**Stair Carriage Connection**

Hinged – roller connection

Shear force = 2.5 tons

use bearing bolts connection for UBN200 and weld for beam B3 or B4

**Weld calculations :**

use weld thickness = SW = 0.4 cm

weld length = Leff = shear force / ( 0.2 x Fu x SW ) = 2.5 / ( 1.04 \* 0.4 ) = 6 cm

actual length = Lact = Leff + 2x SW = 7 cm

**Bolts calculations :**

use Bearing Bolts M12 10.9

Rsh = 3.14 x 1.22 x 0.25 x 10.9 x 0.2 = 2.47 tons

Rbearing = D x t x 0.6 x Fu = 1.2 x 1 x 0.6 x 5.2 = 3.74 tons

Rmax = 2.47 tons

Use 2 Bolts M12 , 10.9

**Use angle 60 x 60 x 6**