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Company Name	**Pythons & Co**	**Project Title**	**Asimple block of flats**
Group/Team Name	**Flying Circus**	**Subtitle**	**Abattoir**
Designer	**Mr. Wiggin**	**Job Number**	**1.1.2.1.2**
Date	**20 /06 /2018**	**Client**	**Mr. Tid**

Design Conclusion	
End Plate	**Fail**
End Plate	
Connection Properties	
Connection	
Connection Title	Flexible End Plate
Connection Type	Shear Connection
Connection Category	
Connectivity	Column flange-Beam web
Beam Connection	Welded
Column Connection	Bolted
Loading (Factored Load)	
Shear Force (kN)	195
Components	
Column Section	UC 254 x 254 x 107
Material	Fe 410
Beam Section	MB 300
Material	Fe 410
Hole	STD
Plate Section	180X154X12
Thickness (mm)	12
Width (mm)	154
Depth (mm)	180
Hole	STD
Weld	
Type	Double Fillet
Size (mm)	10
Bolts	
Type	Friction Grip Bolt
Grade	8.8
Diameter (mm)	16
Bolt Numbers	10
Columns (Vertical Lines)	1
Bolts Per Column	5

Gauge (mm)	0
Pitch (mm)	31
End Distance (mm)	27
Edge Distance (mm)	27
Assembly	
Column-Beam Clearance (mm)	12

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Design Preferences	
Bolt	
Hole Type	Standard
Hole Clearance (mm)	2.0
Material Grade (MPa) (overwrite)	800.0
Slip factor	0.3
Weld	
Type of Weld	Shop weld
Material Grade (MPa) (overwrite)	410.0
Detailing	
Type of Edges	Rolled, machine-flame cut, sawn and planed
Minimum Edge-End Distance	1.5 times the hole diameter
Are members exposed to corrosive influences?	No
Design	
Design Method	Limit State Design

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Design Check			
Check	**Required**	**Provided**	**Remark**
Bolt shear capacity (kN)		V_{dsf} = ((0.3*1*1.0*87.92)/(1.25)) = 21.101 [cl. 10.4.3]	
Bolt bearing capacity (kN)		N/A	
Bolt capacity (kN)		21.101	**Pass**
Critical bolt shear (kN)	≤ 21.101	20.0	**Pass**
No. of bolts		10	
No.of column(s) per side of end plate	≤ 2	1	
No. of bolts per column per side of end plate		5	
Bolt pitch (mm)	≥ 2.5*16 = 40, ≤ Min(32*7.7, 300) = 247 [cl. 10.2.2]	31	**Fail**
Bolt gauge (mm)	≥ 2.5*16 = 40, ≤ Min(32*7.7, 300) = 247 [cl. 10.2.2]	0	
End distance (mm)	≥ 1.5 * 18.0 = 27, ≤ 12*7.7 = 92.4 [cl. 10.2.4]	27	**Pass**
Edge distance (mm)	≥ 1.5 * 18.0 = 27, ≤ 12*7.7 = 92.4 [cl. 10.2.4]	27	**Pass**
Block shear capacity (kN)	≥ 195	V_{db} = 104 [cl. 6.4.1]	**Fail**
Plate thickness (mm)	≥ 8	12	**Pass**
Plate height (mm)	≥ 0.6*300.0=180.0, ≤ 300.0-13.1-14.0-13.1-14.0- 10=235.8 [cl. 10.2.4, Insdag Detailing Manual, 2002]	180	**Pass**
Plate Width (mm)	≥ 154, ≤ 258.8	154	**Pass**
Effective weld length on each side(mm)		180-2*10 = 160	
		f_v =	

Weld strength (kN/mm)	0.609	(0.7*10*410)/(√3*1.25*1000) = 1.326 [cl. 10.5.7]	**Pass**

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Views

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Additional Comments	This is a sample design report generated in Osdag!