



# DRAKE MG-10 COMPOSITE

*High level of isotropic strength in machined balls for demanding applications*



## DESCRIPTION

**DRAKE MG-10** is a high strength thermoset epoxy and woven fabric composite that is rolled and molded in layers to form rod in various diameters. Balls machined from MG-10 rod exhibit a high degree of isotropic behavior in demanding applications such as sliding-sleeve frac tools. This eliminates shear fracturing and anisotropic properties of balls machined from square bars cut from laminated sheet or plate.

## COMPOSITION

High strength thermoset epoxy, glass fiber woven fabric

## KEY ATTRIBUTES – MACHINED BALLS

- High level of isotropic performance in machined balls
- High compressive strength; dimensionally stable
- Chemical and corrosion resistant; long service life

## AVAILABILITY

- Balls in wide range of diameters from under 25mm (1”) to over 100mm (4”). With standard tolerances of +/- 0.04mm (0.0015”).
- Rod available in a range of diameters for machining into down-hole balls

PHYSICAL PROPERTIES	SI UNIT	SAE UNIT	METHODS
Compressive Strength	448 MPa	65,000 PSI	ASTM D695
Tensile Strength	275 MPa	40,000 PSI	ASTM D638
Tensile Modulus of Elasticity	3,240 MPa	470,000 PSI	ASTM D638
Shear Strength	131 MPa	19,000 PSI	ASTM D2344
Flexural Modulus	16.5 GPa	2,400 KSI	ASTM D790
Flexural Strength	448 MPa	65,000 PSI	ASTM D790
Hardness Rockwell M	110		ASTM D785
Density	1.85 g/cm <sup>3</sup>		ASTM D792
Water Absorption, 24 hrs	0.10%		ASTM D570
ELECTRICAL PROPERTIES			
Dielectric Strength	31.5 kV/mm	800 kV/in	ASTM D149
Arc Resistance	100 sec	100 sec	ASTM D495
THERMAL PROPERTIES			
Max. Operating Temperature (air)	140°C	284°F	
Coefficient of Linear Thermal Expansion	9.90 µm/m-°C	5.50 µin/in-°F	ASTM D696

*Note: Property values based on test specimens taken from sheet.*