

## ZZZZ341 - Validation of the following pressure function of space

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### Summary:

This test validates the application of a following pressure whose intensity is function of the reactualized variables of space (  $XF$  ,  $YF$  ,  $ZF$  ) in 2D and 3D:

- A cube, whose Poisson's ratio is null, is initially put in uniform compression according to  $Y$  by a following pressure function of space;
- Then a rigid rotation is applied to the cube around one of its edges. The multiplying function of the loading of pressure is worthless at this moment, the cube is thus slackened.
- Finally to the last moment of calculation, the following loading of pressure is again applied. This loading is function of space so that the new position of the cube makes that the pressure applied is now according to  $X$  .

One raises the reaction of support on the level of the embedded face. The solution is analytical.

One will note the characteristic of treatment of the loading of following pressure function of space:

- initially, the geometry is reactualized to take account of the change of normal
- in the second time, the intensity of the pressure is calculated **starting from the reactualized variables of space** (parameters  $XF$  ,  $YF$  ,  $ZF$  in `DEFI_FONCTION`)

This test comprises three modelings:

- modeling a: `D_PLAN` ;
- modeling b: `3D` ;
- modeling C: `D_PLAN` with option of symmetrization `SYME=' OUI '`.

This documentation is voluntarily brief.