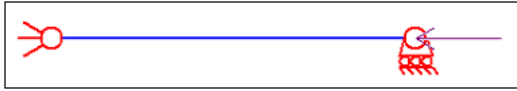


TEST SCHEDULE B 10	EN 1993-1-1: 2005 (EUROCODE 3)	Sargon ©, Cescoplus ©
BUCKLING	COMPRESSION	EC3.BUC.NN.010



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	
4500	$\beta_1=0$	$\beta_2=1$	$\beta_3=1$	HINGE	SIMPLY SUPPORTED	
LOAD						
Type		Value		Point of application		
COMPRESSION		N=6.000.000N		RIGHT END		
MATERIAL						
S275						
f_y [N/mm ²]	f_u [N/mm ²]	E [N/mm ²]	ν	γ_{M0}	γ_{M1}	γ_{M2}
275	430	2,10E+05	0,3	1,1	1,1	1,25
CROSS-SECTION						
HE 300 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]	
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*						
α_2 (h/b<1,2 t _f <100)	α_3 (h/b<1,2 t _f <100)	λ_2	λ_3	$\bar{\lambda}_2$	$\bar{\lambda}_3$	
0,34	0,49	32,2	56,3	0,371	0,649	
Φ_2	Φ_3	χ_2	χ_3	$N_{b2,Rd}$ [N]	$N_{b3,Rd}$ [N]	
0,598	0,820	0,937	0,756	(7.103.141)	5.730.295	

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

$$T_v = N / N_{b3,Rd}$$

Tv
1,047E+00

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

Cv	(Cv-Tv)/Tv
1,047E+00	-6,347E-05

(*) formulae for $\lambda_{2,3}$, $\bar{\lambda}_{2,3}$, $\chi_{2,3}$ and $N_{b2,3,Rd}$ are given in EN 1993-1-1 6.3.1