



CIP Hydro

CIP Hydro™ is a dependable and high quality, self lubricated composite bearing material specifically designed for hydroelectric generating plants. Manufactured by Columbia Industrial Products using polyester and PTFE combined textile with a high grade marine polyester resin. Solid lubricants are added to the resin to provide evenly dispersed lubrication throughout the material, inherently eliminating the need for external lubricants. Proprietary additives are included to increase the overall strength and reduce friction and wear.



Applications

Bearings, Bushings, Wear Pads, Thrust Washers, Staves

- Wicket Gate
- Main Guide
- Linkage
- Servo Motor
- Head Cover
- Operating Ring
- Vertical Gate
- Spillway Trunnion
- Lock/Miter Gate
- Fish Screens



Benefits: self lubricating • low coefficient of friction • high load capacity • eliminates greasing systems • wet or dry running • negligible water swell • extended operating life • low thermal expansion rate • light weight • nonconducting • manufactured to specification • common installation (press, bonding, freeze, or fasten) • easy to machine • nonmetallic • environmentally friendly • made in the USA

One Group, One Location, Reaching Globally

www.CIPHydro.com

Standard Shapes

Tubes

Minimum Bore	1/2 in. (12.7 mm)
Maximum Bore	60 in. (1524 mm)
Standard Lengths	16 in. – 24 in. – 32 in. (406 mm – 609 mm – 812 mm)

Sheets

Minimum Thickness	1/8 in. (1.6 mm)
Maximum Thickness	6 in. (1,524 mm)
Standard Widths	16 in. – 24 in. – 32 in. (406 mm – 609 mm – 812 mm)
Standard Lengths	24 in. – 36 in. – 48 in. – 60 in. (609 mm – 914 mm – 1219 mm)

Custom Products

CIP offers a fully equipped machine shop on location ready to meet your needs. Components can be manufactured to customers' drawings. Spherical bearings with stainless steel balls, threaded components and many other custom products can be fabricated.



CIP Hydro™ Physical Properties

Compressive Strength

Ultimate	50,000 PSI (345 MPa)
Yield	15,000 PSI (103 MPa)
Tensile Strength	12,000 PSI (75 MPa)
Rockwell Hardness	100 M
Density	.047 lbs/in ³ (1.3 g/cm ³)
Water Swell	<0.1%

CIP Hydro™ Thermal Properties

Operating Temperatures	-40° to 200°F (-40° to 93°C)
Coefficient of Thermal Expansion	68° to 200°F (20° to 93°C)
Normal to Laminate	$3.5 \times 10^{-5} / \Delta^{\circ} \text{F}$ ($6.3 \times 10^{-5} / \Delta^{\circ} \text{C}$)
Parallel to Laminate	$1.8 \times 10^{-5} / \Delta^{\circ} \text{F}$ ($3.24 \times 10^{-5} / \Delta^{\circ} \text{C}$)



Tested by
PowerTech Labs



CIP is dedicated to providing the highest quality products with a focus on exceeding requirements. We strive for complete customer satisfaction through continuous improvement in service and quality.

Columbia Industrial Products

29538 Airport Road, Unit A
Eugene, Oregon 97402

888-999-1835

Fax: 541-607-3657

sales@cipcomposites.com

www.cipcomposites.com