

Table 81 Summary of the maximum effective stress in each segment of the optimized **imperfect unstiffened equivalent ellipsoidal shell with the apex (Shell Segment 1) of uniform thickness,  $t = 0.4$  inch.** These are the stresses at the design pressure,  $p = 460$  psi. Critical and near-critical stresses are in bold face. This list is abstracted from the GENOPT output file, eqellipse.OPM, for the user-selected case name, "eqellipse". The output here corresponds to the optimum design listed in Table 78. **Locations of shell segments are indicated in Fig. 2. These are BIGBOSOR4 predictions.**

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*** Start nonlinear axisymmetric stress,+(mode 1) imperfection
skin maximum effective stress, SKNMAX=3.0918E+04 Segment 1, point 13
skin maximum effective stress, SKNMAX=4.4776E+04 Segment 2, point 13
skin maximum effective stress, SKNMAX=1.2177E+05 Segment 3, point 13
skin maximum effective stress, SKNMAX=1.2190E+05 Segment 4, point 1
skin maximum effective stress, SKNMAX=8.0551E+04 Segment 5, point 11
skin maximum effective stress, SKNMAX=8.0732E+04 Segment 6, point 2
skin maximum effective stress, SKNMAX=4.5720E+04 Segment 7, point 12
skin maximum effective stress, SKNMAX=6.1482E+04 Segment 8, point 12
skin maximum effective stress, SKNMAX=6.1165E+04 Segment 9, point 1
skin maximum effective stress, SKNMAX=1.1788E+05 Segment 10, point 13
skin maximum effective stress, SKNMAX=1.1861E+05 Segment 11, point 3
skin maximum effective stress, SKNMAX=8.1789E+04 Segment 12, point 1
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*** Start nonlinear axisymmetric stress,+(mode 2) imperfection
skin maximum effective stress, SKNMAX=2.5713E+04 Segment 1, point 13
skin maximum effective stress, SKNMAX=3.6750E+04 Segment 2, point 13
skin maximum effective stress, SKNMAX=7.8109E+04 Segment 3, point 13
skin maximum effective stress, SKNMAX=7.8343E+04 Segment 4, point 3
skin maximum effective stress, SKNMAX=4.2324E+04 Segment 5, point 13
skin maximum effective stress, SKNMAX=4.2943E+04 Segment 6, point 2
skin maximum effective stress, SKNMAX=3.5186E+04 Segment 7, point 13
skin maximum effective stress, SKNMAX=3.6444E+04 Segment 8, point 9
skin maximum effective stress, SKNMAX=3.9715E+04 Segment 9, point 13
skin maximum effective stress, SKNMAX=7.7495E+04 Segment 10, point 13
skin maximum effective stress, SKNMAX=1.0991E+05 Segment 11, point 13
skin maximum effective stress, SKNMAX=1.2523E+05 Segment 12, point 8
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*** Start nonlinear axisymmetric stress,-(mode 1) imperfection
skin maximum effective stress, SKNMAX=1.2013E+05 Segment 1, point 3
skin maximum effective stress, SKNMAX=1.0116E+05 Segment 2, point 1
skin maximum effective stress, SKNMAX=8.1521E+04 Segment 3, point 13
skin maximum effective stress, SKNMAX=8.1787E+04 Segment 4, point 2
skin maximum effective stress, SKNMAX=4.7692E+04 Segment 5, point 13
skin maximum effective stress, SKNMAX=5.8279E+04 Segment 6, point 8
skin maximum effective stress, SKNMAX=5.6084E+04 Segment 7, point 13
skin maximum effective stress, SKNMAX=6.7884E+04 Segment 8, point 10
skin maximum effective stress, SKNMAX=6.6905E+04 Segment 9, point 1
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skin maximum effective stress, SKNMAX=8.1272E+04 Segment 10, point 13  
skin maximum effective stress, SKNMAX=9.8340E+04 Segment 11, point 13  
**skin maximum effective stress, SKNMAX=1.2142E+05 Segment 12, point 9**

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\*\*\* Start nonlinear axisymmetric stress, -(mode 2) imperfection  
skin maximum effective stress, SKNMAX=1.1789E+05 Segment 1, point 13  
skin maximum effective stress, SKNMAX=9.4470E+04 Segment 2, point 1  
skin maximum effective stress, SKNMAX=6.1927E+04 Segment 3, point 1  
skin maximum effective stress, SKNMAX=5.8060E+04 Segment 4, point 3  
skin maximum effective stress, SKNMAX=3.3751E+04 Segment 5, point 1  
skin maximum effective stress, SKNMAX=4.1836E+04 Segment 6, point 13  
skin maximum effective stress, SKNMAX=4.1798E+04 Segment 7, point 1  
skin maximum effective stress, SKNMAX=4.6352E+04 Segment 8, point 12  
skin maximum effective stress, SKNMAX=6.5364E+04 Segment 9, point 13  
skin maximum effective stress, SKNMAX=1.0825E+05 Segment 10, point 13  
skin maximum effective stress, SKNMAX=1.0833E+05 Segment 11, point 2  
skin maximum effective stress, SKNMAX=7.9635E+04 Segment 12, point 1  
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**NOTE: The maximum allowable stress during optimization is 120000 psi.**