* BEAM MEMBER : [ SINGLE REINFORCEMENT ]
  1. General Information
     1. Design Code : ECP 203-2007
     2. Unit System : N, mm
  2. Material
     1. : 25.00 N/mm2
     2. : 400 N/mm2
     3. : 400 N/mm2
  3. Section
     1. Section Size : 300 x 600mm
     2. Cover : 40.00mm
     3. Compression Bar : Not Considered
     4. Splice Type : 50%



* 1. Moments and Forces
     1. : 0.200kN·m
     2. : 0.0001000kN·m
     3. : 0.000kN
  2. Reinforcement
     1. Top Bar : 2-#8 (
        + Layer 1 : 2 EA (
     2. Bot Bar : 3-#8 (
        + Layer 1 : 3 EA (
     3. Stirrup : 2-#3@250 (= 142mm²)
  3. Check Bending Moment Capacity (Positive)
     1. Calculate design parameter

* + 1. Check space of rebar

       - 275mm,

s = 87.77 < 275mm → O.K

* + 1. Calculate required ratio of reinforcement
       - = 0.0035
    2. Check ratio of tensile reinforcement
    3. Calculate moment capacity
       - ø = 0.900
    4. Calculate ratio of moment capacity
  1. Check Bending Moment Capacity (Negative)
     1. Calculate design parameter
     2. Check space of rebar

        + 275mm,

s = 176 < 275mm → O.K

* + 1. Calculate required ratio of reinforcement
       - = 0.0035
    2. Check ratio of tensile reinforcement
    3. Calculate moment capacity
       - ø = 0.900
    4. Calculate ratio of moment capacity
  1. Check Shear Capacity
     1. Calculate shear strength by concrete
        + d = 538mm
     2. Calculate shear strength by stirrup
     3. Calculate ratio of shear capacity (s = 250mm)
* BEAM MEMBER : [ SINGLE 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 : 300 x 600mm (R-Section)
     2. Cover : 40.00mm
     3. Compression Bar : Not Considered
     4. Splice Type : 50%



* 1. Moments and Forces
     1. : 0.000kN·m
     2. : 5.000kN·m
     3. : 0.000kN
  2. Reinforcement
     1. Top Bar : 2-#8 (
        + Layer 1 : 2 EA (
     2. Bot Bar : 3-#8 (
        + Layer 1 : 3 EA (
     3. Stirrup : 2-#3@250 (= 142mm²)
  3. Check Bending Moment Capacity (Positive)
     1. Calculate design parameter
     2. Check space of rebar

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    2. Check ratio of tensile reinforcement
    3. Calculate moment capacity
       - ø = 0.900
    4. Calculate ratio of moment capacity
  1. Check Bending Moment Capacity (Negative)
     1. Calculate design parameter
     2. Check space of rebar
        + Moment is zero. Skipped.
     3. Calculate required ratio of reinforcement
        + Moment is zero. Skipped.
     4. Calculate moment capacity
        + Moment is zero. Skipped.
  2. Check Shear Capacity
     1. Calculate shear strength by concrete
        + d = 538mm
     2. Calculate shear strength by stirrup
     3. Calculate ratio of shear capacity (s = 250mm)
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