

ALL UNITS ARE - KN METE (UNLESS OTHERWISE NOTED)

MEMBER	TABLE	RESULT/ FX	CRITICAL COND/ MY	RATIO/ MZ	LOADING/ LOCATION
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* 33 ST	200X100X10RHS			(EUROPEAN SECTIONS)	
		FAIL	EC-6.2.7(5)	1.980	4003
		103.04 C	-45.89	14.28	0.20

MATERIAL DATA

Grade of steel = USER
 Modulus of elasticity = 205 kN/mm²
 Design Strength (py) = 355 N/mm²

SECTION PROPERTIES (units - cm)

Member Length = 20.43
 Gross Area = 54.90 Net Area = 54.90

	z-axis	y-axis
Moment of inertia	2664.000	869.000
Plastic modulus	341.000	206.000
Elastic modulus	266.400	173.800
Shear Area	18.300	36.600
Radius of gyration	6.966	3.979
Effective Length	286.800	286.800

DESIGN DATA (units - kN,m) EUROCODE NO.3 /2005

Section Class : CLASS 1
 Squash Load : 1948.95
 Axial force/Squash load : 0.053
 GM0 : 1.00 GM1 : 1.00 GM2 : 1.00

	z-axis	y-axis
Slenderness ratio (KL/r)	41.2	72.1
Compression Capacity	1776.9	1373.4
Tension Capacity	1949.0	1949.0
Moment Capacity	121.1	73.1
Reduced Moment Capacity	121.1	73.1
Shear Capacity	375.1	750.2

BUCKLING CALCULATIONS (units - kN,m)

Lateral Torsional Buckling Moment MB = 121.1
 co-efficients C1 _K : C1 =1.285 K =1.0, Effective Length= 2.868

Elastic Critical Moment for LTB, M_{cr} = 2071.4

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CRITICAL LOADS FOR EACH CLAUSE CHECK (units- kN,m):

CLAUSE	RATIO	LOAD	FX	VY	VZ	MZ	MY
EC-6.3.1.1	0.126	4002	173.6	10.6	131.5	52.7	27.6
EC-6.2.1(7)	0.901	4002	173.6	10.6	131.5	52.7	27.6
EC-6.3.3-661	0.692	4002	173.6	10.6	131.5	52.7	27.6
EC-6.3.3-662	0.808	4002	173.6	10.6	131.5	52.7	27.6
EC-6.2.6-(Z)	0.482	4003	103.0	-9.2	-180.8	14.3	-45.9
EC-6.2.6-(Y)	0.016	4001	1.6	12.3	-1.5	-9.2	-0.2

ADDITIONAL CLAUSE CHECKS FOR TORSION (units- kN,m):

CLAUSE	RATIO	LOAD	DIST	FX	VY	VZ	MZ	MY	MX
EC-6.2.7(5)	1.980	4003	0.2	103.0	-9.2	-180.8	14.3	-45.9	-36.7