

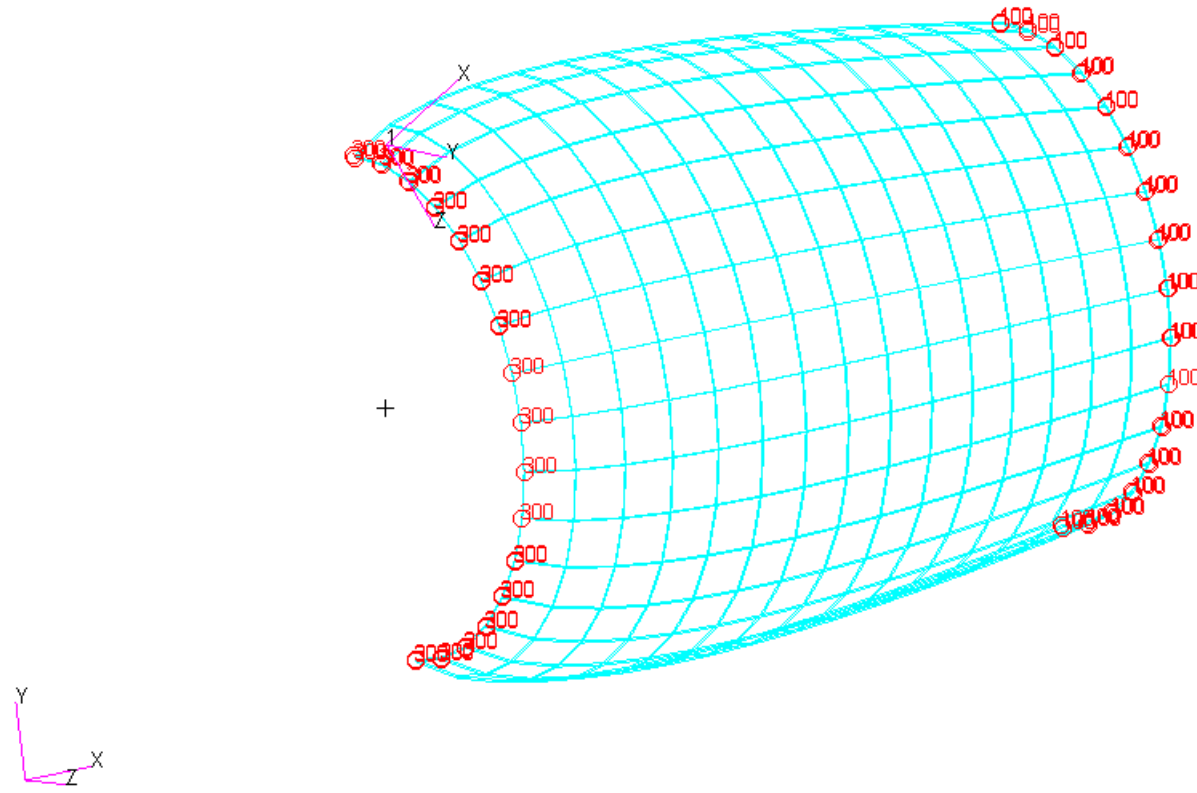
## Layered Solids Thermal stress analysis



HEXAGON

MSC Software

# Thermal boundary conditions



# Layer composite

```

SOL 400
CEND
ECHO = NONE
AUTOSPC(RESIDUAL) = YES
TEMPERATURE(INITIAL) = 2
SUBCASE 1
  STEP 1
    SUBTITLE=Default
    ANALYSIS = HSTAT
    NLSTEP = 1
    SPC = 1
    THERMAL(SORT1)=ALL
TSTRU=37
$ Direct Text Input for this Step
  STEP 2
    SUBTITLE=stress
    ANALYSIS = NLSTATIC
TEMP(LOAD)=37
    NLSTEP = 2
    SPC = 2
$   LOAD = 3
    DISPLACEMENT(SORT1,REAL)=ALL
    SPCFORCES(SORT1,REAL)=ALL
    STRESS(SORT1,REAL,VONMISES,BILIN)=ALL
$ Direct Text Input for this Step

```

```

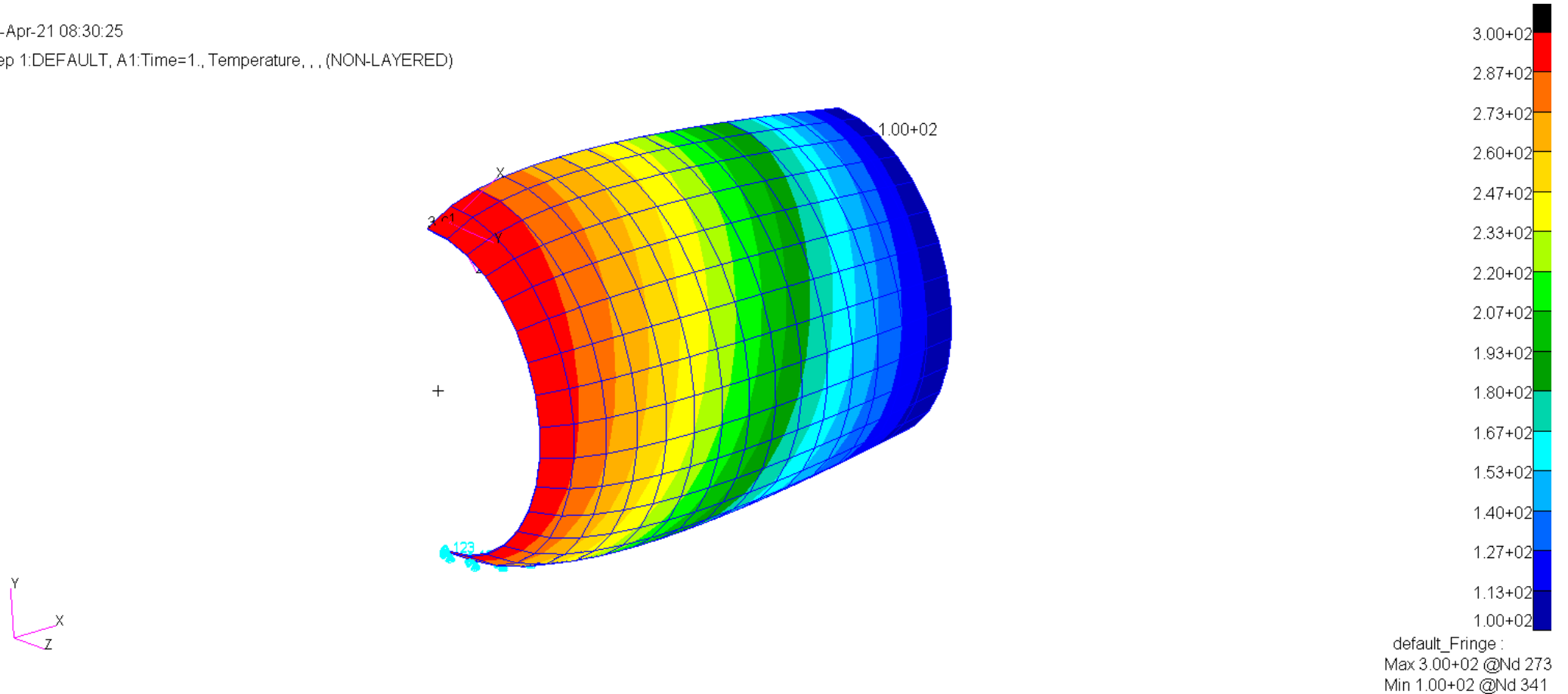
PCOMPLS 1      -1      1
          C8      SLCOMP L
          101     1       8.      45.
          102     1      10.     -45.
$ Pset: "pcomp1" will be imported as: "pcomp.1"
CHEXA    241     1       273      274      275      276      546      545
          548     547
CHEXA    242     1       274      277      278      275      545      549
          550     548

```

# Layer composite thermal analysis

Patran 2021 19-Apr-21 08:30:25

Fringe: SC1:Step 1:DEFAULT, A1:Time=1., Temperature, , , (NON-LAYERED)

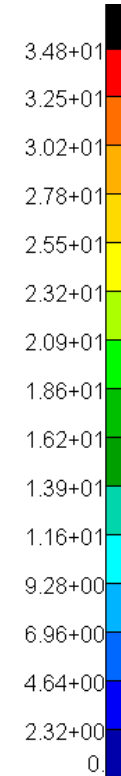
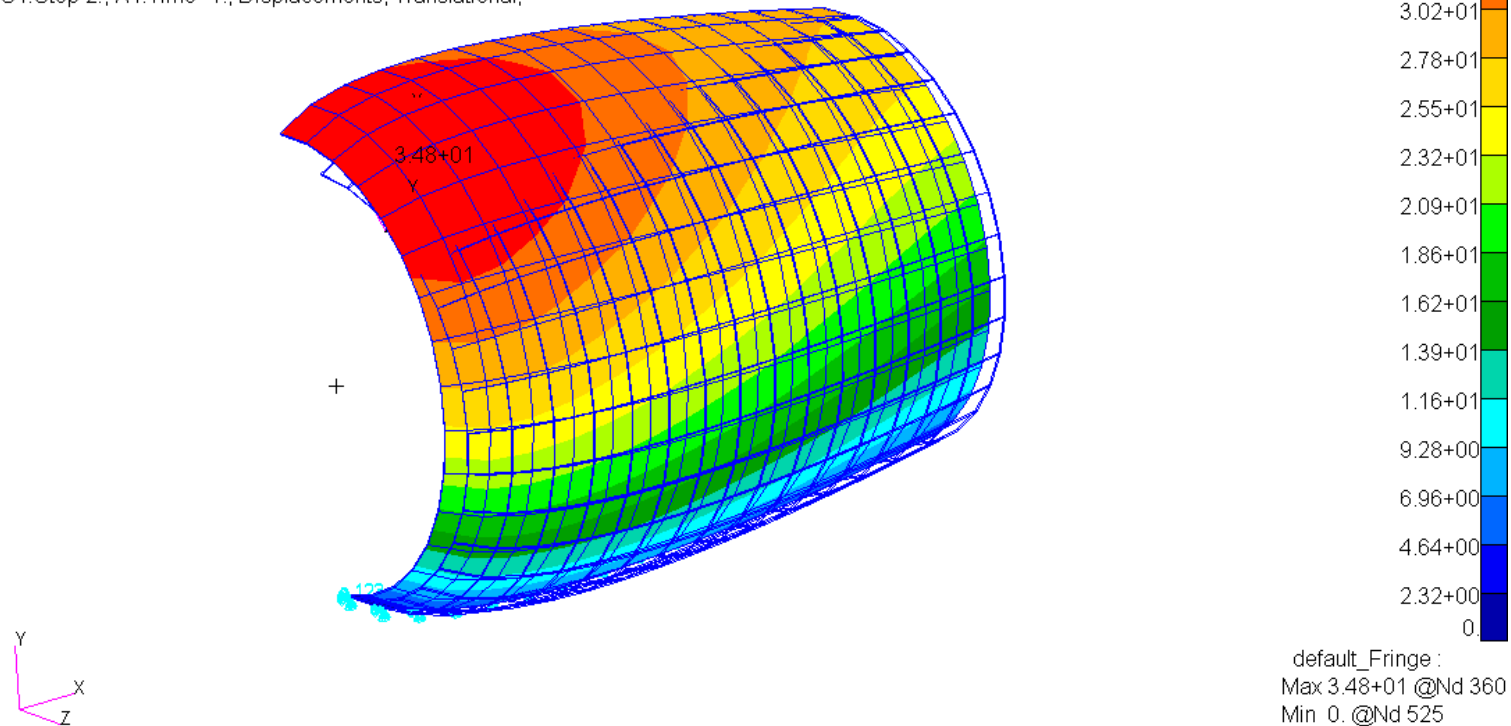


# Layer composite stress analysis

Patran 2021 19-Apr-21 08:33:10

Fringe: SC1:Step 2:, A1:Time=1., Displacements, Translational, Magnitude, (NON-LAYERED)

Deform: SC1:Step 2:, A1:Time=1., Displacements, Translational,



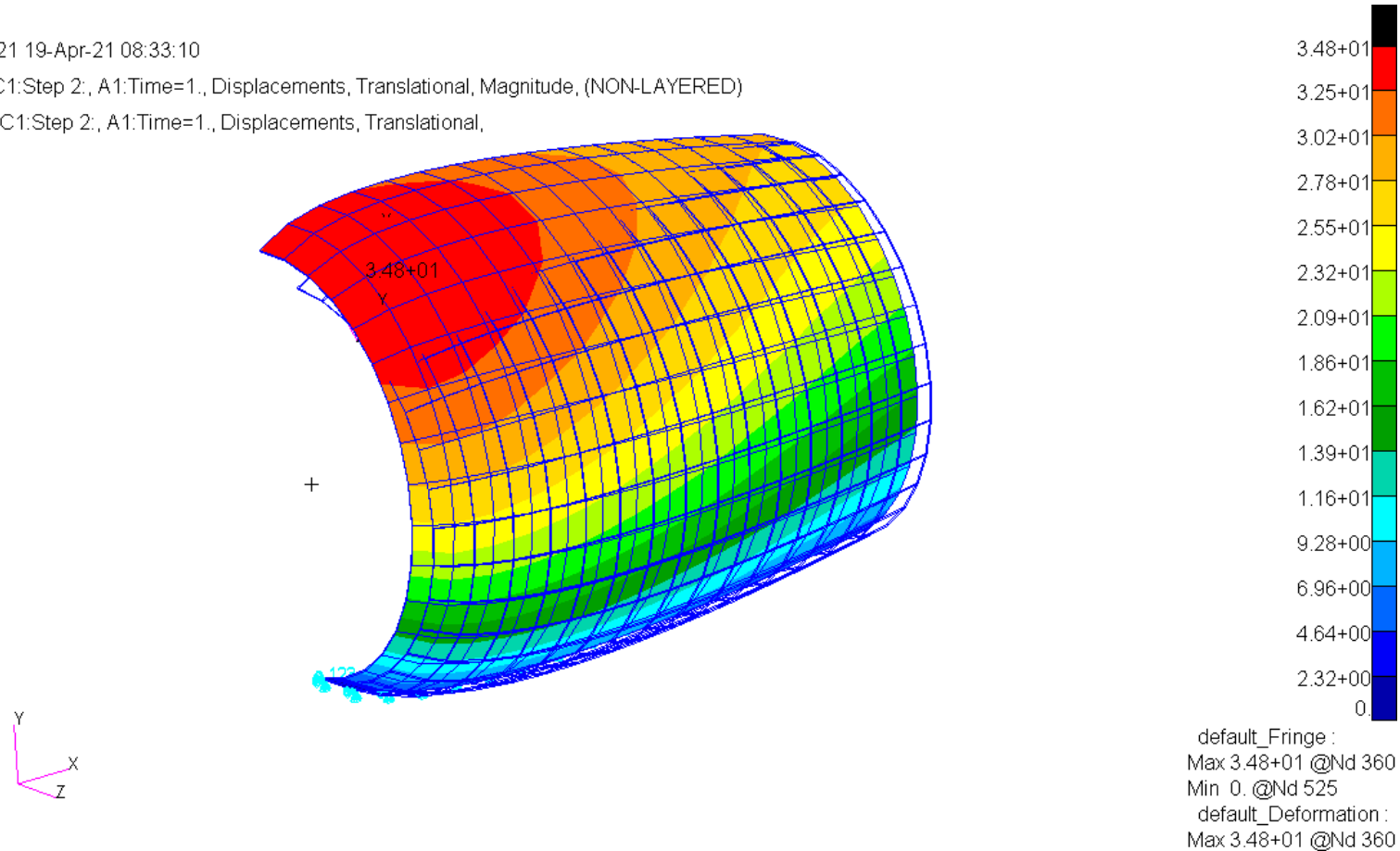
default\_Fringe :  
Max 3.48+01 @Nd 360  
Min 0. @Nd 525  
default\_Deformation :  
Max 3.48+01 @Nd 360

# Interlaminar shear stress on ply 101

Patran 2021 19-Apr-21 08:33:10

Fringe: SC1:Step 2:, A1:Time=1., Displacements, Translational, Magnitude, (NON-LAYERED)

Deform: SC1:Step 2:, A1:Time=1., Displacements, Translational,



# NASTRAN test deck

- Test deck: comp\_seq\_heat\_stress.bdf
- [comp\\_seq\\_heat\\_stress.bdf](#)
- This is a sequential coupled layer composite solid thermal stress analysis.