Secondary Beams

Beam ID	Start Point	End Point	Span	Mmax	Vmax
4	(6,0,3)	(6,5,3)	5	7.2715	5.8172
1	(0,0,3)	(0,5,3)	5	7.2715	5.8172

Design Limit state:

Combo: 1.2D+1.4L

Md: 7.2715 t.m

Vd: 5.8172 ton

Service Limit State

Combo: LIVE

Span: 5 m

Load: -1 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= 1.305475763016158 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.2731079812206573 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.4635464133819397 cm < dall= 1.6666666666666667 cm

Beam ID	Start Point	End Point	Span	Mmax	Vmax
3	(4,0,3)	(4,5,3)	5	14.459	11.5672
2	(2,0,3)	(2,5,3)	5	14.459	11.5672

Design Limit state:

Combo: 1.2D+1.4L

Md: 14.459 t.m

Vd: 11.5672 ton

Service Limit State

Combo: LIVE

Span: 5 m

Load: -2 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= 1.2464655172413792 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.33625581395348836 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.33508413453290237 cm < dall= 1.6666666666666667 cm

Main Beams

Beam ID	Start Point	End Point	Span	Mmax	Vmax
2	(0,5,3)	(6,5,3)	6	27.929339999999996	13.99716
1	(0,0,3)	(6,0,3)	6	27.929339999999996	13.99716

Design Limit state:

Combo: 1.2D+1.4L

Md: 27.929339999999996 t.m

Vd: 13.99716 ton

Service Limit State

Combo: LIVE

Span: 6 m

Load: -2 t/m'

Design Checks

1-Check Local Buckling

dw/tw= 42.75 < 81.97814749472366 => Compact Web

c/tf= 4.94 < 10.908903091817557 => Compact Flange

2-Check Lateral Torsional Buckling

Luact= 0 m < Lumax= 258.19888974716116 m => Supported (No LTB)

3-Check Bending Stress

Section: IPE 500

fact= 1.4471160621761656 t/cm^2 < Fb= 1.536 t/cm^2

4-Check Shear Stress

qact= 0.2744541176470588 t/cm^2 < qall= 0.84 t/cm^2

5-Check Deflection

dact= 0.33343212803793715 cm < dall= 2 cm