

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΔΗΜΟΣ ΑΓΙΟΥ ΝΙΚΟΛΑΟΥ
ΔΙΕΥΘΥΝΣΗ ΥΠΗΡΕΣΙΑΣ ΔΟΜΗΣΗΣ
ΤΜΗΜΑ ΕΚΔΟΣΗΣ ΑΔΕΙΩΝ ΔΟΜΗΣΗΣ

ΣΤΑΘΜΟΣ ΒΑΣΗΣ ΚΙΝΗΤΗΣ
ΤΗΛΕΦΩΝΙΑΣ
«1828 ΑΓ. ΝΙΚΟΛΑΟΣ ΠΟΛΗ 2»
ΘΕΣΗ ΕΡΓΟΥ: ΓΑΡΓΑΔΟΡΟΥ 57, ΔΗΜΟΣ
ΑΓ. ΝΙΚΟΛΑΟΥ, ΠΕΡΙΦΕΡΕΙΑΚΗ
ΕΝΟΤΗΤΑ ΛΑΣΙΘΙΟΥ, ΠΕΡΙΦΕΡΕΙΑ
ΚΡΗΤΗΣ

ΑΡΙΘΜΟΣ ΠΡΩΤ.

211/19.7.16

ΕΓΚΡΙΣΗ

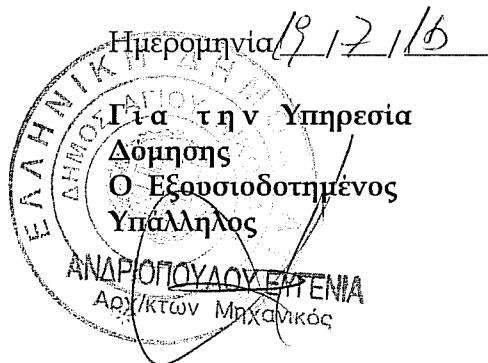
ΕΓΚΑΤΑΣΤΑΣΗΣ ΔΟΜΙΚΩΝ ΚΑΤΑΣΚΕΥΩΝ ΣΤΑΘΜΩΝ ΡΑΔΙΟΕΠΙΚΟΙΝΩΝΙΑΣ από
την WIND HELLAS ΤΗΛΕΠΙΚΟΙΝΩΝΙΕΣ Α.Ε.Β.Ε.

ΕΠΙΕΤΑ ΑΠΟ

1. Την από 21/7/16 αίτηση της WIND HELLAS ΤΗΛΕΠΙΚΟΙΝΩΝΙΕΣ Α.Ε.Β.Ε.
που συνοδεύεται από τις μελέτες και τα λοιπά δικαιολογητικά σύμφωνα με το άρθρο 24α του
Ν.2075 / 1992(ΦΕΚ 129Α)όπως αυτό προστέθηκε με το άρθρο 41 του Ν.2145/1993 (ΦΕΚ 88 Α)
και με το άρθρο 1 του Ν. 2801/2000 (ΦΕΚ 46 Α)
2. Το ν. 2801/2000 «Ρύθμιση θεμάτων αρμοδιότητας του Υπουργείου Μεταφορών και
Επικοινωνιών και άλλες διατάξεις» και ειδικότερα τις διατάξεις του άρθρου 1.
3. Το ν.3431/2006 περί ηλεκτρονικών επικοινωνιών και άλλες διατάξεις (άρθρο 3, παρ.11)
4. Τον έλεγχο των υποβληθέντων στοιχείων με τις άνω διατάξεις και ειδικότερα των παρ. 2&5 του
άρθρου 24^α του ν.2075/1992.
5. Το ν.4053/12 «Μεταβατικές διατάξεις για την αδειοδότηση κατασκευών κεραιών» άρθρο 31
6. Το ν.4070/12 «Ρυθμίσεις σχετικά με την εγκατάσταση των κεραιών» άρθρο 30 Παρ. 17

ΕΓΚΡΙΝΟΥΜΕ

1. Την εκτέλεση των προβλεπόμενων από τις μελέτες εργασιών από την WIND HELLAS
ΤΗΛΕΠΙΚΟΙΝΩΝΙΕΣ Α.Ε.Β.Ε
2. Τις μελέτες συνέταξε ο ΣΟΥΡΕΤΗΣ ΑΝΤΩΝΙΟΣ ΠΟΛΙΤΙΚΟΣ ΜΗΧΑΝΙΚΟΣ
3. Επιβλέπων μηχανικός ορίσθηκε ο ΑΓΓΕΛΙΔΗΣ ΒΑΣΙΛΕΙΟΣ ΠΟΛΙΤΙΚΟΣ ΜΗΧΑΝΙΚΟΣ
4. Η σύνδεση των εγκαταστάσεων με τα δίκτυα των κοινωφελών οργανισμών θα επιτραπεί
όστερα από βεβαίωση της υπηρεσίας μας.



ΙΔΙΟΚΤΗΤΗΣ : WIND ΕΛΛΑΣ ΤΗΛΕΠΙΚΟΙΝΩΝΙΕΣ Α.Ε.Β.Ε

**ΕΡΓΟ : ΕΓΚΑΤΑΣΤΑΣΗ ΣΤΑΘΜΟΥ ΒΑΣΗΣ ΚΙΝΗΤΗΣ ΤΗΛΕΦΩΝΙΑΣ
"ΑΓ. ΝΙΚΟΛΑΟΣ ΠΟΛΗ 2 " Σ.Β. 1828**

**ΘΕΣΗ: ΟΔΟΣ ΓΑΡΓΑΔΟΡΟΥ 57, ΑΓ. ΝΙΚΟΛΑΟΣ, ΠΕΡ. ΕΝΟΤΗΤΑ
ΛΑΣΙΘΙΟΥ, ΠΕΡΙΦΕΡΕΙΑ ΚΡΗΤΗΣ**

ΔΗΛΩΣΗ ΑΝΤΟΧΗΣ

Οι κάτωθι υπογεγραμμένοι Σουρέτης Αντώνιος και Χειμώνας Αντώνιος Πολιτικοί Μηχανικοί, έπειτα από αυτοψία και έλεγχο που διενηργήσαμε, δηλώνουμε υπεύθυνα ότι η οικοδομή, ιδιοκτησίας Ζηνοβίας Δεμέτζου, που βρίσκεται επί της οδού Γαργαδόρου 57 στον Δήμο Αγ. Νικολάου Κρήτης , έχει αβλαβή φέρον οργανισμό από οπλισμένο σκυρόδεμα, ο οποίος, δεν παρουσιάζει ρωγμές, καθιζήσεις ή άλλες μόνιμες παραμορφώσεις και επαρκεί για τις στατικές και δυναμικές φορτίσεις για τις οποίες προορίζεται.

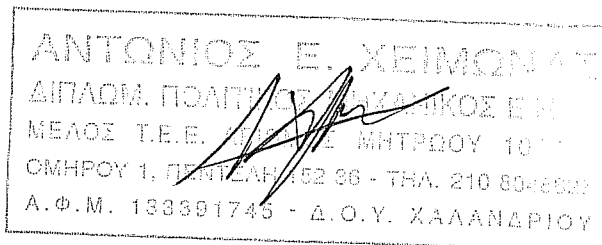
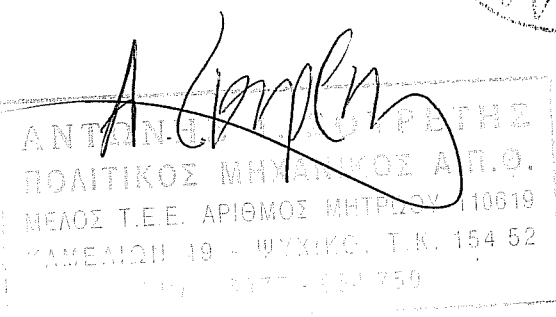
Η κατασκευή του ιστού κεραίας κινητής τηλεφωνίας στην ταράτσα της οικοδομής δεν επιφέρει τέτοιες στατικές και δυναμικές φορτίσεις στον φέροντα οργανισμό ώστε να επηρεάζεται η στατική επάρκεια του κτιρίου.

- Ο -
ΜΗΧΑΝΙΚΟΣ



21/1/13
Αθήνα, 30-Ιαν-13

- Ο -
ΜΗΧΑΝΙΚΟΣ



ΙΔΙΟΚΤΗΤΗΣ : **WIND HELLAS ΤΗΛΕΠΙΚΟΙΝΩΝΙΕΣ Α.Ε.Β.Ε**

ΕΡΓΟ : **ΕΓΚΑΤΑΣΤΑΣΗ ΣΤΑΘΜΟΥ ΒΑΣΗΣ ΚΙΝΗΤΗΣ ΤΗΛΕΦΩΝΙΑΣ**
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ΥΠΕΥΘΥΝΗ ΔΗΛΩΣΗ

ΣΤΑΤΙΚΟΣ ΥΠΟΛΟΓΙΣΜΟΣ
ΚΑΙ ΜΕΛΕΤΗ

ΤΟΥ ΕΠΙΒΛΕΠΟΝΤΟΣ ΜΗΧΑΝΙΚΟΥ ΤΩΝ ΣΤΑΤΙΚΩΝ ΕΡΓΩΝ

Ο/Η Υπογεγραμμένος(η) **ΣΟΥΡΕΤΗΣ ΑΝΤΩΝΙΟΣ**.....

Διπλωματούχος **ΠΟΛΙΤΙΚΟΣ ΜΗΧΑΝΙΚΟΣ**..Α.Π.Θ.....

βάσει του Νόμου του δικαίωματος άσκησης του επαγγέλματος....

Α.Μ. Τ.Ε.Ε. 110619

κάτοικος **ΨΥΧΙΚΟΥ, ΑΘΗΝΑ**

οδός **ΚΑΜΕΛΙΩΝ**

αριθ. 49

ταχ. Κώδ. 154 52. τηλ. 6977854750

Αριθ. Αστυνομικής Ταυτότητας και χρονολογία εκδόσεως..AZ695901 29/08/2008

Εκδοθείσα από το Παράρτημα Ασφαλείας ή Υπ/τος Χωρ/κής..

Αστυνομικό Τμήμα Τ.Α ΑΝΩ ΠΟΛΗΣ ΑΓ. ΠΑΥΛΟΥ ΘΕΣΣΑΛΟΝΙΚΗΣ

Αυξ. Αριθ. Μητρώου του Π.Γ.Α.Π.....

Α) Για την περίπτωση φέροντος οργανισμού από οπλισμένο σκυρόδεμα:

1. Ότι κατά τη σύνταξη της μελέτης, συμμορφώθηκα πλήρως προς τους ισχύοντες κανονισμούς οπλισμένου σκυροδέματος, όπως και ως προς τον αντισεισμικό κανονισμό οικοδομικών έργων.

2. Ότι αναλαμβάνω την πλήρη ευθύνη για την ακρίβεια των υπολογισμών.

3. Ότι κατά την εκτέλεση θα προβώ στην έγκαιρη και επιμελημένη σύνταξη των σχεδίων λεπτομερειών.

4. Ότι θα συμμορφωθώ πλήρως κατά την κατασκευή, προς τις διατάξεις του κανονισμού οπλισμένου σκυροδέματος ΦΕΚ 227Β/28-3-95.

5. Ότι συνεχώς θα παρακολουθώ και θα ελέγχω την ορθή και ακριβή τοποθέτηση των οπλισμών, τη στατική επάρκεια των ξυλοτύπων, τη σύμφωνη προς τη μελέτη από κάθε άποψη επιμελημένη εκτέλεση του σκυροδέματος, έχοντας πλήρη και αkéρεια την ευθύνη για όλα τα ζητήματα αυτά.

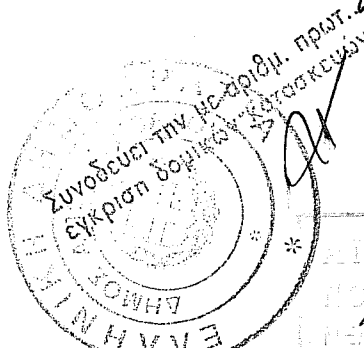
Β) Για την περίπτωση φέροντος οργανισμού από υλικά διαφορετικά του οπλισμένου σκυροδέματος:

1. Ότι συμμορφώθηκα πλήρως προς τους ισχύοντες αντισεισμικούς κανονισμούς οικοδομικών έργων.

2. Ότι αναλαμβάνω την πλήρη ευθύνη για την ακρίβεια των υπολογισμών.

3. Ότι κατά την εκτέλεση θα προβώ στην έγκαιρη και επιμελημένη σύνταξη των σχεδίων λεπτομερειών.

4. Ότι συμμορφώθηκα προς την Ε39941/22-10-67 ΥΔΕ και 769/12-1-65 Εγκ. ΥΠΑ.



30-Iav-13

Ο ΔΗΛΩΝ

ΕΡΓΟ:

ΣΤΑΘΜΟΣ ΒΑΣΗΣ 1828

AGIOS NIKOLAOS CITY 2

ΣΤΑΤΙΚΗ ΜΕΛΕΤΗ

ΤΕΥΧΟΣ ΥΠΟΛΟΓΙΣΜΩΝ

ΑΝΤΩΝΗΣ Ι. ΖΟΥΡΕΤΗΣ
ΠΛΗΡΗΣ ΜΗΧΑΝΙΚΟΣ
ΕΠΙΣΤΗΜΟΝΙΚΟ ΚΑΤΑΣΤΗΡΙΑΣΜΟ
ΑΡΧΙΤΕΚΤΟΝΙΚΟ ΕΓΚΛΗΜΑΤΑ
ΑΡΧΙΤΕΚΤΟΝΙΚΟ ΕΓΚΛΗΜΑΤΑ
ΑΡΧΙΤΕΚΤΟΝΙΚΟ ΕΓΚΛΗΜΑΤΑ
ΑΡΧΙΤΕΚΤΟΝΙΚΟ ΕΓΚΛΗΜΑΤΑ

ΠΕΡΙΕΧΟΜΕΝΑ

1.Εισαγωγή	1
2.Παραδοχές	1
2.1. Φορτία	1
2.2. Συνδυασμοί φορτίσεων	3
2.3. Κανονισμοί	3
3. Ανάλυση Ιστού Κεραιοσυστήματος	4
Τρισδιάστατη Απεικόνιση	4
Υλικά και Διατομές	5
Γεωμετρία	9
Φορτία Υπολογισμού	11
Συνδυασμοί Φορτίσεων	13
Έλεγχος μελών ιστού	30
Έλεγχος έδρασης ιστού	40
Έλεγχος αντιρρίδας	44
4. Ανάλυση Ιστού Μικροκυματικού πιάτου	48
Τρισδιάστατη Απεικόνιση	48
Υλικά και Διατομές	49
Γεωμετρία	52
Φορτία Υπολογισμού	54
Συνδυασμοί Φορτίσεων	55
Έλεγχος μελών ιστού	69
Έλεγχος έδρασης	77

1 ΕΙΣΑΓΩΓΗ

Το παρόν τεύχος αφορά στη μελέτη εγκατάστασης κεραιοσυστημάτων και μικροκυματικού πιάτου στην οροφή κτιρίου.

Το κεραιοσύστημα, που αποτελείται από τρεις κεραίες, εδράζεται επί μεταλλικής κοιλοδοκού ύψους 5.50m περίπου. Σε όλο το ύψος του ιστού προβλέπεται κάλυμμα τύπου VIAPAL κάτοψης 65cm x 65cm. Η κοιλοδοκός εκτός της εδρασής της στην πλάκα οροφής του κτιρίου στηρίζεται και σε τοιχείο οπλισμένου σκυροδέματος μέσω οριζόντιας αντιρρίδας.

Ο ιστός που φέρει το μικροκυματικό πιάτο διαμέτρου 60cm αποτελείται από μεταλλική κοιλοδοκό ύψους 2.40m η οποία εδράζεται επί τοιχείου οπλισμένου σκυροδέματος μέσω οριζόντιων αντιρρίδων.

2 ΠΑΡΑΔΟΧΕΣ ΜΕΛΕΤΗΣ

2.1 ΦΟΡΤΙΑ

2.1.1 Μόνιμα φορτία

2.1.1.1 Ίδιο βάρος κατασκευής

Βάρος χάλυβα 78.5KN/m^3 , Θεωρείται προσαύξηση 1.10 ώστε να ληφθούν υπόψη τα μέσα σύνδεσης και το περίβλημα.

2.1.1.2 Βάρος κεραιών

Κεραίες βάρους 21Kgr

Μικροκυματικό πιάτο διαμέτρου 60cm βάρους 30Kgr

2.1.2 Κινητά Φορτία

2.1.2.1 Άνεμος

Λαμβάνεται ως θεμελιώδης τιμή της βασικής ταχύτητα ανέμου η ταχύτητα 33m/sec.

A. Ιστός με Κεραιοσύστημα

Η δύναμη ανέμου που ασκείται στην κατασκευή υπολογίζεται σύμφωνα με την σχέση 5.3(EN1991-1-4 (2005)).

$$F_w = c_s c_d \cdot c_f \cdot q_p(z_e) \cdot b_{ref} * l_{ref} = 0.976 \text{ kN/m} * l_{ref}$$

όπου:

$$c_s c_d = 1.00 \text{ για ύψος μικρότερο από 60m 6.5D (§6.2(d) EN1999-1-4(2005))}$$

$$q_b = 0.5 p \cdot v_p^2 = 0.5 \cdot 1.25 \cdot 33^2 \cdot 10^{-3} = 0.68 \text{ kN/m}^2 \quad (\text{Eq.4.10})$$

$$c_e(z) = 1.40 \quad (\Sigma\chi. 4.2)$$

$$q_p(z_e) = q_b \cdot c_e(z) = 0.68 \cdot 1.40 = 0.953 \text{ kN/m}^2 \quad (\text{Eq. 4.9})$$

$$c_f = c_{f0} x \psi_\lambda x \psi_r = 1.575 \quad (\text{Eq. 7.9})$$

όπου από το Σχήμα 7.23 είναι $\frac{d}{b} = 1.00 \Rightarrow c_{f0} = 2.10$

Από το Σχήμα 7.24 είναι $\frac{r}{b} = 0 \Rightarrow \psi_r = 1.00$

Από τον Πίνακα 7.16 είναι $l < 15m, \lambda = 2 \times 5.50 / 0.65 = 16.92, \phi = 1 \Rightarrow \psi_\lambda = 0.75$

Η δύναμη κατανέμεται στις θέσεις στήριξης του περιμετρικού καλύμματος.

B. Κατασκευή MW DISH

Η δράση ανέμου στο μικροκυματικό πιάτο καθορίζεται από τις προδιαγραφές του κατασκευαστή.

2.1.3. Σεισμική Φόρτιση

Εφαρμόζονται οι διατάξεις του ΕΑΚ2003 για προσαρτήματα κτιρίων.

Εφαρμόζεται οριζόντια σεισμική δύναμη σύμφωνα με §4.2.3

$$H_p = \varepsilon \cdot W_p \cdot \gamma_p / q_p$$

όπου

$$\varepsilon = a \cdot \beta \cdot (1 + z / H)$$

$$\beta = \frac{2}{1 + (1 - T_p / T)^2} \geq 1$$

Σεισμική Επιτάχυνση Εδάφους a	... : 0.24
Συντελεστής Σεισμικής Συμπεριφοράς q	... : 1.00
Συντελεστής Σπουδαιότητας Προσαρτήματος γ_1	... : 1.00
Ζώνες Σεισμικής Επικινδυνότητας	... : Ζώνη II
Κατηγορία Σπουδαιότητας	... : Σ2
Κατηγορία εδάφους	... : B
Στάθμη στήριξης προσαρτήματος	... : 6.00m
Ύψος κτιρίου	... : 6.00m

2.2 ΣΥΝΔΥΑΣΜΟΙ ΦΟΡΤΙΣΕΩΝ

Μονιμα φορτία G

Άνεμος W

Σεισμός E

Συνδυασμοί σε οριακή κατάσταση αστοχίας (ULS) :

$1.35G+1.50W$

$1.00G+1.50W$

Συνδυασμοί με Σεισμό

$1.00G+1.00EX+0.3EY$

Συνδυασμοί σε οριακή κατάσταση λειτουργικότητας (SLS) :

$1.00G+1.00W$

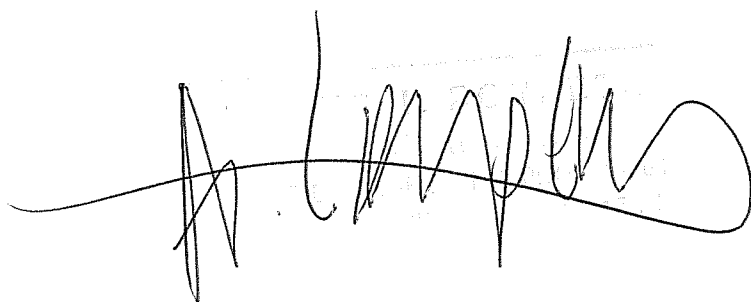
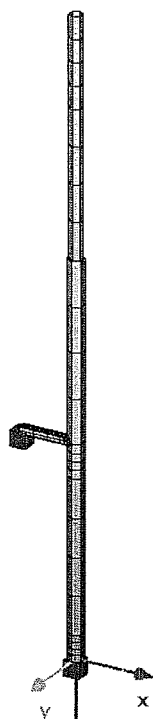
2.3 ΚΑΝΟΝΙΣΜΟΙ

- Κανονισμός Φορτίσεων Δομικών Έργων Β.Δ. 10.11.45 (ΦΕΚ 325/Α/1945 και ΦΕΚ 171Α/1946)
- Κανονισμός για τη μελέτη και κατασκευή έργων από σκυρόδεμα, Ε.Κ.Ω.Σ. 2000 (ΦΕΚ 1329/Β/06.11.2000)
- Ελληνικός Αντισεισμικός Κανονισμός, Ε.Α.Κ. 2000 (ΦΕΚ 2184/Β/20.12.1999)
- Ευρωκώδικας 0, (EN1990) Βάσεις σχεδιασμού δομημάτων
- Ευρωκώδικας 1, (EN1991) Δράσεις στις κατασκευές
- Ευρωκώδικας 3, (EN1993) Σχεδιασμός κατασκευών από δομικό Χάλυβα
- Προσωρινές Συστάσεις (ΠΡΟΣΥ-ΠΜ) για το σχεδιασμό έργων Πολιτικού Μηχανικού (πλην γεφυρών και κτιρίων από σκυρόδεμα) σε συνδυασμό με τους αντίστοιχους Ευρωκώδικες

3 ΑΝΑΛΥΣΗ ΙΣΤΟΥ ΚΕΡΑΙΟΣΥΣΤΗΜΑΤΟΣ

Η ανάλυση του φορέα έγινε με το πρόγραμμα Sofistik με προσομοίωση ραβδόμορφων στοιχείων.

Τρισδιάστατη απεικόνιση φορέα



1828 AGIOS NIKOLAOS CITY 2 MAST

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

No. 1 S 235 (EN 10025-2)

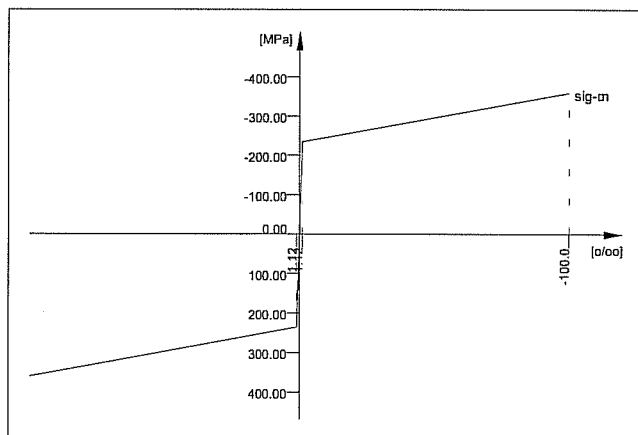
Youngs-modulus	E	210000 [MPa]	Safetyfactor	1.10 [-]
Poisson-Ratio	mu	0.30 [-]	Yield stress	fy 235.00 [MPa]
Shear-modulus	G	80769 [MPa]	Compr.yield val. fyc	235.00 [MPa]
Compression modulus		175000 [MPa]	Tens. strength	ft 360.00 [MPa]
Weight		86.3 [kN/m3]	Compr. strength	fc 360.00 [MPa]
Weight buoyancy		86.3 [kN/m3]	Ultim. plast. strain	100.00 [o/oo]
Temp.elongat.coeff.	1.20E-05 [-]		relative bond coeff.	0.00 [-]
max. thickness	40.00 [mm]		EC2 bondcoeff. K1	0.00 [-]
			Hardening modulus	0.00 [MPa]
			Proportional limit	235.00 [MPa]
			Dynamic stress range	0.00 [MPa]

Stress-Strain for serviceability
Is also extended beyond the
defined stress range

eps[o/oo]	sig-m[MPa]	E-t[MPa]
1000.000	360.00	0
100.000	360.00	1264
1.119	235.00	210000
0.000	0.00	210000
-1.119	-235.00	1264
-100.000	-360.00	0
-1000.000	-360.00	0
Safetyfactor	1.10	

Stress-Strain for ultimate load
Is also extended beyond the
defined stress range

eps[o/oo]	sig-u[MPa]	E-t[MPa]
1000.000	360.00	0
100.000	360.00	1264
1.119	235.00	210000
0.000	0.00	210000
-1.119	-235.00	1264
-100.000	-360.00	0
-1000.000	-360.00	0
Safetyfactor	1.10	



Cross-sections static properties

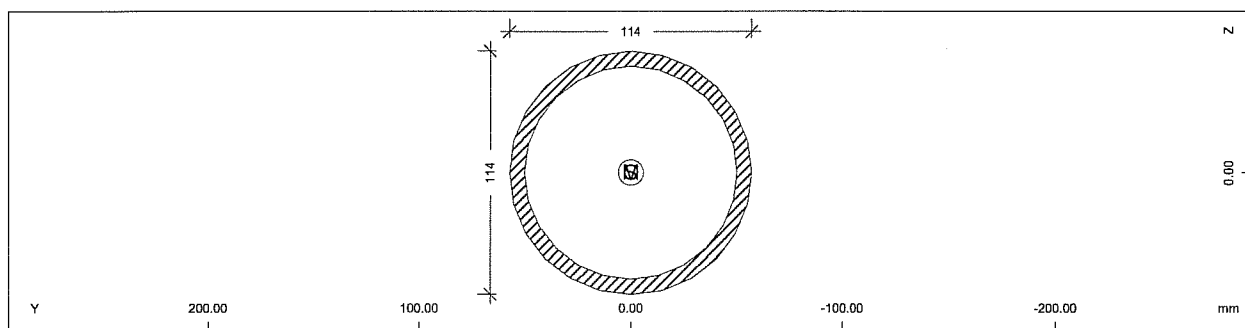
No	MNo	A[m2]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
	MNs	It[m4]	[m2]	[m4]	[m]	[m]	[MPa]	[kN/m]
1	=	D 114.3 / 7.1 mm						
	1	2.3911E-03	5.257E-01	3.450E-06	0.000	0.000	210000	0.21
		6.900E-06	5.257E-01	3.450E-06	0.000	0.000	80769	
2	=	D 139.7 / 5.6 mm						
	1	2.3592E-03	5.164E-01	5.312E-06	0.000	0.000	210000	0.20
		1.062E-05	5.164E-01	5.312E-06	0.000	0.000	80769	
3	=	SH 70 x 70 x 7						
	1	1.7219E-03	7.850E-04	1.134E-06	0.000	0.000	210000	0.15
		1.840E-06	7.850E-04	1.134E-06	0.000	0.000	80769	

1828 AGIOS NIKOLAOS CITY 2 MAST

Summary of used sections in system

No.	Total Length [m]	Total Weight [t]	max. length [m]	Title
1	2.070	0.043	1.280	D 114.3 / 7.1 mm
2	3.410	0.069	1.490	D 139.7 / 5.6 mm
3	0.480	0.007	0.480	SH 70 x 70 x 7

Cross section No. 1 - D 114.3 / 7.1 mm



Static properties of cross section

MNo	A[cm ²]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
MNs	It[cm ⁴]	[cm ²]	[cm ⁴]	[mm]	[mm]	[N/mm ²]	[kN/m]
1	23.91	5256.71	345.0	0.0	0.0	210000	0.21
	690.0	5256.71	345.0	0.0	0.0	80769	

Additional static properties of cross section

Alfa-T	ymin	zmin	hymin	AK	MB	Tau-T	Tau-Vy
	ymax	zmax	hzmin	AB		Tau-B	Tau-Vz
	[mm]	[mm]	[mm]	[cm ²]		[1/m ³]	[1/m ²]
1.2E-05	-57.2	-57.2				8.283E+03	8.340E+02
	57.2	57.2					8.340E+02

Design forces and moments

(C/E = characteristic plastic/elastic, D=plast.Design, F=elast. Design)									
	N[kN]	Vy[kN]	Vz[kN]	Mt[kNm]	My[kNm]	Mz[kNm]	y[mm]	z[mm]	BUCK
C	561.9	214.10	214.10	17.41	19.20	19.20	0.0	0.0	a a
E	561.9	162.68	162.68	16.38	14.19	14.19	0.0	0.0	
D	510.8	194.64	194.64	15.83	17.46	17.46	0.0	0.0	
F	510.8	147.90	147.90	14.89	12.90	12.90	0.0	0.0	

Tube/Cable

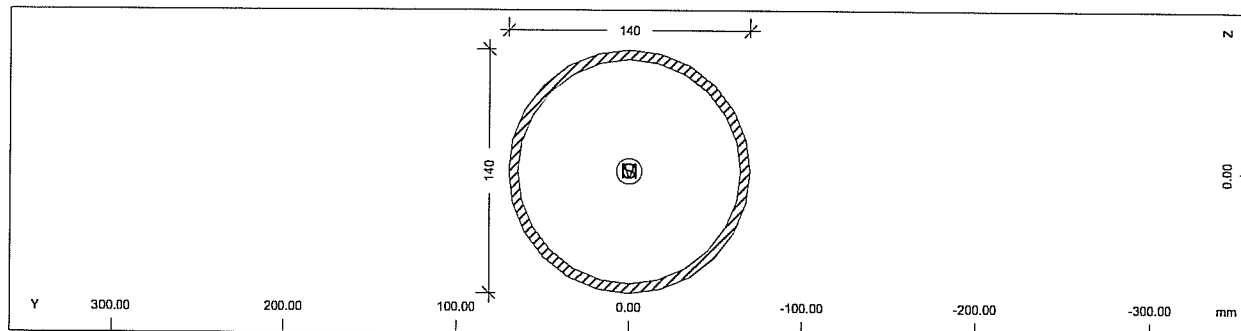
D[mm]	t[mm]
114.3	7.1

Additional Design Data

M	periphery-0/-I	deff	t-min	t-max	SMP	thet-p	thet-y	thet-z	thet-yz
	[m ² /m]	[m ² /m]	[mm]	[mm]	[o/o]	[tm ² /m]	[tm ² /m]	[tm ² /m]	[tm ² /m]
	0.359	0.314	7.1	7.1	0.0				

1828 AGIOS NIKOLAOS CITY 2 MAST

Cross section No. 2 - D 139.7 / 5.6 mm



Static properties of cross section

MNo	A[cm ²]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
MNs	It[cm ⁴]	[cm ²]	[cm ⁴]	[mm]	[mm]	[N/mm ²]	[kN/m]
1	23.59	5163.69	531.2	0.0	0.0	210000	0.20
	1062.5	5163.69	531.2	0.0	0.0	80769	

Additional static properties of cross section

Alfa-T	ymin	zmin	hymin	AK	MB	Tau-T	Tau-Vy
	ymin	zmin	hmin	AB		Tau-B	Tau-Vz
	[mm]	[mm]	[mm]	[cm ²]		[1/m ³]	[1/m ²]
1.2E-05	-69.8	-69.8				6.574E+03	8.468E+02
	69.8	69.8					8.468E+02

Design forces and moments

(C/E = characteristic plastic/elastic, D=plast.Design, F=elast. Design)

	N[kN]	Vy[kN]	Vz[kN]	Mt[kNm]	My[kNm]	Mz[kNm]	y[mm]	z[mm]	BUCK
C	554.4	208.54	208.54	21.47	23.68	23.68	0.0	0.0	a a
E	554.4	160.23	160.23	20.64	17.87	17.87	0.0	0.0	
D	504.0	189.58	189.58	19.52	21.53	21.53	0.0	0.0	
F	504.0	145.67	145.67	18.76	16.25	16.25	0.0	0.0	

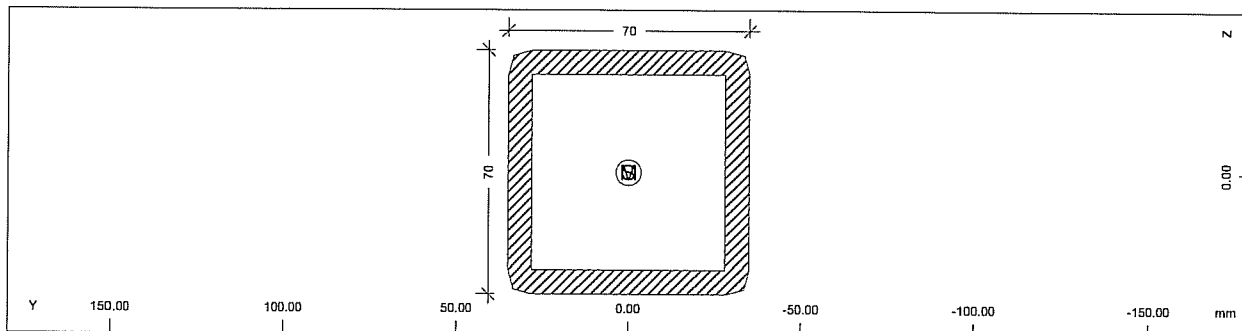
Tube/Cable

D[mm]	t[mm]
139.7	5.6

Additional Design Data

M	periphery-0/-I	deff	t-min	t-max	SMP	thet-p	thet-y	thet-z	thet-yz
	[m ² /m]	[m ² /m]	[mm]	[mm]	[o/o]	[tm ² /m]	[tm ² /m]	[tm ² /m]	[tm ² /m]
	0.439	0.404		5.6	5.6	0.0			

Cross section No. 3 - SH 70 x 70 x 7



Static properties of cross section

MNo	A[cm ²]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
MNs	It[cm ⁴]	[cm ²]	[cm ⁴]	[mm]	[mm]	[N/mm ²]	[kN/m]
1	17.22	7.85	113.4	0.0	0.0	210000	0.15
	184.0	7.85	113.4	0.0	0.0	80769	

1828 AGIOS NIKOLAOS CITY 2 MAST

Additional static properties of cross section

Alfa-T	ymin	zmin	hymin	AK	MB	Tau-T	Tau-Vy
	ymax	zmax	hzmin	AB		Tau-B	Tau-Vz
	[mm]	[mm]	[mm]	[cm2]		[1/m3]	[1/m2]
1.2E-05	-35.0	-35.0		3.969E+01		2.164E+04	1.273E+03
	35.0	35.0					1.273E+03

Section values for warping

Wmin[cm2]	Wmax[cm2]	CM[cm6]	CMS[cm4]	ASwyy[cm6]	ASwzz[cm6]	ry[mm]	rz[mm]
-1.14	1.14	0.00	0.0	0.00	0.00		

Design values of cross section

MNo	A[cm2]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	modules	gam
MNs	It[cm4]	[cm2]	[cm4]	[mm]	[N/mm2]	[kN/m]
1	17.22	7.85	113.4	0.0	190909	0.15
	184.0	7.85	113.4	0.0	73427	

Design forces and moments

(C/E = characteristic plastic/elastic, D=plast.Design, F=elast. Design)									
	N[kN]	Vy[kN]	Vz[kN]	Mt[kNm]	My[kNm]	Mz[kNm]	y[mm]	z[mm]	BUCK
C	404.7	106.51	106.51	6.94	9.50	9.50	0.0	0.0	a a
E	404.7	106.57	106.57	6.27	7.62	7.62	0.0	0.0	
D	367.9	96.82	96.82	6.31	8.64	8.64	0.0	0.0	
F	367.9	96.88	96.88	5.70	6.92	6.92	0.0	0.0	

Additional Design Data

M	periphery-0/-I	deff	t-min	t-max	SMP	thet-p	thet-y	thet-z	thet-yz
	[m2/m]	[m2/m]	[mm]	[mm]	[o/o]	[tm2/m]	[tm2/m]	[tm2/m]	[tm2/m]
	0.270	0.224			0.0	0.000	0.000	0.000	

Rolled steel				D[mm]	B[mm]	s[mm]	t[mm]	r[mm]	yr[mm]	zr[mm]	[grd]
SH	70.0	70.0	7.0	70.0	70.0	7.0	7.0	7.0			

1828 AGIOS NIKOLAOS CITY 2 MAST

Nodal Coordinates and Supports

Number	X[m]	Y[m]	Z[m]	Support Conditions						
1	0.000	0.000	0.000	PX	PY	PZ	MX	MY	MZ	MB
2	0.000	0.000	-0.220							
3	0.000	0.000	-1.560							
4	0.000	0.000	-1.850							
5	0.000	0.000	-3.410							
6	0.000	0.000	-4.690							
7	0.000	0.000	-5.480							
14	-0.480	0.000	-1.850	PX	PY	PZ	MX	MY	MZ	MB

MIN	-0.480	0.000	-5.480							
MAX	0.000	0.000	0.000							

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

No. 1 S 235 (EN 10025-2)

Youngs-modulus	E	210000 [MPa]	Safetyfactor	1.10 [-]
Poisson-Ratio	mu	0.30 [-]	Yield stress	fy 235.00 [MPa]
Shear-modulus	G	80769 [MPa]	Compr.yield val.	fyc 235.00 [MPa]
Compression modulus		175000 [MPa]	Tens. strength	ft 360.00 [MPa]
Weight		86.3 [kN/m3]	Compr. strength	fc 360.00 [MPa]
Weight buoyancy		86.3 [kN/m3]	Ultim. plast. strain	100.00 [o/oo]
Temp.elongat.coeff.	1.20E-05 [-]		relative bond coeff.	0.00 [-]
max. thickness	40.00 [mm]		EC2 bondcoeff. K1	0.00 [-]
			Hardening modulus	0.00 [MPa]
			Proportional limit	235.00 [MPa]
			Dynamic stress range	0.00 [MPa]

Cross sections - Static Properties

No	MNo	A[m2]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
	MNs	It[m4]	[m2]	[m4]	[m]	[m]	[MPa]	[kN/m]
1	=	D 114.3 / 7.1 mm						
	1	2.3911E-03	5.257E-01	3.450E-06	0.000	0.000	210000	0.21
		6.900E-06	5.257E-01	3.450E-06	0.000	0.000	80769	
2	=	D 139.7 / 5.6 mm						
	1	2.3592E-03	5.164E-01	5.312E-06	0.000	0.000	210000	0.20
		1.062E-05	5.164E-01	5.312E-06	0.000	0.000	80769	
3	=	SH 70 x 70 x 7						
	1	1.7219E-03	7.850E-04	1.134E-06	0.000	0.000	210000	0.15
		1.840E-06	7.850E-04	1.134E-06	0.000	0.000	80769	

Summary of used sections in system

No.	Total Length	Total Weight	max. length	Title
	[m]	[t]	[m]	
1	2.070	0.043	1.280	D 114.3 / 7.1 mm
2	3.410	0.069	1.560	D 139.7 / 5.6 mm
3	0.480	0.007	0.480	SH 70 x 70 x 7

Input for groups

No	MNo	Mrf	Ansatz	Posi	Direction	x-axis	Thick [m]
1	1	0	1+2+4	Center		0.00	0.200
2	1	0	1+2+4	Center		0.00	0.200

Legend for Ansatz: 1 = Plate Stiffness
2 = Membrane Stiffness
4 = in-plane Rotation

Beam Elements

Grp	Number	Node	x[m]	NoS	NoP	reference Hinges	direction	local y-axis
1	101	1	0.000	2			-1.000	0.000 0.000
			0.055	2i				
			0.110	2i				
			0.165	2i				
		2	0.220	2				
1	102	2	0.000	2			-1.000	0.000 0.000
			0.335	2i				

1828 AGIOS NIKOLAOS CITY 2 MAST

Beam Elements

Grp	Number	Node	x[m]	NoS	NoP	reference Hinges	direction	local	y-axis
1	102		0.670	2i					
			1.005	2i					
		3	1.340	2					
1	103	3	0.000	2			-1.000	0.000	0.000
			0.073	2i					
			0.145	2i					
			0.218	2i					
		4	0.290	2					
1	104	4	0.000	2			-1.000	0.000	0.000
			0.390	2i					
			0.780	2i					
			1.170	2i					
		5	1.560	2					
1	105	5	0.000	1			-1.000	0.000	0.000
			0.320	1i					
			0.640	1i					
			0.960	1i					
		6	1.280	1					
1	106	6	0.000	1			-1.000	0.000	0.000
			0.197	1i					
			0.395	1i					
			0.593	1i					
		7	0.790	1					
2	201	4	0.000	3	MyMz		0.000	-1.000	0.000
			0.120	3i					
			0.240	3i					
			0.360	3i					
		14	0.480	3					

1828 AGIOS NIKOLAOS CITY 2 MAST
FORTIA YPOLOGISMOU

Load Case 1 IB KERAIWN

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
6			0.6				

Load Case 3 ADRANEIA XX

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
6	0.4						

Load Case 4 ADRANEIA YY

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
6		0.4					

Load Case 21 ANEMOS XX

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	0.7						
3	1.6						
5	1.9						
7	1.0						

sum 5.1

Load Case 22 ANEMOS -XX

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	-0.7						
3	-1.6						
5	-1.9						
7	-1.0						

sum -5.1

1828 AGIOS NIKOLAOS CITY 2 MAST
 FORTIA YPOLOGISMOU

Load Case 23 ANEMOS YY

Factor forces and moments 1.000
 Factor dead weight DL-XX 0.000
 Factor dead weight DL-YY 0.000
 Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2		0.7					
3		1.6					
5		1.9					
7		1.0					
<hr/>							
sum		5.1					

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

No. 1 S 235 (EN 10025-2)

Youngs-modulus	E	210000 [MPa]	Safetyfactor	1.10 [-]
Poisson-Ratio	mu	0.30 [-]	Yield stress	fy 235.00 [MPa]
Shear-modulus	G	80769 [MPa]	Compr.yield val. fyc	235.00 [MPa]
Compression modulus		175000 [MPa]	Tens. strength	ft 360.00 [MPa]
Weight		86.3 [kN/m3]	Compr. strength	fc 360.00 [MPa]
Weight buoyancy		86.3 [kN/m3]	Ultim. plast. strain	100.00 [o/oo]
Temp.elongat.coeff.	1.20E-05 [-]		relative bond coeff.	0.00 [-]
max. thickness	40.00 [mm]		EC2 bondcoeff. K1	0.00 [-]
			Hardening modulus	0.00 [MPa]
			Proportional limit	235.00 [MPa]
			Dynamic stress range	0.00 [MPa]

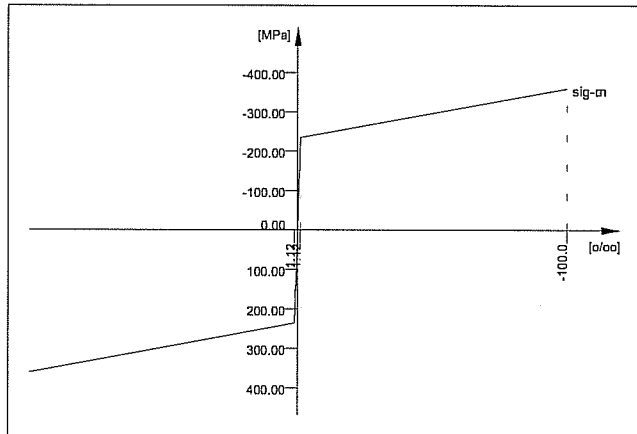
Stress-Strain for serviceability
Is also extended beyond the
defined stress range

eps[o/oo]	sig-m[MPa]	E-t[MPa]
1000.000	360.00	0
100.000	360.00	1264
1.119	235.00	210000
0.000	0.00	210000
-1.119	-235.00	1264
-100.000	-360.00	0
-1000.000	-360.00	0

Stress-Strain for ultimate load
Is also extended beyond the
defined stress range

eps[o/oo]	sig-u[MPa]	E-t[MPa]
1000.000	360.00	0
100.000	360.00	1264
1.119	235.00	210000
0.000	0.00	210000
-1.119	-235.00	1264
-100.000	-360.00	0
-1000.000	-360.00	0

Safetyfactor 1.10



Elementgroups

No	fac-S	fac-L	fac-D	fac-P	fac-B	PLC	HW [m]
1	1.000	1.000	0.000	1.000	1.000	0	
2	1.000	1.000	0.000	1.000	1.000	0	

Nodes

Number	X [m]	Y [m]	Z [m]	supports/number of unknown					
1	0.000	0.000	0.000	PX	PY	PZ	MX	MY	MZ
				0	0	0	0	0	0
2	0.000	0.000	-0.220	1	2	3	4	5	6
3	0.000	0.000	-1.560	7	8	9	10	11	12

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Nodes

Number	X [m]	Y [m]	Z [m]	supports/number of unknown					
4	0.000	0.000	-1.850	13	14	15	16	17	18
5	0.000	0.000	-3.410	19	20	21	22	23	24
6	0.000	0.000	-4.690	25	26	27	28	29	30
7	0.000	0.000	-5.480	31	32	33	34	35	36
14	-0.480	0.000	-1.850	PX	PY	PZ	MX	MY	MZ
				0	0	0	0	0	0

Definition of load type in this output:

PZZ - load in global direction Z in reference to the element length
PZP - load in global direction Z in reference to the projection
Pz - load in local direction z
PG - load in dead load direction in reference to the element length

Load Case 101 ULS1

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.350

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	1.0						
3	2.3						
5	2.9						
6			0.9				
7	1.5						
sum	7.7		0.9				

Load Case 102 ULS2

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.350

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	-1.0						
3	-2.3						
5	-2.9						
6			0.9				
7	-1.5						
sum	-7.7		0.9				

Load Case 103 ULS3

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.350

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2		1.0					
3		2.3					
5		2.9					
6			0.9				

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
7		1.5					
sum		7.7	0.9				

Load Case 104 ULS4

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	1.0						
3	2.3						
5	2.9						
6			0.6				
7	1.5						
sum	7.7		0.6				

Load Case 105 ULS5

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	-1.0						
3	-2.3						
5	-2.9						
6			0.6				
7	-1.5						
sum	-7.7		0.6				

Load Case 106 ULS6

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2		1.0					
3		2.3					
5		2.9					
6			0.6				
7		1.5					
sum		7.7	0.6				

Load Case 201 EX+0.3EY

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.600
Factor dead weight	DL-YY	0.180
Factor dead weight	DL-ZZ	1.000

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
6			0.6				
6	0.4						
6		0.1					
sum	0.4	0.1	0.6				

Load Case 301 SLS1

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	0.7						
3	1.6						
5	1.9						
6			0.6				
7	1.0						
sum	5.1		0.6				

Load Case 302 SLS2

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2	-0.7						
3	-1.6						
5	-1.9						
6			0.6				
7	-1.0						
sum	-5.1		0.6				

Load Case 303 SLS3

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
2		0.7					
3		1.6					
5		1.9					
6			0.6				
7		1.0					
sum		5.1	0.6				

Applied Nodal Loadvector Loadcase 101

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZZ[kNm]
2	1.0	0.0	0.2	0.00	0.00	0.00
3	2.3	0.0	0.2	0.00	0.00	0.00
4	0.0	0.0	0.3	0.00	0.00	0.00
5	2.9	0.0	0.4	0.00	0.00	0.00
6	0.0	0.0	1.1	0.00	0.00	0.00

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Applied Nodal Loadvector Loadcase 101

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
7	1.5	0.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 102

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	-1.0	0.0	0.2	0.00	0.00	0.00
3	-2.3	0.0	0.2	0.00	0.00	0.00
4	0.0	0.0	0.3	0.00	0.00	0.00
5	-2.9	0.0	0.4	0.00	0.00	0.00
6	0.0	0.0	1.1	0.00	0.00	0.00
7	-1.5	0.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 103

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	0.0	1.0	0.2	0.00	0.00	0.00
3	0.0	2.3	0.2	0.00	0.00	0.00
4	0.0	0.0	0.3	0.00	0.00	0.00
5	0.0	2.9	0.4	0.00	0.00	0.00
6	0.0	0.0	1.1	0.00	0.00	0.00
7	0.0	1.5	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 104

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	1.0	0.0	0.2	0.00	0.00	0.00
3	2.3	0.0	0.2	0.00	0.00	0.00
4	0.0	0.0	0.2	0.00	0.00	0.00
5	2.9	0.0	0.3	0.00	0.00	0.00
6	0.0	0.0	0.8	0.00	0.00	0.00
7	1.5	0.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 105

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	-1.0	0.0	0.2	0.00	0.00	0.00
3	-2.3	0.0	0.2	0.00	0.00	0.00
4	0.0	0.0	0.2	0.00	0.00	0.00
5	-2.9	0.0	0.3	0.00	0.00	0.00
6	0.0	0.0	0.8	0.00	0.00	0.00
7	-1.5	0.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 106

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	0.0	1.0	0.2	0.00	0.00	0.00
3	0.0	2.3	0.2	0.00	0.00	0.00
4	0.0	0.0	0.2	0.00	0.00	0.00
5	0.0	2.9	0.3	0.00	0.00	0.00
6	0.0	0.0	0.8	0.00	0.00	0.00
7	0.0	1.5	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 201

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	0.1	0.0	0.2	0.01	-0.02	0.00
3	0.1	0.0	0.2	-0.01	0.02	0.00
4	0.1	0.0	0.2	0.01	-0.02	0.00
5	0.2	0.1	0.3	0.00	0.01	0.00
6	0.5	0.2	0.8	0.00	0.01	0.00
7	0.0	0.0	0.1	0.00	0.01	0.00

(without loads at constraints)

1828 AGIOS NIKOLAOS CITY 2 MAST
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Applied Nodal Loadvector Loadcase 301

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	0.7	0.0	0.2	0.00	0.00	0.00
3	1.6	0.0	0.2	0.00	0.00	0.00
4	0.0	0.0	0.2	0.00	0.00	0.00
5	1.9	0.0	0.3	0.00	0.00	0.00
6	0.0	0.0	0.8	0.00	0.00	0.00
7	1.0	0.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 302

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	-0.7	0.0	0.2	0.00	0.00	0.00
3	-1.6	0.0	0.2	0.00	0.00	0.00
4	0.0	0.0	0.2	0.00	0.00	0.00
5	-1.9	0.0	0.3	0.00	0.00	0.00
6	0.0	0.0	0.8	0.00	0.00	0.00
7	-1.0	0.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 303

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
2	0.0	0.7	0.2	0.00	0.00	0.00
3	0.0	1.6	0.2	0.00	0.00	0.00
4	0.0	0.0	0.2	0.00	0.00	0.00
5	0.0	1.9	0.3	0.00	0.00	0.00
6	0.0	0.0	0.8	0.00	0.00	0.00
7	0.0	1.0	0.1	0.00	0.00	0.00

(without loads at constraints)

Sum of Loads

LC Title	PXX[kN]	PYY[kN]	PZZ[kN]
101 ULS1	7.7	0.0	2.5
102 ULS2	-7.7	0.0	2.5
103 ULS3	0.0	7.7	2.5
104 ULS4	7.7	0.0	1.8
105 ULS5	-7.7	0.0	1.8
106 ULS6	0.0	7.7	1.8
201 EX+0.3EY	1.1	0.3	1.8
301 SLS1	5.1	0.0	1.8
302 SLS2	-5.1	0.0	1.8
303 SLS3	0.0	5.1	1.8

Beam Forces and Moments

Loadcase 101 ULS1

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-2.4	6.57	0.00	0.00	0.00	4.46
	0.055	-2.3	6.57	0.00	0.00	0.00	4.10
	0.110	-2.3	6.57	0.00	0.00	0.00	3.74
	0.165	-2.3	6.57	0.00	0.00	0.00	3.38
	0.220	-2.3	6.57	0.00	0.00	0.00	3.01
102	0.000	-2.3	7.55	0.00	0.00	0.00	3.01
	0.335	-2.2	7.55	0.00	0.00	0.00	0.48
	0.670	-2.1	7.55	0.00	0.00	0.00	-2.05
	1.005	-2.0	7.55	0.00	0.00	0.00	-4.58
	1.340	-1.9	7.55	0.00	0.00	0.00	-7.11
103	0.000	-1.9	9.89	0.00	0.00	0.00	-7.11
	0.073	-1.9	9.89	0.00	0.00	0.00	-7.83
	0.145	-1.9	9.89	0.00	0.00	0.00	-8.54
	0.218	-1.9	9.89	0.00	0.00	0.00	-9.26
	0.290	-1.8	9.89	0.00	0.00	0.00	-9.98
104	0.000	-1.9	-4.38	0.00	0.00	0.00	-9.98
	0.390	-1.7	-4.38	0.00	0.00	0.00	-8.27
	0.780	-1.6	-4.38	0.00	0.00	0.00	-6.56
	1.170	-1.5	-4.38	0.00	0.00	0.00	-4.85

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 101 ULS1

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
104	1.560	-1.4	-4.38	0.00	0.00	0.00	-3.14
105	0.000	-1.4	-1.52	0.00	0.00	0.00	-3.14
	0.320	-1.3	-1.52	0.00	0.00	0.00	-2.65
	0.640	-1.2	-1.52	0.00	0.00	0.00	-2.17
	0.960	-1.2	-1.52	0.00	0.00	0.00	-1.68
	1.280	-1.1	-1.52	0.00	0.00	0.00	-1.20
106	0.000	-0.2	-1.52	0.00	0.00	0.00	-1.20
	0.197	-0.2	-1.52	0.00	0.00	0.00	-0.90
	0.395	-0.1	-1.52	0.00	0.00	0.00	-0.60
	0.593	-0.1	-1.52	0.00	0.00	0.00	-0.30
	0.790	0.0	-1.52	0.00	0.00	0.00	0.00
201	0.000	14.3	0.00	-0.01	0.00	0.00	0.00
	0.120	14.3	0.00	-0.04	0.00	0.00	0.00
	0.240	14.3	0.00	-0.06	0.00	-0.01	0.00
	0.360	14.3	0.00	-0.08	0.00	-0.02	0.00
	0.480	14.3	0.00	-0.11	0.00	-0.03	0.00

Nodal Displacements

Loadcase 101 ULS1

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.086	0.000	0.001	0.000	0.737	0.000
3	-0.784	0.000	0.007	0.000	-1.722	0.000
4	0.019	0.000	0.008	0.000	-3.943	0.000
5	14.564	0.000	0.013	0.000	-13.111	0.000
6	34.162	0.000	0.016	0.000	-16.939	0.000
7	47.888	0.000	0.016	0.000	-17.592	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 101 ULS1

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1	6.6	0.0	-2.4	0.00	-4.46	
14	-14.3	0.0	-0.1	0.00	0.03	0.00

E

load case 101

group	Energy [kNm]	=% of sum
1	0.056098	99.759003
2	0.000136	0.241001
sum	0.056234	100.000000

Beam Forces and Moments

Loadcase 102 ULS2

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-2.4	-6.57	0.00	0.00	0.00	-4.46
	0.055	-2.3	-6.57	0.00	0.00	0.00	-4.10
	0.110	-2.3	-6.57	0.00	0.00	0.00	-3.74
	0.165	-2.3	-6.57	0.00	0.00	0.00	-3.38
	0.220	-2.3	-6.57	0.00	0.00	0.00	-3.01
102	0.000	-2.3	-7.55	0.00	0.00	0.00	-3.01
	0.335	-2.2	-7.55	0.00	0.00	0.00	-0.48
	0.670	-2.1	-7.55	0.00	0.00	0.00	2.05
	1.005	-2.0	-7.55	0.00	0.00	0.00	4.58
	1.340	-1.9	-7.55	0.00	0.00	0.00	7.11
103	0.000	-1.9	-9.89	0.00	0.00	0.00	7.11
	0.073	-1.9	-9.89	0.00	0.00	0.00	7.83
	0.145	-1.9	-9.89	0.00	0.00	0.00	8.54
	0.218	-1.9	-9.89	0.00	0.00	0.00	9.26

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 102 ULS2

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
103	0.290	-1.8	-9.89	0.00	0.00	0.00	9.98
104	0.000	-1.9	4.38	0.00	0.00	0.00	9.98
	0.390	-1.7	4.38	0.00	0.00	0.00	8.27
	0.780	-1.6	4.38	0.00	0.00	0.00	6.56
	1.170	-1.5	4.38	0.00	0.00	0.00	4.85
	1.560	-1.4	4.38	0.00	0.00	0.00	3.14
105	0.000	-1.4	1.52	0.00	0.00	0.00	3.14
	0.320	-1.3	1.52	0.00	0.00	0.00	2.65
	0.640	-1.2	1.52	0.00	0.00	0.00	2.17
	0.960	-1.2	1.52	0.00	0.00	0.00	1.68
	1.280	-1.1	1.52	0.00	0.00	0.00	1.20
106	0.000	-0.2	1.52	0.00	0.00	0.00	1.20
	0.197	-0.2	1.52	0.00	0.00	0.00	0.90
	0.395	-0.1	1.52	0.00	0.00	0.00	0.60
	0.593	-0.1	1.52	0.00	0.00	0.00	0.30
	0.790	0.0	1.52	0.00	0.00	0.00	0.00
201	0.000	-14.3	0.00	-0.01	0.00	0.00	0.00
	0.120	-14.3	0.00	-0.04	0.00	0.00	0.00
	0.240	-14.3	0.00	-0.06	0.00	-0.01	0.00
	0.360	-14.3	0.00	-0.08	0.00	-0.02	0.00
	0.480	-14.3	0.00	-0.11	0.00	-0.03	0.00

Nodal Displacements

Loadcase 102 ULS2

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.086	0.000	0.001	0.000	-0.737	0.000
3	0.784	0.000	0.007	0.000	1.722	0.000
4	-0.019	0.000	0.008	0.000	3.943	0.000
5	-14.564	0.000	0.013	0.000	13.111	0.000
6	-34.162	0.000	0.016	0.000	16.939	0.000
7	-47.888	0.000	0.016	0.000	17.592	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 102 ULS2

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1	-6.6	0.0	-2.4	0.00	4.46	
14	14.3	0.0	-0.1	0.00	0.03	0.00

E

load case 102

group	Energy [kNm]	=% of sum
1	0.056098	99.759003
2	0.000136	0.241001
sum	0.056234	100.000000

Beam Forces and Moments

Loadcase 103 ULS3

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-2.4	0.00	-4.33	0.00	1.81	0.00
	0.055	-2.3	0.00	-4.33	0.00	1.58	0.00
	0.110	-2.3	0.00	-4.33	0.00	1.34	0.00
	0.165	-2.3	0.00	-4.33	0.00	1.10	0.00
	0.220	-2.3	0.00	-4.33	0.00	0.86	0.00
102	0.000	-2.3	0.00	-5.31	0.00	0.86	0.00
	0.335	-2.2	0.00	-5.31	0.00	-0.92	0.00
	0.670	-2.1	0.00	-5.31	0.00	-2.69	0.00
	1.005	-2.0	0.00	-5.31	0.00	-4.47	0.00

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 103 ULS3

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
102	1.340	-1.9	0.00	-5.31	0.00	-6.25	0.00
103	0.000	-1.9	0.00	-7.64	0.00	-6.25	0.00
	0.073	-1.9	0.00	-7.64	0.00	-6.81	0.00
	0.145	-1.9	0.00	-7.64	0.00	-7.36	0.00
	0.218	-1.9	0.00	-7.64	0.00	-7.91	0.00
	0.290	-1.8	0.00	-7.64	0.00	-8.46	0.00
104	0.000	-1.9	0.00	4.38	0.00	-9.98	0.00
	0.390	-1.7	0.00	4.38	0.00	-8.27	0.00
	0.780	-1.6	0.00	4.38	0.00	-6.56	0.00
	1.170	-1.5	0.00	4.38	0.00	-4.85	0.00
	1.560	-1.4	0.00	4.38	0.00	-3.14	0.00
105	0.000	-1.4	0.00	1.52	0.00	-3.14	0.00
	0.320	-1.3	0.00	1.52	0.00	-2.65	0.00
	0.640	-1.2	0.00	1.52	0.00	-2.17	0.00
	0.960	-1.2	0.00	1.52	0.00	-1.68	0.00
	1.280	-1.1	0.00	1.52	0.00	-1.20	0.00
106	0.000	-0.2	0.00	1.52	0.00	-1.20	0.00
	0.197	-0.2	0.00	1.52	0.00	-0.90	0.00
	0.395	-0.1	0.00	1.52	0.00	-0.60	0.00
	0.593	-0.1	0.00	1.52	0.00	-0.30	0.00
	0.790	0.0	0.00	1.52	0.00	0.00	0.00
201	0.000	0.0	12.03	-0.01	1.51	0.00	0.00
	0.120	0.0	12.03	-0.04	1.51	0.00	-1.44
	0.240	0.0	12.03	-0.06	1.51	-0.01	-2.89
	0.360	0.0	12.03	-0.08	1.51	-0.02	-4.33
	0.480	0.0	12.03	-0.11	1.51	-0.03	-5.77

Nodal Displacements

Loadcase 103 ULS3

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	-0.032	0.001	-0.264	0.000	0.000
3	0.000	0.827	0.007	2.971	0.000	0.000
4	0.000	1.952	0.008	4.883	0.000	0.000
5	0.000	17.965	0.013	14.052	0.000	0.000
6	0.000	38.766	0.016	17.880	0.000	0.000
7	0.000	53.235	0.016	18.533	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 103 ULS3

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1		4.3	-2.4	1.81		
14		-12.0	-0.1	-1.51	0.03	-5.77

E

load case 103

group	Energy [kNm]	=% of sum
1	0.051642	76.995071
2	0.015430	23.004929
sum	0.067071	100.000000

Beam Forces and Moments

Loadcase 104 ULS4

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-1.7	6.57	0.00	0.00	0.00	4.46
	0.055	-1.7	6.57	0.00	0.00	0.00	4.10
	0.110	-1.7	6.57	0.00	0.00	0.00	3.74
	0.165	-1.7	6.57	0.00	0.00	0.00	3.38

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 104 ULS4

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.220	-1.7	6.57	0.00	0.00	0.00	3.01
102	0.000	-1.7	7.55	0.00	0.00	0.00	3.01
	0.335	-1.6	7.55	0.00	0.00	0.00	0.48
	0.670	-1.6	7.55	0.00	0.00	0.00	-2.05
	1.005	-1.5	7.55	0.00	0.00	0.00	-4.58
	1.340	-1.4	7.55	0.00	0.00	0.00	-7.11
103	0.000	-1.4	9.89	0.00	0.00	0.00	-7.11
	0.073	-1.4	9.89	0.00	0.00	0.00	-7.83
	0.145	-1.4	9.89	0.00	0.00	0.00	-8.54
	0.218	-1.4	9.89	0.00	0.00	0.00	-9.26
	0.290	-1.4	9.89	0.00	0.00	0.00	-9.98
104	0.000	-1.4	-4.38	0.00	0.00	0.00	-9.98
	0.390	-1.3	-4.38	0.00	0.00	0.00	-8.27
	0.780	-1.2	-4.38	0.00	0.00	0.00	-6.56
	1.170	-1.1	-4.38	0.00	0.00	0.00	-4.85
	1.560	-1.1	-4.38	0.00	0.00	0.00	-3.14
105	0.000	-1.1	-1.52	0.00	0.00	0.00	-3.14
	0.320	-1.0	-1.52	0.00	0.00	0.00	-2.65
	0.640	-0.9	-1.52	0.00	0.00	0.00	-2.17
	0.960	-0.9	-1.52	0.00	0.00	0.00	-1.68
	1.280	-0.8	-1.52	0.00	0.00	0.00	-1.20
106	0.000	-0.2	-1.52	0.00	0.00	0.00	-1.20
	0.197	-0.1	-1.52	0.00	0.00	0.00	-0.90
	0.395	-0.1	-1.52	0.00	0.00	0.00	-0.60
	0.593	0.0	-1.52	0.00	0.00	0.00	-0.30
	0.790	0.0	-1.52	0.00	0.00	0.00	0.00
201	0.000	14.3	0.00	-0.01	0.00	0.00	0.00
	0.120	14.3	0.00	-0.03	0.00	0.00	0.00
	0.240	14.3	0.00	-0.04	0.00	-0.01	0.00
	0.360	14.3	0.00	-0.06	0.00	-0.01	0.00
	0.480	14.3	0.00	-0.08	0.00	-0.02	0.00

Nodal Displacements

Loadcase 104 ULS4

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.086	0.000	0.001	0.000	0.737	0.000
3	-0.784	0.000	0.005	0.000	-1.722	0.000
4	0.019	0.000	0.006	0.000	-3.943	0.000
5	14.564	0.000	0.010	0.000	-13.111	0.000
6	34.162	0.000	0.012	0.000	-16.939	0.000
7	47.888	0.000	0.012	0.000	-17.592	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 104 ULS4

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1	6.6	0.0	-1.7	0.00	-4.46	
14	-14.3	0.0	-0.1	0.00	0.02	0.00

E

load case 104

group	Energy [kNm]	=% of sum
1	0.056092	99.759209
2	0.000135	0.240794
sum	0.056227	100.000000

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 105 ULS5

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-1.7	-6.57	0.00	0.00	0.00	-4.46
	0.055	-1.7	-6.57	0.00	0.00	0.00	-4.10
	0.110	-1.7	-6.57	0.00	0.00	0.00	-3.74
	0.165	-1.7	-6.57	0.00	0.00	0.00	-3.38
	0.220	-1.7	-6.57	0.00	0.00	0.00	-3.01
102	0.000	-1.7	-7.55	0.00	0.00	0.00	-3.01
	0.335	-1.6	-7.55	0.00	0.00	0.00	-0.48
	0.670	-1.6	-7.55	0.00	0.00	0.00	2.05
	1.005	-1.5	-7.55	0.00	0.00	0.00	4.58
	1.340	-1.4	-7.55	0.00	0.00	0.00	7.11
103	0.000	-1.4	-9.89	0.00	0.00	0.00	7.11
	0.073	-1.4	-9.89	0.00	0.00	0.00	7.83
	0.145	-1.4	-9.89	0.00	0.00	0.00	8.54
	0.218	-1.4	-9.89	0.00	0.00	0.00	9.26
	0.290	-1.4	-9.89	0.00	0.00	0.00	9.98
104	0.000	-1.4	4.38	0.00	0.00	0.00	9.98
	0.390	-1.3	4.38	0.00	0.00	0.00	8.27
	0.780	-1.2	4.38	0.00	0.00	0.00	6.56
	1.170	-1.1	4.38	0.00	0.00	0.00	4.85
	1.560	-1.1	4.38	0.00	0.00	0.00	3.14
105	0.000	-1.1	1.52	0.00	0.00	0.00	3.14
	0.320	-1.0	1.52	0.00	0.00	0.00	2.65
	0.640	-0.9	1.52	0.00	0.00	0.00	2.17
	0.960	-0.9	1.52	0.00	0.00	0.00	1.68
	1.280	-0.8	1.52	0.00	0.00	0.00	1.20
106	0.000	-0.2	1.52	0.00	0.00	0.00	1.20
	0.197	-0.1	1.52	0.00	0.00	0.00	0.90
	0.395	-0.1	1.52	0.00	0.00	0.00	0.60
	0.593	0.0	1.52	0.00	0.00	0.00	0.30
	0.790	0.0	1.52	0.00	0.00	0.00	0.00
201	0.000	-14.3	0.00	-0.01	0.00	0.00	0.00
	0.120	-14.3	0.00	-0.03	0.00	0.00	0.00
	0.240	-14.3	0.00	-0.04	0.00	-0.01	0.00
	0.360	-14.3	0.00	-0.06	0.00	-0.01	0.00
	0.480	-14.3	0.00	-0.08	0.00	-0.02	0.00

Nodal Displacements

Loadcase 105 ULS5

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.086	0.000	0.001	0.000	-0.737	0.000
3	0.784	0.000	0.005	0.000	1.722	0.000
4	-0.019	0.000	0.006	0.000	3.943	0.000
5	-14.564	0.000	0.010	0.000	13.111	0.000
6	-34.162	0.000	0.012	0.000	16.939	0.000
7	-47.888	0.000	0.012	0.000	17.592	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 105 ULS5

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1	-6.6	0.0	-1.7	0.00	4.46	
14	14.3	0.0	-0.1	0.00	0.02	0.00

E

load case 105

group	Energy [kNm]	=% of sum
1	0.056092	99.759209
2	0.000135	0.240794
sum	0.056227	100.000000

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 106 ULS6

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	-1.7	0.00	-4.33	0.00	1.81	0.00
	0.055	-1.7	0.00	-4.33	0.00	1.58	0.00
	0.110	-1.7	0.00	-4.33	0.00	1.34	0.00
	0.165	-1.7	0.00	-4.33	0.00	1.10	0.00
	0.220	-1.7	0.00	-4.33	0.00	0.86	0.00
102	0.000	-1.7	0.00	-5.31	0.00	0.86	0.00
	0.335	-1.6	0.00	-5.31	0.00	-0.92	0.00
	0.670	-1.6	0.00	-5.31	0.00	-2.69	0.00
	1.005	-1.5	0.00	-5.31	0.00	-4.47	0.00
	1.340	-1.4	0.00	-5.31	0.00	-6.25	0.00
103	0.000	-1.4	0.00	-7.64	0.00	-6.25	0.00
	0.073	-1.4	0.00	-7.64	0.00	-6.81	0.00
	0.145	-1.4	0.00	-7.64	0.00	-7.36	0.00
	0.218	-1.4	0.00	-7.64	0.00	-7.91	0.00
	0.290	-1.4	0.00	-7.64	0.00	-8.46	0.00
104	0.000	-1.4	0.00	4.38	0.00	-9.98	0.00
	0.390	-1.3	0.00	4.38	0.00	-8.27	0.00
	0.780	-1.2	0.00	4.38	0.00	-6.56	0.00
	1.170	-1.1	0.00	4.38	0.00	-4.85	0.00
	1.560	-1.1	0.00	4.38	0.00	-3.14	0.00
105	0.000	-1.1	0.00	1.52	0.00	-3.14	0.00
	0.320	-1.0	0.00	1.52	0.00	-2.65	0.00
	0.640	-0.9	0.00	1.52	0.00	-2.17	0.00
	0.960	-0.9	0.00	1.52	0.00	-1.68	0.00
	1.280	-0.8	0.00	1.52	0.00	-1.20	0.00
106	0.000	-0.2	0.00	1.52	0.00	-1.20	0.00
	0.197	-0.1	0.00	1.52	0.00	-0.90	0.00
	0.395	-0.1	0.00	1.52	0.00	-0.60	0.00
	0.593	0.0	0.00	1.52	0.00	-0.30	0.00
	0.790	0.0	0.00	1.52	0.00	0.00	0.00
201	0.000	0.0	12.03	-0.01	1.51	0.00	0.00
	0.120	0.0	12.03	-0.03	1.51	0.00	-1.44
	0.240	0.0	12.03	-0.04	1.51	-0.01	-2.89
	0.360	0.0	12.03	-0.06	1.51	-0.01	-4.33
	0.480	0.0	12.03	-0.08	1.51	-0.02	-5.77

Nodal Displacements

Loadcase 106 ULS6

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	-0.032	0.001	-0.264	0.000	0.000
3	0.000	0.827	0.005	2.971	0.000	0.000
4	0.000	1.952	0.006	4.883	0.000	0.000
5	0.000	17.965	0.010	14.052	0.000	0.000
6	0.000	38.766	0.012	17.880	0.000	0.000
7	0.000	53.235	0.012	18.533	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 106 ULS6

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
1		4.3	-1.7	1.81		
14		-12.0	-0.1	-1.51	0.02	-5.77

E

load case 106

group	Energy [kNm]	=% of sum
1	0.051635	76.992966
2	0.015430	23.007027
sum	0.067065	100.000000

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 201 EX+0.3EY

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-1.7	1.39	-0.29	0.00	0.13	0.89
	0.055	-1.7	1.39	-0.30	0.00	0.11	0.81
	0.110	-1.7	1.40	-0.30	0.00	0.09	0.73
	0.165	-1.7	1.41	-0.30	0.00	0.08	0.66
	0.220	-1.7	1.41	-0.30	0.00	0.06	0.58
102	0.000	-1.7	1.41	-0.30	0.00	0.06	0.58
	0.335	-1.6	1.46	-0.32	0.00	-0.04	0.10
	0.670	-1.6	1.50	-0.33	0.00	-0.15	-0.39
	1.005	-1.5	1.54	-0.34	0.00	-0.26	-0.90
	1.340	-1.4	1.58	-0.35	0.00	-0.38	-1.42
103	0.000	-1.4	1.58	-0.35	0.00	-0.38	-1.42
	0.073	-1.4	1.59	-0.35	0.00	-0.40	-1.54
	0.145	-1.4	1.60	-0.36	0.00	-0.43	-1.66
	0.218	-1.4	1.60	-0.36	0.00	-0.45	-1.77
	0.290	-1.4	1.61	-0.36	0.00	-0.48	-1.89
104	0.000	-1.4	-0.83	0.25	0.00	-0.57	-1.89
	0.390	-1.3	-0.78	0.23	0.00	-0.47	-1.58
	0.780	-1.2	-0.73	0.22	0.00	-0.38	-1.28
	1.170	-1.1	-0.68	0.20	0.00	-0.30	-1.01
	1.560	-1.1	-0.63	0.19	0.00	-0.22	-0.75
105	0.000	-1.1	-0.63	0.19	0.00	-0.22	-0.75
	0.320	-1.0	-0.59	0.18	0.00	-0.17	-0.55
	0.640	-0.9	-0.56	0.17	0.00	-0.11	-0.37
	0.960	-0.9	-0.52	0.15	0.00	-0.06	-0.20
	1.280	-0.8	-0.48	0.14	0.00	-0.01	-0.04
106	0.000	-0.2	-0.10	0.03	0.00	-0.01	-0.04
	0.197	-0.1	-0.07	0.02	0.00	-0.01	-0.02
	0.395	-0.1	-0.05	0.01	0.00	0.00	-0.01
	0.593	0.0	-0.02	0.01	0.00	0.00	0.00
	0.790	0.0	0.00	0.00	0.00	0.00	0.00
201	0.000	2.4	0.61	-0.01	0.09	0.00	0.00
	0.120	2.4	0.61	-0.03	0.09	0.00	-0.07
	0.240	2.5	0.62	-0.04	0.09	-0.01	-0.15
	0.360	2.5	0.62	-0.06	0.09	-0.01	-0.22
	0.480	2.5	0.62	-0.08	0.09	-0.02	-0.30

Nodal Displacements

Loadcase 201 EX+0.3EY

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.017	-0.002	0.001	-0.019	0.145	0.000
3	-0.155	0.037	0.005	0.164	-0.341	0.000
4	0.003	0.100	0.006	0.276	-0.771	0.000
5	2.824	1.016	0.010	0.819	-2.580	0.000
6	6.686	2.232	0.012	1.019	-3.246	0.000
7	9.259	3.039	0.012	1.023	-3.260	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 201 EX+0.3EY

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1	1.4	0.3	-1.7	0.13	-0.89	
14	-2.5	-0.6	-0.1	-0.09	0.02	-0.30

E

load case 201

group	Energy [kNm]	=% of sum
1	0.002376	98.067924
2	0.000047	1.932072
sum	0.002423	100.000000

1828 AGIOS NIKOLAOS CITY 2 MAST
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Beam Forces and Moments

Loadcase 301 SLS1

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-1.7	4.38	0.00	0.00	0.00	2.97
	0.055	-1.7	4.38	0.00	0.00	0.00	2.73
	0.110	-1.7	4.38	0.00	0.00	0.00	2.49
	0.165	-1.7	4.38	0.00	0.00	0.00	2.25
	0.220	-1.7	4.38	0.00	0.00	0.00	2.01
102	0.000	-1.7	5.04	0.00	0.00	0.00	2.01
	0.335	-1.6	5.04	0.00	0.00	0.00	0.32
	0.670	-1.6	5.04	0.00	0.00	0.00	-1.36
	1.005	-1.5	5.04	0.00	0.00	0.00	-3.05
	1.340	-1.4	5.04	0.00	0.00	0.00	-4.74
103	0.000	-1.4	6.59	0.00	0.00	0.00	-4.74
	0.073	-1.4	6.59	0.00	0.00	0.00	-5.22
	0.145	-1.4	6.59	0.00	0.00	0.00	-5.70
	0.218	-1.4	6.59	0.00	0.00	0.00	-6.18
	0.290	-1.4	6.59	0.00	0.00	0.00	-6.65
104	0.000	-1.4	-2.92	0.00	0.00	0.00	-6.65
	0.390	-1.3	-2.92	0.00	0.00	0.00	-5.51
	0.780	-1.2	-2.92	0.00	0.00	0.00	-4.37
	1.170	-1.1	-2.92	0.00	0.00	0.00	-3.23
	1.560	-1.1	-2.92	0.00	0.00	0.00	-2.09
105	0.000	-1.1	-1.01	0.00	0.00	0.00	-2.09
	0.320	-1.0	-1.01	0.00	0.00	0.00	-1.77
	0.640	-0.9	-1.01	0.00	0.00	0.00	-1.44
	0.960	-0.9	-1.01	0.00	0.00	0.00	-1.12
	1.280	-0.8	-1.01	0.00	0.00	0.00	-0.80
106	0.000	-0.2	-1.01	0.00	0.00	0.00	-0.80
	0.197	-0.1	-1.01	0.00	0.00	0.00	-0.60
	0.395	-0.1	-1.01	0.00	0.00	0.00	-0.40
	0.593	0.0	-1.01	0.00	0.00	0.00	-0.20
	0.790	0.0	-1.01	0.00	0.00	0.00	0.00
201	0.000	9.5	0.00	-0.01	0.00	0.00	0.00
	0.120	9.5	0.00	-0.03	0.00	0.00	0.00
	0.240	9.5	0.00	-0.04	0.00	-0.01	0.00
	0.360	9.5	0.00	-0.06	0.00	-0.01	0.00
	0.480	9.5	0.00	-0.08	0.00	-0.02	0.00

Nodal Displacements

Loadcase 301 SLS1

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.058	0.000	0.001	0.000	0.491	0.000
3	-0.523	0.000	0.005	0.000	-1.148	0.000
4	0.013	0.000	0.006	0.000	-2.628	0.000
5	9.710	0.000	0.010	0.000	-8.741	0.000
6	22.775	0.000	0.012	0.000	-11.293	0.000
7	31.925	0.000	0.012	0.000	-11.728	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 301 SLS1

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
1	4.4	0.0	-1.7	0.00	-2.97	
14	-9.5	0.0	-0.1	0.00	0.02	0.00

E

load case 301

group	Energy [kNm]	=% of sum
1	0.024934	99.758888
2	0.000060	0.241108
sum	0.024994	99.999992

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Beam Forces and Moments

Loadcase 302 SLS2

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-1.7	-4.38	0.00	0.00	0.00	-2.97
	0.055	-1.7	-4.38	0.00	0.00	0.00	-2.73
	0.110	-1.7	-4.38	0.00	0.00	0.00	-2.49
	0.165	-1.7	-4.38	0.00	0.00	0.00	-2.25
	0.220	-1.7	-4.38	0.00	0.00	0.00	-2.01
102	0.000	-1.7	-5.04	0.00	0.00	0.00	-2.01
	0.335	-1.6	-5.04	0.00	0.00	0.00	-0.32
	0.670	-1.6	-5.04	0.00	0.00	0.00	1.36
	1.005	-1.5	-5.04	0.00	0.00	0.00	3.05
	1.340	-1.4	-5.04	0.00	0.00	0.00	4.74
103	0.000	-1.4	-6.59	0.00	0.00	0.00	4.74
	0.073	-1.4	-6.59	0.00	0.00	0.00	5.22
	0.145	-1.4	-6.59	0.00	0.00	0.00	5.70
	0.218	-1.4	-6.59	0.00	0.00	0.00	6.18
	0.290	-1.4	-6.59	0.00	0.00	0.00	6.65
104	0.000	-1.4	2.92	0.00	0.00	0.00	6.65
	0.390	-1.3	2.92	0.00	0.00	0.00	5.51
	0.780	-1.2	2.92	0.00	0.00	0.00	4.37
	1.170	-1.1	2.92	0.00	0.00	0.00	3.23
	1.560	-1.1	2.92	0.00	0.00	0.00	2.09
105	0.000	-1.1	1.01	0.00	0.00	0.00	2.09
	0.320	-1.0	1.01	0.00	0.00	0.00	1.77
	0.640	-0.9	1.01	0.00	0.00	0.00	1.44
	0.960	-0.9	1.01	0.00	0.00	0.00	1.12
	1.280	-0.8	1.01	0.00	0.00	0.00	0.80
106	0.000	-0.2	1.01	0.00	0.00	0.00	0.80
	0.197	-0.1	1.01	0.00	0.00	0.00	0.60
	0.395	-0.1	1.01	0.00	0.00	0.00	0.40
	0.593	0.0	1.01	0.00	0.00	0.00	0.20
	0.790	0.0	1.01	0.00	0.00	0.00	0.00
201	0.000	-9.5	0.00	-0.01	0.00	0.00	0.00
	0.120	-9.5	0.00	-0.03	0.00	0.00	0.00
	0.240	-9.5	0.00	-0.04	0.00	-0.01	0.00
	0.360	-9.5	0.00	-0.06	0.00	-0.01	0.00
	0.480	-9.5	0.00	-0.08	0.00	-0.02	0.00

Nodal Displacements

Loadcase 302 SLS2

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.058	0.000	0.001	0.000	-0.491	0.000
3	0.523	0.000	0.005	0.000	1.148	0.000
4	-0.013	0.000	0.006	0.000	2.628	0.000
5	-9.710	0.000	0.010	0.000	8.741	0.000
6	-22.775	0.000	0.012	0.000	11.293	0.000
7	-31.925	0.000	0.012	0.000	11.728	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 302 SLS2

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1	-4.4	0.0	-1.7	0.00	2.97	
14	9.5	0.0	-0.1	0.00	0.02	0.00

E

load case 302

group	Energy [kNm]	=% of sum
1	0.024934	99.758888
2	0.000060	0.241108
sum	0.024994	99.999992

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Beam Forces and Moments

Loadcase 303 SLS3

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	-1.7	0.00	-2.88	0.00	1.21	0.00
	0.055	-1.7	0.00	-2.88	0.00	1.05	0.00
	0.110	-1.7	0.00	-2.88	0.00	0.89	0.00
	0.165	-1.7	0.00	-2.88	0.00	0.73	0.00
	0.220	-1.7	0.00	-2.88	0.00	0.58	0.00
102	0.000	-1.7	0.00	-3.54	0.00	0.58	0.00
	0.335	-1.6	0.00	-3.54	0.00	-0.61	0.00
	0.670	-1.6	0.00	-3.54	0.00	-1.80	0.00
	1.005	-1.5	0.00	-3.54	0.00	-2.98	0.00
	1.340	-1.4	0.00	-3.54	0.00	-4.17	0.00
103	0.000	-1.4	0.00	-5.09	0.00	-4.17	0.00
	0.073	-1.4	0.00	-5.09	0.00	-4.54	0.00
	0.145	-1.4	0.00	-5.09	0.00	-4.90	0.00
	0.218	-1.4	0.00	-5.09	0.00	-5.28	0.00
	0.290	-1.4	0.00	-5.09	0.00	-5.64	0.00
104	0.000	-1.4	0.00	2.92	0.00	-6.65	0.00
	0.390	-1.3	0.00	2.92	0.00	-5.51	0.00
	0.780	-1.2	0.00	2.92	0.00	-4.37	0.00
	1.170	-1.1	0.00	2.92	0.00	-3.23	0.00
	1.560	-1.1	0.00	2.92	0.00	-2.09	0.00
105	0.000	-1.1	0.00	1.01	0.00	-2.09	0.00
	0.320	-1.0	0.00	1.01	0.00	-1.77	0.00
	0.640	-0.9	0.00	1.01	0.00	-1.44	0.00
	0.960	-0.9	0.00	1.01	0.00	-1.12	0.00
	1.280	-0.8	0.00	1.01	0.00	-0.80	0.00
106	0.000	-0.2	0.00	1.01	0.00	-0.80	0.00
	0.197	-0.1	0.00	1.01	0.00	-0.60	0.00
	0.395	-0.1	0.00	1.01	0.00	-0.40	0.00
	0.593	0.0	0.00	1.01	0.00	-0.20	0.00
	0.790	0.0	0.00	1.01	0.00	0.00	0.00
201	0.000	0.0	8.02	-0.01	1.01	0.00	0.00
	0.120	0.0	8.02	-0.03	1.01	0.00	-0.96
	0.240	0.0	8.02	-0.04	1.01	-0.01	-1.92
	0.360	0.0	8.02	-0.06	1.01	-0.01	-2.89
	0.480	0.0	8.02	-0.08	1.01	-0.02	-3.85

Nodal Displacements

Loadcase 303 SLS3

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	-0.022	0.001	-0.176	0.000	0.000
3	0.000	0.551	0.005	1.981	0.000	0.000
4	0.000	1.301	0.006	3.255	0.000	0.000
5	0.000	11.977	0.010	9.368	0.000	0.000
6	0.000	25.844	0.012	11.920	0.000	0.000
7	0.000	35.490	0.012	12.355	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 303 SLS3

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
1		2.9	-1.7	1.21		
14		-8.0	-0.1	-1.01	0.02	-3.85

Sum of Reactions and Loads

LC Title	PXX[kN]	PYY[kN]	PZZ[kN]
101 ULS1	-7.7	0.0	-2.5
	7.7	0.0	2.5

1828 AGIOS NIKOLAOS CITY 2 MAST
SYNDYASMOI FORTISEWN

Sum of Reactions and Loads

LC Title	PXX[kN]	PYY[kN]	PZZ[kN]
102 ULS2	7.7	0.0	-2.5
	-7.7	0.0	2.5
103 ULS3	0.0	-7.7	-2.5
	0.0	7.7	2.5
104 ULS4	-7.7	0.0	-1.8
	7.7	0.0	1.8
105 ULS5	7.7	0.0	-1.8
	-7.7	0.0	1.8
106 ULS6	0.0	-7.7	-1.8
	0.0	7.7	1.8
201 EX+0.3EY	-1.1	-0.3	-1.8
	1.1	0.3	1.8
301 SLS1	-5.1	0.0	-1.8
	5.1	0.0	1.8
302 SLS2	5.1	0.0	-1.8
	-5.1	0.0	1.8
303 SLS3	0.0	-5.1	-1.8
	0.0	5.1	1.8

E

load case 303

group	Energy [kNm]	=% of sum
1	0.022953	76.996162
2	0.006858	23.003832
sum	0.029811	100.000000

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

Materials

No. 1 S 235 (EN 10025-2)

Considered Load Cases

101	102	103	104	105	106
201					

Stresses utilisation

Beam	x[m]	NoS	LC	M	A	sig-	sig+	tau	sig-I	sig-II	sig-v	N/Npl*
101	0.000	2	MIN	1		0.059	0.052	0.010			0.059	
			MAX	1		0.279	0.271	0.045			0.279	
	0.055	2	MIN	1		0.054	0.047	0.010			0.054	
			MAX	1		0.257	0.249	0.045			0.257	
	0.110	2	MIN	1		0.049	0.042	0.010			0.049	
			MAX	1		0.235	0.227	0.045			0.235	
	0.165	2	MIN	1		0.044	0.037	0.010			0.044	
			MAX	1		0.212	0.204	0.045			0.212	
	0.220	2	MIN	1		0.039	0.033	0.010			0.039	
			MAX	1		0.190	0.182	0.045			0.190	
102	0.000	2	MIN	1		0.039	0.033	0.010			0.039	
			MAX	1		0.190	0.182	0.052			0.190	
	0.335	2	MIN	1		0.010	0.003	0.010			0.013	
			MAX	1		0.061	0.053	0.052			0.061	
	0.670	2	MIN	1		0.029	0.023	0.011			0.029	
			MAX	1		0.170	0.163	0.052			0.170	
	1.005	2	MIN	1		0.061	0.055	0.011			0.061	
			MAX	1		0.286	0.279	0.052			0.286	
	1.340	2	MIN	1		0.094	0.088	0.011			0.094	
			MAX	1		0.441	0.435	0.052			0.441	
103	0.000	2	MIN	1		0.094	0.088	0.011			0.094	
			MAX	1		0.441	0.435	0.068			0.441	
	0.073	2	MIN	1		0.101	0.095	0.011			0.101	
			MAX	1		0.486	0.479	0.068			0.486	
	0.145	2	MIN	1		0.108	0.102	0.011			0.108	
			MAX	1		0.530	0.523	0.068			0.530	
	0.218	2	MIN	1		0.115	0.110	0.011			0.115	
			MAX	1		0.574	0.567	0.068			0.574	
	0.290	2	MIN	1		0.123	0.117	0.011			0.123	
			MAX	1		0.618	0.611	0.068			0.618	
104	0.000	2	MIN	1		0.124	0.119	0.006			0.124	
			MAX	1		0.618	0.611	0.030			0.618	
	0.390	2	MIN	1		0.104	0.099	0.006			0.104	
			MAX	1		0.512	0.506	0.030			0.512	
	0.780	2	MIN	1		0.085	0.080	0.005			0.085	
			MAX	1		0.407	0.401	0.030			0.407	
	1.170	2	MIN	1		0.067	0.062	0.005			0.067	
			MAX	1		0.301	0.296	0.030			0.301	
	1.560	2	MIN	1		0.050	0.046	0.005			0.050	
			MAX	1		0.196	0.191	0.030			0.196	
105	0.000	1	MIN	1		0.063	0.059	0.004			0.063	
			MAX	1		0.246	0.241	0.010			0.246	
	0.320	1	MIN	1		0.047	0.043	0.004			0.047	
			MAX	1		0.208	0.204	0.010			0.208	
	0.640	1	MIN	1		0.032	0.028	0.004			0.032	
			MAX	1		0.170	0.166	0.010			0.170	
	0.960	1	MIN	1		0.018	0.014	0.004			0.018	
			MAX	1		0.133	0.129	0.010			0.133	
	1.280	1	MIN	1		0.005	0.002	0.003			0.005	
			MAX	1		0.095	0.091	0.010			0.095	

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Stresses utilisation

Beam	x[m]	NoS	LC	M	A	sig-	sig+	tau	sig-I	sig-II	sig-v	N/Npl*
106	0.000	1	MIN	1		0.003	0.003	0.001			0.003	
			MAX	1		0.093	0.093	0.010			0.093	
	0.197	1	MIN	1		0.002	0.002	0.001			0.002	
			MAX	1		0.070	0.069	0.010			0.070	
	0.395	1	MIN	1		0.001	0.001	0.000			0.001	
			MAX	1		0.047	0.046	0.010			0.047	
	0.593	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.023	0.023	0.010			0.023	
	0.790	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.000	0.000	0.010			0.010	
201	0.000	3	MIN	1		0.039	0.039	0.000			0.022	
			MAX	1		0.039	0.039	0.389			0.389	
	0.120	3	MIN	1		0.038	0.038	0.000			0.024	
			MAX	1		0.209	0.209	0.389			0.389	
	0.240	3	MIN	1		0.038	0.038	0.000			0.032	
			MAX	1		0.418	0.418	0.389			0.494	
	0.360	3	MIN	1		0.037	0.037	0.001			0.041	
			MAX	1		0.627	0.627	0.389			0.680	
	0.480	3	MIN	1		0.036	0.036	0.001			0.042	
			MAX	1		0.837	0.837	0.389			0.875	

Stresses utilisation

Beam	x[m]	NoS	LC	M	A	sig-	sig+	tau	sig-I	sig-II	sig-v	N/Npl*
Total System			MIN	1		0.039	0.039	0.000			0.000	
Total System			MAX	1		0.837	0.837	0.389			0.875	

Reviewed Maximum Values Material 1

Constant compression	213.64 MPa	utilisation	0.039	LC	102
Constant tension	213.64 MPa	utilisation	0.039	LC	101
Uniaxial compression	213.64 MPa	utilisation	0.834	LC	103
Uniaxial tension	213.64 MPa	utilisation	0.834	LC	103
Biaxial compression	213.64 MPa	utilisation	0.837	LC	103
Biaxial tension	213.64 MPa	utilisation	0.837	LC	103
Shear stress	123.34 MPa	utilisation	0.389	LC	103
Comparison stress	213.64 MPa	utilisation	0.875	LC	103
Shear in weldings	170.91 MPa				
Compression in compr. zone	213.64 MPa	utilisation	0.039	LC	102

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-]	Vy[-]	Vz[-]	Mt[-]	My[-]	Mz[-]	N+M[-]	V+Mt[-]	Tot[-]
			Nred				Myred	Mzred	My+Mz,r		
101	0.000	101	0.005	0.035	0.000	0.000	0.000	0.207	0.212	0.035	0.207
			0.005	ay,az=	1.325	1.325	0.000	0.199	0.040		
		102	0.005	0.035	0.000	0.000	0.000	0.207	0.212	0.035	0.207
			0.005	ay,az=	1.325	1.325	0.000	0.199	0.040		
		103	0.005	0.000	0.023	0.000	0.084	0.000	0.089	0.023	0.084
			0.005	ay,az=	1.325	1.325	0.081	0.000	0.007		
		104	0.003	0.035	0.000	0.000	0.000	0.207	0.211	0.035	0.207
			0.003	ay,az=	1.325	1.325	0.000	0.199	0.040		
		105	0.003	0.035	0.000	0.000	0.000	0.207	0.211	0.035	0.207
			0.003	ay,az=	1.325	1.325	0.000	0.199	0.040		
		106	0.003	0.000	0.023	0.000	0.084	0.000	0.088	0.023	0.084
			0.003	ay,az=	1.325	1.325	0.081	0.000	0.007		
	0.055	201	0.003	0.007	0.002	0.000	0.006	0.041	0.051	0.009	0.041
			0.003	ay,az=	1.325	1.325	0.006	0.040	0.002		
		101	0.005	0.035	0.000	0.000	0.000	0.190	0.195	0.035	0.190
			0.005	ay,az=	1.325	1.325	0.000	0.183	0.034		
		102	0.005	0.035	0.000	0.000	0.000	0.190	0.195	0.035	0.190
			0.005	ay,az=	1.325	1.325	0.000	0.183	0.034		
		103	0.005	0.000	0.023	0.000	0.073	0.000	0.078	0.023	0.073
			0.005	ay,az=	1.325	1.325	0.071	0.000	0.005		
		104	0.003	0.035	0.000	0.000	0.000	0.190	0.194	0.035	0.190
			0.003	ay,az=	1.325	1.325	0.000	0.183	0.034		

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-]	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
101	0.055	105	0.003	0.035	0.000	0.000	0.000	0.190	0.194	0.035	0.190
			0.003	ay,az=	1.325	1.325	0.000	0.183	0.034		
		106	0.003	0.000	0.023	0.000	0.073	0.000	0.077	0.023	0.073
			0.003	ay,az=	1.325	1.325	0.070	0.000	0.005		
		201	0.003	0.007	0.002	0.000	0.005	0.038	0.046	0.009	0.038
			0.003	ay,az=	1.325	1.325	0.005	0.036	0.001		
	0.110	101	0.005	0.035	0.000	0.000	0.000	0.174	0.178	0.035	0.174
			0.005	ay,az=	1.325	1.325	0.000	0.167	0.028		
		102	0.005	0.035	0.000	0.000	0.000	0.174	0.178	0.035	0.174
			0.005	ay,az=	1.325	1.325	0.000	0.167	0.028		
		103	0.005	0.000	0.023	0.000	0.062	0.000	0.067	0.023	0.062
			0.005	ay,az=	1.325	1.325	0.060	0.000	0.004		
	0.165	104	0.003	0.035	0.000	0.000	0.000	0.174	0.177	0.035	0.174
			0.003	ay,az=	1.325	1.325	0.000	0.167	0.028		
		105	0.003	0.035	0.000	0.000	0.000	0.174	0.177	0.035	0.174
			0.003	ay,az=	1.325	1.325	0.000	0.167	0.028		
		106	0.003	0.000	0.023	0.000	0.062	0.000	0.066	0.023	0.062
			0.003	ay,az=	1.325	1.325	0.060	0.000	0.004		
	0.220	201	0.003	0.007	0.002	0.000	0.004	0.034	0.042	0.009	0.034
			0.003	ay,az=	1.325	1.325	0.004	0.033	0.001		
		101	0.005	0.035	0.000	0.000	0.000	0.157	0.161	0.035	0.157
			0.005	ay,az=	1.325	1.325	0.000	0.151	0.023		
		102	0.005	0.035	0.000	0.000	0.000	0.157	0.161	0.035	0.157
			0.005	ay,az=	1.325	1.325	0.000	0.151	0.023		
102	0.000	103	0.005	0.000	0.023	0.000	0.051	0.000	0.056	0.023	0.051
			0.005	ay,az=	1.325	1.325	0.049	0.000	0.002		
		104	0.003	0.035	0.000	0.000	0.000	0.157	0.160	0.035	0.157
			0.003	ay,az=	1.325	1.325	0.000	0.151	0.023		
		105	0.003	0.035	0.000	0.000	0.000	0.157	0.160	0.035	0.157
			0.003	ay,az=	1.325	1.325	0.000	0.151	0.023		
	0.055	106	0.003	0.000	0.023	0.000	0.051	0.000	0.055	0.023	0.051
			0.003	ay,az=	1.325	1.325	0.049	0.000	0.002		
		201	0.003	0.007	0.002	0.000	0.004	0.031	0.038	0.009	0.031
			0.003	ay,az=	1.325	1.325	0.004	0.029	0.001		
		101	0.005	0.035	0.000	0.000	0.000	0.140	0.145	0.035	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		
	0.110	102	0.005	0.035	0.000	0.000	0.000	0.140	0.145	0.035	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		
		103	0.005	0.000	0.023	0.000	0.040	0.000	0.045	0.023	0.040
			0.005	ay,az=	1.325	1.325	0.039	0.000	0.001		
		104	0.003	0.035	0.000	0.000	0.000	0.140	0.143	0.035	0.140
			0.003	ay,az=	1.325	1.325	0.000	0.135	0.018		
	0.165	105	0.003	0.035	0.000	0.000	0.000	0.140	0.143	0.035	0.140
			0.003	ay,az=	1.325	1.325	0.000	0.135	0.018		
		106	0.003	0.000	0.023	0.000	0.040	0.000	0.043	0.023	0.040
			0.003	ay,az=	1.325	1.325	0.039	0.000	0.001		
		201	0.003	0.007	0.002	0.000	0.003	0.027	0.033	0.009	0.027
			0.003	ay,az=	1.325	1.325	0.003	0.026	0.001		
	0.220	101	0.005	0.040	0.000	0.000	0.000	0.140	0.145	0.040	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		
		102	0.005	0.040	0.000	0.000	0.000	0.140	0.145	0.040	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		
		103	0.005	0.000	0.028	0.000	0.040	0.000	0.045	0.028	0.040
			0.005	ay,az=	1.325	1.325	0.039	0.000	0.001		
103	0.000	104	0.003	0.040	0.000	0.000	0.000	0.140	0.143	0.040	0.140
			0.003	ay,az=	1.325	1.325	0.000	0.135	0.018		
		105	0.003	0.040	0.000	0.000	0.000	0.140	0.143	0.040	0.140
			0.003	ay,az=	1.325	1.325	0.000	0.135	0.018		
		106	0.003	0.000	0.028	0.000	0.040	0.000	0.043	0.028	0.040
			0.003	ay,az=	1.325	1.325	0.039	0.000	0.001		
	0.055	201	0.003	0.007	0.002	0.000	0.003	0.027	0.033	0.009	0.027
			0.003	ay,az=	1.325	1.325	0.003	0.026	0.001		
		101	0.005	0.040	0.000	0.000	0.000	0.140	0.145	0.040	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		
		102	0.005	0.040	0.000	0.000	0.000	0.140	0.145	0.040	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		
	0.110	103	0.005	0.000	0.028	0.000	0.040	0.000	0.045	0.028	0.040
			0.005	ay,az=	1.325	1.325	0.039	0.000	0.001		
		104	0.003	0.040	0.000	0.000	0.000	0.140	0.143	0.040	0.140
			0.003	ay,az=	1.325	1.325	0.000	0.135	0.018		
		105	0.003	0.040	0.000	0.000	0.000	0.140	0.143	0.040	0.140
			0.003	ay,az=	1.325	1.325	0.000	0.135	0.018		
	0.165	106	0.003	0.000	0.028	0.000	0.040	0.000	0.043	0.028	0.040
			0.003	ay,az=	1.325	1.325	0.039	0.000	0.001		
		201	0.003	0.007	0.002	0.000	0.003	0.027	0.033	0.009	0.027
			0.003	ay,az=	1.325	1.325	0.003	0.026	0.001		
		101	0.005	0.040	0.000	0.000	0.000	0.140	0.145	0.040	0.140
			0.005	ay,az=	1.325	1.325	0.000	0.135	0.018		

1828 AGIOS NIKOLAOS CITY 2 MAST
ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
102	0.335	101	0.004	0.040	0.000	0.000	0.000	0.022	0.027	0.040	0.040
			0.004	ay,az=	1.325	1.325	0.000	0.022	0.000		
		102	0.004	0.040	0.000	0.000	0.000	0.022	0.027	0.040	0.040
			0.004	ay,az=	1.325	1.325	0.000	0.022	0.000		
		103	0.004	0.000	0.028	0.000	0.043	0.000	0.047	0.028	0.043
			0.004	ay,az=	1.325	1.325	0.041	0.000	0.002		
		104	0.003	0.040	0.000	0.000	0.000	0.022	0.026	0.040	0.040
			0.003	ay,az=	1.325	1.325	0.000	0.022	0.000		
		105	0.003	0.040	0.000	0.000	0.000	0.022	0.026	0.040	0.040
			0.003	ay,az=	1.325	1.325	0.000	0.022	0.000		
		106	0.003	0.000	0.028	0.000	0.043	0.000	0.046	0.028	0.043
			0.003	ay,az=	1.325	1.325	0.041	0.000	0.002		
		201	0.003	0.008	0.002	0.000	0.002	0.005	0.010	0.009	0.008
			0.003	ay,az=	1.325	1.325	0.002	0.004	0.000		
	0.670	101	0.004	0.040	0.000	0.000	0.000	0.095	0.099	0.040	0.095
			0.004	ay,az=	1.325	1.325	0.000	0.092	0.008		
		102	0.004	0.040	0.000	0.000	0.000	0.095	0.099	0.040	0.095
			0.004	ay,az=	1.325	1.325	0.000	0.092	0.008		
		103	0.004	0.000	0.028	0.000	0.125	0.000	0.129	0.028	0.125
			0.004	ay,az=	1.325	1.325	0.120	0.000	0.014		
		104	0.003	0.040	0.000	0.000	0.000	0.095	0.098	0.040	0.095
			0.003	ay,az=	1.325	1.325	0.000	0.092	0.008		
		105	0.003	0.040	0.000	0.000	0.000	0.095	0.098	0.040	0.095
			0.003	ay,az=	1.325	1.325	0.000	0.092	0.008		
		106	0.003	0.000	0.028	0.000	0.125	0.000	0.128	0.028	0.125
			0.003	ay,az=	1.325	1.325	0.120	0.000	0.014		
		201	0.003	0.008	0.002	0.000	0.007	0.018	0.028	0.010	0.018
			0.003	ay,az=	1.325	1.325	0.007	0.018	0.000		
	1.005	101	0.004	0.040	0.000	0.000	0.000	0.213	0.217	0.040	0.213
			0.004	ay,az=	1.325	1.325	0.000	0.205	0.042		
		102	0.004	0.040	0.000	0.000	0.000	0.213	0.217	0.040	0.213
			0.004	ay,az=	1.325	1.325	0.000	0.205	0.042		
		103	0.004	0.000	0.028	0.000	0.208	0.000	0.212	0.028	0.208
			0.004	ay,az=	1.325	1.325	0.200	0.000	0.040		
		104	0.003	0.040	0.000	0.000	0.000	0.213	0.216	0.040	0.213
			0.003	ay,az=	1.325	1.325	0.000	0.205	0.042		
		105	0.003	0.040	0.000	0.000	0.000	0.213	0.216	0.040	0.213
			0.003	ay,az=	1.325	1.325	0.000	0.205	0.042		
		106	0.003	0.000	0.028	0.000	0.208	0.000	0.211	0.028	0.208
			0.003	ay,az=	1.325	1.325	0.200	0.000	0.040		
		201	0.003	0.008	0.002	0.000	0.012	0.042	0.057	0.010	0.042
			0.003	ay,az=	1.325	1.325	0.012	0.040	0.002		
	1.340	101	0.004	0.040	0.000	0.000	0.000	0.330	0.334	0.040	0.330
			0.004	ay,az=	1.325	1.325	0.000	0.318	0.101		
		102	0.004	0.040	0.000	0.000	0.000	0.330	0.334	0.040	0.330
			0.004	ay,az=	1.325	1.325	0.000	0.318	0.101		
		103	0.004	0.000	0.028	0.000	0.290	0.000	0.294	0.028	0.290
			0.004	ay,az=	1.325	1.325	0.279	0.000	0.078		
		104	0.003	0.040	0.000	0.000	0.000	0.330	0.333	0.040	0.330
			0.003	ay,az=	1.325	1.325	0.000	0.318	0.101		
		105	0.003	0.040	0.000	0.000	0.000	0.330	0.333	0.040	0.330
			0.003	ay,az=	1.325	1.325	0.000	0.318	0.101		
		106	0.003	0.000	0.028	0.000	0.290	0.000	0.293	0.028	0.290
			0.003	ay,az=	1.325	1.325	0.279	0.000	0.078		
		201	0.003	0.008	0.002	0.000	0.018	0.066	0.087	0.010	0.066
			0.003	ay,az=	1.325	1.325	0.017	0.064	0.004		
103	0.000	101	0.004	0.052	0.000	0.000	0.000	0.330	0.334	0.052	0.330
			0.004	ay,az=	1.325	1.325	0.000	0.318	0.101		
		102	0.004	0.052	0.000	0.000	0.000	0.330	0.334	0.052	0.330
			0.004	ay,az=	1.325	1.325	0.000	0.318	0.101		
		103	0.004	0.000	0.040	0.000	0.290	0.000	0.294	0.040	0.290
			0.004	ay,az=	1.325	1.325	0.279	0.000	0.078		

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-]	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
103	0.000	104	0.003	0.052	0.000	0.000	0.000	0.330	0.333	0.052	0.330
			0.003	ay,az=	1.325	1.325	0.000	0.318	0.101		
		105	0.003	0.052	0.000	0.000	0.000	0.330	0.333	0.052	0.330
			0.003	ay,az=	1.325	1.325	0.000	0.318	0.101		
		106	0.003	0.000	0.040	0.000	0.290	0.000	0.293	0.040	0.290
			0.003	ay,az=	1.325	1.325	0.279	0.000	0.078		
		201	0.003	0.008	0.002	0.000	0.018	0.066	0.087	0.010	0.066
			0.003	ay,az=	1.325	1.325	0.017	0.064	0.004		
0.073		101	0.004	0.052	0.000	0.000	0.000	0.364	0.368	0.052	0.364
			0.004	ay,az=	1.325	1.325	0.000	0.350	0.122		
		102	0.004	0.052	0.000	0.000	0.000	0.364	0.368	0.052	0.364
			0.004	ay,az=	1.325	1.325	0.000	0.350	0.122		
		103	0.004	0.000	0.040	0.000	0.316	0.000	0.320	0.040	0.316
			0.004	ay,az=	1.325	1.325	0.304	0.000	0.092		
		104	0.003	0.052	0.000	0.000	0.000	0.364	0.367	0.052	0.364
			0.003	ay,az=	1.325	1.325	0.000	0.350	0.122		
		105	0.003	0.052	0.000	0.000	0.000	0.364	0.367	0.052	0.364
			0.003	ay,az=	1.325	1.325	0.000	0.350	0.122		
		106	0.003	0.000	0.040	0.000	0.316	0.000	0.319	0.040	0.316
			0.003	ay,az=	1.325	1.325	0.304	0.000	0.092		
		201	0.003	0.008	0.002	0.000	0.019	0.072	0.093	0.010	0.072
			0.003	ay,az=	1.325	1.325	0.018	0.069	0.005		
0.145		101	0.004	0.052	0.000	0.000	0.000	0.397	0.401	0.052	0.397
			0.004	ay,az=	1.325	1.325	0.000	0.382	0.146		
		102	0.004	0.052	0.000	0.000	0.000	0.397	0.401	0.052	0.397
			0.004	ay,az=	1.325	1.325	0.000	0.382	0.146		
		103	0.004	0.000	0.040	0.000	0.342	0.000	0.345	0.040	0.342
			0.004	ay,az=	1.325	1.325	0.329	0.000	0.108		
		104	0.003	0.052	0.000	0.000	0.000	0.397	0.400	0.052	0.397
			0.003	ay,az=	1.325	1.325	0.000	0.382	0.146		
		105	0.003	0.052	0.000	0.000	0.000	0.397	0.400	0.052	0.397
			0.003	ay,az=	1.325	1.325	0.000	0.382	0.146		
		106	0.003	0.000	0.040	0.000	0.342	0.000	0.345	0.040	0.342
			0.003	ay,az=	1.325	1.325	0.329	0.000	0.108		
		201	0.003	0.008	0.002	0.000	0.020	0.077	0.100	0.010	0.077
			0.003	ay,az=	1.325	1.325	0.019	0.074	0.006		
0.218		101	0.004	0.052	0.000	0.000	0.000	0.430	0.434	0.052	0.430
			0.004	ay,az=	1.325	1.325	0.000	0.414	0.171		
		102	0.004	0.052	0.000	0.000	0.000	0.430	0.434	0.052	0.430
			0.004	ay,az=	1.325	1.325	0.000	0.414	0.171		
		103	0.004	0.000	0.040	0.000	0.368	0.000	0.371	0.040	0.368
			0.004	ay,az=	1.325	1.325	0.354	0.000	0.125		
		104	0.003	0.052	0.000	0.000	0.000	0.430	0.433	0.052	0.430
			0.003	ay,az=	1.325	1.325	0.000	0.414	0.171		
		105	0.003	0.052	0.000	0.000	0.000	0.430	0.433	0.052	0.430
			0.003	ay,az=	1.325	1.325	0.000	0.414	0.171		
		106	0.003	0.000	0.040	0.000	0.368	0.000	0.370	0.040	0.368
			0.003	ay,az=	1.325	1.325	0.354	0.000	0.125		
		201	0.003	0.008	0.002	0.000	0.021	0.082	0.106	0.010	0.082
			0.003	ay,az=	1.325	1.325	0.020	0.079	0.007		
0.290		101	0.004	0.052	0.000	0.000	0.000	0.463	0.467	0.052	0.463
			0.004	ay,az=	1.325	1.325	0.000	0.446	0.199		
		102	0.004	0.052	0.000	0.000	0.000	0.463	0.467	0.052	0.463
			0.004	ay,az=	1.325	1.325	0.000	0.446	0.199		
		103	0.004	0.000	0.040	0.000	0.393	0.000	0.397	0.040	0.393
			0.004	ay,az=	1.325	1.325	0.378	0.000	0.143		
		104	0.003	0.052	0.000	0.000	0.000	0.463	0.466	0.052	0.463
			0.003	ay,az=	1.325	1.325	0.000	0.446	0.199		
		105	0.003	0.052	0.000	0.000	0.000	0.463	0.466	0.052	0.463
			0.003	ay,az=	1.325	1.325	0.000	0.446	0.199		
		106	0.003	0.000	0.040	0.000	0.393	0.000	0.396	0.040	0.393
			0.003	ay,az=	1.325	1.325	0.378	0.000	0.143		

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
103	0.290	201	0.003	0.009	0.002	0.000	0.022	0.088	0.113	0.010	0.088
			0.003	ay,az=	1.325	1.325	0.022	0.084	0.008		
104	0.000	101	0.004	0.023	0.000	0.000	0.000	0.463	0.467	0.023	0.463
			0.004	ay,az=	1.325	1.325	0.000	0.446	0.199		
		102	0.004	0.023	0.000	0.000	0.000	0.463	0.467	0.023	0.463
			0.004	ay,az=	1.325	1.325	0.000	0.446	0.199		
		103	0.004	0.000	0.023	0.000	0.463	0.000	0.467	0.023	0.463
			0.004	ay,az=	1.325	1.325	0.446	0.000	0.199		
		104	0.003	0.023	0.000	0.000	0.000	0.463	0.466	0.023	0.463
			0.003	ay,az=	1.325	1.325	0.000	0.446	0.199		
		105	0.003	0.023	0.000	0.000	0.000	0.463	0.466	0.023	0.463
			0.003	ay,az=	1.325	1.325	0.000	0.446	0.199		
		106	0.003	0.000	0.023	0.000	0.463	0.000	0.466	0.023	0.463
			0.003	ay,az=	1.325	1.325	0.446	0.000	0.199		
		201	0.003	0.004	0.001	0.000	0.026	0.088	0.117	0.006	0.088
			0.003	ay,az=	1.325	1.325	0.025	0.084	0.008		
0.390		101	0.003	0.023	0.000	0.000	0.000	0.384	0.387	0.023	0.384
			0.003	ay,az=	1.325	1.325	0.000	0.369	0.136		
		102	0.003	0.023	0.000	0.000	0.000	0.384	0.387	0.023	0.384
			0.003	ay,az=	1.325	1.325	0.000	0.369	0.136		
		103	0.003	0.000	0.023	0.000	0.384	0.000	0.387	0.023	0.384
			0.003	ay,az=	1.325	1.325	0.369	0.000	0.136		
		104	0.003	0.023	0.000	0.000	0.000	0.384	0.387	0.023	0.384
			0.003	ay,az=	1.325	1.325	0.000	0.369	0.136		
		105	0.003	0.023	0.000	0.000	0.000	0.384	0.387	0.023	0.384
			0.003	ay,az=	1.325	1.325	0.000	0.369	0.136		
		106	0.003	0.000	0.023	0.000	0.384	0.000	0.387	0.023	0.384
			0.003	ay,az=	1.325	1.325	0.369	0.000	0.136		
		201	0.003	0.004	0.001	0.000	0.022	0.073	0.098	0.005	0.073
			0.003	ay,az=	1.325	1.325	0.021	0.070	0.005		
0.780		101	0.003	0.023	0.000	0.000	0.000	0.305	0.308	0.023	0.305
			0.003	ay,az=	1.325	1.325	0.000	0.293	0.086		
		102	0.003	0.023	0.000	0.000	0.000	0.305	0.308	0.023	0.305
			0.003	ay,az=	1.325	1.325	0.000	0.293	0.086		
		103	0.003	0.000	0.023	0.000	0.305	0.000	0.308	0.023	0.305
			0.003	ay,az=	1.325	1.325	0.293	0.000	0.086		
		104	0.002	0.023	0.000	0.000	0.000	0.305	0.307	0.023	0.305
			0.002	ay,az=	1.325	1.325	0.000	0.293	0.086		
		105	0.002	0.023	0.000	0.000	0.000	0.305	0.307	0.023	0.305
			0.002	ay,az=	1.325	1.325	0.000	0.293	0.086		
		106	0.002	0.000	0.023	0.000	0.305	0.000	0.307	0.023	0.305
			0.002	ay,az=	1.325	1.325	0.293	0.000	0.086		
		201	0.002	0.004	0.001	0.000	0.018	0.060	0.080	0.005	0.060
			0.002	ay,az=	1.325	1.325	0.017	0.057	0.004		
1.170		101	0.003	0.023	0.000	0.000	0.000	0.225	0.228	0.023	0.225
			0.003	ay,az=	1.325	1.325	0.000	0.217	0.047		
		102	0.003	0.023	0.000	0.000	0.000	0.225	0.228	0.023	0.225
			0.003	ay,az=	1.325	1.325	0.000	0.217	0.047		
		103	0.003	0.000	0.023	0.000	0.225	0.000	0.228	0.023	0.225
			0.003	ay,az=	1.325	1.325	0.217	0.000	0.047		
		104	0.002	0.023	0.000	0.000	0.000	0.225	0.227	0.023	0.225
			0.002	ay,az=	1.325	1.325	0.000	0.217	0.047		
		105	0.002	0.023	0.000	0.000	0.000	0.225	0.227	0.023	0.225
			0.002	ay,az=	1.325	1.325	0.000	0.217	0.047		
		106	0.002	0.000	0.023	0.000	0.225	0.000	0.227	0.023	0.225
			0.002	ay,az=	1.325	1.325	0.217	0.000	0.047		
		201	0.002	0.004	0.001	0.000	0.014	0.047	0.063	0.005	0.047
			0.002	ay,az=	1.325	1.325	0.014	0.045	0.002		
1.560		101	0.003	0.023	0.000	0.000	0.000	0.146	0.149	0.023	0.146
			0.003	ay,az=	1.325	1.325	0.000	0.140	0.020		
		102	0.003	0.023	0.000	0.000	0.000	0.146	0.149	0.023	0.146
			0.003	ay,az=	1.325	1.325	0.000	0.140	0.020		

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-]	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
104	1.560	103	0.003	0.000	0.023	0.000	0.146	0.000	0.149	0.023	0.146
			0.003	ay,az=	1.325	1.325	0.140	0.000	0.020		
		104	0.002	0.023	0.000	0.000	0.000	0.146	0.148	0.023	0.146
			0.002	ay,az=	1.325	1.325	0.000	0.140	0.020		
		105	0.002	0.023	0.000	0.000	0.000	0.146	0.148	0.023	0.146
			0.002	ay,az=	1.325	1.325	0.000	0.140	0.020		
		106	0.002	0.000	0.023	0.000	0.146	0.000	0.148	0.023	0.146
			0.002	ay,az=	1.325	1.325	0.140	0.000	0.020		
		201	0.002	0.003	0.001	0.000	0.010	0.035	0.047	0.004	0.035
			0.002	ay,az=	1.325	1.325	0.010	0.033	0.001		
105	0.000	101	0.003	0.008	0.000	0.000	0.000	0.180	0.182	0.008	0.180
			0.003	ay,az=	1.354	1.354	0.000	0.173	0.030		
		102	0.003	0.008	0.000	0.000	0.000	0.180	0.182	0.008	0.180
			0.003	ay,az=	1.354	1.354	0.000	0.173	0.030		
		103	0.003	0.000	0.008	0.000	0.180	0.000	0.182	0.008	0.180
			0.003	ay,az=	1.354	1.354	0.173	0.000	0.030		
		104	0.002	0.008	0.000	0.000	0.000	0.180	0.182	0.008	0.180
			0.002	ay,az=	1.354	1.354	0.000	0.173	0.030		
		105	0.002	0.008	0.000	0.000	0.000	0.180	0.182	0.008	0.180
			0.002	ay,az=	1.354	1.354	0.000	0.173	0.030		
		106	0.002	0.000	0.008	0.000	0.180	0.000	0.182	0.008	0.180
			0.002	ay,az=	1.354	1.354	0.173	0.000	0.030		
		201	0.002	0.003	0.001	0.000	0.013	0.043	0.058	0.004	0.043
			0.002	ay,az=	1.354	1.354	0.012	0.041	0.002		
		0.320	101	0.003	0.008	0.000	0.000	0.152	0.155	0.008	0.152
			0.003	ay,az=	1.354	1.354	0.000	0.146	0.021		
		102	0.003	0.008	0.000	0.000	0.000	0.152	0.155	0.008	0.152
			0.003	ay,az=	1.354	1.354	0.000	0.146	0.021		
		103	0.003	0.000	0.008	0.000	0.152	0.000	0.155	0.008	0.152
			0.003	ay,az=	1.354	1.354	0.146	0.000	0.021		
		104	0.002	0.008	0.000	0.000	0.000	0.152	0.154	0.008	0.152
			0.002	ay,az=	1.354	1.354	0.000	0.146	0.021		
		105	0.002	0.008	0.000	0.000	0.000	0.152	0.154	0.008	0.152
			0.002	ay,az=	1.354	1.354	0.000	0.146	0.021		
		106	0.002	0.000	0.008	0.000	0.152	0.000	0.154	0.008	0.152
			0.002	ay,az=	1.354	1.354	0.146	0.000	0.021		
		201	0.002	0.003	0.001	0.000	0.009	0.032	0.043	0.004	0.032
			0.002	ay,az=	1.354	1.354	0.009	0.030	0.001		
		0.640	101	0.002	0.008	0.000	0.000	0.124	0.127	0.008	0.124
			0.002	ay,az=	1.354	1.354	0.000	0.119	0.014		
		102	0.002	0.008	0.000	0.000	0.000	0.124	0.127	0.008	0.124
			0.002	ay,az=	1.354	1.354	0.000	0.119	0.014		
		103	0.002	0.000	0.008	0.000	0.124	0.000	0.127	0.008	0.124
			0.002	ay,az=	1.354	1.354	0.119	0.000	0.014		
		104	0.002	0.008	0.000	0.000	0.000	0.124	0.126	0.008	0.124
			0.002	ay,az=	1.354	1.354	0.000	0.119	0.014		
		105	0.002	0.008	0.000	0.000	0.000	0.124	0.126	0.008	0.124
			0.002	ay,az=	1.354	1.354	0.000	0.119	0.014		
		106	0.002	0.000	0.008	0.000	0.124	0.000	0.126	0.008	0.124
			0.002	ay,az=	1.354	1.354	0.119	0.000	0.014		
		201	0.002	0.003	0.001	0.000	0.006	0.021	0.029	0.004	0.021
			0.002	ay,az=	1.354	1.354	0.006	0.020	0.000		
		0.960	101	0.002	0.008	0.000	0.000	0.096	0.099	0.008	0.096
			0.002	ay,az=	1.354	1.354	0.000	0.093	0.009		
		102	0.002	0.008	0.000	0.000	0.000	0.096	0.099	0.008	0.096
			0.002	ay,az=	1.354	1.354	0.000	0.093	0.009		
		103	0.002	0.000	0.008	0.000	0.096	0.000	0.099	0.008	0.096
			0.002	ay,az=	1.354	1.354	0.093	0.000	0.009		
		104	0.002	0.008	0.000	0.000	0.000	0.096	0.098	0.008	0.096
			0.002	ay,az=	1.354	1.354	0.000	0.093	0.009		
		105	0.002	0.008	0.000	0.000	0.000	0.096	0.098	0.008	0.096
			0.002	ay,az=	1.354	1.354	0.000	0.093	0.009		

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
105	0.960	106	0.002	0.000	0.008	0.000	0.096	0.000	0.098	0.008	0.096
			0.002	ay,az=	1.354	1.354	0.093	0.000	0.009		
		201	0.002	0.003	0.001	0.000	0.003	0.011	0.016	0.003	0.011
			0.002	ay,az=	1.354	1.354	0.003	0.011	0.000		
		1.280	0.002	0.008	0.000	0.000	0.000	0.069	0.071	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.000	0.066	0.004		
	1.280	101	0.002	0.008	0.000	0.000	0.000	0.069	0.071	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.000	0.066	0.004		
		102	0.002	0.008	0.000	0.000	0.000	0.069	0.071	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.000	0.066	0.004		
		103	0.002	0.000	0.008	0.000	0.069	0.000	0.071	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.066	0.000	0.004		
		104	0.002	0.008	0.000	0.000	0.000	0.069	0.070	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.000	0.066	0.004		
		105	0.002	0.008	0.000	0.000	0.000	0.069	0.070	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.000	0.066	0.004		
		106	0.002	0.000	0.008	0.000	0.069	0.000	0.070	0.008	0.069
			0.002	ay,az=	1.354	1.354	0.066	0.000	0.004		
		201	0.002	0.002	0.001	0.000	0.001	0.002	0.004	0.003	0.002
			0.002	ay,az=	1.354	1.354	0.001	0.002	0.000		
106	0.000	101	0.000	0.008	0.000	0.000	0.000	0.069	0.069	0.008	0.069
			0.000	ay,az=	1.354	1.354	0.000	0.066	0.004		
		102	0.000	0.008	0.000	0.000	0.000	0.069	0.069	0.008	0.069
			0.000	ay,az=	1.354	1.354	0.000	0.066	0.004		
		103	0.000	0.000	0.008	0.000	0.069	0.000	0.069	0.008	0.069
			0.000	ay,az=	1.354	1.354	0.066	0.000	0.004		
		104	0.000	0.008	0.000	0.000	0.000	0.069	0.069	0.008	0.069
			0.000	ay,az=	1.354	1.354	0.000	0.066	0.004		
		105	0.000	0.008	0.000	0.000	0.000	0.069	0.069	0.008	0.069
			0.000	ay,az=	1.354	1.354	0.000	0.066	0.004		
		106	0.000	0.000	0.008	0.000	0.069	0.000	0.069	0.008	0.069
			0.000	ay,az=	1.354	1.354	0.066	0.000	0.004		
		201	0.000	0.001	0.000	0.000	0.001	0.002	0.003	0.001	0.002
			0.000	ay,az=	1.354	1.354	0.001	0.002	0.000		
	0.197	101	0.000	0.008	0.000	0.000	0.000	0.051	0.052	0.008	0.051
			0.000	ay,az=	1.354	1.354	0.000	0.049	0.002		
		102	0.000	0.008	0.000	0.000	0.000	0.051	0.052	0.008	0.051
			0.000	ay,az=	1.354	1.354	0.000	0.049	0.002		
		103	0.000	0.000	0.008	0.000	0.051	0.000	0.052	0.008	0.051
			0.000	ay,az=	1.354	1.354	0.049	0.000	0.002		
		104	0.000	0.008	0.000	0.000	0.000	0.051	0.052	0.008	0.051
			0.000	ay,az=	1.354	1.354	0.000	0.049	0.002		
		105	0.000	0.008	0.000	0.000	0.000	0.051	0.052	0.008	0.051
			0.000	ay,az=	1.354	1.354	0.000	0.049	0.002		
		106	0.000	0.000	0.008	0.000	0.051	0.000	0.052	0.008	0.051
			0.000	ay,az=	1.354	1.354	0.049	0.000	0.002		
		201	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.000	0.001
			0.000	ay,az=	1.354	1.354	0.000	0.001	0.000		
	0.395	101	0.000	0.008	0.000	0.000	0.000	0.034	0.035	0.008	0.034
			0.000	ay,az=	1.354	1.354	0.000	0.033	0.001		
		102	0.000	0.008	0.000	0.000	0.000	0.034	0.035	0.008	0.034
			0.000	ay,az=	1.354	1.354	0.000	0.033	0.001		
		103	0.000	0.000	0.008	0.000	0.034	0.000	0.035	0.008	0.034
			0.000	ay,az=	1.354	1.354	0.033	0.000	0.001		
		104	0.000	0.008	0.000	0.000	0.000	0.034	0.034	0.008	0.034
			0.000	ay,az=	1.354	1.354	0.000	0.033	0.001		
		105	0.000	0.008	0.000	0.000	0.000	0.034	0.034	0.008	0.034
			0.000	ay,az=	1.354	1.354	0.000	0.033	0.001		
		106	0.000	0.000	0.008	0.000	0.034	0.000	0.034	0.008	0.034
			0.000	ay,az=	1.354	1.354	0.033	0.000	0.001		
		201	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.001
			0.000	ay,az=	1.354	1.354	0.000	0.001	0.000		
0.593	101		0.000	0.008	0.000	0.000	0.000	0.017	0.017	0.008	0.017
			0.000	ay,az=	1.354	1.354	0.000	0.016	0.000		

1828 AGIOS NIKOLAOS CITY 2 MAST
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
106	0.593	102	0.000	0.008	0.000	0.000	0.000	0.017	0.017	0.008	0.017
			0.000	ay,az=	1.354	1.354	0.000	0.016	0.000		
			0.000	ay,az=	1.354	1.354	0.017	0.000	0.017	0.008	0.017
		103	0.000	0.008	0.000	0.000	0.000	0.017	0.017	0.008	0.017
			0.000	ay,az=	1.354	1.354	0.000	0.016	0.000		
		104	0.000	0.008	0.000	0.000	0.000	0.017	0.017	0.008	0.017
			0.000	ay,az=	1.354	1.354	0.000	0.016	0.000		
		105	0.000	0.008	0.000	0.000	0.000	0.017	0.017	0.008	0.017
			0.000	ay,az=	1.354	1.354	0.000	0.016	0.000		
		106	0.000	0.008	0.000	0.000	0.017	0.000	0.017	0.008	0.017
			0.000	ay,az=	1.354	1.354	0.016	0.000	0.000		
		201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.790	0.790	101	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.008	0.008
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
		102	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.008	0.008
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
		103	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.008	0.008
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
		104	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.008	0.008
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
		105	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.008	0.008
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
		106	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.008	0.008
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
201	0.000	201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.354	1.354	0.000	0.000	0.000		
		101	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		102	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		103	0.000	0.124	0.000	0.240	0.000	0.000	0.000	0.364	0.240
			0.000	ay,az=	1.248	1.248	0.000	0.000	0.000		
		104	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		105	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
0.120	0.120	106	0.000	0.124	0.000	0.240	0.000	0.000	0.000	0.364	0.240
			0.000	ay,az=	1.248	1.248	0.000	0.000	0.000		
		201	0.007	0.006	0.000	0.014	0.000	0.000	0.007	0.020	0.014
			0.007	ay,az=	1.248	1.248	0.007	0.007	0.000		
		101	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		102	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		103	0.000	0.124	0.000	0.240	0.000	0.167	0.167	0.364	0.273
			0.000	ay,az=	1.248	1.248	0.000	0.129	0.033		
		104	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
0.240	0.240	105	0.039	0.000	0.000	0.000	0.000	0.000	0.039	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		106	0.000	0.124	0.000	0.240	0.000	0.167	0.167	0.364	0.273
			0.000	ay,az=	1.248	1.248	0.000	0.129	0.033		
		201	0.007	0.006	0.000	0.014	0.000	0.008	0.015	0.020	0.015
			0.007	ay,az=	1.248	1.248	0.007	0.013	0.001		
		101	0.039	0.000	0.001	0.000	0.001	0.000	0.040	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.040	0.039	0.009		
		102	0.039	0.000	0.001	0.000	0.001	0.000	0.040	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.040	0.039	0.009		
		103	0.000	0.124	0.001	0.240	0.001	0.334	0.335	0.365	0.345
			0.000	ay,az=	1.248	1.248	0.001	0.258	0.105		
		104	0.039	0.000	0.000	0.000	0.001	0.000	0.040	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		

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Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
201	0.240	105	0.039	0.000	0.000	0.000	0.001	0.000	0.040	0.000	0.039
			0.039	ay,az=	1.248	1.248	0.039	0.039	0.009		
		106	0.000	0.124	0.000	0.240	0.001	0.334	0.335	0.364	0.345
			0.000	ay,az=	1.248	1.248	0.001	0.258	0.105		
		201	0.007	0.006	0.000	0.014	0.001	0.017	0.024	0.020	0.017
			0.007	ay,az=	1.248	1.248	0.007	0.020	0.002		
0.360		101	0.039	0.000	0.001	0.000	0.002	0.000	0.041	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.040	0.039	0.009		
		102	0.039	0.000	0.001	0.000	0.002	0.000	0.041	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.040	0.039	0.009		
		103	0.000	0.124	0.001	0.240	0.002	0.501	0.503	0.365	0.501
			0.000	ay,az=	1.248	1.248	0.002	0.387	0.207		
		104	0.039	0.000	0.001	0.000	0.001	0.000	0.040	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.040	0.039	0.009		
		105	0.039	0.000	0.001	0.000	0.001	0.000	0.040	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.040	0.039	0.009		
		106	0.000	0.124	0.001	0.240	0.001	0.501	0.503	0.365	0.501
			0.000	ay,az=	1.248	1.248	0.001	0.387	0.207		
		201	0.007	0.006	0.001	0.014	0.001	0.026	0.034	0.021	0.026
			0.007	ay,az=	1.248	1.248	0.008	0.026	0.003		
0.480		101	0.039	0.000	0.001	0.000	0.003	0.000	0.042	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.041	0.039	0.010		
		102	0.039	0.000	0.001	0.000	0.003	0.000	0.042	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.041	0.039	0.010		
		103	0.000	0.124	0.001	0.240	0.003	0.668	0.671	0.365	0.668
			0.000	ay,az=	1.248	1.248	0.003	0.516	0.333		
		104	0.039	0.000	0.001	0.000	0.002	0.000	0.041	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.041	0.039	0.009		
		105	0.039	0.000	0.001	0.000	0.002	0.000	0.041	0.001	0.039
			0.039	ay,az=	1.248	1.248	0.041	0.039	0.009		
		106	0.000	0.124	0.001	0.240	0.002	0.668	0.671	0.365	0.668
			0.000	ay,az=	1.248	1.248	0.002	0.516	0.333		
		201	0.007	0.006	0.001	0.014	0.002	0.034	0.043	0.021	0.034
			0.007	ay,az=	1.248	1.248	0.009	0.033	0.004		
Total System			0.039	0.124	0.040	0.240	0.463	0.668	0.671	0.365	0.668
			0.039				0.446	0.516	0.333		

Maximum Degree of Utilization

		N	Vy	Vz	Mt	My	Mz	Mb	Mt2	Total	lamda
		sig-c	sig-t	tau	sig-*	tend.	As-l	As-v	crack	sigdyn	tau-*
Cross sect.	1	0.003	0.010	0.010	0.000	0.246	0.246	0.000	0.000	0.180	0.000
D 114.3 / 7.1 mm		0.246	0.241	0.010	0.246	0.000	0.000	0.000	0.000	0.000	0.000
Cross sect.	2	0.005	0.068	0.052	0.000	0.618	0.618	0.000	0.000	0.463	0.000
D 139.7 / 5.6 mm		0.618	0.611	0.068	0.618	0.000	0.000	0.000	0.000	0.000	0.000
Cross sect.	3	0.039	0.124	0.001	0.265	0.043	0.834	0.000	0.000	0.668	0.000
SH 70 x 70 x 7		0.837	0.837	0.389	0.875	0.000	0.000	0.000	0.000	0.000	0.000
<hr/>											
Total System		0.039	0.124	0.052	0.265	0.618	0.834	0.000	0.000	0.668	0.000
		0.837	0.837	0.389	0.875	0.000	0.000	0.000	0.000	0.000	0.000



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 1 of 4

Quotation:

Project:

List No.:

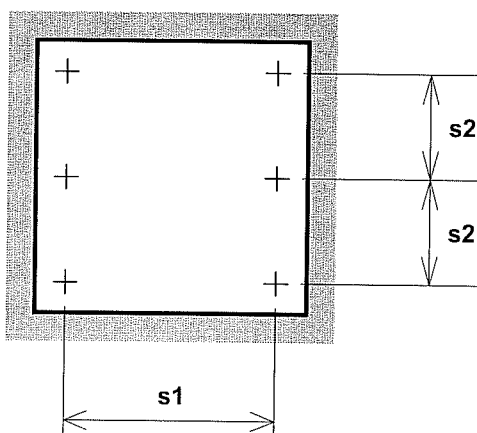
Date:

Project name:

Anchor fastening design for HST-M16

As per Hilti-CC method

Positioning

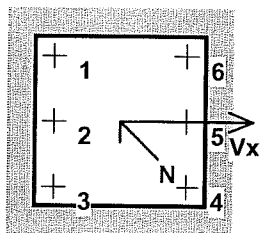


Anchoring plate:

$l_x=350 \text{ mm}$ $l_y=350 \text{ mm}$
 $s_1=270 \text{ mm}$ $s_2=135 \text{ mm}$

- Anchor
- Anchor in slotted hole

Loads (design values)



Tensile Load:

$N_d=-2.4 \text{ kN}$

Shear Load:

$V_{x,d}=5.9 \text{ kN}$

Moments:

$M_{y,d}=4.230 \text{ kNm}$



Concrete

Compressive class: C20/25
tensile zone / cracked concrete
factor depth of embedment: 1.0
no edge reinforcement
close reinforcement (close reinforcement ($s \leq 15 \text{ cm}$))



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 2 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Tension Load N

HST-M16

Anchor		1	2	3	4	5	6
Design value of tension load	$N_{Sd,i}$	4.4 kN	4.4 kN	4.4 kN	0.0 kN	0.0 kN	0.0 kN

$$\text{Design value of anchor group } N_{Sd}^g = \sum_{i=1}^n \alpha N_{Sd,i} = 13.3 \text{ kN}$$

Steel failure

Characteristic value for one anchor $N_{Rk,s} = 75.0 \text{ kN}$
Partial safety factor $\gamma_{Ms} = 1.50$

$$\text{Design value of resistance } N_{Rd,s} = \frac{N_{Rk,s}}{\gamma_{Ms}} = 50.0 \text{ kN} \quad \text{Check } \frac{N_{Sd}^h}{N_{Rd,s}} = 0.09$$

Pullout failure

Characteristic value for one anchor $N_{Rk,p} = 20.0 \text{ kN}$
Partial safety factor $\gamma_{Mp} = 1.50$

$$\text{Design value of resistance } N_{Rd,p} = \frac{N_{Rk,p}}{\gamma_{Mp}} = 13.3 \text{ kN} \quad \text{Check } \frac{N_{Sd}^h}{N_{Rd,p}} = 0.33$$

Concrete cone failure

Initial value of the anchor resistance	$N_{Rk,c}^0 = 26.7 \text{ kN}$	
Actual area of concrete cone	$A_{c,N} = 126936 \text{ mm}^2$	
Reference area of concrete cone	$A_{c,N}^0 = 60516 \text{ mm}^2$	
Factor for disturbance of stressed distribution	$\psi_{s,N} = 1.00$	
Shell spalling factor	$\psi_{re,N} = 0.91$	
Eccentricity of the resulting tensile load	$e_{N,x} = 0 \text{ mm}$	$e_{N,y} = 0 \text{ mm}$
Factors for eccentric loading	$\psi_{ec,N,x} = 1.00$	$\psi_{ec,N,y} = 1.00$
Influence concrete	$f_{B,N} = 1.00$	
Influence depth	$\psi_T = 1.00$	

Characteristic value for the anchor group

$$N_{Rk,c} = N_{Rk,c}^0 \cdot \frac{A_{c,N}}{A_{c,N}^0} \cdot \psi_{s,N} \cdot \psi_{re,N} \cdot \psi_{ec,N,x} \cdot \psi_{ec,N,y} \cdot \psi_T \cdot f_{B,N} = 51.0 \text{ kN}$$

Partial safety factor $\gamma_{Mc} = 1.50$

$$\text{Design value of resistance } N_{Rd,c} = \frac{N_{Rk,c}}{\gamma_{Mc}} = 34.0 \text{ kN} \quad \text{Check } \frac{N_{Sd}^g}{N_{Rd,c}} = 0.39$$



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 3 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Shear Load V

HST-M16

Anchor		1	2	3	4	5	6
Design value of shear in x	$V_{Sd,x,i}$	1.0 kN	1.0 kN	1.0 kN	1.0 kN	1.0 kN	1.0 kN
Design value of shear in y	$V_{Sd,y,i}$	0.0 kN	0.0 kN	0.0 kN	0.0 kN	0.0 kN	0.0 kN

$$\text{Design value of anchor group} \quad V_{Sd,x}^g = \alpha \sum_{i=1}^n V_{Sd,x,i} = 5.9 \text{ kN} \quad V_{Sd,y}^g = \alpha \sum_{i=1}^n V_{Sd,y,i} = 0.0 \text{ kN}$$

Resulting design value of shear	$V_{Sd,i}$	1.0 kN	1.0 kN	1.0 kN	1.0 kN	1.0 kN	1.0 kN
---------------------------------	------------	--------	--------	--------	--------	--------	--------

Steel failure without lever arm

$$\begin{aligned} \text{Characteristic value for one anchor} & V_{Rk,s} = 50.0 \text{ kN} \\ \text{Partial safety factor} & \gamma_{Ms} = 1.25 \end{aligned}$$

$$\text{Design value of resistance} \quad V_{Rd,s} = \frac{V_{Rk,s}}{\gamma_{Ms}} = 40.0 \text{ kN} \quad \text{Check} \quad \frac{V_{Sd}^h}{V_{Rd,s}} = 0.02$$

Concrete edge failure

Initial value of the anchor resistance	$V_{Rk,c}^0$	= ---
Actual area of concrete cone	$A_{c,V}$	= 0 mm ²
Reference area of concrete cone	$A_{c,V}^0$	= 0 mm ²
Factor for disturbance of stressed distribution	$\psi_{s,V}$	= 1.00
Factor for member thickness	$\psi_{h,V}$	= 1.00
Factor for load direction	$\psi_{\alpha,V}$	= 1.00
Eccentricity of the resulting shear load	$e_{V,x}$	= 0 mm
	$e_{V,y}$	= 0 mm
Factors for eccentric loading	$\psi_{ec,V,x}$	= 1.00
	$\psi_{ec,V,y}$	= 1.00
Factors for the position of the anchorage	$\psi_{ucr,V}$	= 1.0

Characteristic value for the anchor group

$$V_{Rk,c} = V_{Rk,c}^0 \cdot \frac{A_{c,V}}{A_{c,V}^0} \cdot \psi_{s,V} \cdot \psi_{h,V} \cdot \psi_{\alpha,V} \cdot \psi_{ec,V} \cdot \psi_{ucr,V} \quad V_{Rk,c,x} = --- \quad \gamma_{Mc} = 1.00$$

$$\text{Design value of resistance} \quad V_{Rd,c} = \frac{V_{Rk,c}}{\gamma_{Mc}} = --- \quad \text{Check} \quad \frac{V_{Sd}^g}{V_{Rd,c}} = 0.00$$



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 4 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Concrete pryout failure

HST-M16

Factor for short stiff anchors $k = 2.0$
Characteristic value for the anchor group $N_{Rk,c} = 102.1 \text{ kN}$

Characteristic value for the anchor group $V_{Rk,c} = 204.1 \text{ kN}$
Partial safety factor $\gamma_{Mc} = 1.50$

Design value of resistance $V_{Rd,c} = \frac{V_{Rk,c}}{\gamma_{Mc}} = 136.1 \text{ kN}$ Check $\frac{V_{Sd}^g}{V_{Rd,c}} = 0.04$

Splitting failure due to loading

Actual area of concrete cone $A_{c,N,sp} = 126936 \text{ mm}^2$
Reference area of concrete cone $A_{c,N,sp}^0 = 60516 \text{ mm}^2$
Factor for actual member depth $\psi_{h,sp} = 1.50$

Characteristic value for the anchor group

$$N_{Rk,sp} = N_{Rk,c}^0 \cdot \frac{A_{c,N,sp}}{A_{c,N,sp}^0} \cdot \psi_{s,N} \cdot \psi_{re,N} \cdot \psi_{ec,N,x} \cdot \psi_{ec,N,y} \cdot \psi_{ucr,N} \cdot \psi_{h,sp} = 84.1 \text{ kN}$$

Partial safety factor $\gamma_{Msp} = 1.50$

Design value of resistance $N_{Rd,sp} = \frac{N_{Rk,sp}^g}{\gamma_{Msp}} = 56.1 \text{ kN}$ Check $\frac{N_{Sd}^g}{N_{Rd,sp}} = 0.24$

Combined tension and shear load

$$\beta_N = 0.39 < 1.0 \quad \beta_V = 0.04 < 1.0 \quad (\beta_N + \beta_V)/1.2 = 0.36 < 1.0 \quad \beta_N^a + \beta_V^a = 0.25 < 1.0$$



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 1 of 4

Quotation:

Project:

List No.:

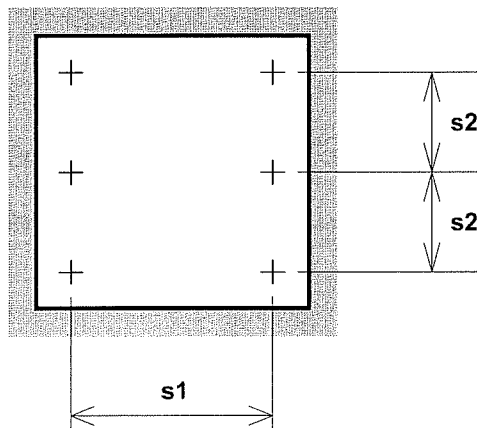
Date:

Project name:

Anchor fastening design for HST-M16

As per Hilti-CC method

Positioning

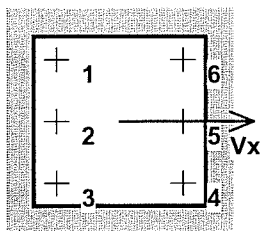


Anchoring plate:

$l_x=260 \text{ mm}$ $l_y=260 \text{ mm}$
 $s_1=190 \text{ mm}$ $s_2=95 \text{ mm}$

- + Anchor
- Anchor in slotted hole

Loads (design values)



Shear Load:

$V_{x,d}=11.6 \text{ kN}$


Moments:

$M_{y,d}=5.570 \text{ kNm}$



Concrete

Compressive class: C20/25
tensile zone / cracked concrete
factor depth of embedment: 1.0
no edge reinforcement
close reinforcement (close reinforcement ($s \leq 15 \text{ cm}$))

 Hilti AG FL-9494 Schaan HAP v3.3c	Customer No.:	Anchor fastening design	Page: 2 of 4	
		Location:	Quotation:	
			Project:	
			List No.:	
			Date:	
			Project name:	
	Phone:			
	Resp.:			

Tension Load N

HST-M16

Anchor		1	2	3	4	5	6
Design value of tension load	$N_{Sd,i}$	8.9 kN	8.9 kN	8.9 kN	0.0 kN	0.0 kN	0.0 kN
Design value of anchor group		$N_{Sd}^g = \sum_{i=1}^n \alpha N_{Sd,i} = 26.8 \text{ kN}$					

Steel failure

Characteristic value for one anchor	$N_{Rk,s} = 75.0 \text{ kN}$
Partial safety factor	$\gamma_{Ms} = 1.50$

Design value of resistance	$N_{Rd,s} = \frac{N_{Rk,s}}{\gamma_{Ms}} = 50.0 \text{ kN}$	Check	$\frac{N_{Sd}^h}{N_{Rd,s}} = 0.18$
----------------------------	---	-------	------------------------------------

Pullout failure

Characteristic value for one anchor	$N_{Rk,p} = 20.0 \text{ kN}$
Partial safety factor	$\gamma_{Mp} = 1.50$

Design value of resistance	$N_{Rd,p} = \frac{N_{Rk,p}}{\gamma_{Mp}} = 13.3 \text{ kN}$	Check	$\frac{N_{Sd}^h}{N_{Rd,p}} = 0.67$
----------------------------	---	-------	------------------------------------

Concrete cone failure

Initial value of the anchor resistance	$N_{Rk,c}^0 = 26.7 \text{ kN}$	
Actual area of concrete cone	$A_{c,N} = 107256 \text{ mm}^2$	
Reference area of concrete cone	$A_{c,N}^0 = 60516 \text{ mm}^2$	
Factor for disturbance of stressed distribution	$\psi_{s,N} = 1.00$	
Shell spalling factor	$\psi_{re,N} = 0.91$	
Eccentricity of the resulting tensile load	$e_{N,x} = 0 \text{ mm}$	$e_{N,y} = 0 \text{ mm}$
Factors for eccentrical loading	$\psi_{ec,N,x} = 1.00$	$\psi_{ec,N,y} = 1.00$
Influence concrete	$f_{b,N} = 1.00$	
Influence depth	$\psi_T = 1.00$	

Characteristic value for the anchor group	
$N_{Rk,c}$	$N_{Rk,c} = N_{Rk,c}^0 \cdot \frac{A_{c,N}}{A_{c,N}^0} \cdot \psi_{s,N} \cdot \psi_{re,N} \cdot \psi_{ec,N,x} \cdot \psi_{ec,N,y} \cdot \psi_T \cdot f_{b,N} = 43.1 \text{ kN}$
Partial safety factor	$\gamma_{Mc} = 1.50$

Design value of resistance	$N_{Rd,c} = \frac{N_{Rk,c}}{\gamma_{Mc}} = 28.7 \text{ kN}$	Check	$\frac{N_{Sd}^g}{N_{Rd,c}} = 0.93$
----------------------------	---	-------	------------------------------------



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 3 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Shear Load V

HST-M16

Anchor		1	2	3	4	5	6
Design value of shear in x	$V_{Sd,x,i}$	1.9 kN	1.9 kN	1.9 kN	1.9 kN	1.9 kN	1.9 kN
Design value of shear in y	$V_{Sd,y,i}$	0.0 kN	0.0 kN	0.0 kN	0.0 kN	0.0 kN	0.0 kN

$$\text{Design value of anchor group} \quad V_{Sd,x}^g = \sum_{i=1}^n \alpha V_{Sd,x,i} = 11.6 \text{ kN} \quad V_{Sd,y}^g = \sum_{i=1}^n \alpha V_{Sd,y,i} = 0.0 \text{ kN}$$

Resulting design value of shear	$V_{Sd,i}$	1.9 kN	1.9 kN	1.9 kN	1.9 kN	1.9 kN	1.9 kN
---------------------------------	------------	--------	--------	--------	--------	--------	--------

Steel failure without lever arm

Characteristic value for one anchor $V_{Rk,s} = 50.0 \text{ kN}$
Partial safety factor $\gamma_{Ms} = 1.25$

$$\text{Design value of resistance} \quad V_{Rd,s} = \frac{V_{Rk,s}}{\gamma_{Ms}} = 40.0 \text{ kN} \quad \text{Check} \quad \frac{V_{Sd}^h}{V_{Rd,s}} = 0.05$$

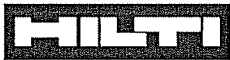
Concrete edge failure

Initial value of the anchor resistance	$V_{Rk,c}^0$	= ---
Actual area of concrete cone	$A_{c,V}$	= 0 mm ²
Reference area of concrete cone	$A_{c,V}^0$	= 0 mm ²
Factor for disturbance of stressed distribution	$\psi_{s,V}$	= 1.00
Factor for member thickness	$\psi_{h,V}$	= 1.00
Factor for load direction	$\psi_{a,V}$	= 1.00
Eccentricity of the resulting shear load	$e_{V,x}$	= 0 mm
	$e_{V,y}$	= 0 mm
Factors for eccentric loading	$\psi_{ec,V,x}$	= 1.00
	$\psi_{ec,V,y}$	= 1.00
Factors for the position of the anchorage	$\psi_{ucr,V}$	= 1.0

Characteristic value for the anchor group

$$V_{Rk,c} = V_{Rk,c}^0 \cdot \frac{A_{c,V}}{A_{c,V}^0} \cdot \psi_{s,V} \cdot \psi_{h,V} \cdot \psi_{a,V} \cdot \psi_{ec,V} \cdot \psi_{ucr,V} \quad V_{Rk,c,x} = --- \quad \gamma_{Mc} = 1.00$$

$$\text{Design value of resistance} \quad V_{Rd,c} = \frac{V_{Rk,c}}{\gamma_{Mc}} = --- \quad \text{Check} \quad \frac{V_{Sd}^g}{V_{Rd,c}} = 0.00$$



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 4 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Concrete pryout failure

HST-M16

Factor for short stiff anchors $k = 2.0$
Characteristic value for the anchor group $N_{Rk,c} = 76.4 \text{ kN}$

Characteristic value for the anchor group $V_{Rk,c} = 152.8 \text{ kN}$
Partial safety factor $\gamma_{Mc} = 1.50$

Design value of resistance $V_{Rd,c} = \frac{V_{Rk,c}}{\gamma_{Mc}} = 101.9 \text{ kN}$ Check $\frac{V_{Sd}^g}{V_{Rd,c}} = 0.11$

Splitting failure due to loading

Actual area of concrete cone $A_{c,N,sp} = 107256 \text{ mm}^2$
Reference area of concrete cone $A_{c,N,sp}^0 = 60516 \text{ mm}^2$
Factor for actual member depth $\psi_{h,sp} = 1.50$

Characteristic value for the anchor group

$N_{Rk,sp} = N_{Rk,c}^0 \cdot \frac{A_{c,N,sp}}{A_{c,N,sp}^0} \cdot \psi_{s,N} \cdot \psi_{re,N} \cdot \psi_{ec,N,x} \cdot \psi_{ec,N,y} \cdot \psi_{ucr,N} \cdot \psi_{h,sp} = 71.1 \text{ kN}$

Partial safety factor $\gamma_{Msp} = 1.50$

Design value of resistance $N_{Rd,sp} = \frac{N_{Rk,sp}^g}{\gamma_{Msp}} = 47.4 \text{ kN}$ Check $\frac{N_{Sd}^g}{N_{Rd,sp}} = 0.57$

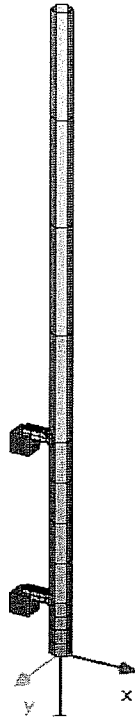
Combined tension and shear load

$\beta_N = 0.93 < 1.0$ $\beta_V = 0.11 < 1.0$ $(\beta_N + \beta_V)/1.2 = 0.87 < 1.0$ $\beta_N^\alpha + \beta_V^\alpha = 0.94 < 1.0$

4 ΑΝΑΛΥΣΗ ΚΑΤΑΣΚΕΥΗΣ ΜΙΚΡΟΚΥΜΑΤΙΚΟΥ ΠΙΑΤΟΥ

Η ανάλυση των φορέων έγινε το πρόγραμμα Sofistik με προσομοίωση ραβδόμορφων στοιχείων

Τρισδιάστατη απεικόνιση φορέα

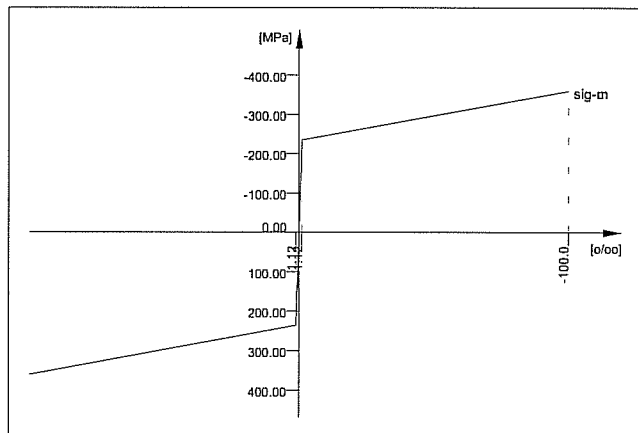


1828 AGIOS NIKOLAOS CITY 2 MW DISH

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

No. 1 S 235 (EN 10025-2)

Youngs-modulus	E	210000 [MPa]	Safetyfactor	1.10 [-]	
Poisson-Ratio	mu	0.30 [-]	Yield stress	fy 235.00 [MPa]	
Shear-modulus	G	80769 [MPa]	Compr.yield val.	fyc 235.00 [MPa]	
Compression modulus		175000 [MPa]	Tens. strength	ft 360.00 [MPa]	
Weight		86.3 [kN/m3]	Compr. strength	fc 360.00 [MPa]	
Weight buoyancy		86.3 [kN/m3]	Ultim. plast. strain	100.00 [o/oo]	
Temp.elongat.coeff.	1.20E-05 [-]		relative bond coeff.	0.00 [-]	
max. thickness	40.00 [mm]		EC2 bondcoeff. K1	0.00 [-]	
			Hardening modulus	0.00 [MPa]	
			Proportional limit	235.00 [MPa]	
			Dynamic stress range	0.00 [MPa]	
Stress-Strain for serviceability			eps[o/oo]	sig-m[MPa]	E-t[MPa]
Is also extended beyond the			1000.000	360.00	0
defined stress range			100.000	360.00	1264
			1.119	235.00	210000
			0.000	0.00	210000
			-1.119	-235.00	1264
			-100.000	-360.00	0
			-1000.000	-360.00	0
			Safetyfactor	1.10	
Stress-Strain for ultimate load			eps[o/oo]	sig-u[MPa]	E-t[MPa]
Is also extended beyond the			1000.000	360.00	0
defined stress range			100.000	360.00	1264
			1.119	235.00	210000
			0.000	0.00	210000
			-1.119	-235.00	1264
			-100.000	-360.00	0
			-1000.000	-360.00	0
			Safetyfactor	1.10	



Cross-sections static properties

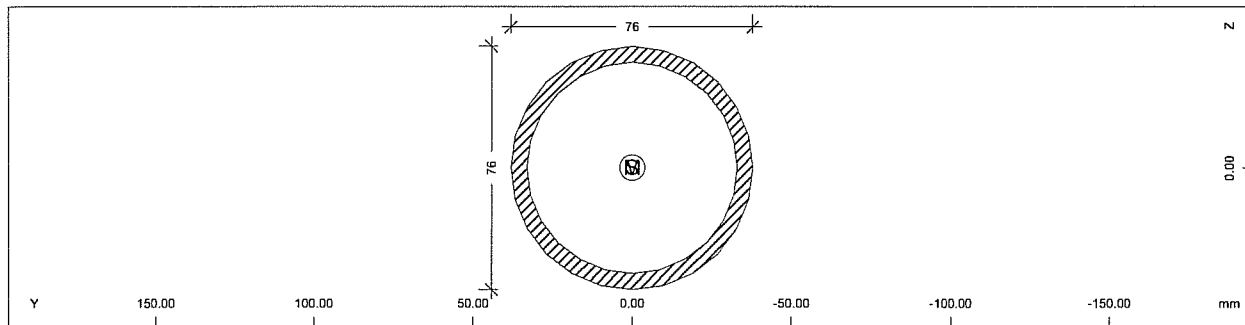
No	MNo	A[m2]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
	MNs	It[m4]	[m2]	[m4]	[m]	[m]	[MPa]	[kN/m]
1	=	D 76.1 / 5 mm						
	1	1.1168E-03	5.272E-01	7.092E-07	0.000	0.000	210000	0.10
		1.418E-06	5.272E-01	7.092E-07	0.000	0.000	80769	
2	=	SH 40 x 40 x 4						
	1	5.6227E-04	2.606E-04	1.210E-07	0.000	0.000	210000	0.05
		1.962E-07	2.606E-04	1.210E-07	0.000	0.000	80769	

1828 AGIOS NIKOLAOS CITY 2 MW DISH

Summary of used sections in system

No.	Total Length [m]	Total Weight [t]	max. length [m]	Title
1	2.400	0.023	1.600	D 76.1 / 5 mm
2	0.280	0.001	0.140	SH 40 x 40 x 4

Cross section No. 1 - D 76.1 / 5 mm



Static properties of cross section

MNo	A[cm ²]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
MNs	It[cm ⁴]	[cm ²]	[cm ⁴]	[mm]	[mm]	[N/mm ²]	[kN/m]
1	11.17	5272.06	70.9	0.0	0.0	210000	0.10
	141.8	5272.06	70.9	0.0	0.0	80769	

Additional static properties of cross section

Alfa-T	ymin	zmin	hymn	AK	MB	Tau-T	Tau-Vy
	ymax	zmax	hzmin	AB		Tau-B	Tau-Vz
	[mm]	[mm]	[mm]	[cm ²]		[1/m ³]	[1/m ²]
1.2E-05	-38.0	-38.0				2.683E+04	1.785E+03
	38.0	38.0					1.785E+03

Design forces and moments

(C/E = characteristic plastic/elastic, D=plast.Design, F=elast. Design)

	N[kN]	Vy[kN]	Vz[kN]	Mt[kNm]	My[kNm]	Mz[kNm]	y[mm]	z[mm]	BUCK
C	262.5	100.21	100.21	5.40	5.95	5.95	0.0	0.0	a a
E	262.5	76.01	76.01	5.06	4.38	4.38	0.0	0.0	
D	238.6	91.10	91.10	4.91	5.41	5.41	0.0	0.0	
F	238.6	69.10	69.10	4.60	3.98	3.98	0.0	0.0	

Tube/Cable

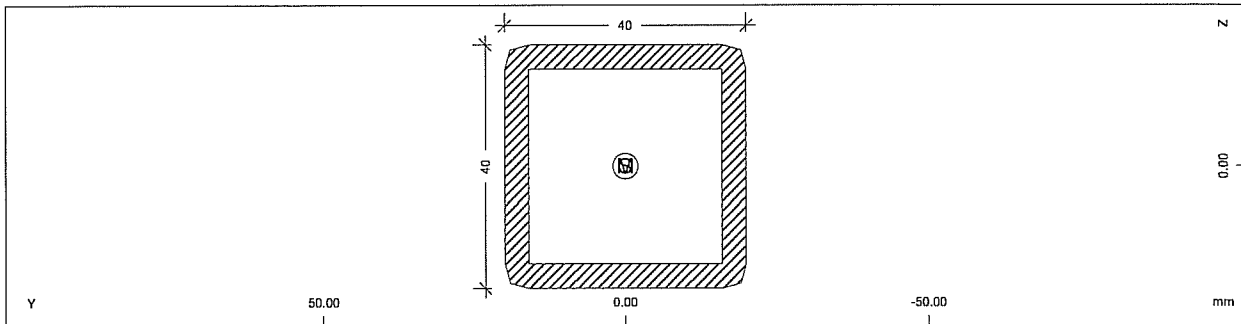
D[mm]	t[mm]
76.1	5.0

Additional Design Data

M	periphery-0/-I	deff	t-min	t-max	SMP	thet-p	thet-y	thet-z	thet-yz
	[m ² /m]	[m ² /m]	[mm]	[mm]	[o/o]	[tm ² /m]	[tm ² /m]	[tm ² /m]	[tm ² /m]
	0.239	0.208	5.0	5.0	0.0				

1828 AGIOS NIKOLAOS CITY 2 MW DISH

Cross section No. 2 - SH 40 x 40 x 4



Static properties of cross section

MNo	A[cm ²]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
MNs	It[cm ⁴]	[cm ²]	[cm ⁴]	[mm]	[mm]	[N/mm ²]	[kN/m]
1	5.62	2.61	12.1	0.0	0.0	210000	0.05
	19.6	2.61	12.1	0.0	0.0	80769	

Additional static properties of cross section

Alfa-T	ymin	zmin	hmin	AK	MB	Tau-T	Tau-Vy
	ymax	zmax	hzmin	AB		Tau-B	Tau-Vz
	[mm]	[mm]	[mm]	[cm ²]		[1/m ³]	[1/m ²]
1.2E-05	-20.0	-20.0		1.296E+01		1.160E+05	3.899E+03
	20.0	20.0					3.899E+03

Section values for warping

Wmin[cm ²]	Wmax[cm ²]	CM[cm ⁶]	CMS[cm ⁴]	ASwyy[cm ⁶]	ASwzz[cm ⁶]	ry[mm]	rz[mm]
-0.37	0.37	0.00	0.0	0.00	0.00		

Design values of cross section

MNo	A[cm ²]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	modules	gam
MNs	It[cm ⁴]	[cm ²]	[cm ⁴]	[mm]	[N/mm ²]	[kN/m]
1	5.62	2.61	12.1	0.0	190909	0.05
	19.6	2.61	12.1	0.0	73427	

Design forces and moments

(C/E = characteristic plastic/elastic, D=plast.Design, F=elast. Design)									
	N[kN]	Vy[kN]	Vz[kN]	Mt[kNm]	My[kNm]	Mz[kNm]	y[mm]	z[mm]	BUCK
C	132.1	35.35	35.35	1.29	1.77	1.77	0.0	0.0	a a
E	132.1	34.80	34.80	1.17	1.42	1.42	0.0	0.0	
D	120.1	32.14	32.14	1.18	1.61	1.61	0.0	0.0	
F	120.1	31.63	31.63	1.06	1.29	1.29	0.0	0.0	

Additional Design Data

M	periphery-0/-I	deff	t-min	t-max	SMP	thet-p	thet-y	thet-z	thet-yz
	[m ² /m]	[m ² /m]	[mm]	[mm]	[o/o]	[tm ² /m]	[tm ² /m]	[tm ² /m]	[tm ² /m]
	0.154	0.128			0.0	0.000	0.000	0.000	0.000

Rolled steel	D[mm]	B[mm]	s[mm]	t[mm]	r[mm]	yr[mm]	zr[mm]	[grd]
SH	40.0	40.0	4.0	40.0	40.0	4.0	4.0	

1828 AGIOS NIKOLAOS CITY 2 MW DISH

Nodal Coordinates and Supports

Number	X[m]	Y[m]	Z[m]	Support Conditions							
1	0.000	0.000	0.000								
2	0.000	0.000	-0.200								
3	0.000	0.000	-0.800								
4	0.000	0.000	-2.400								
12	-0.140	0.000	-0.200	PX	PY	PZ	MX	MY	MZ	MB	
13	-0.140	0.000	-0.800	PX	PY	PZ	MX	MY	MZ	MB	

MIN	-0.140	0.000	-2.400								
MAX	0.000	0.000	0.000								

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

No. 1 S 235 (EN 10025-2)

Youngs-modulus	E	210000 [MPa]	Safetyfactor	1.10 [-]
Poisson-Ratio	mu	0.30 [-]	Yield stress	fy 235.00 [MPa]
Shear-modulus	G	80769 [MPa]	Compr.yield val.	fyc 235.00 [MPa]
Compression modulus		175000 [MPa]	Tens. strength	ft 360.00 [MPa]
Weight		86.3 [kN/m3]	Compr. strength	fc 360.00 [MPa]
Weight buoyancy		86.3 [kN/m3]	Ultim. plast. strain	100.00 [o/oo]
Temp.elongat.coeff.	1.20E-05 [-]		relative bond coeff.	0.00 [-]
max. thickness	40.00 [mm]		EC2 bondcoeff. K1	0.00 [-]
			Hardening modulus	0.00 [MPa]
			Proportional limit	235.00 [MPa]
			Dynamic stress range	0.00 [MPa]

Cross sections - Static Properties

No	MNo	A[m2]	Ay/Az/Ayz	Iy/Iz/Iyz	ys/zs	y/z-sc	modules	gam
	MNs	It[m4]	[m2]	[m4]	[m]	[m]	[MPa]	[kN/m]
1	=	D 76.1 / 5 mm						
	1	1.1168E-03	5.272E-01	7.092E-07	0.000	0.000	210000	0.10
		1.418E-06	5.272E-01	7.092E-07	0.000	0.000	80769	
2	=	SH 40 x 40 x 4						
	1	5.6227E-04	2.606E-04	1.210E-07	0.000	0.000	210000	0.05
		1.962E-07	2.606E-04	1.210E-07	0.000	0.000	80769	

Summary of used sections in system

No.	Total Length	Total Weight	max. length	Title
	[m]	[t]	[m]	
1	2.400	0.023	1.600	D 76.1 / 5 mm
2	0.280	0.001	0.140	SH 40 x 40 x 4

Input for groups

No	MNo	Mrf	Ansatz	Posi	Direction	x-axis	Thick [m]
1	1	0	1+2+4	Center		0.00	0.200
2	1	0	1+2+4	Center		0.00	0.200

Legend for Ansatz: 1 = Plate Stiffness
2 = Membrane Stiffness
4 = in-plane Rotation

Beam Elements

Grp	Number	Node	x[m]	NoS	NoP	reference Hinges	direction	local	y-axis
1	101	1	0.000	1			-1.000	0.000	0.000
			0.050	1i					
			0.100	1i					
			0.150	1i					
		2	0.200	1					
1	102	2	0.000	1			-1.000	0.000	0.000
			0.150	1i					
			0.300	1i					
			0.450	1i					
		3	0.600	1					
1	103	3	0.000	1			-1.000	0.000	0.000
			0.400	1i					
			0.800	1i					

1828 AGIOS NIKOLAOS CITY 2 MW DISH

Beam Elements

Grp	Number	Node	x[m]	NoS	NoP	reference Hinges	direction	local y-axis
1	103		1.200	1i				
		4	1.600	1				
2	201	2	0.000	2		MyMz	0.000	-1.000 0.000
			0.035	2i				
			0.070	2i				
			0.105	2i				
		12	0.140	2				
2	202	3	0.000	2		MyMz	0.000	-1.000 0.000
			0.035	2i				
			0.070	2i				
			0.105	2i				
		13	0.140	2				

1828 AGIOS NIKOLAOS CITY 2 MW DISH
FORTIA YPOLOGISMOU

Load Case 1 IB MW DISH

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				

Load Case 3 ADRANEIA XX

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4	0.2						

Load Case 4 ADRANEIA YY

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4		0.2					

Load Case 21 ANEMOS XX

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4	0.5						

Load Case 22 ANEMOS -XX

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4	-0.5						

Load Case 23 ANEMOS YY

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 0.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4		0.5					

1828 AGIOS NIKOLAOS CITY 2 MW DISH
SYNDYASMOI FORTISEWN

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

No. 1 S 235 (EN 10025-2)

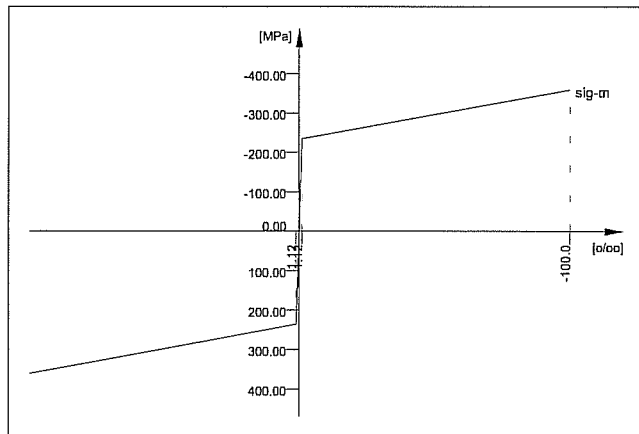
Youngs-modulus	E	210000 [MPa]	Safetyfactor	1.10 [-]
Poisson-Ratio	mu	0.30 [-]	Yield stress	fy 235.00 [MPa]
Shear-modulus	G	80769 [MPa]	Compr.yield val. fyc	235.00 [MPa]
Compression modulus		175000 [MPa]	Tens. strength	ft 360.00 [MPa]
Weight		86.3 [kN/m3]	Compr. strength	fc 360.00 [MPa]
Weight buoyancy		86.3 [kN/m3]	Ultim. plast. strain	100.00 [o/oo]
Temp.elongat.coeff.		1.20E-05 [-]	relative bond coeff.	0.00 [-]
max. thickness		40.00 [mm]	EC2 bondcoeff. K1	0.00 [-]
			Hardening modulus	0.00 [MPa]
			Proportional limit	235.00 [MPa]
			Dynamic stress range	0.00 [MPa]

Stress-Strain for serviceability
Is also extended beyond the
defined stress range

eps[o/oo]	sig-m[MPa]	E-t[MPa]
1000.000	360.00	0
100.000	360.00	1264
1.119	235.00	210000
0.000	0.00	210000
-1.119	-235.00	1264
-100.000	-360.00	0
-1000.000	-360.00	0

Stress-Strain for ultimate load
Is also extended beyond the
defined stress range

eps[o/oo]	sig-u[MPa]	E-t[MPa]
1000.000	360.00	0
100.000	360.00	1264
1.119	235.00	210000
0.000	0.00	210000
-1.119	-235.00	1264
-100.000	-360.00	0
-1000.000	-360.00	0
Safetyfactor		1.10



Elementgroups

No	fac-S	fac-L	fac-D	fac-P	fac-B	PLC	HW [m]
1	1.000	1.000	0.000	1.000	1.000	0	
2	1.000	1.000	0.000	1.000	1.000	0	

Nodes

Number	X [m]	Y [m]	Z [m]	supports/number of unknown					
1	0.000	0.000	0.000						
2	0.000	0.000	-0.200	1	2	3	4	5	6
3	0.000	0.000	-0.800	7	8	9	10	11	12
				19	20	21	22	23	24

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Nodes

Number	X [m]	Y [m]	Z [m]	supports/number of unknown					
4	0.000	0.000	-2.400	13	14	15	16	17	18
12	-0.140	0.000	-0.200	PX	PY	PZ	MX	MY	MZ
				0	0	0	0	0	0
13	-0.140	0.000	-0.800	PX	PY	PZ	MX	MY	MZ
				0	0	0	0	0	0

Definition of load type in this output:

PZZ - load in global direction Z in reference to the element length
PZP - load in global direction Z in reference to the projection
Pz - load in local direction z
PG - load in dead load direction in reference to the element length

Load Case 101 ULS1

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.350

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.4				
4	0.7						

sum	0.7		0.4				

Load Case 102 ULS2

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.350

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.4				
4	-0.7						

sum	-0.7		0.4				

Load Case 103 ULS3

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.350

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.4				
4		0.7					

sum		0.7	0.4				

Load Case 104 ULS4

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.000

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Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4	0.7						

sum	0.7		0.3				

Load Case 105 ULS5

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4	-0.7						

sum	-0.7		0.3				

Load Case 106 ULS6

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4		0.7					

sum		0.7	0.3				

Load Case 201 EX+0.3EY

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.600
Factor dead weight	DL-YY	0.180
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4	0.2						
4		0.1					

sum	0.2	0.1	0.3				

Load Case 301 SLS1

Factor forces and moments		1.000
Factor dead weight	DL-XX	0.000
Factor dead weight	DL-YY	0.000
Factor dead weight	DL-ZZ	1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4	0.5						

sum	0.5		0.3				

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Load Case 302 SLS2

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4	-0.5						

sum	-0.5		0.3				

Load Case 303 SLS3

Factor forces and moments 1.000
Factor dead weight DL-XX 0.000
Factor dead weight DL-YY 0.000
Factor dead weight DL-ZZ 1.000

Loads acting on Nodes

Node	PX[kN]	PY[kN]	PZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]	MB[kNm2]
4			0.3				
4		0.5					

sum		0.5	0.3				

Applied Nodal Loadvector Loadcase 101

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]
2	0.0	0.0	0.1	0.00	0.00	0.00
3	0.0	0.0	0.1	0.00	0.00	0.00
4	0.7	0.0	0.5	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 102

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]
2	0.0	0.0	0.1	0.00	0.00	0.00
3	0.0	0.0	0.1	0.00	0.00	0.00
4	-0.7	0.0	0.5	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 103

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]
2	0.0	0.0	0.1	0.00	0.00	0.00
3	0.0	0.0	0.1	0.00	0.00	0.00
4	0.0	0.7	0.5	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 104

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]
3	0.0	0.0	0.1	0.00	0.00	0.00
4	0.7	0.0	0.4	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 105

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]
3	0.0	0.0	0.1	0.00	0.00	0.00
4	-0.7	0.0	0.4	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 106

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MX[kNm]	MY[kNm]	MZ[kNm]
3	0.0	0.0	0.1	0.00	0.00	0.00
4	0.0	0.7	0.4	0.00	0.00	0.00

(without loads at constraints)

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Applied Nodal Loadvector Loadcase 201

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
3	0.1	0.0	0.1	0.00	-0.01	0.00
4	0.2	0.1	0.4	0.00	0.01	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 301

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
3	0.0	0.0	0.1	0.00	0.00	0.00
4	0.5	0.0	0.4	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 302

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
3	0.0	0.0	0.1	0.00	0.00	0.00
4	-0.5	0.0	0.4	0.00	0.00	0.00

(without loads at constraints)

Applied Nodal Loadvector Loadcase 303

Node	PXX[kN]	PYY[kN]	PZZ[kN]	MXX[kNm]	MYY[kNm]	MZZ[kNm]
3	0.0	0.0	0.1	0.00	0.00	0.00
4	0.0	0.5	0.4	0.00	0.00	0.00

(without loads at constraints)

Sum of Loads

LC Title	PXX[kN]	PYY[kN]	PZZ[kN]
101 ULS1	0.7	0.0	0.7
102 ULS2	-0.7	0.0	0.7
103 ULS3	0.0	0.7	0.7
104 ULS4	0.7	0.0	0.5
105 ULS5	-0.7	0.0	0.5
106 ULS6	0.0	0.7	0.5
201 EX+0.3EY	0.3	0.1	0.5
301 SLS1	0.5	0.0	0.5
302 SLS2	-0.5	0.0	0.5
303 SLS3	0.0	0.5	0.5

Beam Forces and Moments

Loadcase 101 ULS1

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.3	1.92	0.00	0.00	0.00	0.00
	0.150	-0.3	1.92	0.00	0.00	0.00	-0.29
	0.300	-0.3	1.92	0.00	0.00	0.00	-0.58
	0.450	-0.3	1.92	0.00	0.00	0.00	-0.86
	0.600	-0.2	1.92	0.00	0.00	0.00	-1.15
103	0.000	-0.6	-0.72	0.00	0.00	0.00	-1.15
	0.400	-0.6	-0.72	0.00	0.00	0.00	-0.86
	0.800	-0.5	-0.72	0.00	0.00	0.00	-0.58
	1.200	-0.5	-0.72	0.00	0.00	0.00	-0.29
	1.600	-0.4	-0.72	0.00	0.00	0.00	0.00
201	0.000	-1.9	0.00	-0.35	0.00	0.00	0.00
	0.035	-1.9	0.00	-0.35	0.00	-0.01	0.00
	0.070	-1.9	0.00	-0.35	0.00	-0.02	0.00
	0.105	-1.9	0.00	-0.36	0.00	-0.04	0.00
	0.140	-1.9	0.00	-0.36	0.00	-0.05	0.00
202	0.000	2.6	0.00	-0.37	0.00	0.00	0.00
	0.035	2.6	0.00	-0.37	0.00	-0.01	0.00
	0.070	2.6	0.00	-0.37	0.00	-0.03	0.00
	0.105	2.6	0.00	-0.37	0.00	-0.04	0.00
	0.140	2.6	0.00	-0.38	0.00	-0.05	0.00

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Nodal Displacements

Loadcase 101 ULS1

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.151	0.000	0.015	0.000	0.764	0.000
2	-0.002	0.000	0.015	0.000	0.764	0.000
3	0.003	0.000	0.016	0.000	-1.556	0.000
4	9.093	0.000	0.019	0.000	-7.744	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 101 ULS1

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12	1.9	0.0	-0.4	0.00	0.05	0.00
13	-2.6	0.0	-0.4	0.00	0.05	0.00

E

load case 101

group	Energy [kNm]	=% of sum
1	0.003268	99.635643
2	0.000012	0.364361
sum	0.003280	100.000000

Beam Forces and Moments

Loadcase 102 ULS2

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.3	-1.92	0.00	0.00	0.00	0.00
	0.150	-0.3	-1.92	0.00	0.00	0.00	0.29
	0.300	-0.3	-1.92	0.00	0.00	0.00	0.58
	0.450	-0.3	-1.92	0.00	0.00	0.00	0.86
	0.600	-0.2	-1.92	0.00	0.00	0.00	1.15
103	0.000	-0.6	0.72	0.00	0.00	0.00	1.15
	0.400	-0.6	0.72	0.00	0.00	0.00	0.86
	0.800	-0.5	0.72	0.00	0.00	0.00	0.58
	1.200	-0.5	0.72	0.00	0.00	0.00	0.29
	1.600	-0.4	0.72	0.00	0.00	0.00	0.00
201	0.000	1.9	0.00	-0.35	0.00	0.00	0.00
	0.035	1.9	0.00	-0.35	0.00	-0.01	0.00
	0.070	1.9	0.00	-0.35	0.00	-0.02	0.00
	0.105	1.9	0.00	-0.36	0.00	-0.04	0.00
	0.140	1.9	0.00	-0.36	0.00	-0.05	0.00
202	0.000	-2.6	0.00	-0.37	0.00	0.00	0.00
	0.035	-2.6	0.00	-0.37	0.00	-0.01	0.00
	0.070	-2.6	0.00	-0.37	0.00	-0.03	0.00
	0.105	-2.6	0.00	-0.37	0.00	-0.04	0.00
	0.140	-2.6	0.00	-0.38	0.00	-0.05	0.00

Nodal Displacements

Loadcase 102 ULS2

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	-0.151	0.000	0.015	0.000	-0.764	0.000
2	0.002	0.000	0.015	0.000	-0.764	0.000
3	-0.003	0.000	0.016	0.000	1.556	0.000
4	-9.093	0.000	0.019	0.000	7.744	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

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Nodal Reactions and Residual Forces

Loadcase 102 ULS2

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12	-1.9	0.0	-0.4	0.00	0.05	0.00
13	2.6	0.0	-0.4	0.00	0.05	0.00

E

load case 102

group	Energy [kNm]	=% of sum
1	0.003268	99.635643
2	0.000012	0.364361
sum	0.003280	100.000000

Beam Forces and Moments

Loadcase 103 ULS3

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.3	0.00	-1.68	0.00	0.04	0.00
	0.150	-0.3	0.00	-1.68	0.00	-0.22	0.00
	0.300	-0.3	0.00	-1.68	0.00	-0.47	0.00
	0.450	-0.3	0.00	-1.68	0.00	-0.72	0.00
	0.600	-0.2	0.00	-1.68	0.00	-0.97	0.00
103	0.000	-0.6	0.00	0.72	0.00	-1.15	0.00
	0.400	-0.6	0.00	0.72	0.00	-0.86	0.00
	0.800	-0.5	0.00	0.72	0.00	-0.58	0.00
	1.200	-0.5	0.00	0.72	0.00	-0.29	0.00
	1.600	-0.4	0.00	0.72	0.00	0.00	0.00
201	0.000	0.0	-1.68	-0.35	-0.04	0.00	0.00
	0.035	0.0	-1.68	-0.35	-0.04	-0.01	0.06
	0.070	0.0	-1.68	-0.35	-0.04	-0.02	0.12
	0.105	0.0	-1.68	-0.36	-0.04	-0.04	0.18
	0.140	0.0	-1.68	-0.36	-0.04	-0.05	0.24
202	0.000	0.0	2.40	-0.37	0.18	0.00	0.00
	0.035	0.0	2.40	-0.37	0.18	-0.01	-0.08
	0.070	0.0	2.40	-0.37	0.18	-0.03	-0.17
	0.105	0.0	2.40	-0.37	0.18	-0.04	-0.25
	0.140	0.0	2.40	-0.38	0.18	-0.05	-0.34

Nodal Displacements

Loadcase 103 ULS3

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.000	-0.009	0.015	-0.315	0.000	0.000
2	0.000	-0.072	0.015	-0.315	0.000	0.000
3	0.000	0.102	0.016	1.574	0.000	0.000
4	0.000	9.222	0.019	7.762	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 103 ULS3

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12		1.7	-0.4	0.04	0.05	0.24
13		-2.4	-0.4	-0.18	0.05	-0.34

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E

load case 103

group	Energy [kNm]	=% of sum
1	0.002991	89.928764
2	0.000335	10.071235
sum	0.003326	100.000000

Beam Forces and Moments

Loadcase 104 ULS4

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.2	1.92	0.00	0.00	0.00	0.00
	0.150	-0.2	1.92	0.00	0.00	0.00	-0.29
	0.300	-0.2	1.92	0.00	0.00	0.00	-0.58
	0.450	-0.2	1.92	0.00	0.00	0.00	-0.86
	0.600	-0.2	1.92	0.00	0.00	0.00	-1.15
103	0.000	-0.5	-0.72	0.00	0.00	0.00	-1.15
	0.400	-0.4	-0.72	0.00	0.00	0.00	-0.86
	0.800	-0.4	-0.72	0.00	0.00	0.00	-0.58
	1.200	-0.3	-0.72	0.00	0.00	0.00	-0.29
	1.600	-0.3	-0.72	0.00	0.00	0.00	0.00
201	0.000	-1.9	0.00	-0.26	0.00	0.00	0.00
	0.035	-1.9	0.00	-0.26	0.00	-0.01	0.00
	0.070	-1.9	0.00	-0.26	0.00	-0.02	0.00
	0.105	-1.9	0.00	-0.26	0.00	-0.03	0.00
	0.140	-1.9	0.00	-0.27	0.00	-0.04	0.00
202	0.000	2.6	0.00	-0.27	0.00	0.00	0.00
	0.035	2.6	0.00	-0.27	0.00	-0.01	0.00
	0.070	2.6	0.00	-0.28	0.00	-0.02	0.00
	0.105	2.6	0.00	-0.28	0.00	-0.03	0.00
	0.140	2.6	0.00	-0.28	0.00	-0.04	0.00

Nodal Displacements

Loadcase 104 ULS4

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	0.151	0.000	0.011	0.000	0.764	0.000
2	-0.002	0.000	0.011	0.000	0.764	0.000
3	0.003	0.000	0.012	0.000	-1.556	0.000
4	9.093	0.000	0.014	0.000	-7.744	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 104 ULS4

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
12	1.9	0.0	-0.3	0.00	0.04	0.00
13	-2.6	0.0	-0.3	0.00	0.04	0.00

E

load case 104

group	Energy [kNm]	=% of sum
1	0.003268	99.712898
2	0.000009	0.287102
sum	0.003277	100.000000

1828 AGIOS NIKOLAOS CITY 2 MW DISH
SYNDYASMOI FORTISEWN

Beam Forces and Moments

Loadcase 105 ULS5

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.2	-1.92	0.00	0.00	0.00	0.00
	0.150	-0.2	-1.92	0.00	0.00	0.00	0.29
	0.300	-0.2	-1.92	0.00	0.00	0.00	0.58
	0.450	-0.2	-1.92	0.00	0.00	0.00	0.86
	0.600	-0.2	-1.92	0.00	0.00	0.00	1.15
103	0.000	-0.5	0.72	0.00	0.00	0.00	1.15
	0.400	-0.4	0.72	0.00	0.00	0.00	0.86
	0.800	-0.4	0.72	0.00	0.00	0.00	0.58
	1.200	-0.3	0.72	0.00	0.00	0.00	0.29
	1.600	-0.3	0.72	0.00	0.00	0.00	0.00
201	0.000	1.9	0.00	-0.26	0.00	0.00	0.00
	0.035	1.9	0.00	-0.26	0.00	-0.01	0.00
	0.070	1.9	0.00	-0.26	0.00	-0.02	0.00
	0.105	1.9	0.00	-0.26	0.00	-0.03	0.00
	0.140	1.9	0.00	-0.27	0.00	-0.04	0.00
202	0.000	-2.6	0.00	-0.27	0.00	0.00	0.00
	0.035	-2.6	0.00	-0.27	0.00	-0.01	0.00
	0.070	-2.6	0.00	-0.28	0.00	-0.02	0.00
	0.105	-2.6	0.00	-0.28	0.00	-0.03	0.00
	0.140	-2.6	0.00	-0.28	0.00	-0.04	0.00

Nodal Displacements

Loadcase 105 ULS5

Node No	u-X [mm]	u-Y [mm]	u-Z [mm]	phi-X [mrad]	phi-Y [mrad]	phi-Z [mrad]
1	-0.151	0.000	0.011	0.000	-0.764	0.000
2	0.002	0.000	0.011	0.000	-0.764	0.000
3	-0.003	0.000	0.012	0.000	1.556	0.000
4	-9.093	0.000	0.014	0.000	7.744	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 105 ULS5

Node No	P-X [kN]	P-Y [kN]	P-Z [kN]	M-X [kNm]	M-Y [kNm]	M-Z [kNm]
12	-1.9	0.0	-0.3	0.00	0.04	0.00
13	2.6	0.0	-0.3	0.00	0.04	0.00

E

load case 105

group	Energy [kNm]	=% of sum
1	0.003268	99.712898
2	0.000009	0.287102
sum	0.003277	100.000000

Beam Forces and Moments

Loadcase 106 ULS6

beam Number	x [m]	N [kN]	Vy [kN]	Vz [kN]	Mt [kNm]	My [kNm]	Mz [kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.2	0.00	-1.68	0.00	0.04	0.00
	0.150	-0.2	0.00	-1.68	0.00	-0.22	0.00

1828 AGIOS NIKOLAOS CITY 2 MW DISH
SYNDYASMOI FORTISEWN

Beam Forces and Moments

Loadcase 106 ULS6

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
102	0.300	-0.2	0.00	-1.68	0.00	-0.47	0.00
	0.450	-0.2	0.00	-1.68	0.00	-0.72	0.00
	0.600	-0.2	0.00	-1.68	0.00	-0.97	0.00
103	0.000	-0.5	0.00	0.72	0.00	-1.15	0.00
	0.400	-0.4	0.00	0.72	0.00	-0.86	0.00
	0.800	-0.4	0.00	0.72	0.00	-0.58	0.00
	1.200	-0.3	0.00	0.72	0.00	-0.29	0.00
	1.600	-0.3	0.00	0.72	0.00	0.00	0.00
201	0.000	0.0	-1.68	-0.26	-0.04	0.00	0.00
	0.035	0.0	-1.68	-0.26	-0.04	-0.01	0.06
	0.070	0.0	-1.68	-0.26	-0.04	-0.02	0.12
	0.105	0.0	-1.68	-0.26	-0.04	-0.03	0.18
	0.140	0.0	-1.68	-0.27	-0.04	-0.04	0.24
202	0.000	0.0	2.40	-0.27	0.18	0.00	0.00
	0.035	0.0	2.40	-0.27	0.18	-0.01	-0.08
	0.070	0.0	2.40	-0.28	0.18	-0.02	-0.17
	0.105	0.0	2.40	-0.28	0.18	-0.03	-0.25
	0.140	0.0	2.40	-0.28	0.18	-0.04	-0.34

Nodal Displacements

Loadcase 106 ULS6

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.000	-0.009	0.011	-0.315	0.000	0.000
2	0.000	-0.072	0.011	-0.315	0.000	0.000
3	0.000	0.102	0.012	1.574	0.000	0.000
4	0.000	9.222	0.014	7.762	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 106 ULS6

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12		1.7	-0.3	0.04	0.04	0.24
13		-2.4	-0.3	-0.18	0.04	-0.34

E

load case 106

group	Energy [kNm]	=% of sum
1	0.002991	89.996201
2	0.000332	10.003798
sum	0.003323	100.000000

Beam Forces and Moments

Loadcase 201 EX+0.3EY

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.01	0.00	0.00	0.00	0.00
	0.150	0.0	0.01	0.00	0.00	0.00	0.00
	0.200	0.0	0.01	0.00	0.00	0.00	0.00
102	0.000	-0.2	0.58	-0.15	0.00	0.00	0.00
	0.150	-0.2	0.59	-0.16	0.00	-0.02	-0.09
	0.300	-0.2	0.60	-0.16	0.00	-0.04	-0.18
	0.450	-0.2	0.61	-0.16	0.00	-0.07	-0.27
	0.600	-0.2	0.62	-0.16	0.00	-0.09	-0.36
103	0.000	-0.5	-0.27	0.08	0.00	-0.11	-0.36
	0.400	-0.4	-0.25	0.07	0.00	-0.08	-0.26
	0.800	-0.4	-0.23	0.07	0.00	-0.05	-0.16
	1.200	-0.3	-0.20	0.06	0.00	-0.02	-0.08

1828 AGIOS NIKOLAOS CITY 2 MW DISH
SYNDYASMOI FORTISEWN

Beam Forces and Moments

Loadcase 201 EX+0.3EY

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
103	1.600	-0.3	-0.18	0.05	0.00	0.00	0.00
201	0.000	-0.6	-0.15	-0.26	0.00	0.00	0.00
	0.035	-0.6	-0.15	-0.26	0.00	-0.01	0.01
	0.070	-0.6	-0.15	-0.26	0.00	-0.02	0.01
	0.105	-0.6	-0.15	-0.26	0.00	-0.03	0.02
	0.140	-0.6	-0.15	-0.27	0.00	-0.04	0.02
202	0.000	0.9	0.24	-0.27	0.02	0.00	0.00
	0.035	0.9	0.25	-0.27	0.02	-0.01	-0.01
	0.070	0.9	0.25	-0.28	0.02	-0.02	-0.02
	0.105	0.9	0.25	-0.28	0.02	-0.03	-0.03
	0.140	0.9	0.25	-0.28	0.02	-0.04	-0.03

Nodal Displacements

Loadcase 201 EX+0.3EY

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.047	-0.001	0.011	-0.029	0.239	0.000
2	-0.001	-0.006	0.011	-0.029	0.238	0.000
3	0.001	0.010	0.012	0.148	-0.486	0.000
4	2.748	0.838	0.014	0.692	-2.299	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 201 EX+0.3EY

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12	0.6	0.1	-0.3	0.00	0.04	0.02
13	-0.9	-0.2	-0.3	-0.02	0.04	-0.03

E

load case 201

group	Energy [kNm]	=% of sum
1	0.000350	98.093491
2	0.000007	1.906510
sum	0.000357	100.000000

Beam Forces and Moments

Loadcase 301 SLS1

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.2	1.28	0.00	0.00	0.00	0.00
	0.150	-0.2	1.28	0.00	0.00	0.00	-0.19
	0.300	-0.2	1.28	0.00	0.00	0.00	-0.38
	0.450	-0.2	1.28	0.00	0.00	0.00	-0.58
	0.600	-0.2	1.28	0.00	0.00	0.00	-0.77
103	0.000	-0.5	-0.48	0.00	0.00	0.00	-0.77
	0.400	-0.4	-0.48	0.00	0.00	0.00	-0.58
	0.800	-0.4	-0.48	0.00	0.00	0.00	-0.38
	1.200	-0.3	-0.48	0.00	0.00	0.00	-0.19
	1.600	-0.3	-0.48	0.00	0.00	0.00	0.00
201	0.000	-1.3	0.00	-0.26	0.00	0.00	0.00
	0.035	-1.3	0.00	-0.26	0.00	-0.01	0.00
	0.070	-1.3	0.00	-0.26	0.00	-0.02	0.00
	0.105	-1.3	0.00	-0.26	0.00	-0.03	0.00
	0.140	-1.3	0.00	-0.27	0.00	-0.04	0.00

1828 AGIOS NIKOLAOS CITY 2 MW DISH
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Beam Forces and Moments

Loadcase 301 SLS1

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
202	0.000	1.8	0.00	-0.27	0.00	0.00	0.00
	0.035	1.8	0.00	-0.27	0.00	-0.01	0.00
	0.070	1.8	0.00	-0.28	0.00	-0.02	0.00
	0.105	1.8	0.00	-0.28	0.00	-0.03	0.00
	0.140	1.8	0.00	-0.28	0.00	-0.04	0.00

Nodal Displacements

Loadcase 301 SLS1

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.100	0.000	0.011	0.000	0.510	0.000
2	-0.002	0.000	0.011	0.000	0.510	0.000
3	0.002	0.000	0.012	0.000	-1.037	0.000
4	6.062	0.000	0.014	0.000	-5.163	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 301 SLS1

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12	1.3	0.0	-0.3	0.00	0.04	0.00
13	-1.8	0.0	-0.3	0.00	0.04	0.00

E

load case 301

group	Energy [kNm]	=% of sum
1	0.001453	99.595543
2	0.000006	0.404461
sum	0.001459	100.000000

Beam Forces and Moments

Loadcase 302 SLS2

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.2	-1.28	0.00	0.00	0.00	0.00
	0.150	-0.2	-1.28	0.00	0.00	0.00	0.19
	0.300	-0.2	-1.28	0.00	0.00	0.00	0.38
	0.450	-0.2	-1.28	0.00	0.00	0.00	0.58
	0.600	-0.2	-1.28	0.00	0.00	0.00	0.77
103	0.000	-0.5	0.48	0.00	0.00	0.00	0.77
	0.400	-0.4	0.48	0.00	0.00	0.00	0.58
	0.800	-0.4	0.48	0.00	0.00	0.00	0.38
	1.200	-0.3	0.48	0.00	0.00	0.00	0.19
	1.600	-0.3	0.48	0.00	0.00	0.00	0.00
201	0.000	1.3	0.00	-0.26	0.00	0.00	0.00
	0.035	1.3	0.00	-0.26	0.00	-0.01	0.00
	0.070	1.3	0.00	-0.26	0.00	-0.02	0.00
	0.105	1.3	0.00	-0.26	0.00	-0.03	0.00
	0.140	1.3	0.00	-0.27	0.00	-0.04	0.00
202	0.000	-1.8	0.00	-0.27	0.00	0.00	0.00
	0.035	-1.8	0.00	-0.27	0.00	-0.01	0.00
	0.070	-1.8	0.00	-0.28	0.00	-0.02	0.00
	0.105	-1.8	0.00	-0.28	0.00	-0.03	0.00
	0.140	-1.8	0.00	-0.28	0.00	-0.04	0.00

1828 AGIOS NIKOLAOS CITY 2 MW DISH
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Nodal Displacements

Loadcase 302 SLS2

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	-0.100	0.000	0.011	0.000	-0.510	0.000
2	0.002	0.000	0.011	0.000	-0.510	0.000
3	-0.002	0.000	0.012	0.000	1.037	0.000
4	-6.062	0.000	0.014	0.000	5.163	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

Nodal Reactions and Residual Forces

Loadcase 302 SLS2

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12	-1.3	0.0	-0.3	0.00	0.04	0.00
13	1.8	0.0	-0.3	0.00	0.04	0.00

E

load case 302

group	Energy [kNm]	=% of sum
1	0.001453	99.595543
2	0.000006	0.404461
sum	0.001459	100.000000

Beam Forces and Moments

Loadcase 303 SLS3

beam	x	N	Vy	Vz	Mt	My	Mz
Number	[m]	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
101	0.000	0.0	0.00	0.00	0.00	0.00	0.00
	0.050	0.0	0.00	0.00	0.00	0.00	0.00
	0.100	0.0	0.00	0.00	0.00	0.00	0.00
	0.150	0.0	0.00	0.00	0.00	0.00	0.00
	0.200	0.0	0.00	0.00	0.00	0.00	0.00
102	0.000	-0.2	0.00	-1.12	0.00	0.02	0.00
	0.150	-0.2	0.00	-1.12	0.00	-0.14	0.00
	0.300	-0.2	0.00	-1.12	0.00	-0.31	0.00
	0.450	-0.2	0.00	-1.12	0.00	-0.48	0.00
	0.600	-0.2	0.00	-1.12	0.00	-0.65	0.00
103	0.000	-0.5	0.00	0.48	0.00	-0.77	0.00
	0.400	-0.4	0.00	0.48	0.00	-0.58	0.00
	0.800	-0.4	0.00	0.48	0.00	-0.38	0.00
	1.200	-0.3	0.00	0.48	0.00	-0.19	0.00
	1.600	-0.3	0.00	0.48	0.00	0.00	0.00
201	0.000	0.0	-1.12	-0.26	-0.02	0.00	0.00
	0.035	0.0	-1.12	-0.26	-0.02	-0.01	0.04
	0.070	0.0	-1.12	-0.26	-0.02	-0.02	0.08
	0.105	0.0	-1.12	-0.26	-0.02	-0.03	0.12
	0.140	0.0	-1.12	-0.27	-0.02	-0.04	0.16
202	0.000	0.0	1.60	-0.27	0.12	0.00	0.00
	0.035	0.0	1.60	-0.27	0.12	-0.01	-0.06
	0.070	0.0	1.60	-0.28	0.12	-0.02	-0.11
	0.105	0.0	1.60	-0.28	0.12	-0.03	-0.17
	0.140	0.0	1.60	-0.28	0.12	-0.04	-0.22

Nodal Displacements

Loadcase 303 SLS3

Node	u-X	u-Y	u-Z	phi-X	phi-Y	phi-Z
No	[mm]	[mm]	[mm]	[mrad]	[mrad]	[mrad]
1	0.000	-0.006	0.011	-0.210	0.000	0.000
2	0.000	-0.048	0.011	-0.210	0.000	0.000
3	0.000	0.068	0.012	1.049	0.000	0.000
4	0.000	6.148	0.014	5.175	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000

1828 AGIOS NIKOLAOS CITY 2 MW DISH
SYNDYASMOI FORTISEWN

Nodal Reactions and Residual Forces

Loadcase 303 SLS3

Node	P-X	P-Y	P-Z	M-X	M-Y	M-Z
No	[kN]	[kN]	[kN]	[kNm]	[kNm]	[kNm]
12		1.1	-0.3	0.02	0.04	0.16
13		-1.6	-0.3	-0.12	0.04	-0.22

Sum of Reactions and Loads

LC Title	PXX[kN]	PYY[kN]	PZZ[kN]
101 ULS1	-0.7	0.0	-0.7
	0.7	0.0	0.7
102 ULS2	0.7	0.0	-0.7
	-0.7	0.0	0.7
103 ULS3	0.0	-0.7	-0.7
	0.0	0.7	0.7
104 ULS4	-0.7	0.0	-0.5
	0.7	0.0	0.5
105 ULS5	0.7	0.0	-0.5
	-0.7	0.0	0.5
106 ULS6	0.0	-0.7	-0.5
	0.0	0.7	0.5
201 EX+0.3EY	-0.3	-0.1	-0.5
	0.3	0.1	0.5
301 SLS1	-0.5	0.0	-0.5
	0.5	0.0	0.5
302 SLS2	0.5	0.0	-0.5
	-0.5	0.0	0.5
303 SLS3	0.0	-0.5	-0.5
	0.0	0.5	0.5

E

load case 303

group	Energy [kNm]	=% of sum
1	0.001330	89.893761
2	0.000149	10.106237
sum	0.001479	100.000000

1828 AGIOS NIKOLAOS CITY 2 MW DISH
 ELEGXOS MELWN

Default design code is EuroCode 3 Steel with country code 30 (Hellas/Greece)

Materials

No. 1 S 235 (EN 10025-2)

Considered Load Cases

101 102 103 104 105 106
 201

Stresses utilisation

Beam	x[m]	NoS	LC	M	A	sig-	sig+	tau	sig-I	sig-II	sig-v	N/Npl*
101	0.000	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.000	0.000	0.000			0.000	
	0.050	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.000	0.000	0.000			0.000	
	0.100	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.000	0.000	0.000			0.000	
	0.150	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.000	0.000	0.000			0.000	
	0.200	1	MIN	1		0.000	0.000	0.000			0.000	
			MAX	1		0.000	0.000	0.000			0.000	
102	0.000	1	MIN	1		0.001	0.001	0.009			0.009	
			MAX	1		0.010	0.008	0.028			0.028	
	0.150	1	MIN	1		0.024	0.022	0.009			0.024	
			MAX	1		0.074	0.071	0.028			0.074	
	0.300	1	MIN	1		0.047	0.045	0.009			0.047	
			MAX	1		0.146	0.144	0.028			0.146	
	0.450	1	MIN	1		0.071	0.069	0.009			0.071	
			MAX	1		0.218	0.216	0.028			0.218	
	0.600	1	MIN	1		0.095	0.093	0.009			0.095	
			MAX	1		0.290	0.289	0.028			0.290	
103	0.000	1	MIN	1		0.097	0.093	0.004			0.097	
			MAX	1		0.292	0.287	0.010			0.292	
	0.400	1	MIN	1		0.069	0.066	0.004			0.069	
			MAX	1		0.219	0.215	0.010			0.219	
	0.800	1	MIN	1		0.044	0.041	0.003			0.044	
			MAX	1		0.147	0.143	0.010			0.147	
	1.200	1	MIN	1		0.022	0.019	0.003			0.022	
			MAX	1		0.074	0.071	0.010			0.074	
	1.600	1	MIN	1		0.001	0.002	0.003			0.003	
			MAX	1		0.002	0.001	0.010			0.011	
201	0.000	2	MIN	1		0.016	0.016	0.008			0.015	
			MAX	1		0.016	0.016	0.087			0.087	
	0.035	2	MIN	1		0.009	0.009	0.008			0.015	
			MAX	1		0.053	0.053	0.087			0.091	
	0.070	2	MIN	1		0.002	0.002	0.008			0.026	
			MAX	1		0.106	0.106	0.087			0.113	
	0.105	2	MIN	1		0.005	0.005	0.008			0.037	
			MAX	1		0.160	0.160	0.087			0.164	
	0.140	2	MIN	1		0.012	0.012	0.008			0.045	
			MAX	1		0.213	0.213	0.087			0.217	
202	0.000	2	MIN	1		0.022	0.022	0.009			0.024	
			MAX	1		0.022	0.022	0.243			0.243	
	0.035	2	MIN	1		0.015	0.015	0.009			0.030	
			MAX	1		0.073	0.073	0.243			0.244	
	0.070	2	MIN	1		0.007	0.007	0.009			0.035	
			MAX	1		0.146	0.146	0.243			0.246	
	0.105	2	MIN	1		0.000	0.000	0.009			0.044	
			MAX	1		0.219	0.219	0.243			0.276	
	0.140	2	MIN	1		0.008	0.008	0.009			0.052	
			MAX	1		0.293	0.293	0.243			0.327	

1828 AGIOS NIKOLAOS CITY 2 MW DISH
 ELEGXOS MELWN

Stresses utilisation

Beam	x[m]	NoS	LC M A	sig-	sig+	tau	sig-I	sig-II	sig-v	N/Npl*
Total System			MIN 1	0.022	0.022	0.000			0.000	
Total System			MAX 1	0.293	0.293	0.243			0.327	

Reviewed Maximum Values Material 1

Constant compression	213.64 MPa	utilisation	0.022	LC	102
Constant tension	213.64 MPa	utilisation	0.022	LC	101
Uniaxial compression	213.64 MPa	utilisation	0.292	LC	101
Uniaxial tension	213.64 MPa	utilisation	0.289	LC	104
Biaxial compression	213.64 MPa	utilisation	0.293	LC	103
Biaxial tension	213.64 MPa	utilisation	0.293	LC	103
Shear stress	123.34 MPa	utilisation	0.243	LC	103
Comparison stress	213.64 MPa	utilisation	0.327	LC	103
Shear in weldings	170.91 MPa				
Compression in compr. zone	213.64 MPa	utilisation	0.022	LC	102

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-]	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
101	0.000	101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		102	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
	0.050	101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		102	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
	0.100	101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		102	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
	0.150	101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000
		102	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000

Beam	x[m]	LC	N[-] Nred	Vy[-]	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]		
101	0.150	103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
		104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
		105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
		106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
		201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
		0.200	101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
				0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000
	102		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
	103		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
	104		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
	105		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
	106		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
			0.000	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.000	0.000	
	102	0.000	101	0.001	0.021	0.000	0.000	0.000	0.000	0.000	0.001	0.021	0.021
				0.001	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.001	0.021
102			0.001	0.021	0.000	0.000	0.000	0.000	0.000	0.001	0.021	0.021	
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.001	0.021	0.021
103			0.001	0.000	0.018	0.000	0.007	0.000	0.000	0.008	0.018	0.018	
			0.001	ay,az=	1.358	1.358	0.006	0.000	0.000	0.000	0.008	0.018	0.018
104			0.001	0.021	0.000	0.000	0.000	0.000	0.000	0.001	0.021	0.021	
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.001	0.021	0.021
105			0.001	0.021	0.000	0.000	0.000	0.000	0.000	0.001	0.021	0.021	
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000	0.000	0.001	0.021	0.021
106			0.001	0.000	0.018	0.000	0.007	0.000	0.000	0.008	0.018	0.018	
			0.001	ay,az=	1.358	1.358	0.006	0.000	0.000	0.000	0.008	0.018	0.018
0.150		201	0.001	0.006	0.002	0.000	0.001	0.000	0.000	0.002	0.008	0.006	
			0.001	ay,az=	1.358	1.358	0.001	0.000	0.000	0.000	0.002	0.008	0.006
		101	0.001	0.021	0.000	0.000	0.000	0.053	0.055	0.055	0.021	0.053	
			0.001	ay,az=	1.358	1.358	0.000	0.051	0.003	0.003	0.021	0.053	0.053
		102	0.001	0.021	0.000	0.000	0.000	0.053	0.055	0.055	0.021	0.053	
			0.001	ay,az=	1.358	1.358	0.000	0.051	0.003	0.003	0.021	0.053	0.053
		103	0.001	0.000	0.018	0.000	0.040	0.000	0.041	0.041	0.018	0.040	
			0.001	ay,az=	1.358	1.358	0.039	0.000	0.001	0.001	0.018	0.040	0.040
		104	0.001	0.021	0.000	0.000	0.000	0.053	0.054	0.054	0.021	0.053	
			0.001	ay,az=	1.358	1.358	0.000	0.051	0.003	0.003	0.021	0.053	0.053
		105	0.001	0.021	0.000	0.000	0.000	0.053	0.054	0.054	0.021	0.053	
			0.001	ay,az=	1.358	1.358	0.000	0.051	0.003	0.003	0.021	0.053	0.053
0.300	106	0.001	0.000	0.018	0.000	0.040	0.000	0.041	0.041	0.018	0.040		
		0.001	ay,az=	1.358	1.358	0.039	0.000	0.001	0.001	0.018	0.040	0.040	
	201	0.001	0.007	0.002	0.000	0.004	0.017	0.021	0.021	0.008	0.017		
		0.001	ay,az=	1.358	1.358	0.004	0.016	0.000	0.000	0.008	0.017	0.017	
	101	0.001	0.021	0.000	0.000	0.000	0.106	0.108	0.108	0.021	0.106		
		0.001	ay,az=	1.358	1.358	0.000	0.102	0.010	0.010	0.021	0.106	0.106	
	102	0.001	0.021	0.000	0.000	0.000	0.106	0.108	0.108	0.021	0.106		
		0.001	ay,az=	1.358	1.358	0.000	0.102	0.010	0.010	0.021	0.106	0.106	
	103	0.001	0.000	0.018	0.000	0.087	0.000	0.088	0.088	0.018	0.087		
		0.001	ay,az=	1.358	1.358	0.083	0.000	0.007	0.007	0.018	0.087	0.087	
	104	0.001	0.021	0.000	0.000	0.000	0.106	0.107	0.107	0.021	0.106		
		0.001	ay,az=	1.358	1.358	0.000	0.102	0.010	0.010	0.021	0.106	0.106	
105	0.001	0.021	0.000	0.000	0.000	0.106	0.107	0.107	0.021	0.106			
	0.001	ay,az=	1.358	1.358	0.000	0.102	0.010	0.010	0.021	0.106	0.106		

1828 AGIOS NIKOLAOS CITY 2 MW DISH
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-]	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
102	0.300	106	0.001	0.000	0.018	0.000	0.087	0.000	0.088	0.018	0.087
			0.001	ay,az=	1.358	1.358	0.083	0.000	0.007		
		201	0.001	0.007	0.002	0.000	0.008	0.033	0.042	0.008	0.033
			0.001	ay,az=	1.358	1.358	0.008	0.032	0.001		
		0.450	0.001	0.021	0.000	0.000	0.000	0.160	0.161	0.021	0.160
			0.001	ay,az=	1.358	1.358	0.000	0.154	0.024		
	0.600	102	0.001	0.021	0.000	0.000	0.000	0.160	0.161	0.021	0.160
			0.001	ay,az=	1.358	1.358	0.000	0.154	0.024		
		103	0.001	0.000	0.018	0.000	0.133	0.000	0.134	0.018	0.133
			0.001	ay,az=	1.358	1.358	0.128	0.000	0.016		
		104	0.001	0.021	0.000	0.000	0.000	0.160	0.161	0.021	0.160
			0.001	ay,az=	1.358	1.358	0.000	0.154	0.024		
		105	0.001	0.021	0.000	0.000	0.000	0.160	0.161	0.021	0.160
			0.001	ay,az=	1.358	1.358	0.000	0.154	0.024		
		106	0.001	0.000	0.018	0.000	0.133	0.000	0.134	0.018	0.133
			0.001	ay,az=	1.358	1.358	0.128	0.000	0.016		
		201	0.001	0.007	0.002	0.000	0.012	0.050	0.063	0.008	0.050
			0.001	ay,az=	1.358	1.358	0.012	0.048	0.002		
		101	0.001	0.021	0.000	0.000	0.000	0.213	0.214	0.021	0.213
			0.001	ay,az=	1.358	1.358	0.000	0.205	0.042		
		102	0.001	0.021	0.000	0.000	0.000	0.213	0.214	0.021	0.213
			0.001	ay,az=	1.358	1.358	0.000	0.205	0.042		
		103	0.001	0.000	0.018	0.000	0.180	0.000	0.181	0.018	0.180
			0.001	ay,az=	1.358	1.358	0.173	0.000	0.030		
		104	0.001	0.021	0.000	0.000	0.000	0.213	0.214	0.021	0.213
			0.001	ay,az=	1.358	1.358	0.000	0.205	0.042		
		105	0.001	0.021	0.000	0.000	0.000	0.213	0.214	0.021	0.213
			0.001	ay,az=	1.358	1.358	0.000	0.205	0.042		
		106	0.001	0.000	0.018	0.000	0.180	0.000	0.181	0.018	0.180
			0.001	ay,az=	1.358	1.358	0.173	0.000	0.030		
		201	0.001	0.007	0.002	0.000	0.017	0.067	0.085	0.009	0.067
			0.001	ay,az=	1.358	1.358	0.016	0.064	0.004		
103	0.000	101	0.003	0.008	0.000	0.000	0.000	0.213	0.216	0.008	0.213
			0.003	ay,az=	1.358	1.358	0.000	0.205	0.042		
		102	0.003	0.008	0.000	0.000	0.000	0.213	0.216	0.008	0.213
			0.003	ay,az=	1.358	1.358	0.000	0.205	0.042		
		103	0.003	0.000	0.008	0.000	0.213	0.000	0.216	0.008	0.213
			0.003	ay,az=	1.358	1.358	0.205	0.000	0.042		
		104	0.002	0.008	0.000	0.000	0.000	0.213	0.215	0.008	0.213
			0.002	ay,az=	1.358	1.358	0.000	0.205	0.042		
		105	0.002	0.008	0.000	0.000	0.000	0.213	0.215	0.008	0.213
			0.002	ay,az=	1.358	1.358	0.000	0.205	0.042		
		106	0.002	0.000	0.008	0.000	0.213	0.000	0.215	0.008	0.213
			0.002	ay,az=	1.358	1.358	0.205	0.000	0.042		
		201	0.002	0.003	0.001	0.000	0.020	0.067	0.089	0.004	0.067
			0.002	ay,az=	1.358	1.358	0.019	0.064	0.005		
		0.400	0.002	0.008	0.000	0.000	0.000	0.160	0.162	0.008	0.160
			0.002	ay,az=	1.358	1.358	0.000	0.154	0.024		
		102	0.002	0.008	0.000	0.000	0.000	0.160	0.162	0.008	0.160
			0.002	ay,az=	1.358	1.358	0.000	0.154	0.024		
		103	0.002	0.000	0.008	0.000	0.160	0.000	0.162	0.008	0.160
			0.002	ay,az=	1.358	1.358	0.154	0.000	0.024		
		104	0.002	0.008	0.000	0.000	0.000	0.160	0.161	0.008	0.160
			0.002	ay,az=	1.358	1.358	0.000	0.154	0.024		
		105	0.002	0.008	0.000	0.000	0.000	0.160	0.161	0.008	0.160
			0.002	ay,az=	1.358	1.358	0.000	0.154	0.024		
		106	0.002	0.000	0.008	0.000	0.160	0.000	0.161	0.008	0.160
			0.002	ay,az=	1.358	1.358	0.154	0.000	0.024		
		201	0.002	0.003	0.001	0.000	0.014	0.048	0.064	0.004	0.048
			0.002	ay,az=	1.358	1.358	0.014	0.046	0.002		
		0.800	0.002	0.008	0.000	0.000	0.000	0.106	0.109	0.008	0.106
			0.002	ay,az=	1.358	1.358	0.000	0.102	0.010		

1828 AGIOS NIKOLAOS CITY 2 MW DISH
ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
103	0.800	102	0.002	0.008	0.000	0.000	0.000	0.106	0.109	0.008	0.106
			0.002	ay,az=	1.358	1.358	0.000	0.102	0.010		
		103	0.002	0.000	0.008	0.000	0.106	0.000	0.109	0.008	0.106
			0.002	ay,az=	1.358	1.358	0.102	0.000	0.010		
		104	0.002	0.008	0.000	0.000	0.000	0.106	0.108	0.008	0.106
			0.002	ay,az=	1.358	1.358	0.000	0.102	0.010		
		105	0.002	0.008	0.000	0.000	0.000	0.106	0.108	0.008	0.106
			0.002	ay,az=	1.358	1.358	0.000	0.102	0.010		
		106	0.002	0.000	0.008	0.000	0.106	0.000	0.108	0.008	0.106
			0.002	ay,az=	1.358	1.358	0.102	0.000	0.010		
		201	0.002	0.002	0.001	0.000	0.009	0.030	0.041	0.003	0.030
			0.002	ay,az=	1.358	1.358	0.009	0.029	0.001		
	1.200	101	0.002	0.008	0.000	0.000	0.000	0.053	0.055	0.008	0.053
			0.002	ay,az=	1.358	1.358	0.000	0.051	0.003		
		102	0.002	0.008	0.000	0.000	0.000	0.053	0.055	0.008	0.053
			0.002	ay,az=	1.358	1.358	0.000	0.051	0.003		
		103	0.002	0.000	0.008	0.000	0.053	0.000	0.055	0.008	0.053
			0.002	ay,az=	1.358	1.358	0.051	0.000	0.003		
		104	0.001	0.008	0.000	0.000	0.000	0.053	0.055	0.008	0.053
			0.001	ay,az=	1.358	1.358	0.000	0.051	0.003		
		105	0.001	0.008	0.000	0.000	0.000	0.053	0.055	0.008	0.053
			0.001	ay,az=	1.358	1.358	0.000	0.051	0.003		
		106	0.001	0.000	0.008	0.000	0.053	0.000	0.055	0.008	0.053
			0.001	ay,az=	1.358	1.358	0.051	0.000	0.003		
	1.600	201	0.001	0.002	0.001	0.000	0.004	0.014	0.020	0.003	0.014
			0.001	ay,az=	1.358	1.358	0.004	0.014	0.000		
		101	0.002	0.008	0.000	0.000	0.000	0.000	0.002	0.008	0.008
			0.002	ay,az=	1.358	1.358	0.000	0.000	0.000		
		102	0.002	0.008	0.000	0.000	0.000	0.000	0.002	0.008	0.008
			0.002	ay,az=	1.358	1.358	0.000	0.000	0.000		
		103	0.002	0.000	0.008	0.000	0.000	0.000	0.002	0.008	0.008
			0.002	ay,az=	1.358	1.358	0.000	0.000	0.000		
		104	0.001	0.008	0.000	0.000	0.000	0.000	0.001	0.008	0.008
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000		
		105	0.001	0.008	0.000	0.000	0.000	0.000	0.001	0.008	0.008
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000		
	0.035	106	0.001	0.000	0.008	0.000	0.000	0.000	0.001	0.008	0.008
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000		
		201	0.001	0.002	0.001	0.000	0.000	0.000	0.001	0.003	0.002
			0.001	ay,az=	1.358	1.358	0.000	0.000	0.000		
		101	0.016	0.000	0.011	0.000	0.000	0.016	0.016	0.011	0.016
			0.016	ay,az=	1.248	1.248	0.016	0.016	0.002		
		102	0.016	0.000	0.011	0.000	0.000	0.000	0.016	0.011	0.016
			0.016	ay,az=	1.248	1.248	0.016	0.016	0.002		
		103	0.000	0.052	0.011	0.030	0.000	0.000	0.000	0.094	0.052
			0.000	ay,az=	1.248	1.248	0.000	0.000	0.000		
		104	0.016	0.000	0.008	0.000	0.000	0.000	0.016	0.008	0.016
			0.016	ay,az=	1.248	1.248	0.016	0.016	0.002		
		105	0.016	0.000	0.008	0.000	0.000	0.000	0.016	0.008	0.016
			0.016	ay,az=	1.248	1.248	0.016	0.016	0.002		
		106	0.000	0.052	0.008	0.030	0.000	0.000	0.000	0.091	0.052
			0.000	ay,az=	1.248	1.248	0.000	0.000	0.000		
		201	0.005	0.005	0.008	0.003	0.000	0.000	0.005	0.015	0.008
			0.005	ay,az=	1.248	1.248	0.005	0.005	0.000		
		101	0.016	0.000	0.011	0.000	0.008	0.000	0.024	0.011	0.016
			0.016	ay,az=	1.248	1.248	0.022	0.016	0.003		
		102	0.016	0.000	0.011	0.000	0.008	0.000	0.024	0.011	0.016
			0.016	ay,az=	1.248	1.248	0.022	0.016	0.003		
		103	0.000	0.052	0.011	0.030	0.008	0.037	0.044	0.094	0.052
			0.000	ay,az=	1.248	1.248	0.008	0.028	0.003		
		104	0.016	0.000	0.008	0.000	0.006	0.000	0.022	0.008	0.016
			0.016	ay,az=	1.248	1.248	0.020	0.016	0.003		

1828 AGIOS NIKOLAOS CITY 2 MW DISH
 ELEGXOS MELWN

Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
201	0.035	105	0.016	0.000	0.008	0.000	0.006	0.000	0.022	0.008	0.016
			0.016	ay,az=	1.248	1.248	0.020	0.016	0.003		
		106	0.000	0.052	0.008	0.030	0.006	0.037	0.042	0.091	0.052
			0.000	ay,az=	1.248	1.248	0.006	0.028	0.003		
		201	0.005	0.005	0.008	0.003	0.006	0.003	0.014	0.016	0.008
			0.005	ay,az=	1.248	1.248	0.009	0.007	0.001		
	0.070	101	0.016	0.000	0.011	0.000	0.015	0.000	0.031	0.011	0.016
			0.016	ay,az=	1.248	1.248	0.028	0.016	0.004		
		102	0.016	0.000	0.011	0.000	0.015	0.000	0.031	0.011	0.016
			0.016	ay,az=	1.248	1.248	0.028	0.016	0.004		
		103	0.000	0.052	0.011	0.030	0.015	0.073	0.088	0.094	0.073
			0.000	ay,az=	1.248	1.248	0.015	0.056	0.009		
		104	0.016	0.000	0.008	0.000	0.011	0.000	0.027	0.008	0.016
			0.016	ay,az=	1.248	1.248	0.025	0.016	0.003		
		105	0.016	0.000	0.008	0.000	0.011	0.000	0.027	0.008	0.016
			0.016	ay,az=	1.248	1.248	0.025	0.016	0.003		
		106	0.000	0.052	0.008	0.030	0.011	0.073	0.084	0.091	0.073
			0.000	ay,az=	1.248	1.248	0.011	0.056	0.009		
		201	0.005	0.005	0.008	0.003	0.011	0.006	0.023	0.016	0.011
			0.005	ay,az=	1.248	1.248	0.013	0.010	0.001		
	0.105	101	0.016	0.000	0.011	0.000	0.023	0.000	0.039	0.011	0.023
			0.016	ay,az=	1.248	1.248	0.034	0.016	0.005		
		102	0.016	0.000	0.011	0.000	0.023	0.000	0.039	0.011	0.023
			0.016	ay,az=	1.248	1.248	0.034	0.016	0.005		
		103	0.000	0.052	0.011	0.030	0.023	0.110	0.133	0.094	0.110
			0.000	ay,az=	1.248	1.248	0.023	0.084	0.018		
		104	0.016	0.000	0.008	0.000	0.017	0.000	0.033	0.008	0.017
			0.016	ay,az=	1.248	1.248	0.029	0.016	0.004		
		105	0.016	0.000	0.008	0.000	0.017	0.000	0.033	0.008	0.017
			0.016	ay,az=	1.248	1.248	0.029	0.016	0.004		
		106	0.000	0.052	0.008	0.030	0.017	0.110	0.127	0.091	0.110
			0.000	ay,az=	1.248	1.248	0.017	0.084	0.018		
		201	0.005	0.005	0.008	0.003	0.017	0.010	0.031	0.016	0.017
			0.005	ay,az=	1.248	1.248	0.018	0.012	0.002		
	0.140	101	0.016	0.000	0.011	0.000	0.031	0.000	0.047	0.011	0.031
			0.016	ay,az=	1.248	1.248	0.040	0.016	0.006		
		102	0.016	0.000	0.011	0.000	0.031	0.000	0.047	0.011	0.031
			0.016	ay,az=	1.248	1.248	0.040	0.016	0.006		
		103	0.000	0.052	0.011	0.030	0.031	0.146	0.177	0.094	0.146
			0.000	ay,az=	1.248	1.248	0.031	0.112	0.030		
		104	0.016	0.000	0.008	0.000	0.023	0.000	0.039	0.008	0.023
			0.016	ay,az=	1.248	1.248	0.034	0.016	0.005		
		105	0.016	0.000	0.008	0.000	0.023	0.000	0.039	0.008	0.023
			0.016	ay,az=	1.248	1.248	0.034	0.016	0.005		
		106	0.000	0.052	0.008	0.030	0.023	0.146	0.169	0.091	0.146
			0.000	ay,az=	1.248	1.248	0.023	0.112	0.028		
		201	0.005	0.005	0.008	0.003	0.023	0.013	0.040	0.016	0.023
			0.005	ay,az=	1.248	1.248	0.023	0.015	0.003		
202	0.000	101	0.022	0.000	0.011	0.000	0.000	0.000	0.022	0.011	0.022
			0.022	ay,az=	1.248	1.248	0.022	0.022	0.004		
		102	0.022	0.000	0.011	0.000	0.000	0.000	0.022	0.011	0.022
			0.022	ay,az=	1.248	1.248	0.022	0.022	0.004		
		103	0.000	0.075	0.011	0.151	0.000	0.000	0.000	0.238	0.151
			0.000	ay,az=	1.248	1.248	0.000	0.000	0.000		
		104	0.022	0.000	0.008	0.000	0.000	0.000	0.022	0.008	0.022
			0.022	ay,az=	1.248	1.248	0.022	0.022	0.004		
		105	0.022	0.000	0.008	0.000	0.000	0.000	0.022	0.008	0.022
			0.022	ay,az=	1.248	1.248	0.022	0.022	0.004		
		106	0.000	0.075	0.008	0.151	0.000	0.000	0.000	0.235	0.151
			0.000	ay,az=	1.248	1.248	0.000	0.000	0.000		
		201	0.007	0.008	0.008	0.014	0.000	0.000	0.007	0.030	0.015
			0.007	ay,az=	1.248	1.248	0.007	0.007	0.001		

1828 AGIOS NIKOLAOS CITY 2 MW DISH
ELEGX0S MELWN

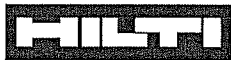
Usage of Allowable Plastic Forces

Beam	x[m]	LC	N[-] Nred	Vy[-] ay,az=	Vz[-]	Mt[-]	My[-] Myred	Mz[-] Mzred	N+M[-] My+Mz,r	V+Mt[-]	Tot[-]
202	0.035	101	0.022	0.000	0.011	0.000	0.008	0.000	0.030	0.011	0.022
			0.022	ay,az=	1.248	1.248	0.028	0.022	0.004		
		102	0.022	0.000	0.011	0.000	0.008	0.000	0.030	0.011	0.022
			0.022	ay,az=	1.248	1.248	0.028	0.022	0.004		
		103	0.000	0.075	0.011	0.151	0.008	0.052	0.060	0.238	0.157
			0.000	ay,az=	1.248	1.248	0.008	0.040	0.005		
		104	0.022	0.000	0.009	0.000	0.006	0.000	0.028	0.009	0.022
			0.022	ay,az=	1.248	1.248	0.027	0.022	0.004		
		105	0.022	0.000	0.009	0.000	0.006	0.000	0.028	0.009	0.022
			0.022	ay,az=	1.248	1.248	0.027	0.022	0.004		
		106	0.000	0.075	0.009	0.151	0.006	0.052	0.058	0.235	0.156
			0.000	ay,az=	1.248	1.248	0.006	0.040	0.005		
	0.070	201	0.007	0.008	0.009	0.014	0.006	0.005	0.019	0.030	0.016
			0.007	ay,az=	1.248	1.248	0.012	0.012	0.001		
		101	0.022	0.000	0.012	0.000	0.016	0.000	0.038	0.012	0.022
			0.022	ay,az=	1.248	1.248	0.034	0.022	0.005		
		102	0.022	0.000	0.012	0.000	0.016	0.000	0.038	0.012	0.022
			0.022	ay,az=	1.248	1.248	0.034	0.022	0.005		
		103	0.000	0.075	0.012	0.151	0.016	0.104	0.120	0.238	0.168
			0.000	ay,az=	1.248	1.248	0.016	0.080	0.016		
		104	0.022	0.000	0.009	0.000	0.012	0.000	0.034	0.009	0.022
			0.022	ay,az=	1.248	1.248	0.031	0.022	0.005		
		105	0.022	0.000	0.009	0.000	0.012	0.000	0.034	0.009	0.022
			0.022	ay,az=	1.248	1.248	0.031	0.022	0.005		
0.105	0.105	106	0.000	0.075	0.009	0.151	0.012	0.104	0.116	0.235	0.167
			0.000	ay,az=	1.248	1.248	0.012	0.080	0.016		
		201	0.007	0.008	0.009	0.014	0.012	0.011	0.030	0.030	0.016
			0.007	ay,az=	1.248	1.248	0.017	0.016	0.002		
		101	0.022	0.000	0.012	0.000	0.024	0.000	0.046	0.012	0.024
			0.022	ay,az=	1.248	1.248	0.041	0.022	0.007		
		102	0.022	0.000	0.012	0.000	0.024	0.000	0.046	0.012	0.024
			0.022	ay,az=	1.248	1.248	0.041	0.022	0.007		
		103	0.000	0.075	0.012	0.151	0.024	0.156	0.181	0.238	0.183
			0.000	ay,az=	1.248	1.248	0.024	0.120	0.032		
		104	0.022	0.000	0.009	0.000	0.018	0.000	0.040	0.009	0.022
			0.022	ay,az=	1.248	1.248	0.036	0.022	0.006		
	0.140	105	0.022	0.000	0.009	0.000	0.018	0.000	0.040	0.009	0.022
			0.022	ay,az=	1.248	1.248	0.036	0.022	0.006		
		106	0.000	0.075	0.009	0.151	0.018	0.156	0.174	0.235	0.182
			0.000	ay,az=	1.248	1.248	0.018	0.120	0.031		
		201	0.007	0.008	0.009	0.014	0.018	0.016	0.041	0.031	0.018
			0.007	ay,az=	1.248	1.248	0.021	0.020	0.003		
		101	0.022	0.000	0.012	0.000	0.032	0.000	0.054	0.012	0.032
			0.022	ay,az=	1.248	1.248	0.047	0.022	0.008		
		102	0.022	0.000	0.012	0.000	0.032	0.000	0.054	0.012	0.032
			0.022	ay,az=	1.248	1.248	0.047	0.022	0.008		
		103	0.000	0.075	0.012	0.151	0.032	0.209	0.241	0.238	0.209
			0.000	ay,az=	1.248	1.248	0.032	0.160	0.051		
Total System		104	0.022	0.000	0.009	0.000	0.024	0.000	0.046	0.009	0.024
			0.022	ay,az=	1.248	1.248	0.040	0.022	0.007		
		105	0.022	0.000	0.009	0.000	0.024	0.000	0.046	0.009	0.024
			0.022	ay,az=	1.248	1.248	0.040	0.022	0.007		
		106	0.000	0.075	0.009	0.151	0.024	0.209	0.233	0.235	0.209
			0.000	ay,az=	1.248	1.248	0.024	0.160	0.050		
		201	0.007	0.008	0.009	0.014	0.024	0.021	0.053	0.031	0.024
			0.007	ay,az=	1.248	1.248	0.026	0.024	0.004		
			0.022	0.075	0.018	0.151	0.213	0.213	0.241	0.238	0.213
			0.022				0.205	0.205	0.051		

1828 AGIOS NIKOLAOS CITY 2 MW DISH
 ELEGXOS MELWN

Maximum Degree of Utilization

		N	Vy	Vz	Mt	My	Mz	Mb	Mt2	Total	landa
		sig-c	sig-t	tau	sig-*	tend.	As-l	As-v	crack	sigdyn	tau-*
Cross sect.	1	0.003	0.028	0.024	0.000	0.292	0.292	0.000	0.000	0.213	0.000
D 76.1 / 5 mm		0.292	0.289	0.028	0.292	0.000	0.000	0.000	0.000	0.000	0.000
Cross sect.	2	0.022	0.076	0.012	0.168	0.062	0.260	0.000	0.000	0.209	0.000
SH 40 x 40 x 4		0.293	0.293	0.243	0.327	0.000	0.000	0.000	0.000	0.000	0.000
<hr/>											
Total System		0.022	0.076	0.024	0.168	0.292	0.292	0.000	0.000	0.213	0.000
		0.293	0.293	0.243	0.327	0.000	0.000	0.000	0.000	0.000	0.000



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 1 of 4

Quotation:

Project:

List No.:

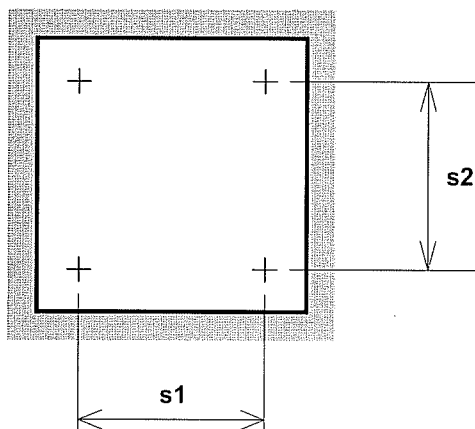
Date:

Project name:

Anchor fastening design for HST-M12

As per Hilti-CC method

Positioning

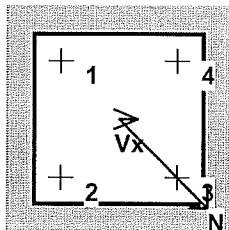


Anchoring plate:

$l_x=160 \text{ mm}$ $l_y=160 \text{ mm}$
 $s_1=110 \text{ mm}$ $s_2=110 \text{ mm}$

- Anchor
- Anchor in slotted hole

Loads (design values)



Tensile Load:

$N_d=2.6 \text{ kN}$

Shear Load:

$V_{x,d}=0.4 \text{ kN}$

Moments:

$M_{y,d}=0.350 \text{ kNm}$



Concrete

Compressive class: C20/25
tensile zone / cracked concrete
factor depth of embedment: 1.0
no edge reinforcement
close reinforcement (close reinforcement ($s \leq 15 \text{ cm}$))



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 2 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Tension Load N

HST-M12

Anchor		1	2	3	4
Design value of tension load	$N_{Sd,i}$	2.1 kN	2.1 kN	0.1 kN	0.1 kN

$$\text{Design value of anchor group } N_{Sd}^g = \sum_{i=1}^n \alpha N_{Sd,i} = 4.3 \text{ kN}$$

Steel failure

Characteristic value for one anchor $N_{Rk,s} = 43.0 \text{ kN}$
Partial safety factor $\gamma_{Ms} = 1.50$

$$\text{Design value of resistance } N_{Rd,s} = \frac{N_{Rk,s}}{\gamma_{Ms}} = 28.7 \text{ kN} \quad \text{Check } \frac{N_{Sd}^h}{N_{Rd,s}} = 0.07$$

Pullout failure

Characteristic value for one anchor $N_{Rk,p} = 12.0 \text{ kN}$
Partial safety factor $\gamma_{Mp} = 1.50$

$$\text{Design value of resistance } N_{Rd,p} = \frac{N_{Rk,p}}{\gamma_{Mp}} = 8.0 \text{ kN} \quad \text{Check } \frac{N_{Sd}^h}{N_{Rd,p}} = 0.26$$

Concrete cone failure

Initial value of the anchor resistance	$N_{Rk,c}^0 = 21.1 \text{ kN}$	
Actual area of concrete cone	$A_{c,N} = 102400 \text{ mm}^2$	
Reference area of concrete cone	$A_{c,N}^0 = 44100 \text{ mm}^2$	
Factor for disturbance of stressed distribution	$\psi_{s,N} = 1.00$	
Shell spalling factor	$\psi_{re,N} = 0.85$	
Eccentricity of the resulting tensile load	$e_{N,x} = 51 \text{ mm}$	$e_{N,y} = 0 \text{ mm}$
Factors for eccentric loading	$\psi_{ec,N,x} = 0.67$	$\psi_{ec,N,y} = 1.00$
Influence concrete	$f_{B,N} = 1.00$	
Influence depth	$\psi_T = 1.00$	

Characteristic value for the anchor group

$$N_{Rk,c} = N_{Rk,c}^0 \cdot \frac{A_{c,N}}{A_{c,N}^0} \cdot \psi_{s,N} \cdot \psi_{re,N} \cdot \psi_{ec,N,x} \cdot \psi_{ec,N,y} \cdot \psi_T \cdot f_{B,N} = 28.0 \text{ kN}$$

Partial safety factor $\gamma_{Mc} = 1.50$

$$\text{Design value of resistance } N_{Rd,c} = \frac{N_{Rk,c}}{\gamma_{Mc}} = 18.6 \text{ kN} \quad \text{Check } \frac{N_{Sd}^g}{N_{Rd,c}} = 0.23$$



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 3 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Shear Load V

HST-M12

Anchor		1	2	3	4
Design value of shear in x	$V_{Sd,x,i}$	0.1 kN	0.1 kN	0.1 kN	0.1 kN
Design value of shear in y	$V_{Sd,y,i}$	0.0 kN	0.0 kN	0.0 kN	0.0 kN

$$\text{Design value of anchor group} \quad V_{Sd,x}^g = \sum_{i=1}^n V_{Sd,x,i} = 0.4 \text{ kN} \quad V_{Sd,y}^g = \sum_{i=1}^n V_{Sd,y,i} = 0.0 \text{ kN}$$

Resulting design value of shear	$V_{Sd,i}$	0.1 kN	0.1 kN	0.1 kN	0.1 kN
---------------------------------	------------	--------	--------	--------	--------

Steel failure without lever arm

Characteristic value for one anchor $V_{Rk,s} = 30.0 \text{ kN}$
Partial safety factor $\gamma_{Ms} = 1.25$

$$\text{Design value of resistance} \quad V_{Rd,s} = \frac{V_{Rk,s}}{\gamma_{Ms}} = 24.0 \text{ kN} \quad \text{Check} \quad \frac{V_{Sd}^h}{V_{Rd,s}} = 0.00$$

Concrete edge failure

Initial value of the anchor resistance	$V_{Rk,c}^0 = \text{---}$	
Actual area of concrete cone	$A_{c,V} = 0 \text{ mm}^2$	
Reference area of concrete cone	$A_{c,V}^0 = 0 \text{ mm}^2$	
Factor for disturbance of stressed distribution	$\psi_{s,V} = 1.00$	
Factor for member thickness	$\psi_{h,V} = 1.00$	
Factor for load direction	$\psi_{\alpha,V} = 1.00$	
Eccentricity of the resulting shear load	$e_{V,x} = 0 \text{ mm}$	$e_{V,y} = 0 \text{ mm}$
Factors for eccentric loading	$\psi_{ec,V,x} = 1.00$	$\psi_{ec,V,y} = 1.00$
Factors for the position of the anchorage	$\psi_{ucr,V} = 1.0$	

Characteristic value for the anchor group

$$V_{Rk,c} = V_{Rk,c}^0 \cdot \frac{A_{c,V}}{A_{c,V}^0} \cdot \psi_{s,V} \cdot \psi_{h,V} \cdot \psi_{\alpha,V} \cdot \psi_{ec,V} \cdot \psi_{ucr,V} \quad V_{Rk,c,x} = \text{---} \quad \gamma_{Mc} = 1.00$$

$$\text{Design value of resistance} \quad V_{Rd,c} = \frac{V_{Rk,c}}{\gamma_{Mc}} = \text{---} \quad \text{Check} \quad \frac{V_{Sd}^g}{V_{Rd,c}} = 0.00$$



Hilti AG
FL-9494 Schaan

HAP v3.3c

Customer No.:

Phone:

Resp.:

Anchor fastening design

Location:

Page: 4 of 4

Quotation:

Project:

List No.:

Date:

Project name:

Concrete pryout failure

HST-M12

Factor for short stiff anchors $k = 2.0$
Characteristic value for the anchor group $N_{Rk,c} = 41.6 \text{ kN}$

Characteristic value for the anchor group $V_{Rk,c} = 83.2 \text{ kN}$
Partial safety factor $\gamma_{Mc} = 1.50$

Design value of resistance $V_{Rd,c} = \frac{V_{Rk,c}}{\gamma_{Mc}} = 55.5 \text{ kN}$ Check $\frac{V_{Sd}^g}{V_{Rd,c}} = 0.01$

Splitting failure due to loading

Actual area of concrete cone $A_{c,N,sp} = 102400 \text{ mm}^2$
Reference area of concrete cone $A_{c,N,sp}^0 = 44100 \text{ mm}^2$
Factor for actual member depth $\psi_{h,sp} = 1.50$

Characteristic value for the anchor group

$$N_{Rk,sp} = N_{Rk,c}^0 \cdot \frac{A_{c,N,sp}}{A_{c,N,sp}^0} \cdot \psi_{s,N} \cdot \psi_{re,N} \cdot \psi_{ec,N,x} \cdot \psi_{ec,N,y} \cdot \psi_{ucr,N} \cdot \psi_{h,sp} = 49.4 \text{ kN}$$

Partial safety factor $\gamma_{Msp} = 1.50$

Design value of resistance $N_{Rd,sp} = \frac{N_{Rk,sp}^g}{\gamma_{Msp}} = 32.9 \text{ kN}$ Check $\frac{N_{Sd}^g}{N_{Rd,sp}} = 0.13$

Combined tension and shear load

$$\beta_N = 0.26 < 1.0 \quad \beta_V = 0.01 < 1.0 \quad (\beta_N + \beta_V)/1.2 = 0.22 < 1.0 \quad \beta_N^a + \beta_V^a = 0.13 < 1.0$$