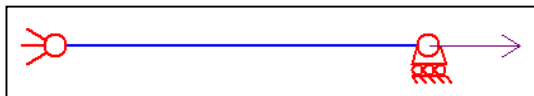


| | | |
|--------------------------|---------------------------------------|------------------------------|
| TEST SCHEDULE R 2 | EN 1993-1-1: 2005 (EUROCODE 3) | Sargon ©, Cescoplus © |
| RESISTANCE | TENSION | EC3.RES.NP.002 |



Program: WEURO © version October 2007 for Sargon and Cescoplus
Keywords: EN 1993, Eurocode 3, example, validation, benchmark, reliability, quality control, error measure. **Parole chiave:** Eurocodice 3, esempio, validazione, test ,affidabilità, controllo di qualità, misura dell'errore
Tv=exploitation target value, **Cv**=exploitation computed value
Authors: Ing. Marco Croci, Ing. Paolo Rugarli

| | | |
|-------------|----------|------------------|
| BEAM | | |
| Length [mm] | Left end | Right end |
| 1000 | HINGE | SIMPLY SUPPORTED |

| | | |
|-------------|--------------|----------------------|
| LOAD | | |
| Type | Value | Point of application |
| TENSION | N=1.000.000N | RIGHT END |

| | | | | | | |
|----------------------------|----------------------------|------------------------|-------|---------------|---------------|---------------|
| MATERIAL | A441/40 | | | | | |
| f_y [N/mm ²] | f_u [N/mm ²] | E [N/mm ²] | ν | γ_{M0} | γ_{M1} | γ_{M2} |
| 276 | 414 | 2,000e+05 | 0,3 | 1,1 | 1,1 | 1,25 |

| | | | | | |
|-------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| CROSS-SECTION | HE 100 M | CLASS: N⁺ →1 | | | |
| A [mm ²] | J ₂ [mm ⁴] | J ₃ [mm ⁴] | J _t [mm ⁴] | W ₂ [mm ³] | W ₃ [mm ³] |
| 5324 | 1,143e+07 | 3,992e+06 | 6,821e+05 | 1,904e+05 | 7,531e04 |
| W _{pl2} [mm ³] | W _{pl3} [mm ³] | i ₂ [mm] | i ₃ [mm] | i _t [mm] | |
| 2,358e+05 | 1,163e+05 | 46,3 | 27,4 | 30,6 | |
| h | b | t _w | t _f | r | |
| 120 | 106 | 12 | 20 | 12 | |

| | | | | |
|------------------------|-------------------------------------|--|--|--|
| OTHER DATA | | | | |
| % red A _{net} | A _{net} [mm ²] | | | |
| 0,95 | 5.057,8 | | | |

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

$$N_{p/Rd} = A * f_y / \gamma_{M0}, \quad N_{u/Rd} = 0,9 * A_{net} * f_u / \gamma_{M2}, \quad N_{t/Rd} = \min(N_{p/Rd}, N_{u/Rd})$$

| | | | |
|-----------------------|-----------------------|-----------------------|----------------------------|
| N _{p/Rd} [N] | N _{u/Rd} [N] | N _{t/Rd} [N] | Tv = N / N _{t/Rd} |
| 1.335.840 | 1.507.629 | 1.335.840 | 7,486E-01 |

CHECKER'S RESULTS (COMPUTED VALUES) AND COMPARISON WITH THE TARGET

| | |
|-----------|------------------|
| Cv | (Cv - Tv)/Tv. |
| 7,486E-01 | 0,000E+00 |