

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

Frame : 207 X Mid: 14,250 Combo: ELU1 Design Type: Beam
Length: 1,750 Y Mid: 0,875 Shape: IPE120 Frame Type: DCM-MRF
Loc : 1,313 Z Mid: 4,500 Class: Class 1 Rolled : Yes

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=0,001 eNy=0,000 eNz=0,000
A=0,001 Iyy=3,180E-06 iyy=0,049 Wel,yy=5,300E-05 Weff,yy=5,300E-05
It=0,000 Izz=0,000 izz=0,014 Wel,zz=8,656E-06 Weff,zz=8,656E-06
Iw=0,000 Iyz=0,000 h=0,120 Wpl,yy=6,070E-05 Av,z=8,474E-04
E=210000000,0 fy=275000,000 fu=430000,000 Wpl,zz=1,360E-05 Av,y=6,295E-04

STRESS CHECK FORCES & MOMENTS

Location	Ned	Med,yy	Med,zz	Ved,z	Ved,y	Ted
1,313	2,968	0,877	0,012	9,037	0,009	-2,088E-04

PMM DEMAND/CAPACITY RATIO (Governing Equation EC3 6.3.3(4)-6.61)

D/C Ratio: 0,596 = 0,000 + 0,592 + 0,004 < 0,950 OK
= Ned/(Chi_y NRk/GammaM1) + kyy (My,Ed+NEd eNy)/(Chi_LT

My,Rk/GammaM1) + kyz (Mz,Ed+NEd eNz)/(Mz,Rk/GammaM1) (EC3 6.3.3(4)-6.61)

AXIAL FORCE DESIGN

	Ned Force	Nc,Rd Capacity	Nt,Rd Capacity	Npl,Rd 345,714	Nu,Rd 408,672	Ncr,T 579,039	Ncr,TF 579,039	An/Ag 1,000
Axial	2,968	345,714	345,714					

	Curve	Alpha	Ncr	LambdaBar	Phi	Chi	Nb,Rd
Major (y-y)	a	0,210	2152,138	0,411	0,606	0,950	313,483
MajorB (y-y)	a	0,210	2152,138	0,411	0,606	0,950	313,483
Minor (z-z)	b	0,340	46,867	2,783	4,812	0,114	37,770
MinorB (z-z)	b	0,340	46,867	2,783	4,812	0,114	37,770
Torsional TF	b	0,340	579,039	0,792	0,914	0,730	240,741

MOMENT DESIGN

	Med Moment	Med,span Moment	Mc,Rd Capacity	Mv,Rd Capacity	Mn,Rd Capacity	Mb,Rd Capacity
Major (y-y)	0,877	5,220	15,898	15,898	15,898	8,820
Minor (z-z)	0,012	0,016	3,562	3,562	3,562	

	Curve	AlphaLT	LambdaBarLT	PhiLT	ChiLT	C1	Mcr
LTB	a	0,210	1,122	1,226	0,581	1,574	13,267

	kyy	kyz	kzy	kzz
Factors	1,000	0,751	0,524	1,011

SHEAR DESIGN

	Ved Force	Ted Torsion	Vc,Rd Capacity	Stress Ratio	Status Check
Major (z)	9,037	0,000	95,190	0,095	OK
Minor (y)	0,009	0,000	128,142	6,866E-05	OK

Vpl,Rd Eta LambdaBarW

SAP2000

Project _____
Job Number _____
Engineer _____

Reduction	95,190	1,200	0,306
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CONNECTION SHEAR FORCES FOR BEAMS

	VMajor Left	VMajor Right
Major (V2)	2,625	12,008