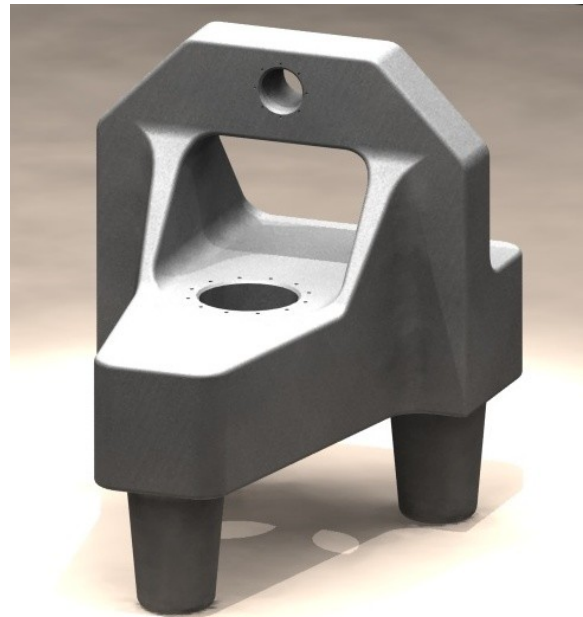




Perlumite™ Precision Structures

Perluma offers structures for precision machines made from a proprietary castable mixture of advanced aggregate materials in a specially-formulated polymer matrix. Perlumite™ precision structures provide superior vibrational damping when compared to traditional granite, steel, or cast iron machine structures. In addition, Perlumite™ precision structures provide several other advantages over conventional structures:

- Superior vibrational damping, better than granite and cast iron
- Cast and cured in less than one day
- Molds can last for thousands of cycles; soft tooling available for prototypes
- Net precision surfaces eliminates need for finishing and secondary operations
- Complex shapes, tight-tolerance inserts, and conduits can be molded in
- Engineered materials can be added to optimize structural properties
- Excellent stability and low coefficient of thermal expansion
- Waterproof and highly resistant to most industrial chemicals
- Various colors and surface textures



Properties	Perlumite™	Granite	Cast Iron
Damping Ratio	Best	Better	Good
Specific Heat	900 J/kg°C	210 - 350 J/kg°C	460 J/kg°C
Chemical Resistance	Excellent	Poor	Moderate
Compressive Strength	135 MPa	97-310 MPa	83000 MPa
Density	2.3 g/cm ³	2.5 - 2.7 g/cm ³	7.8 g/cm ³
Flexure Strength	30 Mpa	9 - 38 MPa	515 MPa
Modulus of Elasticity	30 GPa	20 - 60 GPa	200 GPa
Poisson Ratio	0.25	0.25	0.3
Temperature Limits	-45°C to 104°C		
Tensile Strength	15 MPa	7 - 25 MPa	275 MPa
Thermal Conductivity	2 W/(m·°C)	1.2-4.2 W/(m·°C)	50 W/(m·°C)
Water Absorption	0.01%	0.005%	N/A
Thermal Expansion	10 x 10 ⁻⁶ /°C	3.7-11 x 10 ⁻⁶ /°C	9.9 x 10 ⁻⁶ /°C