

TEST SCHEDULE R 33	EN 1993-1-1: 2005 (EUROCODE 3)	Sargon ©, Cescoplus ©
RESISTANCE	SHEAR 3 + BENDING 2	EC3.RES.T3M2.004



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]	Left end		Right end			
1 (*)	FREE		FIXED			
LOADS						
Type		Value		Point of application		
BENDING MOMENT M_2		$M=200.000.000\text{Nmm}$		LEFT END		
Type		Value		Point of application		
SHEAR FORCE T_3		$T=250.000\text{N}$		LEFT END		
MATERIAL						
A572/42						
f_y [N/mm ²]	f_u [N/mm ²]	E [N/mm ²]	ν	γ_{M0}	γ_{M1}	γ_{M2}
290	414	2,000e+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						
$A_V=2A/\pi$ [mm ²]	$V_{pl3}=A_V \cdot f_y / (\sqrt{3} \gamma_{M0})$ [N]	$M_c=W_{pl2} \cdot f_y / \gamma_{M0}$ [Nmm]	$T_3 > 0,5V_{pl}$?			
3.513,8	534.837,3	268.645.454,5	NO			

TARGET VALUES BASED ON PRELIMINAR COMPUTATIONS

$T_v = M_2 / M_c$
7,445E-01

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

C_v	$(C_v - T_v) / T_v$
7,444E-01	-1,016E-04

(*) length is only 1mm in order to diminish the increase of moment along the beam