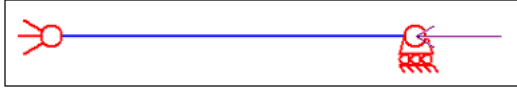


<b>TEST SCHEDULE B 5</b>	<b>EN 1993-1-1: 2005 (EUROCODE 3)</b>	<b>Sargon ©, Cescoplus ©</b>
BUCKLING	COMPRESSION	<b>EC3.BUC.NN.005</b>



**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

<b>BEAM</b>						
Length [mm]	Buckling factors			Left end	Right end	
1000	$\beta_1=0$	$\beta_2=1$	$\beta_3=1$	HINGE	SIMPLY SUPPORTED	
<b>LOAD</b>						
Type			Value	Point of application		
COMPRESSION			N=500.000N	RIGHT END		
<b>MATERIAL</b>						
<b>S355</b>						
$f_y$ [N/mm <sup>2</sup> ]	$f_u$ [N/mm <sup>2</sup> ]	E [N/mm <sup>2</sup> ]	$\nu$	$\gamma_{M0}$	$\gamma_{M1}$	$\gamma_{M2}$
355	510	2,10e+05	0,3	1,1	1,1	1,25
<b>CROSS SECTION</b>						
<b>RHS 90x90x7x14</b>		<b>CLASS: N → 1</b>				
A [mm <sup>2</sup> ]	$J_2$ [mm <sup>4</sup> ]	$J_3$ [mm <sup>4</sup> ]	$J_t$ [mm <sup>4</sup> ]	$W_2$ [mm <sup>3</sup> ]	$W_3$ [mm <sup>3</sup> ]	
2198	2,486e+06	2,486e+06	4,117e+06	5,525e+04	5,525e+04	
$W_{pl2}$ [mm <sup>3</sup> ]	$W_{pl3}$ [mm <sup>3</sup> ]	$i_2$ [mm]	$i_3$ [mm]	$i_t$ [mm]		
6,699e+04	6,699e+04	33,63	33,63	0		
h	b	t	r			
90	90	7	14			
<b>OTHER DATA*</b>						
$\alpha$	$\lambda$	$\bar{\lambda}$	$\Phi$	$\chi$	$N_{b,Rd}$ [N]	
0,21	29,74	0,389	0,596	0,956	677.860	

**TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS**

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

Tv
7,376E-01

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

Cv	(Cv-Tv)/Tv
7,377E-01	<b>1,139E-04</b>

(\*) formulae for  $\lambda$ ,  $\bar{\lambda}$ ,  $\chi$  and  $N_{b,Rd}$  are given in EN 1993-1-1 6.3.1