

ANSYS Class3 Error Report

ERROR NO:

2014-20

Keywords:

PLASTIC WORK PLASTIC STRAIN ENERGY

Description of Error:

Plastic strain energy density (output quantity PLAS in the PRESOL,SEND command or output quantity PLWK in the PRESOL,NL command) is incorrect if yielding occurs in the first substep for the following material combinations:

1. Hill yield surface (TB,HILL) + Chaboche nonlinear kinematic hardening (TB,CHAB) + Isotropic hardening (TB,BISO or TB,MISO or TB,NLISO),
2. Hill yield surface (TB,HILL) + Creep (TB,CREEP) + Isotropic hardening (TB,BISO or TB,MISO or TB,NLISO),
3. Hill yield surface (TB,HILL) + Chaboche nonlinear kinematic hardening (TB,CHAB) + Creep (TB,CREEP) + Isotropic hardening (TB,BISO or TB,MISO or TB,NLISO),
4. Chaboche nonlinear kinematic hardening (TB,CHAB) + Creep (TB,CREEP) + Isotropic hardening (TB,BISO or TB,MISO or TB,NLISO),
5. Anisotropic elasticity (TB,ELAS) + Nonlinear isotropic hardening (TB,NLISO) + Creep (TB,CREEP).

For material combinations (3) and (4), the plastic strain energy density is calculated correctly if the yield stress on the TB,CHAB table is equal to the yield stress entered on the isotropic hardening table.

Typical GUI Path(s):**Other Comments:**

The error may become insignificant if the plastic strain energy density from subsequent substeps is much larger than the first substep. This defect does not affect other results such as plastic strains, displacements, reactions, or stresses.

First Incorrect Version:

Release 6.0

Corrected In:

Release 16.0

Suggested User Action For Running on Uncorrected Version:

Ensure that yielding does not occur in the first substep.

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