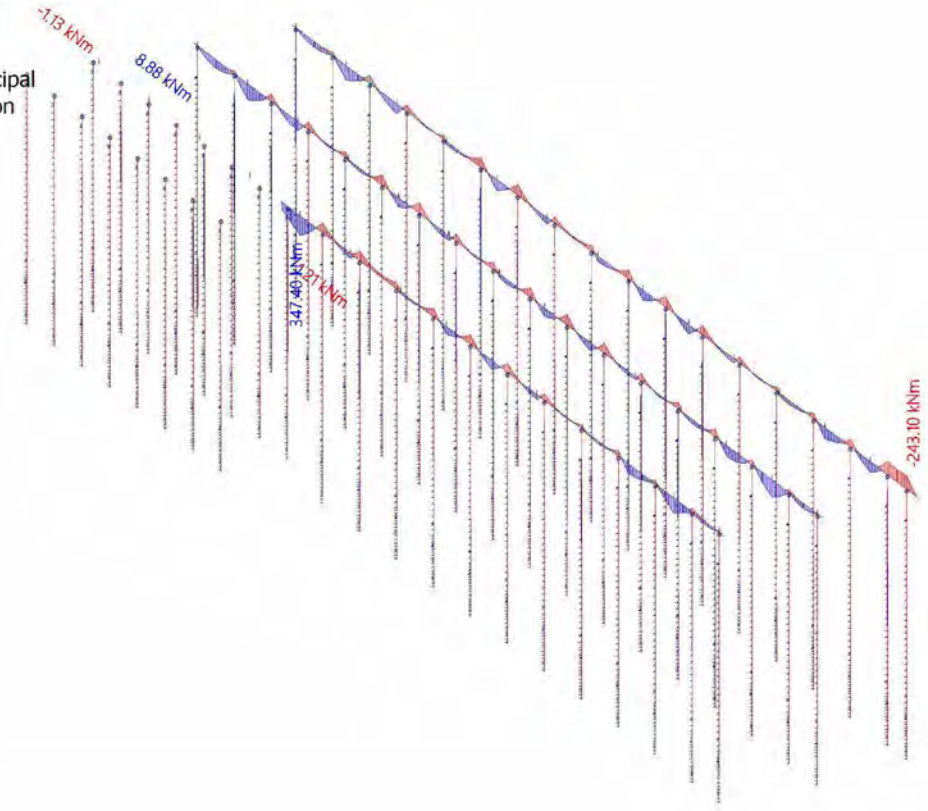
2.2.2.5. Resultaten - M_x

Values: M_x
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



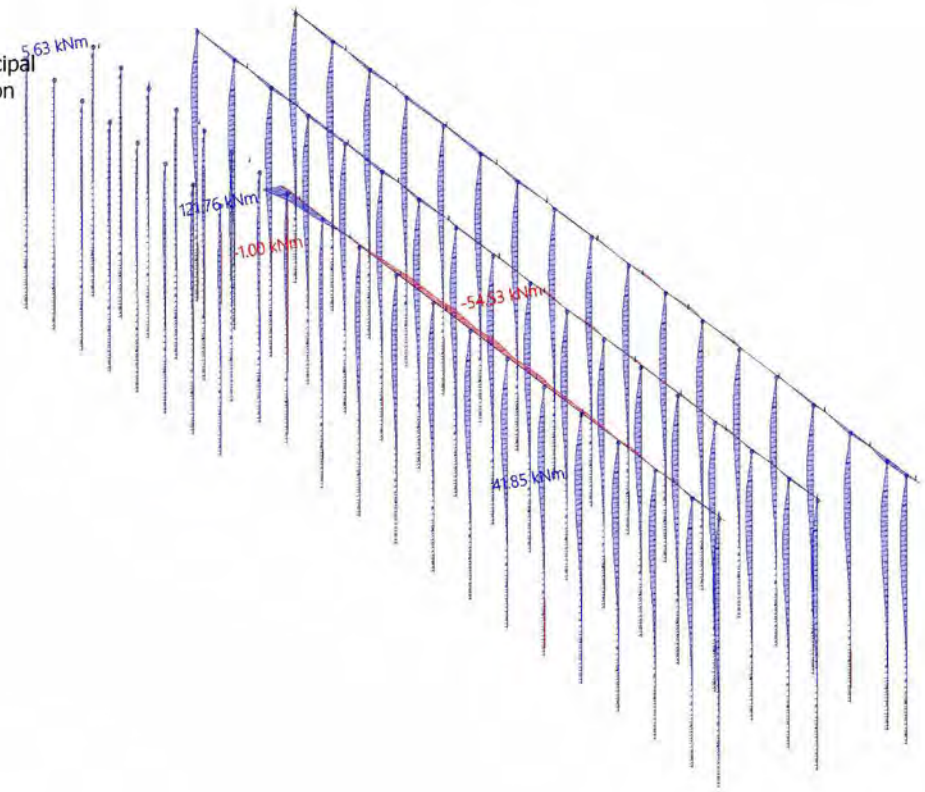
2.2.2.6. Resultaten - M_y

Values: M_y
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



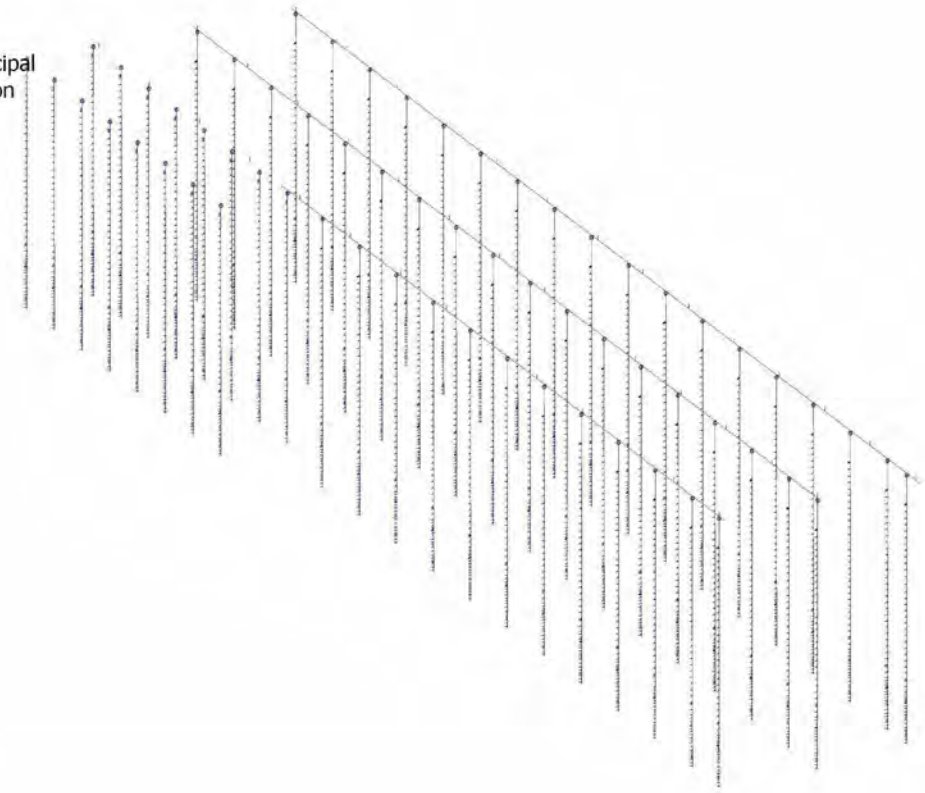
2.2.2.7. Resultaten - M_z

Values: M_z
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



2.2.2.8. Resultaten - V_r

Values: V_r
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



2.2.3. 3D stress

2.2.3.1. 3D stress

Linear calculation
Class: Alle UGT
Selection: All
Location: In nodes no avg.. System: LCS mesh element
Principal magnitudes

Results on 1D member

Extreme 1D: Cross-section

Name	dx [m]	Fibre	Case	Cross-section	σ_1 [MPa]	σ_2 [MPa]	τ_{tot} [MPa]	σ_E [MPa]
S4	0.000	1	UGT-Set B/1	CT-12 - Rechthoek (600; 600)	0.0	-0.9	0.0	**0.9**
S8	2.030-	5	UGT-Set B/2	CT-11 - Rechthoek (800; 1000)	0.0	-3.2	0.0	**3.2**
S135	3.427+	6	UGT-Set B/3	ST-23 - Cirkel (460)	0.0	-7.0	0.0	**7.0**

Results on 2D member

Extreme 2D: Global

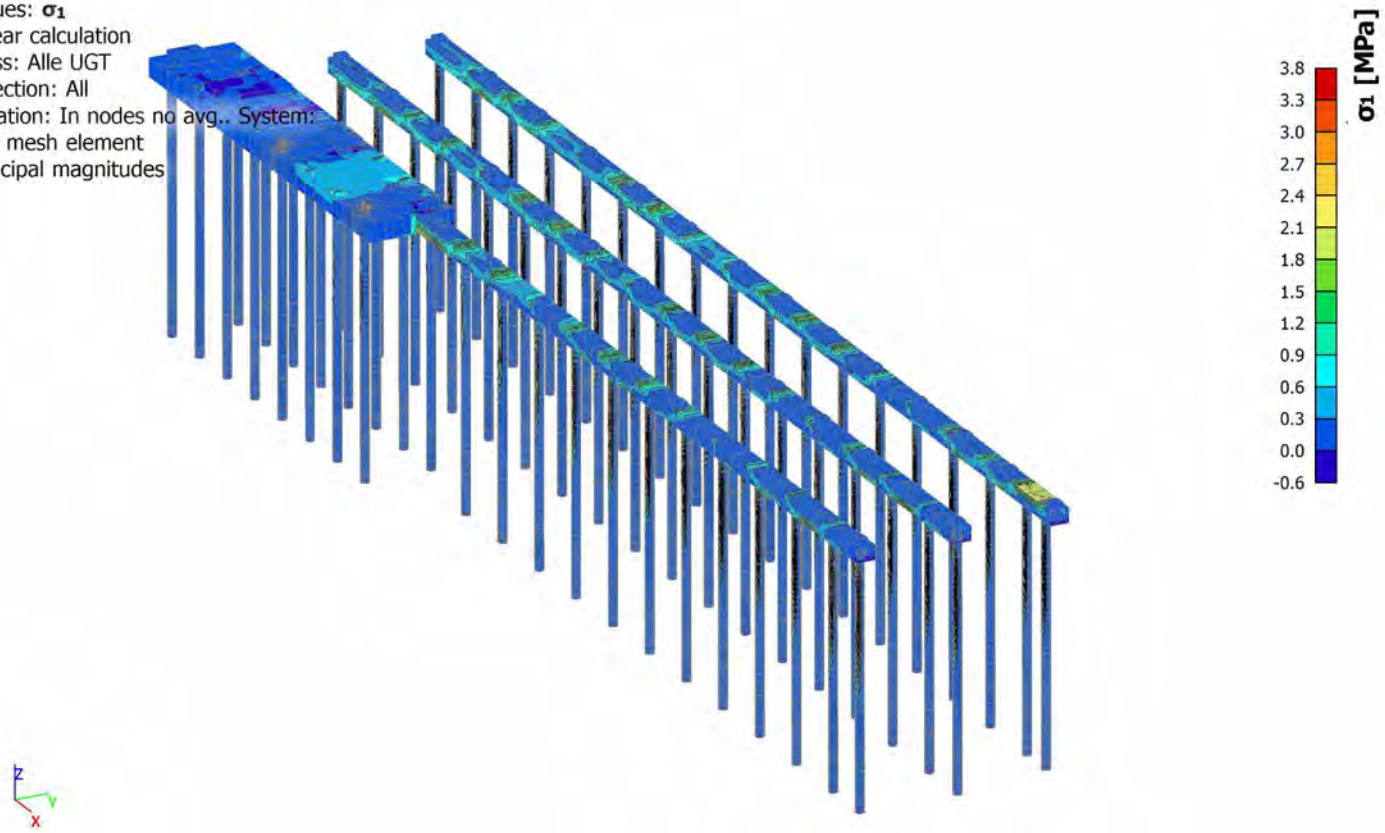
Name	Mesh	Position [m]	Case	σ_{E+} [MPa] σ_{E-} [MPa]	σ_{1+} [MPa] σ_{1-} [MPa]	σ_{2+} [MPa] σ_{2-} [MPa]	$\alpha+$ [deg] $\alpha-$ [deg]	$\tau_{max,b}$ [MPa]
E1	Element: 385 Node: 25	12.800 5.050 -0.500	UGT-Set B/4	**0.0** 0.0	0.0 0.0	0.0 0.0	-17.86 -84.06	0.0
E1	Element: 932 Node: 107	21.755 5.990 -0.500	UGT-Set B/5	0.0 **0.0**	0.0 0.0	0.0 0.0	26.57 -75.18	0.0
E1	Element: 178 Node: 6	32.230 5.050 -0.500	UGT-Set B/6	2.3 0.9	**-0.6** 0.9	-2.6 0.0	48.89 -63.81	0.5
E1	Element: 776 Node: 102	30.755 5.990 -0.500	UGT-Set B/7	0.4 0.3	0.4 **-0.3**	**0.3** -0.3	4.98 -68.90	0.6
E1	Element: 176 Node: 5	32.230 4.450 -0.500	UGT-Set B/8	0.4 **1.4**	0.3 **1.5**	-0.1 0.3	77.77 15.56	0.1
E1	Element: 178 Node: 6	32.230 5.050 -0.500	UGT-Set B/8	**2.6** 0.9	-0.5 1.0	**-2.8** 0.1	52.73 -52.89	0.3
E1	Element: 31 Node: 88	27.565 5.800 -0.500	UGT-Set B/2	1.1 1.2	**1.2** -0.2	0.2 **-1.2**	1.80 -87.91	0.3
E1	Element: 176 Node: 1794	31.730 4.612 -0.500	UGT-Set B/9	0.4 0.4	-0.3 0.4	-0.5 **0.4**	-81.19 27.97	0.2
E1	Element: 719 Node: 102	30.755 5.990 -0.500	UGT-Set B/10	0.0 0.0	0.0 0.0	0.0 0.0	6.87 -84.82	**0.0**
E1	Element: 776 Node: 1772	30.730 6.000 -0.500	UGT-Set B/7	0.4 0.3	0.4 -0.3	0.3 -0.3	3.75 -75.23	**0.6**

Name	Combination key
UGT-Set B/1	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG123
UGT-Set B/2	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/3	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG114 + 1.50*BG123
UGT-Set B/4	0.90*BG101 + 0.90*BG102 + 1.50*BG114 + 1.50*BG123
UGT-Set B/5	0.90*BG101 + 0.90*BG102 + 1.50*BG123
UGT-Set B/6	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115 + 1.50*BG123

Name	Combination key
UGT-Set B/7	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/8	1.20*BG101 + 1.20*BG102 + 1.50*BG123
UGT-Set B/9	1.35*BG101 + 1.35*BG102
UGT-Set B/10	0.90*BG101 + 0.90*BG102 + 1.50*BG122

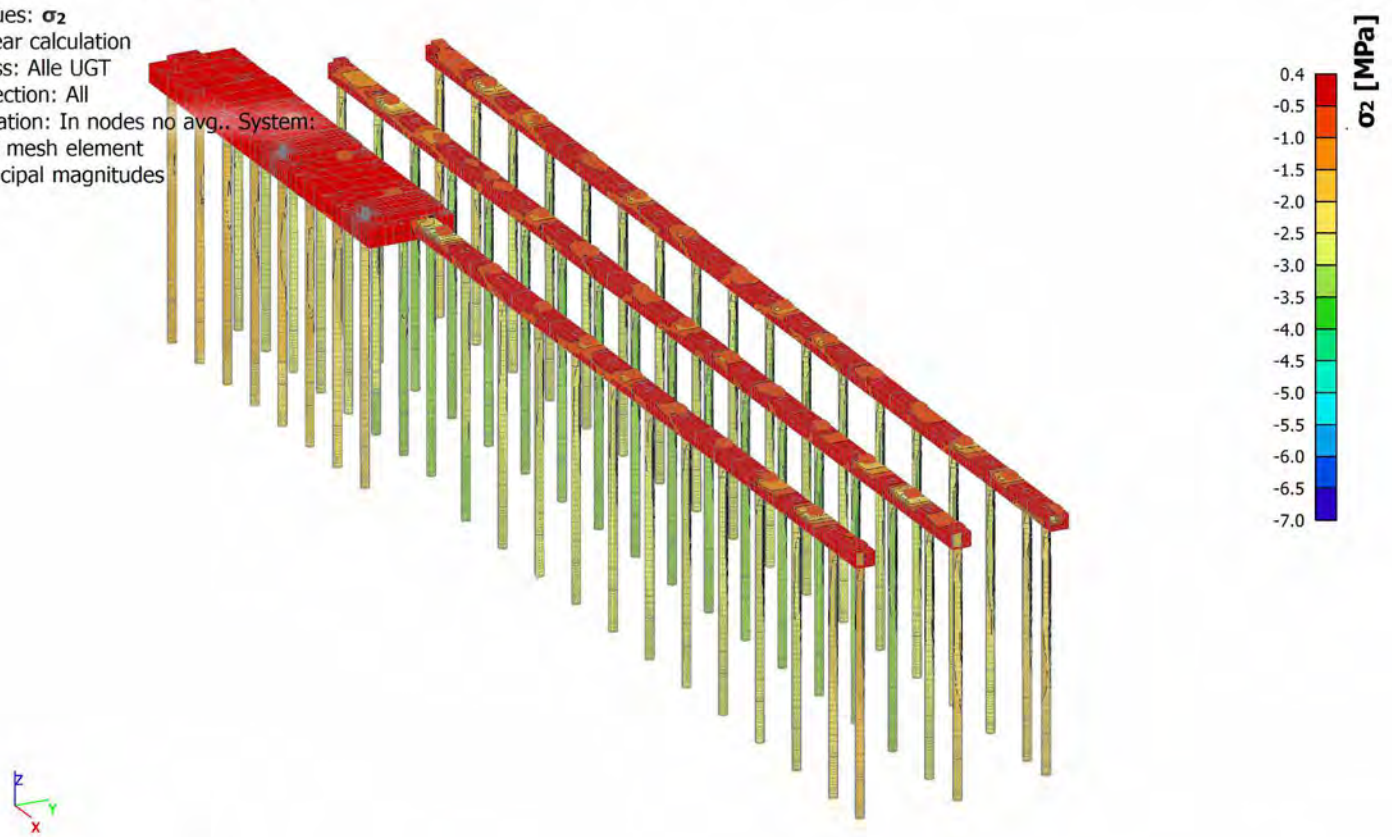
2.2.3.2. Resultaten - σ_1

Values: σ_1
Linear calculation
Class: Alle UGT
Selection: All
Location: In nodes no avg.. System: LCS mesh element
Principal magnitudes



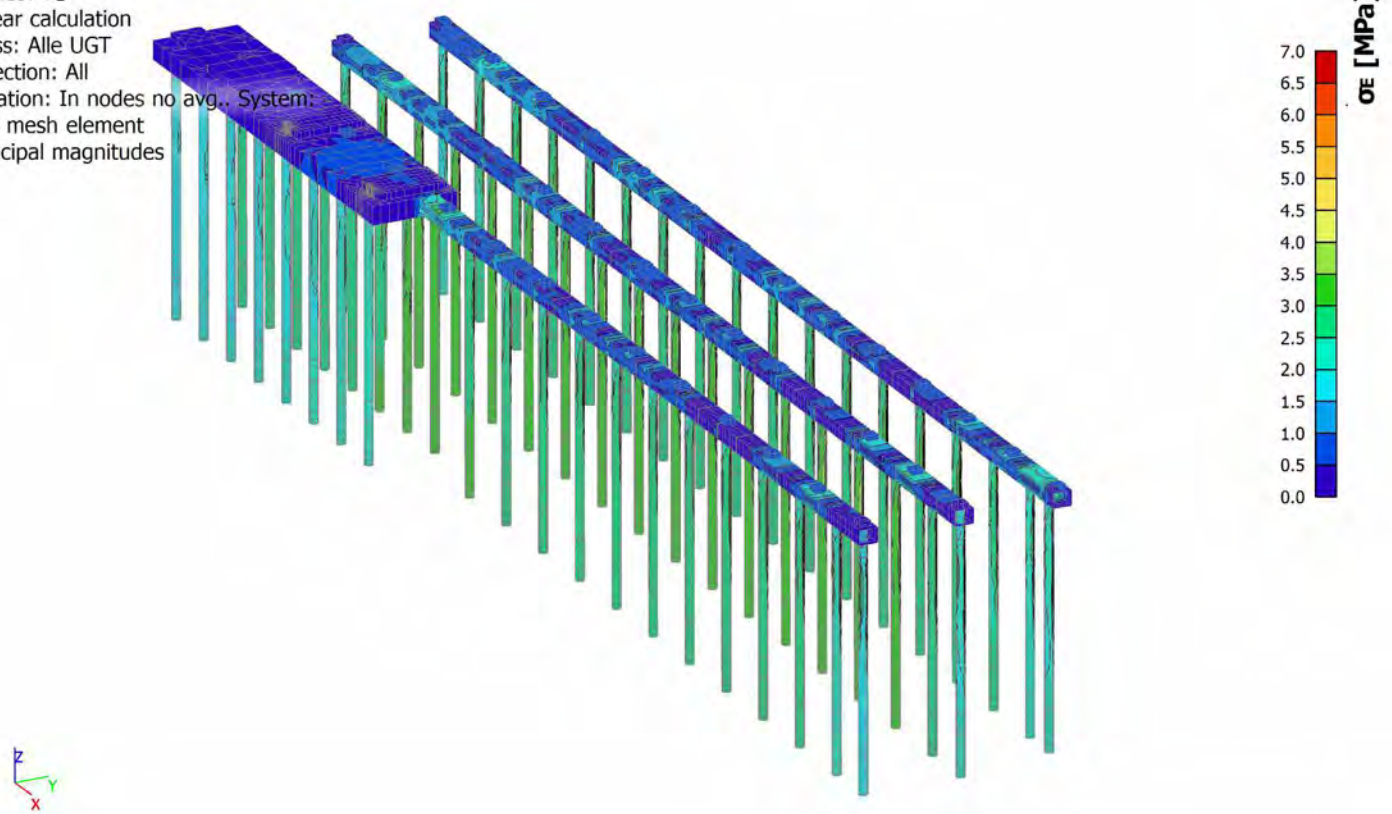
2.2.3.3. Resultaten - σ_2

Values: σ_2
Linear calculation
Class: Alle UGT
Selection: All
Location: In nodes no avg.. System:
LCS mesh element
Principal magnitudes



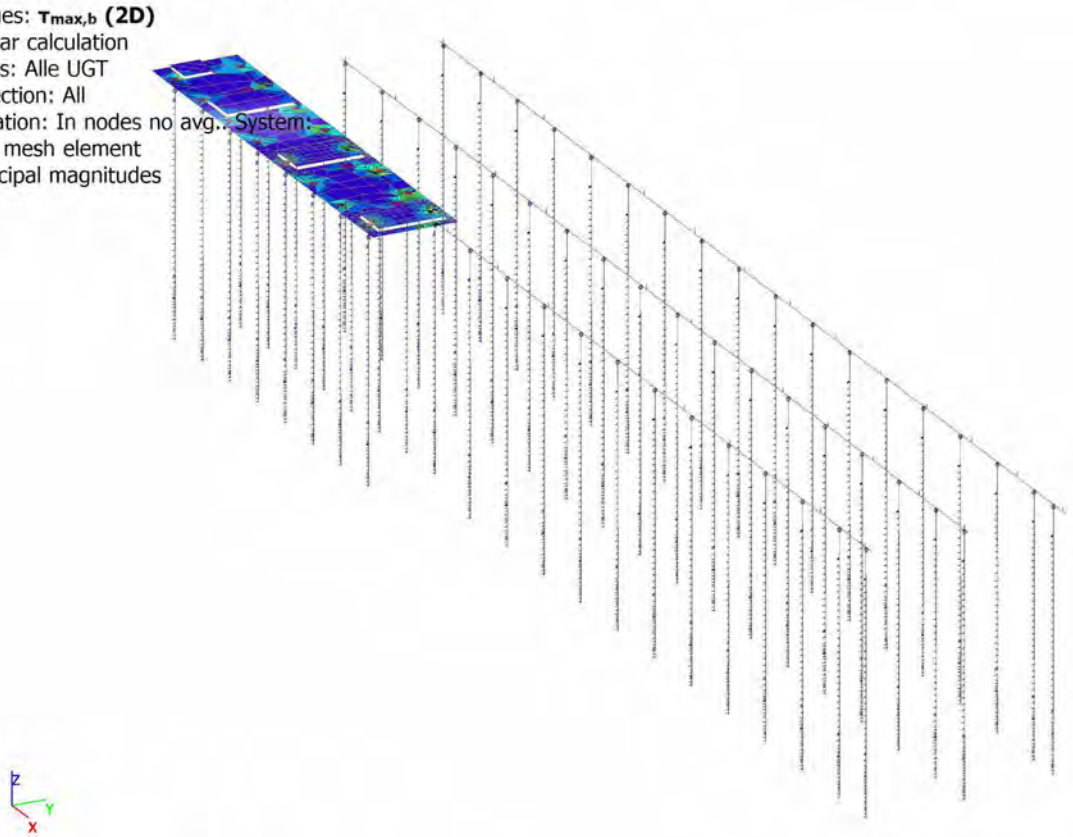
2.2.3.4. Resultaten - σ_E

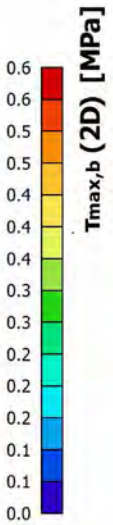
Values: σ_E
Linear calculation
Class: Alle UGT
Selection: All
Location: In nodes no avg.. System:
LCS mesh element
Principal magnitudes



2.2.3.5. Resultaten - τ_max,b (2D)

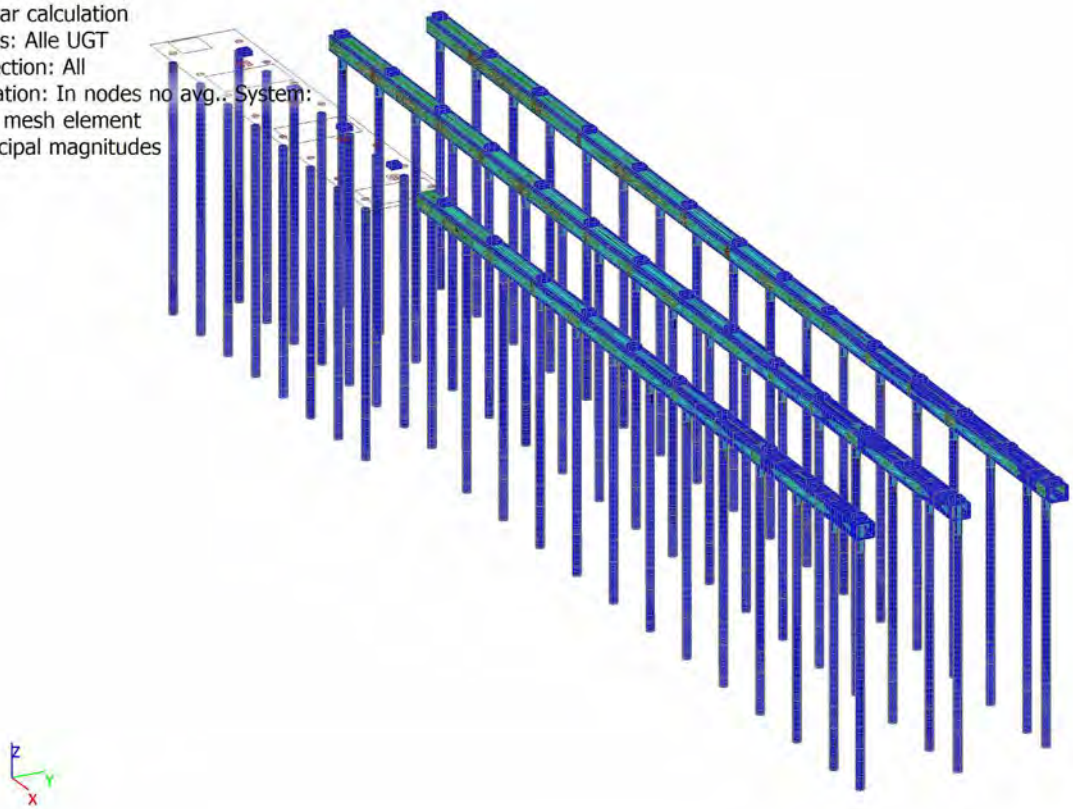
Values: $\tau_{max,b}$ (2D)
Linear calculation
Class: Alle UGT
Selection: All
Location: In nodes no avg.. System:
LCS mesh element
Principal magnitudes

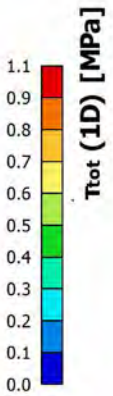




2.2.3.6. Resultaten - τ_tot (1D)

Values: τ_{tot} (1D)
Linear calculation
Class: Alle UGT
Selection: All
Location: In nodes no avg.. System:
LCS mesh element
Principal magnitudes





2.2.4. 1D stress

2.2.4.1. 1D stresses

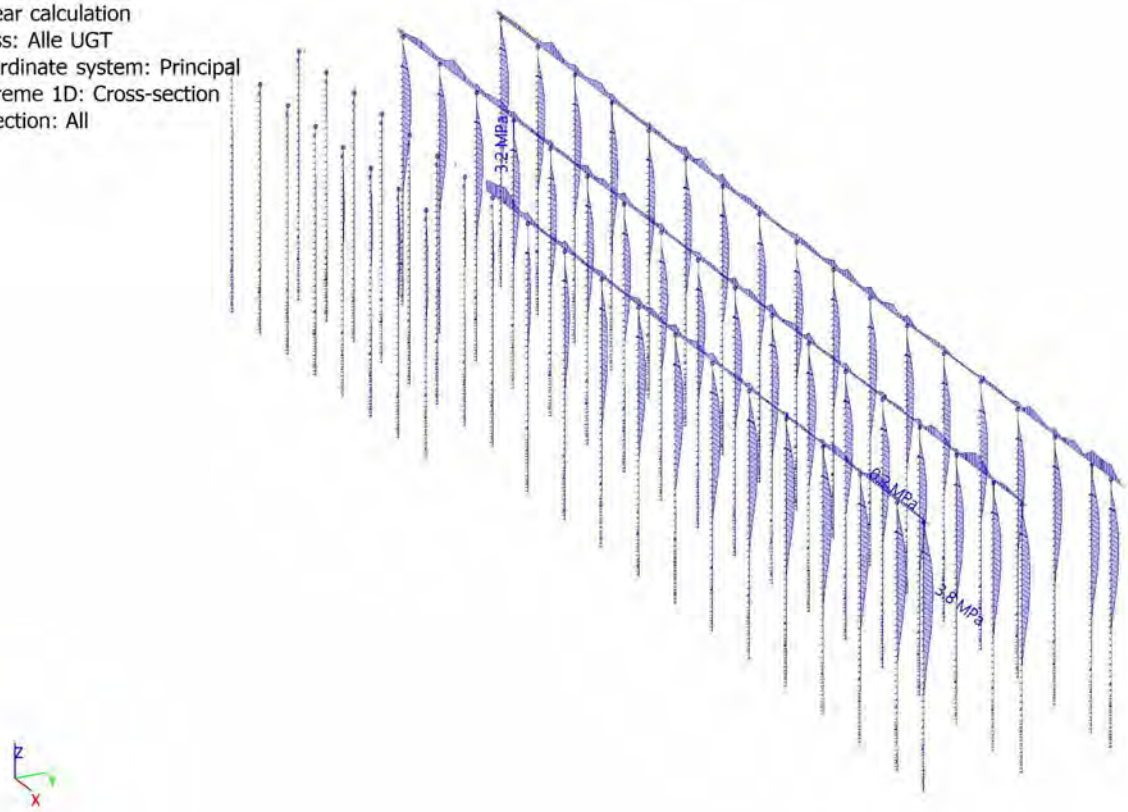
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All

Name	dx [m]	Fibre	Case	Cross-section	σ_1 [MPa]	σ_2 [MPa]	T_{tot} [MPa]	σ_E [MPa]
S4	0.000	1	UGT-Set B/1	CT-12 - Rechthoek (600; 600)	0.0	-0.9	0.0	**0.9**
S8	2.030-	5	UGT-Set B/2	CT-11 - Rechthoek (800; 1000)	0.0	-3.2	0.0	**3.2**
S135	3.427+	6	UGT-Set B/3	ST-23 - Cirkel (460)	0.0	-7.0	0.0	**7.0**

Name	Combination key
UGT-Set B/1	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG123
UGT-Set B/2	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/3	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG114 + 1.50*BG123

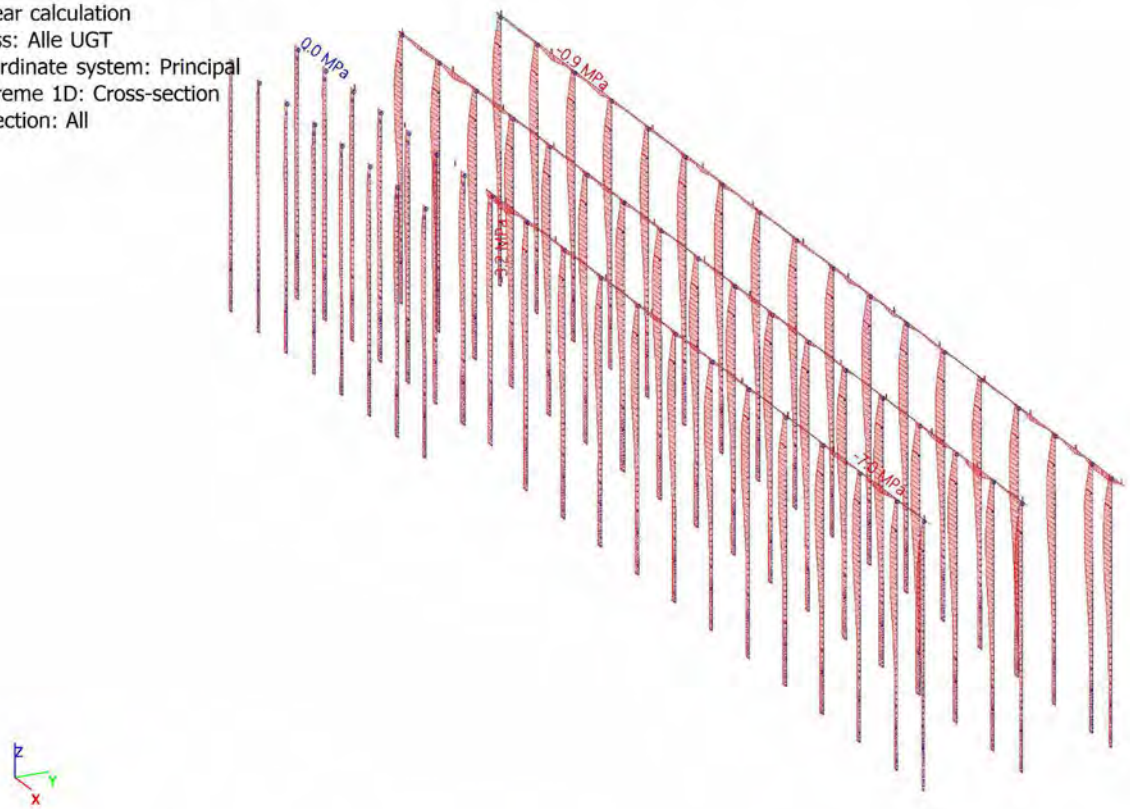
2.2.4.2. Resultaten - σ_1

Values: σ_1
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



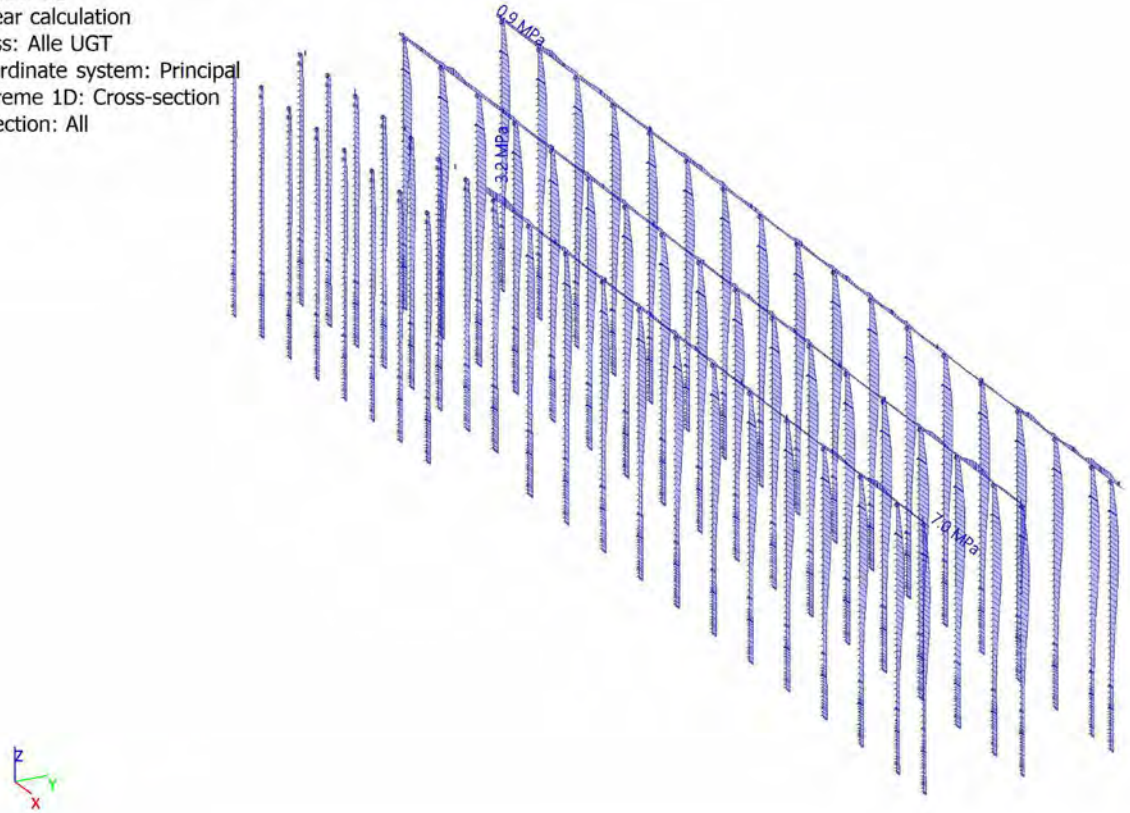
2.2.4.3. Resultaten - σ_2

Values: σ_2
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



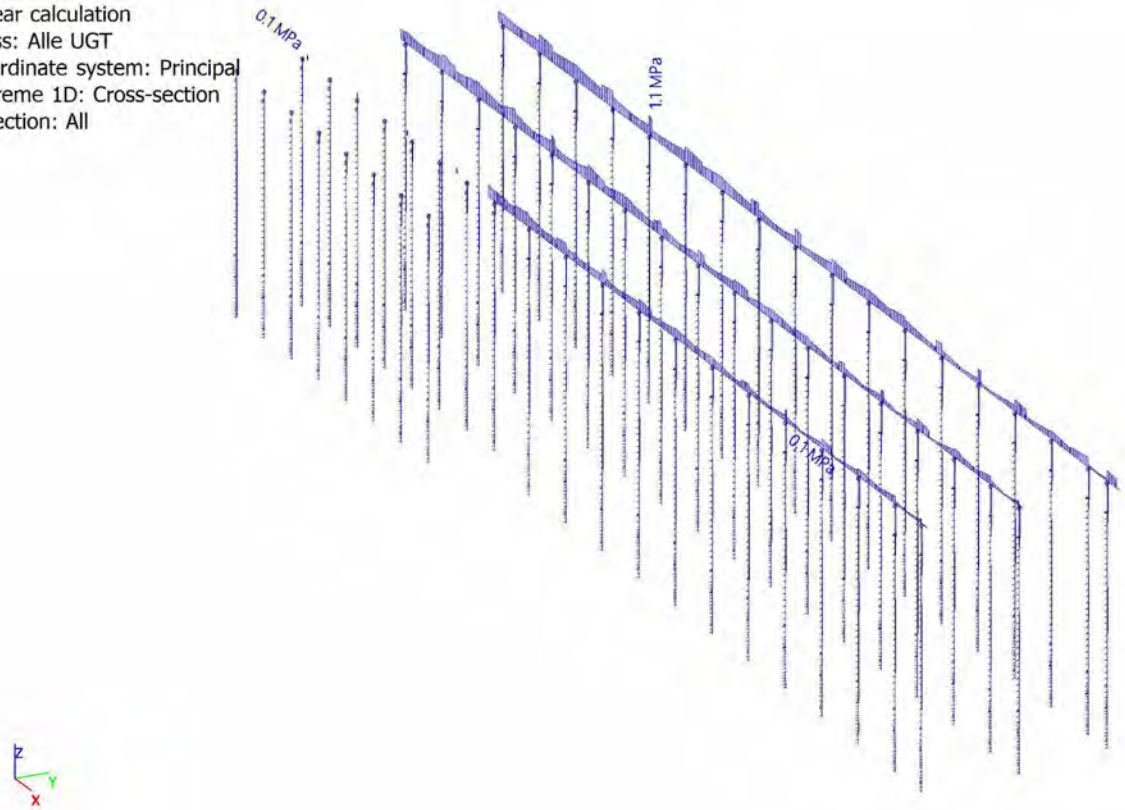
2.2.4.4. Resultaten - σ_E

Values: σ_E
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



2.2.4.5. Resultaten - τ_tot

Values: Ttot
Linear calculation
Class: Alle UGT
Coordinate system: Principal
Extreme 1D: Cross-section
Selection: All



2.2.5. 2D stress

2.2.5.1. 2D stress/strain

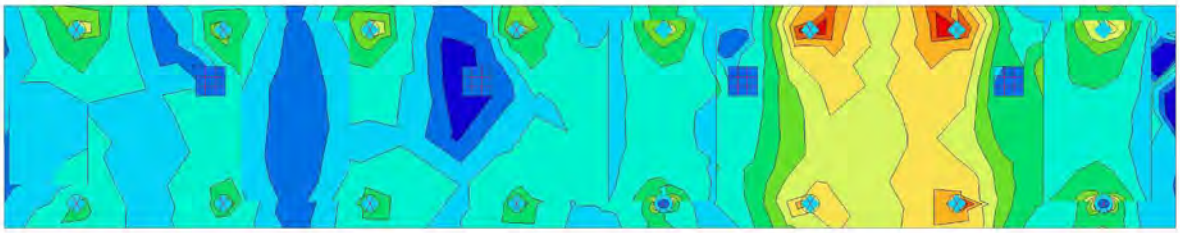
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element
Principal stress

Name	Mesh	Position [m]	Case	σ_{1+} [MPa] σ_{1-} [MPa]	σ_{2+} [MPa] σ_{2-} [MPa]	σ_{E+} [MPa] σ_{E-} [MPa]	α_+ [deg] α_- [deg]	$\tau_{max,b}$ [MPa]
E1	Element: 177 Node: 2227	31.954 5.013 -0.500	UGT-Set B/1	**-0.3** 0.4	-0.5 -0.1	0.4 0.5	51.92 -57.09	0.2
E1	Element: 249 Node: 1772	30.730 6.000 -0.500	UGT-Set B/2	0.2 **-0.2**	**0.2** -0.3	0.2 0.3	39.67 -78.47	0.3
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/3	0.1 **0.8**	-0.2 0.2	0.2 0.8	65.70 3.94	0.0
E1	Element: 177 Node: 6	32.230 5.050 -0.500	UGT-Set B/3	0.0 0.4	**-1.0** -0.2	**1.1** 0.5	64.54 -40.99	0.1
E1	Element: 29 Node: 88	27.565 5.800 -0.500	UGT-Set B/4	**1.0** 0.0	0.0 **-1.0**	0.9 **0.9**	8.07 -81.77	0.3
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/5	-0.2 0.5	-0.5 **0.3**	0.4 0.4	-65.65 34.80	0.1
E1	Element: 385 Node: 25	12.800 5.050 -0.500	UGT-Set B/6	0.0 0.0	0.0 0.0	**0.0** 0.0	-31.34 -83.05	0.0
E1	Element: 932 Node: 109	21.755 5.610 -0.500	UGT-Set B/7	0.0 0.0	0.0 0.0	0.0 **0.0**	49.49 -19.94	0.0
E1	Element: 719 Node: 102	30.755 5.990 -0.500	UGT-Set B/8	0.0 0.0	0.0 0.0	0.0 0.0	8.73 -72.27	**0.0**
E1	Element: 27 Node: 86	27.945 5.800 -0.500	UGT-Set B/4	0.8 0.0	0.0 -0.8	0.7 0.8	7.59 -82.07	**0.5**

Name	Combination key
UGT-Set B/1	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG123
UGT-Set B/2	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/3	1.20*BG101 + 1.20*BG102 + 1.50*BG123
UGT-Set B/4	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/5	1.35*BG101 + 1.35*BG102
UGT-Set B/6	0.90*BG101 + 0.90*BG102 + 1.50*BG114 + 1.50*BG123
UGT-Set B/7	0.90*BG101 + 0.90*BG102 + 1.50*BG123
UGT-Set B/8	0.90*BG101 + 0.90*BG102 + 1.50*BG122

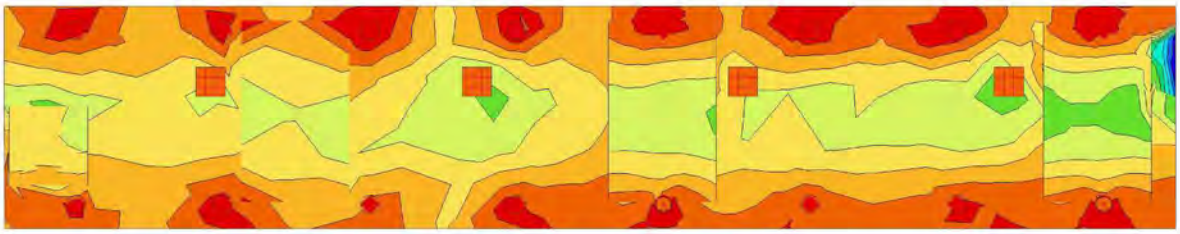
2.2.5.2. Resultaten - σ_1+

Values: σ_{1+}
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



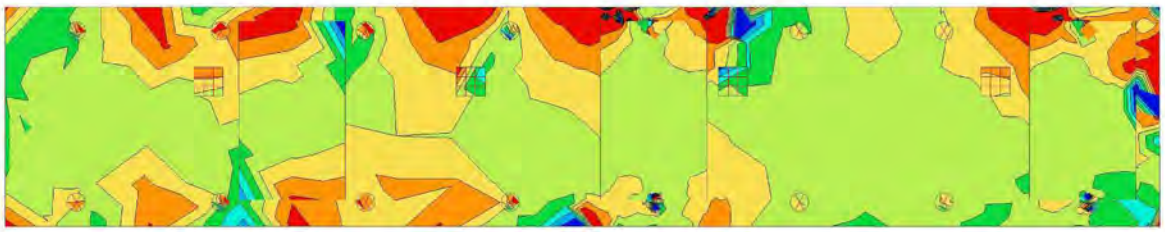
2.2.5.3. Resultaten - σ_2+

Values: σ_{2+}
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



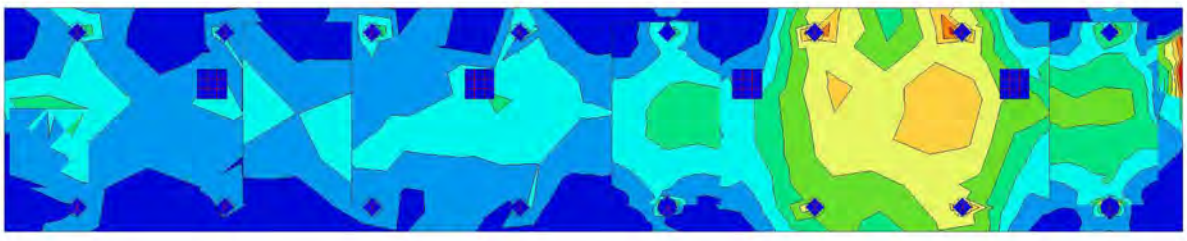
2.2.5.4. Resultaten - α+

Values: **α+**
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



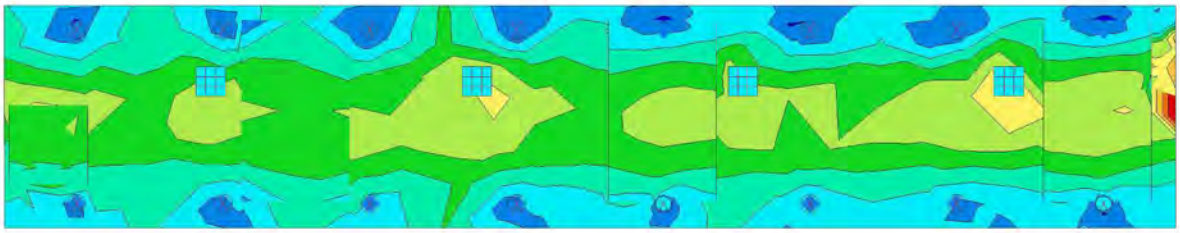
2.2.5.5. Resultaten - σ_E+

Values: **σE+**
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2.5.6. Resultaten - σ_1-

Values: σ_1-
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

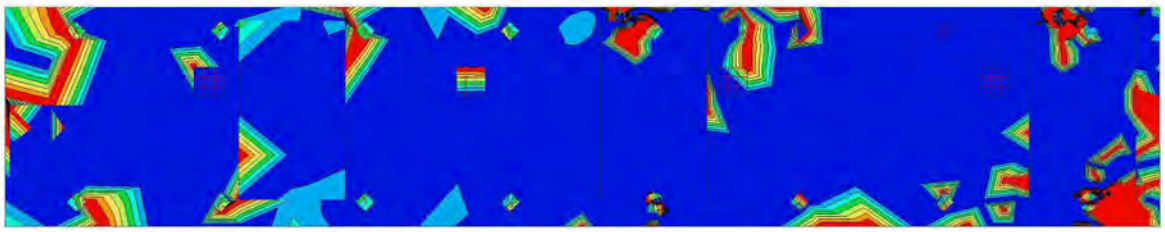


2.2.5.7. Resultaten - σ_2-

Values: σ_2-
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

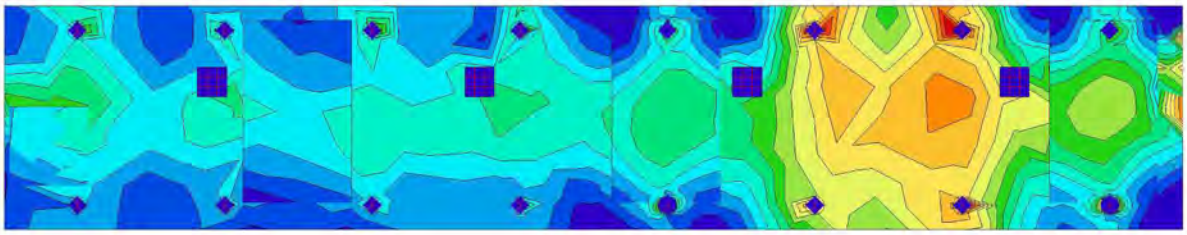
2.2.5.8. Resultaten - α-

Values: **α-**
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



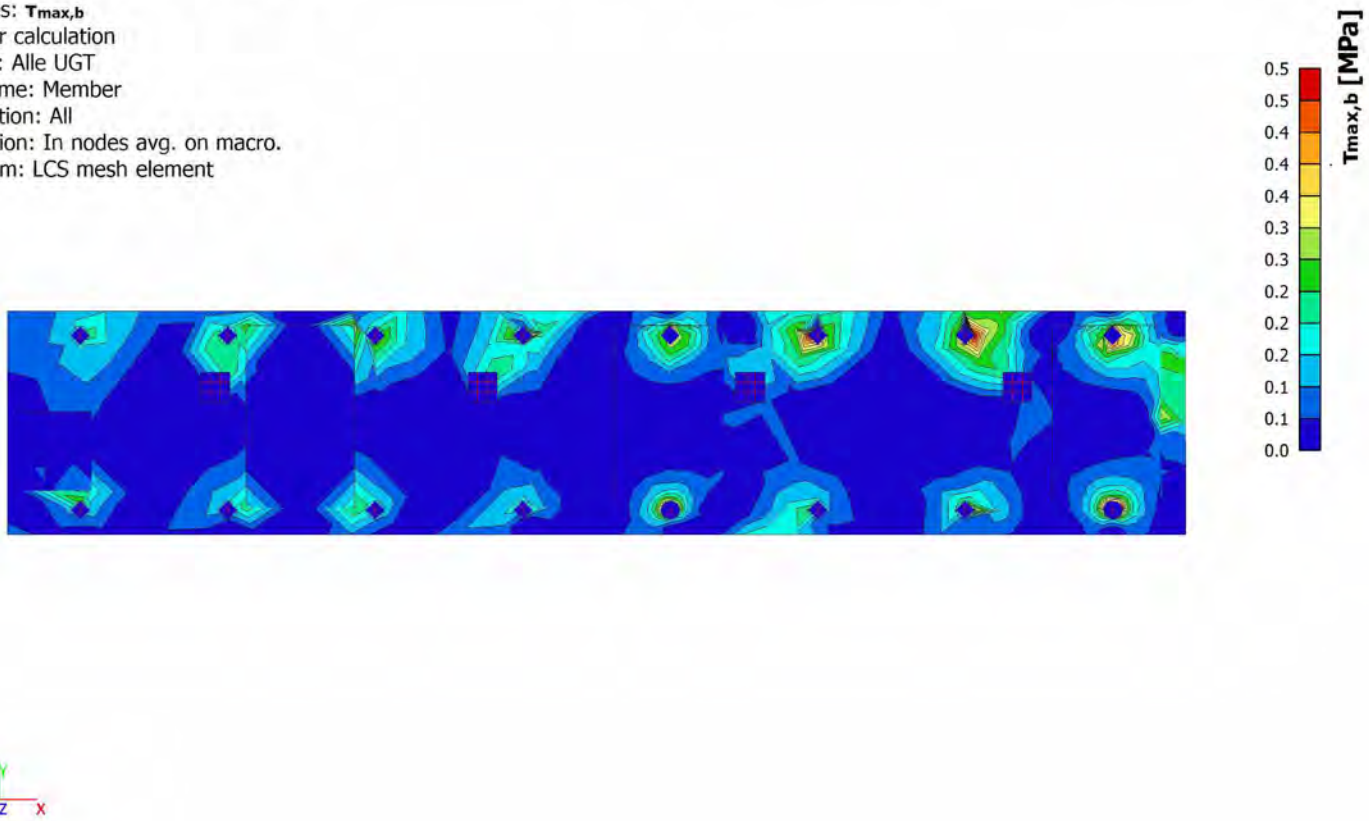
2.2.5.9. Resultaten - σ_E-

Values: **σE-**
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2.5.10. Resultaten - τ_max,b

Values: $\tau_{max,b}$
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2.6. 2D internal forces

2.2.6.1. 2D internal forces

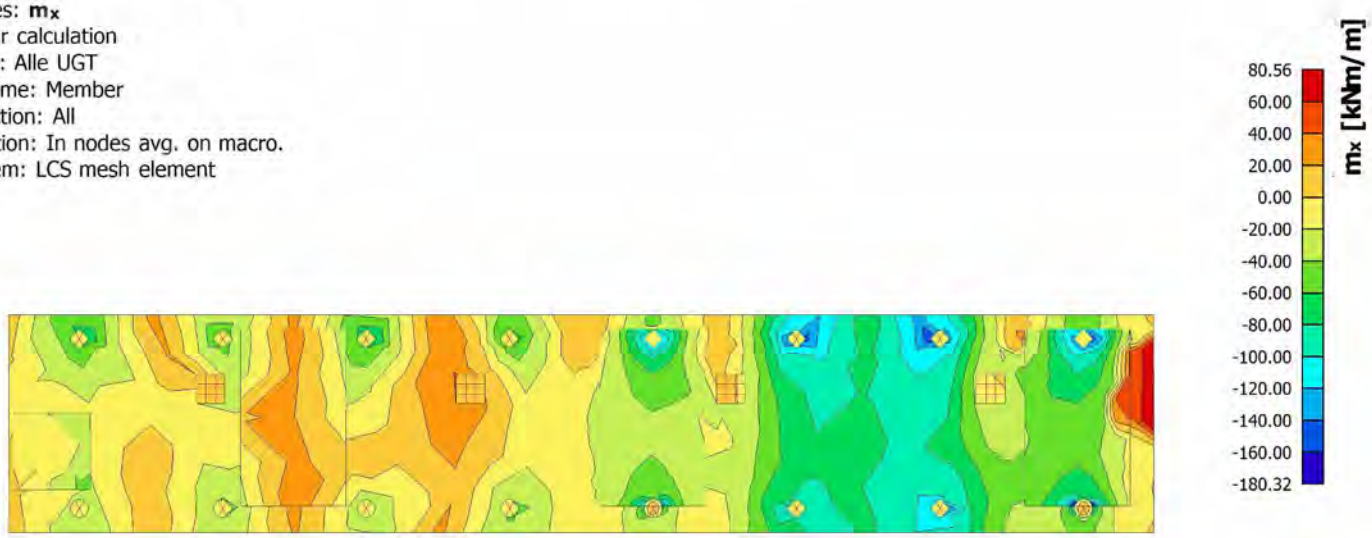
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element
Basic magnitudes

Name	Mesh	Position [m]	Case	m_x [kNm/m] m_y [kNm/m]	m_{xy} [kNm/m]	v_x [kN/m] v_y [kN/m]	n_x [kN/m] n_y [kN/m]	n_{xy} [kN/m]
E1	Element: 817 Node: 98	30.938 2.300 -0.500	UGT-Set B/1	**-180.32** -11.35	4.80	**419.91** 104.25	107.99 5.65	-7.26
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/2	**80.56** 11.41	-4.55	-16.43 -27.19	350.50 111.49	72.51
E1	Element: 1140 Node: 17	13.130 6.000 -0.500	UGT-Set B/1	-13.53 **-67.61**	-12.91	189.93 -132.54	-3.94 2.83	23.38
E1	Element: 757 Node: 2625	31.447 4.150 -0.500	UGT-Set B/3	-22.75 **127.59**	-14.99	60.93 16.72	-26.73 -37.42	-2.94
E1	Element: 179 Node: 1706	32.230 5.675 -0.500	UGT-Set B/4	67.21 16.65	**-62.85**	90.23 -20.93	-385.67 -21.92	-71.67
E1	Element: 840 Node: 2472	30.640 2.401 -0.500	UGT-Set B/1	-94.33 22.96	**44.25**	-215.28 317.69	41.59 -21.29	-18.94
E1	Element: 814 Node: 99	30.572 2.300 -0.500	UGT-Set B/3	-178.45 -0.30	-14.34	**-364.53** 109.50	94.73 4.91	3.64
E1	Element: 829 Node: 104	30.755 5.610 -0.500	UGT-Set B/3	-129.85 17.21	7.62	30.66 **-389.88**	10.53 -5.89	-1.43
E1	Element: 775 Node: 102	30.755 5.990 -0.500	UGT-Set B/3	-102.90 -32.96	-7.83	69.37 **411.22**	36.86 -9.71	-1.41
E1	Element: 179 Node: 1705	32.230 5.362 -0.500	UGT-Set B/5	61.38 56.35	-25.81	103.29 -50.95	**-394.95** -38.47	62.34
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/6	65.21 0.26	-8.00	-23.73 -34.88	**354.62** 106.58	71.35
E1	Element: 174 Node: 1795	31.730 4.150 -0.500	UGT-Set B/6	35.46 -1.08	-8.00	-4.98 144.28	137.89 **-73.50**	71.35
E1	Element: 176 Node: 1794	31.730 4.612 -0.500	UGT-Set B/5	17.86 12.15	-10.56	67.10 -54.31	117.69 **128.59**	-69.95
E1	Element: 759 Node: 1793	31.730 5.075 -0.500	UGT-Set B/5	16.30 26.52	-25.87	97.48 -102.17	-126.67 41.79	**-83.48**
E1	Element: 174 Node: 1795	31.730 4.150 -0.500	UGT-Set B/7	40.00 10.33	-4.58	-2.66 175.77	138.67 -62.70	**72.52**

Name	Combination key
UGT-Set B/1	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/2	1.20*BG101 + 1.20*BG102 + 1.50*BG123
UGT-Set B/3	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/4	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG115 + 1.50*BG123
UGT-Set B/5	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115 + 1.50*BG123
UGT-Set B/6	0.90*BG101 + 0.90*BG102 + 1.50*BG115 + 1.50*BG123
UGT-Set B/7	1.20*BG101 + 1.20*BG102 + 1.50*BG115 + 1.50*BG123

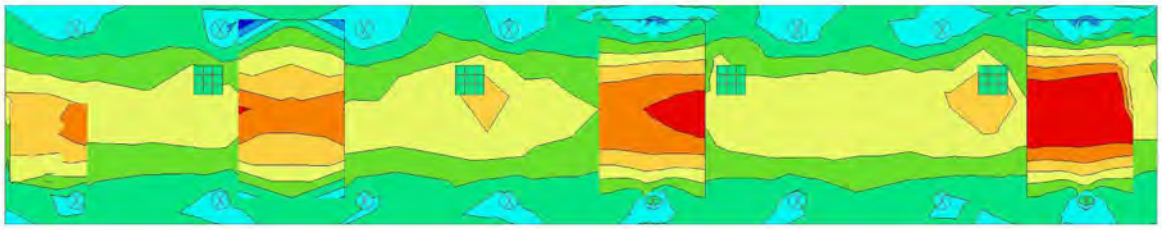
2.2.6.2. Resultaten - m_x

Values: m_x
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2.6.3. Resultaten - m_y

Values: m_y
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

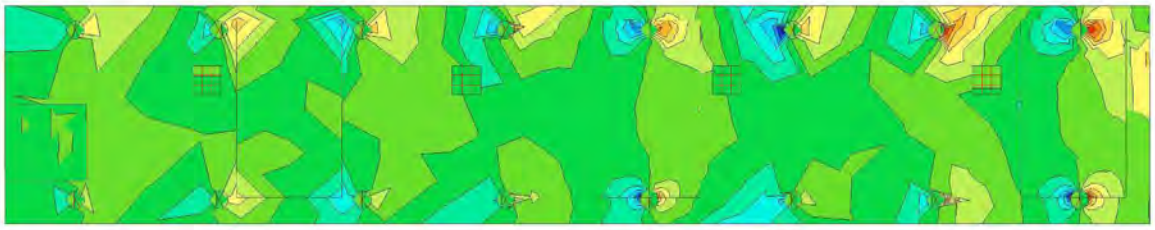


2.2.6.4. Resultaten - m_xy

Values: m_{xy}
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

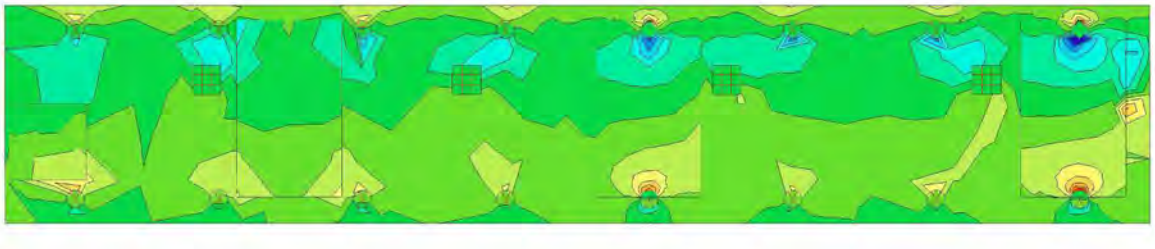
2.2.6.5. Resultaten - v_x

Values: v_x
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



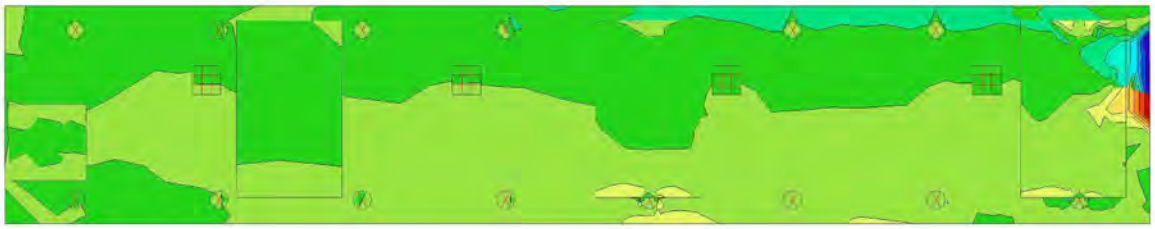
2.2.6.6. Resultaten - v_y

Values: v_y
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



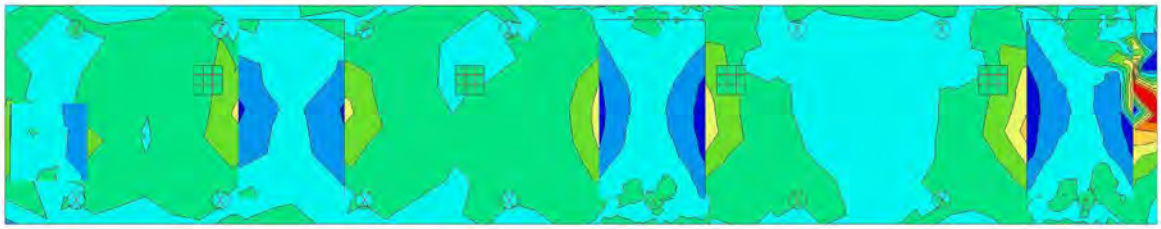
2.2.6.7. Resultaten - n_x

Values: n_x
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



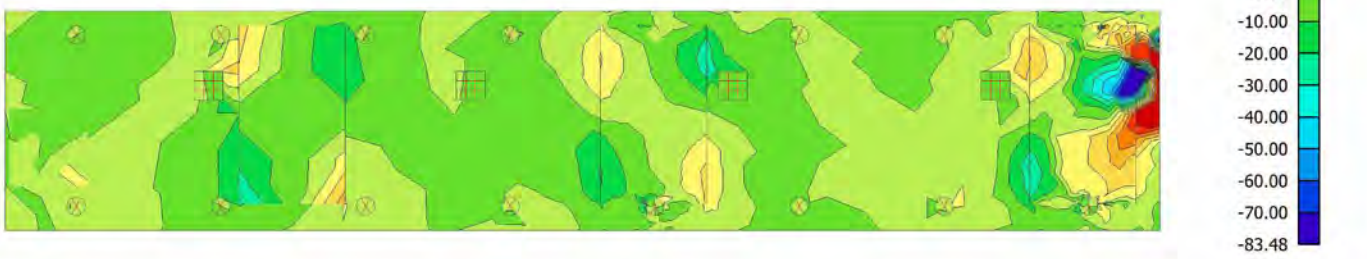
2.2.6.8. Resultaten - n_y

Values: n_y
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2.6.9. Resultaten - n_xy

Values: n_{xy}
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2D internal forces

Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element

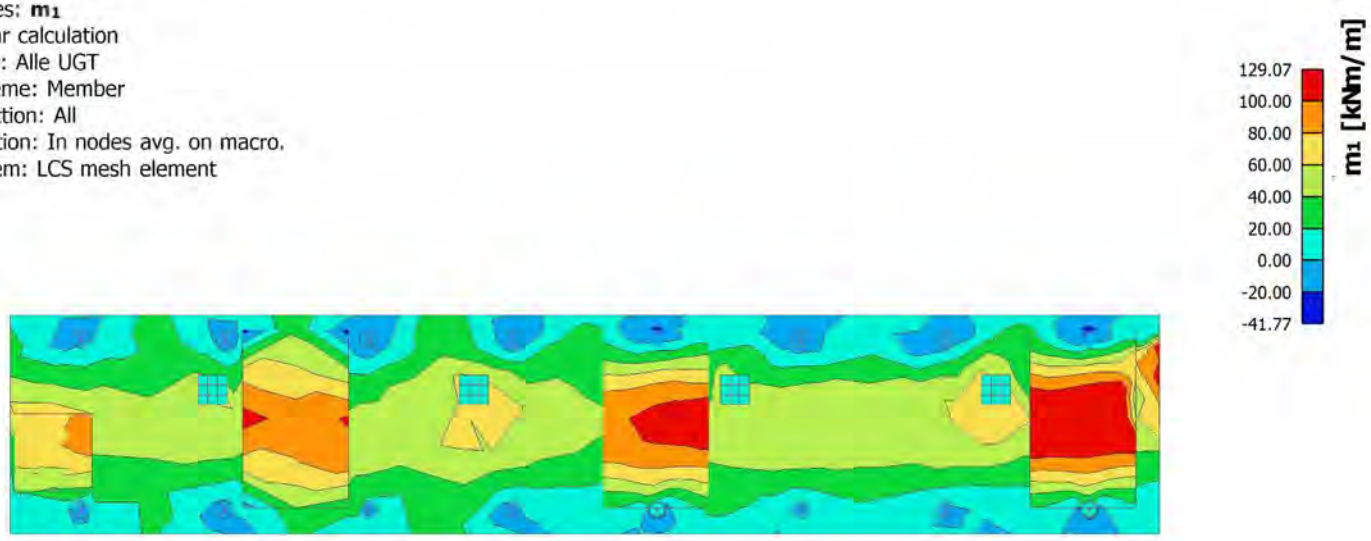
Principal magnitudes

Name	Mesh	Position [m]	Case	m_1 [kNm/m] m_2 [kNm/m]	α_b [deg]	mt_{max} [kNm/m]	q_{max} [kN/m]	β_b [deg]	n_1 [kN/m] n_2 [kN/m]	α_n [deg]	q_{min} [kN/m]
E1	Element: 980 Node: 107	21.755 5.990 -0.500	UGT-Set B/1	**-41.77** -62.61	89.64	10.42	364.06	81.40	22.10 -8.67	-4.33	15.39
E1	Element: 757 Node: 2625	31.447 4.150 -0.500	UGT-Set B/2	**129.07** -24.23	-84.36	76.65	63.19	15.34	-25.98 -38.17	-14.41	6.10
E1	Element: 817 Node: 98	30.938 2.300 -0.500	UGT-Set B/3	-11.21 **-180.46**	88.38	84.62	**432.66**	13.94	108.51 5.13	-4.04	51.69
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/2	61.87 **42.40**	53.14	9.73	96.40	50.59	22.34 -30.39	87.10	26.36
E1	Element: 13 Node: 1560	30.234 6.300 -0.500	UGT-Set B/4	-0.60 -31.30	**-90.00**	15.35	60.21	155.56	-0.22 -1.62	65.90	0.70
E1	Element: 264 Node: 1790	31.730 5.769 -0.500	UGT-Set B/5	4.48 -20.99	**90.00**	12.73	75.88	-26.42	29.21 -5.62	-42.19	17.42
E1	Element: 932 Node: 108	21.565 5.800 -0.500	UGT-Set B/1	0.00 0.00	-35.52	**0.00**	0.00	-37.55	0.00 0.00	20.17	0.00
E1	Element: 815 Node: 2474	30.597 2.356 -0.500	UGT-Set B/3	23.79 -172.87	88.03	**98.33**	368.93	148.65	76.79 -9.71	-2.89	43.25
E1	Element: 719 Node: 102	30.755 5.990 -0.500	UGT-Set B/6	0.00 0.00	-80.18	0.00	**0.00**	9.47	0.00 0.00	7.30	0.00
E1	Element: 549 Node: 2058	21.459 2.207 -0.500	UGT-Set B/7	3.50 -26.29	-64.23	14.90	91.47	**-179.99**	38.59 -2.63	-12.49	20.61
E1	Element: 107 Node: 59	15.565 2.250 -0.500	UGT-Set B/8	13.17 -19.72	-65.94	16.44	74.55	**180.00**	21.92 4.26	-2.42	8.83
E1	Element: 177 Node: 6	32.230 5.050 -0.500	UGT-Set B/9	91.59 -17.85	-37.03	54.72	44.60	-30.27	**-51.81** -365.83	77.73	157.01
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/10	66.18 -0.71	-6.92	33.45	42.19	-124.23	**373.67** 87.52	14.96	143.08
E1	Element: 179 Node: 1706	32.230 5.675 -0.500	UGT-Set B/11	103.08 -26.98	-34.49	65.03	106.14	-13.31	-10.18 **-407.67**	-79.70	198.75
E1	Element: 174 Node: 1704	32.230 4.000 -0.500	UGT-Set B/12	68.58 14.26	-8.98	27.16	4.56	-104.55	368.01 **95.35**	15.85	136.33
E1	Element: 82 Node: 43	9.945 5.800 -0.500	UGT-Set B/7	-1.95 -48.91	-81.17	23.48	90.89	-6.23	0.57 -2.97	**-90.00**	1.77
E1	Element: 36 Node: 2276	23.752 5.939 -0.500	UGT-Set B/8	1.33 -3.52	73.86	2.43	41.40	-171.09	-0.40 -47.17	**90.00**	23.38
E1	Element: 419 Node: 55	15.945 5.800 -0.500	UGT-Set B/13	0.00 0.00	-15.41	0.00	0.00	-158.07	0.00 0.00	-36.71	**0.00**
E1	Element: 177 Node: 5	32.230 4.450 -0.500	UGT-Set B/8	66.19 -2.42	-6.72	34.31	42.83	-57.21	104.67 -365.63	81.17	**235.15**

Name	Combination key
UGT-Set B/1	1.35*BG101 + 1.35*BG102 + 1.50*BG114
UGT-Set B/2	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114
UGT-Set B/3	1.35*BG101 + 1.35*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115
UGT-Set B/4	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG121
UGT-Set B/5	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG122
UGT-Set B/6	0.90*BG101 + 0.90*BG102 + 1.50*BG122
UGT-Set B/7	0.90*BG101 + 0.90*BG102 + 1.50*BG114 + 1.50*BG123
UGT-Set B/8	0.90*BG101 + 0.90*BG102 + 1.50*BG123
UGT-Set B/9	0.90*BG101 + 0.90*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG115 + 1.50*BG123
UGT-Set B/10	0.90*BG101 + 0.90*BG102 + 1.50*BG115 + 1.50*BG123
UGT-Set B/11	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG114 + 1.50*BG115 + 1.50*BG123
UGT-Set B/12	1.20*BG101 + 1.20*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG123
UGT-Set B/13	0.90*BG101 + 0.90*BG102 + 1.50*BG111 + 1.50*BG113 + 1.50*BG123

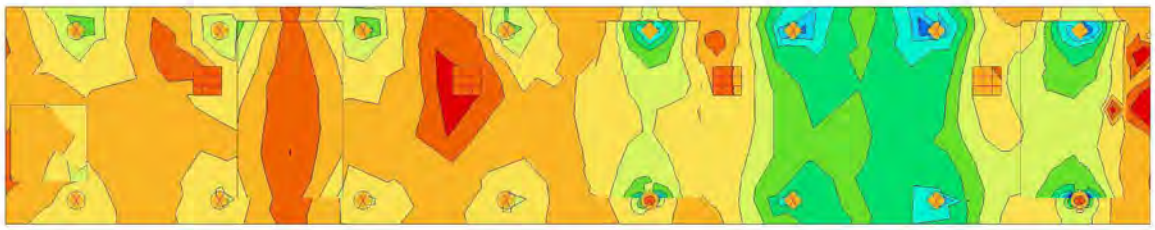
Resultaten - m_1

Values: m_1
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



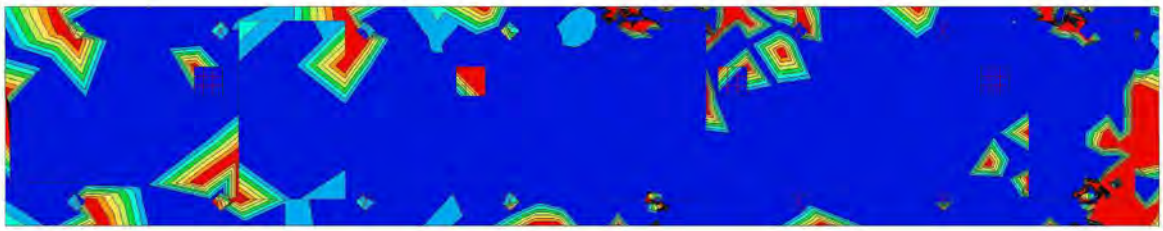
Resultaten - m_2

Values: m_2
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



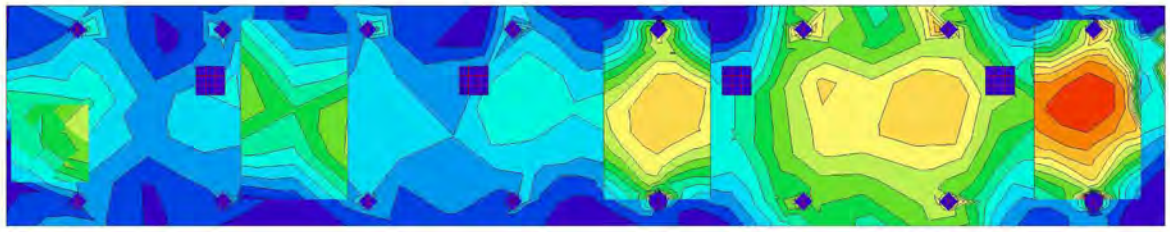
Resultaten - α_b

Values: α_b
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



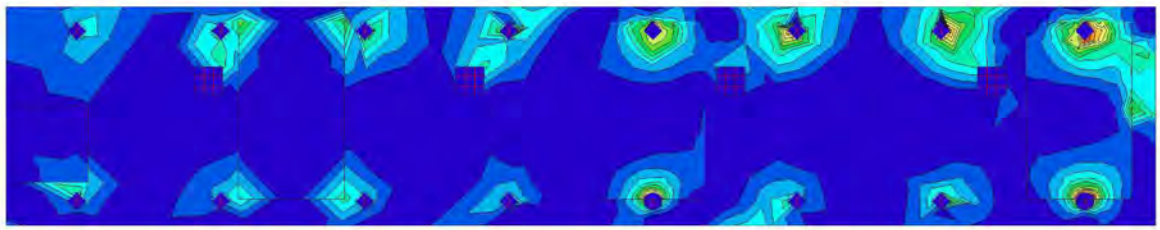
Resultaten - mt_maxb

Values: $\mathbf{mt_{maxb}}$
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



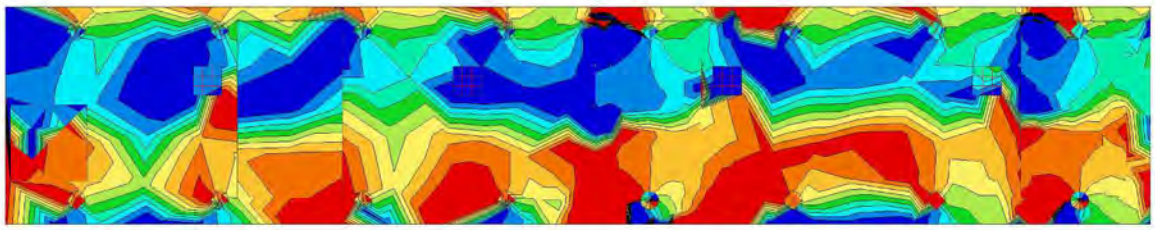
Resultaten - q_maxb

Values: $\mathbf{q_{maxb}}$
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



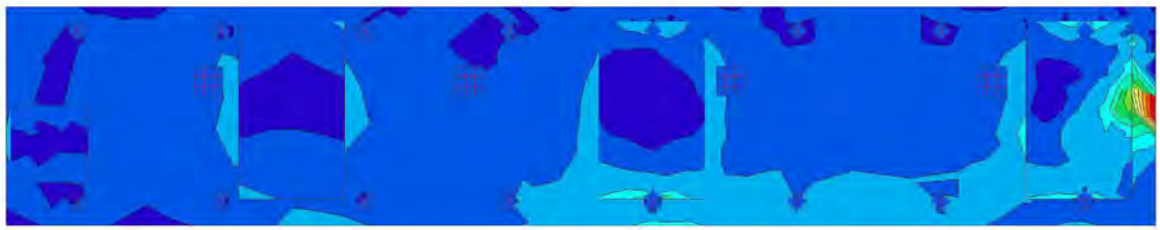
Resultaten - β_b

Values: β_b
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



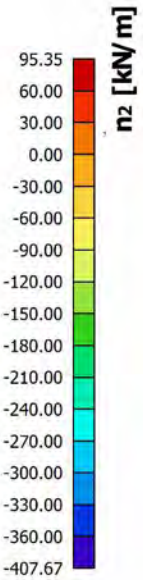
Resultaten - n_1

Values: n_1
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



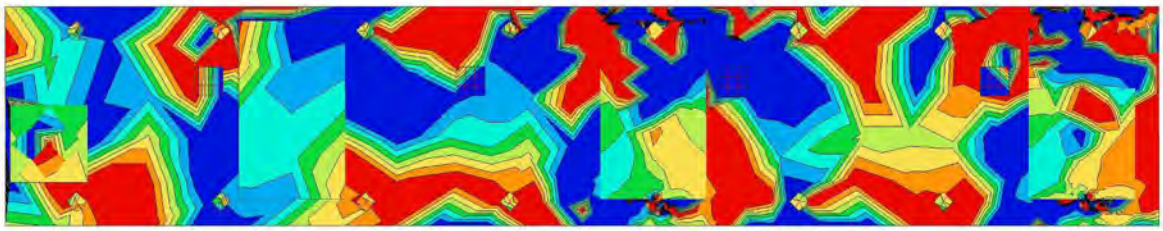
Resultaten - n_2

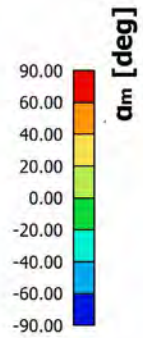
Values: n_2
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



Resultaten - α_m

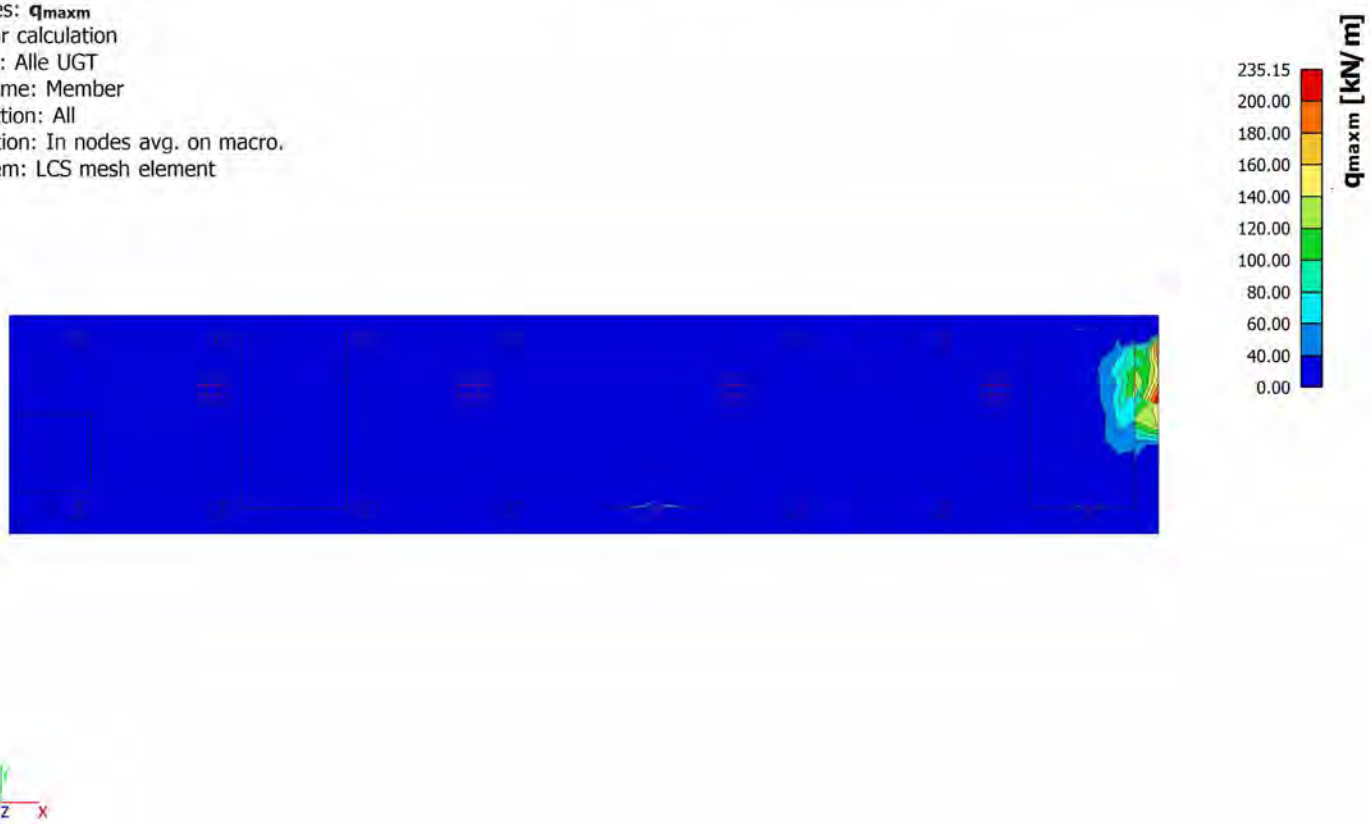
Values: α_m
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



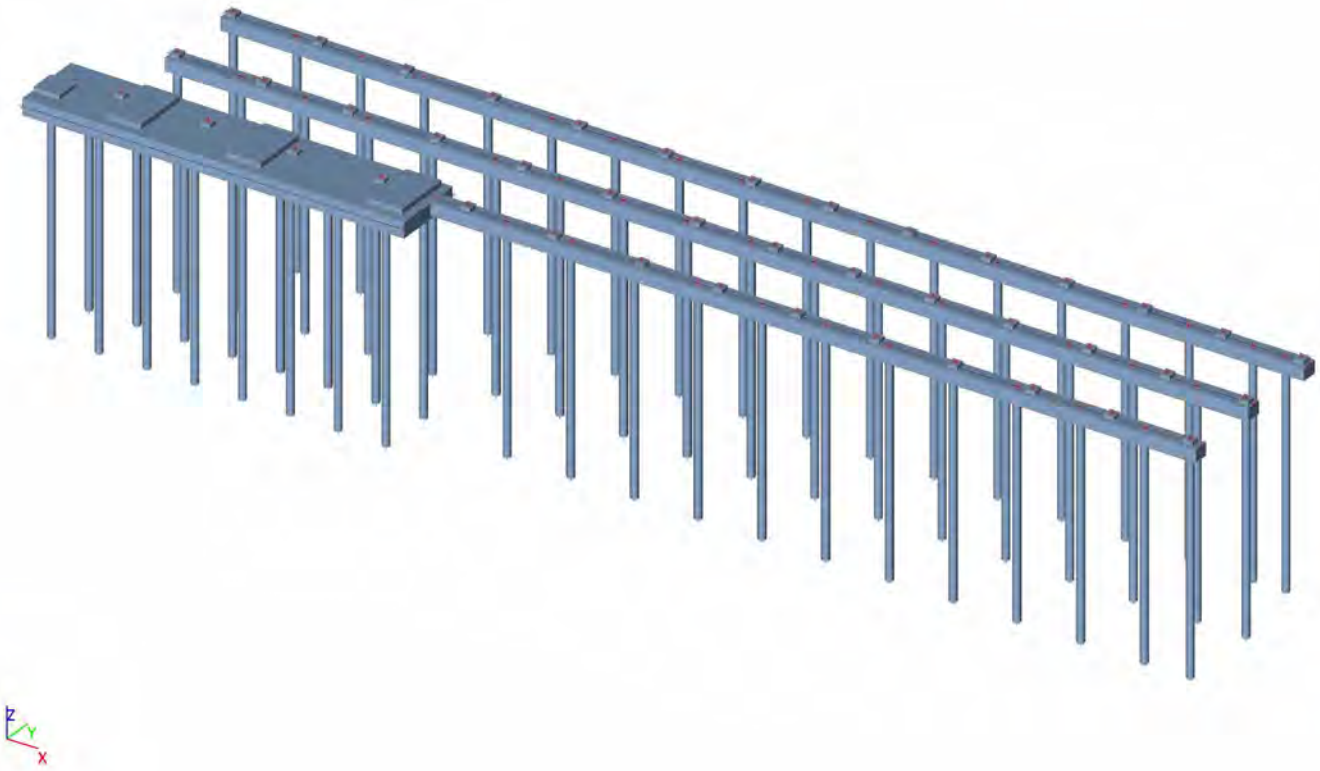


Resultaten - q_maxm

Values: q_{maxm}
Linear calculation
Class: Alle UGT
Extreme: Member
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



Annex D.3.
Prelim. Concrete design



1. Table of contents

2. Concrete design

2.1. Slab

2.1.1. Design forces

2.1.1.1. Internal forces 2D

Extreme: Global
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element
Error E-C04: Not all items in this class were calculated.
Nothing in selection to display as: Standard result

E/W/N	Present on members
E-C04	all

2.1.1.2. Rekenmodel - mEd,1+

Values: m_{Ed1+}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.3. Rekenmodel - mEd,2+

Values: m_{Ed2+}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.4. Rekenmodel - mEd,c+

Values: m_{Edc+}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.5. Rekenmodel - mEd,1-

Values: m_{Ed1-}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.6. Rekenmodel - mEd,2-

Values: m_{Ed2-}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.7. Rekenmodel - mEd,c-

Values: m_{Edc-}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.8. Rekenmodel - nEd,1+

Values: n_{Ed1+}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.9. Rekenmodel - nEd,2+

Values: n_{Ed2+}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.10. Rekenmodel - nEd,c+

Values: n_{Edc+}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.11. Rekenmodel - nEd,1-

Values: n_{Ed1-}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.12. Rekenmodel - nEd,2-

Values: n_{Ed2-}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.13. Rekenmodel - nEd,c-

Values: n_{Edc-}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.1.14. Rekenmodel - vEd

Values: v_{Ed}

Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element
Error E-C04: Not all items in this class were calculated.

2.1.2. Rebar design

2.1.2.1. Reinforcement design (ULS+SLS)

Linear calculation
Class: Alle UGT
Extreme: Global
Selection: All
Location: In nodes avg. on macro. System: LCS mesh element

Plate E1	**h=1000 mm**
NEN EN 1992-1-1+C2/NB+A1:2020	Node 1686/645 [X= 30.983, Y=1.750, Z=-0.500 m]

Design assumptions

Reinforcement

Longitudinal: **B 500B**

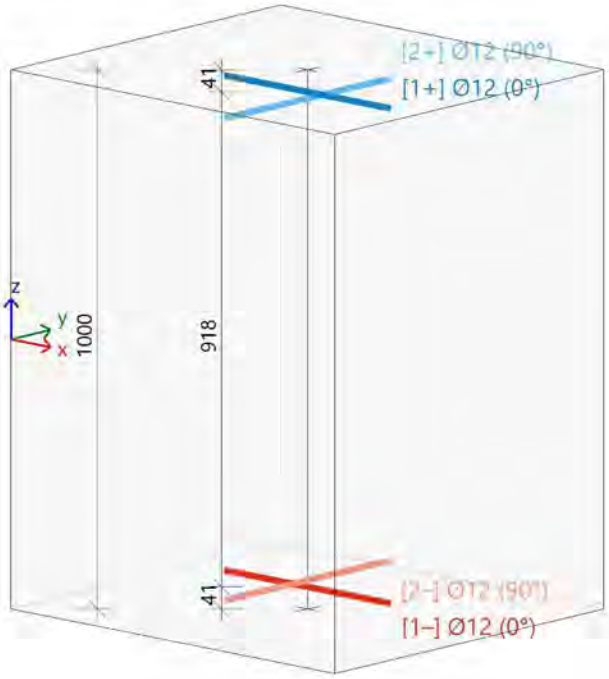
Upper surface

[1+] First layer (0°)	Ø12 mm / Principal
[2+] Second layer (90°)	Ø12 mm / Principal
Cover:	c_{nom} = 35 mm

Lower surface

[1−] First layer (0°)	Ø12 mm / Principal
[2−] Second layer (90°)	Ø12 mm / Principal
Cover:	c_{nom} = 35 mm

Shear: **B 500B** Ø12 mm



Concrete:

Material: **C35/45**

Structural class:	S3 (design working life of 50 years, no special quality control)	(Table 4.3N)
Environmental conditions:	XC3, XF3, XS1, XA3 (in situ)	(Table 4.1N)

Minimum cover (§4.4.1.2)

$$c_{min} = \max\left(c_{min,b}; c_{min,dur} + \Delta c_{dur,\gamma} - \Delta c_{dur,st} - \Delta c_{dur,add}; 10\right) \quad (4.2)$$

$$= \max\left(12; 30 + 0 - 0 - 0; 10\right) = 30 \text{ mm}$$

Nominal cover (§4.4.1.1)

$$c_{nom} = c_{min} + \Delta c_{dev} = 30 + 5 = 35 \text{ mm} \quad (4.1)$$

Internal forces from structural analysis

Ultimate limit state

Involving the shifting of moment curve : YES (§9.2.1.3(2))

$a_l = h \cdot Coeff_d = 1 \cdot 0.9 = 900$ mm (§6.2.2(5))

Case	m_x [kNm/m]	m_y [kNm/m]	m_{xy} [kNm/m]	n_x [kN/m]	n_y [kN/m]	n_{xy} [kN/m]	v_x [kN/m]	v_y [kN/m]
UGT-Set B/1	-66.58	29.18	15.35	26.15	2.13	-1.40	26.26	-2.52
UGT-Set B/2	-180.32	51.46	44.25	22.34	0.69	-0.49	47.03	-3.59
UGT-Set B/3	-160.07	47.55	39.47	21.15	0.64	-0.39	45.05	-3.53
UGT-Set B/4	-86.83	33.14	20.13	27.34	2.18	-1.51	28.23	-2.58
UGT-Set B/5	-180.03	51.46	44.20	22.39	0.69	-0.49	47.04	-3.60
UGT-Set B/6	-66.87	29.17	15.40	26.10	2.13	-1.41	26.24	-2.52
UGT-Set B/7	-113.28	32.05	28.62	12.32	0.55	-0.39	30.40	-2.30
UGT-Set B/8	-165.50	50.63	40.96	23.52	0.69	-0.39	47.01	-3.68
UGT-Set B/9	-119.27	43.54	28.21	32.33	2.32	-1.57	38.29	-3.39
UGT-Set B/10	-119.56	43.53	28.26	32.28	2.32	-1.58	38.28	-3.39
UGT-Set B/11	-111.36	31.98	27.36	13.75	0.42	-0.29	30.05	-2.33
UGT-Set B/12	-96.83	31.15	24.12	14.89	0.43	-0.19	30.02	-2.41
UGT-Set B/13	-134.09	44.44	31.50	31.15	2.32	-1.68	38.31	-3.31

Case	Combination key
UGT-Set B/1	0.90*BG101+0.90*BG102+1.50*BG123
UGT-Set B/2	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115
UGT-Set B/3	1.35*BG101+1.35*BG102+1.50*BG114+1.50*BG115
UGT-Set B/4	0.90*BG101+0.90*BG102+1.50*BG111+1.50*BG113+1.50*BG123
UGT-Set B/5	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114
UGT-Set B/6	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG123
UGT-Set B/7	0.90*BG101+0.90*BG102+1.50*BG114+1.50*BG115+1.50*BG122
UGT-Set B/8	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113
UGT-Set B/9	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG123
UGT-Set B/10	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG115+1.50*BG123
UGT-Set B/11	0.90*BG101+0.90*BG102+1.50*BG114
UGT-Set B/12	0.90*BG101+0.90*BG102
UGT-Set B/13	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115+1.50*BG123

Longitudinal reinforcement

Ultimate limit state design

Direction of reinforcement layer [α=90°]

[2-]: lower surface

m_{Ed} = 53.2 kNm/m | n_{Ed} = 94 kN/m [UGT-Set B/2]

f_{cd} = 23.3 MPa (γ_C = 1.5, α_{cc} = 1)

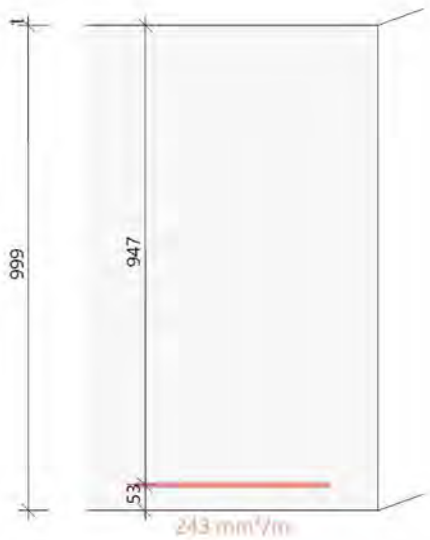
f_{yd} = 435 MPa (γ_S = 1.15)

Ø12 mm : d_1=53 mm -> d=947 mm

x=0.7 mm -> z=947 mm

$A_{s,ult}$=243 mm²/m (tensile)

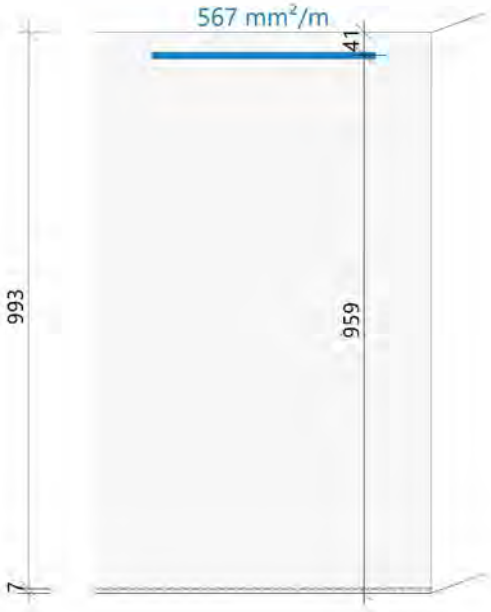
ρ_l=0.026%



Direction of reinforcement layer [α=0°]

[1+]: upper surface

m_{Ed} = -178 kNm/m | n_{Ed} = 116 kN/m [UGT-Set B/2]
f_{cd} = 23.3 MPa (γ_C = 1.5, α_{cc} = 1)
f_{yd} = 435 MPa (γ_S = 1.15)
Ø12 mm : d_1=41 mm -> d=959 mm
x=7 mm -> z=956 mm
$A_{s,ult}$=567 mm²/m (tensile)
ρ_l=0.059%



Design summary

	Case	α_s [°]	$d_{s,ref}$ [mm]	m_{Ed} [kNm]	n_{Ed} [kN]	d [mm]	x [mm]	z [mm]	F_{cd} [kN]	F_{sd} [kN]	$A_{s,ult}$ [mm²]
[1+]	UGT-Set B/2	0.0	ϕ12	**-178.08**	**115.62**	959.0	7.5	956.1	-130.8	246.4	**567**
[2-]	UGT-Set B/2	90.0	ϕ12	**53.23**	**93.96**	947.0	0.7	946.7	-11.9	105.8	**243**

α_s - direction of the reinforcement layer; m_{Ed}, n_{Ed} - recalculated design load, F_{cd} - resisting force in the concrete; F_{sd} - resisting force in the reinforcement; $A_{s,ult}$ - required reinforcement area from ULS design

UGT-Set B/2	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115

Check of concrete diagonal strut

Check direction (extreme) [α=45°]

Design normal force in direction of concrete strut

$n_{Ed,sc}$ = -93.8 kN [UGT-Set B/2]

with full cross-section height:

h=1000 mm -> $A_{cc} = h \cdot b = 1 \cdot 1000 = 1 \cdot 10^6$ mm²

$$f_{cd} = \frac{\alpha_{cc} \cdot f_{ck}}{\gamma_C} = \frac{1 \cdot 35}{1.5} = 23 \text{ MPa}$$

Design resistance of concrete strut (in compression)

$$n_{Rd,sc} = A_{cc} \cdot Red_{fcd} \cdot f_{cd} = 1 \cdot 10^6 \cdot 0.85 \cdot 23 = 19833 \text{ kN}$$

Unity check

$$UC_{sc} = \frac{abs(n_{Ed,sc})}{n_{Rd,sc}} = \frac{abs(-93.8)}{19833} = 0.0047$$

Minimum and maximum reinforcement areas

Minimum area of principal tension reinforcement (§9.2.1.1(1))

[2-] Reinforcement layer

First order eccentricity

e_y = 0 mm
e_z = 567 mm

$$e = \sqrt{e_y^2 + e_z^2} = \sqrt{0^2 + 567^2} = 567 \text{ mm}$$

Elastic section modulus

$\alpha_e = 0\ °$

$W_{ely} = 167{\cdot}10^6\ mm^3$

$W_{elz} = 167{\cdot}10^6\ mm^3$

$W_{el} = 167{\cdot}10^6\ mm^3$

$$\eta_y = \frac{e_z \cdot A_c}{W_{ely}} = \frac{567 \cdot 1{\cdot}10^6}{167{\cdot}10^6} = 3.4$$

$$\eta_z = \frac{e_y \cdot A_c}{W_{elz}} = \frac{0 \cdot 1{\cdot}10^6}{167{\cdot}10^6} = 0$$

$$\eta = \frac{e \cdot A_c}{W_{el}} = \frac{567 \cdot 1{\cdot}10^6}{167{\cdot}10^6} = 3.4$$

Combination for compression

$$M_{E,min,y} = \frac{f_{ctm} \cdot W_{ely} \cdot \eta_y}{\eta_y - 1} = \frac{3.2 \cdot 167{\cdot}10^6 \cdot 3.4}{3.4 - 1} = 756\ kNm$$

$$M_{E,min,z} = \frac{f_{ctm} \cdot W_{elz} \cdot \eta_z}{\eta_z - 1} = \frac{3.2 \cdot 167{\cdot}10^6 \cdot 0}{0 - 1} = 0\ kNm$$

$$N_{E,min} = \frac{f_{ctm} \cdot A_c \cdot 1}{\eta - 1} = \frac{3.2 \cdot 1{\cdot}10^6 \cdot 1}{3.4 - 1} = 1334\ kN$$

$A_{s,req,comp} = 351\ mm^2$

Combination for tension

$$M_{E,min,y} = \frac{f_{ctm} \cdot W_{ely} \cdot \eta_y}{\eta_y + 1} = \frac{3.2 \cdot 167{\cdot}10^6 \cdot 3.4}{3.4 + 1} = 412\ kNm$$

$$M_{E,min,z} = \frac{f_{ctm} \cdot W_{elz} \cdot \eta_z}{\eta_z + 1} = \frac{3.2 \cdot 167{\cdot}10^6 \cdot 0}{0 + 1} = 0\ kNm$$

$$N_{E,min} = \frac{f_{ctm} \cdot A_c \cdot 1}{\eta + 1} = \frac{3.2 \cdot 1{\cdot}10^6 \cdot 1}{3.4 + 1} = 727\ kN$$

$A_{s,req,tens} = 1759\ mm^2$

Combination for bending

$M_{E,min,y} = f_{ctm} \cdot W_{ely} = 3.2 \cdot 167{\cdot}10^6 = 533\ kNm$

$M_{E,min,z} = f_{ctm} \cdot W_{elz} = 3.2 \cdot 167{\cdot}10^6 = 533\ kNm$

$A_{s,req,bend} = 1230\ mm^2$

$A_{s,min,1} = \max\left(A_{s,req,comp};A_{s,req,tens};A_{s,req,bend}\right) = \max\left(351;1759;1230\right) = 1759\ mm^2/m$

Required area from ULS

$A_s = 243\ mm^2$

$Coeff_{Asmin} = 1.25$

$A_{s,min,2} = Coeff_{Asmin} \cdot A_s = 1.25 \cdot 243 = 304\ mm^2/m$

Final minimal allowed area of longitudinal reinforcement

$A_{s,min} = \min\left(A_{s,min,1};A_{s,min,2}\right) = \min\left(1759;304\right) = 304\ mm^2/m$

[1+] Reinforcement layer

First order eccentricity

$e_y = 0$ mm

$e_z = 1540$ mm

$$e = \sqrt{e_y^2 + e_z^2} = \sqrt{0^2 + 1540^2} = 1540 \text{ mm}$$

Elastic section modulus

$\alpha_e = 0$ °

$W_{ely} = 167 \cdot 10^6$ mm^3

$W_{elz} = 167 \cdot 10^6$ mm^3

$W_{el} = 167 \cdot 10^6$ mm^3

$$\eta_y = \frac{e_z \cdot A_c}{W_{ely}} = \frac{1540 \cdot 1 \cdot 10^6}{167 \cdot 10^6} = 9.24$$

$$\eta_z = \frac{e_y \cdot A_c}{W_{elz}} = \frac{0 \cdot 1 \cdot 10^6}{167 \cdot 10^6} = 0$$

$$\eta = \frac{e \cdot A_c}{W_{el}} = \frac{1540 \cdot 1 \cdot 10^6}{167 \cdot 10^6} = 9.24$$

Combination for compression

$$M_{E,min,y} = \frac{f_{ctm} \cdot W_{ely} \cdot \eta_y}{\eta_y - 1} = \frac{3.2 \cdot 167 \cdot 10^6 \cdot 9.24}{9.24 - 1} = 598 \text{ kNm}$$

$$M_{E,min,z} = \frac{f_{ctm} \cdot W_{elz} \cdot \eta_z}{\eta_z - 1} = \frac{3.2 \cdot 167 \cdot 10^6 \cdot 0}{0 - 1} = 0 \text{ kNm}$$

$$N_{E,min} = \frac{f_{ctm} \cdot A_c \cdot 1}{\eta - 1} = \frac{3.2 \cdot 1 \cdot 10^6 \cdot 1}{9.24 - 1} = 388 \text{ kN}$$

$A_{s,req,comp} = 947$ mm^2

Combination for tension

$$M_{E,min,y} = \frac{f_{ctm} \cdot W_{ely} \cdot \eta_y}{\eta_y + 1} = \frac{3.2 \cdot 167 \cdot 10^6 \cdot 9.24}{9.24 + 1} = 481 \text{ kNm}$$

$$M_{E,min,z} = \frac{f_{ctm} \cdot W_{elz} \cdot \eta_z}{\eta_z + 1} = \frac{3.2 \cdot 167 \cdot 10^6 \cdot 0}{0 + 1} = 0 \text{ kNm}$$

$$N_{E,min} = \frac{f_{ctm} \cdot A_c \cdot 1}{\eta + 1} = \frac{3.2 \cdot 1 \cdot 10^6 \cdot 1}{9.24 + 1} = 312 \text{ kN}$$

$A_{s,req,tens} = 1436$ mm^2

Combination for bending

$M_{E,min,y} = f_{ctm} \cdot W_{ely} = 3.2 \cdot 167 \cdot 10^6 = 533$ kNm

$M_{E,min,z} = f_{ctm} \cdot W_{elz} = 3.2 \cdot 167 \cdot 10^6 = 533$ kNm

$A_{s,req,bend} = 1215$ mm^2

$$A_{s,min,1} = \max\left(A_{s,req,comp}; A_{s,req,tens}; A_{s,req,bend}\right) = \max\left(947; 1436; 1215\right) = 1436 \text{ mm}^2/\text{m}$$

Required area from ULS

$A_s = 567\ mm^2$

$Coeff_{Asmin} = 1.25$

$A_{s,min,2} = Coeff_{Asmin} \cdot A_s = 1.25 \cdot 567 = 709\ mm^2/m$

Final minimal allowed area of longitudinal reinforcement

$A_{s,min} = \min\left(A_{s,min,1};A_{s,min,2}\right) = \min\left(1436;709\right) = 709\ mm^2/m$

Maximum cross-sectional area of tension or compression reinforcement (§9.2.1.1(3))

[2-][1+] Reinforcement layer

$A_{s,max} = Coeff_{Asmax} \cdot A_c = 0.04 \cdot 1 = 40000\ mm^2/m$

Minimum and maximum spacing of reinforcement bars

Maximum spacing of principal reinforcement bars (§9.3.1.1(3))

[2-][1+] Reinforcement layer

$s_{max} = \min\left(Coeff_{smax,slab,A} \cdot h;Coeff_{smax,slab,B}\right) = \min\left(3 \cdot 1000;400\right) = 400\ mm$

Minimum clear distance between reinforcement bars (§8.2(2))

[1-][2-][1+][2+] Reinforcement layer

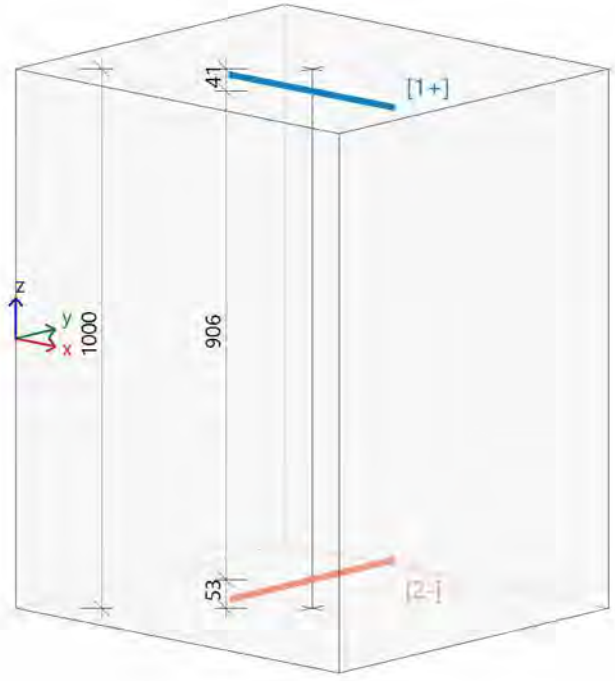
$s_{min} = \max\left(k_1 \cdot \phi;d_g + k_2;s_{l,min}\right) = \max\left(1 \cdot 12;32 + 5;20\right) = 37\ mm$

Longitudinal reinforcement - Summary

Designed reinforcement layers (in direction from the member local x axis):

	Basic	Additional		α	$A_{s,min}$	$A_{s,ult}$	$\Delta A_{s,serv}$	$A_{s,req}$	$A_{s,prov}$	$A_{s,max}$	$s_{min(cl)}$	s_{max}	Status
		User	Auto	[°]	[mm²]	[mm²]	[mm²]	[mm²]	[mm²]	[mm²]	[mm]	[mm]	
[1+]	ϕ12/150	---	---	0.0	709	567	---	**709**	**754**	40000	138	150	**OK**
								0.07%	0.08%		≥37	≤400	
[2-]	ϕ12/150	---	---	90.0	304	243	---	**304**	**754**	40000	138	150	**OK**
								0.03%	0.08%		≥37	≤400	

$A_{s,req}$ - required reinforcement area as $\max(A_{s,ult}; A_{s,min}) + \Delta A_{s,serv}$; $A_{s,prov}$ - provided reinforcement area; $A_{s,min/max}$ - min/max reinforcement area; $s_{max(min)}$ - maximum spacing of bars (minimum clear distance between bars



[1+] ϕ12/150
[2-] ϕ12/150

Design of shear reinforcement

Design shear force

$$v_{Ed} = \sqrt{v_x^2 + v_y^2} = \sqrt{47.0^2 + -3.6^2} = 47.2 \text{ kN/m}$$ [UGT-Set B/5]

Principal forces and plane of deformation

$m_z = -188$ kNm | $n_z = 22$ kN

$d = 953$ mm | $z = 949$ mm

Longitudinal reinforcement ratio (considering upper surface is in tension) (§6.4.4(1))

$$\rho_{lx} = \frac{A_{sl,x}}{b \cdot d} = \frac{754}{1000 \cdot 953} = 0.0791\ \% \quad \rho_{ly} = \frac{A_{sl,y}}{b \cdot d} = \frac{0}{1000 \cdot 953} = 0\ \%$$

$$\rho_l = \min(\rho_{lx}; 0.02) = 0.0791\ \%$$

Shear resistance without shear reinforcement

Normal concrete stresses (positive if compression)

Normal forces (from FEM): $n_x = 22.4$ kN/m $n_y = 0.7$ kN/m [UGT-Set B/5]

$$\sigma_{cp,1} = \min\left(\frac{-n_x}{A_c}; 0.2 \cdot f_{cd}\right) = \min\left(\frac{-22.4}{1}; 0.2 \cdot 23.3 \cdot 10^6\right) = -0.02 \text{ MPa}$$ (§6.2.2(1))

$$\sigma_{cp,2} = \min\left(\frac{-n_y}{A_c}; 0.2 \cdot f_{cd}\right) = \min\left(\frac{-0.7}{1}; 0.2 \cdot 23.3 \cdot 10^6\right) = 0.00 \text{ MPa}$$ (§6.2.2(1))

$$\sigma_{cp} = \frac{\sigma_{cp,1} + \sigma_{cp,2}}{2} = \frac{-0.02 + 0.00}{2} = -0.01 \text{ MPa}$$

Design shear resistance without shear reinforcement (§6.4.4(1))

$$k = \min\left(1 + \left(\frac{200}{d}\right)^{\frac{1}{2}}; 2\right) = \min\left(1 + \left(\frac{200}{953}\right)^{\frac{1}{2}}; 2\right) = 1.46$$

$C_{Rdc} = 0.12$ $v_{min} = 0.365$ MPa $k_1 = 0.15$

$$v_{Rdc} = \max\left(10^6 \cdot \left(C_{Rdc} \cdot k \cdot \left(100 \cdot \rho_l \cdot f_{ck}\right)^{\frac{1}{3}} + k_1 \cdot \sigma_{cp}\right) \cdot d; 0\right)$$ (6.47)

$$= \max\left(10^6 \cdot \left(0.12 \cdot 1.46 \cdot \left(100 \cdot 791 \cdot 10^{-6} \cdot 35\right)^{\frac{1}{3}} + 0.15 \cdot -0.0115\right) \cdot 0.953; 0\right) = 233 \text{ kN/m}$$

$$v_{Rdcmin} = \max\left(10^6 \cdot \left(v_{min} + k_1 \cdot \sigma_{cp}\right) \cdot d; 0\right) = \max\left(10^6 \cdot \left(0.365 + 0.15 \cdot -0.0115\right) \cdot 0.953; 0\right) = 346 \text{ kN/m}$$

$$v_{Rdc} = \max\left(v_{Rdc}; v_{Rdcmin}\right) = \max\left(233 \text{ kN/m}; 346 \text{ kN/m}\right) = 346 \text{ kN/m}$$

Maximal concrete shear resistance

Strength reduction factor for concrete cracked in shear

$$\nu = 0.6 \cdot \left(1 - \frac{f_{ck}}{250}\right) = 0.6 \cdot \left(1 - \frac{35}{250}\right) = 0.516$$ (6.6N)

Angle of compression concrete strut

$\theta = \theta_{inp} = 40°$, $\cot(\theta) = 1.192$

Design value of the max shear force which can be sustained by the member

$$v_{Rd,max} = \frac{\alpha_{cw} \cdot b_w \cdot z \cdot \nu_1 \cdot f_{cd}}{\left(\cot g(\theta) + tg(\theta)\right)} = \frac{1 \cdot 1 \cdot 0.949 \cdot 0.516 \cdot 23.3}{\left(\cot g(40) + tg(40)\right)} = 5625 \text{ kN/m}$$ (6.9)

Check shear capacity (without shear reinforcement)

Check $v_{Rd,max}$

$v_{Ed} = 47.2$ kN/m $\leq v_{Rd,max} = 5625$ kN/m **(OK)**

Check v_{Rdc}

$v_{Ed} = 47.2$ kN/m <= $v_{Rdc} = 346$ kN/m **(OK, no shear reinforcement is required)**

Shear reinforcement - Summary

	Case	θ [°]	v_{Ed} [kN/m]	$A_{sl,x}$ [mm²]	$A_{sl,y}$ [mm²]	ρ_l [%]	$v_{Rd,c}$ [kN/m]	$v_{Rd,max}$ [kN/m]	$A_{sw,req}$ [mm²/m²]	Status
[+]	UGT-Set B/5	40.0	**47.2**	754	0	0.079	345.8	5625.1	---	**OK**

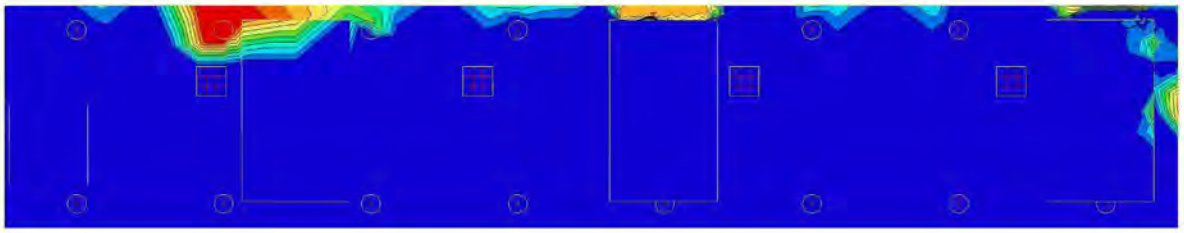
v_{Ed} - design shear force, $A_{sl,x/y}$ - tensile longitudinal reinforcement, ρ_l - corresponding reinforcement ratio, v_{Rdc} - shear resistance without shear reinforcement, $v_{Rd,max}$ - maximal concrete shear resistance, $A_{sw,req}$ - required shear reinforcement

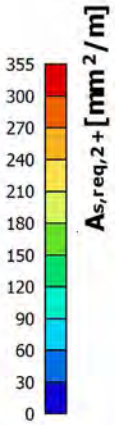
2.1.2.2. Rekenmodel - As,req,1+

Values: **$A_{s,req,1+}$**
Linear calculation
Class: Alle UGT
Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

2.1.2.3. Rekenmodel - As,req,2+

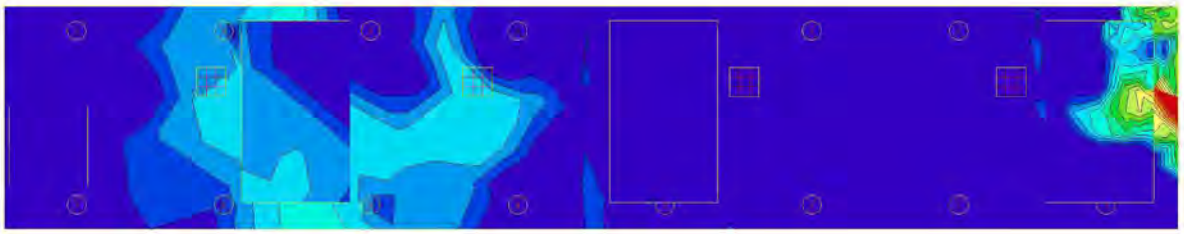
Values: $A_{s,req,2+}$
Linear calculation
Class: Alle UGT
Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element

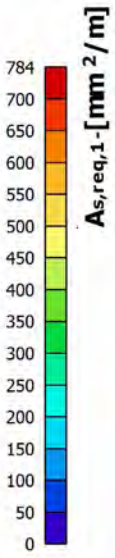




2.1.2.4. Rekenmodel - As,req,1-

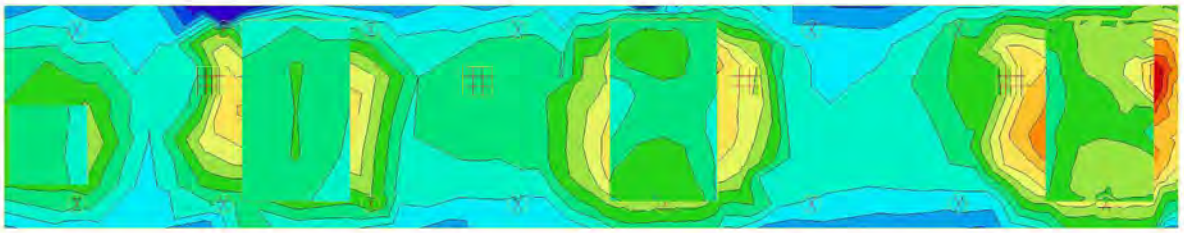
Values: $A_{s,req,1-}$
Linear calculation
Class: Alle UGT
Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element





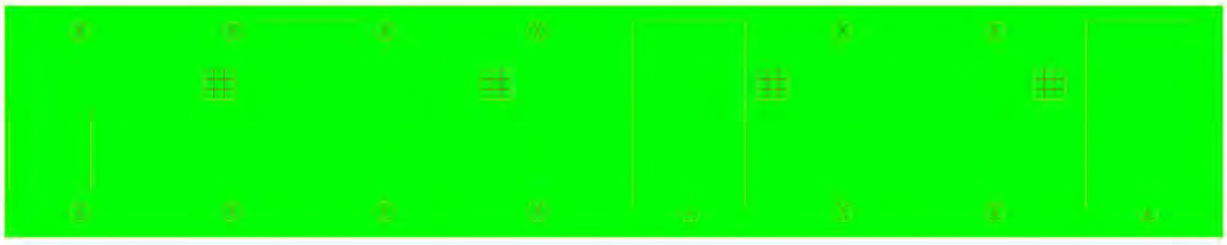
2.1.2.5. Rekenmodel - As,req,2-

Values: $A_{s,req,2-}$
Linear calculation
Class: Alle UGT
Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.1.2.6. Rekenmodel - Asw,req

Values: $A_{sw,req}$
Linear calculation
Class: Alle UGT
Extreme: Global
Selection: All
Location: In nodes avg. on macro.
System: LCS mesh element



2.2. Beams

2.2.1. Design forces

2.2.1.1. Rekenmodel - N

2.2.1.2. Rekenmodel - NEd

2.2.1.3. Rekenmodel - M

2.2.1.4. Rekenmodel - M-MEd

2.2.1.5. Rekenmodel - MEd

2.2.1.6. Rekenmodel - Mx

2.2.1.7. Rekenmodel - MEdx

2.2.1.8. Rekenmodel - V

2.2.1.9. Rekenmodel - V-VEd

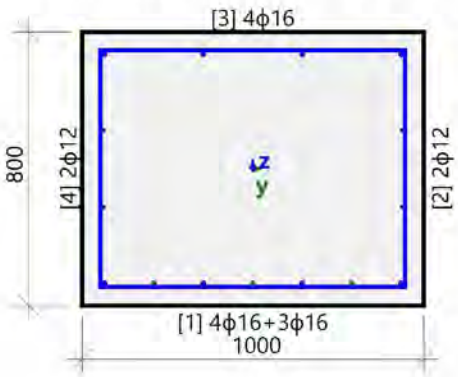
2.2.1.10. Rekenmodel - VEd

2.2.2. Overall Design (ULS)

Linear calculation
Combination: UGT-Set B
Coordinate system: Member
Extreme 1D: Global
Selection: All
Filter: Cross-section = CT-11 - Rechthoek (800; 1000)

Beam S8	**Rechthoek (800; 1000)**
NEN EN 1992-1-1+C2/NB+A1:2020	Section 9 [dx = 1.58 m]

Member length: L = 48 m
Buckling y-y⊥ L_y = 4.04 m (sway)
Buckling z-z⊥ L_z = 103 m (sway)



Concrete: C35/45
Bi-linear stress-strain diagram
Exposure class: XC3, XS1, XF3, XA3

Longitudinal reinforcement: B 500B
Bi-linear with an inclined top branch
11ϕ16+4ϕ12 (2664 mm^2)
ρ_l = 0.333 % (20.9 kg/m)

Shear reinforcement: B 500B
Bi-linear with an inclined top branch
2L ϕ8/100 (101 mm^2)
ρ_w = 0.101 % (7.89 kg/m)

Cover (stirrup)
Top: 50 mm
Bottom: 50 mm
Sides: 50 mm

Design forces

Case	N_{Ed} [kN]	V_{Edy} [kN]	V_{Edz} [kN]	T_{Ed} [kNm]	M_{Edy} [kNm]	M_{Edz} [kNm]
UGT-Set B/1	22.6	0.0	42.9	-0.2	190.8	0.0
UGT-Set B/2	-0.4	0.0	107.8	-0.7	328.0	0.0
UGT-Set B/3	-0.3	0.0	104.0	-0.8	341.7	0.0
UGT-Set B/4	-0.3	0.0	104.1	-0.7	341.8	0.0
UGT-Set B/5	1.5	-29.2	56.0	67.9	264.4	83.9
UGT-Set B/6	1.8	-30.1	2.9	68.3	146.2	88.7
UGT-Set B/7	1.7	-30.1	2.8	68.3	146.2	88.7
UGT-Set B/8	22.5	0.0	42.9	-0.2	190.7	0.0
UGT-Set B/9	-0.3	0.0	107.9	-0.7	328.1	0.0
UGT-Set B/10	-0.1	0.0	43.7	-0.3	190.9	0.0

UGT-Set B/1	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG122
UGT-Set B/2	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG121
UGT-Set B/3	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114
UGT-Set B/4	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115
UGT-Set B/5	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115+1.50*BG123
UGT-Set B/6	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG123
UGT-Set B/7	0.90*BG101+0.90*BG102+1.50*BG123
UGT-Set B/8	0.90*BG101+0.90*BG102+1.50*BG122
UGT-Set B/9	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115+1.50*BG121
UGT-Set B/10	0.90*BG101+0.90*BG102

Longitudinal reinforcement

	Basic	Additional	d_1 [mm]	$A_{s,ult}$ [mm^2]	$A_{s,min}$ [mm^2]	$A_{s,req}$ [mm^2]	$A_{s,prov}$ [mm^2]	s_{min} [mm]	s_{max} [mm]	Status
[1]	4ϕ16	3ϕ16	66	1216	-	**1216**	**1407**	129	145	**OK**
								≥37	≤350	
[2]	2ϕ12	---	64	141	-	**141**	**226**	208	224	**OK**
								≥37	≤350	
[3]	4ϕ16	---	66	170	-	**170**	**804**	273	289	**OK**
								≥37	≤350	
[4]	2ϕ12	---	64	141	-	**141**	**226**	208	224	**OK**
								≥37	≤350	
∑Y	4ϕ12	---				**282**	**452**			
∑Z	8ϕ16	3ϕ16				**1386**	**2212**			
∑	4ϕ12+8ϕ16	3ϕ16				**1668**	**2664**	≤$A_{s,max}$=32000 mm^2		**OK**

Shear reinforcement

Stirrups	$A_{swm,req}$ [mm^2/m]	$A_{swm,prov}$ [mm^2/m]	$A_{swm,max}$ [mm^2/m]	Status
ϕ8/100mm, (ns=2)	947	1005	13846	**OK**

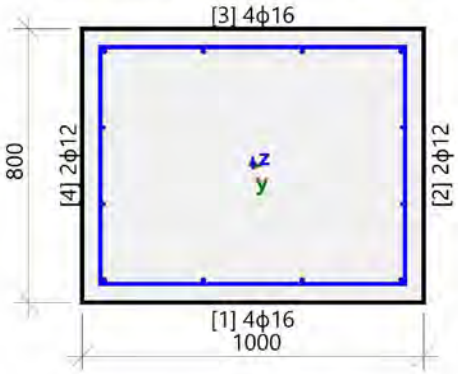
Beam S8

NEN EN 1992-1-1+C2/NB+A1:2020

Rechthoek (800; 1000)

Section 91 [dx = 17.1 m]

Member length: L = 48 m
Buckling y-y$^{\perp}$ L_y = 3.99 m (sway)
Buckling z-z$^{\perp}$ L_z = 103 m (sway)



Concrete: C35/45
Bi-linear stress-strain diagram
Exposure class: XC3, XS1, XF3, XA3

Longitudinal reinforcement: B 500B
Bi-linear with an inclined top branch
8ϕ16+4ϕ12 (2061 mm^2)
ρ_l = 0.258 % (16.2 kg/m)

Shear reinforcement: B 500B
Bi-linear with an inclined top branch
2L ϕ8/100 (101 mm^2)
ρ_w = 0.326 % (7.89 kg/m)

Cover (stirrup)
Top: 50 mm
Bottom: 50 mm
Sides: 50 mm

Design forces

Case	N_{Ed} [kN]	V_{Edy} [kN]	V_{Edz} [kN]	T_{Ed} [kNm]	M_{Edy} [kNm]	M_{Edz} [kNm]
UGT-Set B/1	16.5	-0.1	107.2	0.0	40.3	1.4
UGT-Set B/2	-0.2	-0.1	207.4	0.0	85.9	3.8
UGT-Set B/3	-0.1	-0.1	211.1	0.0	85.0	3.9
UGT-Set B/4	1.0	-14.0	150.2	45.0	-62.0	-49.7
UGT-Set B/5	0.0	0.0	107.6	0.0	41.8	1.6
UGT-Set B/6	1.2	-13.9	64.5	44.9	-32.0	-51.7
UGT-Set B/7	1.1	-13.9	79.4	45.0	-41.4	-50.6
UGT-Set B/8	-0.1	0.0	192.6	0.0	83.8	2.6
UGT-Set B/9	16.4	-0.1	122.1	0.0	-51.8	2.5
UGT-Set B/10	1.1	-13.9	135.4	44.9	51.9	-50.8
UGT-Set B/11	0.0	0.0	122.5	0.0	-50.7	2.8

UGT-Set B/1	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG122
UGT-Set B/2	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG121
UGT-Set B/3	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114
UGT-Set B/4	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG123
UGT-Set B/5	0.90*BG101+0.90*BG102+1.50*BG115
UGT-Set B/6	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG123
UGT-Set B/7	0.90*BG101+0.90*BG102+1.50*BG114+1.50*BG115+1.50*BG123
UGT-Set B/8	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG121
UGT-Set B/9	0.90*BG101+0.90*BG102+1.50*BG114+1.50*BG122
UGT-Set B/10	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG115+1.50*BG123
UGT-Set B/11	0.90*BG101+0.90*BG102+1.50*BG114

Longitudinal reinforcement

	Basic	Additional	d_1 [mm]	$A_{s,ult}$ [mm^2]	$A_{s,min}$ [mm^2]	$A_{s,req}$ [mm^2]	$A_{s,prov}$ [mm^2]	s_{min} [mm]	s_{max} [mm]	Status
[1]	4ϕ16	---	66	276	-	**276**	**804**	273	289	**OK**
								≥37	≤350	
[2]	2ϕ12	---	64	214	-	**214**	**226**	208	224	**OK**
								≥37	≤350	
[3]	4ϕ16	---	66	276	-	**276**	**804**	273	289	**OK**
								≥37	≤350	
[4]	2ϕ12	---	64	88	-	**88**	**226**	208	224	**OK**
								≥37	≤350	
∑Y	4ϕ12	---				**302**	**452**			
∑Z	8ϕ16	---				**552**	**1608**			
∑	4ϕ12+8ϕ16	---				**854**	**2061**	≤$A_{s,max}$=32000 mm^2		**OK**

Shear reinforcement

Stirrups	$A_{swm,req}$ [mm^2/m]	$A_{swm,prov}$ [mm^2/m]	$A_{swm,max}$ [mm^2/m]	Status
ϕ8/100mm, (ns=2)	951	1005	13906	**OK**

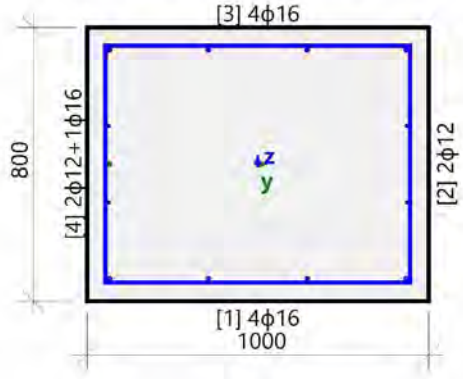
Beam S8

NEN EN 1992-1-1+C2/NB+A1:2020

Rechthoek (800; 1000)

Section 2 [dx = 0.451 m]

Member length: L = 48 m
Buckling y-y$^{\perp}$ L_y = 4.04 m (sway)
Buckling z-z$^{\perp}$ L_z = 103 m (sway)



Concrete: C35/45
Bi-linear stress-strain diagram
Exposure class: XC3, XS1, XF3, XA3

Longitudinal reinforcement: B 500B
Bi-linear with an inclined top branch
9ϕ16+4ϕ12 (2262 mm^2)
ρ_l = 0.283 % (17.8 kg/m)

Shear reinforcement: B 500B
Bi-linear with an inclined top branch
2L ϕ8/100 (101 mm^2)
ρ_w = 0.097 % (7.89 kg/m)

Cover (stirrup)
Top: 50 mm
Bottom: 50 mm
Sides: 50 mm

Design forces

Case	N_{Ed} [kN]	V_{Edy} [kN]	V_{Edz} [kN]	T_{Ed} [kNm]	M_{Edy} [kNm]	M_{Edz} [kNm]
UGT-Set B/1	22.6	0.0	74.4	-0.2	136.8	0.0
UGT-Set B/2	-0.4	0.0	162.5	-0.7	196.6	0.0
UGT-Set B/3	-0.3	0.0	163.9	-0.8	213.7	0.0
UGT-Set B/4	-0.3	0.0	164.0	-0.7	213.7	0.0
UGT-Set B/5	1.8	-30.1	34.4	68.3	136.2	121.8
UGT-Set B/6	1.7	-30.1	34.3	68.3	136.2	121.7
UGT-Set B/7	-0.2	0.0	133.5	-0.7	211.6	0.0
UGT-Set B/8	1.7	-29.9	59.5	68.2	181.8	120.0
UGT-Set B/9	-0.2	0.0	126.4	-0.6	145.7	0.0
UGT-Set B/10	-0.2	0.0	105.7	-0.4	138.2	0.0
UGT-Set B/11	1.6	-30.0	64.9	68.2	138.4	120.8

UGT-Set B/1	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG122
UGT-Set B/2	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG121
UGT-Set B/3	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114
UGT-Set B/4	1.35*BG101+1.35*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115
UGT-Set B/5	0.90*BG101+0.90*BG102+1.50*BG115+1.50*BG123
UGT-Set B/6	0.90*BG101+0.90*BG102+1.50*BG123
UGT-Set B/7	1.35*BG101+1.35*BG102+1.50*BG114
UGT-Set B/8	1.20*BG101+1.20*BG102+1.50*BG123
UGT-Set B/9	0.90*BG101+0.90*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG115
UGT-Set B/10	0.90*BG101+0.90*BG102+1.50*BG111+1.50*BG113+1.50*BG115
UGT-Set B/11	0.90*BG101+0.90*BG102+1.50*BG111+1.50*BG113+1.50*BG115+1.50*BG123

Longitudinal reinforcement

	Basic	Additional	d_1 [mm]	$A_{s,ult}$ [mm^2]	$A_{s,min}$ [mm^2]	$A_{s,req}$ [mm^2]	$A_{s,prov}$ [mm^2]	s_{min} [mm]	s_{max} [mm]	Status
[1]	4ϕ16	---	66	687	-	**687**	**804**	273	289	**OK**
								≥37	≤350	
[2]	2ϕ12	---	64	137	-	**137**	**226**	208	224	**OK**
								≥37	≤350	
[3]	4ϕ16	---	66	177	-	**177**	**804**	273	289	**OK**
								≥37	≤350	
[4]	2ϕ12	1ϕ16	66	353	-	**353**	**427**	98	222	**OK**
								≥37	≤350	
∑Y	4ϕ12	1ϕ16				**490**	**653**			
∑Z	8ϕ16	---				**864**	**1608**			
∑	4ϕ12+8ϕ16	1ϕ16				**1354**	**2262**	≤$A_{s,max}$=32000 mm^2		**OK**

Shear reinforcement

Stirrups	$A_{swm,req}$ [mm^2/m]	$A_{swm,prov}$ [mm^2/m]	$A_{swm,max}$ [mm^2/m]	Status
ϕ8/100mm, (ns=2)	938	1005	13720	**OK**

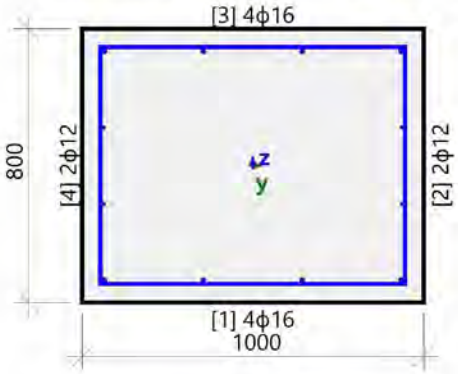
Beam S10

NEN EN 1992-1-1+C2/NB+A1:2020

Rechthoek (800; 1000)

Section 354 [dx = 66.5 m]

Member length: L = 68 m
Buckling y-y⊥ L_y = 2.99 m (sway)
Buckling z-z⊥ L_z = 68 m (sway)



Concrete: C35/45
Bi-linear stress-strain diagram
Exposure class: XC3, XS1, XF3, XA3

Longitudinal reinforcement: B 500B
Bi-linear with an inclined top branch
8ϕ16+4ϕ12 (2061 mm²)
ρ_l = 0.258 % (16.2 kg/m)

Shear reinforcement: B 500B
Bi-linear with an inclined top branch
2L ϕ8/100 (101 mm²)
ρ_w = 0.101 % (7.89 kg/m)

Cover (stirrup)
Top: 50 mm
Bottom: 50 mm
Sides: 50 mm

Design forces

Case	N_{Ed} [kN]	V_{Edy} [kN]	V_{Edz} [kN]	T_{Ed} [kNm]	M_{Edy} [kNm]	M_{Edz} [kNm]
UGT-Set B/1	0.0	0.0	146.3	0.0	-129.8	0.0
UGT-Set B/2	4.5	0.0	139.2	0.0	-127.4	0.0
UGT-Set B/3	0.0	-22.5	199.2	14.6	-184.5	24.5
UGT-Set B/4	0.0	0.0	97.5	0.0	-86.5	0.0
UGT-Set B/5	0.0	0.0	262.2	14.6	-243.1	0.0

UGT-Set B/1	1.35*BG101+1.35*BG102
UGT-Set B/2	1.20*BG101+1.20*BG102+1.50*BG122
UGT-Set B/3	1.20*BG101+1.20*BG102+1.50*BG123
UGT-Set B/4	0.90*BG101+0.90*BG102
UGT-Set B/5	1.20*BG101+1.20*BG102+1.50*BG111+1.50*BG113+1.50*BG114+1.50*BG123

Longitudinal reinforcement

	Basic	Additional	d_1 [mm]	$A_{s,ult}$ [mm²]	$A_{s,min}$ [mm²]	$A_{s,req}$ [mm²]	$A_{s,prov}$ [mm²]	s_{min} [mm]	s_{max} [mm]	Status
[1]	4ϕ16	---	66	39	-	**39**	**804**	273	289	**OK**
								≥37	≤350	
[2]	2ϕ12	---	64	39	-	**39**	**226**	208	224	**OK**
								≥37	≤350	
[3]	4ϕ16	---	66	766	-	**766**	**804**	273	289	**OK**
								≥37	≤350	
[4]	2ϕ12	---	64	39	-	**39**	**226**	208	224	**OK**
								≥37	≤350	
∑Y	**4ϕ12**	---				**78**	**452**			
∑Z	**8ϕ16**	---				**805**	**1608**			
∑	**4ϕ12+8ϕ16**	---				**883**	**2061**	≤$A_{s,max}$=32000 mm²		**OK**

Shear reinforcement

Stirrups	$A_{swm,req}$ [mm^2/m]	$A_{swm,prov}$ [mm^2/m]	$A_{swm,max}$ [mm^2/m]	Status
ϕ8/100mm, (ns=2)	947	1005	13846	**OK**

Annex E
Overview of codes and Literature

Content

E. Overview of codes and Literature

E.1. Used codes

E.1.1. Basic codes for calculation

Eurocode 0: Basis of structural design
- EN 1990+NA
- Eurocode: Basis of structural design

Eurocode 1: Actions on structures
- EN 1991-1-1+NA
- Eurocode 1: Actions on structures - Part 1-1: General actions -Densities, self-weight, imposed loads for buildings
- EN 1991-1-3+NA
- Eurocode 1: Actions on structures - Part 1-3: General actions - Snow loads
- EN 1991-1-4+NA
- Eurocode 1: Actions on structures - Part 1-4: General actions - Wind actions
- EN 1991-1-5+NA
- Eurocode 1: Actions on structures - Part 1-5: General actions - Thermal actions
- EN 1991-1-6+NA
- Eurocode 1: Actions on structures - Part 1-6: General actions - Actions during execution
- EN 1991-1-7+NA
- Eurocode 1: Actions on structures - Part 1-7: General actions - Accidental Actions
- EN 1991-2+NA
- Eurocode 1: Actions on structures - Part 2: Traffic loads on bridges
- EN 1991-4+NA
- Eurocode 1: Actions on structures - Part 4: Silos and tanks

Eurocode 2: Design of concrete structures
- EN 1992-1-1+NA
- Eurocode 2: Design of concrete structures - Part 1-1: General rules, and rules for buildings

Eurocode 7: Geotechnisch ontwerp
- EN 1997-1+NA
- EN 1997 - Eurocode 7: Geotechnical design - Part 1: General rules
- EN 1997-2+NA
- EN 1997 - Eurocode 7: Geotechnical design - Part 2: Ground investigation and testing
- NEN 9997-1
- Geotechnical design of structures - Part 1: General rules

E.2. Standards for execution

EN 13670+NA
- Execution of concrete structures

E.3. Material codes

E.3.1. Codes for Steel N.A.

E.3.2. Codes for concrete

EN 206-1+NA
- Concrete - Part 1: Specification, performance, production and conformity

NEN 8005
- Dutch supplement to EN 206-1: Concrete - Part 1: Specification, performance, production and conformity

EN 197-1+NA
- Concrete - Part 1: Composition, specifications and conformity criteria for common cements

EN 14216 +NA
- Cement - Composition, specifications and conformity criteria for very low heat special cements

NEN 3550
- Cements conforming to EN 197-1, EN 197-4 or EN 14216, with additional special properties - Definitions and requirements

NEN 6008
- Steel for the reinforcement of concrete

EN 10080 +NA
- Steel for the reinforcement of concrete

EN 12390 +NA (all parts)
- Testing hardened concrete

EN ISO 17660 +NA (all parts)

Welding - Welding of reïnforcing steel

EN 10138 +NA

Prestressing steels - Part 1: General requirements

NEN 3868

Prestressing steel

EN ISO 15630 +NA

Steel for the reïnforcement and prestressing of concrete - Test methods - Part 1: Reinforcing bars, wire rod and wire

E.3.3. Codes for Wood **N.A.**

E.3.4. Normen voor Metselwerk **N.A.**

E.4. Codes for connections / connectionmaterials *N.A.*

E.5. Other codes *N.A.*

E.6. Used Literature

Documents	Discription
Publicaties SCI	Several publications of the "Steel Construction Institute " on calculating steel structures
Publicaties BmS	Several books and documents from "Bouwen met Staal"
GTS 2013	Grafieken en Tabelen Staalbouw 2013 from "Bouwen met Staal"
Stahlbau-Praxis	Band 1 to 3 van BBB Beuth
Kranbahnen	Bemessung und konstruktive Gestaltung nach Eurocode, van BBB Beuth
Design of Steel Structures	ECCS publicatie, ECCS Eurocode Design Manuals For general design rules of steelstructures
Design of Joints in Steel and Composite Structures	ECCS publicatie, ECCS Eurocode Design Manuals For detailcalculations acc. to EN 1993-1-8
Design of Plated Structures	ECCS publicatie, ECCS Eurocode Design Manuals General design rules for steelstructures, steel plates acc. to EN 1993-1-5
GTB 2013	Grafieken en Tabelen Beton 2013 from "Betonvereniging"
Betonbauteile nach Eurocode	Hintergründe, Auslegungen, Praxisbeispiele Beiträge aus Praxis und Wissenschaft
Holzbau kompakt nach Eurocode 5	Bauwerk-Basis-Bibliothek
Geotechnik nach Eurocode Band 1: Bodenmechanik	Grundlagen, Nachweise, Berechnungsbeispiele
Geotechnik nach Eurocode Band 2: Grundbau	Grundlagen, Nachweise, Berechnungsbeispiele Bauwerk-Basis-Bibliothek
NB-overige landen / Andere normen	Where special design data (such as ψ-values for example installation) are missing the National Annex / Standards of other countries are applied.