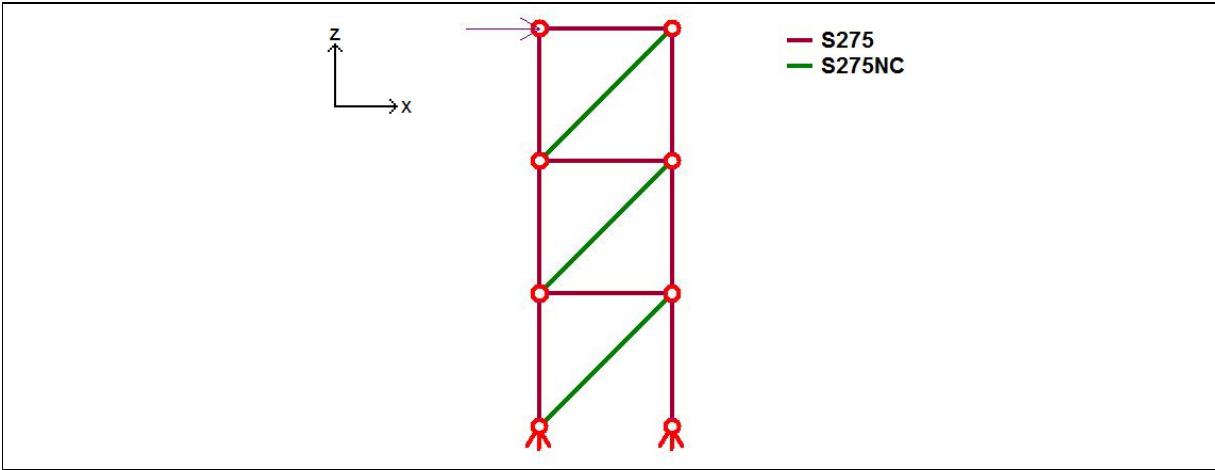


**Validation of Sargon Nonlinear solver (CURAN, version 9.60)**

**TEST TR016**

VALIDATION, RELIABILITY, BENCHMARK

Marco Croci Rev.2-06/12/2010



**Test description**

Constitutive law of trusses material: linear elastic; diagonal trusses are no compression. Compare this one to test 017 where diagonals material is no tension. If diagonals are in tension, as in this case, solution should coincide to a linear elastic analysis.

Test model: **curanTR\_016.WSR**

**Material properties**

Name	$\nu$	E
S275 (complete)	0,3	210000N/mm <sup>2</sup>

Name	$\nu$	E
S275NC (no compression)	0,3	210000N/mm <sup>2</sup>

**Cross-section: HEA200**

<b>Force (x direction)</b>	
Load case 1	F = +500000N
Load case 2	F = +20000N
Load case 3	F = +40000N

Load path: not active

**CHECK**

Load case	Value	Unit	CURAN	THEORETICAL	% diff.
1	Truss #3 normal stress	N/mm <sup>2</sup>	-2,787E+02	-2,787E+02	0,00
2	Truss #4 normal stress	N/mm <sup>2</sup>	5,254E+00	5,254E+00	0,00
3	Truss #12 normal stress	N/mm <sup>2</sup>	1,051E+01	1,051E+01	0,00
1	Node #13 displacement (x)	mm	2,697E+01	2,697E+01	0,00

% difference = (CURAN - THEORETICAL) / THEORETICAL \* 100

Precision of limit multiplier for the analysis: 0.005