

The Oval Tank Treated with Shell Elements

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See the movies here: | [1](#) | [2](#) |

Input data: Ref. Ovaltank.STEP geometry, Uniform pressure = 0.1 psi; Thickness of the wall = 3/8''; material: steel.

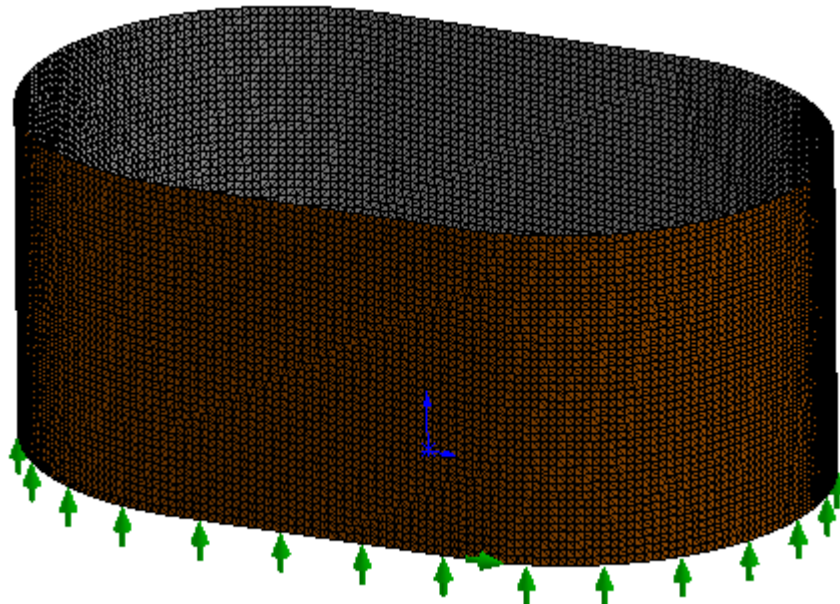
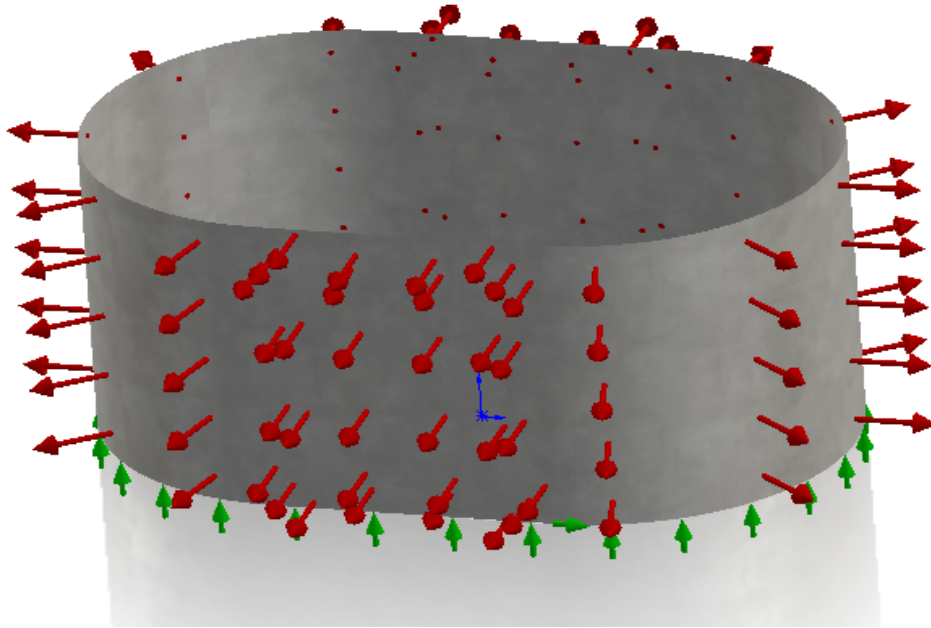


Fig. 1 The model of tank in SolidWorks Simulation.

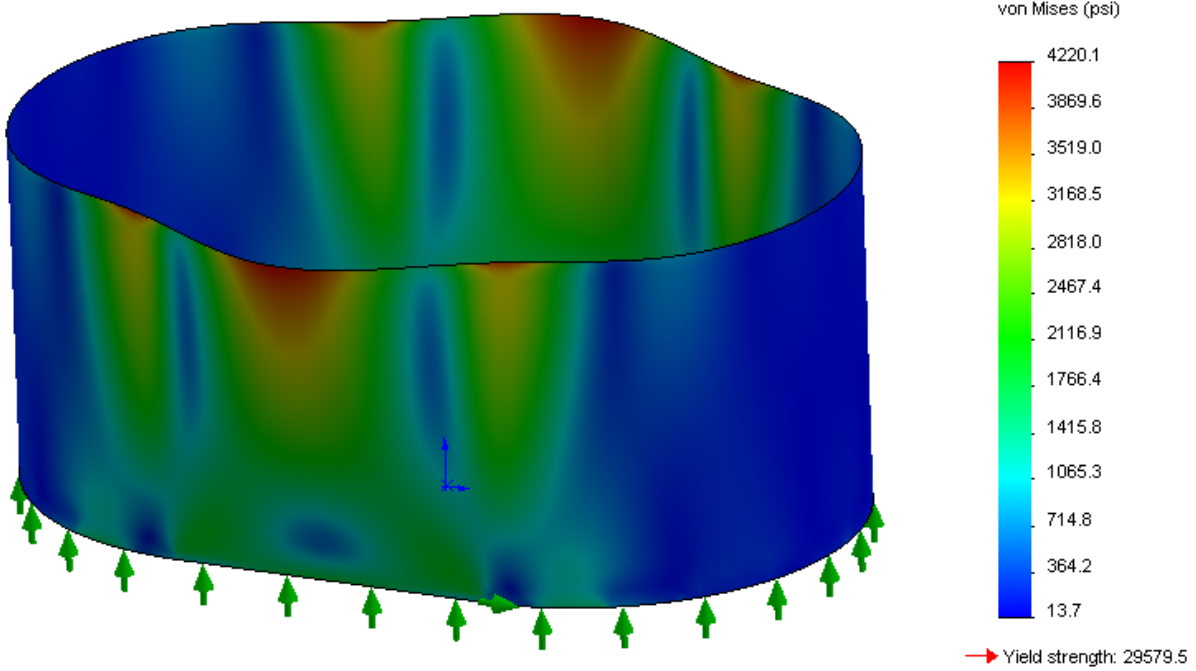
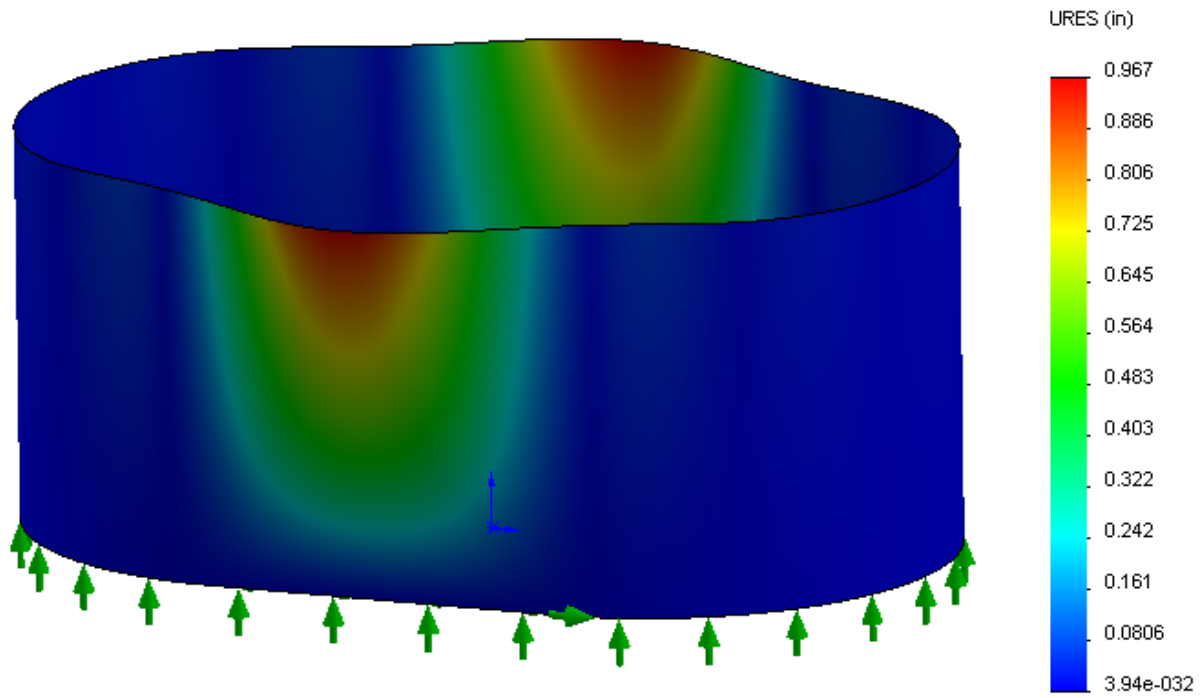


Fig. 2 Max. Displacemet = 0.97 in, Max. Von-Mises Stress (bottom) 4220 psi

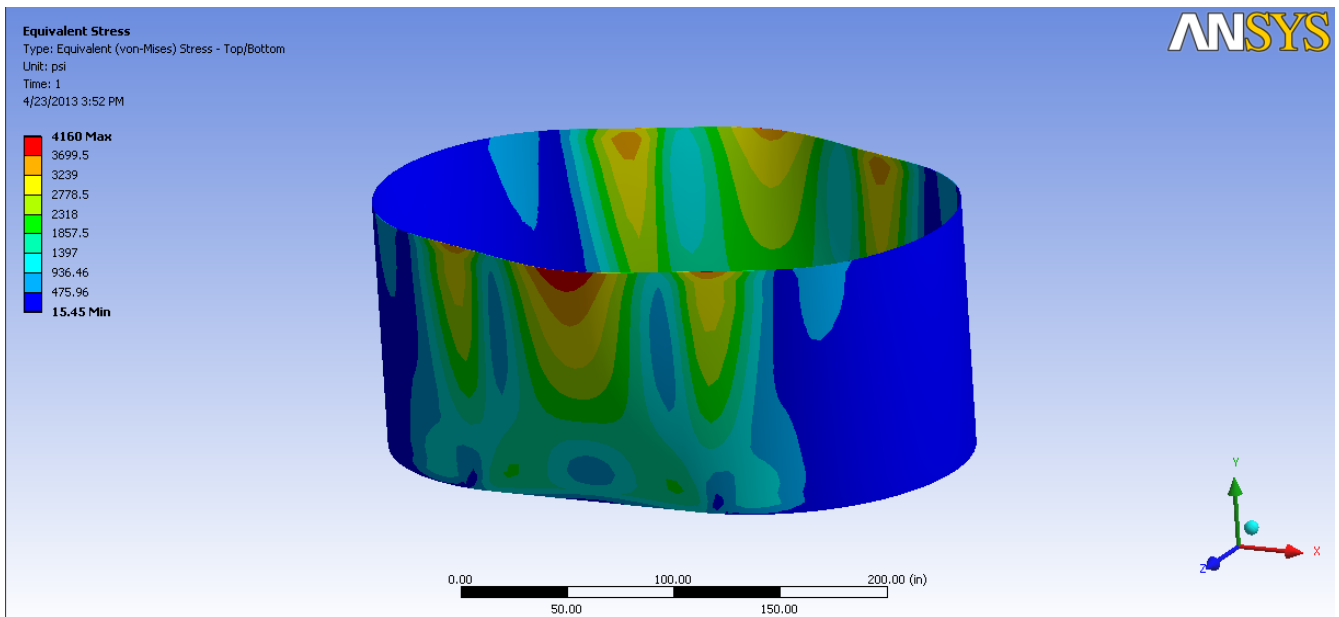
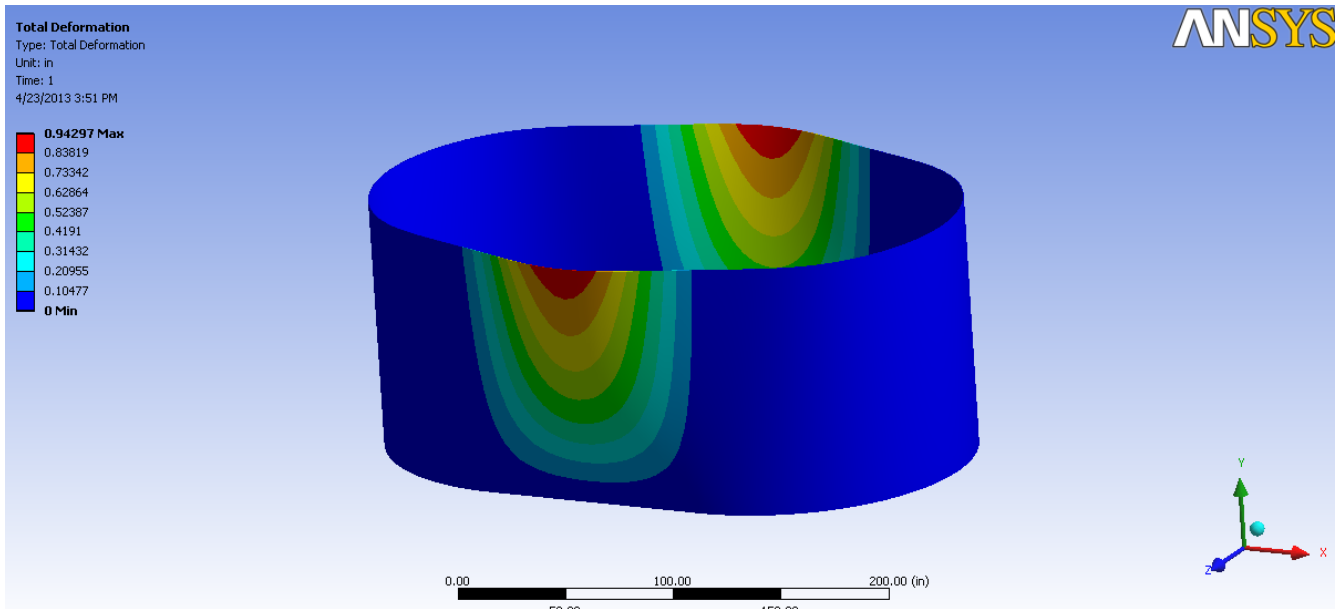


Fig.3 ANSYS 4160 psi / 0.94 in

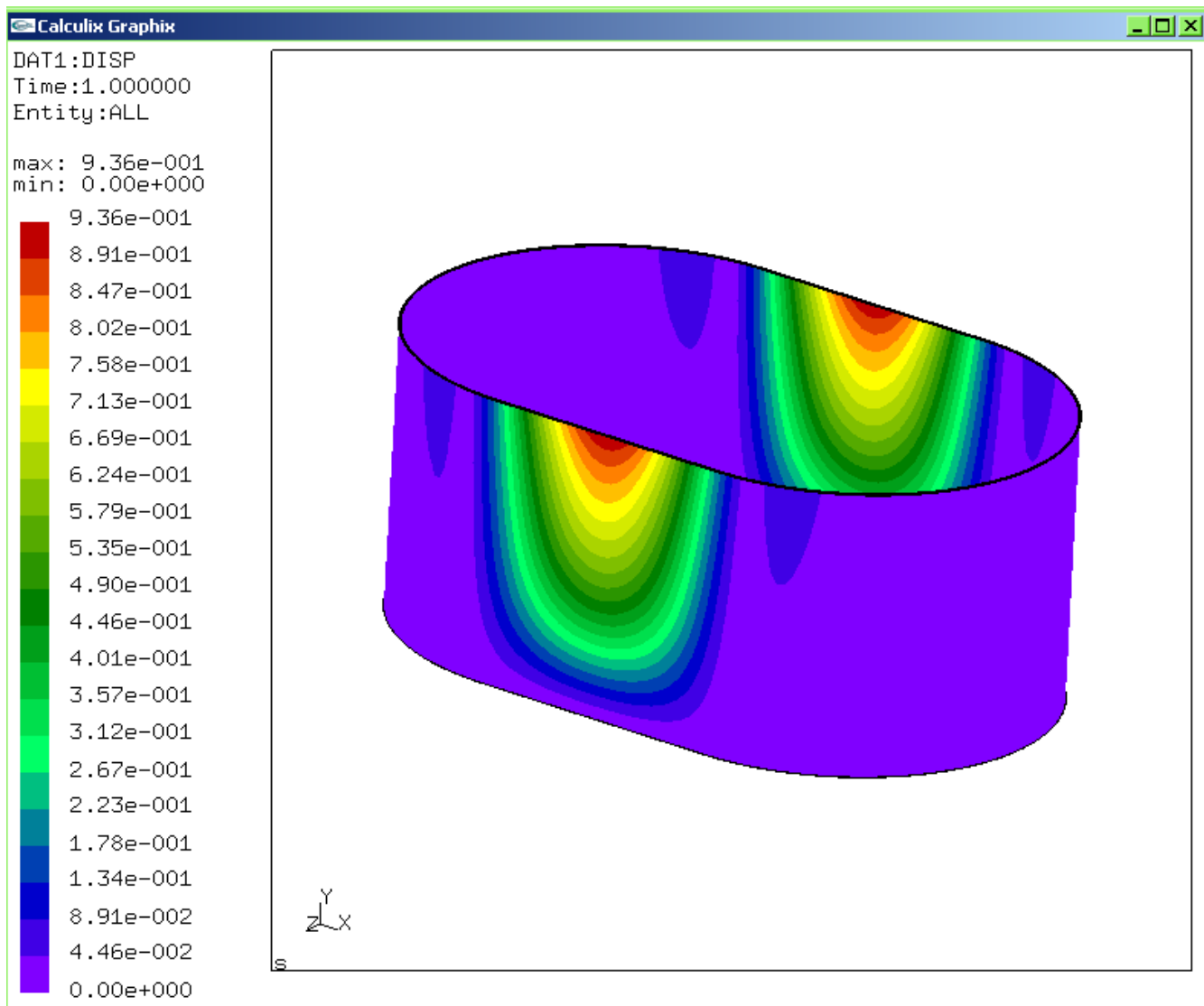


Fig. 4 CalculiX (S8R shell elements, with GMSH)
Max. Displacement 0.94''

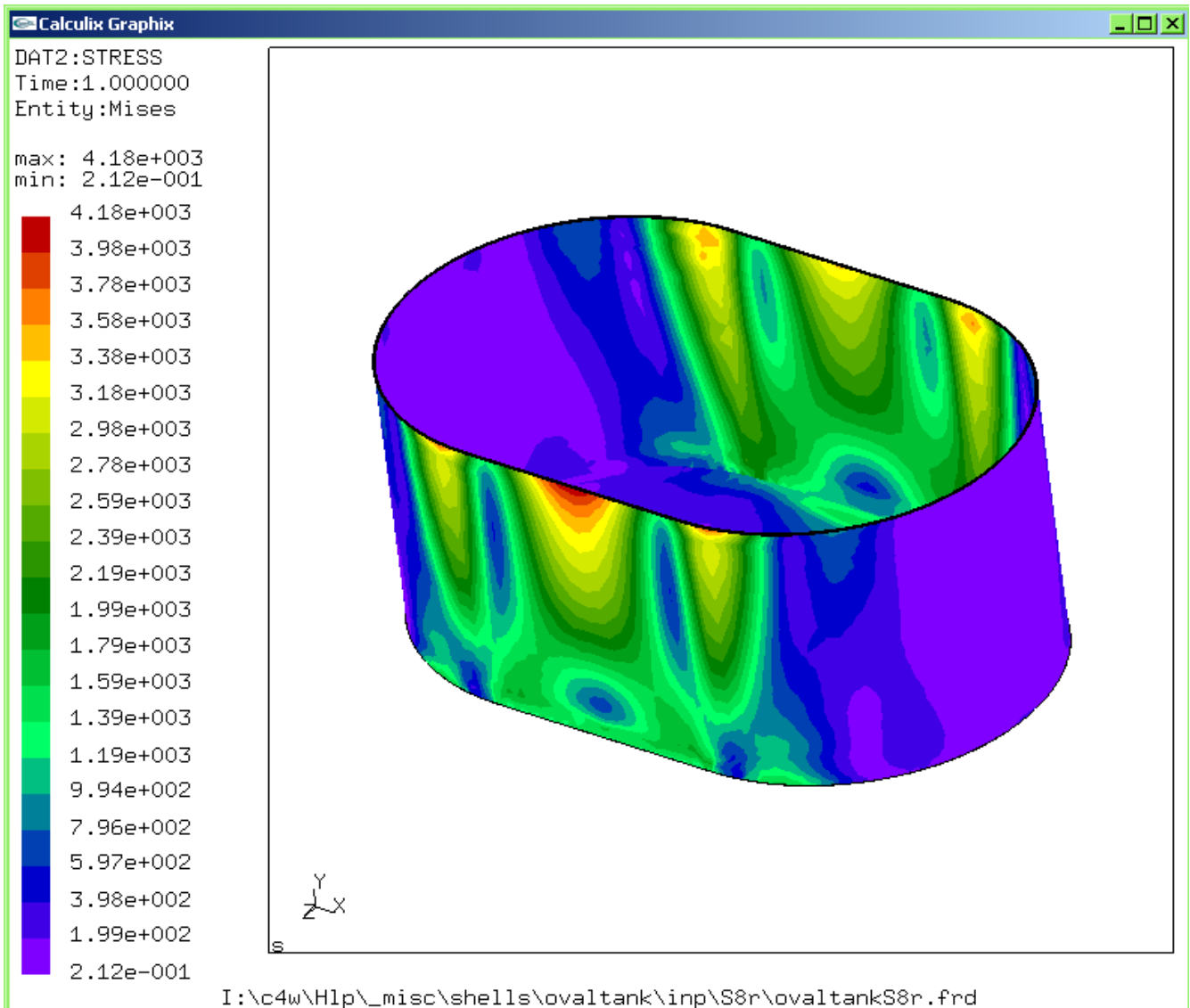


Fig. 5 CalculiX Von Mises Stress (S8R elements) (max 4180 psi)

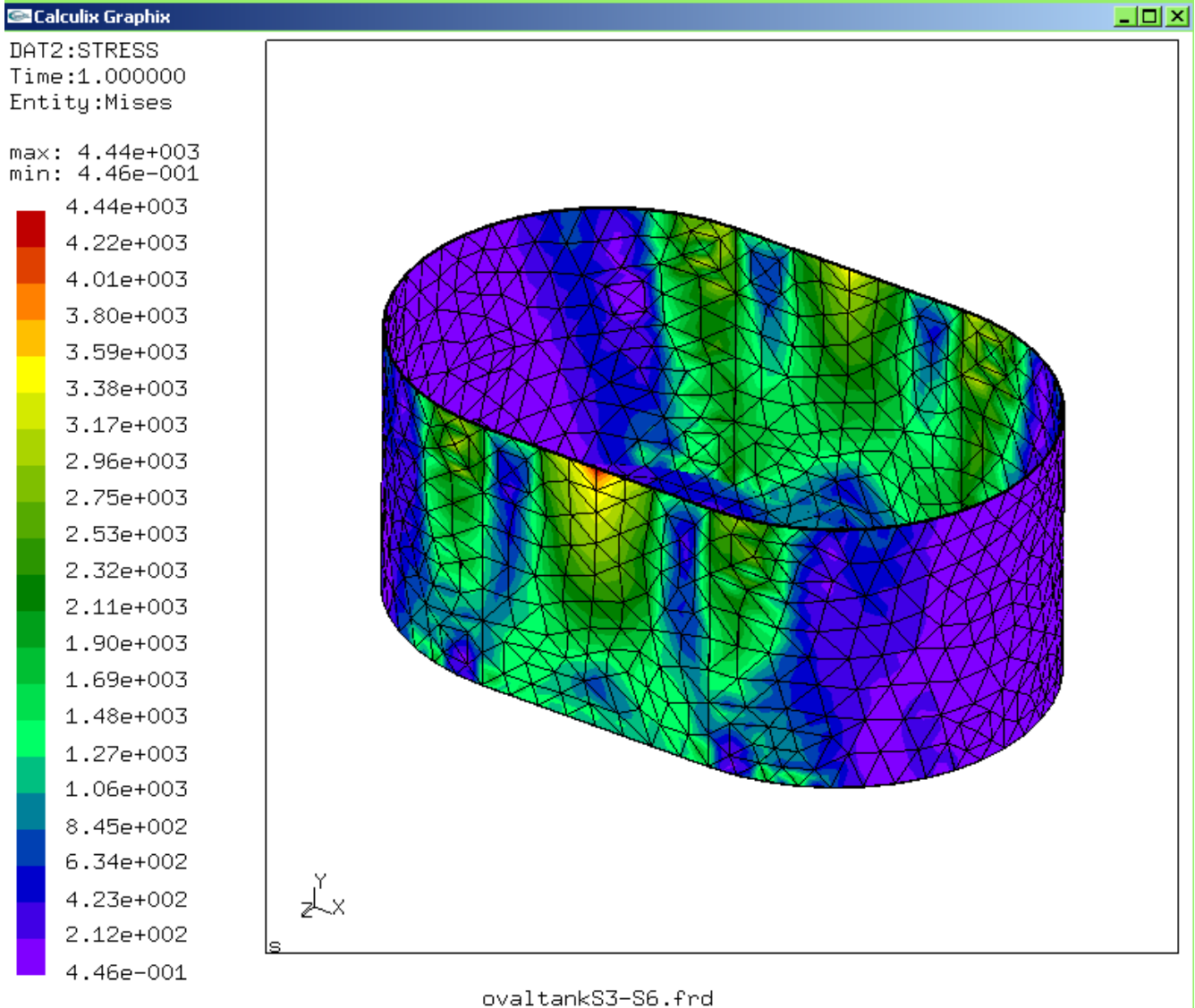


Fig. 6 CalculiX Von Mises Stress (S6 elements) (max 4440 psi for rough mesh)

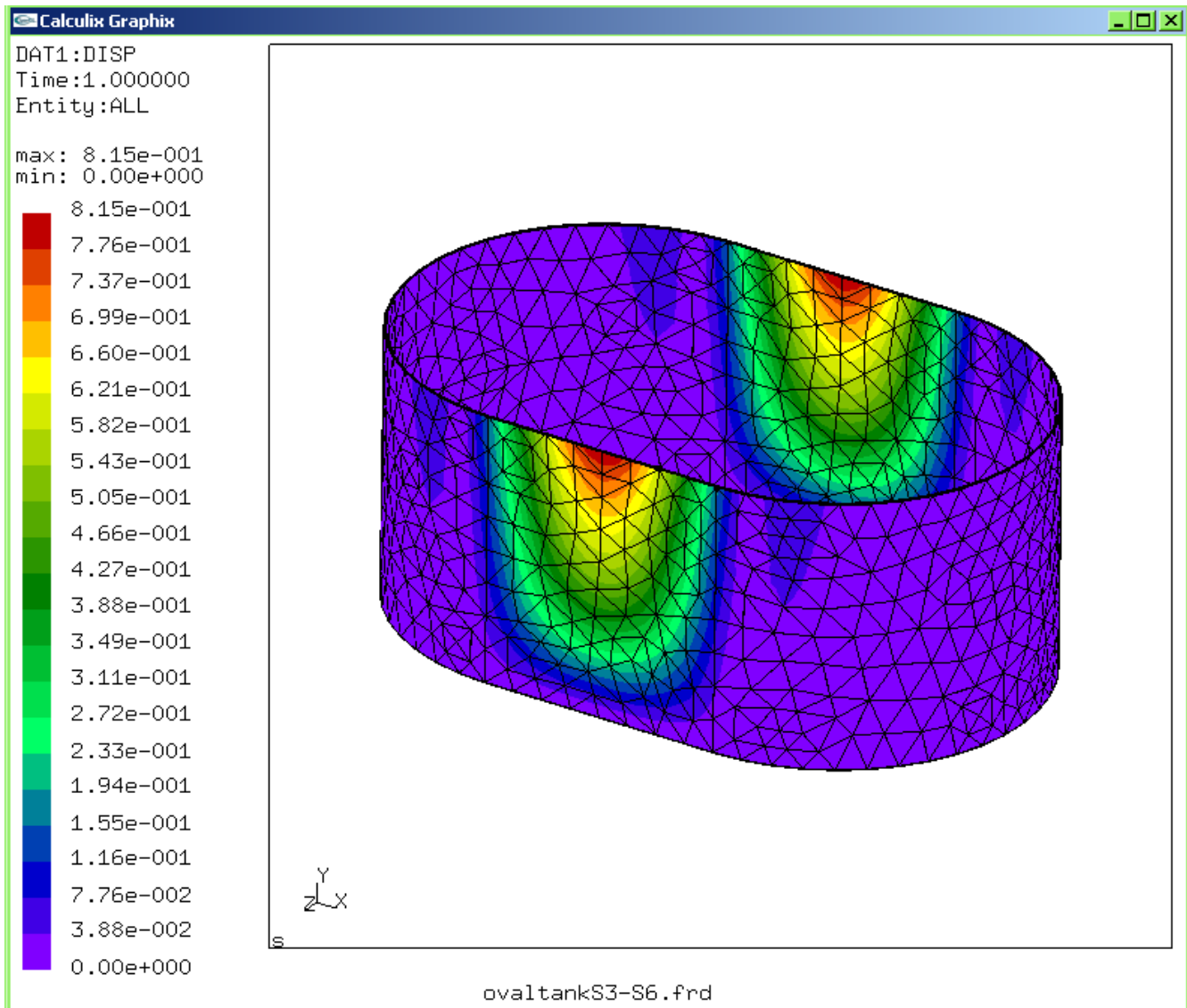


Fig. 8 CalculiX (S6 shell elements)
Max. Displacement 0.81'' for rough mesh