SAMPE Additive Manufacturing Competition Design Summary

**Name**: Your Name

**Email**: YourEmailAddress@mail.com

**School**: Your School's Name

**Registration Number**: Your Number will be 11 characters and include both numbers and letters

**Faculty** **Advisor**: Your Advisor's Name

**Faculty** **Email**: YourAdvisorsEmailAddress@mail.com

**Visual depiction of your design:**

Picture(s) Go **Here**

(with scale AND print direction)

**Print Parameters and Orientation:**

Any specific print parameters or print orientation that are important when printing your submission.

**Written description of your design:**

Why did you choose it? What makes it unique?

**Calculation of your design’s structural capability.**

Must include failure mode prediction and show the relevant calculations performed. At minimum, submissions must be analyzed for both compression strength and buckling strength.

**Column Information:**

|  |  |  |
| --- | --- | --- |
|  | **Units** | **Value** |
| Material (for Category B only) | N/A | **Here** |
| Weight | g | **Here** |
| Load Capacity at 28 inches | lb | **Here** |
| Height | in | **Here** |
| Diameter | in | **Here** |
| Number of Parts |  | **Here** |
| Cross-Sectional Area at 34 inches | in2 | **Here** |
| Moment of inertia at 34 inches | in4 | **Here** |
| Cross-Sectional Area at 28 inches | in2 | **Here** |
| Moment of inertia at 28 inches | in4 | **Here** |
| Modulus | Msi | **Here** |

**Compression Failure at 34 inches:**

**Your Calculations Here**

**Buckling Failure at 34 inches (Assuming pinned-pinned):**
Euler column formula:

**Your Calculations Here**

C= **?** for this loading case.

**Compression Failure at 28 inches:**

**Your Calculations Here**

**Buckling Failure at 28 inches (Assuming pinned-pinned):**
Euler column formula:

**Your Calculations Here**

C= **?** for this loading case.

**Estimated print time:**

**Your Estimated Print Time Here**

**Resources (if applicable):**

**E.g. material datasheets**