

STEEL DESIGN

CODE: EN 1993-1-2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 272 Simple member01_272
0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa



SECTION PARAMETERS: PL50x6

$h = 5.0$ cm
 $b = 0.6$ cm
 $t_w = 0.3$ cm
 $t_f = 0.3$ cm
 $g_{M0} = 1.00$
 $A_y = 3.00$ cm²
 $I_y = 6.25$ cm⁴
 $W_{ply} = 3.75$ cm³
 $g_{M1} = 1.00$
 $A_z = 3.00$ cm²
 $I_z = 0.09$ cm⁴
 $W_{plz} = 0.45$ cm³
 $A_x = 3.00$ cm²
 $I_x = 0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{i,Rd} = 87.00$ kN	$M_{y,Ed} = 0.01$ kN*m	$M_{z,Ed} = -0.00$ kN*m	$V_{y,Ed} = -0.00$ kN
$M_{y,pl,Rd} = 1.09$ kN*m	$M_{y,c,Rd} = 1.09$ kN*m	$M_{z,pl,Rd} = 0.13$ kN*m	$V_{z,Ed} = -0.02$ kN
$M_{y,c,Rd} = 1.09$ kN*m	$M_{z,c,Rd} = 0.13$ kN*m	$V_{z,T,Rd} = 50.22$ kN	$T_{i,Ed} = -0.00$ kN*m
$M_{N,y,Rd} = 1.09$ kN*m	$M_{N,z,Rd} = 0.13$ kN*m	Class of section = I	

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis:



About z axis:

VERIFICATION FORMULAS:

Section strength check:

$N_{Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.01 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \leq 1.66 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{y,Ed}/(f_y/(sqrt(3)*g_{M0})) = 0.00 < 1.00$ (6.2.6)
 $Tau_{z,Ed}/(f_y/(sqrt(3)*g_{M0})) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

Date : 07/04/25

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CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 273 Simple member01_273

POINT: 3 COORDINATE: x = 1.00 L = 0.44 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 fy = 290.00 MPa



SECTION PARAMETERS: PL50x6

h=5.0 cm gM0=1.00 gM1=1.00
b=0.6 cm Ay=3.00 cm2 Az=3.00 cm2
Iy=6.25 cm4 Iz=0.09 cm4
Iy=0.3 cm Wply=3.75 cm3
Iz=0.3 cm Wplz=0.45 cm3
Ax=3.00 cm2 Ix=0.33 cm4

INTERNAL FORCES AND CAPACITIES:

Nt,Rd = -2.41 kN My,Ed = 0.00 kN*m
My,pI,Rd = 1.09 kN*m My,c,Rd = 1.09 kN*m
Mz,pI,Rd = 0.13 kN*m Mz,c,Rd = 0.13 kN*m
Mz,Ed = -0.00 kN*m MN,z,Rd = 0.13 kN*m
Vy,Ed = -0.00 kN Vy,T,Rd = 50.22 kN
Vz,Ed = -0.02 kN Vz,T,Rd = 50.22 kN
Tt,Ed = -0.00 kN*m
Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $T_{au,ty,Ed}/(f_y/(\sqrt{3} \cdot g_{M0})) = 0.00 < 1.00$ (6.2.6)
 $T_{au,tz,Ed}/(f_y/(\sqrt{3} \cdot g_{M0})) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:**MEMBER:** 274 Simple member01_274

0.44 m

LOADS:*Governing Load Case:* 15 G-EY-0.3EX 1*1.00+8*-1.00**MATERIAL:**AISI316 $f_y = 290.00$ MPa**SECTION PARAMETERS: PL50x6**

$h=5.0$ cm $gM0=1.00$
 $b=0.6$ cm $Ay=3.00$ cm²
 $t_w=0.3$ cm $Iy=6.25$ cm⁴
 $tf=0.3$ cm $Wply=3.75$ cm³
 $gM1=1.00$
 $Az=3.00$ cm²
 $Iz=0.09$ cm⁴
 $Wplz=0.45$ cm³
 $Ax=3.00$ cm²
 $Ix=0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{i,Rd} = 87.00$ kN
 $M_{y,Ed} = -2.26$ kN
 $M_{y,Ed} = 0.01$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $MN_{y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $MN_{z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.22$ kN
 $V_{z,Ed} = -0.03$ kN
 $V_{z,T,Rd} = 50.22$ kN
 $T_{i,Ed} = -0.00$ kN*m
 Class of section = 1

LATERAL BUCKLING PARAMETERS:**BUCKLING PARAMETERS:**

☒ About y axis: ☒ About z axis:

VERIFICATION FORMULAS:*Section strength check:*

$N_{i,Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.01 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{y,Ed}/(f_y/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)
 $Tau_{z,Ed}/(f_y/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)

*Section OK !!!***STEEL DESIGN****CODE:** EN 1993-1-2005/A1:2014, Eurocode 3: Design of steel structures.**ANALYSIS TYPE:** Member Verification**CODE GROUP:****MEMBER:** 275 Simple member01_275

0.00 m

POINT: 1 COORDINATE: $x = 0.00$ L =

LOADS:
Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00**MATERIAL:**AISI316 $f_y = 290.00$ MPa**SECTION PARAMETERS: PL50x6** $h = 5.0$ cm
 $b = 0.6$ cm
 $t_w = 0.3$ cm
 $t_f = 0.3$ cm
 $g_{M0} = 1.00$
 $A_y = 3.00$ cm²
 $I_y = 6.25$ cm⁴
 $W_{pl,y} = 3.75$ cm³
 $g_{M1} = 1.00$
 $A_z = 3.00$ cm²
 $I_z = 0.09$ cm⁴
 $W_{pl,z} = 0.45$ cm³
 $A_x = 3.00$ cm²
 $I_x = 0.33$ cm⁴**INTERNAL FORCES AND CAPACITIES:** $N_{t,Rd} = -2.32$ kN
 $M_{y,Ed} = 0.01$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{N,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{N,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.22$ kN
 $V_{z,Ed} = -0.02$ kN
 $V_{z,T,Rd} = 50.22$ kN
 $T_{t,Ed} = -0.00$ kN*m
Class of section = I**BUCKLING PARAMETERS:**☒ About y axis:☐ About z axis:**Section OK !!!****STEEL DESIGN****CODE:** EN 1993-1-2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification**CODE GROUP:****MEMBER:** 276 Simple member01_276**POINT:** 1 COORDINATE: x = 0.00 L =

0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

$h = 5.0$ cm $gM0 = 1.00$
 $b = 0.6$ cm $Ay = 3.00$ cm²
 $Iy = 6.25$ cm⁴ $Iz = 0.09$ cm⁴
 $Ix = 0.33$ cm⁴ $Wplz = 0.45$ cm³

INTERNAL FORCES AND CAPACITIES:

$N_{i,Rd} = -2.30$ kN $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m $M_{y,c,Rd} = 1.09$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m $M_{z,c,Rd} = 0.13$ kN*m
 $M_{N,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN $V_{y,T,Rd} = 50.22$ kN
 $V_{z,Ed} = -0.01$ kN $V_{z,T,Rd} = 50.22$ kN
 $T_{i,Ed} = -0.00$ kN*m
Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})\sqrt{1.66}} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{ty,Ed}/(f_y/\sqrt{3}) = 0.00 < 1.00$ (6.2.6)
 $Tau_{tz,Ed}/(f_y/\sqrt{3}) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 277 Simple member 01_277

POINT: 1 COORDINATE: $x = 0.00$ L = 0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY $1*1.00+6*-1.00$

MATERIAL:

AISI316 $f_y = 290.00$ MPa



SECTION PARAMETERS: PL50x6

$h=5.0$ cm
 $b=0.6$ cm
 $I_y=6.25$ cm⁴
 $I_z=0.09$ cm⁴
 $A_y=3.00$ cm²
 $A_z=3.00$ cm²
 $gM0=1.00$
 $WpIy=3.75$ cm³
 $WpIz=0.45$ cm³
 $Ix=0.33$ cm⁴
 $Ax=3.00$ cm²

INTERNAL FORCES AND CAPACITIES:

$N_{i,Rd} = -2.26$ kN
 $N_{i,Rd} = 87.00$ kN
 $M_{y,Ed} = 0.01$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{n,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{n,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.22$ kN
 $V_{y,T,Rd} = -0.02$ kN
 $V_{z,Ed} = -0.00$ kN
 $V_{z,T,Rd} = 50.22$ kN
 $T_{i,Ed} = -0.00$ kN*m
Class of section = I



LATERAL BUCKLING PARAMETERS:



BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{i,Ed}/N_{i,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.01 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \leq 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{i,y,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)
 $Tau_{i,z,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 278 Simple member01_278

POINT: 1 COORDINATE: x = 0.00 L = 0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa



SECTION PARAMETERS: PL50x6

$h=5.0$ cm
 $gM0=1.00$
 $gM1=1.00$

b=0.6 cm	Ay=3.00 cm ²	Az=3.00 cm ²	Ax=3.00 cm ²
tw=0.3 cm	Iy=6.25 cm ⁴	Iz=0.09 cm ⁴	Ix=0.33 cm ⁴
tf=0.3 cm	Wply=3.75 cm ³	Wplz=0.45 cm ³	

INTERNAL FORCES AND CAPACITIES:

N _{Ed} = -2.45 kN	M _{y,Ed} = 0.01 kN*m	M _{z,Ed} = -0.00 kN*m	V _{y,Ed} = -0.00 kN
N _{t,Rd} = 87.00 kN	M _{y,pl,Rd} = 1.09 kN*m	M _{z,pl,Rd} = 0.13 kN*m	V _{y,T,Rd} = 50.22 kN
	M _{y,c,Rd} = 1.09 kN*m	M _{z,c,Rd} = 0.13 kN*m	V _{z,Ed} = -0.02 kN
	M _{n,y,Rd} = 1.09 kN*m	M _{n,z,Rd} = 0.13 kN*m	V _{z,T,Rd} = 50.22 kN
			T _{t,Ed} = -0.00 kN*m
			Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$$\begin{aligned} N_{Ed}/N_{t,Rd} &= 0.03 < 1.00 \quad (6.2.3.(1)) \\ M_{y,Ed}/M_{N,y,Rd} &= 0.01 < 1.00 \quad (6.2.9.1.(2)) \\ M_{z,Ed}/M_{N,z,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\ (M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} &= 0.00 < 1.00 \quad (6.2.9.1.(6)) \\ V_{y,Ed}/V_{y,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ V_{z,Ed}/V_{z,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ T_{au,y,Ed}/(f_y/(\sqrt{3}) * g_{M0}) &= 0.00 < 1.00 \quad (6.2.6) \\ T_{au,z,Ed}/(f_y/(\sqrt{3}) * g_{M0}) &= 0.00 < 1.00 \quad (6.2.6) \end{aligned}$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 279 Simple member01 279

0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 fy = 290.00 MPa



SECTION PARAMETERS: PL50x6

h=5.0 cm	g _{M0} =1.00	g _{M1} =1.00
b=0.6 cm	A _y =3.00 cm ²	A _z =3.00 cm ²
tw=0.3 cm	I _y =6.25 cm ⁴	I _z =0.09 cm ⁴
tf=0.3 cm	Wply=3.75 cm ³	Wplz=0.45 cm ³
		A _x =3.00 cm ²
		I _x =0.33 cm ⁴

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00 \text{ kN}$	$M_{y,Ed} = 0.00 \text{ kN*m}$	$M_{y,pl,Rd} = 1.09 \text{ kN*m}$	$M_{y,c,Rd} = 1.09 \text{ kN*m}$	$M_{N,y,Rd} = 1.09 \text{ kN*m}$
$N_{t,Rd} = 87.00 \text{ kN}$	$M_{z,Ed} = -0.00 \text{ kN*m}$	$M_{z,pl,Rd} = 0.13 \text{ kN*m}$	$M_{z,c,Rd} = 0.13 \text{ kN*m}$	$M_{N,z,Rd} = 0.13 \text{ kN*m}$
$V_{y,Ed} = -0.00 \text{ kN}$	$V_{y,T,Rd} = 50.22 \text{ kN}$	$V_{z,Ed} = -0.01 \text{ kN}$	$V_{z,T,Rd} = 50.22 \text{ kN}$	$T_{t,Ed} = -0.00 \text{ kN*m}$

Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

☒ About y axis: ☒ About z axis:

VERIFICATION FORMULAS:

Section strength check:

$$\begin{aligned} N_{t,Rd}/N_{t,Rd} &= 0.03 < 1.00 \quad (6.2.3.(1)) \\ M_{y,Ed}/M_{N,y,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\ M_{z,Ed}/M_{N,z,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\ (M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} &= 0.00 < 1.00 \quad (6.2.9.1.(6)) \\ V_{y,Ed}/V_{y,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ V_{z,Ed}/V_{z,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ T_{au,ty,Ed}/(T_{y}/(\sqrt{3}) * g_{M0}) &= 0.00 < 1.00 \quad (6.2.6) \\ T_{au,tz,Ed}/(T_{y}/(\sqrt{3}) * g_{M0}) &= 0.00 < 1.00 \quad (6.2.6) \end{aligned}$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 280 Simple member 01_280

POINT: I COORDINATE: $x = 0.00 \text{ L} =$

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00 \text{ MPa}$ 

SECTION PARAMETERS: PL50x6

$h = 5.0 \text{ cm}$	$g_{M0} = 1.00$	$g_{M1} = 1.00$
$b = 0.6 \text{ cm}$	$A_y = 3.00 \text{ cm}^2$	$A_z = 3.00 \text{ cm}^2$
$t_w = 0.3 \text{ cm}$	$I_y = 6.25 \text{ cm}^4$	$I_z = 0.09 \text{ cm}^4$
$t_f = 0.3 \text{ cm}$	$W_{ply} = 3.75 \text{ cm}^3$	$W_{plz} = 0.45 \text{ cm}^3$

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00 \text{ kN}$	$M_{y,Ed} = 0.00 \text{ kN*m}$	$M_{y,pl,Rd} = 1.09 \text{ kN*m}$	$M_{y,c,Rd} = 1.09 \text{ kN*m}$
$N_{t,Rd} = 87.00 \text{ kN}$	$M_{z,Ed} = -0.00 \text{ kN*m}$	$M_{z,pl,Rd} = 0.13 \text{ kN*m}$	$M_{z,c,Rd} = 0.13 \text{ kN*m}$
$V_{y,Ed} = -0.00 \text{ kN}$	$V_{y,T,Rd} = 50.22 \text{ kN}$	$V_{z,Ed} = -0.02 \text{ kN}$	

LATERAL BUCKLING PARAMETERS:



BUCKLING PARAMETERS:



About y axis:



About z axis:

MN_{y,Rd} = 1.09 kN*m
MN_{z,Rd} = 0.13 kN*m
V_{z,T,Rd} = 50.22 kN
V_{z,T,Rd} = 50.22 kN
T_{z,Rd} = -0.00 kN*m
Class of section = I

VERIFICATION FORMULAS:

Section strength check:

$N_{Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{y,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)
 $Tau_{z,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 281 Simple member01_281

POINT: 1 COORDINATE: x = 0.00 L = 0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 fy = 290.00 MPa



SECTION PARAMETERS: PL50x6

h = 5.0 cm
b = 6.6 cm
tw = 0.3 cm
tf = 0.3 cm
gM0 = 1.00
Ay = 3.00 cm²
Iy = 6.25 cm⁴
Wply = 3.75 cm³
gM1 = 1.00
Az = 3.00 cm²
Iz = 0.09 cm⁴
Wplz = 0.45 cm³
Ax = 3.00 cm²
Ix = 0.33 cm⁴

INTERNAL FORCES AND CAPACITIES:

N_{Ed} = -2.29 kN
N_{t,Rd} = 87.00 kN
M_{y,Ed} = 0.01 kN*m
M_{y,pL,Rd} = 1.09 kN*m
M_{y,c,Rd} = 1.09 kN*m
M_{N,y,Rd} = 1.09 kN*m
M_{z,Ed} = -0.00 kN*m
M_{z,pL,Rd} = 0.13 kN*m
M_{z,c,Rd} = 0.13 kN*m
M_{N,z,Rd} = 0.13 kN*m
V_{y,Ed} = -0.00 kN
V_{y,T,Rd} = 50.22 kN
V_{z,Ed} = -0.02 kN
V_{z,T,Rd} = 50.22 kN
T_{z,Rd} = -0.00 kN*m
Class of section = I

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP: MEMBER: 284 Simple member01_284
POINT: 1 COORDINATE: $x = 0.00 \text{ L} = 0.00 \text{ m}$

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00 \text{ MPa}$

SECTION PARAMETERS: PL50x6



$h = 5.0 \text{ cm}$
 $b = 0.6 \text{ cm}$
 $t_w = 0.3 \text{ cm}$
 $t_f = 0.3 \text{ cm}$
 $g_{M0} = 1.00$
 $A_y = 3.00 \text{ cm}^2$
 $I_y = 6.25 \text{ cm}^4$
 $I_z = 0.09 \text{ cm}^4$
 $W_{plz} = 0.45 \text{ cm}^3$
 $g_{M1} = 1.00$
 $A_z = 3.00 \text{ cm}^2$
 $I_x = 0.33 \text{ cm}^4$

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = -1.50 \text{ kN}$
 $N_{t,Rd} = 87.00 \text{ kN}$
 $M_{y,Ed} = 0.01 \text{ kN*m}$
 $M_{y,pL,Rd} = 1.09 \text{ kN*m}$
 $M_{y,c,Rd} = 1.09 \text{ kN*m}$
 $M_{N,y,Rd} = 1.09 \text{ kN*m}$
 $M_{z,Ed} = -0.00 \text{ kN*m}$
 $M_{z,pL,Rd} = 0.13 \text{ kN*m}$
 $M_{z,c,Rd} = 0.13 \text{ kN*m}$
 $M_{N,z,Rd} = 0.13 \text{ kN*m}$
 $V_{y,Ed} = -0.00 \text{ kN}$
 $V_{y,T,Rd} = 50.23 \text{ kN}$
 $V_{z,Ed} = -0.02 \text{ kN}$
 $V_{z,T,Rd} = 50.23 \text{ kN}$
 $T_{t,Ed} = -0.00 \text{ kN*m}$
Class of section = I

VERIFICATION FORMULAS:

Section strength check:

$N_{t,Ed}/N_{t,Rd} = 0.02 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 285 Simple member01_285

POINT: 1 COORDINATE: $x = 0.00 \text{ L} = 0.00 \text{ m}$

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00 \text{ MPa}$ 

SECTION PARAMETERS: PL50x6

$h = 5.0 \text{ cm}$	$g = 1.00$	$M_0 = 1.00$	$A_x = 3.00 \text{ cm}^2$	$I_x = 0.33 \text{ cm}^4$
$b = 0.6 \text{ cm}$	$A_y = 3.00 \text{ cm}^2$	$I_y = 6.25 \text{ cm}^4$	$A_z = 3.00 \text{ cm}^2$	
$t_w = 0.3 \text{ cm}$	$W_{pl,y} = 3.75 \text{ cm}^3$	$I_z = 0.09 \text{ cm}^4$	$W_{pl,z} = 0.45 \text{ cm}^3$	
$t_f = 0.3 \text{ cm}$				

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00 \text{ kN}$	$M_{y,Ed} = 0.00 \text{ kN*m}$	$M_{y,pl,Rd} = 1.09 \text{ kN*m}$	$M_{y,c,Rd} = 1.09 \text{ kN*m}$	$M_{N,y,Rd} = 1.09 \text{ kN*m}$
$N_{t,Ed} = -1.46 \text{ kN}$	$M_{z,Ed} = -0.00 \text{ kN*m}$	$M_{z,pl,Rd} = 0.13 \text{ kN*m}$	$M_{z,c,Rd} = 0.13 \text{ kN*m}$	$M_{N,z,Rd} = 0.13 \text{ kN*m}$
	$V_{y,Ed} = -0.00 \text{ kN}$	$V_{y,T,Rd} = 50.23 \text{ kN}$	$V_{z,Ed} = -0.01 \text{ kN}$	$V_{z,T,Rd} = 50.23 \text{ kN}$
	$T_{t,Ed} = -0.00 \text{ kN*m}$			

Class of section = I

BUCKLING PARAMETERS:

 About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$$N_{t,Ed}/N_{t,Rd} = 0.02 < 1.00 \quad (6.2.3.(1))$$

$$M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00 \quad (6.2.9.1.(2))$$

$$(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00 \quad (6.2.9.1.(6))$$

$$V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00 \quad (6.2.6-7)$$

$$V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00 \quad (6.2.6-7)$$

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 286 Simple member01_286
0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

$h = 5.0$ cm	$gM0 = 1.00$	$gM1 = 1.00$
$b = 0.6$ cm	$A_y = 3.00$ cm ²	$A_z = 3.00$ cm ²
$t_w = 0.3$ cm	$I_y = 6.25$ cm ⁴	$I_z = 0.09$ cm ⁴
$t_f = 0.3$ cm	$W_{ply} = 3.75$ cm ³	$W_{plz} = 0.45$ cm ³

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00$ kN	$M_{y,Ed} = 0.00$ kN*m	$M_{z,Ed} = -0.00$ kN*m	$V_{y,Ed} = -0.00$ kN
$N_{t,Rd} = 1.63$ kN	$M_{y,pl,Rd} = 1.09$ kN*m	$M_{z,pl,Rd} = 0.13$ kN*m	$V_{y,T,Rd} = 50.22$ kN
	$M_{y,c,Rd} = 1.09$ kN*m	$M_{z,c,Rd} = 0.13$ kN*m	$V_{z,Ed} = -0.02$ kN
	$M_{n,y,Rd} = 1.09$ kN*m	$M_{n,z,Rd} = 0.13$ kN*m	$V_{z,T,Rd} = 50.22$ kN

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$$N_{Ed}/N_{t,Rd} = 0.02 < 1.00 \quad (6.2.3.(1))$$

$$M_{y,Ed}/M_{n,y,Rd} = 0.00 < 1.00 \quad (6.2.9.1.(2))$$

$$M_{z,Ed}/M_{n,z,Rd} = 0.00 < 1.00 \quad (6.2.9.1.(2))$$

$$(M_{y,Ed}/M_{n,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{n,z,Rd})} 1.66 = 0.00 < 1.00 \quad (6.2.9.1.(6))$$

$$V_{y,Ed}/V_{z,T,Rd} = 0.00 < 1.00 \quad (6.2.6-7)$$

$$V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00 \quad (6.2.6-7)$$

$$T_{au,y,Ed}/(f_y/(\sqrt{3}) * gM0) = 0.00 < 1.00 \quad (6.2.6)$$

$$T_{au,tz,Ed}/(f_y/(\sqrt{3}) * gM0) = 0.00 < 1.00 \quad (6.2.6)$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 287 Simple member01_287

POINT: 1 COORDINATE: x = 0.00 L = 0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

$h = 5.0$ cm	$gM0 = 1.00$	$gM1 = 1.00$
$b = 0.6$ cm	$Ay = 3.00$ cm ²	$Az = 3.00$ cm ²
$t_w = 0.3$ cm	$Iy = 6.25$ cm ⁴	$Iz = 0.09$ cm ⁴
$tf = 0.3$ cm	$Wply = 3.75$ cm ³	$Wplz = 0.45$ cm ³

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00$ kN	$M_{y,Ed} = 0.00$ kN*m	$M_{z,Ed} = -0.00$ kN*m	$V_{y,Ed} = -0.00$ kN	$V_{z,Ed} = -0.01$ kN
$N_{t,Rd} = 87.00$ kN	$M_{y,p,Rd} = 1.09$ kN*m	$M_{z,p,Rd} = 0.13$ kN*m	$V_{y,T,Rd} = 50.22$ kN	$V_{z,T,Rd} = 50.22$ kN
	$M_{y,c,Rd} = 1.09$ kN*m	$M_{z,c,Rd} = 0.13$ kN*m		
	$MN_{y,Rd} = 1.09$ kN*m	$MN_{z,Rd} = 0.13$ kN*m		

Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis:



About z axis:

VERIFICATION FORMULAS:

Section strength check:

$$N_{t,Rd} = 0.02 < 1.00 \quad (6.2.3.(1))$$
$$M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00 \quad (6.2.9.1.(2))$$
$$M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00 \quad (6.2.9.1.(2))$$
$$(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00 \quad (6.2.9.1.(6))$$
$$V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00 \quad (6.2.6-7)$$
$$V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00 \quad (6.2.6-7)$$
$$\tau_{au,y,E,d}/(\sqrt{f_y}) * (gM0) = 0.00 < 1.00 \quad (6.2.6)$$
$$\tau_{au,z,E,d}/(\sqrt{f_y}) * (gM0) = 0.00 < 1.00 \quad (6.2.6)$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP: MEMBER: 288 Simple member01_288
POINT: 3 COORDINATE: x = 1.00 L = 0.44 m

LOADS: Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL: AISI316 fy = 290.00 MPa



SECTION PARAMETERS: PL50x6

h=5.0 cm gM0=1.00 gM1=1.00
b=0.6 cm Ay=3.00 cm2 Az=3.00 cm2
Iy=6.25 cm4 Iz=0.09 cm4
Wply=3.75 cm3 Wplz=0.45 cm3
Ix=0.33 cm4

INTERNAL FORCES AND CAPACITIES:

Ny,Rd = -1.81 kN
My,Rd = 0.00 kN*m
My,p1,Rd = 1.09 kN*m
My,c,Rd = 1.09 kN*m
Mz,p1,Rd = 0.13 kN*m
Mz,c,Rd = 0.13 kN*m
Mz,Rd = -0.00 kN*m
Vx,Rd = -0.00 kN
Vy,T,Rd = 50.22 kN
Vy,Rd = -0.02 kN
Vz,T,Rd = 50.22 kN
Vz,Rd = -0.00 kN*m
Tx,Rd = -0.00 kN*m
Ty,Rd = 0.00 kN
Tz,Rd = 0.00 kN
Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{Ed}/N_{t,Rd} = 0.02 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{z,Rd})} \leq 1.66$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $T_{au,ty,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)
 $T_{au,tz,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

CODE: EN 1993-1-2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

STEEL DESIGN

CODE GROUP: MEMBER: 289 Simple member01_289
POINT: 3 COORDINATE: x = 1.00 L = 0.44 m

LOADS: Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL: AISI316 fy = 290.00 MPa

SECTION PARAMETERS: PL50x6

h=5.0 cm gM0=1.00
b=0.6 cm Ay=3.00 cm²
Iy=6.25 cm⁴ Wply=3.75 cm³
Iz=0.09 cm⁴ Wplz=0.45 cm³
Ax=3.00 cm² Ix=0.33 cm⁴

INTERNAL FORCES AND CAPACITIES:

Ny,Rd = 87.00 kN
My,E = -1.66 kN
My,Rd = 1.09 kN*m
My,p,Rd = 1.09 kN*m
My,c,Rd = 1.09 kN*m
MN,y,Rd = 1.09 kN*m
Mz,E = -0.00 kN*m
Mz,p,Rd = 0.13 kN*m
Mz,c,Rd = 0.13 kN*m
MN,z,Rd = 0.13 kN*m
Vy,E = -0.00 kN
Vy,T,Rd = 50.22 kN
Vz,E = -0.03 kN
Vz,T,Rd = 50.22 kN
Tr,E = -0.00 kN*m
Class of section = 1

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☐

VERIFICATION FORMULAS:

Section strength check:
 $N_{Ed}/N_{t,Rd} = 0.02 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.01 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66} + (M_{z,Ed}/M_{N,z,Rd})\sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $\tau_{au,ty,Ed}/(f_y/(\sqrt{3} \cdot gM0)) = 0.00 < 1.00$ (6.2.6)
 $\tau_{au,tz,Ed}/(f_y/(\sqrt{3} \cdot gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 290 Simple member01_290
0.00 m

POINT: 1 COORDINATE: x = 0.00 L =

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:AISI316 $f_y = 290.00$ MPa**SECTION PARAMETERS: PL50x6**

$h=5.0$ cm
 $b=0.6$ cm
 $t_w=0.3$ cm
 $t_f=0.3$ cm
 $g_{M0}=1.00$
 $A_y=3.00$ cm²
 $I_y=6.25$ cm⁴
 $I_z=0.09$ cm⁴
 $W_{plz}=0.45$ cm³
 $g_{M1}=1.00$
 $A_z=3.00$ cm²
 $I_x=0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{f,Rd} = 87.00$ kN
 $N_{f,Ed} = -1.66$ kN
 $M_{y,Ed} = 0.01$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{N,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{N,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.22$ kN
 $V_{z,Ed} = -0.01$ kN
 $V_{z,T,Rd} = 50.22$ kN
 $T_{f,Ed} = -0.00$ kN*m
 Class of section = 1

LATERAL BUCKLING PARAMETERS:**BUCKLING PARAMETERS:**

☒ About y axis: ☒ About z axis:

VERIFICATION FORMULAS:*Section strength check:*

$N_{f,Ed}/N_{f,Rd} = 0.02 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.01 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{f,y,Ed}/(f_y/(sqrt(3)*g_{M0})) = 0.00 < 1.00$ (6.2.6)
 $Tau_{f,z,Ed}/(f_y/(sqrt(3)*g_{M0})) = 0.00 < 1.00$ (6.2.6)

*Section OK !!!***STEEL DESIGN**

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 291 Simple member01_291

0.44 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa


SECTION PARAMETERS: PL50x6

$h = 5.0$ cm
 $b = 0.6$ cm
 $I_y = 6.25$ cm⁴
 $I_z = 0.09$ cm⁴
 $A_y = 3.00$ cm²
 $A_z = 3.00$ cm²
 $gM1 = 1.00$
 $W_{plz} = 0.45$ cm³
 $I_x = 0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{i,Rd} = 87.00$ kN
 $N_{i,Ed} = -1.62$ kN
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{n,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{n,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.22$ kN
 $V_{z,Ed} = -0.02$ kN
 $V_{z,T,Rd} = 50.22$ kN
 $T_{i,Ed} = -0.00$ kN*m
 Class of section = 1

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

 About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{i,Ed}/N_{i,Rd} = 0.02 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{i,y,Ed}/(f_y/(\sqrt{3} * gM0)) = 0.00 < 1.00$ (6.2.6)
 $Tau_{i,z,Ed}/(f_y/(\sqrt{3} * gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

 CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
 ANALYSIS TYPE: Member Verification

CODE GROUP:

 MEMBER: 292 Simple member01_292
 0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

 AISI316 $f_y = 290.00$ MPa



SECTION PARAMETERS: PL50x6

$h=5.0$ cm	$gM0=1.00$	$gM1=1.00$
$b=0.6$ cm	$Ay=3.00$ cm ²	$Az=3.00$ cm ²
$t_w=0.3$ cm	$Iy=6.25$ cm ⁴	$Iz=0.09$ cm ⁴
$It=0.3$ cm ³	$Wply=3.75$ cm ³	$Wplz=0.45$ cm ³

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = -1.55$ kN	$M_{y,Ed} = 0.01$ kN*m	$M_{z,Ed} = -0.00$ kN*m	$V_{y,Ed} = -0.00$ kN
$N_{t,Rd} = 87.00$ kN	$M_{y,pl,Rd} = 1.09$ kN*m	$M_{z,pl,Rd} = 0.13$ kN*m	$V_{y,T,Rd} = 50.22$ kN
	$M_{y,c,Rd} = 1.09$ kN*m	$M_{z,c,Rd} = 0.13$ kN*m	$V_{z,Ed} = -0.02$ kN
	$MN_{y,Rd} = 1.09$ kN*m	$MN_{z,Rd} = 0.13$ kN*m	$V_{z,T,Rd} = 50.22$ kN
			$T_{t,Ed} = -0.00$ kN*m

Class of section = 1



LATERAL BUCKLING PARAMETERS:



About y axis:



About z axis:

VERIFICATION FORMULAS:

Section strength check:

$$\begin{aligned} N_{t,Ed}/N_{t,Rd} &= 0.02 < 1.00 \quad (6.2.3.(1)) \\ M_{y,Ed}/M_{N,y,Rd} &= 0.01 < 1.00 \quad (6.2.9.1.(2)) \\ M_{z,Ed}/M_{N,z,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\ (M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})^2} &= 0.00 < 1.00 \quad (6.2.9.1.(6)) \\ V_{y,Ed}/V_{y,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ V_{z,Ed}/V_{z,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ \tau_{xy,Ed}/(\tau_{y,T,Rd}/(\sqrt{3}) * gM0)) &= 0.00 < 1.00 \quad (6.2.6) \\ \tau_{xz,Ed}/(\tau_{z,T,Rd}/(\sqrt{3}) * gM0)) &= 0.00 < 1.00 \quad (6.2.6) \end{aligned}$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 293 Simple member01_293
0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

 $h=5.0$ cm $gM0=1.00$ $gM1=1.00$

b=0.6 cm	Ay=3.00 cm ²	Az=3.00 cm ²	Ax=3.00 cm ²
tw=0.3 cm	Iy=6.25 cm ⁴	Iz=0.09 cm ⁴	Ix=0.33 cm ⁴
tf=0.3 cm	Wply=3.75 cm ³	Wplz=0.45 cm ³	

INTERNAL FORCES AND CAPACITIES:

N _{Ed} = -1.63 kN	M _{y,Ed} = 0.01 kN*m	M _{z,Ed} = -0.00 kN*m	V _{y,Ed} = -0.00 kN
N _{Rd} = 87.00 kN	M _{y,pL,Rd} = 1.09 kN*m	M _{z,pL,Rd} = 0.13 kN*m	V _{y,T,Rd} = 50.23 kN
	M _{y,c,Rd} = 1.09 kN*m	M _{z,c,Rd} = 0.13 kN*m	V _{z,Ed} = -0.02 kN
	M _{n,y,Rd} = 1.09 kN*m	M _{n,z,Rd} = 0.13 kN*m	V _{z,T,Rd} = 50.23 kN
			T _{t,Ed} = -0.00 kN*m

Class of section = 1

LATERAL BUCKLING PARAMETERS:**BUCKLING PARAMETERS:**

☒ About y axis:
 ☒ About z axis:

VERIFICATION FORMULAS:**Section strength check:**

$N_{Ed}/N_{t,Rd} = 0.02 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.01 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})\sqrt{1.66}} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{t,y,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)
 $Tau_{t,z,Ed}/(fy/(sqrt(3)*gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 294 Simple member01_294
 0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

**SECTION PARAMETERS: PL50x6**

h=5.0 cm	gM0=1.00	gM1=1.00
b=0.6 cm	Ay=3.00 cm ²	Az=3.00 cm ²
tw=0.3 cm	Iy=6.25 cm ⁴	Iz=0.09 cm ⁴
tf=0.3 cm	Wply=3.75 cm ³	Wplz=0.45 cm ³

Ax=3.00 cm²
 Ix=0.33 cm⁴

INTERNAL FORCES AND CAPACITIES:

$$\begin{aligned} M_{y,Ed} &= 0.00 \text{ kN}\cdot\text{m} \\ M_{y,pl,Rd} &= 1.09 \text{ kN}\cdot\text{m} \\ M_{y,c,Rd} &= 1.09 \text{ kN}\cdot\text{m} \\ M_{N,y,Rd} &= 1.09 \text{ kN}\cdot\text{m} \end{aligned}$$
$$\begin{aligned} M_{z,Ed} &= -0.00 \text{ kN*m} \\ M_{z,p1,Rd} &= 0.13 \text{ kN*m} \\ M_{z,c,Rd} &= 0.13 \text{ kN*m} \\ M_{N,z,Rd} &= 0.13 \text{ kN*m} \end{aligned}$$

BUCKLING PARAMETERS:

About z axis:

Section strength check:

$$\begin{aligned} N_{\text{E}/N_{\text{I}}Rd} &= 0.02 > 1.00 & (6.2.3.(1)) \\ M_{\text{z}}/M_{\text{N}}z_{\text{Rd}} &= 0.00 > 1.00 & (6.2.9.1.(2)) \\ M_{\text{z}}/M_{\text{N}}z_{\text{Rd}} &= 0.00 > 1.00 & (6.2.9.1.(2)) \\ (M_{\text{y}}/M_{\text{N}}y_{\text{Rd}})^{1.66} + (M_{\text{z}}/M_{\text{N}}z_{\text{Rd}})^{1.66} &= 0.00 > 1.00 & (6.2.9.1.(6)) \\ V_{\text{y}}/V_{\text{z}}T_{\text{Rd}} &= 0.00 > 1.00 & (6.2.6-7) \\ V_{\text{z}}/V_{\text{z}}T_{\text{Rd}} &= 0.00 > 1.00 & (6.2.6-7) \\ T_{\text{au}}/y_{\text{E}}d(\text{f}/\text{sqrt}(3)) * gM0 &= 0.00 > 1.00 & (6.2.6) \\ T_{\text{au}}/z_{\text{E}}d(\text{f}/\text{sqrt}(3)) * gM0 &= 0.00 > 1.00 & (6.2.6) \end{aligned}$$

Section OK !!!

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

MEMBER: 295 Simple member01_295

Governing Load Case: 11 G-EX-0.3EY 1*1.00+6*-1.00

AISI316 $\bar{f}_y = 290.00 \text{ MPa}$



h=5.0 cm
b=0.6 cm
tw=0.3 cm
tf=0.3 cm

$$\begin{aligned} M_{Z,Ed} &= -0.00 \text{ kN}\cdot\text{m} \\ M_{Z,pl,Rd} &= 0.13 \text{ kN}\cdot\text{m} \\ M_{Z,c,Rd} &= 0.13 \text{ kN}\cdot\text{m} \end{aligned}$$
$$\begin{aligned} V_{y,E d} &= -0.00 \text{ kN} \\ V_{y,T,R d} &= 50.22 \text{ kN} \\ V_{z,E d} &= -0.01 \text{ kN} \end{aligned}$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 296 Simple member01_296
POINT: 1 COORDINATE: x = 0.00 L = 0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6



$h = 5.0$ cm
 $b = 0.6$ cm
 $t = 0.3$ cm
 $gM0 = 1.00$
 $Ay = 3.00$ cm²
 $Iy = 6.25$ cm⁴
 $Wply = 3.75$ cm³
 $gM1 = 1.00$
 $Az = 3.00$ cm²
 $Iz = 0.09$ cm⁴
 $Wplz = 0.45$ cm³
 $Ax = 3.00$ cm²
 $Ix = 0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{i,Rd} = -3.68$ kN
 $N_{i,Rd} = 87.00$ kN
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.12$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.23$ kN
 $V_{y,T,Rd} = -0.01$ kN
 $V_{z,T,Rd} = 50.23$ kN
 $T_{i,Ed} = -0.00$ kN*m
Class of section = 1

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: About z axis:

VERIFICATION FORMULAS:

Section strength check:

$$\begin{aligned} N_{Ed}/N_{t,Rd} &= 0.04 < 1.00 \quad (6.2.3.(1)) \\ M_{y,Ed}/M_{N,y,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\ M_{z,Ed}/M_{N,z,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\ (M_{y,Ed}/M_{N,y,Rd})^2 + (M_{z,Ed}/M_{N,z,Rd})^2 &= 0.00 < 1.00 \quad (6.2.9.1.(6)) \\ V_{y,Ed}/V_{y,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ V_{z,Ed}/V_{z,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\ \tau_{xy,Ed}/\tau_{y,T,Rd} &= 0.00 < 1.00 \quad (6.2.6) \\ \tau_{xz,Ed}/\tau_{z,T,Rd} &= 0.00 < 1.00 \quad (6.2.6) \end{aligned}$$

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 297 Simple member01_297
0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

$h = 5.0$ cm
 $b = 0.6$ cm
 $t_w = 0.3$ cm
 $t_f = 0.3$ cm
 $gM0 = 1.00$
 $A_y = 3.00$ cm²
 $I_y = 6.25$ cm⁴
 $W_{ply} = 3.75$ cm³
 $gM1 = 1.00$
 $A_z = 3.00$ cm²
 $I_z = 0.09$ cm⁴
 $W_{plz} = 0.45$ cm³

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00$ kN
 $N_{t,Ed} = -3.61$ kN
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{N,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{N,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.23$ kN
 $V_{z,Ed} = -0.00$ kN
 $V_{z,T,Rd} = 50.23$ kN
 $T_{t,Ed} = -0.00$ kN*m
Class of section = I

BUCKLING PARAMETERS:

About y axis: ☒About z axis: ☒**VERIFICATION FORMULAS:***Section strength check:*

$$\begin{aligned}
 N_{Ed}/N_{t,Rd} &= 0.04 < 1.00 \quad (6.2.3.(1)) \\
 M_{y,Ed}/M_{y,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\
 M_{z,Ed}/M_{z,Rd} &= 0.00 < 1.00 \quad (6.2.9.1.(2)) \\
 (M_{y,Ed}/M_{y,Rd})^2 + (M_{z,Ed}/M_{z,Rd})^2 &= 0.00 < 1.00 \quad (6.2.9.1.(6)) \\
 V_{y,Ed}/V_{y,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\
 V_{z,Ed}/V_{z,T,Rd} &= 0.00 < 1.00 \quad (6.2.6-7) \\
 \tau_{au,y,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) &= 0.00 < 1.00 \quad (6.2.6) \\
 \tau_{au,z,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) &= 0.00 < 1.00 \quad (6.2.6)
 \end{aligned}$$

*Section OK !!!***STEEL DESIGN**
CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification
CODE GROUP:**MEMBER:** 298 Simple member01_298**POINT:** 1 COORDINATE: x = 0.00 L =

0.00 m

LOADS:*Governing Load Case:* 15 G-EY-0.3EX 1*1.00+8*-1.00**MATERIAL:**AISI316 $f_y = 290.00$ MPa**SECTION PARAMETERS: PL50x6**
 $h = 5.0$ cm
 $b = 0.6$ cm
 $t_w = 0.3$ cm
 $t_f = 0.3$ cm
 $g_{M0} = 1.00$
 $A_y = 3.00$ cm²
 $I_y = 6.25$ cm⁴
 $W_{ply} = 3.75$ cm³
 $g_{M1} = 1.00$
 $A_z = 3.00$ cm²
 $I_z = 0.09$ cm⁴
 $W_{plz} = 0.45$ cm³
 $A_x = 3.00$ cm²
 $I_x = 0.33$ cm⁴
INTERNAL FORCES AND CAPACITIES:
 $N_{t,Rd} = 87.00$ kN
 $N_{y,Ed} = -3.44$ kN
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{N,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{N,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.23$ kN
 $V_{z,Ed} = -0.01$ kN
 $V_{z,T,Rd} = 50.23$ kN
 $T_{t,Ed} = -0.00$ kN*m
Class of section = 1
LATERAL BUCKLING PARAMETERS:**BUCKLING PARAMETERS:**About y axis: ☒About z axis: ☒

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 299 Simple member01_299
0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

 $h = 5.0$ cm
 $b = 0.6$ cm
 $t_w = 0.3$ cm
 $t_f = 0.3$ cm
 $gM0 = 1.00$
 $Ay = 3.00$ cm²
 $Iy = 6.25$ cm⁴
 $Wply = 3.75$ cm³
 $gM1 = 1.00$
 $Az = 3.00$ cm²
 $Iz = 0.09$ cm⁴
 $Wplz = 0.45$ cm³
 $Ax = 3.00$ cm²
 $Ix = 0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

 $N_{y,Ed} = -3.04$ kN
 $N_{x,Rd} = 87.00$ kN
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $MN_{y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $MN_{z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.22$ kN
 $V_{z,Ed} = -0.01$ kN
 $V_{z,T,Rd} = 50.22$ kN
 $T_{y,Ed} = -0.00$ kN*m
Class of section = 1

VERIFICATION FORMULAS:

Section strength check:

 $N_{y,Ed}/N_{y,Rd} = 0.04 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $\tau_{xy,Ed}/(\tau_y/(\sqrt{3}) * gM0) = 0.00 < 1.00$ (6.2.6)
 $\tau_{xz,Ed}/(\tau_z/(\sqrt{3}) * gM0) = 0.00 < 1.00$ (6.2.6)

BUCKLING PARAMETERS:

About y axis:



About z axis:

LATERAL BUCKLING PARAMETERS:

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 300 Simple member01_300

POINT: 1 COORDINATE: $x = 0.00 L =$

0.00 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

$h = 5.0$ cm	$gM0 = 1.00$	$gM1 = 1.00$	$Ax = 3.00$ cm ²	$Ix = 0.33$ cm ⁴
$b = 0.6$ cm	$Ay = 3.00$ cm ²	$Az = 3.00$ cm ²		
$tw = 0.3$ cm	$Iy = 6.25$ cm ⁴	$Iz = 0.09$ cm ⁴		
$tf = 0.3$ cm	$Wply = 3.75$ cm ³	$Wplz = 0.45$ cm ³		

INTERNAL FORCES AND CAPACITIES:

$Nt,Rd = -2.49$ kN	$My,Ed = 0.00$ kN*m	$My,pl,Rd = 1.09$ kN*m	$Mz,Ed = -0.00$ kN*m	$My,Ed = -0.00$ kN	$Vy,T,Rd = 50.22$ kN
	$My,c,Rd = 1.09$ kN*m	$Mz,pl,Rd = 0.13$ kN*m	$Mz,c,Rd = 0.13$ kN*m	$Vz,Ed = -0.00$ kN	$Vz,T,Rd = 50.22$ kN
	$MN,y,Rd = 1.09$ kN*m	$MN,z,Rd = 0.13$ kN*m		$Tt,Ed = -0.00$ kN*m	

Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

 $Nt,Ed/Nt,Rd = 0.03 < 1.00$ (6.2.3.(1))
 $My,Ed/MN,y,Rd = 0.00 < 1.00$ (6.2.9.1.(2))
 $Mz,Ed/MN,z,Rd = 0.00 < 1.00$ (6.2.9.1.(2))
 $(My,Ed/MN,y,Rd) \sqrt{1.66 + (Mz,Ed/MN,z,Rd) \sqrt{1.66}} = 0.00 < 1.00$ (6.2.9.1.(6))
 $Vy,Ed/Vy,T,Rd = 0.00 < 1.00$ (6.2.6-7)
 $Vz,Ed/Vz,T,Rd = 0.00 < 1.00$ (6.2.6-7)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP: MEMBER: 301 Simple member01_301
POINT: 3 COORDINATE: $x = 1.00 \text{ L} = 0.44 \text{ m}$

LOADS: Governing Load Case: 11 G-Ex-0.3EY $1 * 1.00 + 6 * -1.00$

MATERIAL: AISI316 $f_y = 290.00 \text{ MPa}$



SECTION PARAMETERS: PL50x6

$h = 5.0 \text{ cm}$
 $b = 0.6 \text{ cm}$
 $t_w = 0.3 \text{ cm}$
 $t_f = 0.3 \text{ cm}$
 $g_{M0} = 1.00$
 $A_y = 3.00 \text{ cm}^2$
 $I_y = 6.25 \text{ cm}^4$
 $W_{pl,y} = 3.75 \text{ cm}^3$
 $g_{M1} = 1.00$
 $A_z = 3.00 \text{ cm}^2$
 $I_z = 0.09 \text{ cm}^4$
 $W_{pl,z} = 0.45 \text{ cm}^3$
 $A_x = 3.00 \text{ cm}^2$
 $I_x = 0.33 \text{ cm}^4$

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00 \text{ kN}$
 $N_{t,Ed} = -2.19 \text{ kN}$
 $M_{y,Ed} = 0.00 \text{ kN*m}$
 $M_{y,pl,Rd} = 1.09 \text{ kN*m}$
 $M_{y,c,Rd} = 1.09 \text{ kN*m}$
 $M_{N,y,Rd} = 1.09 \text{ kN*m}$
 $M_{z,Ed} = -0.00 \text{ kN*m}$
 $M_{z,pl,Rd} = 0.13 \text{ kN*m}$
 $M_{z,c,Rd} = 0.13 \text{ kN*m}$
 $M_{N,z,Rd} = 0.13 \text{ kN*m}$
 $V_{y,Ed} = -0.00 \text{ kN}$
 $V_{y,T,Rd} = 50.22 \text{ kN}$
 $V_{z,Ed} = -0.02 \text{ kN}$
 $V_{z,T,Rd} = 50.22 \text{ kN}$
 $T_{t,Ed} = -0.00 \text{ kN*m}$
Class of section = I

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{t,Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $\tau_{au,tz,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) = 0.00 < 1.00$ (6.2.6)
 $\tau_{au,ty,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) = 0.00 < 1.00$ (6.2.6)
 $\tau_{au,tz,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

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STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.

ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 302 Simple member01_302

POINT: 1 COORDINATE: x = 0.00 L = 0.00 m

LOADS:

Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa

SECTION PARAMETERS: PL50x6

$h = 5.0$ cm
 $b = 0.6$ cm
 $t_w = 0.3$ cm
 $t_f = 0.3$ cm
 $g_{M0} = 1.00$
 $A_y = 3.00$ cm²
 $I_y = 6.25$ cm⁴
 $W_{pl,y} = 3.75$ cm³
 $g_{M1} = 1.00$
 $A_z = 3.00$ cm²
 $I_z = 0.09$ cm⁴
 $W_{pl,z} = 0.45$ cm³
 $A_x = 3.00$ cm²
 $I_x = 0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = 87.00$ kN
 $N_{t,Ed} = -2.91$ kN
 $M_{y,Ed} = 0.00$ kN*m
 $M_{y,pl,Rd} = 1.09$ kN*m
 $M_{y,c,Rd} = 1.09$ kN*m
 $M_{n,y,Rd} = 1.09$ kN*m
 $M_{z,Ed} = -0.00$ kN*m
 $M_{z,pl,Rd} = 0.13$ kN*m
 $M_{z,c,Rd} = 0.13$ kN*m
 $M_{n,z,Rd} = 0.13$ kN*m
 $V_{y,Ed} = -0.00$ kN
 $V_{y,T,Rd} = 50.23$ kN
 $V_{z,Ed} = -0.01$ kN
 $V_{z,T,Rd} = 50.23$ kN
 $T_{t,Ed} = 0.00$ kN*m
 Class of section = 1

LATERAL BUCKLING PARAMETERS:



BUCKLING PARAMETERS:



About y axis:



About z axis:

VERIFICATION FORMULAS:

Section strength check:

$N_{t,Ed}/N_{t,Rd} = 0.03 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{n,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{n,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{n,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{n,z,Rd})^2} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $T_{t,Ed}/T_{t,Rd} = 0.00 < 1.00$ (6.2.6)
 $T_{a,u,tz,Ed}/(f_y/(\sqrt{3} \cdot g_{M0})) = 0.00 < 1.00$ (6.2.6)
 $T_{a,u,tz,Ed}/(f_y/(\sqrt{3} \cdot g_{M0})) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.		ANALYSIS TYPE: Member Verification	
CODE GROUP: 303 Simple member01_303			
POINT: 3 COORDINATE: x = 1.00 L = 0.44 m			
LOADS: Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00			
MATERIAL: AISI316 fy = 290.00 MPa			
 SECTION PARAMETERS: PL50x6			
h=5.0 cm	gM0=1.00	gM1=1.00	
b=0.6 cm	Ay=3.00 cm2	Az=3.00 cm2	Ax=3.00 cm2
tw=0.3 cm	Iy=6.25 cm4	Iz=0.09 cm4	Ix=0.33 cm4
tf=0.3 cm	Wply=3.75 cm3	Wplz=0.45 cm3	
INTERNAL FORCES AND CAPACITIES:			
Nt,Rd = 87.00 kN	My,Ed = 0.00 kN*m	Mz,Ed = -0.00 kN*m	Vy,Ed = -0.00 kN
Nt,Rd = -3.47 kN	My,p,Rd = 1.09 kN*m	Mz,p,Rd = 0.13 kN*m	Vy,T,Rd = 50.22 kN
	My,c,Rd = 1.09 kN*m	Mz,c,Rd = 0.13 kN*m	Vz,Ed = -0.01 kN
	MN,y,Rd = 1.09 kN*m	MN,z,Rd = 0.13 kN*m	Vz,T,Rd = 50.22 kN
			Tt,Ed = -0.00 kN*m
			Class of section = I
BUCKLING PARAMETERS: ☒ About y axis:  ☐ About z axis:			
VERIFICATION FORMULAS:			
Section strength check:			
Nt,Ed/Nt,Rd = 0.04 < 1.00 (6.2.3.(1))			
My,Ed/MN,y,Rd = 0.00 < 1.00 (6.2.9.1.(2))			
Mz,Ed/MN,z,Rd = 0.00 < 1.00 (6.2.9.1.(2))			
(My,Ed/MN,y,Rd)√1.66 + (Mz,Ed/MN,z,Rd)√1.66 = 0.00 < 1.00 (6.2.9.1.(6))			
Vy,Ed/Vy,T,Rd = 0.00 < 1.00 (6.2.6-7)			
Vz,Ed/Vz,T,Rd = 0.00 < 1.00 (6.2.6-7)			
Tau,ty,Ed/(fy/(sqrt(3))*gM0) = 0.00 < 1.00 (6.2.6)			
Tau,tz,Ed/(fy/(sqrt(3))*gM0) = 0.00 < 1.00 (6.2.6)			
Section OK !!!			
STEEL DESIGN			
CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.			
ANALYSIS TYPE: Member Verification			
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Date : 07/04/25			

CODE GROUP: 304 Simple member01_304
MEMBER: 304 Simple member01_304
POINT: 3 COORDINATE: $x = 1.00 \text{ L} = 0.44 \text{ m}$

LOADS:
 Governing Load Case: 15 G-EY-0.3EX 1*1.00+8*-1.00

MATERIAL:
 AISI316 $f_y = 290.00 \text{ MPa}$

**SECTION PARAMETERS: PL50x6**

$h = 5.0 \text{ cm}$
 $b = 0.6 \text{ cm}$
 $t_w = 0.3 \text{ cm}$
 $t_f = 0.3 \text{ cm}$
 $g_{M0} = 1.00$
 $A_y = 3.00 \text{ cm}^2$
 $I_y = 6.25 \text{ cm}^4$
 $W_{ply} = 3.75 \text{ cm}^3$
 $g_{M1} = 1.00$
 $A_z = 3.00 \text{ cm}^2$
 $I_z = 0.09 \text{ cm}^4$
 $W_{plz} = 0.45 \text{ cm}^3$
 $A_x = 3.00 \text{ cm}^2$
 $I_x = 0.33 \text{ cm}^4$

INTERNAL FORCES AND CAPACITIES:

$N_{,Ed} = -3.45 \text{ kN}$
 $N_{,Ed} = 87.00 \text{ kN}$
 $M_{y,Ed} = 0.00 \text{ kN*m}$
 $M_{y,pl,Rd} = 1.09 \text{ kN*m}$
 $M_{y,c,Rd} = 1.09 \text{ kN*m}$
 $M_{N,y,Rd} = 1.09 \text{ kN*m}$
 $M_{z,Ed} = -0.00 \text{ kN*m}$
 $M_{z,pl,Rd} = 0.13 \text{ kN*m}$
 $M_{z,c,Rd} = 0.13 \text{ kN*m}$
 $M_{N,z,Rd} = 0.13 \text{ kN*m}$
 $V_{y,Ed} = -0.00 \text{ kN}$
 $V_{y,T,Rd} = 50.22 \text{ kN}$
 $V_{z,Ed} = -0.02 \text{ kN}$
 $V_{z,T,Rd} = 50.22 \text{ kN}$
 $T_{,Ed} = -0.00 \text{ kN*m}$
 Class of section = 1

LATERAL BUCKLING PARAMETERS:**BUCKLING PARAMETERS:**

☒ About y axis:
☒ About z axis:

VERIFICATION FORMULAS:

Section strength check:

$N_{,Ed}/N_{,Rd} = 0.04 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $\tau_{au,y,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) = 0.00 < 1.00$ (6.2.6)
 $\tau_{au,tz,Ed}/(\tau_y/(\sqrt{3}) * g_{M0}) = 0.00 < 1.00$ (6.2.6)

Section OK !!!**STEEL DESIGN**

CODE: EN 1993-1-2:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 305 Simple member01_305
POINT: 1 COORDINATE: $x = 0.00 \text{ L} = 0.00 \text{ m}$

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00$ MPa



SECTION PARAMETERS: PL50x6

$h = 5.0$ cm
 $b = 0.6$ cm
 $I_y = 6.25$ cm⁴
 $I_z = 0.09$ cm⁴
 $W_{pl,y} = 3.75$ cm³
 $W_{pl,z} = 0.45$ cm³
 $A_y = 3.00$ cm²
 $A_z = 3.00$ cm²
 $A_x = 3.00$ cm²
 $I_x = 0.33$ cm⁴

INTERNAL FORCES AND CAPACITIES:

$N_{,Ed} = -3.71$ kN	$M_{y,Ed} = 0.00$ kN*m	$M_{z,Ed} = -0.00$ kN*m	$V_{y,Ed} = -0.00$ kN
$N_{,Rd} = 87.00$ kN	$M_{y,pl,Rd} = 1.09$ kN*m	$M_{z,pl,Rd} = 0.13$ kN*m	$V_{y,T,Rd} = 50.22$ kN
	$M_{y,c,Rd} = 1.09$ kN*m	$M_{z,c,Rd} = 0.13$ kN*m	$V_{z,Ed} = -0.01$ kN
	$M_{n,y,Rd} = 1.09$ kN*m	$M_{n,z,Rd} = 0.12$ kN*m	$V_{z,T,Rd} = 50.22$ kN
			$T_{,Ed} = -0.00$ kN*m

Class of section = 1

LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About y axis: ☒ About z axis: ☒

VERIFICATION FORMULAS:

Section strength check:

$N_{,Ed}/N_{t,Rd} = 0.04 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd})\sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{y,Ed}/(f_y/(\sqrt{3} * gM0)) = 0.00 < 1.00$ (6.2.6)
 $Tau_{z,Ed}/(f_y/(\sqrt{3} * gM0)) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

STEEL DESIGN

CODE: EN 1993-1:2005/A1:2014, Eurocode 3: Design of steel structures.
ANALYSIS TYPE: Member Verification

CODE GROUP:

MEMBER: 306 Simple member01_306
0.44 m

LOADS:

Governing Load Case: 11 G-Ex-0.3EY 1*1.00+6*-1.00

MATERIAL:

AISI316 $f_y = 290.00 \text{ MPa}$


SECTION PARAMETERS: PL50x6

$h=5.0 \text{ cm}$
 $b=0.6 \text{ cm}$
 $tw=0.3 \text{ cm}$
 $tf=0.3 \text{ cm}$
 $gM0=1.00$
 $Ay=3.00 \text{ cm}^2$
 $Iy=6.25 \text{ cm}^4$
 $Wply=3.75 \text{ cm}^3$
 $gM1=1.00$
 $Az=3.00 \text{ cm}^2$
 $Iz=0.09 \text{ cm}^4$
 $Wplz=0.45 \text{ cm}^3$
 $Ax=3.00 \text{ cm}^2$
 $Ix=0.33 \text{ cm}^4$

INTERNAL FORCES AND CAPACITIES:

$N_{t,Rd} = -3.68 \text{ kN}$
 $N_{t,Rd} = 87.00 \text{ kN}$
 $M_{y,Ed} = 0.00 \text{ kN*m}$
 $M_{y,pl,Rd} = 1.09 \text{ kN*m}$
 $M_{y,c,Rd} = 1.09 \text{ kN*m}$
 $M_{n,y,Rd} = 1.09 \text{ kN*m}$
 $M_{z,Ed} = -0.00 \text{ kN*m}$
 $M_{z,pl,Rd} = 0.13 \text{ kN*m}$
 $M_{z,c,Rd} = 0.13 \text{ kN*m}$
 $M_{n,z,Rd} = 0.12 \text{ kN*m}$
 $V_{y,Ed} = -0.00 \text{ kN}$
 $V_{y,T,Rd} = 50.22 \text{ kN}$
 $V_{z,Ed} = -0.01 \text{ kN}$
 $V_{z,T,Rd} = 50.22 \text{ kN}$
 $T_{t,Ed} = -0.00 \text{ kN*m}$
 Class of section = I

LATERAL BUCKLING PARAMETERS:



BUCKLING PARAMETERS:



About y axis:



About z axis:

VERIFICATION FORMULAS:

Section strength check:

$N_{t,Ed}/N_{t,Rd} = 0.04 < 1.00$ (6.2.3.(1))
 $M_{y,Ed}/M_{N,y,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $M_{z,Ed}/M_{N,z,Rd} = 0.00 < 1.00$ (6.2.9.1.(2))
 $(M_{y,Ed}/M_{N,y,Rd}) \sqrt{1.66 + (M_{z,Ed}/M_{N,z,Rd})} \sqrt{1.66} = 0.00 < 1.00$ (6.2.9.1.(6))
 $V_{y,Ed}/V_{y,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $V_{z,Ed}/V_{z,T,Rd} = 0.00 < 1.00$ (6.2.6-7)
 $Tau_{t,y,Ed}/(f_y/(\sqrt{3}) * gM0) = 0.00 < 1.00$ (6.2.6)
 $Tau_{t,z,Ed}/(f_y/(\sqrt{3}) * gM0) = 0.00 < 1.00$ (6.2.6)

Section OK !!!

