

TEST SCHEDULE B 17	EN 1993-1-1: 2005 (EUROCODE 3)	Sargon ©, Cescoplus ©
BUCKLING	BENDING 2 (LATERAL TORSIONAL)	EC3.BUC.Q3.002



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]	Buckling factors			Left end	Right end	
3500	$\beta_1=1$	$\beta_2=1$	$\beta_3=1$	FREE	FIXED	
LOAD						
Type			Value	Point of application		
DISTRIBUTED LOAD q_3			$q=80\text{N/mm}$			
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		IPE 360		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]	
7273	1,627E+08	1,043E+07	3,732E+05	9,037E+05	1,228E+05	
W_{pl2} [mm ³]	W_{pl3}	i_2 [mm]	i_3 [mm]	i_t [mm]		
1,019E+06	1,911E+05	149,5	37,9	49,07		
h	b	t_w	t_f	r		
360	170	8	12,7	18		
OTHER DATA*						
h/b	α_{LT}	I_ω	G			
2,12	0,34	3,136E+11	8,077E+04			
χ_{LT}	ϕ_{LT}	λ_{LT}	M_{cr}	C_1		
0,759	0,868	0,743	4,337E+08	1,132		

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

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

T_v
7,415E-01

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

C_v	$(C_v - T_v) / T_v$
7,414E-01	-1,563E-04

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