			Osdag
			Created with
Company Name	INSDAG	**Project Title**	PROB 2
Group/Team Name	M M GHOSH	**Subtitle**	
Designer	M M GHOSH	**Job Number**	
Date	04 /06 /2016	**Method**	Limit State Design (No Earthquake Load)

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)	160

Components

Column Section	ISSC 250
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
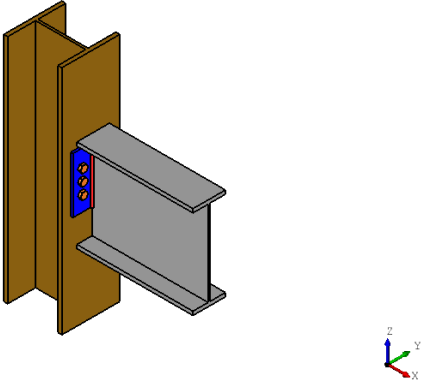
Gauge (mm)	0
Pitch (mm)	50
End Distance (mm)	70
Edge Distance (mm)	37
Assembly	
Column-Beam Clearance (mm)	10

Company Name	INSDAG	Project Title	PROB 2
Group/Team Name	M M GHOSH	Subtitle	
Designer	M M GHOSH	Job Number	
Date	04 /06 /2016	Method	Limit State Design (No Earthquake Load)

Design Check

Check	Required	Provided	Remark
Bolt shear capacity (kN)		V_{dsb} = ((800.0*0.6126*20*20)/($\sqrt{3}$*1.25*1000)) = 52.694 [cl. 10.3.3]	
Bolt bearing capacity (kN)		V_{dpb} = (2.5*0.508*20*10.0*410)/(1.25*1000) = 83.312 [cl. 10.3.4]	
Bolt capacity (kN)		Min (52.694, 83.312) = 52.694	Pass
Critical bolt shear (kN)	≤ 52.694	48.074	Pass
No. of bolts		6	
No.of column(s)	≤ 2	2	
No. of bolts per column per side of end plate		3	
Bolt pitch (mm)	≥ 2.5*20 = 50, ≤ Min(32*8.9, 300) = 285 [cl. 10.2.2]	50	Pass
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	Pass
Edge distance (mm)	≥ 1.7*22.0 = 37.4, ≤ 12*8.9 = 106.8 [cl. 10.2.4]	37	Pass
Block shear capacity (kN)	≥ 160	V_{db} = 203 [cl. 6.4.1]	
Plate thickness (mm)	≥ 8	10	Pass
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, ≤ 250.0	174	**Pass**
Effective weld length (mm)		240-2*8 = 224	
Weld strength (kN/mm)	0.357	f_v =(0.7*8*410)/(√3*1.25*1000) = 1.06 [cl. 10.5.7]	**Pass**

Company Name	INSDAG	Project Title	PROB 2
Group/Team Name	M M GHOSH	Subtitle	
Designer	M M GHOSH	Job Number	
Date	04 /06 /2016	Method	Limit State Design (No Earthquake Load)

Views

Company Name	INSDAG	Project Title	PROB 2
Group/Team Name	M M GHOSH	Subtitle	
Designer	M M GHOSH	Job Number	
Date	04 /06 /2016	Metdod	Limit State Design (No Earthquake Load)

Additional Comments	

Created with Osdag