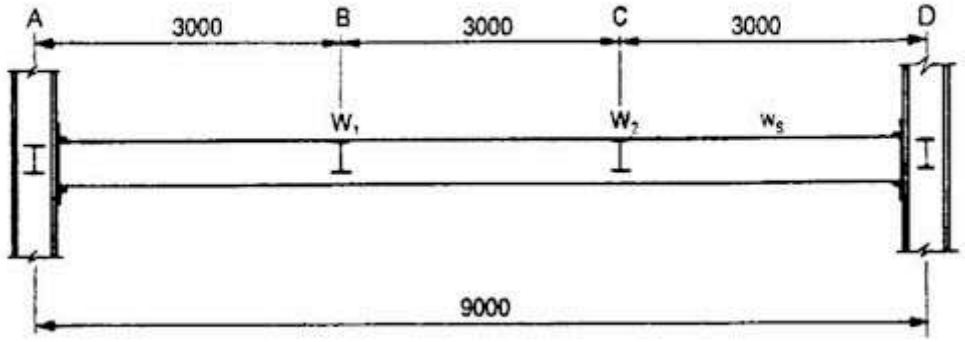
4 نقاط

* Q2 In the figure and data below
what is the Moment max@ B

¶

The·beam·shown·in·Figure·1·is·laterally·restrained·at·the·ends·and·at·the·points·of·load·application·only.·For·the·loading·shown,·design·the·beam·in·S275·steel.¶



***Figure·1**···(loading)·Unfactored¶*

1)·Dead·Loads¶

···Self·weight·→ → → =·3·kN/m¶

Concentrated·load·1¤ G1·=·40·kN¤ @·B¤ ¤

Concentrated·load·2¤ G2·=·20kN¤ @·C¤ ¤

2)·Live·Loads¤ ¤ ¤ ¤

Concentrated·load·1···¤ ·····Q1·=·60kN¤ @·B¤ ¤

···Concentrated·load·2···· → ·Q2·=·30kN·@·C¶

Consider·Modulus·of·elasticity·E·=·205000·N/mm2¶

457·X·191·X·82·UB¶

Depth	D	= 460.2 mm
Width	B	= 191.3 mm
Web thickness	t	= 9.9 mm
Flange thickness	T	= 16 mm
Depth between fillets	d	= 407.9 mm
Root radius	r	= 10.2 mm
Radius of gyration	r_y	= 4.23 cm
Elastic modulus	z_x	= 1610 cm^3
Plastic modulus	S_x	= 1830 cm^3

¶

- 164 kN.m
- 419 kN.m
- 245 kN.m

4 نقاط

* Q3 *Moment max@ C*

- 112 kN.m
- 76 kN.m
- 342 kN.m

4 نقاط

* Q4 *max shear @ support*

- 120 kN
- 146 kN
- 240 kN

4 نقاط

* Q5 *Fv shear @ B*

- 133 kN
- 142 kN
- 74 kN

4 نقاط *

Q6 *From the bending moment diagram you generated which is the critical unrestrained length*

- AB
- BC
- CD

8 نقاط

* Q7 *Section is classified as*

- Plastic
- Compact
- semi Compact

8 نقاط

* Q8 *Capacity of section **Mcx** before buckling occurs*

- 256 kN.m
- 503 kN.m
- 754 kN.m

8 نقاط

* Q9 what is the ratio βw in this problem

- βw= 1.0 for Class 1 and Class 2 sections
- βw = Zx/Sx; for class 3 -sections:
- βw= = Zx,eff/Sx. for class 4 -sections:

8 نقاط

* Q10 The λLT $Equivilant\ slenderness$ $(lateral{-}torsional\ buckling)$ is

- λLT=90.4
- λLT=57.21
- λLT=64.2

8 نقاط

* *Q11 Pb bending strength from appropriate table*

- Pb = 226 N/mm2
- Pb = 213 N/mm2
- Pb =218 N/mm2

8 نقاط

* Q12 *Mb section Buckling capacity*

- Mb= 398 kN.m
- Mb= 420 kN.m
- Mb =124 kN/m

8 نقاط

* Q13 β *the ratio betweem moment at the end of the Controlling segement* =

- 0.82
- 1.2
- 0.57

8 نقاط

Q14 Equivalent uniform moment factor mLT

- mLT = 0.86
- mLT =0.91
- mLT = 0.68

8 نقاط

* =Q15 adjusted moment capacity Mb due to buckling =Mb/mLT

- Mb/mLT = 555 kN/m
- Mb/mLT = 437kN/m
- Mb/mLT =625 kN/m

8 نقاط

* = Q16 *Shear capacity of the section when combined moment and shear Pv*

- 322 kNS
- 451 kN
- 521 kN

محو النموذج

إرسال