



Table 1: Material Properties

Property	Value
Young's Modulus	210 GPa
Tensile Strength	1000 MPa
Yield Strength	600 MPa
Elongation at Break	10%
Hardness (HV)	250

Table 2: Geometric Parameters

Parameter	Value
Length	100 mm
Radius	25 mm
Height	50 mm
Volume	100,000 mm ³
Mass	10 kg

3. Results and Discussion

Table 3: Stress Analysis

Location	Stress (MPa)
Top Surface	100
Bottom Surface	200
Center	150
Edge	180

Table 4: Strain Analysis

Location	Strain (%)
Top Surface	0.5
Bottom Surface	1.0
Center	0.75
Edge	0.9

4. Conclusions

Table 5: Comparison of Results

Parameter	Experimental	Theoretical
Stress	150 MPa	160 MPa
Strain	0.75%	0.8%
Displacement	2 mm	2.5 mm

Table 6: Error Analysis

Source of Error	Percentage Error
Measurement	5%
Material Properties	3%
Modeling	2%
Total	10%

5. References

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 [5] White, R. (2016). *Structural Analysis*. London: Routledge.
 [6] Green, S. (2019). *Material Science*. New York: McGraw-Hill.