Company Name		Project Title	
Group/Team Name		Subtitle	
Designer		Job Number	
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1 Input Parameters

Module	Tension Members Bolted Design
Axial (kN) *	1000.0
Length(mm) *	18000.0
Section Size*	Ref List of Input Section
Bolt Details	
Diameter (mm)*	[30.0, 36.0]
Grade *	[3.6, 4.6, 4.8, 5.6, 5.8, 6.8, 8.8, 9.8, 10.9, 12.9]
Type *	Bearing Bolt
Bolt hole type	Standard
Bolt Ultimate Strength (N/mm2)	0.0
Bolt Yield Strength (N/mm2)	0.0
Slip factor (μ_f)	0.3
Type of edges	a - Sheared or hand flame cut
Gap between beam and support (mm)	0.0
Are the members exposed to corrosive influences	False
Safety Factors - IS 800:2007 Table 5 (Clause 5.4.1)	
Governed by Yielding	$\gamma_{m0} = 1.1$
Governed by Ultimate Stress	$\gamma_{m1} = 1.25$
Connection Bolts - Bearing Type	$\gamma_{mb} = 0.0$

1.1 List of Input Section

Section Size*	['MCP 100', 'MC 100', 'LC 100', 'JC 100', 'MCP 125', 'MC 125*', 'MC 125', 'LC(P) 125
	', 'LC 125', 'JC 125']

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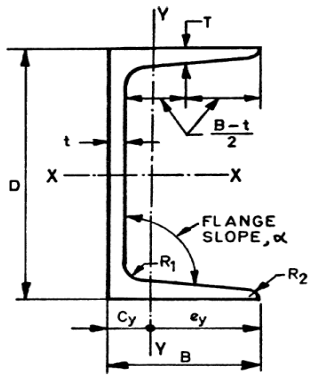
2 Design Checks

2.1 Selected Member Data



Section Size*		('MC 125*', 'Channels')	
Material *		E 250 (Fe 410 W)A	
Ultimate strength, fu (MPa)		410	
Yield Strength , fy (MPa)		250	
Mass	13.7	Iz(mm4)	4340000.0
Area(mm2) - A	1750.0	Iy(mm4)	638000.0
D(mm)	125	rz(mm)	49.8
B(mm)	66	ry(mm)	19.1
t(mm)	6.0	Zz(mm3)	69500.0
T(mm)	8.1	Zy(mm3)	13600.0
FlangeSlope	96	Zpz(mm3)	0.0
R1(mm)	9.5	Zpy(mm3)	13600.0
R2(mm)	2.4	r(mm3)	19.1
Cy(mm)	19.2		

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2.2 Spacing Checks

Check	Required	Provided	Remarks
Min.Diameter (mm)		$d = 30.0$	
Hole Diameter (mm)		$d_0 = 33.0$	
Min. Gauge (mm)	$p/g_{min} = 2.5\ d$ $=2.5 * 30.0 \quad = 75.0$	75	Row Limit (rl) = 2
Min. Edge Distance (mm)	$e/e`_{min} = [1.5\ or\ 1.7] * d_0$ $= 1.7 * 33.0 = 56.1$	60	
Spacing Check	$depth = 2 * e + (rl - 1) * g$ $= 2 * 60 + (2 - 1) * 75$ $= 195$	89.8	Fail

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2.3 Member Checks

Check	Required	Provided	Remarks
Tension Yielding Capacity (kN)	1000.0	$T_{dg}\ or\ A_c = \frac{1 * A_g\ f_y}{\gamma_{m0}}$ $= \frac{1 * 1750.0 * 250}{1.1}$ $= 259.09$	Fail
Slenderness	$\frac{K * L}{r} \leq 400$	$\frac{K * L}{r} = \frac{1 * 18000.0}{19.1}$ $= 942.41$	Fail