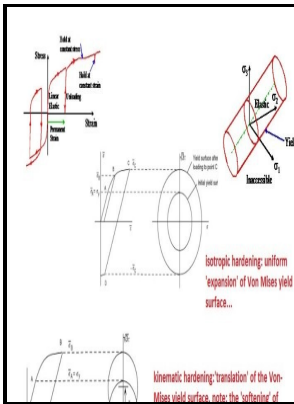# Plane stress finite elements based on assumed strains

- - Plane Stress Elements

Description: -
-Plane stress finite elements based on assumed strains
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Notes: Thesis(Ph.D.) - Loughborough University of Technology
1980.
This edition was published in 1980

Filesize: 49.51 MB

Tags: #Plane #stress/strain #thickness #in #ABAQUS

Finite elements based on consistently assumed stresses and displacements

The normal stress varies linearly with the relative normal displacement up to the proportional limit and thereafter it remains constant Fig. So plane strain analysis only allows strains in-plane.

Plane Stress Elements

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Plane Stress Elements

The elements represent discrete areas where we can relate the local forces to the local stresses. Under thermal analysis, both convection and radiation were considered as an initial boundary condition, whilst the Von-Mises yield criterion and associated flow rules and linear kinematic hardening rule were assumed in the structural analysis. This allows the reaction load in the tangs to be applied directly as diffused balancing loads.

CiteSeerX — Citation Query On the variational foundations of assumed strain methods,

Parametric interpolation The position of the points in the shell reference surface is described in terms of discrete nodal positions with parametric interpolation functions.

3.6.5 Finite

I actually don't see a reason for defining this value for solids. The developed element SBTDR has three degrees of freedom at each corner node where its displacements field contains higher polynomial terms and satisfies the compatibility equations as well as the equilibrium equations as additional conditions.

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