

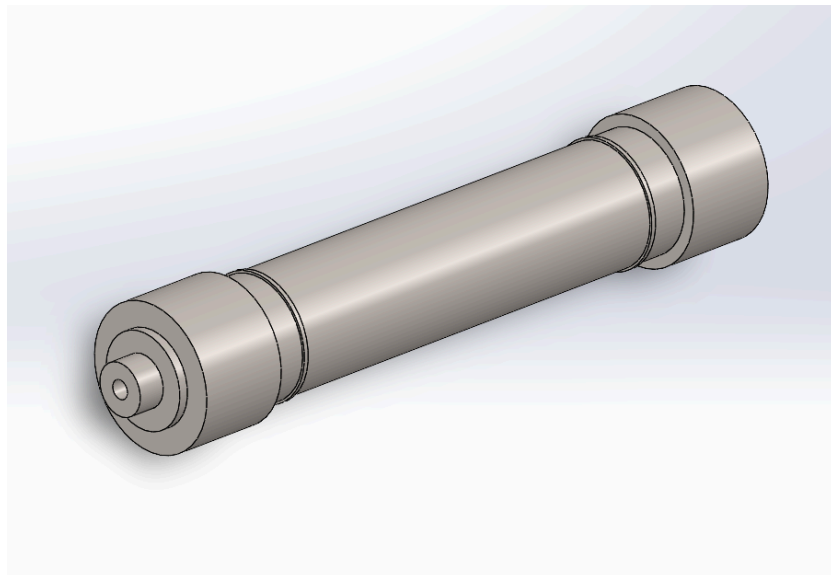
FINAL PROJECT

ME1001L

SECTION 02

FALL 2024

Timothy Waters



Summary

This design proposal is for an Accumulator to be used on the customer's aircraft. The customer requirements are listed in the table below along with the actual values from the proposed design. Material **Titanium Ti-8Mn, Annealed** is proposed in order to satisfy the remaining material requirement from the customer.

Requirements Summary

Item	Customer Requirement	Actual Value
Gas Volume	100 +/- 2 in ³	98.26 in ³
Weight	≤ 18 lbs	11.89 lbs
Displacement	≤ 0.004 in	3.989e ⁻⁰³ in
Burst Pressure	Stress (psi) < Yield Strength	Fulfilled

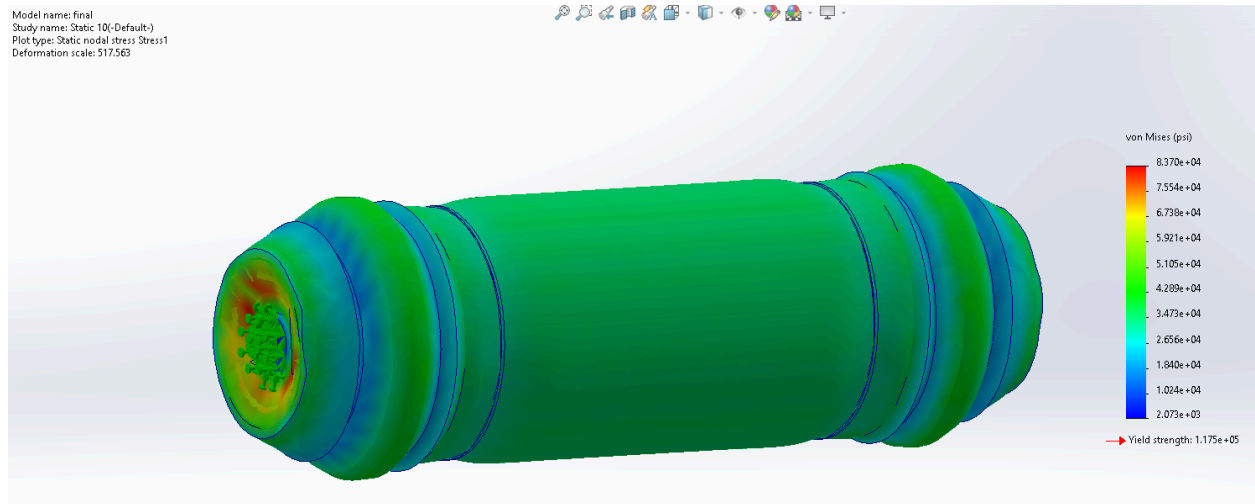


Figure 1: Stress at Burst Pressure, Titanium Ti-8Mn, Annealed

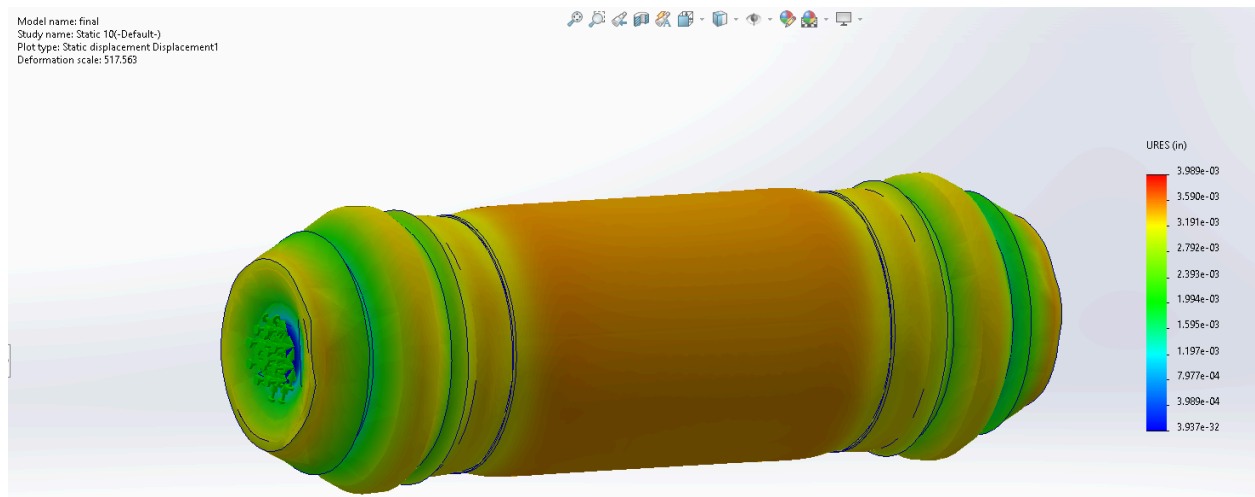


Figure 2: Displacement, Titanium Ti-8Mn, Annealed

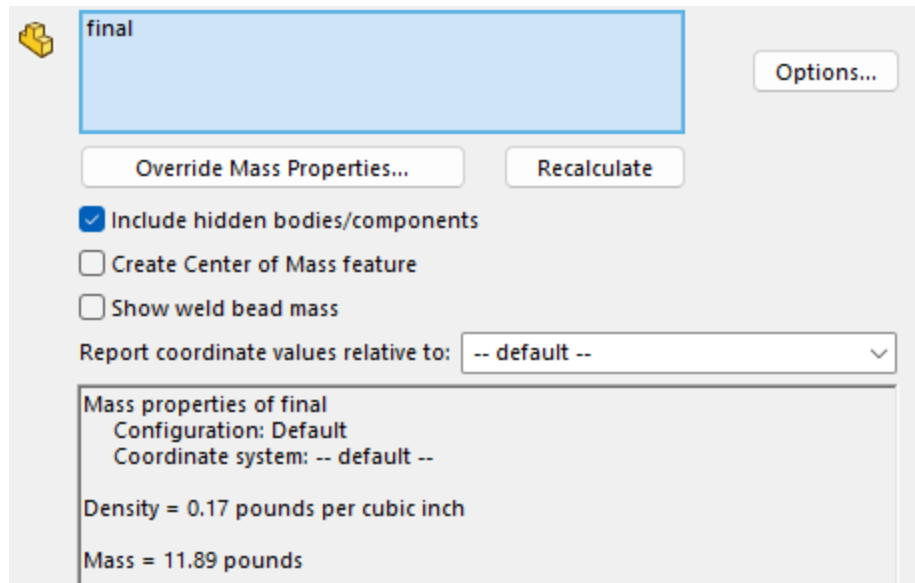


Figure 3: Weight, Titanium Ti-8Mn, Annealed

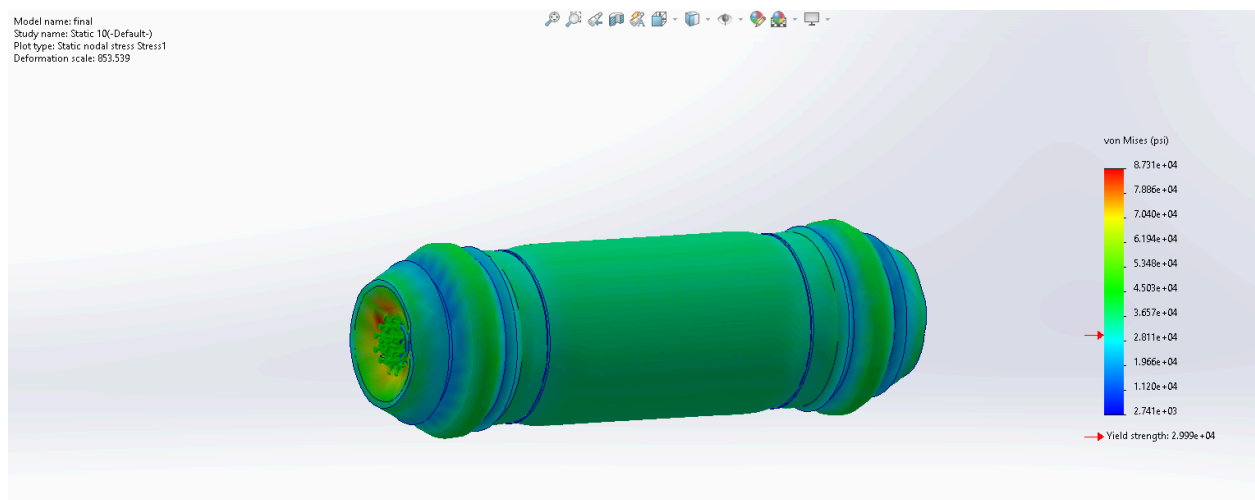


Figure 4: Stress at Burst Pressure, Steel AISI 304

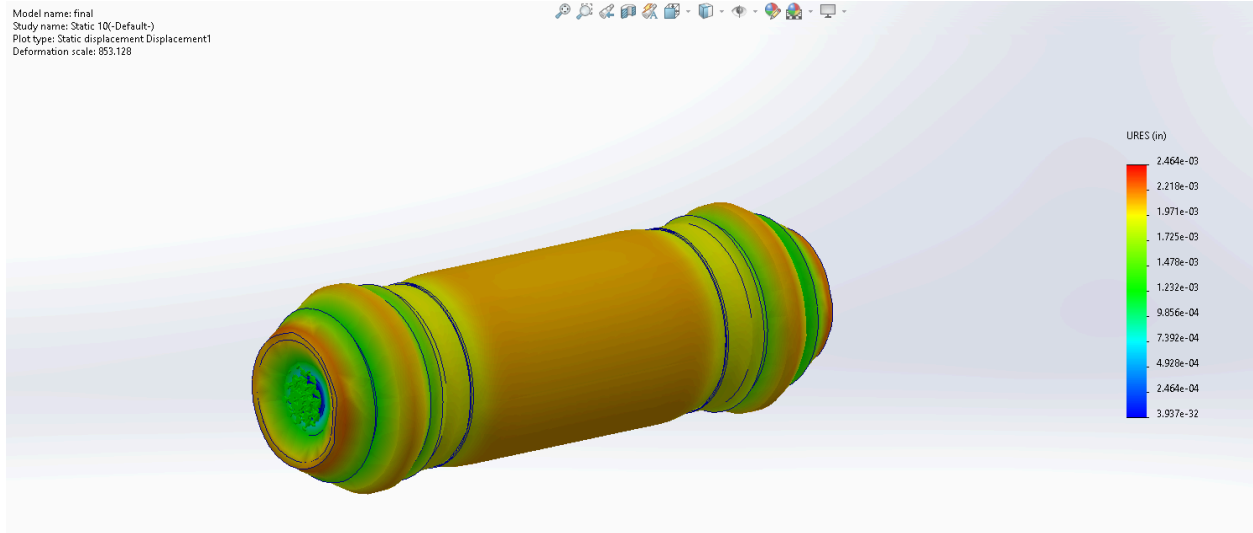


Figure 5: Displacement, Steel AISI 304

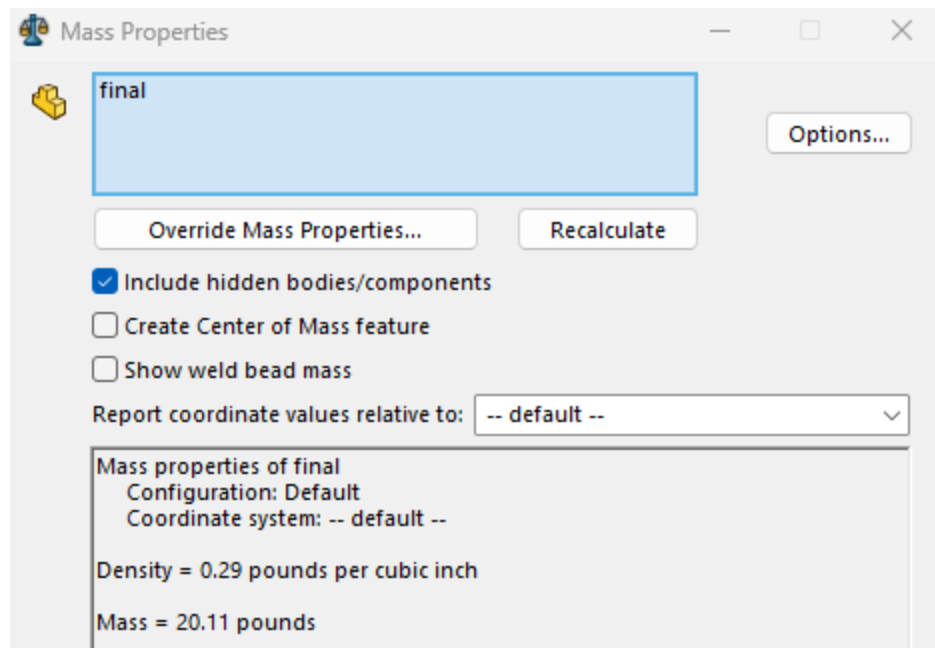


Figure 6: Weight, Steel AISI 304