Secondary Beams

Beam ID	Start Point	End Point	Span	Mmax	Vmax
22	(6,4,6)	(6,8,6)	4	2.0537599999999996	2.0537599999999996
21	(6,0,6)	(6,4,6)	4	2.0537599999999996	2.0537599999999996
2	(0,4,6)	(0,8,6)	4	2.0537599999999996	2.0537599999999996
1	(0,0,6)	(0,4,6)	4	2.0537599999999996	2.0537599999999996

Design Limit state:

Combo: 1.2D+1.4L

Md: 2.0537599999999996 t.m

Vd: 2.0537599999999996 ton

Service Limit State

Combo: LIVE

Span: 4 m

Load: -0.5 t/m'

Design Checks

1-Check Local Buckling

dw/tw= 29.65 < 81.97814749472366 => Compact Web

c/tf= 4.56 < 10.908903091817557 => Compact Flange

2-Check Lateral Torsional Buckling

Luact= 0 m < Lumax= 129.09944487358058 m => Supported (No LTB)

3-Check Bending Stress

Section: IPE 200

fact= 1.0586391752577318 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.18337142857142852 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.40909834724267713 cm < dall= 1.3333333333333333 cm

Beam ID	Start Point	End Point	Span	Mmax	Vmax
18	(16,4,6)	(16,8,6)	4	4.05376	4.05376
17	(16,0,6)	(16,4,6)	4	4.05376	4.05376

20	(18,4,6)	(18,8,6)	4	4.05376	4.05376
3	(2,0,6)	(2,4,6)	4	4.05376	4.05376
4	(2,4,6)	(2,8,6)	4	4.05376	4.05376
5	(4,0,6)	(4,4,6)	4	4.05376	4.05376
6	(4,4,6)	(4,8,6)	4	4.05376	4.05376
7	(6,0,6)	(6,4,6)	4	4.05376	4.05376
8	(6,4,6)	(6,8,6)	4	4.05376	4.05376
9	(8,0,6)	(8,4,6)	4	4.05376	4.05376
10	(8,4,6)	(8,8,6)	4	4.05376	4.05376
19	(18,0,6)	(18,4,6)	4	4.05376	4.05376
12	(10,4,6)	(10,8,6)	4	4.05376	4.05376
13	(12,0,6)	(12,4,6)	4	4.05376	4.05376
14	(12,4,6)	(12,8,6)	4	4.05376	4.05376
15	(14,0,6)	(14,4,6)	4	4.05376	4.05376
16	(14,4,6)	(14,8,6)	4	4.05376	4.05376
11	(10,0,6)	(10,4,6)	4	4.05376	4.05376

Design Limit state:

Combo: 1.2D+1.4L

Md: 4.05376 t.m

Vd: 4.05376 ton

Service Limit State

Combo: LIVE

Span: 4 m

Load: -1 t/m'

Design Checks

1-Check Local Buckling

dw/tw= 32.39 < 81.97814749472366 => Compact Web

c/tf= 4.81 < 10.908903091817557 => Compact Flange

2-Check Lateral Torsional Buckling

Luact= 0 m < Lumax= 154.91933384829667 m => Supported (No LTB)

3-Check Bending Stress

Section: IPE 240

fact= 1.2511604938271603 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.27243010752688174 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.4080466805402538 cm < dall= 1.3333333333333333 cm

Main Beams

Beam ID	Start Point	End Point	Span	Mmax	Vmax
9	(14,8,6)	(20,8,6)	6	8.30246	4.18372
7	(0,8,6)	(6,8,6)	6	8.30246	4.18372
3	(14,0,6)	(20,0,6)	6	8.30246	4.18372
1	(0,0,6)	(6,0,6)	6	8.30246	4.18372

Design Limit state:

Combo: 1.2D+1.4L

Md: 8.30246 t.m

Vd: 4.18372 ton

Service Limit State

Combo: LIVE

Span: 6 m

Load: -0.6666666666666666 t/m'

Design Checks

1-Check Local Buckling

dw/tw= 36.23 < 81.97814749472366 => Compact Web

c/tf= 5.68 < 10.908903091817557 => Compact Flange

2-Check Lateral Torsional Buckling

Luact= 0 m < Lumax= 193.64916731037084 m => Supported (No LTB)

3-Check Bending Stress

Section: IPE 300

fact= 1.4905673249551166 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.19641877934272303 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.6408065618591935 cm < dall= 2 cm

Beam ID	Start Point	End Point	Span	Mmax	Vmax
6	(14,4,6)	(20,4,6)	6	16.409979999999997	8.23748
4	(0,4,6)	(6,4,6)	6	16.409979999999997	8.23748
8	(6,8,6)	(14,8,6)	8	16.5616	6.253919999999999
2	(6,0,6)	(14,0,6)	8	16.5616	6.253919999999999

Design Limit state:

Combo: 1.2D+1.4L

Md: 16.5616 t.m

Vd: 6.253919999999999 ton

Service Limit State

Combo: LIVE

Span: 8 m

Load: -0.75 t/m'

Design Checks

1-Check Local Buckling

dw/tw= 40.24 < 81.97814749472366 => Compact Web

c/tf= 5.35 < 10.908903091817557 => Compact Flange

2-Check Lateral Torsional Buckling

Luact= 0 m < Lumax= 232.379000772445 m => Supported (No LTB)

3-Check Bending Stress

Section: IPE 400

fact= 1.4277241379310344 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.1818 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.8235027690280609 cm < dall= 2.6666666666666665 cm

Beam ID	Start Point	End Point	Span	Mmax	Vmax
5	(6,4,6)	(14,4,6)	8	32.77664	12.33456

Design Limit state:

Combo: 1.2D+1.4L

Md: 32.77664 t.m

Vd: 12.33456 ton

Service Limit State

Combo: LIVE

Span: 8 m

Load: -1.5 t/m'

Design Checks

1-Check Local Buckling

dw/tw= 43.36 < 81.97814749472366 => Compact Web

c/tf= 4.79 < 10.908903091817557 => Compact Flange

2-Check Lateral Torsional Buckling

Luact= 0 m < Lumax= 271.1088342345192 m => Supported (No LTB)

3-Check Bending Stress

Section: IPE 550

fact= 1.343304918032787 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.20204029484029482 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.5675691015381122 cm < dall= 2.6666666666666665 cm