

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

Frame : 924            X Mid: 31,950            Combo: ELU3            Design Type: Brace  
Length: 4,877        Y Mid: -0,925            Shape: D219,1x10        Frame Type: DCM-MRF  
Loc : 0,000        Z Mid: 2,250            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	-82,071	-10,983	-24,670	-3,538	-8,695	-2,142

PMM DEMAND/CAPACITY RATIO (Governing Equation EC3 6.3.3(4)-6.62)  
D/C Ratio: 0,289 = 0,073 + sqrt[(0,061)^2 + (0,208)^2] < 0,950 OK  
= Ned/(Chi\_z NRk/GammaM1) + sqrt[(kzy (My,Ed+NEd eNy)/(Chi\_LT  
My,Rk/GammaM1))^2  
+ (kzz (Mz,Ed+NEd eNz)/(Mz,Rk/GammaM1))^2] (EC3 6.3.3  
(4)-6.62)

#### AXIAL FORCE DESIGN

	Ned Force	Nc,Rd Capacity	Nt,Rd Capacity			
Axial	-82,071	1720,471	1720,471			
	Npl,Rd 1720,471	Nu,Rd 2033,784	Ncr,T 530578,750	Ncr,TF 3135,997	An/Ag 1,000	
Curve	Alpha	Ncr	LambdaBar	Phi	Chi	Nb,Rd
Major (y-y)	c 0,490	3135,997	0,759	0,925	0,688	1129,731
MajorB (y-y)	c 0,490	3135,997	0,759	0,925	0,688	1129,731
Minor (z-z)	c 0,490	3135,997	0,759	0,925	0,688	1129,731
MinorB (z-z)	c 0,490	3135,997	0,759	0,925	0,688	1129,731
Torsional TF	c 0,490	3135,997	0,759	0,925	0,688	1129,731

#### MOMENT DESIGN

	Med Moment	Med,span Moment	Mc,Rd Capacity	Mv,Rd Capacity	Mn,Rd Capacity	Mb,Rd Capacity
Major (y-y)	-10,983	-10,983	114,599	114,599	114,599	109,390
Minor (z-z)	-24,670	-24,670	114,599	114,599	114,599	
Curve	AlphaLT	LambdaBarLT	PhiLT	ChiLT	C1	Mcr
LTB	d 0,760	0,125	0,479	1,000	1,797	7670,863
Factors	kyy	kzy	kzy	kzz		
	0,999	0,555	0,603	0,922		

#### SHEAR DESIGN

	Ved Force	Ted Torsion	Vc,Rd Capacity	Stress Ratio	Status Check
Major (z)	3,538	2,248	632,363	0,006	OK
Minor (y)	8,695	2,248	632,363	0,014	OK

# SAP2000

Project \_\_\_\_\_  
Job Number \_\_\_\_\_  
Engineer \_\_\_\_\_

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

## BRACE MAXIMUM AXIAL LOADS

	P Comp	P Tens
Axial	-82,071	N/C