***Material Selection***

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

**Technical Specification:**

|  |  |
| --- | --- |
| Relative Density | 1.19 g/cm3 |
| 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 | -40⁰C |
| Maximum Service Temperature | 80⁰C |
| Softening Point | > 110⁰C |
| Linear Expansion | 7.7×10-5 |
| 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.