

## ***Material Selection***

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

### **Technical Specification:**

Relative Density	1.19 g/cm <sup>3</sup>
Rockwell Hardness	M 102
Water Absorption	-.2%
Flammability	Class 3, (BS 476 pt. 7) UL94 HB
Tensile Strength	75 MPa
Flexural Strength	115 MPa
Minimum Service Temperature	-40°C
Maximum Service Temperature	80°C
Softening Point	> 110°C
Linear Expansion	7.7×10 <sup>-5</sup>
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.