

Eurocode 3-2005 STEEL SECTION CHECK (Summary for Combo and Station)
Units : KN, m, C

Frame : 551 X Mid: 31,950 Combo: ELU4 Design Type: Brace
Length: 3,886 Y Mid: 13,751 Shape: D219,1x10 Frame Type: DCM-MRF
Loc : 0,000 Z Mid: 1,890 Class: Class 1 Rolled : No

Country=CEN Default Combination=Eq. 6.10
Reliability=Class 2
Interaction=Method 1 (Annex A) MultiResponse=Envelopes P-Delta Done?
No
Consider Torsion? No

GammaM0=1,05 GammaM1=1,10 GammaM2=1,25
An/Ag=1,00 RLLF=1,000 PLLF=0,750 D/C Lim=0,950
Aeff=0,007 eNy=0,000 eNz=0,000
A=0,007 Iyy=3,598E-05 iyy=0,074 Wel,yy=3,285E-04 Weff,yy=3,285E-04
It=7,197E-05 Izz=3,598E-05 izz=0,074 Wel,zz=3,285E-04 Weff,zz=3,285E-04
Iw=0,000 Iyz=0,000 h=0,219 Wpl,yy=4,376E-04 Av,z=0,004
E=210000000,0 fy=275000,000 fu=430000,000 Wpl,zz=4,376E-04 Av,y=0,004

STRESS CHECK FORCES & MOMENTS

Location	Ned	Med,yy	Med,zz	Ved,z	Ved,y	Ted
0,000	-70,551	-79,923	-20,912	-31,289	-10,259	-2,699

PMM DEMAND/CAPACITY RATIO (Governing Equation EC3 6.2.1(7))
D/C Ratio: 0,762 = $0,041 + \sqrt{(0,697)^2 + (0,182)^2}$ < 0,950 OK
= (Ned/NRd) + $\sqrt{(My,Ed/My,Rd)^2 + (Mz,Ed/Mz,Rd)^2}$ (EC3 6.2.1(7))

AXIAL FORCE DESIGN

	Ned Force	Nc,Rd Capacity	Nt,Rd Capacity
Axial	-70,551	1720,471	1720,471

	Npl,Rd	Nu,Rd	Ncr,T	Ncr,TF	An/Ag
	1720,471	2033,784	530578,750	4939,717	1,000

	Curve	Alpha	Ncr	LambdaBar	Phi	Chi	Nb,Rd
Major (y-y)	c	0,490	4939,717	0,605	0,782	0,783	1285,194
MajorB (y-y)	c	0,490	4939,717	0,605	0,782	0,783	1285,194
Minor (z-z)	c	0,490	4939,717	0,605	0,782	0,783	1285,194
MinorB (z-z)	c	0,490	4939,717	0,605	0,782	0,783	1285,194
Torsional TF	c	0,490	4939,717	0,605	0,782	0,783	1285,194

MOMENT DESIGN

	Med Moment	Med,span Moment	Mc,Rd Capacity	Mv,Rd Capacity	Mn,Rd Capacity	Mb,Rd Capacity
Major (y-y)	-79,923	-79,923	114,599	114,599	114,599	109,390
Minor (z-z)	-20,912	-20,912	114,599	114,599	114,599	

	Curve	AlphaLT	LambdaBarLT	PhiLT	ChiLT	C1	Mcr
LTB	d	0,760	0,131	0,482	1,000	1,307	7002,418

	kyy	kzy	kzz
Factors	0,893	0,549	0,914

SHEAR DESIGN

	Ved Force	Ted Torsion	Vc,Rd Capacity	Stress Ratio	Status Check
Major (z)	31,289	3,115	632,363	0,049	OK
Minor (y)	10,259	3,115	632,363	0,016	OK

	Vpl,Rd	Eta	LambdabarW
Reduction	632,363	1,200	0,000

SAP2000

Project _____
Job Number _____
Engineer _____

BRACE MAXIMUM AXIAL LOADS

	P Comp	P Tens
Axial	-70,551	N/C