
Design Conclusion	
Endplate	Pass
Endplate	
Connection Properties	
Connection	
Connection Title	Flexible Endplate
Connection Type	Shear Connection
Connection Category	
Connectivity	Column flange-Beam web
Beam Connection	Welded
Column Connection	Bolted
Loading (Factored Load)	
Shear Force (kN)	140
Components	
Column Section	ISSC 200
Material	Fe 410
Beam Section	ISMB 400
Material	Fe 410
Hole	STD
Plate Section	240X174X10
Thickness (mm)	10
Width (mm)	174
Depth (mm)	240
Hole	STD
Weld	
Type	Double Fillet
Size (mm)	8
Bolts	
Type	HSFG
Grade	8.8
Diameter (mm)	20
Bolt Numbers	6
Columns (Vertical Lines)	2
Bolts Per Column	3
Gauge (mm)	0
Pitch (mm)	50
End Distance (mm)	70
Edge Distance (mm)	37
Assembly	
Column-Beam Clearance (mm)	10

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Design Check

Check	Required	Provided	Remark
Bolt shear capacity (kN)		V_{dsb} = ((800.0*0.6126*20*20)/(√3*1.25*1000) = 52.694 [cl. 10.3.3]	
Bolt bearing capacity (kN)		V_{dsb} = (2.5*0.5*20*8.9*410)/(1.25*1000) = 82.0 [cl. 10.3.4]	
Bolt capacity (kN)		Min (52.694, 82.0) = 52.694	**Pass**
No. of bolts	140/52.694 = 2.7	6	**Pass**
No.of column(s)	≤2	2	
No. of bolts per column		3	
Bolt pitch (mm)	≥2.5* 20 = 50, ≤Min(32*8.9, 300) = 285 [cl. 10.2.2]	50	
Bolt gauge (mm)	≥2.5*20 = 50, ≤Min(32*8.9, 300) = 285 [cl. 10.2.2]	0	
End distance (mm)	≥1.7*22.0 = 37.4, ≤12*8.9 = 106.8 [cl. 10.2.4]	70	
Edge distance (mm)	≥1.7*22.0 = 37.4, ≤12*8.9 = 106.8 [cl. 10.2.4]	37	**Pass**
Block shear capacity (kN)	140	V_{db} = 203 [cl. 6.4.1]	
Plate thickness (mm)	≥ 8	10	
Plate height (mm)	≥0.6*400.0=240.0, ≤400.0-16.0-14.0-16.0-14.0- 10=330.0 [cl. 10.2.4, Insdag Detailing Manual, 2002]	240	**Pass**
Plate Width (mm)	≥174, ≤200.0=200.0	174	**Pass**
Effective weld length (mm)		240-2*8 = 224	
Weld strength (kN/mm)	≤ 0.313	$f_{V\ =(0.7*8*410)/(\sqrt{3}*1.25*1000)}$ = 1.06	**Pass**

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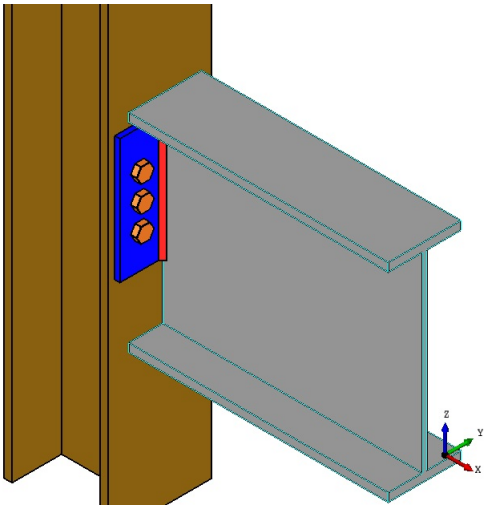
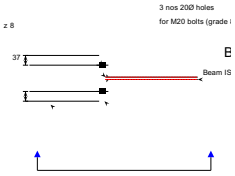
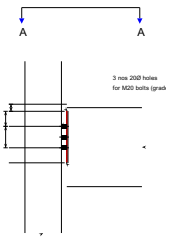
Views







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Additional Comments