

Engineered Sheet Rubber

Product Selection Guide



Garlock
RUBBER TECHNOLOGIES®

an EnPro Industries company

Garlock Rubber

Garlock Rubber Technologies offers the most extensive line of sheet rubber in the industry. Our top quality products are made with pride at our state of the art facility in Paragould, Arkansas.

Garlock Rubber Technologies success is founded on experience, innovation, state of the art technology and dedication to quality. For nearly 120 years, we've been a leader in the rubber industry with many technical 'firsts'.

- First to use the alkali reclaim process which cures rubber more efficiently and makes it easier to handle.
- First to develop and patent the Rotocure Vulcanization Process, for uniform continuous process curing.
- First to use the Bierer Davis Oxygen Bomb to accelerate rubber aging tests.

Garlock Rubber Technologies also maintains one of the industry's most advanced technical labs, where we test the physical, chemical and component properties of materials and finished products. Our computer controlled manufacturing equipment ensures the tightest possible gauge tolerances and highest quality control. That technology, combined with extensive employee training and experience, means our quality is guaranteed.

Our experienced engineering and field support staff are available to help you decide which products are best for your job requirements. And we have a wide range of made to order capabilities so we can customize a product to meet your special needs.

Call Garlock Rubber Technologies for unsurpassed quality and service, including:

- Everything in rubber sheeting including SBR, natural, nitrile, neoprene, EPDM, butyl, CPE, and VITON®. Available in custom made colors and finishes with or without fiber reinforcement.
- Complete line of slit to width skirtboard and chute lining and protecting products for the construction, aggregate and conveyor belting markets.
- Complete line of cushioning products for the road and bridge construction, building construction and vibration isolation markets.
- Gauge thicknesses from 1/32" to 2" (0.8 mm to 50.8 mm)



- 1/32" to 1/4" (0.8 mm to 6.4 mm) thicknesses available up to 72" (1828 mm) in width.
- 1/4" to 1/2" (6.4 mm to 12.7 mm) thicknesses available up to 72" (1828 mm) in width.
- 1/2" to 3" (12.7 mm to 76.2 mm) thicknesses available up to 48" (1219 mm) in width.
- Heavy gauge over 3/8" (9.5 mm) available up to 50' (15.24 m) lengths.

VITON® is a registered trademark of DuPont Dow Elastomers.

Contents

Safety Information	2
Product Selection Guide	3
Non Oil Resistant Sheet	5
Commercial Grade Neoprene Sheet	6
Neoprene Oil and Ozone Resistant Sheet	7
Nitrile Oil Resistant Sheet	8
Neoprene Diaphragm Sheet	9
Food Grade Sheet	10
Cloth Inserted Sheet	11
Chute Lining and Extruded Skirtboard	12
VIBLON™ Cushioning Pads	13
Neoprene Bearing Pads	14
High Performance Sheet Rubber-500 Series	15
Chemical Resistance Guidelines	16
Chemical Resistance Charts	17
Elastomers and Performance Characteristics	22
Custom Items	24
Ordering and Service Information	25
ANSI /ASTM Information	25
Metric Conversion Charts.....	26

Safety Information

READ THIS PAGE BEFORE USING ANY OF THE INFORMATION IN THIS CATALOG

This catalog is intended as a guide to selecting the proper sheet rubber for the applications listed herein. It contains important cautions, warnings, guidelines and directions for the safe and proper use of Garlock sheet rubber. All these directions and footnotes should be read and understood before specifying or using any of these sheet rubber products. Symbols, boxes, boldface type, etc. are used to call attention to these instructions. Be sure to read and understand them before proceeding further with this information.



WARNING

- Certain sheet rubber applications are dangerous, such as those involving high temperatures, fuels and flammables, high pressures or chemical exposure.
- An in-service failure of sheet rubber can result in serious bodily injury or property damage. Do not use the sheet rubber products above the temperatures recommended by the manufacturer.
- All operators must be thoroughly trained to inspect for leakage and other signs of gasket wear.
- Failure or misapplication of a seal, gasket or sheet rubber could cause the release of poisonous, corrosive or flammable material resulting in serious bodily injury, such as burns to the skin, eyes or respiratory system through coming in contact with the escaping fluid vapor.
- Personnel located in areas close to systems containing these dangerous materials must be properly equipped with protective clothing, facial protection and emergency breathing equipment.
- SERVICE LIFE: The service life of a sheet rubber will decrease as the application approaches the upper temperature limit. The service life of sheet rubber products in high temperature applications depends on the specific details of the application, including chemicals and/or oils in contact with the rubber.

CONSULT THE CHEMICAL RESISTANCE GUIDELINES BEGINNING ON PAGE 17 OF THIS CATALOG FOR VITON®, CPE, AND BUTYL PRODUCTS. CALL GARLOCK AT (800) 643.0134 OR FAX (800) 325.0506 FOR ADDITIONAL APPLICATION GUIDELINES AND CHEMICAL COMPATIBILITY INFORMATION ON OTHER SHEET PRODUCTS.

Product Selection Guide

Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Specifications	Page No.
Bay State 22	NAT/SBR	Red	70-85	1,000 (700) 69 (48)	ASTM D-1330 Gr. I & II	5
Style 50	NAT/SBR	Red	70-85	800 (400) 55 (28)	ASTM D-1330 Gr. II	5
Style 135	Natural	Tan	35-45	3,400 (3,000) 235 (207)	ASTM D2000-AA-430	5, 12
Style 563	EPDM	Black	55-65	1,700 (1,500) 117 (104)	ASTM D2000-3BA-615-B13-C12	5
Style 564	EPDM	Black	55-65	1,200 (1,000) 83 (69)	ASTM D2000-2BA-610-C12	5
Style 244	Blended CR/ NBR/SBR	Black	35-45	900 (800) 62 (55)	ASTM D2000-BC-408	6
Style 254	Blended CR/ NBR/SBR	Black	55-65	1,000 (800) 69 (55)	ASTM D2000-BC-508	6
Style 264	Blended CR/ NBR/SBR	Black	55-65	1,100 (800) 76 (55)	ASTM D2000-BC-608	6
Style 274	Blended CR/ NBR/SBR	Black	65-75	1,200 (1,000) 83 (69)	ASTM D2000-BC-710	6
Style 284	Blended CR/ NBR/SBR	Black	75-85	1,400 (1,000) 97 (69)	ASTM D2000-BC-810	6
Style 5240	Neoprene	Black	35-45	1,700 (1,500) 117 (104)	ASTM D2000-5BC-413-A14-B14-E034	7
Style 5260	Neoprene	Black	55-65	1,800 (1,500) 124 (104)	ASTM D2000-2BE-615-A14-B14-C12- E014-F17-Z1	7
Style 5280	Neoprene	Black	75-85	1,800 (1,500) 124 (104)	ASTM D2000-2BE-815-A14-B14-C12- E014-F17	7
Style 361	Nitrile	Black	55-65	2,000 (1,800) 138 (124)	ASTM D2000-BF-618	8
Style 363	Nitrile	Black	55-65	1,200 (1,000) 83 (69)	ASTM D2000-BF-610	8
Diaphragm Style 3205, 3206, 3210	Neoprene	Black	65-75	1,500 (1,400) 104 (97)	ASTM D2000-BC-714	9

* Figures are for rubber compound without fabric.

NOTE: Stock items appear in BOLD type. For items and sizes not listed, contact Customer Service at 800.643.0134.

NOTE: The chart on pages 3 and 4 lists the basic physical properties of each Garlock sheet rubber style, making it easier to match your specifications and requirements to a Garlock material.

Since each application is unique, when trying to match a sheet rubber to a specific application various criteria should be considered including the list on page 26 under "Information Necessary for Custom Manufacturing".

Further information regarding the use of Garlock sheet rubber is available by calling Garlock Customer Service at 800.643.0134.

Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Specifications	Page No.
Style 362	Nitrile	White	55-65	1,700 (1,500) 104 (83)	ASTM D-200-2BF-615-E034	10
Multi-Ply 2103	SBR/NBR Polyester Fabric	Black	70-80	1,300 (1,000) 90 (69)	ASTM D2000-BC-810-Z1	11
Style 2102	SBR/NBR Polyester Fabric	Black	70-80	1,300 (1,000) 90 (69)	ASTM D2000-BC-810-Z1	11
Style 2264	Blended SBR/CR/ NBR Polyester Fabric	Black	55-65	1,100 (800) 76 (55)	ASTM D2000-BC-608	11
Super RINOHIDE™	SBR	Black	55-65	2,800 (2,500) 193 (173)	ASTM D2000-BA-625	12
RINOBACK™	SBR/Cottonback	Black	55-65	2,800 (2,500) 193 (173)	ASTM D2000-BA-625	12
Tan Gum Style 135	Natural	Tan	35-45	3,400 (3,000) 235 (207)	ASTM D2000-AA-430	12
Style 7164	SBR	Black	55-65	2,400 (2,000) 166 (138)	ASTM D2000-BA-620	12
Smooth Skirtboard	SBR	Black	55-65	1,000	ASTM D2000-AA-610	12
VIBLON™	Nitrile	Tan	-	N/A	Designed to meet MIL-C-822E specifications	13
Bearing Pads	Neoprene & Natural	Black	45-55	2,600 (2,250) 179 (155)	Designed to meet AASHTO specifications	14
			55-65	2,800 (2,250) 193 (155)		
			65-75	3,000 (2,250) 207 (155)		
Style 501 Branded	VITON®	Black	70-80	1,300 (1,000) 90 (69)	ASTM D2000-2HK-710-B37-Z1	15
Style 505 Branded	CPE	Black	65-75	2,000 (1,800) 138 (124)	ASTM D2000-BA-615	15
Style 509 Branded	Butyl	Black	55-65	1,800 (1,500) 124 (104)	ASTM D2000-BA-615	15

* Figures are for rubber compound without fabric.
VITON® is a registered trademark of DuPont Dow Elastomers.

NOTE: Stock items appear in BOLD type. For items and sizes not listed, contact Customer Service at 800.643.0134.

WARNING

Exposure to chemicals, fuels, oils or heat can affect the performance of sheet rubber and cause the product to lose its ability to maintain a seal, causing leakage or other failure which could result in property damage, serious injury or death. Since each application is unique, consult Customer Service at 800.643.0134 or fax 800.325.0506 for further information.

Non-Oil Resistant Sheet

Excellent general purpose gasket materials for air, hot and cold water, saturated steam and exterior service.

Bay State 22

(Branded) has a smooth, rotocured finish. It is a blend of natural and SBR rubber, specially compounded to be quick-sealing, non hardening and heat resistant. It conforms easily to uneven flange surfaces.

- ASTM D 1330 Gr. I

Style 50

A cloth finish, drum-cured sheet. It is an excellent, low-cost, flange gasket material.

- ASTM D 1 330 Gr. II

Style 135

A full floating, natural rubber. It resists most organic salts, ammonia, acids and alkalies. It is non marking.

- ASTM D2000-AA-430

Style 563

An EDPM sheet that provides outstanding resistance to weathering, ozone and UV exposure. It provides excellent chemical resistance and dynamic properties.

- ASTM D2000-3BA-615-B13-C12

Style 564

Has the same general characteristics as Style #563, but it is a commercial quality sheet.

- ASTM D2000-2BA-610-C12



Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Bay State 22 Branded	Natural/SBR	Red	70-85	1,000 (700) 69 (48)	Smooth	200	4.7 [2.5]	up to 72 (1829)	1/16, 1/8, 1/4 (1.6, 3.2, 6.4)	-20°F to +180°F (-29°C to +82°C)
Style 50	Natural/SBR	Red	70-85	800 (400) 55 (28)	Cloth Impression	150	5.0 [2.7]	36, 48 (914, 1219)	1/16 thru 1/4 (1.6 thru 6.4)	-20°F to +180°F (-29°C to +82°C)
Style 135	Natural	Tan	35-45	3,400 (3,000) 235 (207)	Smooth	600	2.9 [1.6]	36, 48 (914, 1219)	1/16 thru 1 (1.6 thru 25.4)	-20°F to +180°F (-29°C to +82°C)
Style 563	EPDM	Black	55-65	1,700 (1,500) 117 (104)	Smooth	400	3.3 [1.8]	36 (914)	1/16 thru 1/4 (1.6 thru 6.4)	-40°F to +275°F (-40°C to +135°C)
Style 564	EPDM	Black	55-65	1,200 (1,000) 83 (69)	Smooth	350	3.6 [2.0]	36, 48 (914, 1219)	1/16 thru 1/2 (1.6 thru 12.7)	-20°F to +250°F (-29°C to +121°C)

* Refer to "Sheet Rubber Tolerances", page 26

Commercial Grade Neoprene Sheet

These products are blends of neoprene, nitrile and SBR rubbers. They are moderately oil-resistant, for use as bumpers, pads and in sealing and general gasket applications.

Style 244

A soft, good quality, blended CR/NBR/SBR sheet.

- ASTM D2000-BC-408

Style 254

A medium soft, good quality, blended CR/NBR/SBR sheet.

- ASTM D2000-BC-508

Style 264

A medium hard, good quality, blended CR/NBR/SBR sheet.

- ASTM D2000-BC-608

Style 274

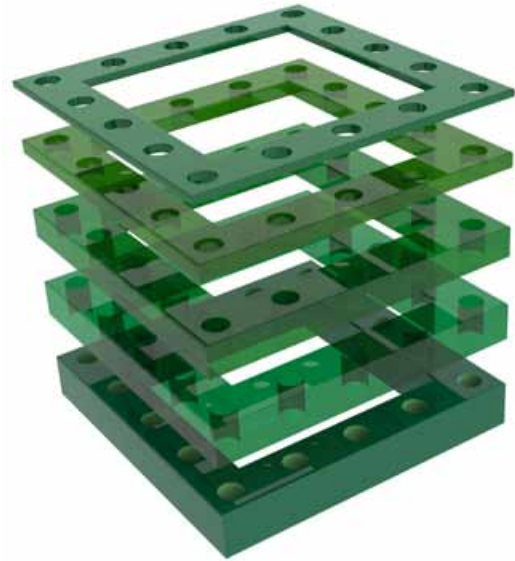
A hard, good quality, blended CR/NBR/SBR sheet.

- ASTM D2000-BC-710

Style 284

A hard, good quality, blended CR/NBR/SBR sheet.

- ASTM D2000-BC-810



Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 244	Blended CR/NBR/SBR	Black	35-45	900 (800) 62 (55)	Smooth	350	3.7 [2.0]	up to 72 (1829)	1/16 thru 1 (1.6 thru 25.4)	-20°F to +190°F (-29°C to +88°C)
Style 254	Blended CR/NBR/SBR	Black	45-55	1,000 (800) 69 (55)	Smooth	300	4.0 [2.2]	up to 72 (1829)	1/16 thru 1 (1.6 thru 25.4)	-20°F to +190°F (-29°C to +88°C)
Style 264	Blended CR/NBR/SBR	Black	55-65	1,100 (800) 76 (55)	Smooth	300	3.9 [2.1]	up to 72 (1829)	1/32 thru 2 (0.8 thru 50.8)	-20°F to +190°F (-29°C to +88°C)
Style 274	Blended CR/NBR/SBR	Black	65-75	1,200 (1,000) 83 (69)	Smooth	200	4.0 [2.2]	up to 72 (1829)	1/16 thru 1 (1.6 thru 25.4)	-20°F to +190°F (-29°C to +88°C)
Style 284	Blended CR/NBR/SBR	Black	75-85	1,400 (1,000) 97 (69)	Smooth	200	4.1 [2.2]	up to 72 (1829)	1/16 thru 1 (1.6 thru 25.4)	-20°F to +190°F (-29°C to +88°C)

* Refer to "Sheet Rubber Tolerances", page 26

Neoprene Oil and Ozone Resistant Sheet

This blended neoprene sheet is used where good oil, petroleum, ozone and weathering resistance is needed. It is very popular due to the broad range of applications in which it may be used.

Style 5240

A soft, premium-grade, neoprene sheet with good resistance to oil, weathering and ozone exposure.

- ASTM D2000-5BC-413-A14-B14-E034

Style 5260

A medium hard, premium grade, neoprene sheet.

- ASTM D2000-2BE-615-A14-B14-C12-E014-F17-Z1 (Z1 Equals 300% Elongation)

Style 5280

A hard, premium grade, neoprene sheet with good oil resistance.

- ASTM D2000-2BE-815-A14-B14-C12-E014-F17



Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 5240	Neoprene	Black	35-45	1,700 (1,500) 117 (104)	Smooth	500	3.9 [2.1]	36 (914)	MTO**	-40°F to +200°F (-40°C to +93°C)
Style 5260	Neoprene	Black	55-65	1,800 (1,500) 124 (104)	Smooth	300	4.0 [2.2]	36 (914)	1/16, 1/8, 1/4 (1.6, 3.2, 6.4)	-40°F to +200°F (-40°C to +93°C))
Style 5240	Neoprene	Black	75-85	1,800 (1,500) 124 (104)	Smooth	150	4.5 [2.4]	36 (914)	1/16 thru 1/4 (1.6 thru 6.4)	-30°F to +250°F (-34°C to +121°C)

* Refer to "Sheet Rubber Tolerances", page 26

** Made to Order

Nitrile Oil Resistant Sheet

Nitrile sheet is primarily used for applications where resistance to oil, solvents and fuels is required. Garlock offers several styles of nitrile sheet, each carrying different specifications.

Style 361

A high tensile strength and is a superior product in applications requiring improved physical properties such as abrasion resistance, tear strength and stretch.

- ASTM D2000-BF-618

Style 363

A good quality, oil resistant nitrile sheet.

- ASTM D2000-BF-610



Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 361	Nitrile	Black	55-65	2,000 (1,800) 138 (124)	Smooth	400	3.5 [1.9]	36 (914)	1/16, 1/8, 1/4 (1.6, 3.2, 6.4)	-30°F to +200°F (-34°C to +93°C)
Style 363	Nitrile	Black	55-65	1,200 (1,000) 83 (69)	Smooth	300	3.8 [2.1]	36, 48 (914, 1219)	1/16, 1/8, 1/4 (1.6, 3.2, 6.4)	-30°F to +200°F (-34°C to +93°C)

* Refer to "Sheet Rubber Tolerances", page 26

** Made to Order

Neoprene Diaphragm Sheet

Each of these diaphragm sheets is manufactured with a high quality compound designed for long service. Each is reinforced with high quality, square woven duck to provide balanced structural strength over the entire area of the diaphragm. Recommended for control valves, regulators and pumps, they also make excellent weather strip materials.

Style 3205

A 7.5 oz./sq. yd. (254 g/sq. m), polyester fabric with neoprene covers. Good oil resistance. One ply of fabric per 1/16" (1.6 mm) thickness.

- ASTM D2000-BC-714

Style 3206

A 14 oz./sq. yd. (480 g/sq. m), cotton duck fabric with neoprene covers. Good oil resistance. One ply of fabric per 1/16" (1.6mm) thickness.

- ASTM D2000-BC-714

Style 3210

A 14 oz./sq. yd. (480 g/sq. m), strong nylon duck fabric with neoprene covers. Good oil resistance. One ply of fabric per 1/16" (1.6mm) through 3/16" (4.8mm) thickness. Two plies of fabric in 1/4" (6.4mm) thickness.

- ASTM D2000-BC-714



Product	1 Ply	2 Ply	3 Ply	4 Ply
Style 3205	370 psig (26 bar)	860 psig (59 bar)	1,000 psig (69+ bar)	1,000 psig (69+ bar)
Style 3206	315 psig (22 bar)	655 psig (45 bar)	950 psig (66 bar)	1,000 psig (69+ bar)
Style 3210	1,200+ psig (83+ bar)	-	-	-

Mullen Burst Test Ratings for Fabric

Obtained using burst tester with 1.24 inch (31.5mm) diameter opening. Per ASTM D751

Product	Elastomer	Color	Durometer (Shore A) **	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Wt. Fabric Oz./Yd ²	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 3205	Neoprene	Black	65-75	1,500 (1,400) 104 (97)	Smooth	300	4.0 [2.2]	7.5 Polyester	56 (1422)	1/16 thru 1/4 (1.6 thru 6.4)	-20°F to +200°F (-29°C to +93°C)
Style 3206	Neoprene	Black	65-75	1,500 (1,400) 104 (97)	Smooth	300	3.5 [1.9]	14.0 Cotton	56 (1422)	1/16 thru 1/4 (1.6 thru 6.4)	-20°F to +200°F (-29°C to +93°C)
Style 3210	Neoprene	Black	65-75	1,500 (1,400) 104 (97)	Smooth	300	4.0 [2.2]	14.0 Cotton	56 (1422)	1/16 thru 1/4 (1.6 thru 6.4)	-20°F to +200°F (-29°C to +93°C)

* Refer to "Sheet Rubber Tolerances", page 26

** Figures are for rubber compound without fabric.

Food Grade Sheet

Garlock Food Grade Sheet is manufactured from Food and Drug Administration approved ingredients. It is a superior, long life sheet designed specifically for general gasketing, counter tops and skirting in all areas of food processing and pharmaceutical and cosmetics manufacturing. Approved by USDA for meat and poultry processing.

Style 362

A white nitrile sheet made from FDA approved ingredients per Z1 CFR 177.2600. It also meets "3A Sanitary Standards for Multiple Use Rubber and Rubber Like Materials used as product contact surfaces in dairy equipment," Number 18 02, Class III and IV. It has good resistance to oily and greasy food products and abrasion. This sheet is non marking.

- ASTM D2000-2BF-615-E034



Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 362	Nitrile	White	55-65	1,700 (1,500) 117 (104)	Smooth	400	3.8 [2.1]	36, 48 (914, 1219)	1/16 thru 1/4 (1.6 thru 6.4)	-20°F to +200°F (-29°C to +93°C)

* Refer to "Sheet Rubber Tolerances", page 26

WARNING

Exposure to chemicals, fuels, oils or heat can affect the performance of sheet rubber and cause the product to lose its ability to maintain a seal, causing leakage or other failure which could result in property damage, serious injury or death. Since each application is unique, consult Customer Service at 800.643.0134 or fax 800.325.0506 for further information.

Cloth Inserted Sheet

Garlock cloth Inserted materials are designed to add stability where mechanical fastening is necessary, and to reduce gasket creep where heavy flange loading is required. For low line pressure applications such as air, hot and cold water, saturated steam and low pressure steam.

Style 2102 C.I.

A smooth finish SBR/NBR sheet, constructed with polyester fabric. One ply of fabric in 1/16" (1.6 mm) through 1/8" (3.2 mm) thicknesses. Two plies of fabric in 3/16" (4.8 mm) and 1/4" (6.4 mm) thicknesses.

- ASTM D2000-BC-810-Z1 (Z1 equal to 70 85 Durometer)

Style 2103 C.I.

A smooth finish SBR/NBR sheet constructed with polyester fabric. Designed to reduce creep in flanges. One ply of fabric per 1/16" (1.6 mm) thickness.

- ASTM D2000-BC-810-Z1 (Z1 equal to 70 80 Durometer)

Style 70 C.I.

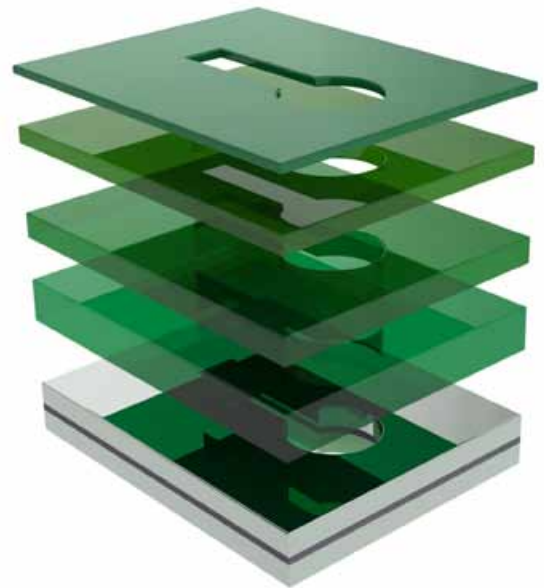
Style #2102 quality with cloth impression. One ply of fabric in 1/16" (1.6 mm) and 1/8" (3.2 mm) thicknesses. Two plies of fabric in 3/16" (4.8 mm) and 1/4" (6.4 mm) thicknesses.

- ASTM D2000-BC-810-Z1 (Z1 equal to 70 85 Durometer)

Style 2264

A smooth finish NBR/CR/SBR sheet, constructed with polyester. For moderate oil resistant applications. One ply of fabric in 1/16" (1.6 mm) through 1/8" (3.2 mm) thicknesses. Two plies of fabric in 3/16" (4.8 mm) and 1/4" (6.4 mm) thicknesses.

- ASTM D2000-BC-608



Product	Elastomer	Color	Durometer (Shore A)**	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 2102 C.I.	SBR/NBR	Black	70-80	1,300 (1,000) 90 (69)	Smooth	200	4.6 [2.5]	36, 48, 72 (914, 1219, 1829)	1/16 thru 1/4 (1.6 thru 6.4)	-20°F to +200°F (-29°C to +93°C)
Style 2103 C.I.	SBR/NBR	Black	70-80	1,300 (1,000) 90 (69)	Smooth	200	4.6 [2.5]	36, 48, 72 (914, 1219, 1829)	1/8, 3/16, 1/4 (3.2, 4.8, 6.4)	-20°F to +200°F (-29°C to +93°C)
Style 70 C.I.	SBR/NBR	Black	70-80	1,300 (1,000) 90 (69)	Cloth Finish	200	4.6 [2.5]	48 (1219)	1/16, 1/8 (1.6, 3.2)	-20°F to +200°F (-29°C to +93°C)
Style 2264	Blended NBR/CR/SBR	Black	55-65	1,100 (800) 76 (55)	Smooth	300	3.9 [2.1]	36, 72 (914, 1829)	1/16, 1/8, 3/16, 1/4 (1.6, 3.2, 4.8, 6.4)	-20°F to +190°F (-29°C to +88°C)

* Refer to "Sheet Rubber Tolerances", page 26

** Figures are for rubber compound without fabric.

Chute Lining and Extruded Skirtboard

Garlock features a complete line of products for protecting applications such as: belt wipers, chute lining, skirtboards, bumper stock, impact pads, laundry lining, sand and shot blast curtains, scraper stock, tumbler liners and many more. Garlock chute lining has been proven, through years of on the job service, to perform well. Super RINOHIDE™, in particular, performs with superior resistance to abrasion, impact, aging and weathering.

Super RINOHIDE™ Style 7160

The most versatile protection material in the line. It is suitable for all of the above applications. It is made of specially compounded SBR to withstand severe impact and abrasion.

- ASTM D2000-BA-625

Tan Gum Style 135

Highest tensile strength, made of pure gum rubber, used for skirtboard, bumper stock, laundry lining, sand and shot blast curtains, scraper stock and tumbler liners.

- ASTM D2000-AA-430

Style 7164

Made of SBR and is most often used as chute lining. Other applications include belt wipers and laundry lining. An optional duck fabric backing is also available on minimum quantity orders.

- ASTM D2000-BA-620

Smooth Skirtboard

Made of SBR. Standard sizes available:

1/4" (6.4 mm) gauge in widths of 4", 5", 6", 8", 10", 12", and 48" (102, 127, 152, 203, 254, 305, and 1219 mm)

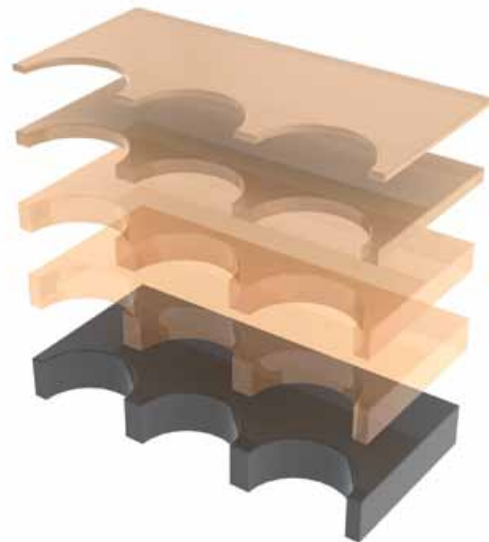
3/8" (9.5 mm) gauge in widths of 4", 5", 6", 8", 10", 12", and 48" (102, 127, 152, 203, 254, 305, and 1219 mm).

1/2" (12.7 mm) gauge in widths of 4", 5", 6", 8", 10", 12", and 48" (102, 127, 152, 203, 254, 305, and 1219 mm).

3/4" (19.1 mm) gauge in widths of 4", 6", 8", 10", and 12" (102, 152, 203, 254, and 305 mm)

1" (25.4 mm) gauge in widths of 6", 8", 10", and 12" (152, 203, 254, and 305 mm)

- ASTM D2000-AA-610



Product	Elastomer	Color	Durometer* (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Super RINOHIDE™	SBR	Black	55-65	2,800 (2,500) 193 (173)	Smooth	500	1.5 [0.8]	48 (1219)	1/8 thru 1 (3.2 thru 25.4)	-20°F to +200°F (-29°C to +93°C)
Tan Gum Style 135	Nitrile	Tan	35-45	3,400 (3,000) 235 (207)	Smooth	600	1.28 [0.7]	36, 48 (914, 1219)	1/4 thru 1 (6.4 thru 25.4)	-20°F to +180°F (-29°C to +82°C)
Style 7164	SBR	Black	55-65	2,400 (2,000) 166 (138)	Smooth	300	1.70 [0.9]	48 (1219)	1/8 thru 1 (3.2 thru 25.4)	-20°F to +200°F (-29°C to +93°C)
Smooth Skirtboard	SBR	Black	55-65	1,000	Cloth or smooth	300	1.62 [0.9]	4 thru 12 (102 thru 305)	1/4 thru 1 (6.4 thru 25.4)	-20°F to +180°F (-29°C to +82°C)

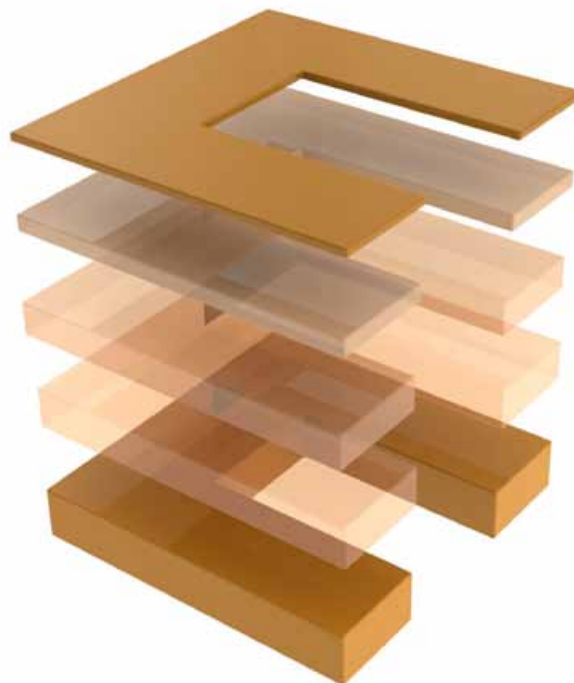
* Refer to "Sheet Rubber Tolerances", page 26

VIBLON™ Cushioning Pads

Garlock VIBLON pads are technically engineered and specifically designed to cushion impact, shock and vibration. Constructed of multiple layers of high quality, cotton polyester duck fabric, completely impregnated with specially designed nitrile compounds.

VIBLON™

VIBLON is the answer to vibration, noise, impact, and shock problems. It is manufactured to the rigid requirements of Military Specification MIL C 882 E, American Association of State Highway and Transportation Officials (AASHTO), and the Federal Bureau of Public Roads. Designed for use in bridge, industrial machinery and railroad applications. Test report and certifications will be furnished on request. Conforms to article 2.10.3 (1) AASHTO specifications.



Product	Elastomer	Color	Maximum Compressive Load	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
VIBLON™	Nitrile	Tan	10,000 psig (690 bar)	Smooth	Not Applicable	†	48 (1219)	1/8, 5/64, 11/32, 1/2, 3/4, 1 (3.2, 6.0, 8.7, 12.7, 19.1, 25.4)	-20°F to +200°F (-29°C to +93°C)

WARNING

Exposure to chemicals, fuels, oils or heat can affect the performance of sheet rubber and cause the product to lose its ability to maintain a seal, causing leakage or other failure which could result in property damage, serious injury or death. Since each application is unique, consult Customer Service at 800.643.0134 or fax 800.325.0506 for further information.

Neoprene Bearing Pads

Garlock Neoprene Bearing Pads provide a uniform transfer of load from beam to substructure. They permit beam rotation at the bearing point due to deflection or misalignment. They absorb vibration and prevent sound transfer, while reducing the destructive action of vibration between movable and stationary structural members. They also provide for movement caused by normal expansion and contraction.

Neoprene Bearing Pads are used extensively in bridge structures and prestressed and precast concrete buildings. Also used in industrial machinery and heavy equipment applications. Three styles are available:

Style 256

Stocked in a 48" (1219 mm) width and is made from a high quality neoprene. Durometer is 45-55 and its minimum ultimate elongation is 400%. CUT SLABS ARE STOCKED AND AVAILABLE.

Style 266

Stocked in a 48" (1219 mm) width and is made from a high-quality neoprene. Durometer is 55-65 and its minimum ultimate elongation is 350%. CUT SLABS ARE STOCKED AND AVAILABLE.

Style 276

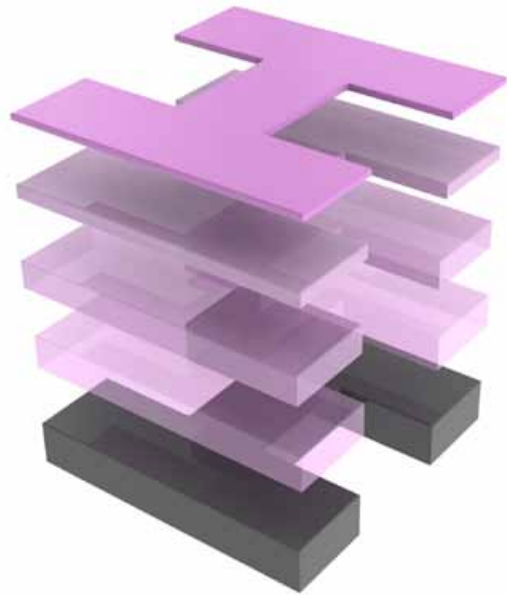
Stocked in a 48" (1219 mm) width and is made from a high quality neoprene. Durometer is 65-75 and its minimum ultimate elongation is 300%. CUT SLABS ARE STOCKED AND AVAILABLE.

Additional made-to-order bearing pads available:

- Natural rubber bearing pad material for colder climates
- Caltrans material for the State of California to meet section 51, item 51 1.12H(1)

Meets AASHTO Standard Specifications for Highway Bridges, 17th Edition 2002, Division II Construction, Section 18 Bearings, Grade 2, and AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 22nd Edition, 2002, Part 1A - Specifications, M251 -97 - Plain and Laminated Elastomeric Bridge Bearings.

NOTE: Some states specify requirements other than standard AASHTO specifications. When ordering, identify all requirements or submit individual state specification.



Product	Elastomer	Color	Durometer (Shore A)	Typical Tensile* (minimum) psi (bar)	Finish	Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 256	Neoprene	Black	45-55	2,600 (2,250) 179 (155)	Smooth	400	†	48 (1219)	1/8, 1/4, 1/2, 3/4, 1 (3.2, 6.4, 12.7, 19.1, 25.4)	-40°F to +200°F (-40°C to +93°C)
Style 266	Neoprene	Black	55-65	2,800 (2,250) 193 (155)	Smooth	350	†	48 (1219)	1/8, 1/4, 1/2, 3/4, 1 (3.2, 6.4, 12.7, 19.1, 25.4)	-40°F to +200°F (-40°C to +93°C)
Style 276	Neoprene	Black	65-75	3,000 (2,250) 207 (155)	Smooth	300	†	48 (1219)	1/8, 1/4, 1/2, 3/4, 1 (3.2, 6.4, 12.7, 19.1, 25.4)	-40°F to +200°F (-40°C to +93°C)

* Refer to "Sheet Rubber Tolerances", page 26

† Call Customer Service 800.643.0134

High Performance Sheet Rubber - 500 Series

Chemicals, oils and heat, taken together or individually, present critical and unique sealing applications. Sealing problems can be avoided by selecting sealing materials suited to the rigors of these applications.

To help you select the most appropriate material for your sealing application, Garlock has included in this catalog:

1. Chemical Resistance Chart
2. ASTM Specifications for all 500 Series Products
3. Safety Information, Specific Warnings and Maintenance Precautions that will assist in proper safety planning and material selection.

Style 501

Sheet rubber, made with VITON® fluoroelastomer, is a high performance product resistant to heat, oils, fuels, numerous acids and other chemicals.

- ASTM D2000-2HK-710-B37-Z1
(11 equals durometer of 75 ±5 Shore A)

Physical	Style 501	Style 505	Style 509
Properties	(VITON®)	(Butyl)	(CPE)
Compression Set <i>Meets ASTM Test D395, 22 hrs at test temperature, % Max.</i>	175°C (347°F) 50%	100°C (212°F) 60%	125°C (257°F) 60%
Resistance to Heat <i>Meets ASTM D573 Heat Aged Test of 70 hrs at test temperature</i>	250°C (482°F)	125°C (257°F)	125°C (257°F)
Change in hardness, pts	±15	±15	±15
Change in Tensile, %	±30	±30	±30
Change in Elongation, % Max	-50	-50	-50
Specific Gravity	1.85	1.11	-
Oil Resistance <i>Meets D471 Oil Immersion Test, No. 3 Oil, 70 hours at 150°C (302°F),</i> Change in Volume, % Max	10	-	-

Style 505

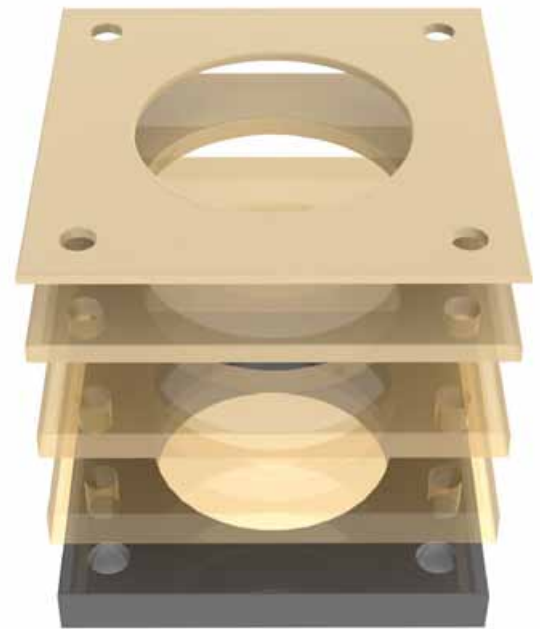
A branded, chlorinated polyethylene (CPE) sheet rubber product. CPE has excellent resistance to many chemical groups such as oils, acids, bases and alcohols. CPE is also very resistant to oxidation, heat and ozone.

- ASTM D2000 2CE-718-B15

Style 509

A branded, chlorobutyl sheet rubber product, also referred to as "Butyl" sheet.

- ASTM D2000-BA-615



Product	Elastomer	Color	ASTM D2240 Durometer (Shore A)**	Typical Tensile ASTM D412 (minimum) psi (bar)	Finish	ASTM D412 Ultimate Elongation (% min)	Approx. Wt. Lbs/Yd ² [kg/m ²] 1/16" [1.6mm]	Width* Inches (mm)	Stock Gauge* Inches (mm)	Temperature Range
Style 501 Branded	VITON®	Black	70-80	1,300 (1,000) 90 (69)	Smooth	175	5.4 [2.9]	36, 48 (914, 1219)	1/16, 1/8, 1/4 (1.6, 3.2, 6.4)	-15°F to +400°F (-26°C to +204°C)
Style 505 Branded	Chlorinated Polyethylene	Black	65-75	2,000 (1,800) 138 (124)	Smooth	350	4.1 [2.2]	36 (914)	1/16, 1/8, 1/4 (1.6, 3.2, 6.4)	-20°F to +275°F (-29°C to +135°C)
Style 509 Branded	Butyl	Black	55-65	1,800 (1,500) 124 (104)	Cloth Finish	350	3.3 [1.8]	36 (914)	1/16, 1/8, 3/16, 1/4 (1.6, 3.2, 4.8, 6.4)	-30°F to +300°F (-34°C to +149°C)

* Contact Customer Service for width and gauge tolerance.
VITON® and HYPALON® are registered trademarks of DuPont Dow Elastomers.

Garlock Chemical Resistance Guidelines

The following tables list the most commonly used materials, chemicals, solvents, oils, etc. The tables do not imply conformance to the Food and Drug Administration requirements or Federal or State Laws when handling food products, chemicals, or dangerous or toxic materials.

The following chemical list is offered as a guide to the chemical resistance properties of Garlock Style 505 and 509. It should be used as a guide only, since the degree of resistance of any elastomer to a particular fluid depends upon such variables as temperature, fluid concentration, pressure conditions, velocity of flow, duration of exposure, aeration, stability of the fluid, etc.

Therefore, when in doubt, you should not rely solely on this guide in critical nature applications. Critical nature applications are those where personal safety, life and property damage could occur due to premature failure. Tests should be devised that simulate actual service conditions as nearly as possible.

WARNING



Testing can be dangerous and should be done only by trained personnel using proper tools and procedures. Failure to follow such procedures might result in damage to property and serious bodily injury. Contact your Garlock representative for technical assistance.

Restrictions on VITON® Fluoroelastomer

Due to its extensive range of chemical resistance, the listings for Style 501 are only partially shown in this publication.

Certain families of chemicals will attack and degrade parts made with VITON®. This chemical attack may cause Style 501 to lose its ability to maintain a seal. These chemical groups include:

1. Low molecular weight ketones
2. Esters, such as ethyl acetate
3. Amines
4. Strong bases, such as sodium hydroxide
5. Alkyl phosphate esters
6. Hot anhydrous hydrofluoric acid
7. Chlorosulfonic acid
8. Hot concentrated alkalies
9. Some proprietary fluids such as SKYDROL 500A

For resistance to chemicals other than those in this listing, contact Garlock at (800) 643 0134.

Maintenance and Inspection

The user must regularly inspect all flange connections, valve connections, and sealing devices incorporating rubber as the sealing member, *especially those applications in high heat environments*. The inspection procedure should include periodic checks such as:

1. Check for signs of leakage around fluid sealing areas.
2. Use leak detection devices for gas leakage.
3. Monitor actual operating temperatures.
4. Examine old gaskets or parts for evidence of potential sealing problems: compression set, tears around flange bolts, brittleness, swelling or other physical degradation.
5. Use standardized industry data for installation methods, test methods for specific application tests: ASTM Volumes 09.01 and 09.02 Rubber Products, Industrial.
6. Develop a preventive maintenance checklist and keep a log detailing inspection results.

VITON® is a registered trademark of DuPont Dow Elastomers.

Chemical Resistance Chart

Material	Style 501 VITON® Fluoro- elastomer	Style 505 CPE**	Style 509 Butyl**
ACETALDEHYDE	X	C	F
ACETIC ACID (GLACIAL)	X	F	A
ACETIC ESTER (ETHYL ACETATE)	X	C	F
ACETATE (VINYL ACETATE)	X	C	F
ACETONE	X	F	F
ACID CARBOLIC (PHENOL)	A	C	F
ACID, HYDROCHLORIC 10%	A	A	F
ACID, HYDROCHLORIC 37% (COLD)	A	A	F
ACID, HYDROCHLORIC 37% (HOT)	F	F	F
ACID, NITRIC 10%	X	X	A
ACID, NITRIC 37%	C	X	X
ACID, NITRIC 70%	C	X	X
ACID, NITRIC RED FUMING	X	X	X
ACID, PHOSPHORIC 20% to 45%	A	A	F
ACID, STEARIC	A	F	F
ACROLEIN	X	F	F
ACRYLONITRILE	C	C	X
ALCOHOL, FURFURYL	C	C	X
ALKYLAMINE (ETHYLAMINE)	X	C	F
ALKYLAMINE (ISOPROPYLAMINE)	X	C	F
ALUM	A	A	F
ALUMINUM SULFATE	A	A	F
2-AMINOETHANOL	X	F	F
AMINOBENZENE	X	X	F
AMINO ETHYLETHANOLAMINE	X	C	F
AMINO RESINS	X	C	F
AMMONIUM HYDROXIDE (38% MAX)	F	F	C
AMMONIUM ALUM	A	F	C
AMMONIUM NITRATE SOLUTIONS	F	A	A
ANILINE DYES	F	F	F
ANILINE OIL	X	X	F
ANIMAL FATS	A	F	X
ANTI-FREEZE (ALCOHOL)	C	A	A
ANTI-FREEZE (GLYCOL)	F	A	A
AQUA REGIA	C	C	X
ARSENIC ACID	A	F	F
ASPHALT (1500 F)	A	X	X
BENZENE (BENZOL)	A	X	X
BENZOIC ACID	A	C	X
BROMINE	A	X	X
BUNKER C	A	X	X
BUTANONE	X	X	F
BUTYL METHACRYLATE	X	X	X

Resistance Ratings

A = Good Resistance

The product is usually suitable for service.

F = Fair Resistance

The chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.

C = Depends on Condition

Moderate service may be possible if chemical exposure is limited or infrequent. Functionality must be determined by testing.

X = Not Recommended

The product is unsuitable for service.

** At temperatures up to 180°F (82°C)

For resistance to other chemicals not listed here, contact Garlock at 800.643.0134.

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WARNING

Exposure to chemicals, fuels, oils or heat can affect the performance of sheet rubber and cause the product to lose its ability to maintain a seal, causing leakage or other failure which could result in property damage, serious injury or death. Since each application is unique, consult Customer Service at 800.643.0134 or fax 800.325.0506 for further information.

Chemical Resistance Chart (con't)

Material	Style 501 VITON® Fluoro- elastomer	Style 505 CPE**	Style 509 Butyl**
CALCIUM CHLORIDE - 40%	A	A	A
CALCIUM HYDROXIDE	A	A	A
CARBON TETRACHLORIDE	A	X	X
CAUSTIC SODA (SODIUM HYDROXIDE)	X	A	A
CHLORO BENZENE	A	X	X
CHLOROFORM (TRICHLOROMETHANE)	A	X	X
COAL NAPHTHA	A	X	X
COAL OIL	A	X	X
COALTAR	A	X	X
CORN OIL (NON-EDIBLE)	A	F	F
COTTONSEED OIL (NON-EDIBLE)	A	F	F
CREOSOTE OIL (CREOSOTE)	A	C	X
CRUDE OIL	A	C	X
CRUDE TAR	A	C	X
CUMENE	A	X	X
DECALIN	A	X	X
DEXTROSE (FOOD GRADE)	X	X	X
1, 2-DIAMINOETHANE	X	C	A
DIBROMOETHANE	F	X	X
o-DICHLORO BENZENE	A	X	X
DICHLOROMETHANE	F	X	X
1, 2 DICHLOROPROPANE	F	X	X
DIESEL OIL	A	F	X
DIETHANOLAMIN E	X	C	F
DIETHYLENE TRIAMINE	X	C	F
1, 2 DIHYDROXYPROPANE	F	F	F
DIMETHYL PHTHALATE	F	X	F
ETHANOLAMIN E	X	F	F
ETHER, PETROLEUM (NAPHTHA)	A	C	X
ETHYL ACETATE	X	X	F
ETHYL ACRYLATE (ETHYL PROPENOATE)	X	C	F
ETHYL ALCOHOL (ETHANOL)	C	A	A
ETHYLAMINE (70 72%)	X	F	F
ETHYLENE CHOLOROHYDRIN	A	F	F
ETHYLENE DIBROMIDE	F	X	X
ETHYLENE DICHLORIDE	A	X	X
ETHYLENE GLYCOL	A	A	A
ETHYLENE GLYCOL METHYL ETHER	X	F	F
ETHYL METHYLACRYLATE	X	X	F
FATTY ACIDS	A	F	F
FORMALDEHYDE (FORMALIN) (40% max)	X	C	A
FUEL OILS (No.'s 1, 2, 3, 4, 5, 6)	A	X	X

Resistance Ratings

A = Good Resistance

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F = Fair Resistance

The chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.

C = Depends on Condition

Moderate service may be possible if chemical exposure is limited or infrequent. Functionality must be determined by testing.

X = Not Recommended

The product is unsuitable for service.

** At temperatures up to 180°F (82°C)

For resistance to other chemicals not listed here, contact Garlock at 800.643.0134.

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WARNING

Exposure to chemicals, fuels, oils or heat can affect the performance of sheet rubber and cause the product to lose its ability to maintain a seal, causing leakage or other failure which could result in property damage, serious injury or death. Since each application is unique, consult Customer Service at 800.643.0134 or fax 800.325.0506 for further information.

Chemical Resistance Chart (con't)

Material	Style 501 VITON® Fluoro- elastomer	Style 505 CPE**	Style 509 Butyl**
FURFURAL	X	C	X
FUSEL OIL	C	F	F
GALLIC ACID	F	F	F
GASOLINE	A	X	X
GLUCOSE (FOOD GRADE)	X	X	X
GLYCERINE (FOOD GRADE)	X	F	X
GLYCOL (ANTI FREEZE)	F	A	A
GRAIN ALCOHOL	C	A	A
GREASES	A	X	X
HEPTANE	A	C	X
HEXANE	A	C	X
HEXENE	A	C	X
HYDROBROMIC ACID 20%	A	A	F
HYDROCHLORIC 10%	A	A	F
HYDROCHLORIC 37% (COLD)	A	A	F
HYDROCHLORIC 37% (HOT)	F	F	F
HYDROFLUORIC ACID (COLD)	A	A	C
HYDROFLUOSILICIC ACID (50% max)	A	A	F
HYDROGEN PEROXIDE (50% max)	F	A	C
HYDROGEN SULFIDE WET	X	F	F
ISOPROPYLAMINE	X	C	F
JP 1,3,4,5	A	C	X
JET FUEL	A	C	X
KEROSENE	A	C	X
LATEX (SYNTHETIC AND NATURAL)	F	C	X
LINSEED OIL	A	F	F
LIQUID GLASS (WATER GLASS)	A	A	A
LIQUID ROSIN	A	X	X
LYE			A
MEK (METHYL ETHYL KETONE)	X	X	F
METHYL ALCOHOL	X	A	A
METHYL ACRYLATE	X	X	F
METHYL CHLOROFORM (1, 1, 1, TRICHLOROMETHANE)	A	X	X
METHYLENE CHLORIDE	F	X	X
METHYL METHACRYLATE	X	X	X
METHYL OLEATE	F	X	F
MINERAL GREASES	A	F	X
MOLASSES (EDIBLE, FOOD GRADE)	X	X	X
MOLASSES (NON EDIBLE)	A	A	A
MONOCHLOROBENZENE	A	X	X
NAPHTHA	A	C	X
NAPHTHA, COAL	A	C	X

Resistance Ratings

A = Good Resistance

The product is usually suitable for service.

F = Fair Resistance

The chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.

C = Depends on Condition

Moderate service may be possible if chemical exposure is limited or infrequent. Functionality must be determined by testing.

X = Not Recommended

The product is unsuitable for service.

** At temperatures up to 180°F (82°C)

For resistance to other chemicals not listed here, contact Garlock at 800.643.0134.

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WARNING

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Chemical Resistance Chart (con't)

Material	Style 501 VITON® Fluoro- elastomer	Style 505 CPE**	Style 509 Butyl**
NAPHTHALENE	A	C	X
NATURAL GASOLINE	A	X	X
NITRIC ACID 10%	X	F	A
NITRIC ACID 37%	C	X	X
NITRIC ACID 70%	C	X	X
OIL, COAL	A	X	X
OIL, COTTONSEED (NON-EDIBLE)	A	F	F
OIL, CREOSOTE	A	C	X
OIL, CRUDE	A	C	X
OIL, DIESEL	A	C	X
OIL, FUEL No. (1,2,3,4,5 and 6)	A	C	X
OIL, LINSEED (NON-EDIBLE)	A	F	F
OIL, LUBRICATING	A	C	X
OIL, RESIDUAL	A	C	X
OIL, SOYBEAN (EDIBLE)	X	X	X
OIL, SOYBEAN (NON-EDIBLE)	A	A	X
OIL, STOVE (KEROSENE)	A	C	X
OIL, IUNG	A	F	X
OILS, VEGETABLE (EDIBLE)	X	X	X
OILS, VEGETABLE (NON-EDIBLE)	A	A	X
OLEIC ACID	F	F	X
OLEUM (100%)	A	X	X
PALMITIC ACID (10%)	A	F	F
PARAFFIN (DEPENDS ON TEMP.)	A	A	X
PENTANE	A	C	X
PERCHLOROETHYLENE	F	X	X
PETROLEUM ETHER	A	F	X
PHENOL	A	C	F
PHENYLAMINE (ANILINE)	X	C	F
PHOSPHORIC ACID 20-45%	A	A	F
POLYVINYL ACETATE EMULSIONS	X	F	A
POTASSIUM ALUM	A	A	A
POTASSIUM ALUMINUM SULFATE	A	A	A
POTASSIUM SULFATE	A	A	A
PROPYLENE DICHLORIDE	A	X	X
PROPYLENE GLYCOL	F	A	A
ROSIN, LIQUID	A	F	X
SODA CAUSTIC	X	A	A
SODIUM HYDROXIDE	X	A	A
SODIUM HYPOCHLORITE	A	A	F
SODIUM SILICATE	A	A	A
SOYBEAN OIL (NON-EDIBLE)	A	X	F

Resistance Ratings

A = Good Resistance

The product is usually suitable for service.

F = Fair Resistance

The chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.

C = Depends on Condition

Moderate service may be possible if chemical exposure is limited or infrequent. Functionality must be determined by testing.

X = Not Recommended

The product is unsuitable for service.

** At temperatures up to 180°F (82°C)

For resistance to other chemicals not listed here, contact Garlock at 800.643.0134.

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WARNING

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Chemical Resistance Chart (con't)

Material	Style 501 VITON® Fluoro- elastomer	Style 505 CPE**	Style 509 Butyl**
SOYBEAN OIL (EDIBLE)	X	X	X
STABILIZED FAT (NON-EDIBLE)	A	F	F
STABILIZED FAT (EDIBLE)	X	X	X
STARCH SYRUP (NON-EDIBLE)	A	A	F
STEARIC ACID	A	F	F
STODDARD SOLVENT	A	X	X
STYRENE (MONOMER)	F	X	X
SULFURIC ACID 10% 150°F	A	A	F
SULFURIC ACID 50%100°F	A	A	F
SULFURIC ACID 75% 100°F	A	A	F
SULFURIC ACID 95% 70°F	A	A	X
SULFURIC ACID 96% AND HIGHER	A	X	X
SULFURIC ACID FUMING (140-F MAX) F	X	X	
SYRUP, CORN (NON-EDIBLE)	A	A	A
SYRUP, CORN (EDIBLE)	X	X	X
TALLOL	F	X	X
TALLOW (NON-EDIBLE)	A	F	F
TALLOW (EDIBLE)	X	X	X
TAR CRUDE	A	C	X
TETRACHLOROETHYLENE	A	X	X
TETRACHLOROMETHANE	A	X	X
TETRALIN	A	X	X
TOLUENE	A	X	X
TRICHLOROETHANE	A	X	X
TRICHLOROETHYLENE	A	X	X
TRICHLOROMETHANE (CHLOROFORM)	A	X	X
TUNGOIL	A	F	X
TURPENTINE	A	X	X
UREA	F	A	F
VARNISH	A	X	X
VEGETABLE GREASES	A	F	F
VEGETABLE OILS (NON-EDIBLE)	A	F	F
VEGETABLE OILS (EDIBLE)	X	X	X
VINEGAR (EDIBLE)	X	X	X
VINYL ACETATE (INHIBITED)	X	X	F
VINYL BENZENE (STYRENE)	F	X	X
VINYL TOLUENE	X	X	X
WATER GLASS	A	A	A
WHITE SPIRITS (NAPHTHA)	A	C	X
XYLENE	F	X	X

Resistance Ratings

A = Good Resistance

The product is usually suitable for service.

F = Fair Resistance

The chemical has some deteriorative effects, but the elastomer is still adequate for moderate service.

C = Depends on Condition

Moderate service may be possible if chemical exposure is limited or infrequent. Functionality must be determined by testing.

X = Not Recommended

The product is unsuitable for service.

** At temperatures up to 180°F (82°C)

For resistance to other chemicals not listed here, contact Garlock at 800.643.0134.

VITON® is a registered trademark of DuPont Dow Elastomers.

WARNING

Exposure to chemicals, fuels, oils or heat can affect the performance of sheet rubber and cause the product to lose its ability to maintain a seal, causing leakage or other failure which could result in property damage, serious injury or death. Since each application is unique, consult Customer Service at 800.643.0134 or fax 800.325.0506 for further information.

Elastomers and Performance Characteristics

Elastomer Type	Performance Characteristics
Butyl IIR (isobutylene-isoprene)	+ Excellent resistance to acids and alkalis. Excellent weathering properties and heat resistance. Excellent electrical resistance. Low permeability to air. - Poor resistance to fuels, solvents, oils and hydrocarbons. Cold weather properties are fair.
CPE (Chlorinated Polyethylene)	+ Excellent oxidation resistance. Good oil resistance, heat resistance, ozone resistance and weather resistance. Fair resistance to ketones and ethers. - Poor cold weather properties.
EPDM (ethylene-propylene diene)	+ Excellent resistance to ozone, sunlight and oxygen. Excellent resistance to acids, alkalis and ketones. Excellent heat resistance and aging. - Poor resistance to fuels and oils.
Fluoroelastomer (VITON® fluoroelastomer, a registered trademark of DuPont Dow Elastomers)	+ Excellent resistance to heat and oil combinations: hot greases found in engines and compressors. Excellent resistance to a wide range of concentrated acids. - High cost of fluoroelastomer may limit usage to extreme applications. Resilience is low and tear strength is limited unless certain compounding steps are taken to improve it. Impact resistance is fair.
SBR (Styrene butadiene)	+ Good abrasion resistance and excellent impact and cut-and-gouge resistance. Can be compounded for use as skirtboard rubber, lining rubber, conveyor belt covers, tires and other extremely demanding applications. Used as gasket material and as an economical general purpose sheet. - Not suited for use with oils, fuels, solvents, or hydraulic fluids.

Elastomer Type	Performance Characteristics
<p>Natural Rubber NR (Gum)</p>	<ul style="list-style-type: none"> + Good gasket material due to excellent physical properties such as resilience, tear strength and wear resistance. Natural rubber is used effectively as sand and shot blast curtain material because of its high abrasion resistance and resilience. - Deteriorates when exposed to oils, fuels, solvents, and hydraulic fluids. Poor resistance to sunlight, ozone and oxygen.
<p>Neoprene CR (chloroprene)</p>	<ul style="list-style-type: none"> + Good oil- and petroleum-based solvent resistance. Good weather and ozone resistance. Neoprene may be blended with SBR rubber CR (chloroprene) to achieve an economically priced sheet for moderately oil resistant applications. - Poor resistance to degreaser solvents. Content levels of neoprene can vary widely. Application problems may occur when using blended or commercial grades of neoprene sheet of unknown quality levels in contact with oil, solvents and fuels. <p>Where good oil or fuel resistance is required, the fabricator and user need to specify one of the following:</p> <ul style="list-style-type: none"> • A known manufacturer's product • An ASIM call-out • A military specification • An ASTM-specified oil resistance level based on an ASTM test (e.g. oil swell)
<p>Nitrile (butadiene-acrylonitrile)</p>	<ul style="list-style-type: none"> + Excellent resistance to oils, solvents and fuels. Resistant to a broader range of aromatic hydrocarbons than neoprene. Nitrile may be blended with SBR rubber to achieve an economically priced sheet for moderately oil resistant applications. - Application problems may occur when using nitrile of unknown quality levels in extreme oil resistance applications or in contact with fuels and solvents. <p>Content levels of nitrile can vary widely.</p> <p>Where oil or fuel resistance is required, the fabricator and user need to specify one of the following:</p> <ul style="list-style-type: none"> • A known manufacturer's product • An ASTM call-out • A military specification • An ASTM-specified oil resistance level based on an ASTM test (e.g. oil swell)

Custom Items

If you need sheet products other than those in this catalog, let us know your requirements. We have complete facilities to make a wide variety of custom products, using our formulations of your specifications.

Products can be manufactured with a variety of surface impressions from smooth to cotton fabric, fine or coarse nylon.

Information Necessary for Custom Manufacturing

A complete description of the product requirements and proposed service conditions should be furnished. This will enable us to quote the proper grade for best service at the lowest cost. Any samples submitted should be at least a 12 inch (300 mm) square. Use the following checklist to furnish data:

Description

1. Thickness, width and length
2. Tolerance (commercial or special)
3. Quantity
4. Durometer ± 5 (Shore A)
5. Tensile strength
6. Elongation
7. Cloth inserted (Cl.)
8. Cloth one side (C.O.S.)
9. Cloth both sides (C.B.S.)
10. All rubber
11. Surface (smooth, cloth impression)
12. Color
13. Untrimmed or trimmed to size

Service Conditions

1. Temperature
2. Heat (air, steam, water, oil)
3. Oil (type and extent of contact)
4. Chemicals
5. Concentration of chemical (%)
6. Partially or totally confined gasket
7. Abrasive condition(s)
8. Ozone
9. Other pertinent data

Specifications to be Met

1. Government
2. ASTM or SAE
3. Customer

VITON® is a registered trademark of DuPont Dow Elastomers.

Sheet Rubber Tolerances

Thickness	Tolerance	
	Inches	mm
1/32" (0.8mm)	± 0.012	± 0.3
1/16" (1.6mm) but not including 1/8" (3.2mm)	± 0.016	± 0.4
1/8" (3.2mm) but not including 3/16" (4.8mm)	± 0.020	± 0.5
3/16" (4.8mm) but not including 3/8" (9.5mm)	± 0.031	± 0.8
3/8" (9.5mm) but not including 9/16" (14.3mm)	± 0.047	± 1.2
9/16" (14.3mm) but not including 3/4" (19.1mm)	± 0.063	± 1.6
3/4" (19.1mm) but not including 1" (25.4mm)	± 0.093	± 2.4
1" (25.4mm) and over	$\pm 10\%$	

Width	Tolerance	
36" (914mm) and over	± 1	± 25.4

Sheet Rubber Tolerances — Neoprene Bearing Pads

Thickness	Tolerance	
	Inches	mm
1" (25.4mm) and below	-0, +1/8	-0, +3.2
Above 1" (25.4mm)	-0, +1/4	-0, +6.4

Width	Tolerance	
1" (25.4mm) gauges and below on widths 36" (914mm) and 48" (1219mm)	-0, +1"	-0, +25.4
Above 1" (25.4mm)	1"	25.4

ASTM Specifications

If you have other applications requiring other ASTM specifications not listed, please contact customer service at 800.643.0134.

Ordering and Service Information

Garlock Rubber Technologies is one of North America's most advanced manufacturers of industrial sheet rubber for gasketing, cushioning and protecting applications. Garlock offers a full line of sheet rubber products suited for a variety of end use applications.

Garlock serves end users through a worldwide network of industrial distributors who fabricate a variety of parts from our sheet products using many state of the art techniques. Garlock distributors modify and enhance our high-quality sheet products. The teamwork among Gar-lock, distributors and end users allows us to offer a complete package, ensuring high performance and top quality for all your rubber product applications.

Important Information You Should Know

ANSI/ASTM D 2000

American National Standards Institute
American Society for Testing and Materials

Are your rubber products meeting these standards or are you creating possible problems for you and your company?

ANSI / ASTM standards give you the assurance you are receiving the quality you deserve. Know what you're buying in a global economy.

Do you know that some products like commercial grade neoprene can contain very little neoprene and in some cases no neoprene at all? If the price is extremely low, it's more than likely you're not getting what you really want or need.

To ensure that you get what you pay for, buy rubber by the foot or yard, not by the pound. You get more material for the money and the best yield. Remember, rubber polymers weigh less than a lot of cheaper fillers like calcium carbonate or clay.

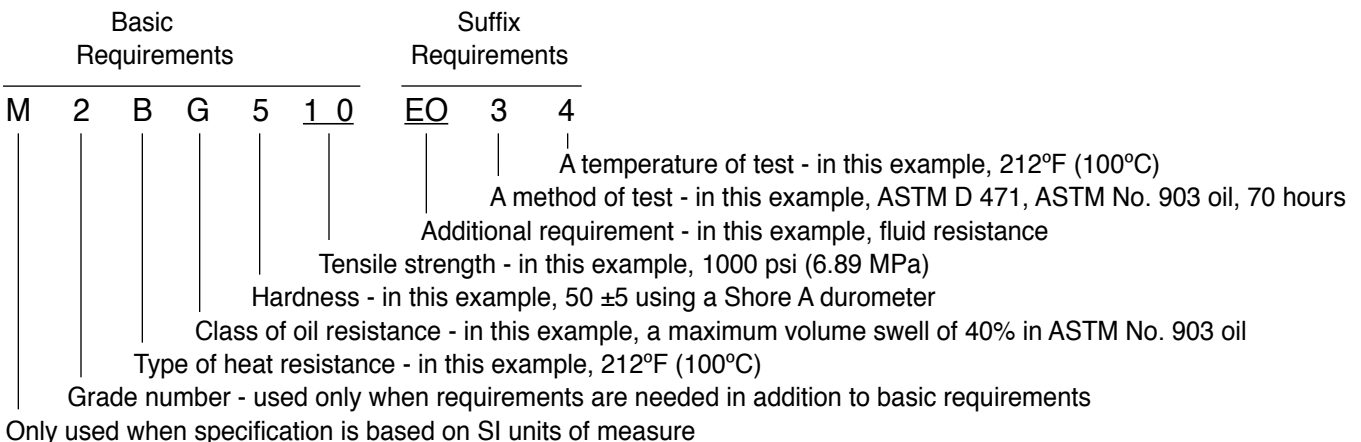
Guidelines to use when buying rubber products

Use ANSI/ASTM D 2000 Standards when ordering rubber products and be sure you verify these standards with your supplier.

- Buy rubber products by the foot or yard for better yields. Be sure to verify pounds vs. yields with your supplier.
- Buy from Garlock Rubber Technologies — Quality products made with pride in the U.S.A.

Phone: 800.643.0134. Fax: 800.325.0506

ASTM D2000 Line Callout



Metric Conversion Charts

Metric Conversion Table

Millimeters x .03937 = inches	Liters + 28.316 = cubic feet
Millimeters + 25.4 = inches	Hectoliters x 3.531 = cubic feet
Centimeters x 0.3937 = inches	Hectoliters x 2.84 = bushels (2150.42 cubic inches)
Centimeters 2.54 = inches	Hectoliters x .131 =cubic yards
Meters x 39.37 = inches	Hectoliters + 26.42 = gallons (231 cubic inches)
Meters x 3.281 =feet	Grams x 15.432 = grains
Meters x 1.094 = yards	Grams + 981 = dynes
Kilometers x .621 = miles	Grams (water) + 29.57 = fluid ounces
Kilometers = 1.6093 = miles	Grams + 28.35 = ounces avoirdupois
Kilometers x 3280.8693 = feet	Grams per Cu. Cent. + 27.7 = pounds per cubic inch
Square Millimeters x .00155 = square inches	Joule x .7373 = foot pounds
Square Millimeters + 645.1 = square inches	Kilograms x 2.2046 = pounds
Square Centimeters x .155 = square inches	Kilograms x 35.3 = avoirdupois
Square Centimeters + 6.451 = square inches	Kilograms + 907.2 = tons (2,000 pounds)
Square Meters x 10.764 = square feet	Kilograms per Sq. Cent. x 14.223 = pounds per square inch
Square Kilometers x 247.1 = acres	Kilogram meters x 7.233 = foot pounds
Hectare x 2.471 = acres	Kilograms per Meter x .062 = pounds per foot
Cubic Centimeters 16.383 = cubic inches	Kilograms per Cu. Meter x .062 = pounds per cubic foot
Cubic Centimeters + 3.69 = foot drams (USP)	Tonneau x 1.1023 = tons (2,000 pounds)
Cubic Centimeters + 29.57 = fluid ounces (USP)	Kilowatts x 1.34 = horse power
Cubic Meters x 35.315 = cubic feet	Watts + 746 = horse power
Cubic Meters x 1.308 = cubic yards	Watts x.7373 = foot pounds per second
Cubic Meters x 264.2 = gallons (213 cubic inches)	Calorie x 3.968 = BTU
Liters x 61.022 = cu. in.	Cheval Vapeau +.9863 = horse power
Liters x 33.84 = fluid ounces (USP)	(Centigrade x 1.8) + 32 = degrees Fahrenheit
Liters x .2642 =gallons (231 cubic inches)	
Liters + 3.78 = gallons (231 cubic inches)	

Millimeter to Inch Conversion 1" = 25.4mm

mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1	0.039370	26	1.023622	51	2.007874	76	2.992126	101	3.976378	126	4.960630	151	5.944882
2	0.078740	27	1.062992	52	2.047244	77	3.031496	102	4.015748	127	5.000000	152	5.984252
3	0.118110	28	1.102362	53	2.086614	78	3.070866	103	4.055118	128	5.039370	153	6.023622
4	0.157480	29	1.141732	54	2.125984	79	3.110236	104	4.094488	129	5.078740	154	6.062992
5	0.196850	30	1.181102	55	2.165354	80	3.149606	105	4.133858	130	5.118110	155	6.102362
6	0.236220	31	1.220472	56	2.204724	81	3.188976	106	4.173228	131	5.157480	156	6.141732
7	0.275591	32	1.259843	57	2.244094	82	3.228346	107	4.212599	132	5.196851	157	6.181102
8	0.314961	33	1.299213	58	2.283465	83	3.267717	108	4.251969	133	5.236221	158	6.220473
9	0.354331	34	1.338583	59	2.322835	84	3.307087	109	4.291339	134	5.275591	159	6.259843
10	0.393701	35	1.377953	60	2.362205	85	3.346457	110	4.330709	135	5.314961	160	6.299213
11	0.433071	36	1.417323	61	2.401575	86	3.385827	111	4.370079	136	5.354331	161	6.338583
12	0.472441	37	1.456693	62	2.440945	87	3.425197	112	4.409449	137	5.393701	162	6.377953
13	0.511811	38	1.496063	63	2.480315	88	3.464567	113	4.448819	138	5.433071	163	6.417323
14	0.551181	39	1.535433	64	2.519685	89	3.503937	114	4.488189	139	5.472441	164	6.456693
15	0.590551	40	1.574803	65	2.559055	90	3.543307	115	4.527559	140	5.511811	165	6.496063
16	0.629921	41	1.614173	66	2.598425	91	3.582677	116	4.566929	141	5.551181	166	6.535433
17	0.669291	42	1.653543	67	2.637795	92	3.622047	117	4.606299	142	5.590551	167	6.574803
18	0.708661	43	1.692913	68	2.677165	93	3.661417	118	4.645669	143	5.629921	168	6.614173
19	0.748031	44	1.732283	69	2.716535	94	3.700787	119	4.685039	144	5.669291	169	6.653543
20	0.787402	45	1.771654	70	2.755906	95	3.740157	120	4.724410	145	5.708662	170	6.692914
21	0.826772	46	1.811024	71	2.795276	96	3.779528	121	4.763780	146	5.748032	171	6.732284
22	0.866142	47	1.850394	72	2.834646	97	3.818898	122	4.803150	147	5.787402	172	6.771654
23	0.905512	48	1.889764	73	2.874016	98	3.858268	123	4.842520	148	5.826772	173	6.811024
24	0.944882	49	1.929134	74	2.913386	99	3.897638	124	4.881890	149	5.866142	174	6.850394
25	0.984252	50	1.968504	75	2.952756	100	3.937008	125	4.921260	150	5.905512	175	6.889764

Metric Conversion Charts

Temperature Conversion Table - Centigrade to Fahrenheit

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
-80	-112.0	21	69.8	53	127.4	250	482	570	1058	890	1634	1210	2210
-70	-94.0	22	71.6	54	129.2	260	500	580	1076	900	1652	1220	2228
-60	-76.0	23	73.4	55	131.0	270	518	590	1094	910	1670	1230	2246
-50	-58.0	24	75.2	56	132.8	280	536	600	1112	920	1688	1240	2264
-40	-40.0	25	77.0	57	134.6	290	554	610	1130	930	1706	1250	2282
-30	-22.0	26	78.8	58	136.4	300	572	620	1148	940	1724	1260	2300
-25	-13.0	27	80.6	59	138.2	310	590	630	1166	950	1742	1270	2318
-20	-4.0	28	82.4	60	140.0	320	608	640	1184	960	1760	1280	2336
-15	4.0	29	84.2	61	141.8	330	626	650	1202	970	1778	1290	2354
-10	14.0	30	86.0	65	149.0	340	644	660	1220	980	1796	1300	2372
-5	23.0	31	87.8	70	158.0	350	662	670	1238	990	1814	1310	2390
0	32.0	32	89.6	75	167.0	360	680	680	1256	1000	1832	1320	2408
1	33.8	33	91.4	80	176.0	370	698	690	1274	1010	1850	1330	2426
2	35.6	34	93.2	85	185.0	380	716	700	1292	1020	1868	1340	2444
3	37.4	35	95.0	90	194.0	390	734	710	1310	1030	1886	1350	2462
4	39.2	36	96.8	95	203.0	400	752	720	1328	1040	1904	1360	2480
5	41.0	37	98.6	100	212.0	410	770	730	1346	1050	1922	1370	2498
6	42.8	38	100.4	110	230	420	788	740	1364	1060	1940	1380	2516
7	44.6	39	102.2	120	248	430	806	750	1382	1070	1958	1390	2534
8	46.4	40	104.0	130	266	440	824	760	1400	1080	1976	1400	2552
9	48.2	41	105.8	140	284	450	842	770	1418	1090	1994	1410	2570
10	50.0	42	107.6	150	302	460	860	780	1436	1100	2012	1420	2588
11	51.8	43	109.4	160	320	470	878	790	1454	1110	2030	1430	2606
12	53.6	44	111.2	170	338	480	896	800	1472	1120	2048	1440	2624
13	55.4	45	113.0	180	356	490	914	810	1490	1130	2066	1450	2642
14	57.2	46	114.8	190	374	500	932	820	1508	1140	2084	1460	2660
15	59.0	47	116.6	200	392	510	950	830	1526	1150	2102	1470	2678
16	60.8	48	118.4	210	410	520	968	840	1544	1160	2120	1480	2696
17	62.6	49	120.2	212	413	530	986	850	1562	1170	2138	1490	2714
18	64.4	50	122.0	220	428	540	1004	860	1580	1180	2156	1500	2732
19	66.2	51	123.8	230	446	550	1022	870	1598	1190	2174		
20	68.0	52	125.6	240	464	560	1040	880	1616	1200	2192		

More than just great products...

Beyond offering you the widest available range of products for packing and sealing, Garlock enhances the value of its products with technical services and comprehensive training programs:

- A global network of stocking Authorized Garlock Distributors.
- Factory sales representatives and applications engineers available for problem solving when and where it is needed.
- Toll-free 800 telephone and fax numbers for immediate product information.
- In-plant surveys of equipment and processes, providing the customer with recommendations to identify and eliminate sealing and packing problems before they start.
- The most sophisticated and most comprehensive test facilities available.
- Technical field seminars on all Garlock products.
- Factory-sponsored product training programs, including hands-on seminars, to ensure that Garlock representatives and their distributor personnel are the best in the industry.
- Technical Bulletins to keep you up-to-date on product enhancements and changes.

Customers who specify Garlock fluid sealing products get, at no extra cost, the high quality support needed to run a profitable operation.

AUTHORIZED REPRESENTATIVE

Garlock
RUBBER TECHNOLOGIES®

an EnPro Industries company

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WARNING:

Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury.

Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing.

While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice.

GARLOCK is a registered trademark for packings, seals, gaskets, and other products of Garlock.

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Other Garlock facilities are located in:

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Columbia, SC, USA	Phone 1.803.783.1880	Fax 1.803.783.4279
Houston, TX, USA	Phone 1.315.597.4811	Fax 1.315.597.3216
Denver, CO, USA	Phone 1.303.988.1242	Fax 1.303.988.1922
Sydney, Australia	Phone 61.2.9793.2511	Fax 61.2.9793.2544
Auckland, New Zealand	Phone 64.9573.5651	Fax 64.9573.5636
São Paulo, Brazil	Phone 55.11.4352.6161	Fax 55.11.4352.8181
Sherbrooke, Canada	Phone 1.819.563.8080	Fax 1.819.563.5620
W. Yorkshire, England	Phone 44.1422.313600	Fax 44.1422.313601
Saint-Étienne, France	Phone 33.4.7743.5100	Fax 33.4.7743.5151
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Singapore	Phone 65.6285.9322	Fax 65.6284.5843
Shanghai, China	Phone 86.021.64544412	Fax 86.021.34080906
Dubai, UAE	Phone 971.4.8833652	Fax 971.4.8833682
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