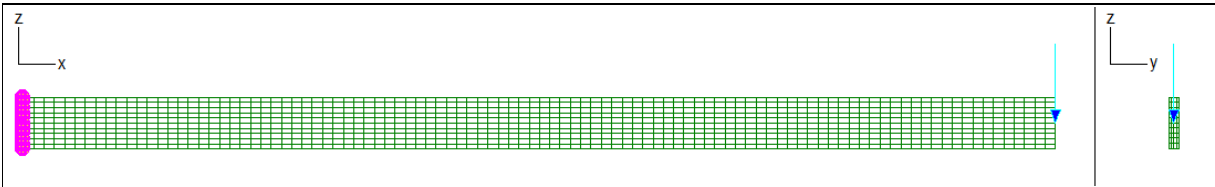


Validation of Sargon Nonlinear solver (CURAN, version 9.70)
TEST SO025 VALIDATION, CROSS CHECKS, RELIABILITY, BENCHMARK Marco Croci Rev.1-23/03/2011

Test description

 Constitutive law of solids material: elastic-perfectly plastic.
 When limit load is exceeded there is a collapse.

 Test model: **curansO_025.WSR**
Material properties

Name	ν	f_y	E
S235PP	0,3	235N/mm ²	210000N/mm ²

Beam			Constraints		Load (z direction)	
LENGTH L	HEIGHT h	THICKNESS b	LEFT	RIGHT	APPLICATION POINT	FORCE F
10000mm	500mm	100mm	Fixed	Free	Right end	-200000N

Model data

Solid elements	Type	d.o.f.
4000 (100x10x4)	BRICK8WI	16500

CROSS CHECK

 Theoretical limit load is $F_{lim} = bh^2/4 * f_y / L = 146875N$. Load factor is $F_{lim}/F = 0,7344$

Load case	Value	Unit	CURAN	TARGET	KIND	% diff.
1	Load factor	/	7,388E-01	7,344E-01	theoretical	0,60

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

Precision of limit multiplier for the analysis: 0.005

BRICK8WI: isoparametric element with Wilson-Ibrahimbegovic modification