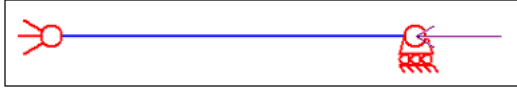


TEST SCHEDULE B 8	EN 1993-1-1: 2005 (EUROCODE 3)	Sargon ©, Cescoplus ©
BUCKLING	COMPRESSION	EC3.BUC.NN.008



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
1000	$\beta_1=0 \quad \beta_2=1 \quad \beta_3=1$	HINGE	SIMPLY SUPPORTED

LOAD			
Type	Value	Point of application	
COMPRESSION	N=10.000N	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	L 40x20x5	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]
277	4,550e+04	4,800e+03	2,292e+03	1,790e+03	4,200e+02
W_{pl2} [mm ³]	W_{pl3} [mm ³]	i_2 [mm]	i_3 [mm]	i_t [mm]	
1,790e+03	4,200e+02	12,8	4,2	0	
h	b	t	r	r1	
40	20	5	4	2	

OTHER DATA*					
α_2	α_3	λ_2	λ_3	$\bar{\lambda}_2$	$\bar{\lambda}_3$
0,34	0,34	78,13	238,10	0,900	2,743
Φ_2	Φ_3	χ_2	χ_3	$N_{b2,Rd}$ [N]	$N_{b3,Rd}$ [N]
1,024	4,693	0,661	0,118	(45.789)	8.145

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

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

Tv
1,228E+00

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

Cv	(Cv-Tv)/Tv
1,228E+00	2,569E-04

(*) 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