* BEAM MEMBER : [ DOUBLE REINFORCEMENT ]
  1. General Information
     1. Design Code : ECP 203-2007
     2. Unit System : N, mm
  2. Material
     1. : 25.00MPa
     2. : 400MPa
     3. : 400MPa
  3. Section
     1. Section Size : 400 x 600mm (R-Section)
     2. Cover : 40.00mm
     3. Compression Bar : Not Considered
     4. Splice Type : 0%



* 1. Moments and Forces
     1. : 0.000N·mm
     2. :200000000N·mm
     3. : 500000N
  2. Reinforcement
     1. Area of steel from equilibrium equation Double Reinforcement (ECP 203-200 - 4-7) [page no 8 – 4]

* + 1. Minimum Area of Steel tensile

=585

* + 1. Minimum Area of compressive Steel tensile

* 1. Check Bending Moment Capacity
     1. Calculate max moment capacity Double Reinforcement (ECP 203-200 - 4-6) [page no 8-4]

Check Bending Moment Capacity

* + 1. Calculate max moment capacity Double Reinforcement (ECP 203-200 - 4-6) [page no 8-4]

200000000.0

* 1. Check Shear Capacity
     1. Calculate shear strength

* + 1. Calculate shear strength by concrete

* + 1. shear strength check as per code

* + 1. Calculate shear strength by stirrup
       - S mm S mm



* + 1. Calculate of shear capacity by stirrup
    2. Require area steel for stirrups

=330.150

* + 1. Minimum area steel for stirrups

* 1. Skin Reinforcement
     1. Check for skin reinforcement

* + 1. Vertical side reinforcement

* + 1. Vertical side reinforcement

* 1. Check for the deflection
     1. Crack Moment

* + 1. Moment carrying by Beam

* + 1. Instant Deflection

=0.5536 mm

* + 1. Long term deflection

=1.1505 mm

Code check mm