



<b>Company Name</b>	neeta gajanan deshingkar	<b>Project Title</b>	PROBLEM2
<b>Group/Team Name</b>	MIT	<b>Subtitle</b>	
<b>Designer</b>	NGD	<b>Job Number</b>	
<b>Date</b>	05 /06 /2016	<b>Method</b>	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

240X160X10

Thickness (mm)

10

Width (mm)

160

Depth (mm)

240

Hole

STD

### Weld

Type

Double Fillet

Size (mm)

4

### Bolts

Type

HSFG

Grade

8.8

Diameter (mm)

16

Bolt Numbers	10
Columns (Vertical Lines)	2
Bolts Per Column	5
Gauge (mm)	0
Pitch (mm)	40
End Distance (mm)	40
Edge Distance (mm)	30
<b>Assembly</b>	
<b>Column-Beam Clearance (mm)</b>	10



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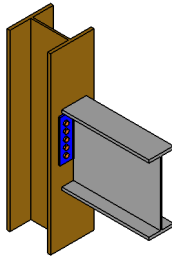
Design Check			
Check	Required	Provided	Remark
<b>Bolt shear capacity (kN)</b>		$V_{dsb} = ((800.0 \times 0.6126 \times 16 \times 16) / (\sqrt{3} \times 1.25 \times 1000))$ $= 33.724$ [cl. 10.3.3]	
<b>Bolt bearing capacity (kN)</b>		$V_{dpb} = (2.5 \times 0.491 \times 16 \times 10.0 \times 410) / (1.25 \times 1000)$ $= 64.419$ [cl. 10.3.4]	
<b>Bolt capacity (kN)</b>		Min (33.724, 64.419) = 33.724	Pass
<b>Critical bolt shear (kN)</b>	$\leq 33.724$	25.612	Pass
<b>No. of bolts</b>		10	
<b>No. of column(s)</b>	$\leq 2$	2	
<b>No. of bolts per column per side of end plate</b>		5	
<b>Bolt pitch (mm)</b>	$\geq 2.5 \times 16 = 40, \leq$ $\text{Min}(32 \times 8.9, 300) = 285$ [cl. 10.2.2]	40	Pass
<b>Bolt gauge (mm)</b>	$\geq 2.5 \times 16 = 40, \leq$ $\text{Min}(32 \times 8.9, 300) = 285$ [cl. 10.2.2]	0	
<b>End distance (mm)</b>	$\geq 1.7 \times 18.0 = 30.6, \leq 12 \times 8.9$ $= 106.8$ [cl. 10.2.4]	40	Pass
<b>Edge distance (mm)</b>	$\geq 1.7 \times 18.0 = 30.6, \leq 12 \times 8.9$ $= 106.8$ [cl. 10.2.4]	30	Pass
<b>Block shear capacity (kN)</b>	$\geq 160$	$V_{db} = 191$ [cl. 6.4.1]	
<b>Plate thickness (mm)</b>	$\geq 8$	10	Pass
	$\geq 0.6 \times 400.0 = 240.0, \leq$		

<b>Plate height (mm)</b>	400.0-16.0-14.0-16.0-14.0-10=330.0 [cl. 10.2.4, Insdag Detailing Manual, 2002]	240	<b>Pass</b>
<b>Plate Width (mm)</b>	$\geq 160, \leq 250.0$	160	<b>Pass</b>
<b>Effective weld length (mm)</b>		$240 - 2 \cdot 4 = 232$	
<b>Weld strength (kN/mm)</b>	0.345	$f_v = (0.7 \cdot 4 \cdot 410) / (\sqrt{3} \cdot 1.25 \cdot 1000)$ = 0.53 [cl. 10.5.7]	<b>Pass</b>



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## Views





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<b>Additional Comments</b>	
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