

ΤΕΧΝΙΚΗ ΕΚΘΕΣΗ

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1. Γενικά

Η παρούσα τεχνική έκθεση αφορά στη στατική μελέτη για τη κατασκευή πρότυπου συστήματος στήριξης φωτοβολταϊκών πλαισίων.

2. Ισχύοντες κανονισμοί

Οι κανονισμοί που λήφθηκαν υπόψη στην παρούσα στατική μελέτη είναι:

- Ευρωκώδικας 0
EN 1990 :2002 – Basis of structural design
- Ευρωκώδικας 1
EN 1991-1 :2002 – Actions On Structures – General actions – Densities, self weight, imposed loads for buildings
EN 1991-1-3 : 2003- Snow Loads
EN 1991-1-4 : 2005- Wind Actions
- Ευρωκώδικας 2
EN 1992-1-1 :2004 – Design of concrete structures
- Κανονισμός Τεχνολογίας Σκυροδέματος
Φ.Ε.Κ. 315 / Β / 17-04-1997
- Κανονισμός Τεχνολογίας Χαλύβων Οπλισμού Σκυροδέματος
Φ.Ε.Κ. 381 / Β / 24-03-2000
Τροποποίηση Φ.Ε.Κ. 576 / Β / 28-04-2005
- Ευρωκώδικας 3
EN 1993-1-1 : 2005- General Rules for Buildings
EN 1993-1-5 : 2006- Plated structural Elements
EN 1993-1-6 : 2005- Shell Structures
EN 1993-1-8 : 2005- Design of Joints
EN 1993-1-9 : 2005- Fatigue
- Ευρωκώδικας 7
EN 1997-1:2004 – Geotechnical design – General rules
- Ευρωκώδικας 8
EN 1998-1:2004 – Design of structures for earthquake resistance

3. Υλικά - Παραδοχές φορτίσεων

Υλικά

Οπλισμένο σκυρόδεμα:

Η θεμελίωση κατασκευάζεται από σκυρόδεμα **C20/25** και χάλυβα οπλισμών **B500c**.

Δομικός χάλυβας:

Τα μεταλλικά στοιχεία είναι κατασκευασμένα από

- χάλυβα **S355** μέσω ψυχρής διαμόρφωσης,

. χάλυβα **S275**

Οι κοχλίες που χρησιμοποιούνται είναι ποιότητας **8.8**.

Τα αγκύρια που χρησιμοποιούνται είναι ποιότητας **5.6**.

4. Φορτία – Συνδυασμοί φορτίσεων

Το υπό μελέτη σύστημα στήριξης σχεδιάστηκε με βάση την κατηγορία διάρκειας ζωής σχεδιασμού 3 (Ευρωκώδικα EN1990 παρ. 2.3), με ωφέλιμο χρόνο ζωής τα 20 χρόνια και κλάση αξιοπιστίας **RC1**.

I. Μόνιμα φορτία

- Ίδιο βάρος (μεταλλικών στοιχείων)
- Πρόσθετο μόνιμο (βάρος φωτοβολταϊκών φύλλων)

II. Χιονι

Το φορτίο χιονιού προσδιορίστηκε σύμφωνα με τις διατάξεις του αντίστοιχου Ευρωκώδικα (EN1991-1-3) θεωρώντας φορτίο αναφοράς:

$$S_{k,o}=0.80 \text{ kN/m}^2$$

Η ανάλυση πραγματοποιήθηκε για επίπεδο φορτίου που αντιστοιχεί στην κατηγορία διάρκειας ζωής σχεδιασμού 3 (20 χρόνια).

Επίσης θεωρήθηκε συντελεστής έκθεσης

$$C_e=1.00$$

$$\rho=0.05$$

III. Φορτία ανέμου

Το φορτίο ανέμου προσδιορίστηκε σύμφωνα με τις διατάξεις του αντίστοιχου Ευρωκώδικα (EN1991-1-4) θεωρώντας:

$$v_o=27 \text{ m/sec,}$$

$$\rho=0.05,$$

κατηγορία εδάφους 2 ($z_o=0.05$, $z_{\min}=2$)

Με βάση τα ανωτέρω προέκυψε:

$$C_r = 0.70 \text{ (συντελεστής τραχύτητας)}$$

$$I_v(z)=0.271$$

$$q_p= 0.52 \text{ kN/m}^2 \text{ (πίεση αιχμής)}$$

για τους συντελεστές καθολικών(έλεγχος κεντρικού συστήματος στήριξης) και τοπικών (έλεγχος τεγιδών) πιέσεων χρησιμοποιήθηκαν οι διατάξεις του Ευρωκώδικα EN1991-1-4 παρ. 7.3

Συνδυασμοί δράσεων

Για τη διαστασιολόγηση λαμβάνονται υπόψη οι συνδυασμοί δράσεων με βάση τον Ευρωκώδικα 0 (EN 1990 παρ 6.4.3.2).

$$\sum_{j \geq 1} \gamma_{G,j} G_{k,j} + \gamma_P P + \gamma_{Q,1} Q_{k,1} + \sum_{i > 1} \gamma_{Q,i} \psi_{0,i} Q_{k,i}$$

Οι συντελεστές μεταβλητών δράσεων ψ_2 λαμβάνονται ανάλογα με την κατηγορία από τον πίνακα που παρατίθεται στο σχετικό παράτημα του Ευρωκώδικα 0 (EN 1990 Annex –A, πίνακα A.1.1) .

5. Προσομοίωση – Μέθοδος ανάλυσης

Για την ανάλυση του συστήματος χρησιμοποιήθηκε εξειδικευμένο πρόγραμμα πεπερασμένων στοιχείων. Οι αναλύσεις που πραγματοποιήθηκαν ήταν οι εξής :

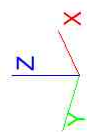
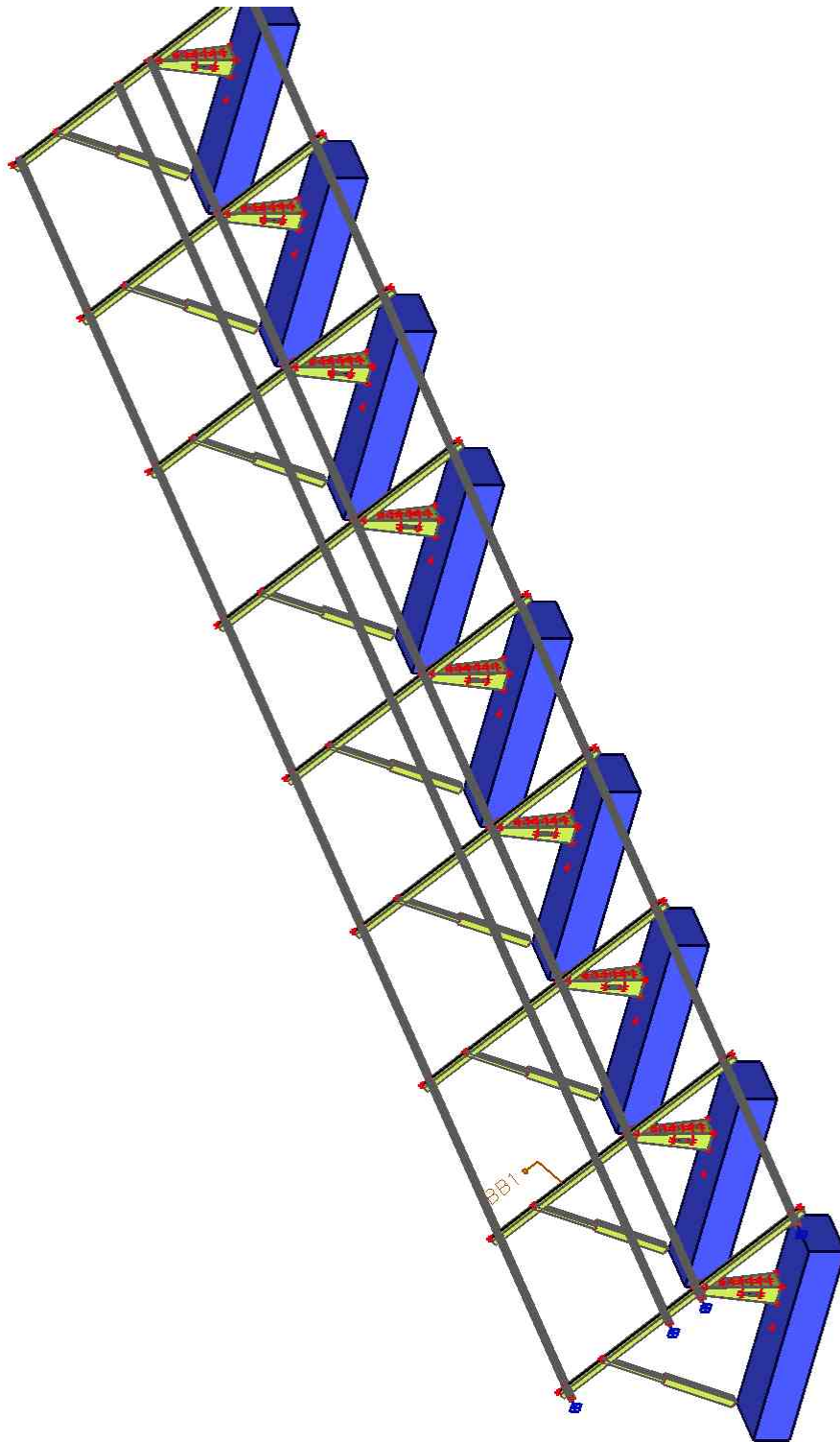
1. Ανάλυση χωρικού προσομοιώματος βασικού πλαισίου στήριξης φωτοβολταϊκών φύλλων, με τη χρήση γραμμικών και επιφανειακών πεπερασμένων στοιχείων. Για τη διαστασιολόγηση των μεταλλικών στοιχείων εφαρμόστηκαν οι διατάξεις του Ευρωκώδικα 3 (EN 1993)..

1. ΠΕΡΙΕΧΟΜΕΝΑ

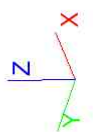
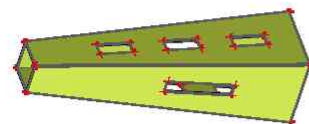
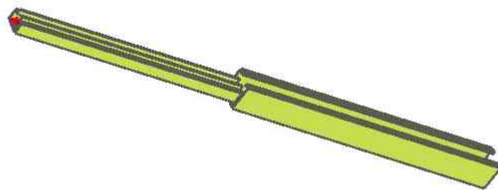
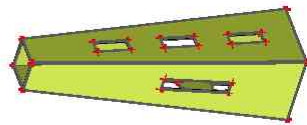
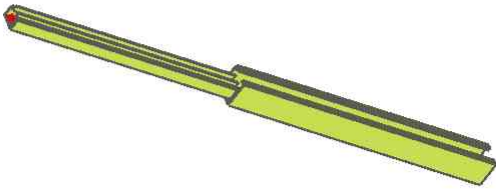
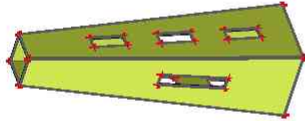
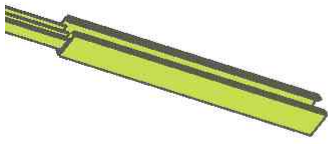
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2. ΦΟΡΕΑΣ

2.1. ΦΟΡΕΑΣ



2.2. ΦΟΡΕΑΣ (ΥΠΟΣΤΥΛ./ΠΥΡΓΟΣ)



3. ΥΛΙΚΑ - ΔΙΑΤΟΜΕΣ

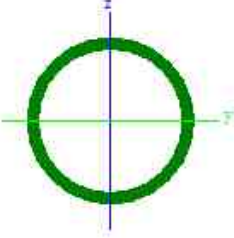
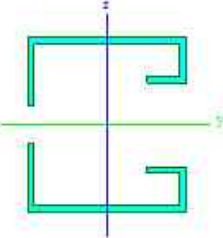
3.1. ΥΛΙΚΑ

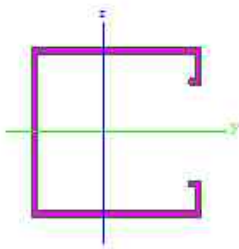
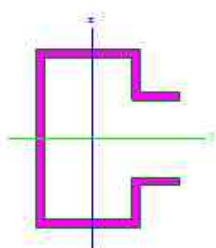
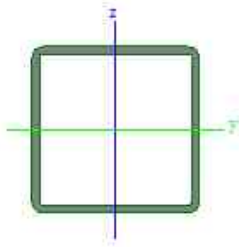
Name	Unit mass [kg/m ³]	E mod [MPa]	Poisson - nu	G mod [MPa]	Thermal exp [m/mK]
S 235	7850.00	2.1000e+05	0.3	8.0769e+04	0.00
S 275	7850.00	2.1000e+05	0.3	8.0769e+04	0.00
S 355	7850.00	2.1000e+05	0.3	8.0769e+04	0.00

Name	Type	Unit mass [kg/m ³]	E mod [MPa]	Poisson - nu	G mod [MPa]	Thermal exp [m/mK]	Characteristic compressive cylinder strength f _{ck} (28) [MPa]
C20/25	Concrete	2500.00	3.0000e+04	0.2	1.2500e+04	0.00	20.00

Name	Type	Unit mass [kg/m ³]	E mod [MPa]	Poisson - nu	G mod [MPa]	Thermal exp [m/mK]	Characteristic yield strength f _{yk} [MPa]
B 400A	Reinforcement steel	7850.00	2.0000e+05	0.2	8.3333e+04	0.00	400.0

3.2. ΔΙΑΤΟΜΕΣ

>	Name	CS15	
	Type	CHS48.3/3.2	
	Source description	British Standard / BS 5950 part 1 : 1990 & EN 10210-2	
	Item material	S 235	
	Fabrication	rolled	
	Buckling y-y, z-z	a	a
>			
>	A [mm ²]	4.5300e+02	
	A _{y, z} [mm ²]	2.8839e+02	2.8839e+02
	I _{y, z} [mm ⁴]	1.1600e+05	1.1600e+05
	I _w [mm ⁶], t [mm ⁴]	0.0000e+00	2.3055e+05
	W _{el y, z} [mm ³]	4.8000e+03	4.8000e+03
	W _{pl y, z} [mm ³]	6.4169e+03	6.4169e+03
	d _{y, z} [mm]	0	0
	c _{YLCS, ZLCS} [mm]	0	0
	alpha [deg]	0.00	
	AL [m ² /m]	1.5173e-01	
>	Name	purlin	
	Type	General cross-section	
	Item material	S 355	
	Fabrication	cold formed	
	Buckling y-y, z-z	b	b
>			
>	A [mm ²]	3.6000e+02	
	A _{y, z} [mm ²]	7.0391e+01	1.5201e+02
	I _{y, z} [mm ⁴]	1.7886e+05	1.2032e+05
	I _w [mm ⁶], t [mm ⁴]	6.2637e+06	4.8000e+02
	W _{el y, z} [mm ³]	6.6246e+03	4.8875e+03
	W _{pl y, z} [mm ³]	7.7460e+03	6.0057e+03
	d _{y, z} [mm]	0	0
	c _{YLCS, ZLCS} [mm]	0	0
	alpha [deg]	0.00	
	AL [m ² /m]	3.6800e-01	

>	Name	main_col	
	Type	General cross-section	
	Item material	S 275	
	Fabrication	cold formed	
	Buckling y-y, z-z	c	c
>			
>	A [mm ²]	8.3400e+02	
	A y, z [mm ²]	7.0391e+01	1.5201e+02
	I y, z [mm ⁴]	1.0089e+06	7.8960e+05
	I w [mm ⁶], t [mm ⁴]	6.2637e+06	4.8000e+02
	Wel y, z [mm ³]	2.4310e+04	1.6591e+04
	Wpl y, z [mm ³]	2.7532e+04	2.3077e+04
	d y, z [mm]	0	0
	c YLCS, ZLCS [mm]	10	0
	alpha [deg]	0.00	
	AL [m ² /m]	5.6800e-01	
>	Name	second_col	
	Type	General cross-section	
	Item material	S 275	
	Fabrication	cold formed	
	Buckling y-y, z-z	c	c
>			
>	A [mm ²]	5.6400e+02	
	A y, z [mm ²]	7.0391e+01	1.5201e+02
	I y, z [mm ⁴]	3.0593e+05	1.5303e+05
	I w [mm ⁶], t [mm ⁴]	6.2637e+06	4.8000e+02
	Wel y, z [mm ³]	9.7120e+03	4.9661e+03
	Wpl y, z [mm ³]	1.2202e+04	8.5416e+03
	d y, z [mm]	0	0
	c YLCS, ZLCS [mm]	-5	0
	alpha [deg]	0.00	
	AL [m ² /m]	3.8800e-01	
>	Name	second_col1	
	Type	SHS70/70/3.0	
	Source description	British Standard / BS 5950 part 1 : 1990 & EN 10210-2	
	Item material	S 275	
	Fabrication	rolled	
	Buckling y-y, z-z	a	a
>			
>	A [mm ²]	7.9400e+02	
	A y, z [mm ²]	3.9700e+02	3.9700e+02
	I y, z [mm ⁴]	5.9000e+05	5.9000e+05
	I w [mm ⁶], t [mm ⁴]	4.2018e+08	9.2200e+05
	Wel y, z [mm ³]	1.6900e+04	1.6900e+04
	Wpl y, z [mm ³]	1.9684e+04	1.9684e+04
	d y, z [mm]	0	0

>	c YLCS, ZLCS [mm]	35	35
	alpha [deg]	0.00	
	AL [m ² /m]	2.7224e-01	

3.3. ΣΤΟΙΧΕΙΑ ΕΔΑΦΟΥΣ

Name	C1x [MN/m ³]	C1y [MN/m ³]	Stiffness [MN/m ³]	C2x [MN/m]	C2y [MN/m]
Sub1	5.0000e+01	5.0000e+01	5.0000e+01	1.0000e-03	1.0000e-03

3.4. ΔΙΑΤΟΜΕΣ ΠΕΔΙΩΝ

Name, Type	PF1	Prismatic	
Material, Cast condition	C20/25	Prefabricated	
A B [m]	0.600	2.500	
h 1, 2, 3 [m]	0.400	0.000	0.000
a, b [m]	0.200	0.200	
e x, y [m]	0.000	0.000	

4. ΓΕΩΜΕΤΡΙΑ

4.1. ΚΟΜΒΟΙ

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N156	0.110	7.330	0.064
N157	0.110	9.628	1.993
N160	-0.090	8.632	1.157
N161	0.110	8.326	0.900
N162	-0.090	8.304	0.882
N163	0.220	8.436	0.000
N164	0.000	8.436	0.000
N165	0.060	8.376	0.800
N166	0.160	8.376	0.800
N167	0.000	8.216	0.000
N168	0.060	8.276	0.800
N169	0.220	8.216	0.000
N170	0.160	8.276	0.800
N171	0.205	8.306	0.199
N172	0.205	8.346	0.199
N173	0.190	8.346	0.399
N174	0.190	8.306	0.399
N175	0.090	8.223	0.100
N176	0.130	8.223	0.100
N177	0.130	8.231	0.199
N178	0.090	8.231	0.199
N179	0.130	8.246	0.399
N180	0.090	8.246	0.399
N181	0.090	8.238	0.299
N182	0.130	8.238	0.299
N183	0.090	8.253	0.499
N184	0.130	8.253	0.499
N185	0.130	8.261	0.598
N186	0.090	8.261	0.598
N187	0.015	8.346	0.199
N188	0.015	8.306	0.199
N189	0.030	8.306	0.399
N190	0.030	8.346	0.399
N191	0.130	8.428	0.100
N192	0.094	8.428	0.100
N193	0.094	8.421	0.199
N194	0.134	8.421	0.199
N195	0.134	8.428	0.100
N196	0.130	8.413	0.299
N197	0.094	8.406	0.399
N198	0.134	8.406	0.399
N199	0.094	8.413	0.299
N200	0.134	8.413	0.299
N201	0.130	8.398	0.499
N202	0.094	8.398	0.499
N203	0.094	8.391	0.598

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N204	0.134	8.391	0.598
N205	0.134	8.398	0.499
N207	0.110	9.838	0.102
N208	0.110	9.261	1.685
N619	0.110	9.530	0.947
N621	0.110	8.849	-0.100
N623	0.110	8.326	-0.050
N2222	20.110	8.632	1.157
N2223	20.110	8.304	0.882
N2240	0.110	8.326	0.850
N2245	-0.090	7.330	0.064
N2246	20.110	7.330	0.064
N2247	-0.090	9.628	1.993
N2248	20.110	9.628	1.993
N2249	2.610	7.330	0.064
N2250	2.610	9.628	1.993
N2251	2.610	8.326	0.900
N2252	2.720	8.436	0.000
N2253	2.560	8.376	0.800
N2254	2.660	8.376	0.800
N2255	2.560	8.276	0.800
N2256	2.720	8.216	0.000
N2257	2.660	8.276	0.800
N2258	2.705	8.306	0.199
N2259	2.705	8.346	0.199
N2260	2.690	8.346	0.399
N2261	2.690	8.306	0.399
N2262	2.590	8.223	0.100
N2263	2.630	8.223	0.100
N2264	2.630	8.231	0.199
N2265	2.590	8.231	0.199
N2266	2.630	8.246	0.399
N2267	2.590	8.246	0.399
N2268	2.590	8.238	0.299
N2269	2.630	8.238	0.299
N2270	2.590	8.253	0.499
N2271	2.630	8.253	0.499
N2272	2.630	8.261	0.598
N2273	2.590	8.261	0.598
N2274	2.515	8.346	0.199
N2275	2.515	8.306	0.199
N2276	2.530	8.306	0.399
N2277	2.530	8.346	0.399
N2278	2.630	8.428	0.100
N2279	2.594	8.428	0.100
N2280	2.594	8.421	0.199
N2281	2.634	8.421	0.199
N2282	2.634	8.428	0.100
N2283	2.630	8.413	0.299
N2284	2.594	8.406	0.399
N2285	2.634	8.406	0.399
N2286	2.594	8.413	0.299
N2287	2.634	8.413	0.299
N2288	2.630	8.398	0.499
N2289	2.594	8.398	0.499
N2290	2.594	8.391	0.598
N2291	2.634	8.391	0.598
N2292	2.634	8.398	0.499
N2293	2.610	9.838	0.102
N2294	2.610	9.261	1.685
N2295	2.610	9.530	0.947
N2296	2.610	8.849	-0.100
N2297	2.610	8.326	-0.050
N2298	2.610	8.326	0.850
N2299	2.500	8.436	0.000
N2300	2.500	8.216	0.000
N2352	5.110	7.330	0.064
N2353	5.110	9.628	1.993
N2354	5.110	8.326	0.900
N2355	5.220	8.436	0.000
N2356	5.060	8.376	0.800
N2357	5.160	8.376	0.800
N2358	5.060	8.276	0.800

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N2359	5.220	8.216	0.000
N2360	5.160	8.276	0.800
N2361	5.205	8.306	0.199
N2362	5.205	8.346	0.199
N2363	5.190	8.346	0.399
N2364	5.190	8.306	0.399
N2365	5.090	8.223	0.100
N2366	5.130	8.223	0.100
N2367	5.130	8.231	0.199
N2368	5.090	8.231	0.199
N2369	5.130	8.246	0.399
N2370	5.090	8.246	0.399
N2371	5.090	8.238	0.299
N2372	5.130	8.238	0.299
N2373	5.090	8.253	0.499
N2374	5.130	8.253	0.499
N2375	5.130	8.261	0.598
N2376	5.090	8.261	0.598
N2377	5.015	8.346	0.199
N2378	5.015	8.306	0.199
N2379	5.030	8.306	0.399
N2380	5.030	8.346	0.399
N2381	5.130	8.428	0.100
N2382	5.094	8.428	0.100
N2383	5.094	8.421	0.199
N2384	5.134	8.421	0.199
N2385	5.134	8.428	0.100
N2386	5.130	8.413	0.299
N2387	5.094	8.406	0.399
N2388	5.134	8.406	0.399
N2389	5.094	8.413	0.299
N2390	5.134	8.413	0.299
N2391	5.130	8.398	0.499
N2392	5.094	8.398	0.499
N2393	5.094	8.391	0.598
N2394	5.134	8.391	0.598
N2395	5.134	8.398	0.499
N2396	5.110	9.838	0.102
N2397	5.110	9.261	1.685
N2398	5.110	9.530	0.947
N2399	5.110	8.849	-0.100
N2400	5.110	8.326	-0.050
N2401	5.110	8.326	0.850
N2402	5.000	8.436	0.000
N2403	5.000	8.216	0.000
N2455	7.610	7.330	0.064
N2456	7.610	9.628	1.993
N2457	7.610	8.326	0.900
N2458	7.720	8.436	0.000
N2459	7.560	8.376	0.800
N2460	7.660	8.376	0.800
N2461	7.560	8.276	0.800
N2462	7.720	8.216	0.000
N2463	7.660	8.276	0.800
N2464	7.705	8.306	0.199
N2465	7.705	8.346	0.199
N2466	7.690	8.346	0.399
N2467	7.690	8.306	0.399
N2468	7.590	8.223	0.100
N2469	7.630	8.223	0.100
N2470	7.630	8.231	0.199
N2471	7.590	8.231	0.199
N2472	7.630	8.246	0.399
N2473	7.590	8.246	0.399
N2474	7.590	8.238	0.299
N2475	7.630	8.238	0.299
N2476	7.590	8.253	0.499
N2477	7.630	8.253	0.499
N2478	7.630	8.261	0.598
N2479	7.590	8.261	0.598
N2480	7.515	8.346	0.199
N2481	7.515	8.306	0.199
N2482	7.530	8.306	0.399

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N2483	7.530	8.346	0.399
N2484	7.630	8.428	0.100
N2485	7.594	8.428	0.100
N2486	7.594	8.421	0.199
N2487	7.634	8.421	0.199
N2488	7.634	8.428	0.100
N2489	7.630	8.413	0.299
N2490	7.594	8.406	0.399
N2491	7.634	8.406	0.399
N2492	7.594	8.413	0.299
N2493	7.634	8.413	0.299
N2494	7.630	8.398	0.499
N2495	7.594	8.398	0.499
N2496	7.594	8.391	0.598
N2497	7.634	8.391	0.598
N2498	7.634	8.398	0.499
N2499	7.610	9.838	0.102
N2500	7.610	9.261	1.685
N2501	7.610	9.530	0.947
N2502	7.610	8.849	-0.100
N2503	7.610	8.326	-0.050
N2504	7.610	8.326	0.850
N2505	7.500	8.436	0.000
N2506	7.500	8.216	0.000
N2558	10.110	7.330	0.064
N2559	10.110	9.628	1.993
N2560	10.110	8.326	0.900
N2561	10.220	8.436	0.000
N2562	10.060	8.376	0.800
N2563	10.160	8.376	0.800
N2564	10.060	8.276	0.800
N2565	10.220	8.216	0.000
N2566	10.160	8.276	0.800
N2567	10.205	8.306	0.199
N2568	10.205	8.346	0.199
N2569	10.190	8.346	0.399
N2570	10.190	8.306	0.399
N2571	10.090	8.223	0.100
N2572	10.130	8.223	0.100
N2573	10.130	8.231	0.199
N2574	10.090	8.231	0.199
N2575	10.130	8.246	0.399
N2576	10.090	8.246	0.399
N2577	10.090	8.238	0.299
N2578	10.130	8.238	0.299
N2579	10.090	8.253	0.499
N2580	10.130	8.253	0.499
N2581	10.130	8.261	0.598
N2582	10.090	8.261	0.598
N2583	10.015	8.346	0.199
N2584	10.015	8.306	0.199
N2585	10.030	8.306	0.399
N2586	10.030	8.346	0.399
N2587	10.130	8.428	0.100
N2588	10.094	8.428	0.100
N2589	10.094	8.421	0.199
N2590	10.134	8.421	0.199
N2591	10.134	8.428	0.100
N2592	10.130	8.413	0.299
N2593	10.094	8.406	0.399
N2594	10.134	8.406	0.399
N2595	10.094	8.413	0.299
N2596	10.134	8.413	0.299
N2597	10.130	8.398	0.499
N2598	10.094	8.398	0.499
N2599	10.094	8.391	0.598
N2600	10.134	8.391	0.598
N2601	10.134	8.398	0.499
N2602	10.110	9.838	0.102
N2603	10.110	9.261	1.685
N2604	10.110	9.530	0.947
N2605	10.110	8.849	-0.100
N2606	10.110	8.326	-0.050

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N2607	10.110	8.326	0.850
N2608	10.000	8.436	0.000
N2609	10.000	8.216	0.000
N2661	12.610	7.330	0.064
N2662	12.610	9.628	1.993
N2663	12.610	8.326	0.900
N2664	12.720	8.436	0.000
N2665	12.560	8.376	0.800
N2666	12.660	8.376	0.800
N2667	12.560	8.276	0.800
N2668	12.720	8.216	0.000
N2669	12.660	8.276	0.800
N2670	12.705	8.306	0.199
N2671	12.705	8.346	0.199
N2672	12.690	8.346	0.399
N2673	12.690	8.306	0.399
N2674	12.590	8.223	0.100
N2675	12.630	8.223	0.100
N2676	12.630	8.231	0.199
N2677	12.590	8.231	0.199
N2678	12.630	8.246	0.399
N2679	12.590	8.246	0.399
N2680	12.590	8.238	0.299
N2681	12.630	8.238	0.299
N2682	12.590	8.253	0.499
N2683	12.630	8.253	0.499
N2684	12.630	8.261	0.598
N2685	12.590	8.261	0.598
N2686	12.515	8.346	0.199
N2687	12.515	8.306	0.199
N2688	12.530	8.306	0.399
N2689	12.530	8.346	0.399
N2690	12.630	8.428	0.100
N2691	12.594	8.428	0.100
N2692	12.594	8.421	0.199
N2693	12.634	8.421	0.199
N2694	12.634	8.428	0.100
N2695	12.630	8.413	0.299
N2696	12.594	8.406	0.399
N2697	12.634	8.406	0.399
N2698	12.594	8.413	0.299
N2699	12.634	8.413	0.299
N2700	12.630	8.398	0.499
N2701	12.594	8.398	0.499
N2702	12.594	8.391	0.598
N2703	12.634	8.391	0.598
N2704	12.634	8.398	0.499
N2705	12.610	9.838	0.102
N2706	12.610	9.261	1.685
N2707	12.610	9.530	0.947
N2708	12.610	8.849	-0.100
N2709	12.610	8.326	-0.050
N2710	12.610	8.326	0.850
N2711	12.500	8.436	0.000
N2712	12.500	8.216	0.000
N2764	15.110	7.330	0.064
N2765	15.110	9.628	1.993
N2766	15.110	8.326	0.900
N2767	15.220	8.436	0.000
N2768	15.060	8.376	0.800
N2769	15.160	8.376	0.800
N2770	15.060	8.276	0.800
N2771	15.220	8.216	0.000
N2772	15.160	8.276	0.800
N2773	15.205	8.306	0.199
N2774	15.205	8.346	0.199
N2775	15.190	8.346	0.399
N2776	15.190	8.306	0.399
N2777	15.090	8.223	0.100
N2778	15.130	8.223	0.100
N2779	15.130	8.231	0.199
N2780	15.090	8.231	0.199
N2781	15.130	8.246	0.399

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N2782	15.090	8.246	0.399
N2783	15.090	8.238	0.299
N2784	15.130	8.238	0.299
N2785	15.090	8.253	0.499
N2786	15.130	8.253	0.499
N2787	15.130	8.261	0.598
N2788	15.090	8.261	0.598
N2789	15.015	8.346	0.199
N2790	15.015	8.306	0.199
N2791	15.030	8.306	0.399
N2792	15.030	8.346	0.399
N2793	15.130	8.428	0.100
N2794	15.094	8.428	0.100
N2795	15.094	8.421	0.199
N2796	15.134	8.421	0.199
N2797	15.134	8.428	0.100
N2798	15.130	8.413	0.299
N2799	15.094	8.406	0.399
N2800	15.134	8.406	0.399
N2801	15.094	8.413	0.299
N2802	15.134	8.413	0.299
N2803	15.130	8.398	0.499
N2804	15.094	8.398	0.499
N2805	15.094	8.391	0.598
N2806	15.134	8.391	0.598
N2807	15.134	8.398	0.499
N2808	15.110	9.838	0.102
N2809	15.110	9.261	1.685
N2810	15.110	9.530	0.947
N2811	15.110	8.849	-0.100
N2812	15.110	8.326	-0.050
N2813	15.110	8.326	0.850
N2814	15.000	8.436	0.000
N2815	15.000	8.216	0.000
N2867	17.610	7.330	0.064
N2868	17.610	9.628	1.993
N2869	17.610	8.326	0.900
N2870	17.720	8.436	0.000
N2871	17.560	8.376	0.800
N2872	17.660	8.376	0.800
N2873	17.560	8.276	0.800
N2874	17.720	8.216	0.000
N2875	17.660	8.276	0.800
N2876	17.705	8.306	0.199
N2877	17.705	8.346	0.199
N2878	17.690	8.346	0.399
N2879	17.690	8.306	0.399
N2880	17.590	8.223	0.100
N2881	17.630	8.223	0.100
N2882	17.630	8.231	0.199
N2883	17.590	8.231	0.199
N2884	17.630	8.246	0.399
N2885	17.590	8.246	0.399
N2886	17.590	8.238	0.299
N2887	17.630	8.238	0.299
N2888	17.590	8.253	0.499
N2889	17.630	8.253	0.499
N2890	17.630	8.261	0.598
N2891	17.590	8.261	0.598
N2892	17.515	8.346	0.199
N2893	17.515	8.306	0.199
N2894	17.530	8.306	0.399
N2895	17.530	8.346	0.399
N2896	17.630	8.428	0.100
N2897	17.594	8.428	0.100
N2898	17.594	8.421	0.199
N2899	17.634	8.421	0.199
N2900	17.634	8.428	0.100
N2901	17.630	8.413	0.299
N2902	17.594	8.406	0.399
N2903	17.634	8.406	0.399
N2904	17.594	8.413	0.299
N2905	17.634	8.413	0.299

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N2906	17.630	8.398	0.499
N2907	17.594	8.398	0.499
N2908	17.594	8.391	0.598
N2909	17.634	8.391	0.598
N2910	17.634	8.398	0.499
N2911	17.610	9.838	0.102
N2912	17.610	9.261	1.685
N2913	17.610	9.530	0.947
N2914	17.610	8.849	-0.100
N2915	17.610	8.326	-0.050
N2916	17.610	8.326	0.850
N2917	17.500	8.436	0.000
N2918	17.500	8.216	0.000
N2970	20.110	8.326	0.900
N2971	20.220	8.436	0.000
N2972	20.060	8.376	0.800
N2973	20.160	8.376	0.800
N2974	20.060	8.276	0.800
N2975	20.220	8.216	0.000
N2976	20.160	8.276	0.800
N2977	20.205	8.306	0.199
N2978	20.205	8.346	0.199
N2979	20.190	8.346	0.399
N2980	20.190	8.306	0.399
N2981	20.090	8.223	0.100
N2982	20.130	8.223	0.100
N2983	20.130	8.231	0.199
N2984	20.090	8.231	0.199
N2985	20.130	8.246	0.399
N2986	20.090	8.246	0.399
N2987	20.090	8.238	0.299
N2988	20.130	8.238	0.299
N2989	20.090	8.253	0.499
N2990	20.130	8.253	0.499
N2991	20.130	8.261	0.598
N2992	20.090	8.261	0.598
N2993	20.015	8.346	0.199
N2994	20.015	8.306	0.199
N2995	20.030	8.306	0.399
N2996	20.030	8.346	0.399
N2997	20.130	8.428	0.100
N2998	20.094	8.428	0.100
N2999	20.094	8.421	0.199
N3000	20.134	8.421	0.199
N3001	20.134	8.428	0.100
N3002	20.130	8.413	0.299
N3003	20.094	8.406	0.399
N3004	20.134	8.406	0.399
N3005	20.094	8.413	0.299
N3006	20.134	8.413	0.299
N3007	20.130	8.398	0.499
N3008	20.094	8.398	0.499
N3009	20.094	8.391	0.598
N3010	20.134	8.391	0.598
N3011	20.134	8.398	0.499
N3012	20.110	9.838	0.102
N3013	20.110	9.261	1.685
N3014	20.110	9.530	0.947
N3015	20.110	8.849	-0.100
N3016	20.110	8.326	-0.050
N3017	20.110	8.326	0.850
N3018	20.000	8.436	0.000
N3019	20.000	8.216	0.000
N3070	20.110	9.705	2.057
N3071	0.110	9.705	2.057
N3072	2.610	9.705	2.057
N3073	5.110	9.705	2.057
N3074	7.610	9.705	2.057
N3075	10.110	9.705	2.057
N3076	12.610	9.705	2.057
N3077	15.110	9.705	2.057
N3078	17.610	9.705	2.057
N3080	20.110	7.253	0.000

Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N3081	0.110	7.253	0.000
N3082	2.610	7.253	0.000
N3083	5.110	7.253	0.000
N3084	7.610	7.253	0.000
N3085	10.110	7.253	0.000
N3086	12.610	7.253	0.000
N3087	15.110	7.253	0.000
N3088	17.610	7.253	0.000

4.2. ΓΡΑΜΜΙΚΑ ΜΕΛΗ

Name	CrossSection	Length [m]	Shape	Beg. node	End node	Type	FEM type	Layer
B71	second_col1 - SHS70/70/3.0	3.200	Line	N3081	N3071	beam (80)	standard	dokoi
B74	purlin - General cross-section	20.200	Line	N160	N2222	beam (80)	standard	tegides
B75	purlin - General cross-section	20.200	Line	N162	N2223	beam (80)	standard	tegides
B78	main_col - General cross-section	0.900	Line	N207	N619	column (100)	standard	ypostylo
B111	second_col - General cross-section	0.785	Line	N619	N208	column (100)	standard	ypostylo
B152	CS15 - CHS48.3/3.2	0.050	Line	N2240	N161	column (100)	standard	stiriksi
B156	purlin - General cross-section	20.200	Line	N2245	N2246	beam (80)	standard	tegides
B157	purlin - General cross-section	20.200	Line	N2247	N2248	beam (80)	standard	tegides
B158	second_col1 - SHS70/70/3.0	3.200	Line	N3082	N3072	beam (80)	standard	dokoi
B159	main_col - General cross-section	0.900	Line	N2293	N2295	column (100)	standard	ypostylo
B160	second_col - General cross-section	0.785	Line	N2295	N2294	column (100)	standard	ypostylo
B161	CS15 - CHS48.3/3.2	0.050	Line	N2298	N2251	column (100)	standard	stiriksi
B165	second_col1 - SHS70/70/3.0	3.200	Line	N3083	N3073	beam (80)	standard	dokoi
B166	main_col - General cross-section	0.900	Line	N2396	N2398	column (100)	standard	ypostylo
B167	second_col - General cross-section	0.785	Line	N2398	N2397	column (100)	standard	ypostylo
B168	CS15 - CHS48.3/3.2	0.050	Line	N2401	N2354	column (100)	standard	stiriksi
B172	second_col1 - SHS70/70/3.0	3.200	Line	N3084	N3074	beam (80)	standard	dokoi
B173	main_col - General cross-section	0.900	Line	N2499	N2501	column (100)	standard	ypostylo
B174	second_col - General cross-section	0.785	Line	N2501	N2500	column (100)	standard	ypostylo
B175	CS15 - CHS48.3/3.2	0.050	Line	N2504	N2457	column (100)	standard	stiriksi
B179	second_col1 - SHS70/70/3.0	3.200	Line	N3085	N3075	beam (80)	standard	dokoi
B180	main_col - General cross-section	0.900	Line	N2602	N2604	column (100)	standard	ypostylo
B181	second_col - General cross-section	0.785	Line	N2604	N2603	column (100)	standard	ypostylo
B182	CS15 - CHS48.3/3.2	0.050	Line	N2607	N2560	column (100)	standard	stiriksi
B186	second_col1 - SHS70/70/3.0	3.200	Line	N3086	N3076	beam (80)	standard	dokoi
B187	main_col - General cross-section	0.900	Line	N2705	N2707	column (100)	standard	ypostylo
B188	second_col - General cross-section	0.785	Line	N2707	N2706	column (100)	standard	ypostylo
B189	CS15 - CHS48.3/3.2	0.050	Line	N2710	N2663	column (100)	standard	stiriksi
B193	second_col1 - SHS70/70/3.0	3.200	Line	N3087	N3077	beam (80)	standard	dokoi
B194	main_col - General cross-section	0.900	Line	N2808	N2810	column (100)	standard	ypostylo
B195	second_col - General cross-section	0.785	Line	N2810	N2809	column (100)	standard	ypostylo
B196	CS15 - CHS48.3/3.2	0.050	Line	N2813	N2766	column (100)	standard	stiriksi
B200	second_col1 - SHS70/70/3.0	3.200	Line	N3088	N3078	beam (80)	standard	dokoi
B201	main_col - General cross-section	0.900	Line	N2911	N2913	column (100)	standard	ypostylo
B202	second_col - General cross-section	0.785	Line	N2913	N2912	column (100)	standard	ypostylo
B203	CS15 - CHS48.3/3.2	0.050	Line	N2916	N2869	column (100)	standard	stiriksi
B207	second_col1 - SHS70/70/3.0	3.200	Line	N3080	N3070	beam (80)	standard	dokoi
B208	main_col - General cross-section	0.900	Line	N3012	N3014	column (100)	standard	ypostylo
B209	second_col - General cross-section	0.785	Line	N3014	N3013	column (100)	standard	ypostylo
B210	CS15 - CHS48.3/3.2	0.050	Line	N3017	N2970	column (100)	standard	stiriksi

4.3. ΣΤΗΡΙΞΕΙΣ ΚΟΜΒΩΝ

Name	Node	System	Type	X	Y	Z	Rx	Ry	Rz
Sn3	N621	GCS	Pad foundation						
Sn43	N160	GCS	Standard	Free	Free	Free	Flexible	Free	Free
Sn44	N162	GCS	Standard	Free	Free	Free	Flexible	Free	Free
Sn48	N2296	GCS	Pad foundation						
Sn52	N2399	GCS	Pad foundation						
Sn56	N2502	GCS	Pad foundation						
Sn60	N2605	GCS	Pad foundation						
Sn64	N2708	GCS	Pad foundation						
Sn68	N2811	GCS	Pad foundation						
Sn72	N2914	GCS	Pad foundation						
Sn76	N3015	GCS	Pad foundation						
Sn79	N2245	GCS	Standard	Free	Free	Free	Flexible	Free	Free
Sn80	N2247	GCS	Standard	Free	Free	Free	Flexible	Free	Free

4.4. ΕΣΩΤΕΡΙΚΕΣ ΑΡΘΡΩΣΕΙΣ

Name	Member	Position	ux	uy	uz	fix	fiy	fiz
H10	B152	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H15	B161	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H20	B168	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H25	B175	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H30	B182	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H35	B189	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H40	B196	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H45	B203	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H50	B210	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H54	B111	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H55	B160	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H56	B167	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H57	B174	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H58	B181	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H59	B188	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H60	B195	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H61	B202	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H62	B209	End	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H81	B78	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H82	B159	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H83	B166	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H84	B173	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H85	B180	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H86	B187	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H87	B194	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H88	B201	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free
H89	B208	Begin	Rigid	Rigid	Rigid	Rigid	Rigid	Free

Name	dwg
Name	base
Comment	base
Name	tegides
Name	ypostylo
Name	dokoi
Name	stiriksi

4.5. ΟΝΟΜΑΤΟΛΟΓΙΑ ΣΤΥΛΩΝ

B160 B159



B167 B166



B174 B173



B181 B180



B188 B187



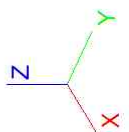
B195 B194



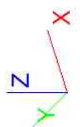
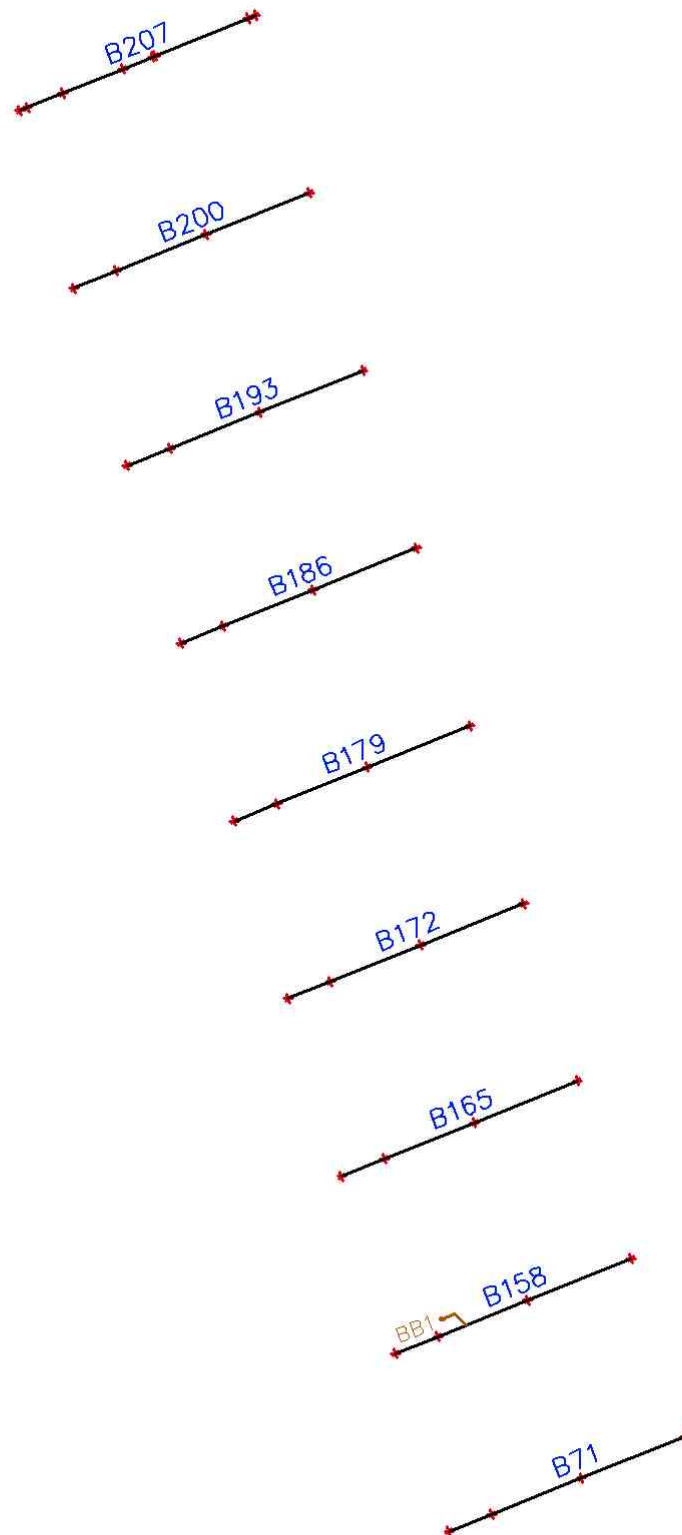
B202 B201



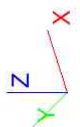
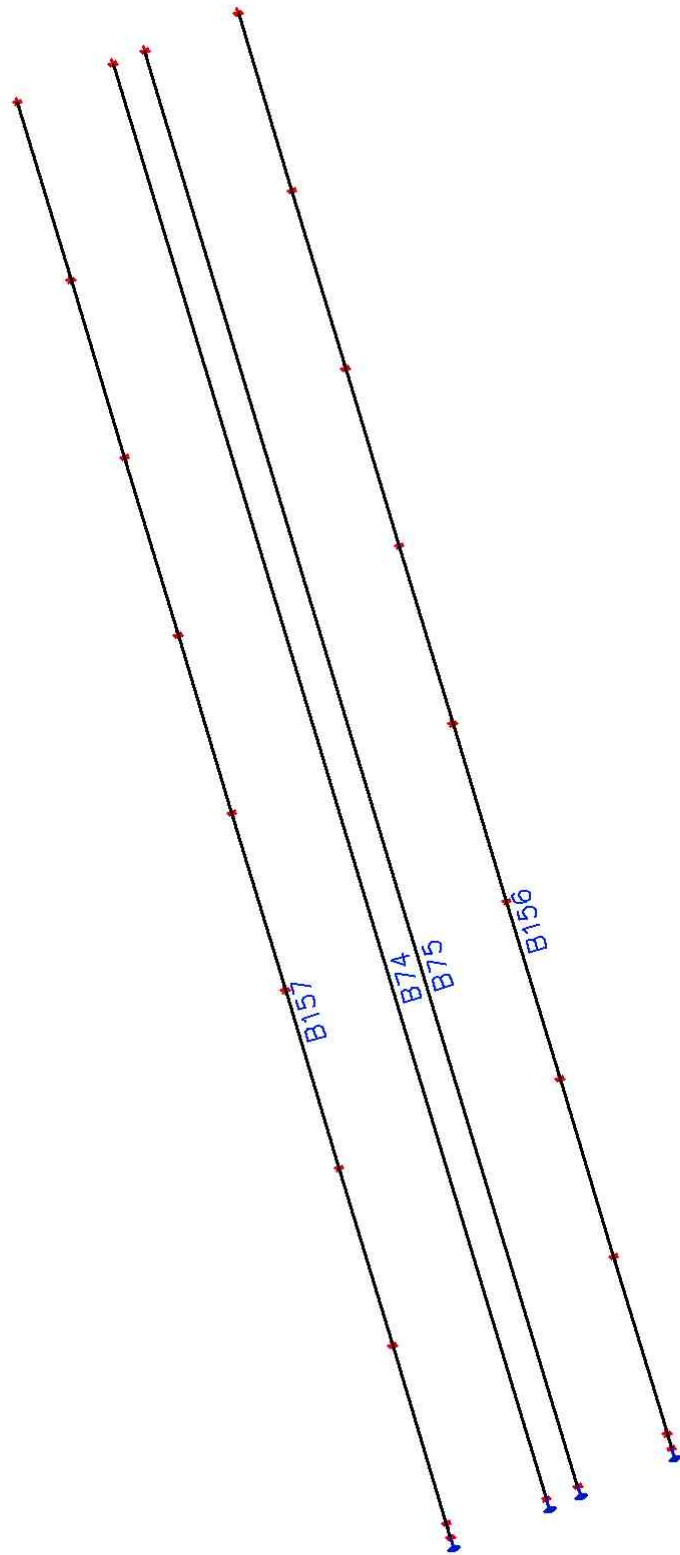
B209 B208



4.6. ΟΝΟΜΑΤΟΛΟΓΙΑ ΔΟΚΩΝ



4.7. ΟΝΟΜΑΤΟΛΟΓΙΑ ΤΕΓΙΔΩΝ



5. ΦΟΡΤΙΑ - ΦΟΡΤΙΣΤΙΚΕΣ ΚΑΤΑΣΤΑΣΕΙΣ

5.1. ΦΟΡΤΙΑ

Name	Description	Action type	LoadGroup	Load type	Spec	Duration	Master load case
LC1	i.b.	Permanent	LG1	Standard			
LC2	extra	Permanent	LG1	Standard			
LC3	xioni	Variable	LG2	Static	Standard	Short	None
LC4	anemos+teg	Variable	LG3	Static	Standard	Short	None
LC5	anemos-teg	Variable	LG3	Static	Standard	Short	None
LC6	anemos+1	Variable	LG3	Static	Standard	Short	None
LC7	anemos-1	Variable	LG3	Static	Standard	Short	None
LC8	anemos+2	Variable	LG3	Static	Standard	Short	None
LC9	anemos-2	Variable	LG3	Static	Standard	Short	None

5.2. ΟΜΑΔΕΣ ΦΟΡΤΙΩΝ

Name	Load	Relation	Type
LG1	Permanent		
LG2	Variable	Exclusive	Snow
LG3	Variable	Exclusive	Wind

5.3. ΣΥΝΔΥΑΣΜΟΙ

Name	Description	Type	Load cases	Coeff. [-]
CO1	ultimate_foreas	EN-ULS (STR/GEO) Set B	LC1 - i.b.	1.00
			LC2 - extra	1.00
			LC3 - xioni	0.70
			LC6 - anemos+1	0.52
			LC7 - anemos-1	0.52
			LC8 - anemos+2	0.52
CO3	ultimate_teg	EN-ULS (STR/GEO) Set B	LC1 - i.b.	1.00
			LC2 - extra	1.00
			LC3 - xioni	0.70
			LC4 - anemos+teg	0.55
			LC5 - anemos-teg	0.55

5.4. ΟΜΑΔΕΣ ΣΥΝΔΥΑΣΜΩΝ

Name	List
GEO	CO1 - EN-ULS (STR/GEO) Set B CO3 - EN-ULS (STR/GEO) Set B
GEO1	CO1 - EN-ULS (STR/GEO) Set B

5.5. ΤΑΥΤΟΤΗΤΑ ΣΥΝΔΥΑΣΜΩΝ

Name	Description of combinations
1	LC1*1.35 +LC2*1.35 +LC3*0.74 +LC9*0.78
2	LC1*1.00 +LC2*1.00 +LC6*0.78
3	LC1*1.00 +LC2*1.00 +LC3*0.74 +LC6*0.78
4	LC1*1.35 +LC2*1.35 +LC3*0.74 +LC7*0.78
5	LC1*1.35 +LC2*1.35
6	LC1*1.35 +LC2*1.35 +LC8*0.78
7	LC1*1.00 +LC2*1.00
8	LC1*1.00 +LC2*1.00 +LC8*0.78
9	LC1*1.00 +LC2*1.00 +LC3*0.74 +LC7*0.78
10	LC1*1.35 +LC2*1.35 +LC3*1.05 +LC7*0.47
11	LC1*1.35 +LC2*1.35 +LC3*0.74 +LC5*0.82
12	LC1*1.00 +LC2*1.00 +LC4*0.82
13	LC1*1.35 +LC2*1.35 +LC3*1.05 +LC5*0.50
14	LC1*1.35 +LC2*1.35 +LC3*1.05 +LC4*0.50
15	LC1*1.00 +LC2*1.00 +LC5*0.82
16	LC1*1.35 +LC2*1.35 +LC3*0.74 +LC4*0.82
17	LC1*1.35 +LC2*1.35 +LC6*0.47
18	LC1*1.35 +LC2*1.35 +LC3*1.05 +LC9*0.47
19	LC1*1.35 +LC2*1.35 +LC8*0.47
20	LC1*1.35 +LC2*1.35 +LC3*1.05 +LC6*0.47
21	LC1*1.35 +LC2*1.35 +LC3*1.05 +LC8*0.47

Name	Description of combinations
22	LC1*1.35 +LC2*1.35 +LC7*0.47
23	LC1*1.35 +LC2*1.35 +LC9*0.47
24	LC1*1.00 +LC2*1.00 +LC6*0.47
25	LC1*1.00 +LC2*1.00 +LC3*1.05 +LC9*0.47
26	LC1*1.00 +LC2*1.00 +LC8*0.47
27	LC1*1.00 +LC2*1.00 +LC3*1.05 +LC6*0.47
28	LC1*1.00 +LC2*1.00 +LC3*1.05 +LC8*0.47
29	LC1*1.00 +LC2*1.00 +LC3*1.05 +LC7*0.47
30	LC1*1.00 +LC2*1.00 +LC7*0.47
31	LC1*1.00 +LC2*1.00 +LC9*0.47
32	LC1*1.35 +LC2*1.35 +LC6*0.78
33	LC1*1.35 +LC2*1.35 +LC3*0.74 +LC6*0.78
34	LC1*1.35 +LC2*1.35 +LC3*0.74 +LC8*0.78
35	LC1*1.35 +LC2*1.35 +LC7*0.78
36	LC1*1.35 +LC2*1.35 +LC9*0.78
37	LC1*1.00 +LC2*1.00 +LC3*0.74 +LC9*0.78
38	LC1*1.00 +LC2*1.00 +LC3*0.74 +LC8*0.78
39	LC1*1.00 +LC2*1.00 +LC7*0.78
40	LC1*1.00 +LC2*1.00 +LC9*0.78

6. ΕΣΩΤΕΡΙΚΕΣ ΔΥΝΑΜΕΙΣ - ΑΝΤΙΔΡΑΣΕΙΣ ΣΤΗΡΙΞΕΩΝ

6.1. ΕΣΩΤΕΡΙΚΕΣ ΔΥΝΑΜΕΙΣ ΣΤΥΛΩΝ

Linear calculation, Extreme : Member, System : Principal

Selection : All

Combinations : CO1

Layer : ypostylo

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B78	CO1/4	0.000	-3.26	-0.02	0.05	0.00	-0.07	0.00
B78	CO1/2	0.900	3.40	0.00	-0.02	0.00	0.01	-0.01
B78	CO1/5	0.000	-0.26	-0.02	0.01	0.00	-0.02	0.00
B78	CO1/5	0.900	-0.19	0.00	0.01	0.00	-0.01	-0.01
B78	CO1/2	0.000	3.34	-0.02	-0.02	0.00	0.03	0.00
B78	CO1/5	0.720	-0.20	0.00	0.01	0.00	-0.01	-0.01
B78	CO1/6	0.000	-2.41	-0.02	0.01	0.00	-0.02	0.00
B111	CO1/4	0.000	-3.18	0.00	0.05	0.00	-0.03	-0.01
B111	CO1/2	0.785	3.43	0.01	-0.02	0.00	0.00	0.00
B111	CO1/7	0.000	-0.14	0.00	0.01	0.00	0.00	-0.01
B111	CO1/5	0.785	-0.14	0.02	0.01	0.00	0.00	0.00
B111	CO1/2	0.000	3.40	0.00	-0.02	0.00	0.01	-0.01
B111	CO1/4	0.785	-3.14	0.02	0.05	0.00	0.01	0.00
B111	CO1/5	0.000	-0.19	0.00	0.01	0.00	-0.01	-0.01
B111	CO1/1	0.785	1.41	0.02	0.03	0.00	0.01	0.00
B159	CO1/4	0.000	-7.49	-0.02	0.05	0.00	-0.07	0.00
B159	CO1/2	0.900	8.01	0.00	-0.02	0.00	0.01	-0.01
B159	CO1/5	0.000	-0.43	-0.02	0.01	0.00	-0.02	0.00
B159	CO1/5	0.900	-0.36	0.00	0.01	0.00	-0.01	-0.01
B159	CO1/2	0.000	7.96	-0.02	-0.02	0.00	0.03	0.00
B159	CO1/5	0.720	-0.37	0.00	0.01	0.00	-0.01	-0.01
B159	CO1/8	0.000	-5.03	-0.02	0.01	0.00	-0.01	0.00
B160	CO1/4	0.000	-7.42	0.00	0.05	0.00	-0.03	-0.01
B160	CO1/2	0.785	8.05	0.01	-0.02	0.00	0.00	0.00
B160	CO1/9	0.000	-7.33	0.00	0.05	0.00	-0.03	-0.01
B160	CO1/5	0.785	-0.32	0.02	0.01	0.00	0.00	0.00
B160	CO1/2	0.000	8.01	0.00	-0.02	0.00	0.01	-0.01
B160	CO1/4	0.785	-7.38	0.02	0.05	0.00	0.01	0.00
B160	CO1/5	0.000	-0.36	0.00	0.01	0.00	-0.01	-0.01
B160	CO1/1	0.785	3.02	0.02	0.03	0.00	0.01	0.00
B166	CO1/4	0.000	-6.43	-0.02	0.05	0.00	-0.07	0.00
B166	CO1/2	0.900	6.92	0.00	-0.02	0.00	0.01	-0.01
B166	CO1/5	0.000	-0.37	-0.02	0.01	0.00	-0.02	0.00
B166	CO1/5	0.900	-0.30	0.00	0.01	0.00	-0.01	-0.01
B166	CO1/2	0.000	6.87	-0.02	-0.02	0.00	0.03	0.00
B166	CO1/5	0.720	-0.31	0.00	0.01	0.00	-0.01	-0.01
B166	CO1/8	0.000	-4.61	-0.02	0.01	0.00	-0.01	0.00
B167	CO1/4	0.000	-6.35	0.00	0.05	0.00	-0.03	-0.01
B167	CO1/2	0.785	6.95	0.01	-0.02	0.00	0.00	0.00
B167	CO1/7	0.000	-0.22	0.00	0.01	0.00	0.00	-0.01
B167	CO1/5	0.785	-0.26	0.02	0.01	0.00	0.00	0.00

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B167	CO1/2	0.000	6.92	0.00	-0.02	0.00	0.01	-0.01
B167	CO1/4	0.785	-6.31	0.02	0.05	0.00	0.01	0.00
B167	CO1/5	0.000	-0.30	0.00	0.01	0.00	-0.01	-0.01
B167	CO1/1	0.785	2.87	0.02	0.03	0.00	0.01	0.00
B173	CO1/4	0.000	-6.71	-0.02	0.05	0.00	-0.07	0.00
B173	CO1/2	0.900	7.18	0.00	-0.02	0.00	0.01	-0.01
B173	CO1/5	0.000	-0.39	-0.02	0.01	0.00	-0.02	0.00
B173	CO1/5	0.900	-0.32	0.00	0.01	0.00	-0.01	-0.01
B173	CO1/2	0.000	7.13	-0.02	-0.02	0.00	0.03	0.00
B173	CO1/5	0.720	-0.34	0.00	0.01	0.00	-0.01	-0.01
B173	CO1/8	0.000	-4.63	-0.02	0.01	0.00	-0.02	0.00
B174	CO1/4	0.000	-6.63	0.00	0.05	0.00	-0.03	-0.01
B174	CO1/2	0.785	7.22	0.01	-0.02	0.00	0.00	0.00
B174	CO1/7	0.000	-0.24	0.00	0.01	0.00	0.00	-0.01
B174	CO1/5	0.785	-0.28	0.02	0.01	0.00	0.00	0.00
B174	CO1/2	0.000	7.18	0.00	-0.02	0.00	0.01	-0.01
B174	CO1/4	0.785	-6.59	0.02	0.05	0.00	0.01	0.00
B174	CO1/5	0.000	-0.32	0.00	0.01	0.00	-0.01	-0.01
B174	CO1/1	0.785	2.81	0.02	0.03	0.00	0.01	0.00
B180	CO1/4	0.000	-6.63	-0.02	0.05	0.00	-0.08	0.00
B180	CO1/2	0.900	7.12	0.00	-0.02	0.00	0.01	-0.01
B180	CO1/5	0.000	-0.39	-0.02	0.01	0.00	-0.02	0.00
B180	CO1/5	0.900	-0.31	0.00	0.01	0.00	-0.01	-0.01
B180	CO1/2	0.000	7.06	-0.02	-0.02	0.00	0.03	0.00
B180	CO1/5	0.720	-0.33	0.00	0.01	0.00	-0.01	-0.01
B180	CO1/8	0.000	-4.63	-0.02	0.01	0.00	-0.02	0.00
B181	CO1/4	0.000	-6.56	0.00	0.05	0.00	-0.03	-0.01
B181	CO1/2	0.785	7.15	0.01	-0.02	0.00	0.00	0.00
B181	CO1/7	0.000	-0.23	0.00	0.01	0.00	0.00	-0.01
B181	CO1/5	0.785	-0.27	0.02	0.01	0.00	0.00	0.00
B181	CO1/2	0.000	7.12	0.00	-0.02	0.00	0.01	-0.01
B181	CO1/4	0.785	-6.52	0.02	0.05	0.00	0.01	0.00
B181	CO1/5	0.000	-0.31	0.00	0.01	0.00	-0.01	-0.01
B181	CO1/1	0.785	2.83	0.02	0.03	0.00	0.01	0.00
B187	CO1/4	0.000	-6.67	-0.02	0.05	0.00	-0.08	0.00
B187	CO1/2	0.900	7.15	0.00	-0.02	0.00	0.01	-0.01
B187	CO1/5	0.000	-0.39	-0.02	0.01	0.00	-0.02	0.00
B187	CO1/5	0.900	-0.32	0.00	0.01	0.00	-0.01	-0.01
B187	CO1/2	0.000	7.09	-0.02	-0.02	0.00	0.03	0.00
B187	CO1/10	0.000	-4.47	-0.02	0.05	0.00	-0.07	0.00
B187	CO1/5	0.720	-0.33	0.00	0.01	0.00	-0.01	-0.01
B187	CO1/8	0.000	-4.62	-0.02	0.01	0.00	-0.02	0.00
B188	CO1/4	0.000	-6.60	0.00	0.05	0.00	-0.03	-0.01
B188	CO1/2	0.785	7.18	0.01	-0.02	0.00	0.00	0.00
B188	CO1/7	0.000	-0.24	0.00	0.01	0.00	0.00	-0.01
B188	CO1/5	0.785	-0.28	0.02	0.01	0.00	0.00	0.00
B188	CO1/2	0.000	7.15	0.00	-0.02	0.00	0.01	-0.01
B188	CO1/10	0.000	-4.39	0.00	0.05	0.00	-0.03	-0.01
B188	CO1/4	0.785	-6.55	0.02	0.05	0.00	0.01	0.00
B188	CO1/5	0.000	-0.32	0.00	0.01	0.00	-0.01	-0.01
B188	CO1/1	0.785	2.82	0.02	0.02	0.00	0.00	0.00
B194	CO1/4	0.000	-6.58	-0.02	0.05	0.00	-0.08	0.00
B194	CO1/2	0.900	7.08	0.00	-0.02	0.00	0.01	-0.01
B194	CO1/5	0.000	-0.38	-0.02	0.01	0.00	-0.02	0.00
B194	CO1/5	0.900	-0.31	0.00	0.01	0.00	-0.01	-0.01
B194	CO1/2	0.000	7.03	-0.02	-0.02	0.00	0.03	0.00
B194	CO1/10	0.000	-4.40	-0.02	0.05	0.00	-0.08	0.00
B194	CO1/5	0.720	-0.32	0.00	0.01	0.00	-0.01	-0.01
B194	CO1/8	0.000	-4.67	-0.02	0.02	0.00	-0.02	0.00
B195	CO1/4	0.000	-6.51	0.00	0.05	0.00	-0.03	-0.01
B195	CO1/2	0.785	7.11	0.01	-0.02	0.00	-0.01	0.00
B195	CO1/7	0.000	-0.23	0.00	0.01	0.00	0.00	-0.01
B195	CO1/5	0.785	-0.26	0.02	0.01	0.00	0.00	0.00
B195	CO1/2	0.000	7.08	0.00	-0.02	0.00	0.01	-0.01
B195	CO1/10	0.000	-4.32	0.00	0.05	0.00	-0.03	-0.01
B195	CO1/4	0.785	-6.47	0.02	0.05	0.00	0.01	0.00
B195	CO1/5	0.000	-0.31	0.00	0.01	0.00	-0.01	-0.01
B195	CO1/1	0.785	2.89	0.02	0.02	0.00	0.00	0.00
B201	CO1/4	0.000	-6.90	-0.02	0.06	0.00	-0.08	0.00
B201	CO1/2	0.900	7.35	0.00	-0.03	0.00	0.01	-0.01
B201	CO1/5	0.000	-0.41	-0.02	0.01	0.00	-0.02	0.00

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B201	CO1/5	0.900	-0.34	0.00	0.01	0.00	-0.01	-0.01
B201	CO1/2	0.000	7.30	-0.02	-0.03	0.00	0.04	0.00
B201	CO1/10	0.000	-4.63	-0.02	0.06	0.00	-0.08	0.00
B201	CO1/5	0.720	-0.35	0.00	0.01	0.00	-0.01	-0.01
B201	CO1/8	0.000	-4.61	-0.02	0.02	0.00	-0.03	0.00
B202	CO1/4	0.000	-6.82	0.00	0.06	0.00	-0.03	-0.01
B202	CO1/2	0.785	7.39	0.01	-0.03	0.00	-0.01	0.00
B202	CO1/7	0.000	-0.25	0.00	0.01	0.00	0.00	-0.01
B202	CO1/5	0.785	-0.29	0.02	0.01	0.00	0.00	0.00
B202	CO1/2	0.000	7.35	0.00	-0.03	0.00	0.01	-0.01
B202	CO1/10	0.000	-4.56	0.00	0.06	0.00	-0.03	-0.01
B202	CO1/5	0.000	-0.34	0.00	0.01	0.00	-0.01	-0.01
B202	CO1/1	0.785	2.75	0.02	0.02	0.00	0.00	0.00
B208	CO1/4	0.000	-3.21	-0.02	-0.69	0.00	0.45	0.00
B208	CO1/2	0.900	3.35	0.00	0.65	0.00	0.14	-0.01
B208	CO1/5	0.000	-0.26	-0.02	-0.05	0.00	0.03	0.00
B208	CO1/5	0.900	-0.18	0.00	-0.05	0.00	-0.02	-0.01
B208	CO1/2	0.000	3.30	-0.02	0.65	0.00	-0.45	0.00
B208	CO1/5	0.720	-0.20	0.00	-0.05	0.00	-0.01	-0.01
B208	CO1/6	0.000	-2.41	-0.02	0.09	0.00	-0.06	0.00
B209	CO1/4	0.000	-3.14	0.00	-0.69	0.00	-0.17	-0.01
B209	CO1/2	0.785	3.38	0.01	0.65	0.00	0.65	0.00
B209	CO1/7	0.000	-0.14	0.00	-0.04	0.00	-0.01	-0.01
B209	CO1/5	0.785	-0.14	0.02	-0.05	0.00	-0.06	0.00
B209	CO1/2	0.000	3.35	0.00	0.65	0.00	0.14	-0.01
B209	CO1/4	0.785	-3.09	0.02	-0.69	0.00	-0.71	0.00
B209	CO1/5	0.000	-0.18	0.00	-0.05	0.00	-0.02	-0.01
B209	CO1/1	0.785	1.42	0.02	-0.25	0.00	-0.27	0.00

6.2. ΕΣΩΤΕΡΙΚΕΣ ΔΥΝΑΜΕΙΣ ΔΟΚΩΝ

Linear calculation, Extreme : Member, System : Principal

Selection : All

Combinations : CO1

Layer : ypostylo

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B78	CO1/4	0.000	-3.26	-0.02	0.05	0.00	-0.07	0.00
B78	CO1/2	0.900	3.40	0.00	-0.02	0.00	0.01	-0.01
B78	CO1/5	0.000	-0.26	-0.02	0.01	0.00	-0.02	0.00
B78	CO1/5	0.900	-0.19	0.00	0.01	0.00	-0.01	-0.01
B78	CO1/2	0.000	3.34	-0.02	-0.02	0.00	0.03	0.00
B78	CO1/5	0.720	-0.20	0.00	0.01	0.00	-0.01	-0.01
B78	CO1/6	0.000	-2.41	-0.02	0.01	0.00	-0.02	0.00
B111	CO1/4	0.000	-3.18	0.00	0.05	0.00	-0.03	-0.01
B111	CO1/2	0.785	3.43	0.01	-0.02	0.00	0.00	0.00
B111	CO1/7	0.000	-0.14	0.00	0.01	0.00	0.00	-0.01
B111	CO1/5	0.785	-0.14	0.02	0.01	0.00	0.00	0.00
B111	CO1/2	0.000	3.40	0.00	-0.02	0.00	0.01	-0.01
B111	CO1/4	0.785	-3.14	0.02	0.05	0.00	0.01	0.00
B111	CO1/5	0.000	-0.19	0.00	0.01	0.00	-0.01	-0.01
B111	CO1/1	0.785	1.41	0.02	0.03	0.00	0.01	0.00
B159	CO1/4	0.000	-7.49	-0.02	0.05	0.00	-0.07	0.00
B159	CO1/2	0.900	8.01	0.00	-0.02	0.00	0.01	-0.01
B159	CO1/5	0.000	-0.43	-0.02	0.01	0.00	-0.02	0.00
B159	CO1/5	0.900	-0.36	0.00	0.01	0.00	-0.01	-0.01
B159	CO1/2	0.000	7.96	-0.02	-0.02	0.00	0.03	0.00
B159	CO1/5	0.720	-0.37	0.00	0.01	0.00	-0.01	-0.01
B159	CO1/8	0.000	-5.03	-0.02	0.01	0.00	-0.01	0.00
B160	CO1/4	0.000	-7.42	0.00	0.05	0.00	-0.03	-0.01
B160	CO1/2	0.785	8.05	0.01	-0.02	0.00	0.00	0.00
B160	CO1/9	0.000	-7.33	0.00	0.05	0.00	-0.03	-0.01
B160	CO1/5	0.785	-0.32	0.02	0.01	0.00	0.00	0.00
B160	CO1/2	0.000	8.01	0.00	-0.02	0.00	0.01	-0.01
B160	CO1/4	0.785	-7.38	0.02	0.05	0.00	0.01	0.00
B160	CO1/5	0.000	-0.36	0.00	0.01	0.00	-0.01	-0.01
B160	CO1/1	0.785	3.02	0.02	0.03	0.00	0.01	0.00
B166	CO1/4	0.000	-6.43	-0.02	0.05	0.00	-0.07	0.00
B166	CO1/2	0.900	6.92	0.00	-0.02	0.00	0.01	-0.01
B166	CO1/5	0.000	-0.37	-0.02	0.01	0.00	-0.02	0.00

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B166	CO1/5	0.900	-0.30	0.00	0.01	0.00	-0.01	-0.01
B166	CO1/2	0.000	6.87	-0.02	-0.02	0.00	0.03	0.00
B166	CO1/5	0.720	-0.31	0.00	0.01	0.00	-0.01	-0.01
B166	CO1/8	0.000	-4.61	-0.02	0.01	0.00	-0.01	0.00
B167	CO1/4	0.000	-6.35	0.00	0.05	0.00	-0.03	-0.01
B167	CO1/2	0.785	6.95	0.01	-0.02	0.00	0.00	0.00
B167	CO1/7	0.000	-0.22	0.00	0.01	0.00	0.00	-0.01
B167	CO1/5	0.785	-0.26	0.02	0.01	0.00	0.00	0.00
B167	CO1/2	0.000	6.92	0.00	-0.02	0.00	0.01	-0.01
B167	CO1/4	0.785	-6.31	0.02	0.05	0.00	0.01	0.00
B167	CO1/5	0.000	-0.30	0.00	0.01	0.00	-0.01	-0.01
B167	CO1/1	0.785	2.87	0.02	0.03	0.00	0.01	0.00
B173	CO1/4	0.000	-6.71	-0.02	0.05	0.00	-0.07	0.00
B173	CO1/2	0.900	7.18	0.00	-0.02	0.00	0.01	-0.01
B173	CO1/5	0.000	-0.39	-0.02	0.01	0.00	-0.02	0.00
B173	CO1/5	0.900	-0.32	0.00	0.01	0.00	-0.01	-0.01
B173	CO1/2	0.000	7.13	-0.02	-0.02	0.00	0.03	0.00
B173	CO1/5	0.720	-0.34	0.00	0.01	0.00	-0.01	-0.01
B173	CO1/8	0.000	-4.63	-0.02	0.01	0.00	-0.02	0.00
B174	CO1/4	0.000	-6.63	0.00	0.05	0.00	-0.03	-0.01
B174	CO1/2	0.785	7.22	0.01	-0.02	0.00	0.00	0.00
B174	CO1/7	0.000	-0.24	0.00	0.01	0.00	0.00	-0.01
B174	CO1/5	0.785	-0.28	0.02	0.01	0.00	0.00	0.00
B174	CO1/2	0.000	7.18	0.00	-0.02	0.00	0.01	-0.01
B174	CO1/4	0.785	-6.59	0.02	0.05	0.00	0.01	0.00
B174	CO1/5	0.000	-0.32	0.00	0.01	0.00	-0.01	-0.01
B174	CO1/1	0.785	2.81	0.02	0.03	0.00	0.01	0.00
B180	CO1/4	0.000	-6.63	-0.02	0.05	0.00	-0.08	0.00
B180	CO1/2	0.900	7.12	0.00	-0.02	0.00	0.01	-0.01
B180	CO1/5	0.000	-0.39	-0.02	0.01	0.00	-0.02	0.00
B180	CO1/5	0.900	-0.31	0.00	0.01	0.00	-0.01	-0.01
B180	CO1/2	0.000	7.06	-0.02	-0.02	0.00	0.03	0.00
B180	CO1/5	0.720	-0.33	0.00	0.01	0.00	-0.01	-0.01
B180	CO1/8	0.000	-4.63	-0.02	0.01	0.00	-0.02	0.00
B181	CO1/4	0.000	-6.56	0.00	0.05	0.00	-0.03	-0.01
B181	CO1/2	0.785	7.15	0.01	-0.02	0.00	0.00	0.00
B181	CO1/7	0.000	-0.23	0.00	0.01	0.00	0.00	-0.01
B181	CO1/5	0.785	-0.27	0.02	0.01	0.00	0.00	0.00
B181	CO1/2	0.000	7.12	0.00	-0.02	0.00	0.01	-0.01
B181	CO1/4	0.785	-6.52	0.02	0.05	0.00	0.01	0.00
B181	CO1/5	0.000	-0.31	0.00	0.01	0.00	-0.01	-0.01
B181	CO1/1	0.785	2.83	0.02	0.03	0.00	0.01	0.00
B187	CO1/4	0.000	-6.67	-0.02	0.05	0.00	-0.08	0.00
B187	CO1/2	0.900	7.15	0.00	-0.02	0.00	0.01	-0.01
B187	CO1/5	0.000	-0.39	-0.02	0.01	0.00	-0.02	0.00
B187	CO1/5	0.900	-0.32	0.00	0.01	0.00	-0.01	-0.01
B187	CO1/2	0.000	7.09	-0.02	-0.02	0.00	0.03	0.00
B187	CO1/10	0.000	-4.47	-0.02	0.05	0.00	-0.07	0.00
B187	CO1/5	0.720	-0.33	0.00	0.01	0.00	-0.01	-0.01
B187	CO1/8	0.000	-4.62	-0.02	0.01	0.00	-0.02	0.00
B188	CO1/4	0.000	-6.60	0.00	0.05	0.00	-0.03	-0.01
B188	CO1/2	0.785	7.18	0.01	-0.02	0.00	0.00	0.00
B188	CO1/7	0.000	-0.24	0.00	0.01	0.00	0.00	-0.01
B188	CO1/5	0.785	-0.28	0.02	0.01	0.00	0.00	0.00
B188	CO1/2	0.000	7.15	0.00	-0.02	0.00	0.01	-0.01
B188	CO1/10	0.000	-4.39	0.00	0.05	0.00	-0.03	-0.01
B188	CO1/4	0.785	-6.55	0.02	0.05	0.00	0.01	0.00
B188	CO1/5	0.000	-0.32	0.00	0.01	0.00	-0.01	-0.01
B188	CO1/1	0.785	2.82	0.02	0.02	0.00	0.00	0.00
B194	CO1/4	0.000	-6.58	-0.02	0.05	0.00	-0.08	0.00
B194	CO1/2	0.900	7.08	0.00	-0.02	0.00	0.01	-0.01
B194	CO1/5	0.000	-0.38	-0.02	0.01	0.00	-0.02	0.00
B194	CO1/5	0.900	-0.31	0.00	0.01	0.00	-0.01	-0.01
B194	CO1/2	0.000	7.03	-0.02	-0.02	0.00	0.03	0.00
B194	CO1/10	0.000	-4.40	-0.02	0.05	0.00	-0.08	0.00
B194	CO1/5	0.720	-0.32	0.00	0.01	0.00	-0.01	-0.01
B194	CO1/8	0.000	-4.67	-0.02	0.02	0.00	-0.02	0.00
B195	CO1/4	0.000	-6.51	0.00	0.05	0.00	-0.03	-0.01
B195	CO1/2	0.785	7.11	0.01	-0.02	0.00	-0.01	0.00
B195	CO1/7	0.000	-0.23	0.00	0.01	0.00	0.00	-0.01
B195	CO1/5	0.785	-0.26	0.02	0.01	0.00	0.00	0.00

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B195	CO1/2	0.000	7.08	0.00	-0.02	0.00	0.01	-0.01
B195	CO1/10	0.000	-4.32	0.00	0.05	0.00	-0.03	-0.01
B195	CO1/4	0.785	-6.47	0.02	0.05	0.00	0.01	0.00
B195	CO1/5	0.000	-0.31	0.00	0.01	0.00	-0.01	-0.01
B195	CO1/1	0.785	2.89	0.02	0.02	0.00	0.00	0.00
B201	CO1/4	0.000	-6.90	-0.02	0.06	0.00	-0.08	0.00
B201	CO1/2	0.900	7.35	0.00	-0.03	0.00	0.01	-0.01
B201	CO1/5	0.000	-0.41	-0.02	0.01	0.00	-0.02	0.00
B201	CO1/5	0.900	-0.34	0.00	0.01	0.00	-0.01	-0.01
B201	CO1/2	0.000	7.30	-0.02	-0.03	0.00	0.04	0.00
B201	CO1/10	0.000	-4.63	-0.02	0.06	0.00	-0.08	0.00
B201	CO1/5	0.720	-0.35	0.00	0.01	0.00	-0.01	-0.01
B201	CO1/8	0.000	-4.61	-0.02	0.02	0.00	-0.03	0.00
B202	CO1/4	0.000	-6.82	0.00	0.06	0.00	-0.03	-0.01
B202	CO1/2	0.785	7.39	0.01	-0.03	0.00	-0.01	0.00
B202	CO1/7	0.000	-0.25	0.00	0.01	0.00	0.00	-0.01
B202	CO1/5	0.785	-0.29	0.02	0.01	0.00	0.00	0.00
B202	CO1/2	0.000	7.35	0.00	-0.03	0.00	0.01	-0.01
B202	CO1/10	0.000	-4.56	0.00	0.06	0.00	-0.03	-0.01
B202	CO1/5	0.000	-0.34	0.00	0.01	0.00	-0.01	-0.01
B202	CO1/1	0.785	2.75	0.02	0.02	0.00	0.00	0.00
B208	CO1/4	0.000	-3.21	-0.02	-0.69	0.00	0.45	0.00
B208	CO1/2	0.900	3.35	0.00	0.65	0.00	0.14	-0.01
B208	CO1/5	0.000	-0.26	-0.02	-0.05	0.00	0.03	0.00
B208	CO1/5	0.900	-0.18	0.00	-0.05	0.00	-0.02	-0.01
B208	CO1/2	0.000	3.30	-0.02	0.65	0.00	-0.45	0.00
B208	CO1/5	0.720	-0.20	0.00	-0.05	0.00	-0.01	-0.01
B208	CO1/6	0.000	-2.41	-0.02	0.09	0.00	-0.06	0.00
B209	CO1/4	0.000	-3.14	0.00	-0.69	0.00	-0.17	-0.01
B209	CO1/2	0.785	3.38	0.01	0.65	0.00	0.65	0.00
B209	CO1/7	0.000	-0.14	0.00	-0.04	0.00	-0.01	-0.01
B209	CO1/5	0.785	-0.14	0.02	-0.05	0.00	-0.06	0.00
B209	CO1/2	0.000	3.35	0.00	0.65	0.00	0.14	-0.01
B209	CO1/4	0.785	-3.09	0.02	-0.69	0.00	-0.71	0.00
B209	CO1/5	0.000	-0.18	0.00	-0.05	0.00	-0.02	-0.01
B209	CO1/1	0.785	1.42	0.02	-0.25	0.00	-0.27	0.00

6.3. ΕΣΩΤΕΡΙΚΕΣ ΔΥΝΑΜΕΙΣ ΤΕΓΙΔΩΝ

Linear calculation, Extreme : Member, System : Principal
Selection : All
Combinations : CO3
Layer : tegides

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B74	CO3/11	17.700	-1.03	2.61	-0.44	0.00	0.19	-1.11
B74	CO3/12	17.700	0.71	-2.22	-0.11	0.00	0.04	0.94
B74	CO3/11	2.700	-0.09	-2.96	0.50	0.00	0.23	-1.30
B74	CO3/13	2.700	-0.14	1.90	-0.56	0.00	0.28	-0.95
B74	CO3/13	2.700	-0.07	-2.17	0.63	0.00	0.28	-0.95
B74	CO3/11	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B74	CO3/12	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B74	CO3/14	1.200	0.02	0.00	0.00	0.00	-0.20	-0.27
B74	CO3/12	2.700	0.07	2.51	0.14	0.00	0.05	1.10
B75	CO3/11	17.700	-0.86	2.51	-0.41	0.00	0.18	-1.05
B75	CO3/12	17.700	0.86	-2.13	-0.12	0.00	0.05	0.89
B75	CO3/11	2.700	-0.06	-2.91	0.50	0.00	0.22	-1.26
B75	CO3/11	2.700	-0.12	2.54	-0.43	0.00	0.22	-1.26
B75	CO3/13	2.700	-0.09	1.87	-0.55	0.00	0.27	-0.92
B75	CO3/13	2.700	-0.04	-2.13	0.62	0.00	0.27	-0.92
B75	CO3/11	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B75	CO3/12	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B75	CO3/14	1.200	0.02	0.00	0.00	0.00	-0.20	-0.27
B75	CO3/12	2.700	0.05	2.46	0.14	0.00	0.06	1.07
B156	CO3/15	17.700	-0.12	1.58	-0.11	0.00	0.05	-0.57
B156	CO3/16	17.700	0.26	-1.29	-0.31	0.00	0.13	0.46
B156	CO3/11	2.700	-0.01	-2.11	0.38	0.00	0.16	-0.77
B156	CO3/11	15.200	-0.05	1.86	-0.31	0.00	0.13	-0.77
B156	CO3/13	17.700	0.03	1.36	-0.42	0.00	0.17	-0.49
B156	CO3/14	2.700	0.03	0.60	0.47	0.00	0.20	0.21

Member	Case	dx [m]	N [kN]	Vy [kN]	Vz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
B156	CO3/11	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B156	CO3/12	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B156	CO3/13	1.200	0.00	0.05	0.00	0.00	-0.15	0.56
B156	CO3/11	5.200	-0.01	-1.82	0.30	0.00	0.12	-0.77
B156	CO3/11	1.200	-0.01	0.07	0.00	0.00	-0.12	0.77
B157	CO3/13	17.700	-0.26	1.45	-0.42	0.00	0.18	-0.60
B157	CO3/12	15.200	0.06	-1.55	-0.10	0.00	0.04	0.64
B157	CO3/11	2.700	-0.04	-2.22	0.39	0.00	0.18	-0.94
B157	CO3/11	17.700	-0.25	1.97	-0.34	0.00	0.15	-0.81
B157	CO3/13	2.700	-0.08	1.42	-0.43	0.00	0.22	-0.69
B157	CO3/13	2.700	-0.04	-1.63	0.49	0.00	0.22	-0.69
B157	CO3/12	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B157	CO3/11	0.000	0.00	0.00	0.00	0.00	0.00	0.00
B157	CO3/14	1.200	-0.02	0.00	0.00	0.00	-0.16	-0.21
B157	CO3/12	2.700	0.01	1.87	0.11	0.00	0.04	0.79

6.4. ΑΝΤΙΔΡΑΣΕΙΣ ΣΤΗΡΙΞΕΩΝ

Linear calculation, Extreme : No

Selection : All

Combinations : CO1

Support	Case	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn3/N621	CO1/5	0.02	0.00	1.25	-0.32	0.03	-0.01
Sn3/N621	CO1/7	0.01	0.00	0.93	-0.24	0.03	-0.01
Sn3/N621	CO1/17	-0.04	1.62	-0.68	-3.37	-0.05	-0.02
Sn3/N621	CO1/18	0.10	-1.34	4.72	-1.71	0.15	0.00
Sn3/N621	CO1/19	-0.04	1.65	-0.71	0.53	-0.02	-0.04
Sn3/N621	CO1/20	0.00	1.61	1.21	-4.08	0.03	-0.04
Sn3/N621	CO1/21	0.00	1.64	1.18	-0.17	0.06	-0.07
Sn3/N621	CO1/10	0.11	-1.31	4.69	1.41	0.17	-0.02
Sn3/N621	CO1/22	0.07	-1.30	2.80	2.12	0.10	0.00
Sn3/N621	CO1/23	0.06	-1.33	2.82	-1.01	0.07	0.02
Sn3/N621	CO1/24	-0.05	1.62	-1.01	-3.29	-0.05	-0.01
Sn3/N621	CO1/25	0.10	-1.33	4.39	-1.63	0.14	0.00
Sn3/N621	CO1/26	-0.04	1.65	-1.04	0.62	-0.02	-0.04
Sn3/N621	CO1/27	-0.01	1.61	0.89	-4.00	0.02	-0.03
Sn3/N621	CO1/28	0.00	1.64	0.86	-0.09	0.05	-0.06
Sn3/N621	CO1/29	0.10	-1.31	4.37	1.50	0.16	-0.02
Sn3/N621	CO1/30	0.06	-1.30	2.47	2.20	0.09	0.00
Sn3/N621	CO1/31	0.06	-1.33	2.50	-0.92	0.07	0.02
Sn3/N621	CO1/32	-0.08	2.71	-1.97	-5.41	-0.10	-0.02
Sn3/N621	CO1/1	0.12	-2.22	5.20	-1.96	0.15	0.02
Sn3/N621	CO1/6	-0.07	2.75	-2.02	1.11	-0.05	-0.07
Sn3/N621	CO1/33	-0.05	2.70	-0.64	-5.90	-0.05	-0.03
Sn3/N621	CO1/34	-0.05	2.75	-0.70	0.61	0.00	-0.08
Sn3/N621	CO1/4	0.13	-2.18	5.15	3.25	0.19	-0.02
Sn3/N621	CO1/35	0.10	-2.17	3.83	3.75	0.14	0.00
Sn3/N621	CO1/36	0.09	-2.21	3.87	-1.46	0.10	0.04
Sn3/N621	CO1/2	-0.09	2.71	-2.29	-5.32	-0.11	-0.02
Sn3/N621	CO1/37	0.11	-2.21	4.87	-1.87	0.14	0.03
Sn3/N621	CO1/8	-0.08	2.75	-2.35	1.19	-0.06	-0.07
Sn3/N621	CO1/3	-0.06	2.70	-0.97	-5.82	-0.06	-0.03
Sn3/N621	CO1/38	-0.05	2.75	-1.02	0.69	-0.01	-0.08
Sn3/N621	CO1/9	0.12	-2.18	4.83	3.34	0.18	-0.01
Sn3/N621	CO1/39	0.09	-2.17	3.50	3.83	0.13	0.00
Sn3/N621	CO1/40	0.09	-2.21	3.55	-1.38	0.09	0.04
Sn43/N160	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/18	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/19	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/25	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/26	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/1	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/6	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/37	0.00	0.00	0.00	0.00	0.00	0.00
Sn43/N160	CO1/8	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00

Support	Case	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn44/N162	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/18	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/19	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/25	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/26	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/1	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/6	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/37	0.00	0.00	0.00	0.00	0.00	0.00
Sn44/N162	CO1/8	0.00	0.00	0.00	0.00	0.00	0.00
Sn48/N2296	CO1/5	0.02	0.01	2.40	-0.74	0.03	-0.01
Sn48/N2296	CO1/7	0.01	0.01	1.78	-0.55	0.03	-0.01
Sn48/N2296	CO1/17	-0.04	3.81	-2.15	-7.86	-0.05	-0.02
Sn48/N2296	CO1/22	0.07	-3.03	6.03	4.97	0.10	0.00
Sn48/N2296	CO1/20	0.00	3.83	2.27	-9.48	0.03	-0.04
Sn48/N2296	CO1/21	0.00	3.77	2.34	-0.51	0.06	-0.07
Sn48/N2296	CO1/10	0.11	-3.01	10.45	3.35	0.18	-0.02
Sn48/N2296	CO1/23	0.07	-2.98	5.97	-2.21	0.08	0.02
Sn48/N2296	CO1/24	-0.05	3.81	-2.77	-7.67	-0.06	-0.01
Sn48/N2296	CO1/30	0.06	-3.04	5.41	5.16	0.09	0.00
Sn48/N2296	CO1/27	-0.01	3.83	1.65	-9.29	0.02	-0.03
Sn48/N2296	CO1/28	0.00	3.76	1.72	-0.32	0.05	-0.06
Sn48/N2296	CO1/29	0.10	-3.02	9.83	3.54	0.17	-0.02
Sn48/N2296	CO1/31	0.06	-2.98	5.35	-2.02	0.07	0.02
Sn48/N2296	CO1/32	-0.08	6.35	-5.18	-12.62	-0.10	-0.02
Sn48/N2296	CO1/35	0.10	-5.06	8.46	8.77	0.14	0.00
Sn48/N2296	CO1/33	-0.06	6.36	-2.09	-13.75	-0.05	-0.04
Sn48/N2296	CO1/34	-0.05	6.25	-1.96	1.21	0.00	-0.09
Sn48/N2296	CO1/4	0.13	-5.05	11.55	7.64	0.20	-0.01
Sn48/N2296	CO1/36	0.10	-4.97	8.36	-3.20	0.11	0.04
Sn48/N2296	CO1/2	-0.09	6.35	-5.80	-12.43	-0.11	-0.02
Sn48/N2296	CO1/39	0.10	-5.06	7.84	8.96	0.13	0.00
Sn48/N2296	CO1/3	-0.06	6.36	-2.71	-13.56	-0.06	-0.03
Sn48/N2296	CO1/38	-0.06	6.25	-2.58	1.40	-0.01	-0.08
Sn48/N2296	CO1/9	0.12	-5.05	10.93	7.83	0.19	-0.01
Sn48/N2296	CO1/40	0.09	-4.98	7.74	-3.00	0.10	0.04
Sn52/N2399	CO1/5	0.02	-0.01	2.13	-0.65	0.04	-0.01
Sn52/N2399	CO1/7	0.01	-0.01	1.58	-0.48	0.03	-0.01
Sn52/N2399	CO1/19	-0.05	3.32	-1.83	1.07	-0.02	-0.05
Sn52/N2399	CO1/18	0.11	-2.69	9.12	-3.45	0.16	0.00
Sn52/N2399	CO1/20	0.00	3.26	2.05	-8.24	0.03	-0.04
Sn52/N2399	CO1/17	-0.04	3.28	-1.77	-6.81	-0.05	-0.02
Sn52/N2399	CO1/21	0.00	3.31	2.00	-0.35	0.06	-0.07
Sn52/N2399	CO1/22	0.07	-2.63	5.25	4.28	0.10	0.00
Sn52/N2399	CO1/10	0.11	-2.65	9.07	2.85	0.18	-0.02
Sn52/N2399	CO1/23	0.07	-2.67	5.29	-2.03	0.08	0.02
Sn52/N2399	CO1/26	-0.05	3.33	-2.38	1.24	-0.03	-0.05
Sn52/N2399	CO1/25	0.11	-2.69	8.57	-3.28	0.15	0.01
Sn52/N2399	CO1/27	-0.01	3.26	1.50	-8.07	0.02	-0.03
Sn52/N2399	CO1/24	-0.05	3.28	-2.32	-6.64	-0.06	-0.02
Sn52/N2399	CO1/28	-0.01	3.31	1.44	-0.19	0.05	-0.07
Sn52/N2399	CO1/30	0.07	-2.63	4.70	4.45	0.09	0.00
Sn52/N2399	CO1/29	0.11	-2.65	8.52	3.02	0.17	-0.02
Sn52/N2399	CO1/31	0.07	-2.67	4.74	-1.86	0.07	0.03
Sn52/N2399	CO1/6	-0.09	5.55	-4.47	2.22	-0.06	-0.08
Sn52/N2399	CO1/1	0.14	-4.46	10.08	-3.94	0.17	0.03
Sn52/N2399	CO1/33	-0.06	5.45	-1.69	-11.92	-0.05	-0.04
Sn52/N2399	CO1/32	-0.09	5.46	-4.37	-10.92	-0.11	-0.02
Sn52/N2399	CO1/34	-0.06	5.54	-1.79	1.22	-0.01	-0.09
Sn52/N2399	CO1/35	0.10	-4.38	7.33	7.57	0.15	0.00
Sn52/N2399	CO1/4	0.14	-4.39	10.00	6.57	0.20	-0.01
Sn52/N2399	CO1/36	0.11	-4.45	7.41	-2.94	0.11	0.05
Sn52/N2399	CO1/8	-0.09	5.55	-5.02	2.39	-0.07	-0.07
Sn52/N2399	CO1/37	0.13	-4.46	9.53	-3.77	0.16	0.03
Sn52/N2399	CO1/3	-0.06	5.45	-2.25	-11.75	-0.06	-0.03
Sn52/N2399	CO1/2	-0.09	5.47	-4.92	-10.75	-0.12	-0.02
Sn52/N2399	CO1/38	-0.06	5.54	-2.34	1.39	-0.02	-0.09
Sn52/N2399	CO1/39	0.10	-4.38	6.78	7.73	0.14	0.00
Sn52/N2399	CO1/9	0.13	-4.39	9.45	6.74	0.19	-0.01
Sn52/N2399	CO1/40	0.10	-4.45	6.85	-2.77	0.10	0.05

Support	Case	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn56/N2502	CO1/5	0.02	0.00	2.19	-0.67	0.04	-0.01
Sn56/N2502	CO1/7	0.02	0.00	1.62	-0.49	0.03	-0.01
Sn56/N2502	CO1/19	-0.05	3.40	-1.86	1.04	-0.03	-0.05
Sn56/N2502	CO1/22	0.08	-2.73	5.45	4.45	0.11	0.00
Sn56/N2502	CO1/17	-0.05	3.41	-1.88	-7.06	-0.05	-0.02
Sn56/N2502	CO1/20	0.00	3.42	2.09	-8.52	0.03	-0.04
Sn56/N2502	CO1/21	-0.01	3.40	2.11	-0.42	0.05	-0.07
Sn56/N2502	CO1/18	0.13	-2.71	9.40	-3.49	0.17	0.01
Sn56/N2502	CO1/10	0.12	-2.72	9.41	2.99	0.19	-0.02
Sn56/N2502	CO1/23	0.08	-2.71	5.43	-2.03	0.09	0.03
Sn56/N2502	CO1/26	-0.06	3.40	-2.43	1.21	-0.04	-0.05
Sn56/N2502	CO1/30	0.07	-2.73	4.88	4.62	0.10	0.00
Sn56/N2502	CO1/24	-0.05	3.41	-2.44	-6.89	-0.06	-0.02
Sn56/N2502	CO1/27	-0.01	3.42	1.52	-8.35	0.02	-0.03
Sn56/N2502	CO1/28	-0.01	3.40	1.54	-0.25	0.04	-0.07
Sn56/N2502	CO1/25	0.12	-2.71	8.83	-3.32	0.16	0.01
Sn56/N2502	CO1/29	0.12	-2.72	8.85	3.16	0.18	-0.02
Sn56/N2502	CO1/31	0.07	-2.71	4.87	-1.86	0.08	0.03
Sn56/N2502	CO1/6	-0.10	5.66	-4.56	2.18	-0.07	-0.09
Sn56/N2502	CO1/35	0.11	-4.54	7.62	7.86	0.16	0.00
Sn56/N2502	CO1/32	-0.09	5.68	-4.59	-11.32	-0.11	-0.02
Sn56/N2502	CO1/33	-0.06	5.69	-1.81	-12.34	-0.05	-0.04
Sn56/N2502	CO1/34	-0.07	5.66	-1.78	1.16	-0.02	-0.10
Sn56/N2502	CO1/1	0.15	-4.52	10.37	-3.97	0.18	0.04
Sn56/N2502	CO1/4	0.14	-4.54	10.39	6.83	0.21	-0.01
Sn56/N2502	CO1/36	0.12	-4.53	7.60	-2.94	0.13	0.05
Sn56/N2502	CO1/8	-0.11	5.66	-5.13	2.35	-0.08	-0.08
Sn56/N2502	CO1/39	0.11	-4.54	7.05	8.03	0.15	0.01
Sn56/N2502	CO1/2	-0.10	5.68	-5.16	-11.15	-0.12	-0.02
Sn56/N2502	CO1/3	-0.06	5.69	-2.38	-12.17	-0.06	-0.03
Sn56/N2502	CO1/38	-0.07	5.66	-2.35	1.33	-0.03	-0.10
Sn56/N2502	CO1/37	0.15	-4.52	9.80	-3.79	0.17	0.04
Sn56/N2502	CO1/9	0.14	-4.54	9.83	7.01	0.20	-0.01
Sn56/N2502	CO1/40	0.11	-4.53	7.03	-2.77	0.12	0.06
Sn60/N2605	CO1/5	0.02	0.00	2.18	-0.66	0.04	-0.01
Sn60/N2605	CO1/7	0.02	0.00	1.61	-0.49	0.03	-0.01
Sn60/N2605	CO1/19	-0.06	3.38	-1.85	1.05	-0.04	-0.06
Sn60/N2605	CO1/18	0.14	-2.70	9.32	-3.48	0.19	0.02
Sn60/N2605	CO1/20	0.00	3.38	2.08	-8.45	0.03	-0.03
Sn60/N2605	CO1/17	-0.05	3.38	-1.85	-7.00	-0.06	-0.02
Sn60/N2605	CO1/21	-0.01	3.38	2.08	-0.40	0.05	-0.08
Sn60/N2605	CO1/22	0.08	-2.70	5.39	4.41	0.11	0.00
Sn60/N2605	CO1/10	0.13	-2.70	9.32	2.95	0.20	-0.02
Sn60/N2605	CO1/23	0.09	-2.70	5.40	-2.03	0.10	0.04
Sn60/N2605	CO1/26	-0.07	3.38	-2.41	1.22	-0.05	-0.06
Sn60/N2605	CO1/25	0.14	-2.70	8.76	-3.31	0.18	0.02
Sn60/N2605	CO1/27	0.00	3.38	1.52	-8.28	0.02	-0.03
Sn60/N2605	CO1/24	-0.05	3.38	-2.41	-6.83	-0.07	-0.02
Sn60/N2605	CO1/28	-0.02	3.38	1.51	-0.23	0.04	-0.08
Sn60/N2605	CO1/30	0.07	-2.70	4.83	4.58	0.10	0.00
Sn60/N2605	CO1/29	0.13	-2.70	8.76	3.12	0.19	-0.01
Sn60/N2605	CO1/31	0.09	-2.70	4.83	-1.86	0.09	0.04
Sn60/N2605	CO1/6	-0.12	5.63	-4.53	2.19	-0.09	-0.10
Sn60/N2605	CO1/1	0.18	-4.51	10.29	-3.96	0.21	0.06
Sn60/N2605	CO1/33	-0.06	5.63	-1.78	-12.24	-0.06	-0.04
Sn60/N2605	CO1/32	-0.10	5.63	-4.53	-11.22	-0.12	-0.03
Sn60/N2605	CO1/34	-0.09	5.63	-1.78	1.17	-0.03	-0.11
Sn60/N2605	CO1/35	0.12	-4.50	7.54	7.78	0.17	0.01
Sn60/N2605	CO1/4	0.15	-4.50	10.29	6.77	0.23	0.00
Sn60/N2605	CO1/36	0.14	-4.51	7.54	-2.94	0.15	0.07
Sn60/N2605	CO1/8	-0.13	5.63	-5.10	2.36	-0.10	-0.10
Sn60/N2605	CO1/37	0.17	-4.51	9.73	-3.79	0.20	0.06
Sn60/N2605	CO1/3	-0.07	5.63	-2.34	-12.07	-0.07	-0.03
Sn60/N2605	CO1/2	-0.10	5.63	-5.09	-11.05	-0.13	-0.02
Sn60/N2605	CO1/38	-0.09	5.63	-2.35	1.34	-0.04	-0.11
Sn60/N2605	CO1/39	0.11	-4.50	6.97	7.96	0.16	0.01
Sn60/N2605	CO1/9	0.15	-4.50	9.72	6.94	0.22	0.00
Sn60/N2605	CO1/40	0.13	-4.51	6.98	-2.77	0.14	0.07
Sn64/N2708	CO1/5	0.03	0.00	2.18	-0.66	0.04	-0.01
Sn64/N2708	CO1/7	0.02	0.00	1.62	-0.49	0.03	0.00
Sn64/N2708	CO1/19	-0.08	3.39	-1.86	1.05	-0.06	-0.08
Sn64/N2708	CO1/10	0.14	-2.71	9.36	2.97	0.22	-0.01
Sn64/N2708	CO1/17	-0.05	3.39	-1.86	-7.02	-0.06	-0.02

Support	Case	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn64/N2708	CO1/20	0.01	3.39	2.08	-8.48	0.04	-0.03
Sn64/N2708	CO1/21	-0.03	3.38	2.09	-0.41	0.04	-0.09
Sn64/N2708	CO1/18	0.17	-2.71	9.36	-3.48	0.21	0.04
Sn64/N2708	CO1/22	0.09	-2.71	5.42	4.43	0.12	0.00
Sn64/N2708	CO1/23	0.11	-2.71	5.41	-2.03	0.12	0.05
Sn64/N2708	CO1/26	-0.09	3.39	-2.42	1.22	-0.07	-0.07
Sn64/N2708	CO1/29	0.14	-2.71	8.80	3.14	0.20	-0.01
Sn64/N2708	CO1/24	-0.06	3.39	-2.43	-6.85	-0.07	-0.02
Sn64/N2708	CO1/27	0.00	3.39	1.52	-8.30	0.02	-0.03
Sn64/N2708	CO1/28	-0.03	3.38	1.52	-0.23	0.03	-0.09
Sn64/N2708	CO1/25	0.16	-2.71	8.79	-3.31	0.20	0.04
Sn64/N2708	CO1/30	0.08	-2.71	4.85	4.60	0.11	0.00
Sn64/N2708	CO1/31	0.11	-2.71	4.85	-1.86	0.11	0.05
Sn64/N2708	CO1/6	-0.16	5.64	-4.55	2.19	-0.12	-0.12
Sn64/N2708	CO1/4	0.17	-4.52	10.34	6.80	0.24	0.00
Sn64/N2708	CO1/32	-0.10	5.65	-4.56	-11.26	-0.12	-0.02
Sn64/N2708	CO1/33	-0.06	5.65	-1.80	-12.28	-0.06	-0.03
Sn64/N2708	CO1/34	-0.12	5.64	-1.79	1.17	-0.06	-0.13
Sn64/N2708	CO1/1	0.21	-4.51	10.33	-3.96	0.24	0.08
Sn64/N2708	CO1/35	0.13	-4.52	7.58	7.82	0.18	0.01
Sn64/N2708	CO1/36	0.17	-4.51	7.57	-2.94	0.17	0.09
Sn64/N2708	CO1/8	-0.16	5.64	-5.11	2.36	-0.13	-0.12
Sn64/N2708	CO1/9	0.16	-4.52	9.77	6.97	0.23	0.00
Sn64/N2708	CO1/2	-0.11	5.65	-5.12	-11.09	-0.14	-0.02
Sn64/N2708	CO1/3	-0.07	5.65	-2.36	-12.11	-0.07	-0.03
Sn64/N2708	CO1/38	-0.12	5.64	-2.35	1.34	-0.07	-0.13
Sn64/N2708	CO1/37	0.20	-4.51	9.76	-3.79	0.23	0.08
Sn64/N2708	CO1/39	0.12	-4.52	7.01	7.99	0.16	0.01
Sn64/N2708	CO1/40	0.16	-4.51	7.00	-2.77	0.16	0.09
Sn68/N2811	CO1/5	0.03	0.00	2.17	-0.67	0.05	-0.01
Sn68/N2811	CO1/7	0.02	0.00	1.61	-0.50	0.03	0.00
Sn68/N2811	CO1/19	-0.11	3.40	-1.86	1.07	-0.08	-0.10
Sn68/N2811	CO1/23	0.14	-2.72	5.40	-2.06	0.15	0.07
Sn68/N2811	CO1/20	0.01	3.36	2.10	-8.44	0.04	-0.02
Sn68/N2811	CO1/21	-0.05	3.40	2.06	-0.40	0.02	-0.11
Sn68/N2811	CO1/18	0.20	-2.72	9.32	-3.53	0.25	0.06
Sn68/N2811	CO1/22	0.09	-2.69	5.37	4.37	0.13	0.00
Sn68/N2811	CO1/26	-0.12	3.40	-2.42	1.24	-0.09	-0.10
Sn68/N2811	CO1/31	0.14	-2.72	4.83	-1.88	0.14	0.07
Sn68/N2811	CO1/27	0.01	3.36	1.54	-8.27	0.03	-0.02
Sn68/N2811	CO1/28	-0.06	3.40	1.50	-0.23	0.01	-0.11
Sn68/N2811	CO1/25	0.20	-2.72	8.76	-3.35	0.24	0.06
Sn68/N2811	CO1/30	0.08	-2.69	4.80	4.55	0.12	0.00
Sn68/N2811	CO1/6	-0.21	5.66	-4.55	2.22	-0.17	-0.16
Sn68/N2811	CO1/36	0.22	-4.53	7.55	-2.98	0.22	0.12
Sn68/N2811	CO1/33	-0.06	5.60	-1.74	-12.21	-0.06	-0.03
Sn68/N2811	CO1/34	-0.17	5.66	-1.80	1.19	-0.10	-0.17
Sn68/N2811	CO1/1	0.26	-4.53	10.29	-4.01	0.29	0.11
Sn68/N2811	CO1/35	0.13	-4.48	7.50	7.74	0.18	0.00
Sn68/N2811	CO1/8	-0.22	5.66	-5.11	2.40	-0.18	-0.16
Sn68/N2811	CO1/40	0.21	-4.53	6.98	-2.81	0.20	0.12
Sn68/N2811	CO1/3	-0.06	5.60	-2.30	-12.03	-0.07	-0.02
Sn68/N2811	CO1/38	-0.17	5.66	-2.36	1.37	-0.11	-0.17
Sn68/N2811	CO1/37	0.26	-4.53	9.73	-3.84	0.27	0.11
Sn68/N2811	CO1/39	0.12	-4.48	6.94	7.91	0.17	0.00
Sn72/N2914	CO1/5	0.03	-0.01	2.22	-0.65	0.05	-0.01
Sn72/N2914	CO1/7	0.02	-0.01	1.64	-0.48	0.04	0.00
Sn72/N2914	CO1/19	-0.17	3.40	-1.89	1.05	-0.12	-0.14
Sn72/N2914	CO1/10	0.16	-2.83	9.60	3.16	0.24	-0.02
Sn72/N2914	CO1/17	-0.04	3.49	-1.97	-7.19	-0.05	0.00
Sn72/N2914	CO1/20	0.03	3.46	2.05	-8.62	0.05	-0.01
Sn72/N2914	CO1/21	-0.10	3.38	2.13	-0.37	-0.02	-0.15
Sn72/N2914	CO1/18	0.26	-2.76	9.53	-3.43	0.30	0.09
Sn72/N2914	CO1/22	0.09	-2.81	5.57	4.59	0.13	-0.01
Sn72/N2914	CO1/23	0.19	-2.74	5.51	-2.01	0.19	0.10
Sn72/N2914	CO1/26	-0.17	3.40	-2.47	1.22	-0.14	-0.14
Sn72/N2914	CO1/29	0.15	-2.83	9.02	3.33	0.23	-0.02
Sn72/N2914	CO1/24	-0.05	3.49	-2.55	-7.03	-0.07	0.00
Sn72/N2914	CO1/27	0.02	3.47	1.48	-8.45	0.04	-0.01
Sn72/N2914	CO1/28	-0.11	3.38	1.56	-0.20	-0.03	-0.15
Sn72/N2914	CO1/25	0.25	-2.76	8.96	-3.26	0.28	0.09
Sn72/N2914	CO1/30	0.08	-2.81	5.00	4.76	0.12	-0.01
Sn72/N2914	CO1/31	0.18	-2.74	4.93	-1.84	0.17	0.10

Support	Case	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn72/N2914	CO1/6	-0.30	5.68	-4.63	2.19	-0.24	-0.22
Sn72/N2914	CO1/4	0.17	-4.69	10.62	7.08	0.26	-0.02
Sn72/N2914	CO1/32	-0.09	5.82	-4.76	-11.56	-0.12	0.00
Sn72/N2914	CO1/33	-0.04	5.80	-1.95	-12.55	-0.05	-0.01
Sn72/N2914	CO1/34	-0.25	5.66	-1.81	1.19	-0.16	-0.23
Sn72/N2914	CO1/1	0.34	-4.58	10.52	-3.91	0.35	0.16
Sn72/N2914	CO1/35	0.12	-4.67	7.81	8.08	0.19	-0.01
Sn72/N2914	CO1/36	0.29	-4.56	7.70	-2.92	0.28	0.17
Sn72/N2914	CO1/8	-0.30	5.68	-5.21	2.35	-0.25	-0.22
Sn72/N2914	CO1/9	0.16	-4.69	10.05	7.25	0.25	-0.02
Sn72/N2914	CO1/2	-0.09	5.82	-5.34	-11.39	-0.14	0.00
Sn72/N2914	CO1/3	-0.05	5.81	-2.52	-12.38	-0.06	-0.01
Sn72/N2914	CO1/38	-0.26	5.66	-2.39	1.36	-0.18	-0.23
Sn72/N2914	CO1/37	0.33	-4.57	9.94	-3.74	0.34	0.16
Sn72/N2914	CO1/39	0.12	-4.67	7.23	8.25	0.17	-0.01
Sn72/N2914	CO1/40	0.29	-4.56	7.12	-2.75	0.27	0.17
Sn76/N3015	CO1/5	-0.18	0.01	1.25	-0.34	-0.02	0.03
Sn76/N3015	CO1/7	-0.14	0.01	0.93	-0.25	-0.01	0.03
Sn76/N3015	CO1/18	-1.23	-1.29	4.69	-1.76	-0.12	0.16
Sn76/N3015	CO1/23	-0.82	-1.31	2.80	-1.02	-0.07	0.09
Sn76/N3015	CO1/19	0.60	1.66	-0.69	0.51	0.05	-0.04
Sn76/N3015	CO1/20	-0.05	1.63	1.25	-4.10	0.09	-0.34
Sn76/N3015	CO1/10	-1.03	-1.24	4.66	1.32	-0.18	0.47
Sn76/N3015	CO1/17	0.36	1.61	-0.64	-3.35	0.13	-0.42
Sn76/N3015	CO1/21	0.20	1.69	1.20	-0.24	0.00	0.04
Sn76/N3015	CO1/22	-0.62	-1.27	2.76	2.07	-0.14	0.39
Sn76/N3015	CO1/25	-1.18	-1.29	4.37	-1.68	-0.11	0.15
Sn76/N3015	CO1/31	-0.77	-1.31	2.48	-0.93	-0.07	0.08
Sn76/N3015	CO1/26	0.65	1.66	-1.01	0.59	0.05	-0.05
Sn76/N3015	CO1/27	0.00	1.63	0.93	-4.01	0.09	-0.35
Sn76/N3015	CO1/29	-0.98	-1.25	4.33	1.41	-0.18	0.46
Sn76/N3015	CO1/24	0.41	1.60	-0.96	-3.26	0.14	-0.42
Sn76/N3015	CO1/28	0.24	1.68	0.88	-0.15	0.01	0.03
Sn76/N3015	CO1/30	-0.57	-1.27	2.44	2.16	-0.14	0.39
Sn76/N3015	CO1/1	-1.52	-2.18	5.16	-1.99	-0.14	0.18
Sn76/N3015	CO1/36	-1.24	-2.19	3.83	-1.47	-0.11	0.13
Sn76/N3015	CO1/6	1.13	2.77	-1.98	1.07	0.09	-0.08
Sn76/N3015	CO1/33	0.44	2.69	-0.58	-5.88	0.20	-0.66
Sn76/N3015	CO1/4	-1.20	-2.10	5.10	3.15	-0.25	0.69
Sn76/N3015	CO1/32	0.72	2.67	-1.90	-5.36	0.23	-0.72
Sn76/N3015	CO1/34	0.84	2.78	-0.66	0.55	0.06	-0.03
Sn76/N3015	CO1/35	-0.91	-2.12	3.77	3.67	-0.22	0.63
Sn76/N3015	CO1/37	-1.48	-2.18	4.84	-1.90	-0.14	0.17
Sn76/N3015	CO1/40	-1.19	-2.20	3.51	-1.38	-0.10	0.12
Sn76/N3015	CO1/8	1.18	2.76	-2.31	1.16	0.10	-0.09
Sn76/N3015	CO1/3	0.49	2.69	-0.90	-5.79	0.21	-0.67
Sn76/N3015	CO1/9	-1.15	-2.11	4.77	3.24	-0.25	0.68
Sn76/N3015	CO1/2	0.77	2.67	-2.23	-5.27	0.24	-0.72
Sn76/N3015	CO1/38	0.89	2.78	-0.98	0.63	0.07	-0.04
Sn76/N3015	CO1/39	-0.86	-2.12	3.45	3.76	-0.22	0.63
Sn79/N2245	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/18	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/19	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/25	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/26	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/1	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/6	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/37	0.00	0.00	0.00	0.00	0.00	0.00
Sn79/N2245	CO1/8	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/19	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/18	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/26	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/25	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/5	0.00	0.00	0.00	0.00	0.00	0.00

Support	Case	Rx [kN]	Ry [kN]	Rz [kN]	Mx [kNm]	My [kNm]	Mz [kNm]
Sn80/N2247	CO1/6	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/1	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/7	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/8	0.00	0.00	0.00	0.00	0.00	0.00
Sn80/N2247	CO1/37	0.00	0.00	0.00	0.00	0.00	0.00

7. ΔΙΑΣΤΑΣΙΟΛΟΓΗΣΗ - ΕΛΕΓΧΟΣ ΕΠΑΡΚΕΙΑΣ

7.1. ΕΛΕΓΧΟΙ ΑΣΤΟΧΙΑΣ

7.1.1. ΕΛΕΓΧΟΣ ΣΤΥΛΩΝ (ΣΥΝΟΠΤΙΚΟΣ)

Linear calculation, Extreme : Member

Selection : All

Combinations : CO1

Layer : ypostylo

Case	Member	css	mat	dx [m]	un.check [-]	sec.check [-]	stab.check [-]
CO1/4	B78	main_col - General cross-section	S 275	0.000	0.25	0.02	0.25
CO1/4	B111	second_col - General cross-section	S 275	0.000	0.13	0.03	0.13
CO1/4	B159	main_col - General cross-section	S 275	0.000	0.56	0.03	0.56
CO1/4	B160	second_col - General cross-section	S 275	0.000	0.26	0.05	0.26
CO1/4	B166	main_col - General cross-section	S 275	0.000	0.48	0.03	0.48
CO1/4	B167	second_col - General cross-section	S 275	0.000	0.23	0.04	0.23
CO1/4	B173	main_col - General cross-section	S 275	0.000	0.50	0.03	0.50
CO1/4	B174	second_col - General cross-section	S 275	0.000	0.24	0.05	0.24
CO1/4	B180	main_col - General cross-section	S 275	0.000	0.49	0.03	0.49
CO1/4	B181	second_col - General cross-section	S 275	0.000	0.24	0.05	0.24
CO1/4	B187	main_col - General cross-section	S 275	0.000	0.50	0.03	0.50
CO1/4	B188	second_col - General cross-section	S 275	0.000	0.24	0.05	0.24
CO1/4	B194	main_col - General cross-section	S 275	0.000	0.49	0.03	0.49
CO1/4	B195	second_col - General cross-section	S 275	0.000	0.24	0.05	0.24
CO1/4	B201	main_col - General cross-section	S 275	0.000	0.51	0.03	0.51
CO1/4	B202	second_col - General cross-section	S 275	0.000	0.25	0.05	0.25
CO1/4	B208	main_col - General cross-section	S 275	0.000	0.35	0.06	0.35
CO1/4	B209	second_col - General cross-section	S 275	0.314	0.61	0.13	0.61

7.1.2. ΕΛΕΓΧΟΣ ΣΤΥΛΩΝ

Linear calculation, Extreme : Cross-section

Selection : All

Combinations : CO1

Layer : ypostylo

EN 1993-1-3 Cold Formed Code Check

Member B159	General cross-section	S 275	CO1/4	0.56
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Basic data EC3 : EN 1993	
partial safety factor Gamma M0 for resistance of cross-sections	1.00
partial safety factor Gamma M1 for resistance to instability	1.00
partial safety factor Gamma M2 for resistance of net sections	1.25

Material data		
yield strength fy	275.0	MPa
average yield strength fy,a	352.5	MPa
k	7	
n	7	
tension strength fu	430.0	MPa
fabrication	cold formed	

....SECTION CHECK:....

The critical check is on position 0.000 m

Internal forces		
NEd	-7.49	kN
Vy,Ed	-0.02	kN
Vz,Ed	0.05	kN
TEd	0.00	kNm
My,Ed	-0.07	kNm
Mz,Ed	0.00	kNm

Effective section N-

Effective width calculation

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m ²]	f2[kN/m ²]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	4	275000.000	275000.000	1.0	0.4	0.1	1.0	4		
2	15	275000.000	275000.000	1.0	4.0	0.1	1.0	15	8	8
3	80	275000.000	275000.000	1.0	4.0	0.5	1.0	80	40	40
4	40	275000.000	275000.000	1.0	4.0	0.3	1.0	40	20	20
5	40	275000.000	275000.000	1.0	4.0	0.3	1.0	40	20	20
6	80	275000.000	275000.000	1.0	4.0	0.5	1.0	80	40	40
7	15	275000.000	275000.000	1.0	4.0	0.1	1.0	15	8	8
8	4	275000.000	275000.000	1.0	0.4	0.1	1.0	4		

Effective section My-

Effective width calculation

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m ²]	f2[kN/m ²]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	4	171875.000	171875.000	1.0	0.4	0.1	1.0	4		
2	15	275000.000	171875.000	0.6	4.9	0.1	1.0	15	7	8
3	80	275000.000	275000.000	1.0	4.0	0.5	1.0	80	40	40
4	40	275000.000	0.000	0.0	7.8	0.2	1.0	40	16	24
5	40	0.000	-275000.000	0.0	7.8	0.2	1.0	40	16	24
6	80	-275000.000	-275000.000							
7	15	-171875.000	-275000.000							
8	4	-171875.000	-171875.000							

Axial Compression Check

According to article EN 1993-1-3: 6.1.3 and formula (6.3)

Table of values		
Ag	834	mm ²
Aeff	834	mm ²
Critical Element	3	
Element Type	plane	
Lambda e	0.51	
Lambda e0	0.67	
Nc,Rd	292.85	kN
Unity check	0.03	-

Bending Moment Check

Bending Moment My

According to article EN 1993-1-3: 6.1.4.1 and formula (6.6)

Bending about Y axis		
Wel,y	24292	mm ³
Weff,y	24292	mm ³
Mcy,Rd	8.57	kNm
Unity check	0.01	-

Combined Compression and Bending Check

According to article EN 1993-1-3: 6.1.9 and formula (6.25), (6.26).

Table of values		
Nc,Rd	292.85	kN
Mcy,Rd,ten	8.57	kNm
Mcy,Rd,com	8.57	kNm

Unity check (6.25) $0.03 + 0.01 + 0.00 = 0.03$ -
 Unity check (6.26) $0.01 + 0.00 - 0.03 = 0.00$ -

Element satisfies the section check !

....:STABILITY CHECK:....

Flexural Buckling Strength

According to article EN 1993-1-3: 6.2.2

According to article EN 1993-1-1: 6.3.1 and formula (6.46)

Buckling parameters	yy	zz	
Sway type	non-sway	non-sway	
System Length L	1.685	1.685	m
Buckling factor k	0.71	1.00	
Buckling length Lcr	1.202	1.685	m
Critical Euler load Ncr	1447.00	576.41	kN
Slenderness	34.56	54.76	
Relative slenderness Lambda	0.45	0.71	
Limit slenderness Lambda,0	0.20	0.20	

The slenderness or compression force is such that Flexural Buckling effects may be ignored according to EN 1993-1-1 article 6.3.1.2(4)

Torsional (-Flexural) Buckling check

According to article EN 1993-1-3: 6.2.3

According to article EN 1993-1-1: 6.3.1 and formula (6.46)

Table of values		
Torsional Buckling length	1.685	m
Ncr,T	20.10	kN
Ncr,TF	20.10	kN
Relative slenderness Lambda,T	3.82	

Table of values		
Limit slenderness Lambda,0	0.20	
Buckling curve	c	
Imperfection Alpha	0.49	
Aeff	8.3400e+02	mm ²
Reduction factor Chi	0.06	
Buckling resistance Nb,Rd	17.80	kN
Unity check	0.42	-

Lateral Torsional Buckling Check

According to article EN 1993-1-3: 6.2.4

According to article EN 1993-1-1: 6.3.2 and formula (6.55)

LTB Parameters		
Method for LTB Curve	art. 6.3.2.2	
Weff,y	24292	mm ³
Elastic critical moment Mcr	5.00	kNm
Relative slenderness Lambda,LT	1.16	
Limit slenderness Lambda,LT,0	0.40	

The slenderness or bending moment is such that Lateral Torsional Buckling effects may be ignored according to EN 1993-1-1 article 6.3.2.2(4)

Bending and Axial Compression Check

According to article EN 1993-1-3: 6.2.5(1)

According to article EN 1993-1-1: 6.3.3 and formula (6.61), (6.62).

Interaction Method 1

Table of values		
kyy	1.282	
kyz	1.013	
kzy	1.278	
kzz	1.010	
Delta My,Ed	0.00	kNm
Delta Mz,Ed	0.00	kNm
A	834	mm ²
Wy	24292	mm ³
Wz	16552	mm ³
NRk	229.35	kN
My,Rk	6.68	kNm
Mz,Rk	4.55	kNm
My,Ed	-0.07	kNm
Mz,Ed	-0.01	kNm
Interaction Method 1		
Mcr0	5.00	kNm
reduced slenderness 0	1.16	
Cmy,0	1.003	
Cmz,0	1.000	
Cmy	1.002	
Cmz	1.000	
CmLT	1.274	
muy	0.999	
muz	0.996	
aLT	1.000	

Unity check $0.04 + 0.01 + 0.00 = 0.05$ -

Unity check $0.54 + 0.01 + 0.00 = 0.56$ -

Element satisfies the stability check !

EN 1993-1-3 Cold Formed Code Check

Member B209	General cross-section	S 275	CO1/4	0.61
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Basic data EC3 : EN 1993	
partial safety factor Gamma M0 for resistance of cross-sections	1.00
partial safety factor Gamma M1 for resistance to instability	1.00
partial safety factor Gamma M2 for resistance of net sections	1.25

Material data		
yield strength fy	275.0	MPa
average yield strength fy,a	344.3	MPa
k	7	
n	4	
tension strength fu	430.0	MPa
fabrication	cold formed	

....SECTION CHECK:....

The critical check is on position 0.314 m

Internal forces		
NEd	-3.12	kN
Vy,Ed	0.01	kN
Vz,Ed	-0.69	kN
TEd	0.00	kNm
My,Ed	-0.38	kNm
Mz,Ed	-0.01	kNm

Effective section N-**Effective width calculation**

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m ²]	f2[kN/m ²]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	15	275000.000	275000.000	1.0	0.4	0.3	1.0	15		
2	15	275000.000	275000.000	1.0	4.0	0.1	1.0	15	8	8
3	34	275000.000	275000.000	1.0	4.0	0.2	1.0	34	17	17
4	30	275000.000	275000.000	1.0	4.0	0.2	1.0	30	15	15
5	30	275000.000	275000.000	1.0	4.0	0.2	1.0	30	15	15
6	34	275000.000	275000.000	1.0	4.0	0.2	1.0	34	17	17
7	15	275000.000	275000.000	1.0	4.0	0.1	1.0	15	8	8
8	15	275000.000	275000.000	1.0	0.4	0.3	1.0	15		

Effective section My-**Effective width calculation**

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m ²]	f2[kN/m ²]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	15	137500.000	137500.000	1.0	0.4	0.3	1.0	15		
2	15	275000.000	137500.000	0.5	5.3	0.1	1.0	15	7	8
3	34	275000.000	275000.000	1.0	4.0	0.2	1.0	34	17	17
4	30	275000.000	0.000	0.0	7.8	0.1	1.0	30	12	18
5	30	0.000	-275000.000	0.0	7.8	0.1	1.0	30	12	18
6	34	-275000.000	-275000.000							
7	15	-137500.000	-275000.000							
8	15	-137500.000	-137500.000							

Effective section Mz-**Effective width calculation**

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m ²]	f2[kN/m ²]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	15	-141137.315	-275000.000							
2	15	-141085.305	-141085.305							
3	34	162454.671	-141085.305	-0.9	20.6	0.1	1.0	18	7	11
4	30	162454.671	162454.671	1.0	4.0	0.2	1.0	30	15	15
5	30	162454.671	162454.671	1.0	4.0	0.2	1.0	30	15	15
6	34	162454.671	-141085.305	-0.9	20.6	0.1	1.0	18	7	11
7	15	-141085.305	-141085.305							
8	15	-141137.315	-275000.000							

Axial Compression Check

According to article EN 1993-1-3: 6.1.3 and formula (6.3)

Table of values		
Ag	564	mm ²
Aeff	564	mm ²
Critical Element	1	
Element Type	plane	
Lambda e	0.29	
Lambda e0	0.67	
Nc,Rd	194.16	kN
Unity check	0.02	-

Bending Moment Check**Bending Moment My**

According to article EN 1993-1-3: 6.1.4.1 and formula (6.6)

Bending about Y axis		
W _{el,y}	9693	mm ³
W _{eff,y}	9693	mm ³
M _{cy,Rd}	3.34	kNm
Unity check	0.11	-

Biaxial Bending

According to article EN 1993-1-3: 6.1.4.1 and formula (6.7)

Bending about Z axis		
M _{cy,Rd}	3.34	kNm
M _{cz,Rd}	1.71	kNm
Unity check	0.12	-

Shear Force Vz

According to article EN 1993-1-3: 6.1.5 and formula (6.8).

No stiffening at the support.

Element ID	l _c [mm]	Alpha [deg]	sw [mm]	Lambda,w [-]	f _{bv} [MPa]	V _{b,Rd,z,i} [kN]
1	15	180.00	15	0.06	159.5	0.00
2	15	270.00	15	0.06	159.5	7.18
3	34	180.00	34	0.14	159.5	0.00
4	30	90.00	30	0.13	159.5	14.35
5	30	90.00	30	0.13	159.5	14.35
6	34	0.00	34	0.14	159.5	0.00
7	15	270.00	15	0.06	159.5	7.18

Element ID	lc [mm]	Alpha [deg]	sw [mm]	Lambda,w [-]	fbv [MPa]	Vb,Rd,z,i [kN]
8	15	0.00	15	0.06	159.5	0.00

Table of values		
Vb,Rd,z	43.06	kN
Unity check	0.02	-

Combined Compression and Bending Check

According to article EN 1993-1-3: 6.1.9 and formula (6.25), (6.26).

Table of values		
Nc,Rd	194.16	kN
Mcy,Rd,ten	3.34	kNm
Mcz,Rd,ten	1.71	kNm
Mcy,Rd,com	3.34	kNm
Mcz,Rd,com	2.67	kNm

Unity check (6.25) $0.02 + 0.11 + 0.00 = 0.13$ -
 Unity check (6.26) $0.11 + 0.00 - 0.02 = 0.10$ -

Element satisfies the section check !

.....**STABILITY CHECK**.....

Flexural Buckling Strength

According to article EN 1993-1-3: 6.2.2

According to article EN 1993-1-1: 6.3.1 and formula (6.46)

Buckling parameters	yy	zz	
Sway type	non-sway	non-sway	
System Length L	1.685	1.685	m
Buckling factor k	0.69	1.00	
Buckling length Lcr	1.167	1.685	m
Critical Euler load Ncr	465.97	111.71	kN
Slenderness	50.09	102.29	
Relative slenderness Lambda	0.65	1.32	
Limit slenderness Lambda,0	0.20	0.20	

The slenderness or compression force is such that Flexural Buckling effects may be ignored according to EN 1993-1-1 article 6.3.1.2(4)

Torsional (-Flexural) Buckling check

According to article EN 1993-1-3: 6.2.3

According to article EN 1993-1-1: 6.3.1 and formula (6.46)

Table of values		
Torsional Buckling length	1.685	m
Ncr,T	53.26	kN
Ncr,TF	53.26	kN
Relative slenderness Lambda,T	1.91	
Limit slenderness Lambda,0	0.20	
Buckling curve	c	
Imperfection Alpha	0.49	
Aeff	5.6400e+02	mm ²
Reduction factor Chi	0.21	
Buckling resistance Nb,Rd	41.23	kN
Unity check	0.08	-

Lateral Torsional Buckling Check

According to article EN 1993-1-3: 6.2.4

According to article EN 1993-1-1: 6.3.2 and formula (6.55)

LTB Parameters		
Method for LTB Curve	art. 6.3.2.2	
Weff,y	9693	mm ³
Elastic critical moment Mcr	2.20	kNm
Relative slenderness Lambda,LT	1.10	
Limit slenderness Lambda,LT,0	0.40	
LTB curve	b	
Imperfection Alpha,LT	0.34	
Reduction factor Chi,LT	0.53	
Buckling resistance Mb,Rd	1.43	kNm
Unity check	0.27	-

Mcr Parameters		
LTB length	1.685	m
k	1.00	
kw	1.00	
C1	2.70	
C2	0.00	
C3	0.68	
Load Position	load in center of gravity	

Bending and Axial Compression Check

According to article EN 1993-1-3: 6.2.5(1)

According to article EN 1993-1-1: 6.3.3 and formula (6.61), (6.62).

Interaction Method 1

Table of values		
kyy	1.047	
kyz	1.028	

Table of values		
kzy	1.031	
kzz	1.012	
Delta My,Ed	0.00	kNm
Delta Mz,Ed	0.00	kNm
A	564	mm ²
Wy	9693	mm ³
Wz	4960	mm ³
NRk	155.10	kN
My,Rk	2.67	kNm
Mz,Rk	1.36	kNm
My,Ed	-0.71	kNm
Mz,Ed	-0.01	kNm
Interaction Method 1		
Mcr0	2.20	kNm
reduced slenderness 0	1.10	
Cmy,0	0.998	
Cmz,0	1.001	
Cmy	0.999	
Cmz	1.001	
CmLT	1.043	
muy	0.998	
muz	0.983	
aLT	0.998	

Unity check $0.03 + 0.52 + 0.01 = 0.55$ -
 Unity check $0.09 + 0.51 + 0.01 = 0.61$ -
 Element satisfies the stability check !

7.1.3. ΕΛΕΓΧΟΣ ΔΟΚΩΝ(ΣΥΝΟΠΤΙΚΟΣ)

Linear calculation, Extreme : Member
 Selection : Named selection - dokoi
 Combinations : CO1

Case	Member	css	mat	dx [m]	un.check [-]	sec.check [-]	stab.check [-]
CO1/1	B71	second_col1 - SHS70/70/3.0	S 275	1.400	0.48	0.48	0.00
CO1/1	B165	second_col1 - SHS70/70/3.0	S 275	1.400	0.95	0.95	0.00
CO1/1	B172	second_col1 - SHS70/70/3.0	S 275	1.400	0.94	0.94	0.00
CO1/1	B179	second_col1 - SHS70/70/3.0	S 275	1.400	0.95	0.95	0.00
CO1/1	B186	second_col1 - SHS70/70/3.0	S 275	1.400	0.94	0.94	0.00
CO1/1	B193	second_col1 - SHS70/70/3.0	S 275	1.400	0.96	0.96	0.00
CO1/1	B200	second_col1 - SHS70/70/3.0	S 275	1.400	0.94	0.94	0.00
CO1/1	B207	second_col1 - SHS70/70/3.0	S 275	1.400	0.49	0.45	0.49

7.1.4. ΕΛΕΓΧΟΣ ΔΟΚΩΝ

Linear calculation, Extreme : Cross-section
 Selection : Named selection - dokoi
 Combinations : CO1

EN 1993-1-1 Code Check

Member B193	SHS70/70/3.0	S 275	CO1/1	0.96
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Basic data EC3 : EN 1993	
partial safety factor Gamma M0 for resistance of cross-sections	1.00
partial safety factor Gamma M1 for resistance to instability	1.00
partial safety factor Gamma M2 for resistance of net sections	1.25

Material data		
yield strength fy	275.0	MPa
tension strength fu	430.0	MPa
fabrication	rolled	

Warning: The selected steel grade is using the default thickness reduction table! Please review the thickness reduction in the Material Library.

.....SECTION CHECK:.....

Width-to-thickness ratio for internal compression parts (EN 1993-1-1 : Tab.5.2. sheet 1).

ratio 20.33 on position 1.371 m

ratio		
maximum ratio	1	67.11
maximum ratio	2	77.36
maximum ratio	3	114.63

==> Class cross-section 1

The critical check is on position 1.400 m

Internal forces		
NEd	1.52	kN

Internal forces		
Vy,Ed	0.23	kN
Vz,Ed	-8.86	kN
TEd	-0.01	kNm
My,Ed	-5.18	kNm
Mz,Ed	0.00	kNm

Warning: Torsion is not taken into account for this cross-section!

Normal force check

According to article EN 1993-1-1 : 6.2.3. and formula (6.5)

Table of values		
Nt,Rd	218.35	kN
Unity check	0.01	-

Shear check (Vy)

According to article EN 1993-1-1 : 6.2.6. and formula (6.17)

Table of values		
Vc,Rd	63.03	kN
Unity check	0.00	-

Shear check (Vz)

According to article EN 1993-1-1 : 6.2.6. and formula (6.17)

Table of values		
Vc,Rd	63.03	kN
Unity check	0.14	-

Bending moment check (My)

According to article EN 1993-1-1 : 6.2.5. and formula (6.12)

Section classification is 1.

Table of values		
Mc,Rd	5.41	kNm
Unity check	0.96	-

Bending moment check (Mz)

According to article EN 1993-1-1 : 6.2.5. and formula (6.12)

Section classification is 1.

Table of values		
Mc,Rd	5.41	kNm
Unity check	0.00	-

Combined bending, axial force and shear force check

According to article EN 1993-1-1 : 6.2.9.1. and formula (6.41)

Section classification is 1.

Table of values		
MNVy,Rd	5.41	kNm
MNVz,Rd	5.41	kNm

alfa 1.66 beta 1.66

Unity check 0.93 -

Element satisfies the section check !

.....STABILITY CHECK:....

Lateral Torsional Buckling Check

Note: The cross-section concerns an RHS section with 'h / b < 10 / Lambda,red,z'.

This section is thus not susceptible to Lateral Torsional Buckling.

Element satisfies the stability check !

7.1.5. ΕΛΕΓΧΟΣ ΤΕΓΙΔΩΝ(ΣΥΝΟΠΤΙΚΟΣ)

Linear calculation, Extreme : Member

Selection : B75, B156, B157

Combinations : CO3

Layer : tegides

Case	Member	css	mat	dx [m]	un.check [-]	sec.check [-]	stab.check [-]
CO3/11	B75	purlin - General cross-section	S 355	2.700	0.96	0.68	0.96
CO3/11	B156	purlin - General cross-section	S 355	2.700	0.51	0.42	0.51
CO3/13	B157	purlin - General cross-section	S 355	2.700	0.63	0.41	0.63

7.1.6. ΕΛΕΓΧΟΣ ΤΕΓΙΔΩΝ

Linear calculation, Extreme : Cross-section

Selection : B75

Combinations : CO3
 Layer : tegides

EN 1993-1-3 Cold Formed Code Check

Member B75	General cross-section	S 355	CO3/11	0.96
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Basic data EC3 : EN 1993	
partial safety factor Gamma M0 for resistance of cross-sections	1.00
partial safety factor Gamma M1 for resistance to instability	1.00
partial safety factor Gamma M2 for resistance of net sections	1.25

Material data		
yield strength fy	355.0	MPa
average yield strength fy,a	427.3	MPa
k	7	
n	6	
tension strength fu	510.0	MPa
fabrication	cold formed	

....SECTION CHECK:....

The critical check is on position 2.700 m

Internal forces		
NEd	-0.12	kN
Vy,Ed	2.54	kN
Vz,Ed	-0.43	kN
TEd	0.00	kNm
My,Ed	0.22	kNm
Mz,Ed	-1.26	kNm

Effective section N-

Effective width calculation

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m^2]	f2[kN/m^2]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	11	355000.000	355000.000	1.0	0.4	0.4	1.0	11		
2	12	355000.000	355000.000	1.0	4.0	0.1	1.0	12	6	6
3	47	355000.000	355000.000	1.0	4.0	0.5	1.0	47	24	24
4	20	355000.000	355000.000	1.0	0.4	0.7	1.0	20		
5	20	355000.000	355000.000	1.0	0.4	0.7	1.0	20		
6	47	355000.000	355000.000	1.0	4.0	0.5	1.0	47	24	24
7	12	355000.000	355000.000	1.0	4.0	0.1	1.0	12	6	6
8	11	355000.000	355000.000	1.0	0.4	0.4	1.0	11		

Effective section My+

Effective width calculation

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m^2]	f2[kN/m^2]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	11	-191153.846	-191153.846							
2	12	-191153.846	-355000.000							
3	47	-355000.000	-355000.000							
4	20	-81923.077	-355000.000							
5	20	355000.000	81923.077	0.2	0.5	0.6	1.0	20		
6	47	355000.000	355000.000	1.0	4.0	0.5	1.0	47	24	24
7	12	355000.000	191153.846	0.5	5.2	0.1	1.0	12	5	7
8	11	191153.846	191153.846	1.0	0.4	0.4	1.0	11		

Effective section Mz-

Effective width calculation

According to EN 1993-1-3 article 5.5.2, 5.5.3 & EN 1993-1-5 article 4.4

Element	bp[mm]	f1[kN/m^2]	f2[kN/m^2]	Psi[-]	k,sigma[-]	Lambda,p[-]	Rho[-]	beff[mm]	be1[mm]	be2[mm]
1	11	-188829.787	-355000.000							
2	12	-355000.000	-355000.000							
3	47	355000.000	-355000.000	-1.0	23.9	0.2	1.0	24	9	14
4	20	355000.000	355000.000	1.0	0.4	0.7	1.0	20		
5	20	355000.000	355000.000	1.0	0.4	0.7	1.0	20		
6	47	355000.000	-355000.000	-1.0	23.9	0.2	1.0	24	9	14
7	12	-355000.000	-355000.000							
8	11	-188829.787	-355000.000							

Bending Moment Check

Bending Moment My

According to article EN 1993-1-3: 6.1.4.1 and formula (6.6)

Bending about Y axis		
W _{el,y}	6619	mm^3
W _{eff,y}	6619	mm^3
M _{cy,Rd}	2.83	kNm
Unity check	0.08	-

Bending Moment Mz

According to article EN 1993-1-3: 6.1.4.1 and formula (6.6)

Bending about Z axis		
W _{el,z}	4899	mm ³
W _{eff,z}	4899	mm ³
M _{cz,Rd}	2.09	kNm
Unity check	0.60	-

Biaxial Bending

According to article EN 1993-1-3: 6.1.4.1 and formula (6.7)

Bending about Z axis		
M _{cy,Rd}	2.83	kNm
M _{cz,Rd}	2.09	kNm
Unity check	0.68	-

Shear Force V_y

According to article EN 1993-1-3: 6.1.5 and formula (6.8).

No stiffening at the support.

Element ID	l _c [mm]	Alpha [deg]	sw [mm]	Lambda _w [-]	f _{bv} [MPa]	V _{b,Rd,y,i} [kN]
1	11	0.00	11	0.08	205.9	4.53
2	12	270.00	12	0.09	205.9	0.00
3	47	180.00	47	0.33	205.9	19.35
4	20	90.00	20	0.14	205.9	0.00
5	20	90.00	20	0.14	205.9	0.00
6	47	0.00	47	0.33	205.9	19.35
7	12	270.00	12	0.09	205.9	0.00
8	11	180.00	11	0.08	205.9	4.53

Table of values		
V _{b,Rd,y}	47.77	kN
Unity check	0.05	-

Shear Force V_z

According to article EN 1993-1-3: 6.1.5 and formula (6.8).

No stiffening at the support.

Element ID	l _c [mm]	Alpha [deg]	sw [mm]	Lambda _w [-]	f _{bv} [MPa]	V _{b,Rd,z,i} [kN]
1	11	0.00	11	0.08	205.9	0.00
2	12	270.00	12	0.09	205.9	4.94
3	47	180.00	47	0.33	205.9	0.00
4	20	90.00	20	0.14	205.9	8.24
5	20	90.00	20	0.14	205.9	8.24
6	47	0.00	47	0.33	205.9	0.00
7	12	270.00	12	0.09	205.9	4.94
8	11	180.00	11	0.08	205.9	0.00

Table of values		
V _{b,Rd,z}	26.36	kN
Unity check	0.02	-

Local Transverse Forces Check

According to article EN 1993-1-3: 6.1.7.2 and formula (6.15d)

Table of values		
Flange condition	Unstiffened	
Loading condition	Interior one-flange (IOF)	
Web rotation	Not prevented	
Inside bend radius r	0	mm
Bearing length S _s	100	mm
k	1.56	
k ₁	0.82	
k ₄	0.88	

Element	l _c [mm]	Phi [deg]	hw [mm]	t [mm]	k ₂	k ₃	k ₅	R _{w,Rd,i} [kN]
2	12	90.00	12	2	1.00	1.00	1.00	24.52
7	12	90.00	12	2	1.00	1.00	1.00	24.52

Table of values		
Load/Reaction F _{Ed}	0.93	kN
R _{w,Rd}	49.05	kN
Unity check	0.02	-

Combined Compression and Bending Check

According to article EN 1993-1-3: 6.1.9 and formula (6.25), (6.26).

Table of values		
N _{c,Rd}	129.82	kN
M _{cy,Rd,ten}	2.83	kNm
M _{cz,Rd,ten}	2.10	kNm
M _{cy,Rd,com}	2.83	kNm
M _{cz,Rd,com}	2.10	kNm

Unity check (6.25) $0.00 + 0.08 + 0.60 = 0.68$ -

Unity check (6.26) $0.08 + 0.60 - 0.00 = 0.68$ -

Combined Bending Moment and Local Load/Reaction Check

According to article EN 1993-1-3: 6.1.11 and formula (6.28c).

Table of values		
FEd	0.93	kN
Mc,Rd	2.83	kNm
Rw,Rd	49.05	kN
Unity check	0.08	-

Element satisfies the section check !

....:STABILITY CHECK:....

Flexural Buckling Strength

According to article EN 1993-1-3: 6.2.2

According to article EN 1993-1-1: 6.3.1 and formula (6.46)

Buckling parameters	yy	zz	
Sway type	non-sway	non-sway	
System Length L	2.500	2.500	m
Buckling factor k	0.54	1.00	
Buckling length Lcr	1.340	2.500	m
Critical Euler load Ncr	206.48	39.90	kN
Slenderness	60.11	136.75	
Relative slenderness Lambda	0.86	1.96	
Limit slenderness Lambda,0	0.20	0.20	

The slenderness or compression force is such that Flexural Buckling effects may be ignored according to EN 1993-1-1 article 6.3.1.2(4)

Torsional (-Flexural) Buckling check

According to article EN 1993-1-3: 6.2.3

According to article EN 1993-1-1: 6.3.1 and formula (6.46)

Table of values		
Torsional Buckling length	2.500	m
Ncr,T	49.15	kN
Ncr,TF	39.90	kN
Relative slenderness Lambda,T	1.96	
Limit slenderness Lambda,0	0.20	

The slenderness or compression force is such that Torsional (-Flexural) Buckling effects may be ignored according to EN 1993-1-1 article 6.3.1.2(4)

Lateral Torsional Buckling Check

According to article EN 1993-1-3: 6.2.4

According to article EN 1993-1-1: 6.3.2 and formula (6.55)

LTB Parameters		
Method for LTB Curve	art. 6.3.2.2	
Weff,y	6619	mm ³
Elastic critical moment Mcr	1.28	kNm
Relative slenderness Lambda,LT	1.36	
Limit slenderness Lambda,LT,0	0.40	
LTB curve	b	
Imperfection Alpha,LT	0.34	
Reduction factor Chi,LT	0.40	
Buckling resistance Mb,Rd	0.94	kNm
Unity check	0.23	-

Mcr Parameters		
LTB length	2.500	m
k	1.00	
kw	1.00	
C1	1.34	
C2	1.16	
C3	1.73	
Load Position	load in center of gravity	

Bending and Axial Compression Check

According to article EN 1993-1-3: 6.2.5(1)

According to article EN 1993-1-1: 6.3.3 and formula (6.61), (6.62).

Interaction Method 1

Table of values		
kyy	1.000	
kyz	1.000	
kzy	0.998	
kzz	0.998	
Delta My,Ed	0.00	kNm
Delta Mz,Ed	0.00	kNm
A	360	mm ²
Wy	6619	mm ³
Wz	4899	mm ³
NRk	127.80	kN
My,Rk	2.35	kNm
Mz,Rk	1.74	kNm
My,Ed	0.22	kNm
Mz,Ed	-1.26	kNm
Interaction Method 1		
Mcr0	1.28	kNm
reduced slenderness 0	1.36	

Table of values		
Cmy,0	1.000	
Cmz,0	0.997	
Cmy	1.000	
Cmz	0.997	
CmLT	1.000	
muy	1.000	
muz	0.998	
aLT	0.997	

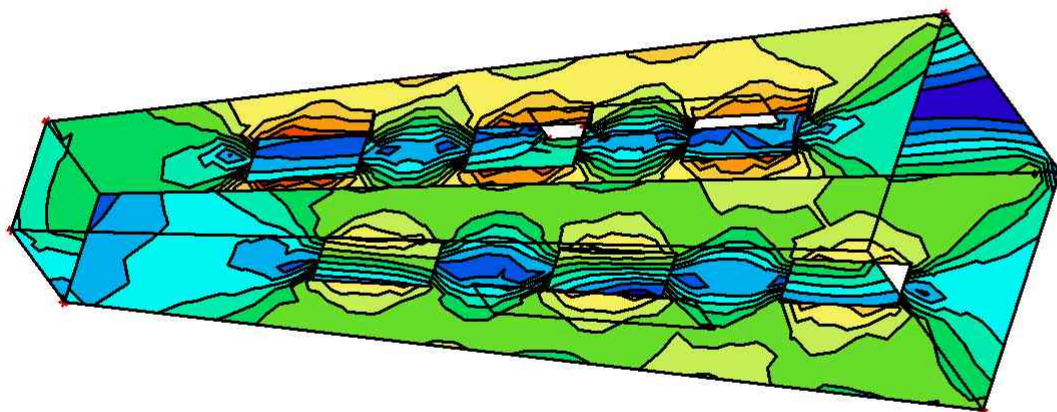
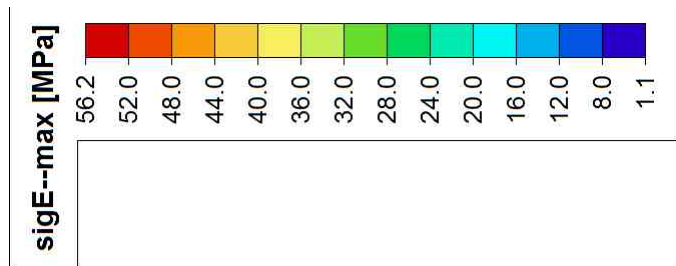
Unity check $0.00 + 0.23 + 0.72 = 0.96$ -

Unity check $0.00 + 0.23 + 0.72 = 0.96$ -

Element satisfies the stability check !

7.1.7. ΕΛΕΓΧΟΣ ΤΑΣΕΩΝ ΒΑΣΙΚΟΥ ΠΥΡΓΟΥ ΣΤΗΡΙΞΗΣ

7.1.7.1. ΤΑΣΕΙΣ VON MISES - (ΠΥΡΓΟΥ)



7.1.7.2. ΤΑΣΕΙΣ VON MISES + (ΠΥΡΓΟΥ)



7.2. ΕΛΕΓΧΟΣ ΘΕΜΕΛΙΩΣΗΣ

7.2.1. ΕΛΕΓΧΟΣ ΘΕΜΕΛΙΩΣΗΣ ΔΥΣΜΕΝΕΣΤΕΡΟΣ

Linear calculation, Extreme : Global

Selection : Sn72

Class : GEO1

Pad foundation check

EN 1997-1 Stability check

Sn72/N2914	CO1/2	0.96
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...:Input & Loading:...

Design data

Design approach	2
Partial factor sets	M1 "+" R2
Gamma Fi'	1.00
Gamma c'	1.00
Gamma cu	1.00
Gamma qu	1.00
Gamma gamma	1.00
Gamma R;v	1.40
Gamma R;h	1.10

Pad foundation data

Name	PF1
Material	C20/25
Type	Prismatic
Cast condition	Prefabricated

Pad foundation geometry

A [m]	B [m]	h1 [m]	h2 [m]	h3 [m]	a [m]	b [m]	ex [m]	ey [m]
0.600	2.500	0.400	0.000	0.000	0.200	0.200	0.000	0.000

Subsoil data

Name	Sub1	
Type	Undrained	
Water/air in clay subgrade	No	
Density	0.00	kg/m ³
Fi'	0.00	deg
Sigma oc	0.1	MPa
c'	20.0	MPa
cu	20.0	MPa

Backfill material

Density	1.00	kg/m ³
Height	1.000	m

Water table

Level	No influence
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Loading

Reaction		Elimination factor	Loading		
Rx	-0.09	0.00	Hx	0.00	kN
Ry	5.82	1.00	Hy	5.82	kN
Rz	-5.34	1.00	P	-5.34	kN
Mx	-11.39	0.90	Mx	-10.25	kNm
My	-0.14	0.00	My	0.00	kNm

...:ULS Stability Check:...

Determination of Effective Geometry

According to EN 1997-1 Annex D

Table of values		
Weight of backfill material	0.01	kN
Weight of pad foundation	15.00	kN
Partial safety factor	1.00	
Design weight of pad foundation and backfill G	15.02	kN
gx	0.000	m
gy	0.000	m
px	0.000	m
py	0.000	m

Table of values		
h	0.400	m
Design value of the vertical load Vd	9.68	kN
Design value of the horizontal load Hd	5.82	kN
Eccentricity ex	0.000	m
Eccentricity ey	-0.819	m

