

SSNP127 - Test of the method of delocalization per regularization of Summarized strain

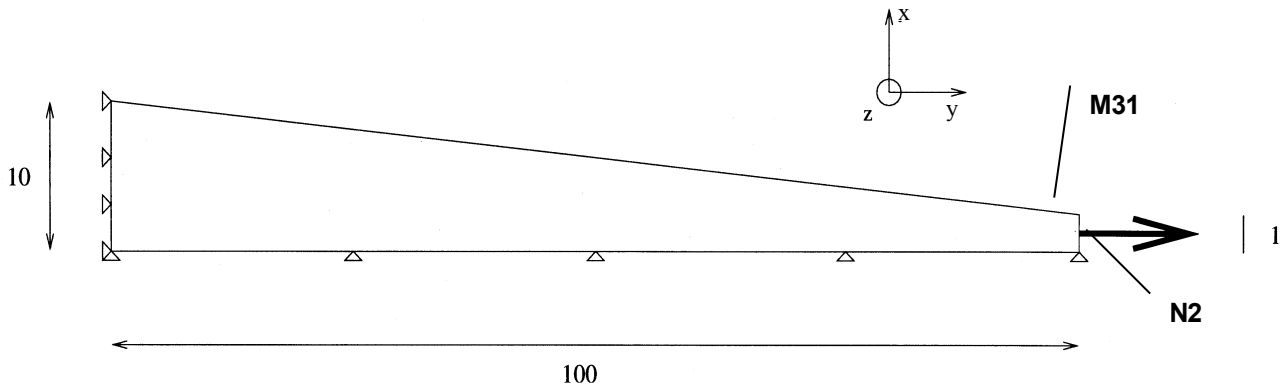
GRAD_EPSI:

One presents a test of uniaxial tension on a variable bar of section for constitutive law ENDO_ORTH_BETON, in the case of the model not room per regularization of strain (D_PLAN_GRAD_EPSI).

1 Problem of reference

1.1 Geometry and boundary conditions

One considers a bar with variable section length 100 m , thickness 1 m , greater section 10 m^2 and smaller section 1 m^2 .



Appears 1.1-a: Geometry and boundary conditions of the uniaxial tests

1.2 Properties of the materials

Behavior elastic:

$$E = 32000 \text{ MPa} ; \nu = 0.2$$

Length characteristic of the delocalization: $\sqrt{3}\text{ m}$

2 Reference solution

This test is a test of non regression.

3 Modelization B

3.1 Parameters of the model/Characteristic of material

ENDO_ORTH_BETON: ALPHA = 0.87,
 K0 = 3.e-4,
 K1 = 10.5,
 K2 = 6.e-4,
 ECROB=1.e-3,
 ECROD=0.06

3.2 Characteristic of the modelization

Modelization D_PLAN_GRAD_EPSI

Element MGDPTR6

3.3 Characteristic of the mesh

Many nodes: 153
Number of meshes and 50 TRIA6
types:

3.4 Functionalities tested

constitutive law ENDO_ORTH_BETON
Type of control: PRED_ELAS

3.5 Quantities tested and results

Sequence number	Name of the field	Component	Aster	Place
101	DEPL	DY	N2	2.06997E-3
101	VARI_ELGA	V1	M31 , point 2	1.70285E-03
101	VARI_ELGA	V2	M31 , point 2	8.93554E-01

4 Synthesis

This benchmark constitute a test of non regression for behavior ENDO_ORTH_BETON