

TEST SCHEDULE B 18	EN 1993-1-1: 2005 (EUROCODE 3)	Sargon ©, Cescoplus ©
BUCKLING	BENDING 2 (LATERAL TORSIONAL)	EC3.BUC.Q3.003



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
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BEAM						
Length [mm]	Buckling factors			Left end	Right end	
5000	$\beta_1=1$	$\beta_2=1$	$\beta_3=1$	FREE	FIXED	
LOAD						
Type			Value	Point of application		
DISTRIBUTED LOAD q_3			$q=200\text{N/mm}$			
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						
HE 300 M		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]	
30308	5,920E+08	1,940E+08	1,408E+07	3,482E+06	1,252e+06	
W_{pl2} [mm ³]	W_{pl3} [mm ³]	i_2 [mm]	i_3 [mm]	i_t [mm]		
4,078E+06	1,913E+06	139,8	80	89,49		
h	b	t_w	t_f	r		
340	310	21	39	27		
OTHER DATA*						
h/b	α_{LT}	I_ω	G			
1,10	0,21	4,386E+12	8,077E+04			
χ_{LT}	ϕ_{LT}	λ_{LT}	M_{cr}	C_1		
0,949	0,609	0,415	5,562E+09	1,132		

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

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

T_v
7,561E-01

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

C_v	$(C_v - T_v) / T_v$
7,562E-01	8,923E-05

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