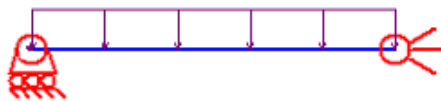


TEST SCHEDULE B 20	EN 1993-1-1: 2005 (EUROCODE 3)	Sargon ©, Cescopius ©
BUCKLING	BENDING 2 (LATERAL TORSIONAL)	EC3.BUC.Q3.005



Program: WEURO © version October 2007 for Sargon and Cescopius
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	Buckling factors		Left end	Right end	
Length [mm]	$\beta_1=1$	$\beta_2=1$	$\beta_3=1$	FREE	FIXED

LOAD	Type	Value	Point of application
DISTRIBUTED LOAD q_3		$q=150\text{N/mm}$	

MATERIAL	S235					
f_y [N/mm ²]	f_u [N/mm ²]	E [N/mm ²]	ν	γ_{M0}	γ_{M1}	γ_{M2}
235	360	2,10E+05	0,3	1,1	1,1	1,25

CROSS SECTION	SHS 600X828	CLASS: $M_2 \rightarrow 1$			
A [mm ²]	J_2 [mm ⁴]	J_3 [mm ⁴]	J_t [mm ⁴]	W_2 [mm ³]	W_3 [mm ³]
1,055E+05	6,544e+09	2,737e+09	1,813e+08	2,181e+07	9,124e+06
W_{pl2} [mm ³]	W_{pl3} [mm ³]	i_2 [mm]	i_3 [mm]	i_t [mm]	
2,550e+07	1,379e+07	149	161	173,2	
h	$b_1=b_2$	t_w	$t_{f1}=t_{f2}$		
600	600	32	76		

OTHER DATA*				
h/b	α_{LT}	I_{ω}	G	Reduced f_y [N/mm ²]
1,00	0,49	1,878E+14	8,077E+04	215
χ_{LT}	ϕ_{LT}	λ_{LT}	M_{cr}	C_1
0,860	0,676	0,470	2,483E+10	1,132

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

$$T_v = M / (\chi_{LT} W_{pl} f_y / \gamma_{M1})$$

T_v
8,577E-01

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

C_v	$(C_v - T_v) / T_v$
8,577E-01	2,067E-05

In Sargon was fixed the same C_1 value reported in Other Data section

According to table 3.1 when cross section thickness is higher than 40mm yield stress should be decreased. Here a yield stress equal to 215N/mm² has been used.

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