***Material Selection***

**Selected Material**: Acrylic (Polymethyl Methacrylate or PMMA) or Plexiglass

**Technical Specification:**

* **General Properties:**Relative Density 1.19 g/cm3 Rockwell Hardness M 102 Water Absorption -.2% ~Flammability Class 3, (BS 476 pt 7) UL94 HB
* **Mechanical:**Tensile Strength 75 MPa Flexural Strength 115 MPa
* **Thermal Properties:**Minimum Service Temperature -40⁰C Maximum Service Temperature 80⁰C Softening Point > 110⁰C Linear Expansion 7.7×10-5
* **Optical Properties:**Light Transmission > 92% Refractive Index 1.49

**Advantages of Acrylic:**

* Excellent optical clarity & transparency-Easier to diagnose errors.
* Highly Water Resistant.
* Highly resistant to variations in temperature.
* Up to 17 times the impact resistance of ordinary glass.
* Half the weight of glass and ideal for precision machining.
* Highly resistant to many different chemical reactions.
* Cost efficient when compared to other alternatives.