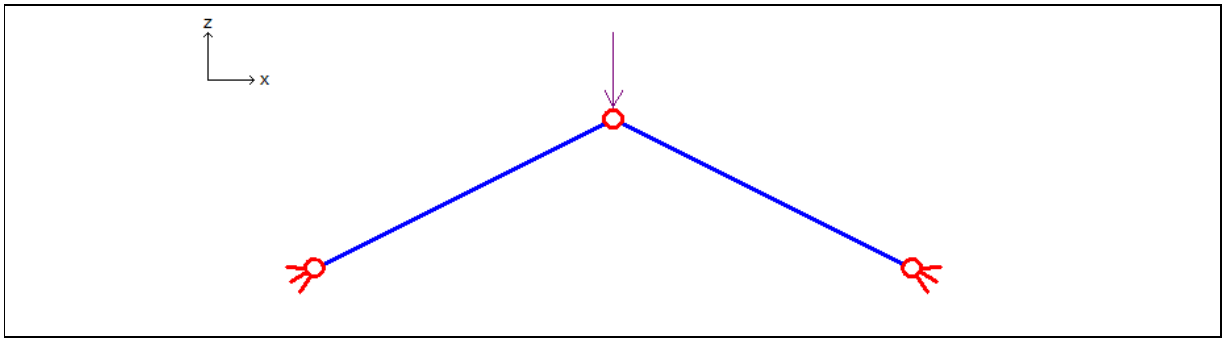
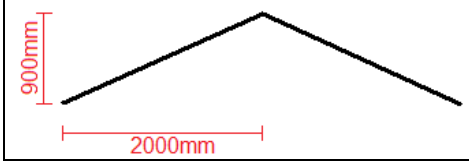
| Validation of Sargon Nonlinear solver (CURAN, version 9.60) | | | |
|---|---|---|---|
| **TEST TR004** | **VALIDATION, RELIABILITY, BENCHMARK** | **Marco Croci** | **Rev.2-03/12/2010** |




| **Test description** |
|---|
| Constitutive law of trusses material: elastic-perfectly plastic. If $f_y$ is not exceeded, solution should coincide with a linear elastic analysis |
| Test model: **curanTR_004.WSR** |

| **Material properties** | | | |
|---|---|---|---|
| Name | $f_y$ | ν | E |
| S235EP | 235Nmm$^2$ | 0,3 | 210000N/mm$^2$ |

| **Cross-section:** circular section, diameter=40mm (area=1256,64mm$^2$) |
|---|

| **Geometry** |
|---|
|  |



| **Force (z direction)** | |
|---|---|
| Load case 1 | F = -240000N |
| Load case 2 | F = +240000N |
| Load path: not active | |

| **CHECK** |
|---|

| Load case | Value | Unit | CURAN | THEORETICAL | % diff. |
|---|---|---|---|---|---|
| 1 | Truss #1 axial force | N | -2,924E+05 | -2,924E+05 | 0,00 |
| 1 | Node #8 displacement (z) | mm | -5,922E+00 | -5,922E+00 | 0,00 |
| 2 | Truss #1 axial force | N | 2,924E+05 | 2,924E+05 | 0,00 |
| 2 | Node #8 displacement (z) | mm | 5,922E+00 | 5,922E+00 | 0,00 |

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

Precision of limit multiplier for the analysis: 0.005