

2-bay flat panel without edge stiffeners: Input file, allenflat5.inp, is generated via Table 27

PA= 1.00000E+01 PB= 0.00000E+00 PX= 0.00000E+00

step 12 fabrication system ,seff, layer 1, outer fiber

Fig.76 nonlinear effective stress - outer fiber, skin only; case=allenflat5

Minimum value = 6.62209E+03, Maximum value = 6.19523E+04

Θ x 24.00

Θ y -22.00

Θ z 30.00

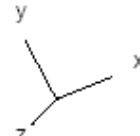


Fig. 76 STAGS prediction of outer fiber effective stress in the flat panel at the design load, PA = 10.0 (Nx = -1000 lb/in). This figure is analogous to Fig. 70, which pertains to the two-stringer bay model of the flat panel with edge stiffeners included in the model. The stress concentration pattern along the x-axis in the neighborhood of the central stringer has a different “side-to-side” alternating pattern than that in Fig. 70 because the linear buckling mode displayed in Fig. 73 has the opposite sign from that in Fig. 67. The outer fiber is the panel skin surface to which the external stringers are attached. Note that in this one case the maximum effective stress occurs where local maximum hoop **compression** is combined with axial compression. The reason for this difference in behavior from that predicted for all the other STAGS models is not known as of this writing.