

ME653

Design for Additive Manufacturing

Design Assignment 2

Submitted by

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Model Properties

1. Material : 15-5PH
2. Elastic Modulus (E) : 29,000 KSI = 200,000 MPa = 200 GPa
3. Poisson Ratio (ν) : 0.27
4. Yield Stress (σ_y) : 145 KSI = 1000 MPa
5. Density (ρ) : 0.283 lb/in³ = 7833 kg/m³
6. Mass (before optimization) : 0.86 kgs
7. Mass (after optimization) : 0.2444 kgs
8. Mass reduction % : 71.58 %

Load Properties

1. A load of 1,250 lbf applied horizontally
2. A load of 1,875 lbf applied 45 degrees from the horizontal
3. A load of 2,500 lbf applied vertically

