Code_Aster

Titre : Opérateur DEFI_COMPOSITE
Responsable : Xavier DESROCHES

Version default

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Clé : U4.42.03   Révision : 8432

Operator `DEFI_COMPOSITE`

1   Drank

To determine the characteristic materials homogenized of a multi-layer shell starting from the characteristics of each layer. Are taken into account the following characteristics:

- thickness,
- type of the constitutive material,
- directional sense of fibers compared to a reference axis.

Product a data structure of the type `MATER`

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2   MUI

```
Syntax [to subdue] = DEFI_COMPOSITE   (

    ♦COUCHE=          (_F   ( ♦EPAIS =EP              ,          [R]
                         ♦   MATER =MA            ,        [mater_sdaster]
                        ◊ORIENTATION  =/ORIEN           ,     [R]
                                           /0 .  ,      [DEFAULT]
                  )   )

    ◊   PRINTING = _F (  ◊ UNITE=/         links,    [I]
.                                          /8,       [DEFAULT]

                        )

                             )
```

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3   Operands

3.1   Key word COUCHE

♦COUCHE   = _F

Key word factor for the definition of a layer of the multi-layer composite on the basis of the sub-base to the roadbase.

3.1.1   Operand EPAIS

♦EPAIS = EP

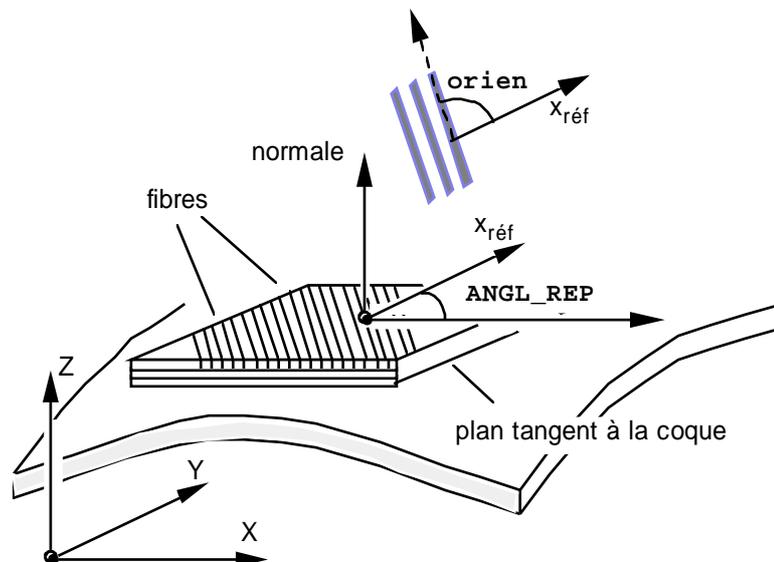Thickness of the layer.

3.1.2   Operand MATER

♦MATER = the MY

concept MY contains the material constitutive of the layer and is produced by the operator DEFI_MATERIAU under the key word factor ELAS_ORTH.

3.1.3   Operand ORIENTATION

◊ORIENTATION = orien

Angle of the 1st direction of orthotropy (longitudinal meaning or meaning of fibers) in the tangent plane with the element compared to the 1st direction of the reference of reference defined in operator AFFE_CARA_ELEM by the key word factor COQUE and key word ANGL_REP [U4.42.01].

By default orien is null, if not it must be provided in degrees and must be understood enters $-90°$ and $+90°$.

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3.2   Operand PRINTING

◊IMPRESSION   = _F   (

Printing with result format of the list of the homogenized coefficients.

4   Example

```
MULTI = DEFI_COMPOSITE      (
        COUCHE =   (_F (EPAIS = 1.E-3, MATER = MAT1,   ORIENTATION = -
20.),
        COUCHE =   (_F (EPAIS = 2.E-3, MATER = MAT2,   ORIENTATION =
10.),
        COUCHE =   (_F (EPAIS = 2.E-3, MATER = MAT2,   ORIENTATION = -
10.),
        COUCHE =   (_F (EPAIS = 1.E-3, MATER = MAT1,   ORIENTATION =
20.),
                        )
```

corresponds to the multi-layer one: