EST. 1911

- UHMW-PE
- HDPE
- LDPE
- PEEK
- PTFE
- Tivar®
- Slidex®
- Nylons
- Phenolics
- G-Tec® & G-Flex®

ENGINEERED PLASTICS

Robco INC.

Engineered Solutions since 1911

Tradition in Innovation

Robco Engineered Plastics

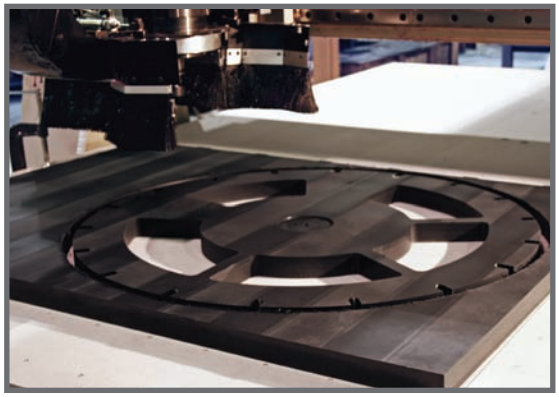
Robco's Plastics Division plays an important role in supplying a variety of products to the pulp and paper, steel, materials handling and transportation industries.

Manufacturing Capability

With a unique compression moulding and machining center located in Montreal, Robco holds the distinction of being the largest Canadian manufacturer and supplier of phenolic bearings and collars to the steel industry. We also manufacture Ultra High Molecular Weight Polyethylene drainage elements, extruded rubber and graphite suction roll sealing strips for the pulp and paper industry, as well as wear components for heavy industry.

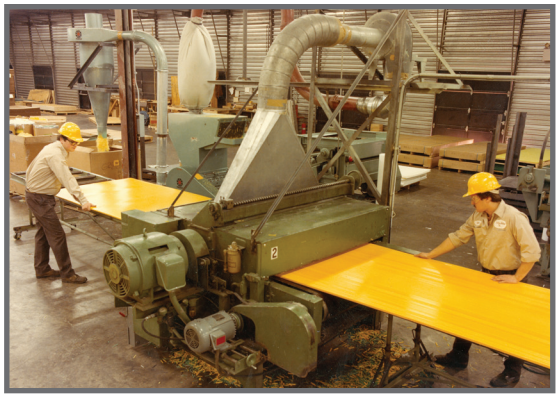
Engineering Group

Our engineering capabilities include proven processes and innovative solutions to maximize results and take full advantage of our engineers' and technicians' machining experience and cutting-edge equipment and processes: CNC cutting, machining, waterjet cutting, compression moulding, welding, stripping, milling, lathes.



Implicit Industry Knowledge

Time flies! Over 100 years in business means a great deal of experience under our belt through implicit industry knowledge. A culture of supporting our customers with products that provide value remains solid. We've been supplying and producing plastic parts for various industries since the 1950's.

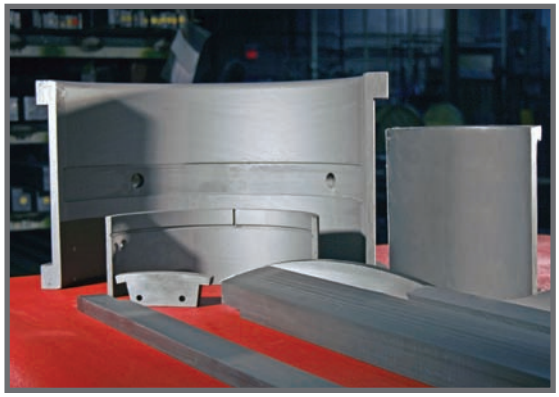


Expert Customer Service

Our on-site technicians, in-house PhD plastics expert and Customer Service department are available to guide you and answer all your questions in the selection of the ideal product for your application.

Pulp and Paper, Steel, Food and other Industries

Our manufactured plastic components play an important role in the pulp and paper process on suction rolls, boxes, foils and drainage elements. Bearings and collars for steel mills and float cell liners used in the mining process of various metals. FDA compliant materials are available.



Brakes, Clutches and Automotive Parts

Robco offers a broad diversity of friction products, phenolics and laminates that can be moulded or machined into any dimensional configuration for your individual application. We produce specific custom parts for giants in automotive and heavy equipment manufacturing.

Frac Balls

Robco Frac Balls have proven themselves to be critical components of cutting-edge downhole tooling used in hydraulic fracturing operations. Precision machining, rigid quality control procedures and careful material selection contribute to improving the likelihood of a successful, reliable well stimulation process.

We know the Industry

Our engineering experts can help determine the best, most cost-effective material for your engineered parts and, upon request, can participate in your development process or reverse engineer from your application and assist in the design of the final product..

Servicing Heavy Industry

Engineered Plastics

Robco INC.
Engineered Solutions since 1911

www.robco.com

UHMW-PE PRODUCTS

Robco 10-100 UHMW

UHMW-PE

High abrasion and wear resistance
High impact strength
Low coefficient of friction
FDA, NSF & USDA compliant

Robco 10-100 GF

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
62-66	3100	3000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
266-275°F/130°-135°C	180°F / 82°C	0.10-0.22

Bulk matrial handling, Food processing, Conveyor and packaging

Robco 10-100 GF UHMW

Glass-Filled UHMW-PE

Low coefficient of friction
Long service life
Superior abrasion & wear resistance

Robco 10-100 GF UHMW

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
63-69	2700	3000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
266-275°F/130°-135°C	180°F / 82°C	0.10-0.22

Chute and hopper liners, Dragline bucket liners, Wear strips

Robco 25-801

Reprocessed UHMW-PE

High abrasion and wear resistance
Low coefficient of friction
Economy grade

Robco 25-801

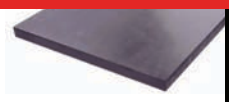
Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
63-69	3000	2800
Melt point	Service Temperature	Coefficient of Friction, Dynamic
266-275°F/130°-135°C	180°F / 82°C	0.10-0.22

Wear strips, Chute and hopper liners, Chain guides

Robco 7587

UHMW-PE

Improved wear resistance
Long service life
Excellent chemical resistance



Robco 7587 UHMW-PE

Hardness Shore D	Tensile Strength (psi)	Yield Strength (psi)
62-66	2900	2900
Melt point	Service Temperature	Coefficient of Friction, Dynamic
266-275°F/130°-135°C	180°F / 82°C	0.10 - 0.22

Wear strips, Chain guides, Light-duty guides & rails

Robco SLIDE-X

Antistatic Sliding Material

Excellent sliding properties even at higher load
Outstanding dry running characteristics
FDA & USDA compliant

Robco Slide-X

Hardness Shore D	Elongation at Break (%)	Compressive Strength (psi)
60	≥250	n/a
Melt point	Service Temperature	Coefficient of Friction, Dynamic
275°F / 135°C	180°F / 82°C	0.11

Conveyor technology, Material handling, Automation

Robco XTP

UHMW - Polyethylene-PE

Modified UHMW-PE
UV stabilized
Elevated temperature resistant

Robco XTP

Hardness Shore D	Tensile Strength (psi)	Yield Strength (psi)
63-69	5200	2900
Melt point	Service Temperature	Coefficient of Friction, Dynamic
266-275°F/130°-135°C	350°F / 177°C	0.10 - 0.14

Minimized thermal degradation at elevated temperatures

Robco XWP

UHMW-PE Superior Abrasion Resistance

Superior abrasion resistance - greater than standard UHMW
Low coefficient of friction
Excellent chemical and corrosion resistance
No moisture absorption. No sticking, even when freezing
High impact strength
UV Stabilized

Robco XWP

Hardness Rockwell R Scale	Tensile Strength (psi)	Yield Strength (psi)
67	5200	2800
Melt point	Service Temperature	Coefficient of Friction, Dynamic
266-275°F/130°-135°C	180°F / 82°C	0.12

Liners and wear components in all types of unit and bulk material handling applications

Robco Natural Nylon 6/6

Extruded Nylon

Good abrasion and wear resistance, long service life, high strength and stiffness at elevated temperatures, chemical resistance to alkalies and oxidizing agents, lghtweight (approx. 1/8 vs. bronze).
Natural is FDA and USDA compliant

Robco Nylon 6/6

Hardness Shore M	Tensile Strength (psi)	Compressive Strength (psi)
85	12000	n/a
Melt point	Service Temperature	Coefficient of Friction, Dynamic
430°F / 221°C	220°F / 104°C	n/a

Bearing and wear applications. Machined into parts to replace bronze, brass, steel and aluminum.

Nycast® 6Pa

Natural or Black

Light-weight, offers extremely good wear resistance, high tensile strength and high module of elasticity. The natural material is an off white unmodified type 6 nylon which is FDA, USDA, and 3A - dairy compliant and can be used in the food industry.

Robco Nycast 6Pa

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
78-84	10000-13500	13500-16000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
430°F / 221°C	230°F / 110°C	0.26

Bearings, Wear pads, Gears, Valve seals, Pulleys, Sprockets, Wear Plates, Thrust Washers, Food industry components

Nycast® 6PA MoS_2

Moly Filled

Improved wear resistance, compressive strength and is a popular choice as a dry lubricant-filled bearing material.

Nycast 6PA MoS2

Hardness Shore R	Tensile Strength (psi)	Compressive Strength (psi)
110-120	10000-13500	14000-16500
Melt point	Service Temperature	Coefficient of Friction, Dynamic
430°F / 221°C	230°F / 110°C	0.22

Bearings, Wear pads, Gears, Valve seals, Pulleys, Sprockets, Wear Plates, Thrust Washers,

Nycast® 6PA XHA

Economical Grade

Can work at higher operating temperatures
Retains physical properties under higher temperatures
Light weight
Excellent abrasion and wear resistance
Easy to machine

Nycast 6 PA XHA

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
110-120	10000	13500
Melt point	Service Temperature	Coefficient of Friction, Dynamic
430°F / 221°C	250°F / 121°C	0.26

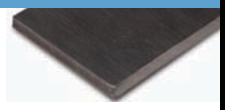
Operating at 200°F (93°C) will have approximately the same physical properties as a standard material at 185°F (85°C).

Robco INC.
Engineered Solutions since 1911
www.robco.com

NYLONS

SPECIALTY

Nyloil® & Nyloil® FG



Meets FDA Regulations

Reduced water absorption for higher dimensional stability Nyloil will not spin out, dry out, or drain out, even under the harshest operating conditions. Nyloil FG Meets FDA Regulations 21 CFR, Section 177.15 and USDA 3A Sanitary Standards 20-17 for direct contact with food.

Nyloil & Nyloil FG

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
74-80	9500-11000	13500-15000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
430°F / 221°C	230°F / 110°C	0.12

Bearings, Wear pads, Gears, Valve seals, Pulleys, Sprockets, Wear Plates, Thrust Washers, Food industry components (FG)

Nyloil® MDX

For demanding applications

Works succesfully in marine applications. A cast nylon with built-in oil lubrication, NYLOIL provides superior machinability, performance and durability compared to other plastic and traditional bearing materials. Reduced water absorption promotes higher dimensional stability. Works and machines as easily as brass. Oil will not spin out, dry out, or

Nyloil MDX

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
74-80	10500-11000	13500-14000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
430°F / 221°C	230°F / 121°C	0.12

Marine applications, Harshest operating conditions.

Robco 22

Regular Cotton Phenolic

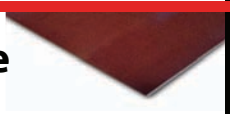
Offers better impact strength than phenolic paper grades. It meets or exceeds the requirements of MIL-I-24768/16 and IEC-60893-4-PF CC 201.

Robco 22

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
100	9700-12000	34000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
n/a	257°F / 125°C	n/a

Excellent for a variety of mechanical applications: gears, sheaves, insulators, bushings, washers, and rollers.

Robco 22 Electrical Grade



Nema Grade CE

Manufactured with a cotton fabric and phenolic resin, Robco 22 Electrical grade is easy to machine and possesses lower moisture absorption and enhanced electrical properties. Robco 22 Electrical grade meets or exceeds the requirements of MIL-I-24768/14.

Robco 22 Electrical Grade

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
100	9700-12000	34000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
n/a	239°F / 115°C	n/a

Excellent for a variety of mechanical applications that must be electrically insulated

Robco 1024

Cotton Phenolic with Graphite

Canvas phenolic laminate with graphite added as a solid lubricant. This material has improved wear properties under certain conditions. Material is conductive to electricity and should not be used where this is detrimental to the application.

Robco 1024

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
90	7000-10000	38000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
n/a	257°F / 125°C	n/a

Excellent for a variety of mechanical applications that must be electrically insulated

Robco INC.
Engineered Solutions since 1911
www.robco.com

SPECIALTY

Robco 2024

Cotton Phenolic with Molybdenum Disulfide

Canvas phenolic laminate with molybdenum disulfide lubricant. The mechanical properties are slightly lower than Robco 22. It is used for lubricity in the composite when carbon (graphite) cannot be used because of conductivity.

Robco 2024

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
100	9000-11000	36000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
n/a	293ºF / 145ºC	n/a

Excellent for a variety of mechanical applications that must be electrically insulated

Robco Acetal

For Wet Applications

Low friction and high wear resistance for parts designed to replace metal. Offers good chemical resistance, high dimensional stability and low moisture absorption.

Robco Acetal

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
85	9500	15000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
330ºF / 166ºC	180ºF / 82ºC	0.21

Mechanical engineering, Electrical industry, Medical engineering

Robco Blue Vincon® PVC Tubing

Air Load Tubes

Suction roll air loading tubes made from blue Vincon and PVC. Reduce tube failure problem by preventing tube over expansion.

Robco Blue Vincon PVC Tubing

Hardness Shore A	Tensile Strength (psi)	Compressive Strength (psi)
55	1831	n/a
Melt point	Service Temperature	Coefficient of Friction, Dynamic
413ºF / 212ºC	165ºF / 74ºC	n/a

Industrial Grade Tubes

Robco G-Flex®

Flexible Graphite Suction Roll Seals

A flexible graphite suction roll seal material specially designed for the specific requirements of a suction roll seal. Flexible and fracture resistant, it will typically run longer than harder seal materials.

Robco G-Flex

Hardness Shore D	Tensile Strength (psi)	Coeff. Thermal Expansion
63	n/a	19x10-6 in/in/ºF
Melt point	Service Temperature	Coefficient of Friction, Dynamic
n/a	250ºF / 121ºC	0.12

Pulp and paper industry

Robco G-Tec®

Suction Roll Seal Material for End Deckles

Much tougher than rubber graphite, it will not fracture easily from impact. Contains no rubber. Its elastomeric binder is a tough blend of non-abrasive synthetic resin loaded with graphite and PTFE to glide against shell.

Robco G-Tec

Hardness Shore D	Tensile Strength (psi)	Coeff. Thermal Expansion
75	n/a	7.11x10-5 in/in.ºF
Melt point	Service Temperature	Coefficient of Friction, Dynamic
n/a	250ºF / 121ºC	n/a

Pulp and paper industry

Engineered Plastics

Robco INC.
Engineered Solutions since 1911
www.robco.com

SPECIALITY

Robco HDPE Virgin Natural

High-Density Polyethylene

Excellent overall mechanical properties
High chemical resistance
Easy to machine and weld
HDPE Virgin Natural is FDA and USDA compliant

Robco HDPE Virgin Natural

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
65	4000	n/a
Melt point	Service Temperature	Coefficient of Friction, Dynamic
268°F / 131°C	180°F / 82°C	0.20-0.29

Tanks and vessels, Light-duty guides and rails, Food cutting boards

Robco PEEK

Polyether Ether Ketone

Excellent dimensional stability
Very low smoke density
Flame retardant and self-extinguishing
PEEK is FDA and USDA compliant

Robco PEEK

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
85	16000	18000
Melt point	Service Temperature	Coefficient of Friction, Dynamic
630°F / 332°C	480°F / 249°C	0.4

Aviation industry, Medical engineering, Electrical industry

Robco Polypropylene

The Versatile Plastic

Excellent chemical resistance
High impact strength
High weldability
Polypropylene is FDA and USDA compliant

Robco Polypropylene

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
69	3500	4400
Melt point	Service Temperature	Coefficient of Friction, Dynamic
323°F / 162°C	180°F / 82°C	0.25-0.28

Ventilation & duct systems, Chemical engineering & tankbuilding, Pump parts

Robco PTFE

Polytetrafluoroethylene

Not wetted by most liquid substances,
Ideal for FDA usages
Very low coefficient of friction
Excellent chemical resistance
Available in filled versions as well

Robco PTFE

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
58	3480	580-725
Melt point	Service Temperature	Coefficient of Friction, Dynamic
620°F / 327°C	500°F / 260°C	0.06

Used all over the food industry, in pipework for reactive and corrosive chemicals and as friction reducing material

GLASS LAMINATES

Robco Glass Polyester GPO3

Fiberglass reinforced thermoset polyester

Excellent combination of high strength, flame resistance and low smoke generation

Robco GPO3

Hardness Shore D	Tensile Strength (psi)	Compressive Strength (psi)
n/a	7800	33100
Specific Gravity	Service Temperature	Flexural Strength (psi)
1.81	180°F / 130°C	22100

Engineered Plastics

Robco INC.
Engineered Solutions since 1911

www.robco.com

GLASS LAMINATES

Robco Glass Silicone G-7

Woven Glass and Brominated Epoxy Laminate

Excellent mechanical and electrical characteristics.

*If FR Grade

Robco G-7

Hardness Shore M	Tensile Strength (psi)	Compressive Strength (psi)
105	37000	63000
Specific Gravity	Operating Temperature	Flexural Strength (psi)
1.78	428°F / 220°C	75000

Robco Glass Melamine G-9

Woven Glass and Melamin Resin Laminate

Excellent electrical properties and high physical strength and excellent arc resistance.

*If FR Grade

Robco G-9

Hardness Shore M	Tensile Strength (psi)	Compressive Strength (psi)
115	39000	70000
Specific Gravity	Operating Temperature	Flexural Strength (psi)
1.85	284°F / 140°C	55000

Robco Glass Epoxy G-10

Woven Glass and Epoxy Resin Laminate

Very good mechanical strength and impact resistance with excellent electrical properties.

*If FR Grade

Robco G-10

Hardness Shore M	Tensile Strength (psi)	Compressive Strength (psi)
99	43000	44000
Specific Gravity	Operating Temperature	Flexural Strength (psi)
1.77	284°F / 140°C	66000

Robco Glass Epoxy G-11

Woven Glass Epoxy Laminate

Excellent physical, mechanical and electrical properties even at elevated temperatures.

*If FR Grade

Robco G-11

Hardness Shore M	Tensile Strength (psi)	Compressive Strength (psi)
110	41000	50000
Specific Gravity	Operating Temperature	Flexural Strength (psi)
1.91	356°F / 180°C	57000

Also available in FR Grades

Tubes Sheets Machined

LEGEND

High Temp. | Chemical Resistance | Self Lube | Flame Retardant | Food Grade | Pulp & Paper

General Industrial | Gear apps. | Bearing apps. | Rollers Conveyors | Frac Balls

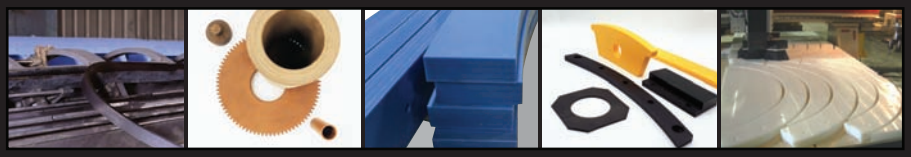
Also available:
Friction Materials
And
Flotation Cell Liner
brochures

Engineered Plastics

Since 1911, Robco products are used everywhere in heavy industry as components of original equipment and in aftermarket maintenance and repair.

Robco's plastics division has been the Canadian front runner in supplying specialty technical plastics and engineered plastic parts. First to supply PTFE and UHMW within Canada, Robco used its knowledge of engineering plastic to manufacture a variety of maintenance products to the steel, pulp and paper and material handling industries.

ISO 9001 and ISO 14001 Certified, our commitment to focusing on engineered solutions has fostered an alignment between our customers' satisfaction and our success while caring for our environment.



Total Cost of Ownership

Our T.C.O. approach to problem-solving often results in our customers saving more than the acquisition cost of the products supplied.

Robco Engineered Plastic Materials are stocked, cut, laminated and machined at our Montreal, and Toronto facilities, ensuring unsurpassed quality control and quick turnaround times for our North American customers.

Robco INC.

Engineered Solutions since 1911

www.robco.com

MONTREAL	**Tel.: 514.367.2252**	**Fax: 514.367.1144**
MISSISSAUGA	**Tel.: 905.564.6555**	**Fax: 905.564.6901**
EDMONTON	**Tel.: 780.469.0601**	**Fax: 780.469.0765**

Email: info@robco.com

Engineered Plastics - Heat Resistant Materials - Rubber Products - Metallic Gaskets
Soft Gaskets - Mechanical Seals - Compression Packing - Lubricants & GreaseS