

Amalga Pneumatic Cylinder Tubing is the lightweight, corrosion resistant alternative to steel, aluminium or brass cylinders. The Black Amalgon stocked in our Bayswater facility can be cut and finished to any length to suit your requirements and is suitable for a range of applications such as pneumatic and hydraulic cylinders for improved piston movement, valve actuators and marine cylinders.

Constructed of fibre-reinforced thermoset epoxy matrix, Black Amalgon features an ultra-smooth inner surface. It is a lightweight, high-strength, corrosion-resistant composite alternative to carbon steel, honed and chromed steel, stainless steel and aluminium or brass cylinder barrels.

75% Lighter Than Steel

One-quarter the weight of steel and 25 percent lighter than aluminium, Black Amalgon reduces material handling and shipping costs, speeds up assembly times and decreases stress loads on connected components.

Superior Corrosion Resistance

Trouble-free performance in chemical, high-moisture and other adverse environments reduces lifecycle costs.

Reduced Maintenance Costs

Our manufacturing process ensures a smooth, self-lubricating interior surface that prevents pistons from sticking even when idled for months. Seals can withstand more than one million strokes before replacement in our non-lubricated cylinders.

Eliminate Honing Costs

A 15 Ra micro-inch surface finish performs just like a honed surface – without the costs of honing.

Shape Stability and Impact Resistance

Black Amalgon retains its circular shape and doesn't dent like metals. Its material impact strength is 21.36 Izod J / cm.

Excellent Thermal Stability

With a low coefficient of thermal expansion, Black Amalgon operates efficiently from -45.5°C to 121°C.

Non-Magnetic Material

Allows piston movement to be controlled by external magnetic sensors.

Textbook Definition of Amalga

A composite material is a macroscopic combination of two or more distinct materials that have a recognizable interface between them.

Practical Definition of Amalga

A versatile solution to today's design problems. Amalga Composites offers a variety of lightweight and high-strength structures to solve your design challenges. A wide variety of properties can be achieved through the proper selection of fibre type, fibre orientation and the resin matrix of the composite structure required for your application. Strong, stiff fibres carry the load and the resin matrix distributes the load evenly.



Imperial Sizes

Metric Sizes

Part Number	Standard Bore Size (inches)	Part Number	Standard Bore Size (inches)	Part Number	Standard Bore Size (mm)	Part Number	Standard Bore Size (mm)
BA0100S	1.000	BA0400S	4.000	BA0032S-MM	32	BA0250A-MM	250
BA0125S	1.250	BA0500S	5.000	BA0040S-MM	40	BA250B-MM	250
BA0150S	1.500	BA0575S	5.750	BA0050S-MM	50	BA300A-MM	300
BA0175S	1.705	BA0600S	6.000	BA0063S-MM	63		
BA0200S	2.000	BA0700S	7.000	BA0080S-MM	80		
BA0225S	2.250	BA0800A	8.000	BA0100S-MM	100		
BA0250S	2.500	BA1000A	10.000	BA0125S-MM	125		
BA0275S	2.750	BA1200A	12.000	BA0125A-MM	125		
BA0300S	3.000	BA1400A	14.000	BA0160S-MM	160		
BA0325S	3.250	BA1600B	16.000	BA0160A-MM	160		
BA0350S	3.500	BA1800B	18.000	BA0200S-MM	200		
BA0375S	3.750	BA2000B	20.000	BA0200B-MM	200		

Wall Thickness Suffix

- A** - 3/16" wall thickness
- B** - 1/4" wall thickness
- S** - 1/8" wall thickness

*Other sizes are available upon request

BLACK AMALGON®

Built for maximum internal pressure under a compressive load.

Material Properties	E-Glass	Applications
Flexural Modulus Longitudinal, 10^6 x psi	1.3	PNEUMATIC & HYDRAULIC CYLINDERS
Flexural Modulus Circumferential, 10^6 x psi	3.6	
Tensile Strength Longitudinal, psi	16,000	
Tensile Strength Circumferential, psi	40,000	VALVE ACTUATORS
Compressive Strength Longitudinal, psi	27,000	
Compressive Strength Circumferential, psi	37,000	PUMP HOUSINGS
Shear Modulus, psi x 10^6	0.8	
Shear Strength, psi	8,000	MARINE CYLINDERS
CTE Circumferential, $\text{in/in}^{\circ}\text{F} \times 10^{-6}$	4.6	
CTE Longitudinal, $\text{in/in}^{\circ}\text{F} \times 10^{-6}$ Poisson's ratio, ν_{xy}	8.8	
Density, Lb/in^3	0.35	
	0.072	



FOR MORE INFORMATION
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