



Created with



<b>Company Name</b>	<b>Pythons &amp; Co</b>	<b>Project Title</b>	<b>A simple block of flats</b>
<b>Group/Team Name</b>	<b>Flying Circus</b>	<b>Subtitle</b>	<b>Abattoir</b>
<b>Designer</b>	<b>Mr. Wiggin</b>	<b>Job Number</b>	<b>1.1.2.1.2</b>
<b>Date</b>	<b>19 /06 /2017</b>	<b>Client</b>	<b>Mr. Tid</b>

## 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

214X154X12

Thickness (mm)

12

Width (mm)

154

Depth (mm)

214

Hole

STD

#### Weld

Type

Double Fillet

Size (mm)

10

#### Bolts

Type

HSFG

Grade

8.8

Diameter (mm)

16

Bolt Numbers

10

Columns (Vertical Lines)

1

Bolts Per Column

5

Gauge (mm)	0
Pitch (mm)	40
End Distance (mm)	27
Edge Distance (mm)	27
<b>Assembly</b>	
<b>Column-Beam Clearance (mm)</b>	12



<b>Company Name</b>	<b>Pythons &amp; Co</b>	<b>Project Title</b>	<b>A simple block of flats</b>
<b>Group/Team Name</b>	<b>Flying Circus</b>	<b>Subtitle</b>	<b>Abattoir</b>
<b>Designer</b>	<b>Mr. Wiggin</b>	<b>Job Number</b>	<b>1.1.2.1.2</b>
<b>Date</b>	<b>19 /06 /2017</b>	<b>Client</b>	<b>Mr. Tid</b>

<b>Design Preferences</b>	
<b>Bolt</b>	
Hole Type	Standard
Hole Clearance (mm)	2.0
Material Grade (MPa) (overwrite)	800.0
Slip factor	0.3
<b>Weld</b>	
Type of Weld	Shop weld
Material Grade (MPa) (overwrite)	410.0
<b>Detailing</b>	
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
<b>Design</b>	
Design Method	Limit State Design



Created with



Company Name	Pythons & Co	Project Title	A simple block of flats
Group/Team Name	Flying Circus	Subtitle	Abattoir
Designer	Mr. Wiggin	Job Number	1.1.2.1.2
Date	19 /06 /2017	Client	Mr. Tid

Design Check			
Check	Required	Provided	Remark
Bolt shear capacity (kN)		$V_{dsf} = ((0.3 \times 1 \times 1.0 \times 87.92) / (1.25)) = 21.101$ [cl. 10.4.3]	
Bolt bearing capacity (kN)		N/A	
Bolt capacity (kN)		21.101	Pass
Critical bolt shear (kN)	$\leq 21.101$	20.0	Pass
No. of bolts		10	
No. of column(s) per side of end plate	$\leq 2$	1	
No. of bolts per column per side of end plate		5	
Bolt pitch (mm)	$\geq 2.5 \times 16 = 40, \leq \text{Min}(32 \times 7.7, 300) = 247$ [cl. 10.2.2]	40	Pass
Bolt gauge (mm)	$\geq 2.5 \times 16 = 40, \leq \text{Min}(32 \times 7.7, 300) = 247$ [cl. 10.2.2]	0	
End distance (mm)	$\geq 1.5 \times 18.0 = 27, \leq 12 \times 7.7 = 92.4$ [cl. 10.2.4]	27	Pass
Edge distance (mm)	$\geq 1.5 \times 18.0 = 27, \leq 12 \times 7.7 = 92.4$ [cl. 10.2.4]	27	Pass
Block shear capacity (kN)	$\geq 195$	$V_{db} = 132$ [cl. 6.4.1]	Fail
Plate thickness (mm)	$\geq 8$	12	Pass
Plate height (mm)	$\geq 0.6 \times 300.0 = 180.0, \leq 300.0 - 13.1 - 14.0 - 13.1 - 14.0 - 10 = 235.8$ [cl. 10.2.4, Insdag Detailing Manual, 2002]	214	Pass
Plate Width (mm)	$\geq 154, \leq 258.8$	154	Pass
Effective weld length on each side (mm)		$214 - 2 \times 10 = 194$	
		$f_v =$	

<b>Weld strength (kN/mm)</b>	0.503	$(0.7 \cdot 10 \cdot 410) / (\sqrt{3} \cdot 1.25 \cdot 1000)$ $= 1.326$ [cl. 10.5.7]	<b>Pass</b>
------------------------------	-------	--	-------------



<b>Company Name</b>	<b>Pythons &amp; Co</b>	<b>Project Title</b>	<b>A simple block of flats</b>
<b>Group/Team Name</b>	<b>Flying Circus</b>	<b>Subtitle</b>	<b>Abattoir</b>
<b>Designer</b>	<b>Mr. Wiggin</b>	<b>Job Number</b>	<b>1.1.2.1.2</b>
<b>Date</b>	<b>19 /06 /2017</b>	<b>Client</b>	<b>Mr. Tid</b>

**Views**



<b>Company Name</b>	<b>Pythons &amp; Co</b>	<b>Project Title</b>	<b>A simple block of flats</b>
<b>Group/Team Name</b>	<b>Flying Circus</b>	<b>Subtitle</b>	<b>Abattoir</b>
<b>Designer</b>	<b>Mr. Wiggin</b>	<b>Job Number</b>	<b>1.1.2.1.2</b>
<b>Date</b>	<b>19 /06 /2017</b>	<b>Client</b>	<b>Mr. Tid</b>

<b>Additional Comments</b>	
----------------------------	--