TITAN INDUSTRIES

Manufacturer of Industrial Hose

Please call Goodyear Rubber Products to order any products shown in this catalog
1-727-822-4672 or 1-800-367-4673 toll free in the USA
Email inquiries to: Sales@GoodyearRubberProducts.com

INDUSTRIAL HOSE CATALOG

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MESSAGE TO OUR CUSTOMERS

South Gate, California

This year marks Titan's 30th anniversary. While we are proud of what we have accomplished, we are dedicated to building a better future for our customers and employees. We are truly honored that distributors and end-users have relied on us for the last three decades and we will continue to go to great lengths to earn their confidence and business. Each and every Titan associate is focused on providing the highest level of quality and customer service in the industry. It is our objective not only to meet our customer's needs, but also to exceed their expectations.

Titan's manufacturing and distribution facilities are strategically located throughout the United States in order to optimally serve our customers. Our California and Texas hose manufacturing facilities produce millions of feet of industrial hose every year in hose constructions up to 8-5/8" ID. We are also proud to be the largest full-service Custom Made Hose manufacturer in the United States. Our Custom Made Hose operations in California and North Carolina specialize in designing and fabricating hand-built application-engineered hoses and assemblies in sizes up to 60" ID. Finally, our stocking warehouses enable us to provide next day delivery to the vast majority of our customers throughout the United States.

As one of NAHAD's founding members, Titan is committed to producing high quality products and to using state-of-the-art manufacturing techniques. To that end, Titan proudly adheres to the NAHAD Industrial Hose Assembly Specification Guidelines. Established by NAHAD member volunteers, the guidelines provide performance recommendations for the specification, design and fabrication of hose assemblies and set a benchmark in our industry for safety, quality, and reliability.

You have our commitment that we will continue to dedicate our resources and efforts to the expansion of our line of exceptional industrial hose products and we are honored to have your support and trust.

Thank you,

Buddy Pepp
President

Todd Mackey
Chief Operating Officer

NAHAD Industrial Hose Listed Manufacturer

Mission Statement

We are an entrepreneurial organization passionate about our people and our products. We provide the highest level of quality and customer service in our industry.

Quality

Quality is an ongoing commitment at Titan and we continually test and refine our products to improve their performance in the field. Our excellence in manufacturing is complimented by our in-house fully equipped test laboratory. Titan's lab performs numerous tests to ensure quality including tensile, elongation, hardness, gravity, volume swell, oven aging, ozone, cold flex, burst, proof pressure, and impulse cycle testing.

Production

All Titan elastomers are formulated in-house and have been perfected through years of research and development. We do all of our own extruding and calendering and utilize several extrusion machines to produce one-piece seamless tubes that eliminate the possibility of delamination. Our South Gate, CA and Spring, TX facilities operate several Titan-designed arana spiral machines that manufacture hoses ranging from 1/2" to 8-5/8" I.D. Our Custom Made Hose Division is capable of producing custom hoses in sizes up to 60" I.D. with special custom manufactured ends (see page 8).

Brands

Titan labels all hose products for easy identification. Both Mylar and impression branding are available in a variety of colors and styles to meet your hose identification needs. Customized logos, colors and styles are also available upon special request.

Couplings

Titan's coupling capabilities include internally expanded, externally swaged, crimped, built-in, re-attachable, beaded ends, and rota-lok fittings. Hose assemblies can be made and tested at all of our manufacturing and warehouse facilities.

Military Specifications

With the support of our in-house laboratory, Titan has the ability to perform first article testing as required by certain government contracts. Titan is an established supplier to the U.S. government and we have a wide range of military hoses available to fulfill your needs (see page 50).

Product Warranty

All Titan parts and products are thoroughly inspected and tested from the time raw material is received at our factory until the product is complete. We guarantee that all products are free from defects in materials and workmanship. Any product that may prove defective in regards to material or workmanship within one year of purchase from Titan, will, at Titan's option, be promptly repaired, replaced, or credited for future orders. This warranty shall not apply to products that have been altered in any way, which have been repaired by any party other than an authorized Titan representative, or when such a failure is due to misuse, misapplication, or conditions of use. Titan shall have no liability for special or consequential damage to any party, and shall have no liability for labor costs or any other costs or charges in excess of the amount of the invoice for the products.

This warranty is in lieu of all other warranties, expressed or implied and specifically the warranties of merchantability and fitness for a particular purpose.

Freight

See current price schedule for freight terms.

Terms and Conditions

See current price schedule for terms and conditions.

South Gate, California

TITAN HOSE STYLES

STYLE	BUILD	REINFORCEMENT	HELIX	COVER	VACUUM
ES	Custom Made	Textile	None	Smooth	Discharge
EW	Custom Made	Textile	Steel Wire	Smooth	Suction
EWC	Custom Made	Textile	Steel Wire	Corrugated	Suction
LW	Custom Made	Textile	Steel Wire	Smooth	Suction
LWC	Custom Made	Textile	Steel Wire	Corrugated	Suction
SM	Machine Built	Textile	Monofilament	Smooth	Suction
SP	Machine Built	Textile	NA	External PVC Rod	Suction
SS	Machine Built	Textile	None	Smooth	Discharge
SW	Machine Built	Textile	Steel Wire	Smooth	Suction
SWC	Machine Built	Textile	Steel Wire	Corrugated	Suction

BASIC HOSE CONSTRUCTION

Most hoses are made up of three components: (1) Tube, (2) Reinforcement, (3) Cover. Each of these components is usually adhered to the adjacent components by bonding agents or thin layers of specially compounded rubber.

HOSE

- A flexible conduit consisting of a tube, reinforcement, and an outer cover.

TUBE

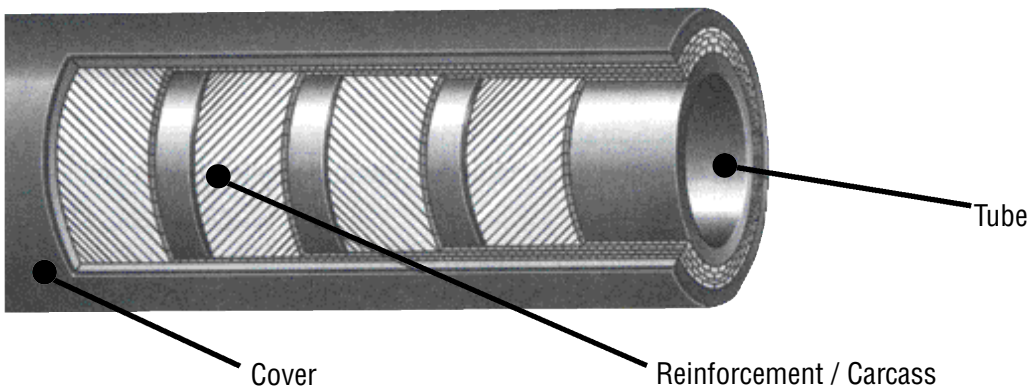
- The innermost element made of rubber or plastic, or a combination of both.
- The tube must be resistant to the material it is intended to convey.

REINFORCEMENT

- Textile, plastic or metal reinforcement, alone or combined, built into the body of the hose.
- The primary function is to withstand internal pressures and external forces.

COVER

- The outer element made of rubber, plastic, metal or textile materials.
- The primary function of the cover is to protect the reinforcement from damage and the environment.



Reprinted from **The Rubber Manufacturers Association, Inc. Hose Handbook, © IP-2, Seventh Edition, 2003**

HOSE FLEXIBILITY

Flexibility is determined by the minimum bend radius and the amount of force required to bend the hose. The minimum bend radius is defined as the radius to which the hose can be bent in service without damaging or appreciably shortening the life of the product. Perhaps more important in determining flexibility, the force-to-bend is defined as the amount of stress required to induce bending around a specified radius. The less force that is required, the easier the product is to maneuver in the field.

Different hose constructions may require significantly different forces to attain the same minimum bend radius. Generally, the preferred hose is the more flexible hose, provided all other properties are essentially equivalent.

TITAN CUSTOM MADE HOSE…MANUFACTURED TO YOUR SPECIFICATIONS

INDUSTRY LEADER

Titan Industries is proud to be the largest full-service Custom Made Hose manufacturer in the United States. Titan specializes in designing and fabricating hand-built application-engineered hoses and assemblies. We have extensive experience in the art and science of hose design, engineering, and production, and take pride in our ability to manufacture specialized products that meet the demanding requirements of the industrial marketplace.

STATE-OF-THE-ART DESIGN AND MANUFACTURING

Our experienced hose designers begin the manufacturing process by surveying your unique requirements and designing a material transfer solution ideally suited for your specific application. Utilizing computer controlled lathes that ensure consistent wrap pressure and material overlap, Titan's master hose builders bring the project to fruition by marrying traditional hand-built hose craftsmanship with state-of-the-art technology to fabricate a completed assembly capable of performing in even the most demanding application.

CUSTOMER SUPPORT

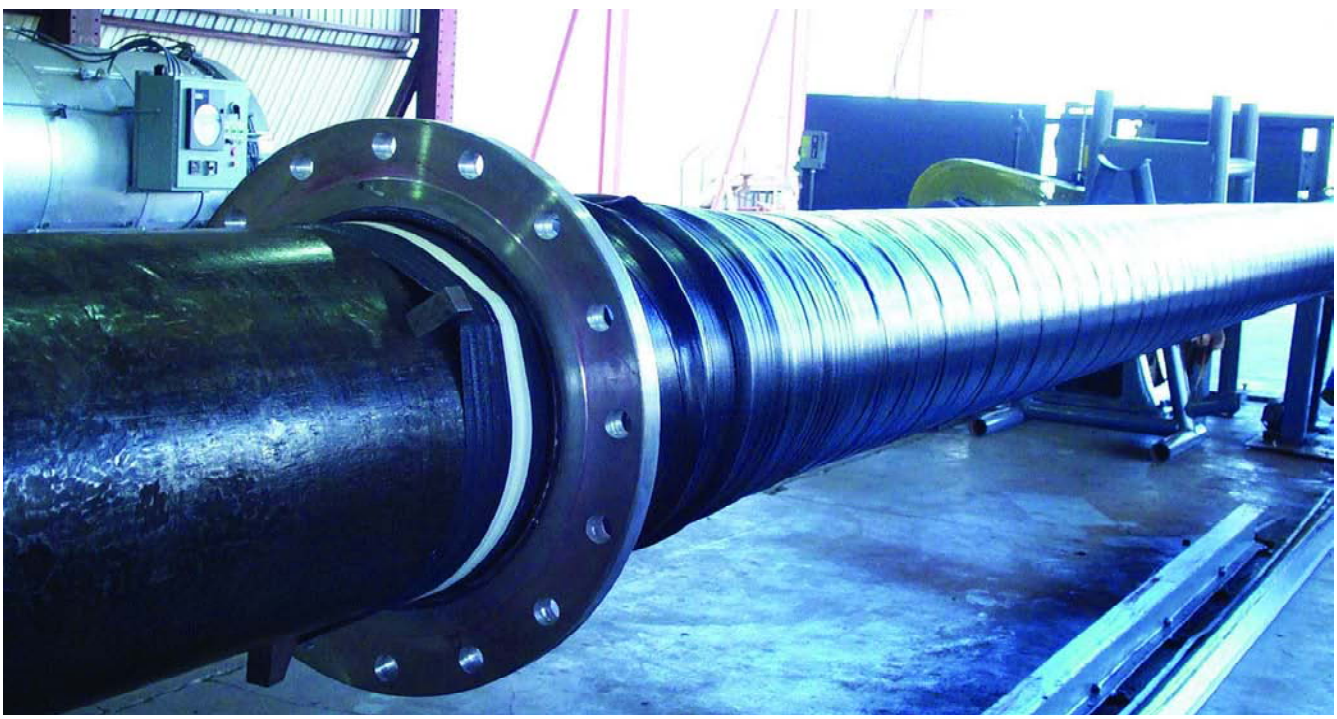
We are here to make your next project a success by filling your specialized orders quickly and affordably. We are confident that we can meet your needs by utilizing our manufacturing facilities in California and North Carolina, bi-coastal design centers, and our experienced sales and customer service teams. Call us today so that we can earn the right to be your preferred custom made hose supplier.

CUSTOM MADE HOSE DESIGN CENTERS

Salisbury, North Carolina
Arvada, Colorado

CUSTOM MADE HOSE MANUFACTURING FACILITIES

South Gate, California
Salisbury, North Carolina



DESIGN CAPABILITIES

Virtually any feature of a custom made hose can be modified to meet your specific requirements.

• Inside Diameter	• Color
• Outside Diameter	• Tube Thickness
• Length	• Working Pressure
• Weight	• Bend Radius
• Color	• End Fittings

INDUSTRIES

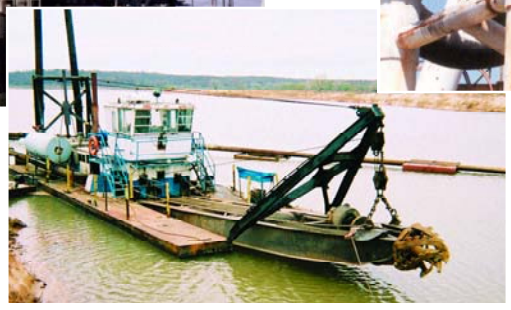
Applications requiring custom made hose can be found in nearly every industry.

• Bulk Hauling	• Mining and Mineral Processing
• Chemical Plants	• Paper Mills
• Concrete Plants	• Power Plants
• Construction	• Refineries
• Dock Facilities	• Sand and Gravel Plants
• Dredge Operations	• Sewage Treatment Plants
• Manufacturing Plants	• Steel Mills

APPLICATIONS

Titan's custom made hose products are ideally suited for applications that require special tube and cover compounds, large diameters, and built-in end fittings.

• Acid Discharge	• Oil Suction & Discharge
• Chemical Processing	• Sand Suction
• Concrete Transfer	• Slurry Pumping
• Hot Tar and Asphalt	• Tanker and Barge Transfer
• Material Handling	• Vapor Recovery
• Molten Sulphur Transfer	• Water Suction and Discharge



TITAN CUSTOM MADE HOSE... MANUFACTURED TO YOUR SPECIFICATIONS

SIZE CAPABILITIES

Our ability to manufacture large diameter hoses up to 60" I.D. opens endless possibilities - No job is too big!

Hose I.D.	Manufactured Length
2" to 16"	Any length up to 100 ft. maximum.
17" to 48"	Any length up to 60 ft. maximum.
49" to 60"	Any length up to 50 ft. maximum.

Autoclave for steam curing large diameter hoses

MANUFACTURING MATERIALS

Titan's highly trained chemists work with a wide variety of materials to meet the unique requirements of the industrial marketplace.

ASTM Designation	Common Name	Composition	General Properties
BR	Polybutadiene	Butadiene	Excellent abrasion and low temperature resistance. High resilience.
CR	Neoprene®	Polychloroprene	Good weathering resistance & flame retarding. Moderate resistance to petroleum based fluids. Good physical properties.
CSM	Hypalon®	Chlorosulfonyl-polyethylene	Excellent ozone, weathering, and acid resistance. Good resistance to heat, abrasion, and petroleum based fluids.
EA	Vamac®	Ethylene-acrylic elastomer	Outstanding heat, ozone, and oil resistance.
EPDM	Ethylene Propylene Rubber	Ethylene-propylene diene-terpolymer	Excellent ozone, chemical, and aging characteristics. Poor resistance to petroleum based fluids.
FKM	Fluoroelastomer	Fluorocarbon Rubber	Excellent high temperature resistance, particularly in air or oil. Very good chemical resistance.
IIR	Butyl	Isobutylene-isoprene	Very good weathering resistance. Low permeability to air. Good physical properties. Poor resistance to petroleum based fluids.
	Kevlar®		Unique combination of toughness, extra-high tenacity, and exceptional thermal stability.
NBR	Nitrile	Acrylonitrile-butadiene	Excellent resistance to petroleum based fluids. Moderate resistance to aromatics. Good physical properties.
	Nomex®		High temperature, exceptional thermal stability, good resistance to degradation by a wide range of chemicals, and industrial solvents.
NR	Natural Rubber	Polyisoprene, natural	Excellent physical properties including abrasion and low temperature resistance. Poor resistance to petroleum products.
SBR	SBR	Styrene-butadiene	Good physical properties, including abrasion resistance. Poor resistance to petroleum based fluids.

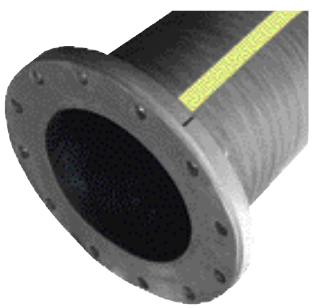
END FITTING STYLES

Choose from a wide variety of built-in, internally expanded, and swaged fittings to make the perfect connection.

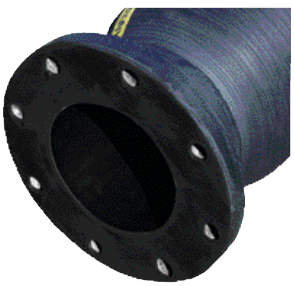
End Fitting Style	Description
Built-In Nipple	Steel nipple is built into the hose during fabrication providing maximum holding power and a full flow unrestricted transition area. Available in threaded, flanged, or grooved end styles. Recommended for heavy duty, high pressure applications.
Built-In Rubber Flange (B.I.R.F.) or Duck & Rubber Flange	Fabric plies and hose tube turn up the face of the flange. Steel back-up flange and rubber flange are molded together. Recommended for light to medium duty, low pressure, abrasive applications.
Modified Built-In Rubber Flange (Mod B.I.R.F.)	Hose tube extends through the steel nipple and up the face of the flange providing a full flow unrestricted transition area. Extends service life by protecting the steel nipple from contact with conveyed material. Recommended for heavy duty, high pressure, abrasive applications.
Enlarged	Hose end is enlarged to accommodate the outside diameter of pipe.
Fixed or Floating Flanges	Built-in, internally expanded, or externally swaged 150# and 300# drilling ANSI forged steel flanges.
Rota-Lok	Hose tube extends through the steel nipple and up the face of the stub end providing a full flow unrestricted transition area. Either full floating or split ring flanges are used to ensure proper bolt hole alignment. Recommended for heavy duty, abrasive applications.
Rubber Lined	Provides added abrasion resistance and extended service life. Recommended for highly abrasive or corrosive applications.
Soft Cuff	Internal wire reinforcement is eliminated from the end of the hose providing a soft and flexible section that creates a leakproof seal when clamped.
Straight or Plain Ends	End of hose is cut straight with no end connections.
Custom Ends	Hose couplings designed specifically to your engineered specifications.

Built-In Nipple

Rota-Lok



Built-In Rubber Flange



TITAN CUSTOM MADE HOSE... MANUFACTURED TO YOUR SPECIFICATIONS

DESIGN OPTIONS

We have the capabilities to design and fabricate a hose to meet your exact requirements.

Design Options	Description
Cover Styles	Smooth or corrugated designs for enhanced flexibility.
Gimbel Construction	Internally smooth, externally corrugated construction. Imbedded individual steel rings provide added strength and flexibility. Recommended for short lengths and large I.D. hoses requiring a tight bend radius.
Kevlar® Reinforcement	Provides high working pressures for heavy duty applications.
Electrical Conductivity	Various compound materials and design methods are available to meet your conductivity requirements.
Heat Resistance	Compounds and internal and external reinforcement materials offer exceptional thermal stability.
Oil Resistance	RMA classified type A, B, and C tube compounds.
Custom Fabrications	Preformed 30˚, 45˚, and 90˚ elbows, “Y’s”, and “T’s”.

Preformed Elbows

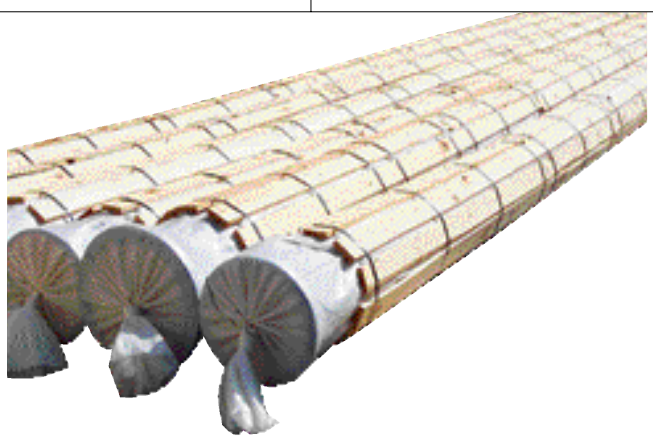
Preformed “Y”

Gimbel Construction

PACKAGING SERVICES

Titan offers value added shipping services to protect your hose and assemblies while in transit.

Packaging	Description
Slat Packing	Wood slats are banded securely to the hose protecting the structural integrity of the assembly during shipping. Recommended for hoses that are shipped in straight lengths, 6” I.D. and larger.
Custom Crating	Custom fabricated shipping crates protect the hose and minimize shipping costs.



Slat Packing

Custom Crates

AIRCRAFT

Product	Page	Size	W.P.	Tube	Cover	Description
SS124	15	1” - 2”	150	Nitrile	Nitrile	Aircraft fueling hose. Meets API 1529/6th Edition 2005, Type C, Grade 1, NFPA 407.
SS244	15	1” - 4”	300	Nitrile	Nitrile	Aircraft fueling hose. Meets API 1529/6th Edition 2005 Type C, Grade 2, & NFPA 407, BS EN1361:1997/C.
SW344	15	1½” - 4”	300	Nitrile	Nitrile	Flexible fuel connection between moving platform and refueling truck. Meets API 1529/6th Edition 2005 Type E, Grade 2, and NFPA 407, BSEN1361:1997/E.

SS124 AIRCRAFT FUELING HOSE

- Economically designed, ultra-flexible aircraft fueling hose.
- Meets or exceeds all requirements for aircraft refueling hose: API 1529/6th Edition 2005, Type C, Grade 1, NFPA 407, Maximum W.P. 150 PSI. Tested to 300 PSI.
- Lightweight construction allows easy handling for reel service.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1"	1 9/16"	2 plies	150	.56
1 1/4"	1 13/16"	2 plies	150	.66
1 1/2"	2 1/16"	2 plies	150	.79
2"	2 9/16"	2 plies	150	1.01

Sold in coupled, tested, and certified lengths.

SS244 AIRCRAFT FUELING HOSE

- Designed to handle commercial and military aviation fuels.
- Excellent for top deck reel and platform type refuelers.
- High grade seamless extruded tube diminishes contamination of fuels and fuel systems.
- Meets or exceeds all requirements for aircraft fueling hose specified in API 1529/6th Edition 2005 Type C, Grade 2, NFPA 407, BS EN1361:1997/C, Maximum w.p. 300 PSI (20 bars), Hydrostatically tested to 600 PSI.

Tube: Extruded Nitrile.
Reinforcement: Textile.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1"	1 11/16"	4 plies	300	.64
1 1/4"	1 15/16"	4 plies	300	.76
1 1/2"	2 3/16"	4 plies	300	.91
2"	2 11/16"	4 plies	300	1.23
2 1/2"	3 3/16"	4 plies	300	1.50
3"	3 11/16"	4 plies	300	1.85
4"	4 7/8"	6 plies	300	2.80

Sold in coupled, tested, and certified lengths.

SW344 AIRCRAFT JAC-RISER HOSE

- Designed for aircraft refuelers equipped with moveable service platforms to act as a flexible connection between the platform and the refueling truck.
- Excellent for defueling applications.
- Meets or exceeds all requirements specified in API 1529/6th Edition 2005 Type E, Grade 2, & NFPA 407, BSEN1361:1997/E, Maximum w.p. 300 PSI, Hydrostatically tested to 600 PSI.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 5/16"	6"	300	1.34	Full
2"	2 13/16"	8"	300	1.73	Full
3"	3 7/8"	12"	300	2.75	Full
4"	4 15/16"	16"	300	3.95	Full

Sold in coupled, tested, and certified lengths.

CHEMICAL

Product	Page	Size	W.P.	Tube	Cover	Description
SP483	18	2" - 4"	150	Modified Cross-Linked Polyethylene	Blue Synthetic Rubber w/external PVC helix	Light-N-Bright chemical suction and discharge. Handles 90% of all known industrial chemicals.
SW373	18	½" - 6"	100 - 500	FEP (Teflon®)	Yellow EPDM	High temperature chemical suction hose designed for sanitary, pharmaceutical, and high purity applications.
SW383	18	1" - 6"	150 - 200	Modified Cross-Linked Polyethylene	Blue EPDM	Chemical suction hose designed for transferring corrosive chemicals, acids and petro-chemicals.
SW393	19	1" - 4"	200	UHMWPE	Blue EPDM	Chemical suction and discharge hose formulated to handle 98% of all known industrial chemicals.
SWC393	19	1½" - 4"	200	UHMWPE	Corrugated Blue EPDM	Corrugated chemical suction hose formulated to handle 98% of all known industrial chemicals.
SWC683	19	1" - 4"	200 - 250	Modified Cross-Linked Polyethylene	Corrugated Black EPDM	Lightweight, ultra-flexible corrugated chemical suction and discharge hose.
SWC683G	19	1" - 4"	200 - 250	Modified Cross-Linked Polyethylene	Corrugated Green EPDM	Lightweight, ultra-flexible corrugated chemical suction and discharge hose.

Teflon® is a registered tradename of DuPont

Warning!

Failure of chemical hose in service can result in serious injury, death, or damage to property. All chemical hose manufacturers recommend specific hose constructions to handle various chemicals. **If you have any questions about proper hose selection after careful review of the chemical resistance charts found on pages 76-84 of this catalog, contact Titan customer service at 800-242-4673 for technical assistance before using or recommending a hose product.**

Do not use chemical hose at temperatures or pressures exceeding those as specified by the product. All operators must be thoroughly trained in the care and use of the hose, and must at all times wear protective clothing. A hose system failure could cause the release of poisonous, corrosive, or flammable material.

Handling

- Crushing or kinking of the hose can cause severe damage to the reinforcement. Care should be exercised to prevent mishandling.

- Use proper hose suspension equipment when lifting or dragging a hose to ensure the recommended curvature is not exceeded. Avoid sharp bends at the end fittings and at manifold connections.

Operation

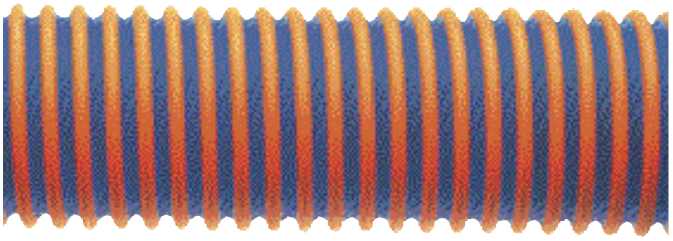
- Personnel involved in an operation using chemical hose must use safety precautions such as wearing eye or face protection, rubber gloves, boots, and other types of protective clothing.

- Pressures and temperatures are to be monitored to see that the hose is not exposed to conditions above specified limits. Exceeding specified limits could damage the hose and result in damage to property and serious bodily harm.

- Never allow chemicals to drip on the exterior of the hose or allow hose to lie in a pool of chemical since the cover may not have the same level of corrosion resistance as the tube. Should a corrosive material come in contact with the reinforcing material, early failure will result.

Reprinted from **The Rubber Manufacturers Association, Inc**. Hose Technical Bulletin Manual for Maintenance, Testing, and Inspection of Chemical Hose, IP-11-7, Edition 2003.

SP483 LIGHT-N-BRIGHT CHEMICAL SUCTION - MOD CROSS-LINK



- Versatile chemical suction and discharge hose designed to handle 90% of all known industrial chemicals.
- Modified XLPE tube offers superior chemical resistance.
- External PVC rod provides abrasion resistance and flexibility.
- 4 to 1 safety factor for protection against impulse surges to help reduce worker injuries and environmental accidents.

Tube: Extruded Modified Cross-Linked Polyethylene.
Reinforcement: Textile and static wire,supported by an external PVC helix.
Cover: Blue synthetic rubber.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	3"	10"	150	1.34	Full
3"	4"	15"	150	1.89	Full
4"	5"	20"	150	2.45	Full

SW373 FEP CHEMICAL SUCTION HOSE

- Designed for sanitary, pharmaceutical, high purity, distillery flex connections, and industrial chemicals with high temperature factors.
- Handles 99.5% of all known industrial chemicals.

Tube: Extruded white FDA FEP (Teflon® or Neoflon®).
Reinforcement: Textile with wire helix.
Cover: Yellow EPDM.
Temperature: -40° to +300°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1/2"	31/32"	7"	500	.37	Full
3/4"	1 1/4"	8"	500	.55	Full
1"	1 17/32"	9"	400	.69	Full
1 1/4"	1 3/4"	11"	375	.75	Full
1 1/2"	2 1/8"	12"	350	1.11	Full
2"	2 11/16"	16"	300	1.57	Full
3"	3 7/8"	30"	200	2.86	Full
4"	5"	42"	150	4.28	Full
6"	7 1/8"	48"	100	7.66	Full

Teflon® is a registered trademark of Dupont.
Neoflon® is a registered trademark of Daikin.

SW383 EXACT-CHEM MODIFIED CROSS-LINKED HOSE

- Designed for the transfer of corrosive chemicals, acids, fuels, and petro-chemical products.
- Specially formulated tube and lightweight construction provide superior flexibility for handling ease.
- High grade chemical, ozone, and abrasion resistant cover.
- Dual helix construction allows full vacuum capabilities.

Tube: Extruded Modified Cross-Linked Polyethylene.
Reinforcement: Textile with dual wire helix.
Cover: EPDM.
Temperature: -40° to +225°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 1/2"	6"	200	.55	Full
1 1/4"	1 3/4"	8"	200	.64	Full
1 1/2"	2"	9"	200	.76	Full
2"	2 17/32"	12"	200	1.08	Full
3"	3 21/32"	18"	150	2.05	Full
4"	4 23/32"	28"	150	2.97	Full
6"	6 13/16"	42"	150	6.24	Full

WARNING: Do not use chemical hose at temperatures or pressures above those recommended.

SW393 CHEM-LITE UHMWPE CHEMICAL

- Premium quality UHMWPE chemical suction hose specially formulated to handle 98% of all known industrial chemicals.
- Dual helix construction allows full vacuum capabilities.
- Tube meets FDA requirements.

Tube: UHMWPE (Ultra High Molecular Weight Polyethylene).
Reinforcement: Textile with dual wire helix.
Cover: Blue EPDM (Smooth or corrugated).
Temperature: -40° to +200°F. (250°F. cleaning temperature).

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 1/2"	6"	200	.52	Full
1 1/2"	2"	9"	200	.76	Full
2"	2 1/2"	12"	200	1.05	Full
3"	3 9/16"	18"	200	1.77	Full
4"	4 5/8"	28"	200	2.60	Full

SWC393 CHEM-LITE CORRUG UHMWPE CHEMICAL

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/16"	6"	200	.92	Full
2"	2 19/32"	8"	200	1.35	Full
3"	3 19/32"	12"	200	1.98	Full
4"	4 11/16"	20"	200	3.15	Full

SWC683 TITANFLEX® CHEMICAL MOD XLPE (BLACK)

- Lightweight, kink resistant chemical suction hose.
- Extreme flexibility and superior bend radius allows easy handling and long-lasting performance.
- Seamless Modified Cross-Linked tube provides high chemical resistance for a variety of chemical transfer applications.
- Will not delaminate, leach, or contaminate conveyed product.
- Can be cleaned with hot water, 10% alkali bath, or low pressure steam.

Tube: Extruded Modified Cross-Linked Polyethylene.
Reinforcement: Textile with dual wire helix.
Cover: Corrugated black or green EPDM.
Temperature: -40° to +250°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 1/2"	2"	250	.47	Full
1 1/2"	2 1/32"	3"	250	.75	Full
2"	2 9/16"	4"	250	1.02	Full
2 1/2"	3 1/8"	5"	200	1.44	Full
3"	3 5/8"	6"	200	1.81	Full
4"	4 5/8"	8"	200	2.43	Full

SWC683G TITANFLEX® CHEMICAL MOD XLPE (GRN)

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 1/2"	2"	250	.49	Full
1 1/2"	2 1/32"	3"	250	.77	Full
2"	2 9/16"	4"	250	1.05	Full
2 1/2"	3 1/8"	5"	200	1.48	Full
3"	3 5/8"	6"	200	1.86	Full
4"	4 5/8"	8"	200	2.57	Full

TITANFLEX® is a registered tradename of Titan Industries.

WARNING: Do not use chemical hose at temperatures or pressures above those recommended.

CONCRETE

Product	Page	Size	W.P.	Tube	Cover	Description
SS120	21	1” - 6”	500 - 800	SBR	SBR	Economically designed concrete placement hose.
SS123	21	1” - 6”	500 - 800	SBR	SBR	Premium grade concrete pump hose.
SS201	21	1½” - 4”	800 - 1200	SBR	SBR	High pressure plaster and grout hose.

SS120 CONCRETE PUMP HOSE

- Economically designed concrete placement hose for wet abrasive materials.
- Excellent flexibility for handling ease.
- Rugged, abrasion resistant SBR cover protects against cuts, scuffs, gouges, and ozone attack.

Tube: Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1"	1 1/2"	2 plies	800	.46
1 1/4"	1 3/4"	2 plies	800	.57
1 1/2"	2 3/16"	2 plies	800	.99
2"	2 3/4"	4 plies	800	1.42
2 1/2"	3 1/4"	4 plies	500	1.71
3"	4 1/16"	4 plies	500	2.91
3 1/2"	4 9/16"	4 plies	500	3.47
4"	5 3/16"	4 plies	500	4.15
4 1/2"	5 11/16"	6 plies	500	4.52
5"	6 1/8"	4 plies	500	4.79
6"	7 1/4"	6 plies	500	6.40

SS123 PREMIUM CONCRETE PUMP HOSE

- Premium grade, high quality concrete placement hose for wet abrasive materials.
- Excellent flexibility for handling ease and kink resistance.
- Rugged, abrasion resistant, all purpose cover protects against cuts, scuffs, gouges, and ozone attack.

Tube: Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1"	1 1/2"	2 plies	800	.46
1 1/4"	1 3/4"	2 plies	800	.57
1 1/2"	2 3/16"	2 plies	800	.99
2"	2 13/16"	4 plies	800	1.40
2 1/2"	3 5/16"	4 plies	500	1.77
3"	4 1/16"	6 plies	500	2.66
4"	5 1/16"	6 plies	500	3.98
5"	6 1/4"	6 plies	500	4.82
6"	7 5/16"	6 plies	500	6.03

SS201 GOLIATH HIGH PRESSURE GROUT HOSE

- High pressure grout hose designed specifically for high pressure plaster, grout, shotcrete, and cement applications.
- Unique manufacturing method minimizes contraction and elongation while remaining flexible for handling ease.
- Durable cover resists cuts, abrasions, and ozone attack.

Tube: Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/2"	2 3/8"	4 plies	1200	1.35
2"	3"	6 plies	1200	1.97
2 1/2"	3 1/2"	6 plies	1000	2.42
3"	4 1/16"	6 plies	1000	3.29
4"	5 1/8"	6 plies	800	4.41

DOCK / O.S.& D.

Product	Page	Size	W.P.	Tube	Cover	Description
EW339	23	6” - 12”	200	Nitrile	Synthetic Rubber	Heavy duty dock hose designed for petroleum transfer from tankers, barges, and storage tanks.
EW339RB	23	6” - 10”	200	Nitrile	Synthetic Rubber	Rough bore dock hose designed for heavy duty service of loading and unloading of tankers and barges.
EW399	24	4” - 8”	250	FKM (Viton®)	Synthetic Rubber	Heavy duty, high pressure dock hose excellent for petro-chemical applications.
EW460RB	24	6” - 10”	200	EPDM	EPDM	Heavy duty Molten Sulphur dock hose.
EWC439	24	4” - 12”	225	Nitrile	Synthetic Rubber	Heavy duty, all-purpose oil suction and discharge hose.
SW339	25	4” - 8”	200	Nitrile	Synthetic Rubber	Heavy duty dock hose designed for transferring petroleum products to and from tankers and barges.
SW355	25	3” - 6”	300	Nitrile	Nitrile	High pressure dock hose for barge transfer applications.
SW356	25	4” - 8”	250 - 300	Nitrile	Nitrile	Rugged, heavy duty dock/O.S.& D. hose designed to handle up to 60% aromatics.

EW339 NITRILE / OIL SERVICE HOSE - 200 PSI

- Heavy duty suction and discharge dock hose designed specifically for transferring petroleum products to and from tankers, barges, and storage tanks.
- Exclusive construction allows for excellent flexibility.
- Specially formulated tube is resistant up to 50% aromatics.
- Rugged cover is resistant to oil, cuts, scuffs, and ozone attack.
- Meets all U.S.C.G. requirements for Dock/O.S. & D. hose.

Tube: Nitrile.
Reinforcement: High strength tire cord with steel wire helix.
Cover: Oil resistant synthetic rubber.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6"	$7\frac{1}{8}$"	36"	200	8.00	Full
8"	$9\frac{1}{4}$"	48"	200	13.30	Full
10"	$11\frac{15}{32}$"	60"	200	20.00	Full
12"	$13\frac{9}{16}$"	72"	200	27.00	Full

Custom Made Hose Product

Refer to SW339 (page 25) for additional sizes.

EWC339 with corrugated construction available upon request.

150, 250, and 300 psi working pressures available upon request.

EW339RB ROUGH BORE DOCK HOSE - 200 PSI

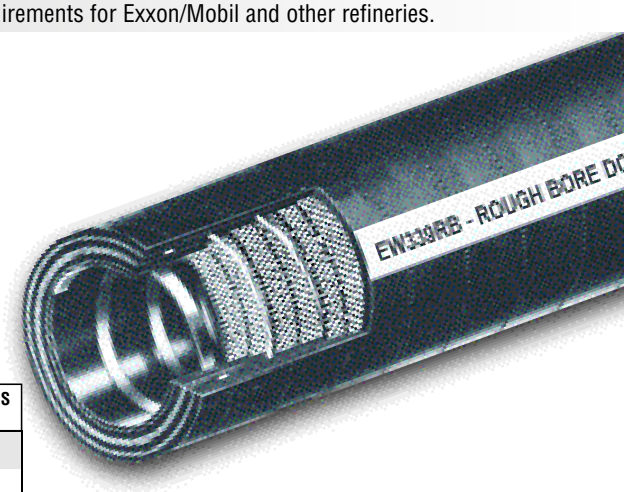
- Rough Bore Dock hose with flat inner wire is specially designed for heavy duty service and the severe and rough conditions of loading and unloading of tankers and barges.
- Manufactured with built-in nipples and fixed or floating flanges.
- Steel flat inner wire reinforcement is bonded at each end to the built-in nipples to eliminate the hazards of static electricity.
- Flat HDMB Class 1 steel wire construction.
- Safely handles hot fluids up to 180˚F (82˚C).

Tube: High grade Nitrile.
Reinforcement: Tire cord with steel flat wire helix and steel spiral wire helix between plies.
Cover: Oil resistant synthetic rubber.
Temperature: Up to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM	COUPLINGS WT/SET
6"	8"	36"	200	5.10	Full	100#
8"	$10\frac{6}{32}$"	48"	200	20.80	Full	150#
10"	$12\frac{10}{32}$"	60"	200	31.50	Full	200#

Custom Made Hose Product

Meets all construction and performance specification requirements for Exxon/Mobil and other refineries.



EW399 DOCK / O.S.& D. HOSE - 250 PSI

Custom Made Hose Product

- Heavy duty, high pressure, suction and discharge dock hose excellent for petro-chemical applications.
- Rugged all-purpose cover is chemical, oil, scuff, gouge, and ozone resistant.
- Meets all U.S.C.G. requirements for Dock hose.

Tube: FKM Fluoroelastomer.
Reinforcement: High strength tire cord with steel wire helix.
Cover: Oil resistant synthetic rubber.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5 1/4"	24"	250	5.50	Full
6"	7 5/16"	36"	250	8.50	Full
8"	9 1/2"	48"	250	14.80	Full

EW460RB MOLTEN SULPHUR DOCK HOSE

Custom Made Hose Product

- Heavy duty modified rough bore construction designed to handle Molten Sulphur up to 300°F. degrees.
- Heat and chemical resistant high grade EPDM tube and cover.

Tube: Black high grade EPDM.
Reinforcement: High strength tire cord with steel wire helix.
Cover: EPDM.
Temperature: -40° to +300°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6"	8"	42"	200	12.00	Full
8"	10 1/4"	54"	200	20.00	Full
10"	12 1/4"	66"	200	28.00	Full

EWC439 FLEX BARGE DOCK HOSE - 225 PSI

Custom Made Hose Product

- Heavy duty, all purpose oil suction and discharge hose suitable for up to 60% aromatics.
- Corrugated construction provides superior flexibility and kink resistance.
- Dual wire helix reinforcement provides full vacuum capabilities.
- High grade multi-purpose cover is oil, ozone, abrasion, and gouge resistant.

Tube: Nitrile.
Reinforcement: High strength tire cord with dual steel wire helix.
Cover: Oil resistant synthetic rubber.
Temperature: -40° to +180° F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5"	18"	225	4.30	Full
6"	7 1/4"	27"	225	8.20	Full
8"	9 13/32"	36"	225	12.30	Full
10"	11 23/32"	45"	225	21.01	Full
12"	13 29/32"	54"	225	27.06	Full

SW339 NITRILE / OIL SERVICE HOSE - 200 PSI

- Heavy duty dock hose designed to transfer petroleum products to and from tankers, barges and storage tanks.
- Exclusive construction allows for excellent flexibility.
- Specially formulated tube suitable for 50% aromatics.
- Rugged all weather cover is oil and ozone resistant.
- Meets all U.S.C.G. requirements for Dock/O.S.& D. hose.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Oil resistant synthetic rubber.
Temperature: -40° to +180°F.

Refer to EW339 (page 23) for larger sizes.

SWC339 with corrugated construction available upon request.

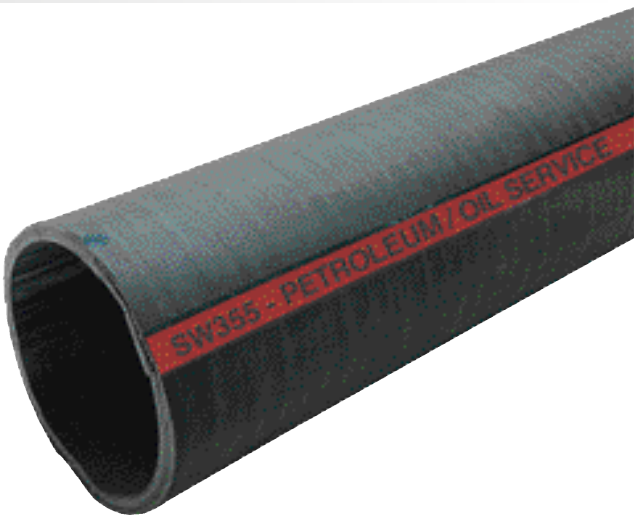
I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4”	5 3/16”	16”	200	5.80	Full
6”	7 1/4”	36”	200	9.41	Full
8”	9 1/4”	48”	200	12.35	Full

SW355 PETROLEUM / OIL SERVICE - 300 PSI

- High pressure petroleum suction and discharge hose designed for barge transfer applications.
- Specially formulated tube is suitable for up to 60% aromatics.
- Dual helix wire reinforcement provides full vacuum capabilities.
- Heavy duty abrasion resistant cover protects against petroleum and chemical products, scuffs, cuts, and ozone attack.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

SW355 is not recommended for heavy duty dock hose applications.



I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
3”	4”	12”	300	2.84	Full
4”	5”	16”	300	3.84	Full
6”	7”	36”	300	7.38	Full

SW356 HEAVY DUTY DOCK / O.S.& D. HOSE

- Rugged, heavy duty suction and discharge dock hose suitable for up to 60% aromatics.
- Dual wire helix reinforcement provides full vacuum capabilities and kink resistance.
- Cover is oil, scuff, cut, abrasion, and ozone resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Oil resistant Nitrile.
Temperature: -40° to +180°F.

MTBE and Ethanol capable.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4”	5 1/4”	20”	300	6.09	Full
6”	7 3/8”	34”	300	9.80	Full
8”	9 3/8”	46”	250	12.69	Full

DREDGE

Product	Page	Size	W.P.	Tube	Cover	Description
ES907	27	4” - 18”	150 - 200	⅜” Natural Rubber	SBR	Dredge sleeve designed for in-line dredge discharge service.
ES908	27	4” - 18”	150 - 200	½” Natural Rubber	SBR	Dredge sleeve designed for in-line dredge discharge service.
EW708	28	4” - 18”	150 - 200	⅜” Natural Rubber	SBR	Rugged in-line flexible connector for dredging and sand suction applications.
EW709	28	4” - 18”	150 - 200	½” Natural Rubber	SBR	Rugged in-line flexible connector for dredging and sand suction applications.

ES907 DREDGE SLEEVE - ⅜" NATURAL RUBBER TUBE

- Dredge hoses designed specifically for discharge service as a flexible connector between lengths of pipe to handle the shifting and twisting of pontoons caused by water movement.
- Excellent for conveying dredged materials to shore.

Tube: ⅜" Black Natural Rubber.
Reinforcement: High strength tire cord.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
4"	5 1/8"	2 plies	200	3.50
4 1/2"	5 5/8"	2 plies	200	3.90
5"	6 1/8"	2 plies	150	4.30
6"	7 5/16"	4 plies	150	6.10
6 5/8"	7 7/8"	4 plies	150	7.00
8"	9 5/16"	4 plies	150	8.30
8 5/8"	10"	4 plies	150	8.90
10"	11 5/8"	6 plies	150	12.00
10 3/4"	12 3/8"	6 plies	150	12.70
12"	13 5/8"	6 plies	150	14.40
12 3/4"	14 3/8"	6 plies	150	16.00
13 1/4"	14 7/8"	6 plies	150	17.00
14"	15 5/8"	6 plies	150	18.50
16"	17 7/8"	8 plies	150	23.00
18"	19 7/8"	8 plies	150	26.00

Custom Made Hose Product

Various tube gauges and working pressures available upon request.

ES908 DREDGE SLEEVE - ½" NATURAL RUBBER TUBE

- Dredge hoses designed specifically for discharge service as a flexible connector between lengths of pipe to handle the shifting and twisting of pontoons caused by water movement.
- Excellent for conveying dredged materials to shore.

Tube: ½" Black Natural Rubber.
Reinforcement: High strength tire cord.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
4"	5⅜"	2 plies	200	4.40
4½"	5 13/16"	2 plies	200	4.90
5"	6 1/16"	2 plies	150	5.40
6"	7⅜"	4 plies	150	7.40
6⅝"	8⅛"	4 plies	150	8.00
8"	9⅝"	4 plies	150	9.90
8⅝"	10 3/16"	4 plies	150	11.00
10"	11 13/16"	6 plies	150	14.00
10¾"	12 7/16"	6 plies	150	15.10
12"	13 13/16"	6 plies	150	16.80
12¾"	14⅝"	6 plies	150	18.00
13¼"	15⅛"	6 plies	150	19.00
14"	15 13/16"	6 plies	150	20.00
16"	18"	8 plies	150	26.00
18"	20"	8 plies	150	30.00

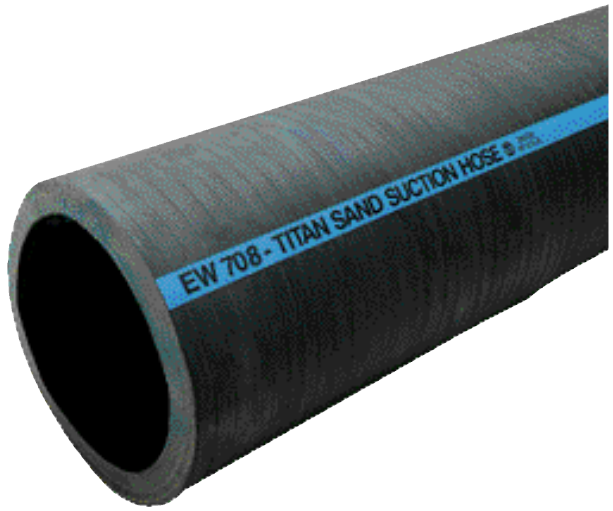
Custom Made Hose Product

DETERMINING THE CORRECT DIAMETER	
Dredge Sleeve diameters are normally selected to match the pipe size of a discharge pipeline. The hose I.D. must fit the pipe O.D. Dredge Sleeves are also available with enlarged ends on lengths greater than 30".	
CHOOSING THE RIGHT TUBE THICKNESS	
3/8" Tube	Light abrasion, sand, and small gravel.
1/2" Tube	Large gravel, abrasive materials, or to gain additional service life.
DETERMINING THE CORRECT HOSE LENGTH	
Dredge Sleeves should be long enough to allow for misalignment, bending (free length of hose), and clamps at each end.	

EW708 SAND SUCTION HOSE - ⅜" NATURAL RUBBER TUBE

Custom Made Hose Product

Additional tube gauges available upon request.



- Designed to connect moveable suction lines to pump inlets and add flexibility on dredge barges.
- Excellent for heavy duty sand suction applications, slurries, and abrasive materials.

Tube: ⅜" Black Natural Rubber.
Reinforcement: High strength tire cord with steel wire helix.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5 1/2"	24"	200	5.90	Full
4 1/2"	6"	27"	200	6.50	Full
5"	6 1/2"	30"	200	7.40	Full
5 1/2"	7"	33"	175	8.10	Full
6"	7 5/8"	36"	175	10.10	Full
6 5/8"	8 1/4"	41"	150	11.00	Full
8"	9 3/4"	48"	150	14.40	Full
8 5/8"	10 5/16"	54"	150	16.20	Full
10"	12 1/8"	60"	150	21.40	Full
10 3/4"	12 7/8"	65"	150	24.90	Full
12"	14"	72"	150	26.70	Full
12 3/4"	14 7/8"	77"	150	31.60	Full
13 1/4"	15 5/16"	80"	150	32.50	Full
14"	16 1/8"	84"	150	34.50	Full
15"	17 1/8"	90"	150	36.70	Full
16"	18 3/16"	96"	150	43.00	Full
18"	20 1/2"	102"	150	55.00	Full

EW709 SAND SUCTION HOSE - ½" NATURAL RUBBER TUBE

Custom Made Hose Product

- Designed to connect moveable suction lines to pump inlets and add flexibility on dredge barges.
- Excellent for heavy duty sand suction applications, slurries, and abrasive materials.

Tube: ½" Black Natural Rubber.
Reinforcement: High strength tire cord with steel wire helix.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5 13/16"	26"	200	6.90	Full
4 1/2"	6 5/16"	29"	200	7.60	Full
5"	6 13/16"	32"	200	8.60	Full
5 1/2"	7 5/16"	36"	175	9.40	Full
6"	7 13/16"	38"	175	11.50	Full
6 5/8"	8 1/2"	43"	150	12.50	Full
8"	9 29/32"	50"	150	16.20	Full
8 5/8"	10 5/8"	56"	150	18.20	Full
10"	12 5/16"	62"	150	23.70	Full
10 3/4"	13"	67"	150	27.30	Full
12"	14 5/16"	74"	150	29.40	Full
12 3/4"	15 1/8"	79"	150	34.50	Full
13 1/4"	15 5/8"	82"	150	35.50	Full
14"	16 5/16"	86"	150	37.60	Full
15"	17 5/16"	92"	150	40.00	Full
16"	18 1/2"	98"	150	46.50	Full
18"	20 1/2"	104"	150	62.00	Full

DETERMINING THE CORRECT DIAMETER

In most applications, the diameter of the hose is determined by the pipe size of the suction or discharge line on the dredge.

CHOOSING THE RIGHT TUBE THICKNESS

3/8" Tube	Continuous service, sand, small gravel, and light abrasion service.
1/2" Tube	Recommended for all hose sizes where service is severe.

LOCATIONS WHERE DREDGES ARE USED

1. Gravel pits or lakes where sand or gravel is pumped ashore.
2. Coastal areas where sand, gravel, oyster, or clam shells are pumped to shore or onto barges.
3. Rivers, using either barge or shore discharge.

FIRE ENGINE SUCTION

Product	Page	Size	W.P.	Tube	Cover	Description
LW701	31	2½" - 6"	150	SBR	SBR	Premium quality fire engine suction hose for remote water removal and fire truck hydrant connections.
LW720	31	2½" - 6"	100 - 150	SBR	Corrugated SBR	Fire engine suction and discharge hose for remote water removal and fire truck hydrant connections.

LW701 HEAVY DUTY FIRE ENGINE SUCTION HOSE

- Premium quality, heavy duty fire engine suction hose designed for remote water removal and hydrant connections on fire trucks.
- Rugged cover design provides excellent abrasion and ozone resistance.

Tube: SBR.
Reinforcement: Textile with steel wire helix.
Cover: SBR.
Temperature: -40° to +180°F.

Meets or exceeds NFPA #1962 and #1901 requirements.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2 1/2"	3 1/8"	15"	150	1.60	Full
3"	3 5/8"	18"	150	1.97	Full
3 1/2"	4 1/8"	21"	150	2.27	Full
4"	4 5/8"	24"	150	2.72	Full
4 1/2"	5 1/8"	27"	150	3.70	Full
5"	5 3/4"	30"	150	5.00	Full
6"	6 3/4"	36"	150	5.93	Full

LW720 CORRUGATED FIRE ENGINE SUCTION HOSE

- Corrugated fire engine suction hose designed for remote water removal and hydrant connections on fire trucks.
- Rugged SBR cover provides excellent abrasion and ozone resistance.

Tube: SBR.
Reinforcement: Textile with steel wire helix.
Cover: Corrugated SBR.
Temperature: -40° to +180°F.

Meets or exceeds NFPA #1962 and #1901 requirements.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2 1/2"	3"	15"	150	1.37	Full
3"	3 1/2"	18"	150	1.68	Full
4"	4 1/2"	24"	150	2.23	Full
4 1/2"	5 1/8"	27"	150	3.03	Full
5"	5 11/16"	30"	150	4.02	Full
6"	6 11/16"	36"	150	4.77	Full
6"	6 3/4"	24"	100	6.24	Full

FOOD

Product	Page	Size	W.P.	Tube	Cover	Description
SM382	33	1½" - 4"	200 - 250	Chlorobutyl	EPDM	Crush and kink resistant food, beverage, and wine suction hose.
SP330	33	2" - 4"	150	Chlorobutyl	Synthetic Rubber with PVC Helix	Ultra-flexible food, beverage, and sanitary suction hose.
SS200	34	1½" - 4"	350	Chlorobutyl	EPDM	Brewery discharge hose.
SS231	34	2" - 6"	110 - 200	Natural Rubber	Natural Rubber	Low pressure sanitary discharge hose for dry food products.
SS290	35	1½" - 4"	250	Nitrile	Natural Rubber	Lightweight food & beverage discharge hose.
SW319	35	1¼" - 3"	150 - 250	EPDM	EPDM	High temperature sanitary suction and discharge hose.
SW330	35	1" - 4"	150	Chlorobutyl	EPDM	Premium quality sanitary suction hose.
SW430	36	1½" - 4"	150	Nitrile	Nitrile	Food suction hose for oily foods.
SW431	36	4" - 5"	100	Natural Rubber	Natural Rubber	Food suction hose for dry abrasive foods.
SW630	37	1½" - 4"	200	Chlorobutyl	EPDM	Ultra-flexible food suction hose for non-oily sanitary and food products.
SWC430	37	2" - 6"	100 - 150	Nitrile	Gray Corrugated Nitrile	Corrugated food suction hose for oily foods.
SWC432	37	2" - 4"	100 - 200	Nitrile	Gray Corrugated Nitrile	Corrugated food suction hose for oily food transfer applications.

SM382 HARVEST PLUS+ FOOD/BEVERAGE/WINE SUCTION

- Crush and kink resistant food hose suitable for milk, milk products, fruit juice, soft drinks, pharmaceutical products, and other non-oily liquid food products.
- Lightweight, easy to handle and bend due to its crush resistant monofilament helix reinforcement.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.
- EPDM cover assures excellent abrasion, ozone and mild chemical resistance.

Tube: Extruded white Chlorobutyl.
Reinforcement: Textile with monofilament helix.
Cover: Gray specially compounded EPDM.
Temperature: -40° to +225°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/4"	5"	250	1.16	Full
2"	2 25/32"	7"	250	1.53	Full
2 1/2"	3 9/32"	13"	250	1.93	Full
3"	3 25/32"	21"	250	2.27	Full
4"	4 25/32"	40"	200	3.03	15"

Crush and kink resistant design.

Microbe and bacteria resistant tube.

Meets FDA, USDA, 3A and PMO sanitary requirements.

SP330 LIGHT-N-BRIGHT FOOD & BEVERAGE HOSE - CHLOROBUTYL TUBE

- Lightweight, ultra-flexible specialty hose designed for handling food, beverages, and other sanitary products.
- Outer PVC helix design allows the hose to glide easily across plant floors while providing excellent abrasion resistance.

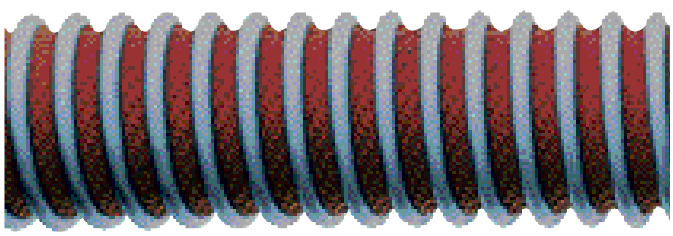
Tube: Extruded white Chlorobutyl.
Reinforcement: Textile supported by an external PVC helix.
Cover: Red synthetic rubber.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	3"	2"	150	1.39	Full
2 1/2"	3 1/2"	3"	150	1.73	Full
3"	4"	4"	150	2.48	Full
4"	5"	6"	150	3.53	Full

SP100 slinky sleeves recommended for banding (Page 54).

Microbe and bacteria resistant tube.

Meets FDA, USDA, 3A, and PMO sanitary requirements.

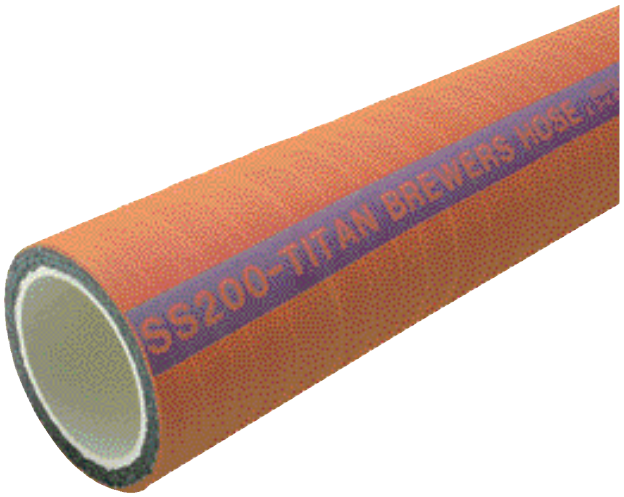


SS200 BREWERS HOSE - CHLOROBUTYL TUBE

Capped ends available upon request.

Microbe and bacteria resistant tube.

Meets FDA, USDA, 3A, and PMO sanitary requirements.



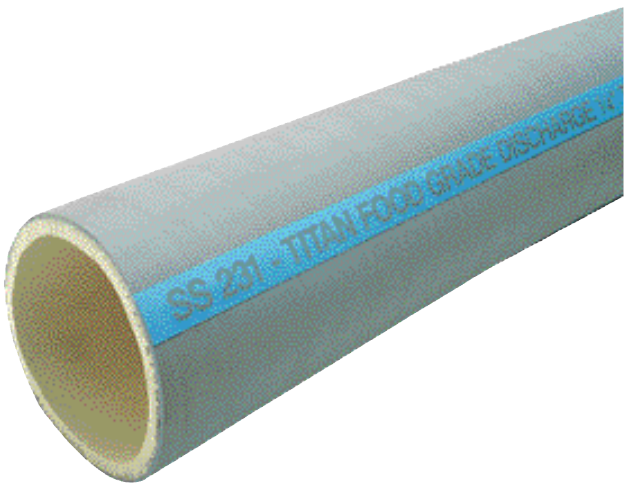
- Brewery discharge hose designed specifically for transferring non-oily foods and liquids in wineries and breweries.
- Special construction provides excellent flexibility and handling ease for in-plant use.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that is microbe resistant and will not impart taste or odor.
- Abrasion resistant cover offers excellent ozone protection.

Tube: Extruded white Chlorobutyl.
Reinforcement: Textile.
Cover: Orange specially compounded EPDM.
Temperature: -40° to +225°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/2"	2 3/8"	4 plies	350	1.33
2"	3"	6 plies	350	1.91
2 1/2"	3 1/2"	6 plies	350	2.32
3"	4 1/8"	6 plies	350	3.05
4"	5 1/8"	6 plies	350	3.87

SS231 FOOD GRADE DISCHARGE HOSE - NATURAL RUBBER TUBE

Meets FDA and USDA sanitary requirements.



- Low pressure sanitary discharge hose designed to handle dry food and beverage products. Excellent for in-plant transfer.
- Lightweight construction provides superior flexibility for handling ease.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Tube: Extruded Natural Rubber.
Reinforcement: Textile with internal static wire.
Cover: Gray specially compounded Natural Rubber.
Temperature: -40° to +150°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
2"	2 27/32"	2 plies	200	1.60
2 1/2"	3 11/32"	2 plies	200	1.92
3"	3 27/32"	2 plies	140	2.23
4"	4 27/32"	2 plies	120	2.88
6"	6 27/32"	2 plies	110	4.27

SS290 BEVERAGE AND POTABLE WATER HOSE - NITRILE TUBE

- Lightweight, sanitary discharge hose designed to handle a wide variety of food and beverage transfer applications.
- Excellent C.I.P. cleaning hose for overhead units.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Tube: Extruded white Nitrile.
Reinforcement: Textile.
Cover: Gray specially compounded Natural Rubber.
Temperature: -40° to +160°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/2"	2 1/8"	4 plies	250	.82
2"	2 5/8"	4 plies	250	1.10
2 1/2"	3 1/8"	4 plies	250	1.39
3"	3 5/8"	4 plies	250	1.64
4"	4 5/8"	4 plies	250	2.21

Meets FDA, USDA, 3A, and PMO sanitary requirements.

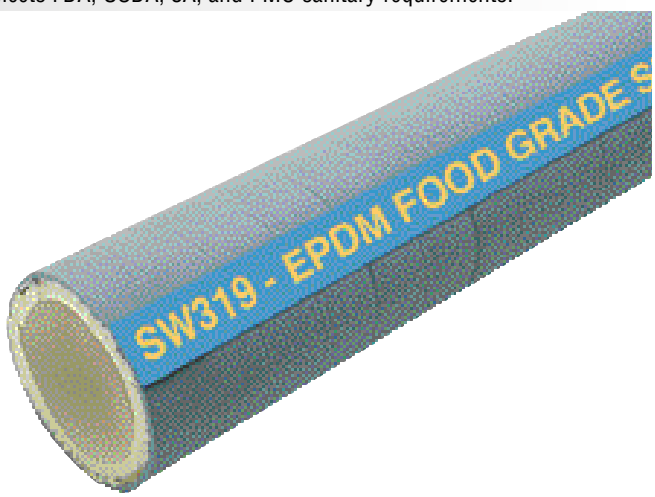
SW319 FOOD SUCTION HOSE - EPDM TUBE

- Premium quality, high temperature food hose designed for sanitary suction and hot air blower service in food applications.
- Dual helix design offers full vacuum capabilities.
- Lightweight construction offers excellent flexibility for handling ease.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Tube: Extruded white EPDM.
Reinforcement: Textile with dual wire helix.
Cover: Gray EPDM.
Temperature: -20° to +225°F

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/4"	1 13/16"	5"	250	.75	Full
1 1/2"	2 1/16"	6"	250	.86	Full
2"	2 5/8"	7"	200	1.27	Full
2 1/2"	3 3/16"	10"	200	1.75	Full
3"	3 11/16"	12"	150	2.25	Full

Meets FDA, USDA, 3A, and PMO sanitary requirements.



SW330 SANITARY SUCTION & DISCHARGE HOSE - CHLOROBUTYL TUBE

- Premium quality sanitary suction and discharge hose designed to handle non-oily food products.
- Seamless extruded tube is highly resistant to C.I.P. solutions, microbes, and bacteria.

Tube: Extruded white Chlorobutyl.
Reinforcement: Textile with dual wire helix.
Cover: Gray EPDM.
Temperature: -40° to +225°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 5/8"	4"	150	.75	Full
1 1/2"	2 3/16"	6"	150	1.05	Full
2"	2 5/8"	7"	150	1.45	Full
2 1/2	3 1/4"	8"	150	1.92	Full
3"	3 3/4"	9"	150	2.47	Full
4"	4 3/4"	12"	150	3.25	Full

Meets FDA, USDA, 3A, and PMO sanitary requirements.
Microbe and bacteria resistant tube.

SW430 FOOD GRADE SUCTION HOSE - NITRILE TUBE

Meets FDA, USDA, 3A, and PMO sanitary requirements.

- High grade, premium quality sanitary suction and discharge hose designed for a variety of food applications.
- Dual helix design provides full vacuum capabilities.
- Lightweight construction offers flexibility for handling ease.
- All purpose abrasion resistant cover provides excellent protection against oily foods, mild chemicals and ozone.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Tube: Extruded white Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Gray Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/8"	6"	150	1.01	Full
2"	2 5/8"	7"	150	1.41	Full
2 1/2	3 3/16"	8"	150	1.89	Full
3"	3 11/16"	9"	150	2.39	Full
4"	4 13/16"	12"	150	3.59	Full

SW431 FLOUR HOSE - 3/16" NATURAL RUBBER TUBE

Meets FDA, USDA, 3A, and PMO sanitary requirements.

- Superior quality suction and discharge food hose designed for flour, sugar, and other dry abrasive food products where an FDA sanitary hose is required.
- Lightweight construction provides easy handling.
- Dual wire reinforcement provides full vacuum capabilities.
- Abrasion resistant cover resists ozone deterioration.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Tube: Extruded white Natural Rubber.
Reinforcement: Textile with dual wire helix.
Cover: Gray specially compounded Natural Rubber.
Temperature: -20° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	4 3/4"	14"	100	3.04	Full
5"	5 3/4"	20"	100	3.90	Full

SW630 TITANFLEX® FOOD SUCTION HOSE - WHITE CHLOROBUTYL TUBE

- Ultra-flexible food hose designed for milk, fruit juices, soft drinks, beer, wine, pharmaceuticals, cosmetics, and other non-oily food products.
- Smooth cover provides extreme flexibility while minimizing bacteria build-up often found in corrugated hoses.
- Cleans easily with hot water, 10% alkali bath, or open-end low pressure steam up to 15 psi.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Meets FDA, USDA, 3A, and PMO sanitary requirements.

Tube: Extruded white Chlorobutyl.
Reinforcement: Textile with dual wire helix.
Cover: Gray EPDM.
Temperature: -40° to +225°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1½"	2⅛"	4½"	200	.98	Full
2"	2 41/64"	6"	200	1.37	Full
2½"	3 5/32"	7½"	200	1.77	Full
3"	3 45/64"	9"	200	2.23	Full
4"	4 47/64"	12"	200	3.18	Full

TITANFLEX® is a registered tradename of Titan Industries.

SWC430 CORRUGATED FOOD GRADE SUCTION - NITRILE TUBE

- Corrugated sanitary suction hose designed for oily foods and multi-purpose food transfer applications.
- Dual helix design provides full vacuum capabilities.
- Abrasion resistant cover provides excellent protection against oily foods, mild chemicals, and ozone attack.
- Manufactured on stainless steel mandrels for an ultra smooth bacteria free tube that will not impart taste or odor.

Meets FDA, USDA, 3A, and PMO sanitary requirements.

Tube: Extruded white Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Gray corrugated Nitrile.
Temperature: -20° to +225°F

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	2 5/8"	5"	150	1.46	Full
3"	3 11/16"	6"	150	2.39	Full
4"	4 13/16"	8"	150	3.68	Full
6"	6 3/4"	12"	100	5.86	Full

SWC432 SANIFLEX CORRUGATED FOOD SUCTION - NITRILE TUBE

- Ultra-flexible food suction and discharge hose designed for oily foods and a variety of food transfer applications.
- Smooth enhanced corrugations allow easy sanitary cleaning.
- Nitrile cover is ozone, abrasion, chemical and oil resistant.
- Manufactured on stainless steel mandrels for an ultra-smooth bacteria free tube that will not impart taste or odor.

Meets FDA, USDA, and 3A sanitary requirements.

Smooth enhanced corrugated cover allows easy sanitary cleaning.

Tube: Extruded white Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Gray Nitrile.
Temperature: -40° to +225°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	2 19/32"	5"	200	1.33	Full
3"	3 5/8"	8"	150	2.09	Full
4"	4 11/16"	10"	100	3.11	Full

MARINE / INDUSTRIAL

Product	Page	Size	W.P.	Tube	Cover	Description
SS269	39	1" - 12¾"	100 - 200	Nitrile	Nitrile	Softwall marine exhaust hose designed for transferring wet exhaust on marine engines.
SW369	40	1¼" - 6⅝"	100 - 200	Nitrile	Nitrile	High temperature hardwall marine exhaust hose and fuel fill connection.
SW469	40	½" - 3"	35 - 50	Nitrile	Nitrile	Hardwall marine fuel fill and vent hose.

SS269 SOFTWALL MARINE EXHAUST HOSE

- Heavy duty softwall marine exhaust hose for use as a flexible connection to transfer wet exhaust on marine engines.
- Heat resistant tube handles high temperatures found in marine engine compartments.
- Durable heat, ozone, and abrasion resistant cover.

Meets U.S.C.G TYPE Standards for specification SAE J2006 R1.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile.
Cover: Specially compounded Nitrile.
Temperature: -40° to +200°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1"	1 7/16"	2 plies	200	.46
1 1/8"	1 9/16"	2 plies	200	.49
1 1/4"	1 13/16"	2 plies	200	.69
1 5/16"	1 7/8"	2 plies	200	.71
1 3/8"	1 15/16"	2 plies	200	.75
1 1/2"	2 1/16"	2 plies	200	.82
1 5/8"	2 3/16"	2 plies	200	.87
1 3/4"	2 5/16"	2 plies	200	.92
1 7/8"	2 7/16"	2 plies	200	.97
2"	2 9/16"	2 plies	200	1.07
2 1/8"	2 11/16"	2 plies	200	1.12
2 1/4"	2 13/16"	2 plies	200	1.17
2 3/8"	2 15/16"	2 plies	200	1.25
2 1/2"	3 1/16"	2 plies	200	1.32
2 5/8"	3 3/16"	2 plies	200	1.37
2 3/4"	3 5/16"	2 plies	200	1.42
2 7/8"	3 7/16"	2 plies	200	1.52
3"	3 5/8"	4 plies	200	1.46
3 1/2"	4 1/8"	4 plies	200	1.70
4"	4 5/8"	4 plies	200	1.93
4 1/2"	5 1/8"	4 plies	200	2.21
5"	5 15/16"	6 plies	200	3.80
5 9/16"	6 1/2"	6 plies	200	4.14
6"	6 15/16"	6 plies	200	4.51
6 5/8"	7 9/16"	6 plies	200	5.01
7"	7 15/16"	6 plies	200	5.24
8"	8 15/16"	6 plies	150	5.83
8 5/8"	9 1/2"	6 plies	150	5.95
10"	10 3/4"	6 plies	150	6.77
10 3/4"	11 5/8"	6 plies	100	7.55
12"	12 7/8"	6 plies	100	8.38
12 3/4"	13 5/8"	6 plies	100	8.88

SW369 HARDWALL MARINE EXHAUST HOSE

U.S.C.G. Type Marine hose.

- Ultra-flexible, lightweight hardwall marine exhaust hose specifically designed to be a high temperature, wet exhaust and fuel fill flexible connection.
- Dual helix wire allows for tight bends without kinking.
- Specially formulated cover is heat and ozone resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +200°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/4"	1 11/16"	4"	200	.56	Full
1 3/8"	1 13/16"	4"	200	.59	Full
1 1/2"	2"	5"	200	.69	Full
1 5/8"	2 1/8"	5"	200	.75	Full
1 7/8"	2 3/8"	6"	200	.84	Full
2"	2 1/2"	6"	200	.88	Full
2 3/8"	2 7/8"	6"	150	1.26	Full
2 1/2"	3"	10"	150	1.33	Full
2 7/8"	3 7/16"	11"	125	1.62	Full
3"	3 9/16"	12"	125	1.68	Full
3 1/2"	4 1/16"	15"	125	1.94	Full
4"	4 5/8"	18"	125	2.51	Full
4 1/2"	5 1/8"	24"	100	2.78	Full
5"	5 5/8"	30"	100	3.04	Full
5 9/16"	6 3/16"	34"	100	3.38	Full
6"	6 5/8"	36"	100	3.79	Full
6 5/8"	7 1/4"	40"	100	4.25	Full

SW469 HARDWALL MARINE FUEL FILL HOSE

Meets U.S.C.G. Standards for specification SAE J1527 TYPE B2.

- Flexible, hardwall marine hose for use in fuel fill and vent applications on marine fuel systems.
- Specifically designed to handle high temperatures.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +200°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1/2"	7/8"	4"	50	.24	Full
5/8"	1"	4"	50	.28	Full
3/4"	1 1/8"	4"	50	.32	Full
7/8"	1 1/4"	4"	50	.36	Full
1"	1 3/8"	4"	50	.39	Full
1 1/8"	1 1/2"	4"	50	.44	Full
1 1/4"	1 5/8"	4"	50	.47	Full
1 5/16"	1 11/16"	4"	50	.49	Full
1 3/8"	1 3/4"	4"	50	.52	Full
1 1/2"	1 7/8"	4"	50	.56	Full
1 5/8"	2"	6"	50	.59	Full
1 3/4"	2 1/8"	6"	50	.63	Full
1 7/8"	2 1/4"	6"	50	.71	Full
2"	2 3/8"	6"	50	.78	Full
2 1/8"	2 1/2"	6"	50	.84	Full
2 1/4"	2 5/8"	6"	50	.91	Full
2 3/8"	2 3/4"	6"	50	.95	Full
2 1/2"	2 7/8"	10"	50	1.00	Full
2 5/8"	3"	10"	40	1.08	Full
2 3/4"	3 1/8"	10"	40	1.15	Full
2 7/8"	3 1/4"	10"	35	1.25	Full
3"	3 3/8"	12"	35	1.30	Full

MATERIAL HANDLING

Product	Page	Size	W.P.	Tube	Cover	Description
ES937	43	6” - 30”	20 - 65	SBR	SBR	Elephant trunk hose.
EW336	43	4” - 14”	100	Natural Rubber	SBR	Dry abrasive material suction hose.
EW360	44	6” - 14”	50 - 100	EPDM	EPDM	Hot air blower hose.
EWC334	44	6” - 12¾”	65 - 135	Natural Rubber	Corrugated SBR	Dry abrasive material suction hose.
EWC777	45	4” - 24”	100 - 150	Natural Rubber	Corrugated SBR	Highly abrasive slurry suction hose.
EWC789	45	4” - 10”	100 - 150	SBR	Corrugated SBR	Vacuum truck hose for debris suction.
EWC888	46	5” - 10”	40 - 75	Natural Rubber	Corrugated SBR	Industrial vacuum hose.
SS135	46	4” - 6”	65	SBR	SBR	Dry cement and abrasives discharge hose.
SS141	47	1” - 4”	500	Neoprene	Neoprene	Oxygen charging hose for steel mill lancing and scarfing applications.
SS147	47	4”	60	SBR	SBR	Dry material discharge hose.
SS236	47	1½” - 6”	85 - 150	Natural Rubber	SBR	Abrasive wet and dry material suction hose.
SS247	48	4” - 8”	60 - 75	SBR	SBR	Heavy duty dry cement, sand, and pebble lime discharge hose.
SW336	48	3” - 6”	110 - 125	Natural Rubber	SBR	Dry abrasive material suction hose.
SW360	48	2” - 6”	100 - 200	EPDM	EPDM	Hot air blower hose.
SW409	49	2” - 6”	100 - 200	Natural Rubber	SBR	Heavy duty sand suction hose.

ES937 ELEPHANT TRUNK HOSE - ⅛" SBR TUBE

- Designed exclusively for gravity flow and low pressure discharge of cement and other abrasive materials.
- Lightweight construction provides excellent flexibility for handling ease.
- Premium quality tube and cover resists cuts and abrasions.

Tube: ⅛" SBR.
Reinforcement: High strength tire cord.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
6"	6 17/32"	2 plies	65	2.90
6 5/8"	7 5/32"	2 plies	60	3.10
7"	7 17/32"	2 plies	60	3.30
7 1/2"	8 1/32"	2 plies	55	3.60
8"	8 17/32"	2 plies	50	3.80
8 5/8"	9 5/32"	2 plies	45	4.20
10"	10 17/32"	2 plies	45	4.90
10 3/4"	11 9/32"	2 plies	40	5.20
12"	12 17/32"	2 plies	40	5.80
12 3/4"	13 9/32"	2 plies	40	6.20
14"	14 17/32"	2 plies	35	6.80
16"	16 17/32"	2 plies	30	7.70
18"	18 17/32"	2 plies	30	8.70
20"	20 17/32"	2 plies	25	9.60
22"	22 17/32"	2 plies	20	10.60
24"	24 17/32"	2 plies	20	11.50
30"	30 19/32"	2 plies	20	14.00

Custom Made Hose Product

EW336 EXACTA PIPE MATERIAL SUCTION HOSE - ¼" NATURAL RUBBER TUBE

- All-weather general purpose suction and discharge hose designed to handle highly abrasive material.
- Natural rubber tube provides excellent rebound, durability, and abrasion resistance.

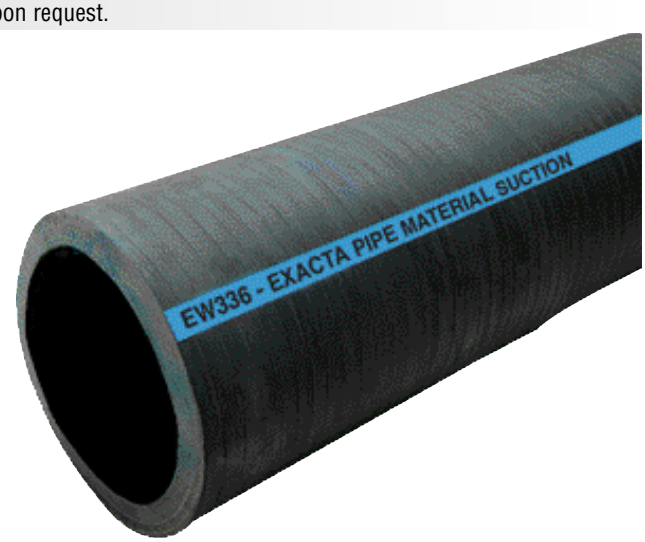
Tube: ¼" Natural Rubber.
Reinforcement: High strength tire cord with steel wire helix.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5 1/8"	24"	100	4.50	Full
5"	6 1/8"	30"	100	5.80	Full
6"	7 1/8"	36"	100	7.10	Full
6 5/8"	7 3/4"	40"	100	7.80	Full
8"	9 1/4"	48"	100	11.70	Full
8 5/8"	9 7/8"	52"	100	12.50	Full
10"	11 3/8"	60"	100	15.00	Full
10 3/4"	12 1/4"	65"	100	20.20	Full
12"	13 1/2"	72"	100	22.50	Full
12 3/4"	14 1/4"	77"	100	23.80	Full
14"	15 1/2"	84"	100	27.50	Full

Custom Made Hose Product

Refer to SW336 (page 48) for additional sizes and working pressures.

Various tube thicknesses and corrugated construction available upon request.



EW360 HOT AIR BLOWER HOSE

Custom Made Hose Product

Refer to SW360 (page 48) for additional sizes and working pressures.

Corrugated and 4 ply constructions available upon request.

- High temperature, ultra-durable hose for transferring hot air.
- Superior grade tube will withstand temperatures up to 300°F.
- Heavy duty EPDM cover is heat and ozone resistant.

Tube: EPDM.
Reinforcement: High strength tire cord with steel wire helix.
Cover: Heat resistant EPDM.
Temperature: -40° to +300°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6"	6 7/8"	36"	100	5.70	Full
6 5/8"	7 1/2"	42"	100	6.30	Full
8"	8 7/8"	48"	75	8.00	Full
8 5/8"	9 5/8"	52"	75	10.00	Full
10"	11"	60"	65	12.50	Full
10 3/4"	11 7/8"	65"	60	15.00	Full
12"	13 1/8"	72"	55	17.50	Full
12 3/4"	13 7/8"	77"	50	18.50	Full
14"	15 1/8"	84"	50	21.50	Full

EWC334 CORRUGATED MATERIAL HANDLING - ⅛" NATURAL RUBBER TUBE

Custom Made Hose Product

Various tube thicknesses available upon request.

- All-weather corrugated material suction hose designed to handle abrasive materials.
- Natural rubber tube provides excellent rebound, durability, and abrasion resistance.
- All weather cover resists cuts, gouging and ozone attack.

Tube: ⅛" Natural Rubber.
Reinforcement: High strength textile with dual wire helix.
Cover: Corrugated SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6"	6 7/8"	29"	135	5.60	Full
6 5/8"	7 1/2"	32"	125	6.40	Full
8"	8 7/8"	38"	100	8.00	Full
8 5/8"	9 9/16"	42"	95	8.80	Full
10"	11"	48"	85	11.60	Full
10 3/4"	11 3/4"	52"	75	12.40	Full
12"	13 1/8"	58"	65	16.50	Full
12 3/4"	13 7/8"	62"	65	17.50	Full

EWC777 CORRUGATED MATERIAL HANDLING HOSE - 5/16" NATURAL RUBBER TUBE

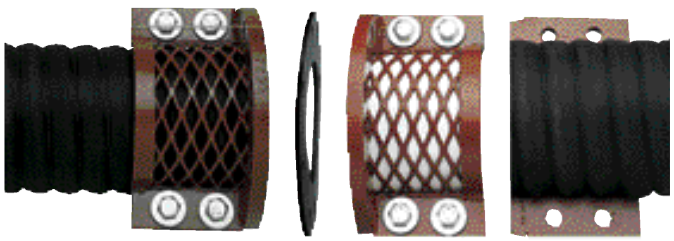
- Corrugated vacuum hose for transferring highly abrasive slurries.
- Designed for on the job engineering of specified lengths. Hose can be cut, coupled, and installed in minutes at the job site with our split-lok flange coupling system.

Tube: 5/16" Natural Rubber.
Reinforcement: High strength tire cord with steel wire helix.
Cover: Corrugated SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5 1/2"	19"	150	5.00	Full
5"	6 1/2"	24"	150	7.00	Full
6"	7 1/2"	29"	150	9.00	Full
8"	9 1/2"	38"	150	12.10	Full
10"	11 1/2"	48"	150	16.00	Full
12"	13 3/4"	58"	150	23.00	Full
14"	15 3/4"	68"	150	27.00	Full
16"	17 3/4"	78"	125	31.10	Full
18"	20"	88"	125	42.00	Full
20"	22"	100"	100	48.00	Full
22"	24 5/16"	120"	100	65.00	Full
24"	26 5/16"	130"	100	69.00	Full

Custom Made Hose Product

Split-Lok Flange Couplings recommended for on-site recoupling.



Split-Lok Flange Couplings (page 70)

EWC789 CORRUGATED VACUUM TRUCK HOSE - 1/4" SBR TUBE

- Corrugated vacuum hose designed for debris suction and mobile vacuum trucks in cleaning storm drains and sewers.
- Dual wire helix provides excellent vacuum capabilities.

Tube: 1/4" SBR.
Reinforcement: High strength textile with dual wire helix.
Cover: Corrugated SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5 13/64"	18"	150	5.00	Full
6"	7 13/64"	28"	150	7.20	Full
8"	9 5/16"	36"	100	9.50	Full
10"	11 13/32"	42"	100	11.50	Full

Custom Made Hose Product

Larger size I.D.'s available upon request.

EWC888 INDUSTRIAL VACUUM HOSE - ⅛" NATURAL RUBBER TUBE

Custom Made Hose Product

- Industrial material handling hose for vacuum service and low pressure applications.
- Lightweight corrugated design provides superior flexibility for handling ease.
- Dual wire reinforcement provides full vacuum capabilities.

Tube: ⅛" Natural Rubber.
Reinforcement: High strength tire cord with dual wire helix.
Cover: Corrugated SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
5"	5 3/4"	20"	75	4.00	Full
6"	6 3/4"	24"	65	4.60	Full
8"	8 7/8"	36"	50	6.80	Full
10"	10 7/8"	48"	40	10.30	Full

SS135 DRY CEMENT DISCHARGE HOSE - ⅛" SBR TUBE

Static conductive tube.

- Low pressure material transfer hose designed for discharge service of dry cement and powdered abrasive materials.
- Lightweight construction provides superior flexibility without sacrificing quality.
- Premium grade cover resists cuts, scuffs, and ozone attack.

Tube: ⅛" Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
4"	4 1/2"	2 plies	65	1.49
4 1/2"	5"	2 plies	65	1.67
5"	5 1/2"	2 plies	65	1.84
6"	6 1/2"	2 plies	65	2.24

SS141 OXYGEN CHARGING HOSE

- Specially designed for steel mill lancing and scarfing applications.
- Premium grade Neoprene cover offers protection against sparks and abrasion.

Tube: Extruded Neoprene.
Reinforcement: Textile.
Cover: Green Neoprene.
Temperature: -40° to +200°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1"	$1^{11}/_{16}$"	2 plies	500	.84
$1^{1}/_{4}$"	$1^{15}/_{16}$"	2 plies	500	1.01
$1^{1}/_{2}$"	$2^{3}/_{16}$"	4 plies	500	1.13
2"	$2^{3}/_{4}$"	4 plies	500	1.56
3"	4"	6 plies	500	3.10
4"	5"	6 plies	500	4.00

Hoses are cleaned and capped prior to shipping.

SS147 DRY MATERIAL DISCHARGE HOSE - $^{3}/_{16}$" SBR TUBE

- Handles dry abrasive materials and for dry bulk transfer.
- Lightweight construction provides excellent flexibility for handling ease.
- High grade cover resists cuts, gouges and scuffs.

Tube: $^{3}/_{16}$" Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
4"	$4^{5}/_{8}$"	2 plies	60	1.96

Static conductive tube.

SS236 MATERIAL HANDLING HOSE - ¼" NATURAL RUBBER TUBE

- Rugged, ultra-durable, slurry discharge hose designed to handle highly abrasive wet and dry materials.
- Durable cover resists cuts, scuffs, gouges, and ozone attack.

Tube: ¼" Extruded Natural Rubber.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
$1^{1}/_{2}$"	$2^{5}/_{16}$"	2 plies	150	1.21
2"	$2^{13}/_{16}$"	2 plies	150	1.56
$2^{1}/_{2}$"	$3^{5}/_{16}$"	2 plies	150	1.90
3"	$3^{13}/_{16}$"	2 plies	150	2.20
4"	$4^{13}/_{16}$"	2 plies	100	2.85
$4^{1}/_{2}$"	$5^{5}/_{16}$"	2 plies	100	3.23
5"	$5^{13}/_{16}$"	2 plies	100	3.54
6"	$6^{13}/_{16}$"	2 plies	85	4.15

SS247 HEAVY DUTY DRY CEMENT HOSE - 1/4" SBR TUBE

Static conductive tube.

Higher working pressures available upon request.

- Specially designed to handle dry abrasive materials such as sand or pebble lime.
- Lightweight construction provides excellent flexibility for handling ease.
- High grade cover resists cuts, gouges and scuffs.

Tube: 1/4" Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
4"	4 3/4"	2 plies	75	2.50
4 1/2"	5 1/4"	2 plies	75	2.79
5"	5 3/4"	2 plies	75	3.11
6"	6 3/4"	2 plies	70	3.69
8"	8 3/4"	2 plies	60	4.88

SW336 MATERIAL HANDLING HOSE - 1/4" NATURAL RUBBER TUBE

Corrugated construction available upon request.

Refer to EW336 (page 43) for additional sizes.

- Durable, all-weather material suction and discharge hose designed to handle highly abrasive materials.
- Dual wire reinforcement provides full vacuum capabilities.

Tube: 1/4" Extruded Natural Rubber.
Reinforcement: Textile with dual wire helix.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
3"	3 15/16"	12"	125	2.69	Full
4"	5"	18"	125	3.94	Full
5"	6"	25"	110	5.25	Full
6"	7 1/16"	30"	110	7.09	Full

SW360 HOT AIR BLOWER HOSE

Refer to EW360 (page 44) for additional sizes and working pressures.

- High temperature, ultra-durable hose for transferring hot air between the tractor and trailer during product unloading.
- Superior grade tube will withstand temperatures up to 350°F.
- Heavy duty cover is heat and ozone resistant.

Tube: Extruded heat resistant EPDM.
Reinforcement: Textile with dual wire helix.
Cover: Heat resistant EPDM.
Temperature: -40° to +350°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	2 1/2	6"	200	.97	Full
3"	3 9/16"	12"	200	1.75	Full
4"	4 9/16"	16"	125	2.41	Full
6"	6 13/16"	24"	100	4.93	Full

SW409 SAND RECOVERY HOSE - NATURAL RUBBER TUBE

- Heavy duty material transfer hose designed exclusively for severe abrasion applications that require suction and discharge service.
- Robust tube provides protection against abrasive material.
- All weather cover resists scuffs, cuts, gouging and ozone attack.

Tube: Extruded 3/16" Natural Rubber.
Reinforcement: Textile with dual wire helix.
Cover: SBR.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	2 3/4"	6"	200	1.49	Full
3"	3 3/4"	12"	175	2.32	Full
4"	4 3/4"	16"	150	3.08	Full
5"	5 13/16"	20"	100	4.25	Full
6"	6 13/16"	24"	100	5.28	Full

Static conductive tube.

MILITARY SPECIFICATIONS

Specification	Part No.	Size	Description
MIL-PRF-11588G Type III & IV	**SS258**	1 - 4”	Hose assemblies for liquid petroleum fuel dispensing (tan cover).
MIL-PRF-11588G Type III & IV	**SS278**	1 - 4”	Hose assemblies for liquid petroleum fuel dispensing (black cover).
MIL-PRF-370J Type A	**SS170**	1 - 6”	Gas discharge hose w/static wire for aviation, auto, turbine, & diesel fuels (tan or black cover).
MIL-PRF-370J Type B	**SW370**	1 - 6”	Hardwall gasoline suction hose (tan or black cover).
USDA Fire Suction & Discharge 5100-184b Nov 1979/Rev. 2 Dec 1982	**SW384**	1, 1½ & 2½”	Forestry suction hose.
A-A-59566 Grade B Class 1 (MIL-ZZ-H-561K)	**SW322**	1 - 6”	Water suction hose (potable & non-potable).
A-A-59566 Grade B Class 2 (MIL-ZZ-H-561K)	**SW323**	1 - 6”	Water suction hose (potable & non-potable).
A-A-59566 Grade A Class 1 (MIL-ZZ-H-561K)	**SW326**	1 - 6”	Water suction hose.
A-A-59566 Grade A Class 2 (MIL-ZZ-H-561K)	**SW328**	1 -6”	Water suction hose.
MIL-DTL-17505F	**EW775**	6 - 8”	Oil and gas suction and discharge hose.
MIL-DTL-27516F`	**SW376**	1 - 6”	Jet fuel and gasoline suction hose.
MIL-DTL-6615F	**SS166**	1½ - 4”	Fuel and non-potable water discharge hose. Type II, no static wire or static conductive tube.
MIL-DTL-6615F	**SS167**	1¼ - 4”	Fuel and non-potable water discharge hose. Type I with static wire and static conductive tube.
MIL-DTL-20176G Type I & II	**SW346**	2½ - 4”	Sewage and oily waste hose (non-collapsible).
MIL-H-17902F (SH) Type CC	**SS217**	2½”	Aircraft fueling on-board ships (collapsible).
MIL-H-17902F (SH) Type NC	**SW391**	1½”	Aircraft fueling on-board ships (non-collapsible).
A-A-59567 Grade 1 Class 1 (MIL-ZZ-H-601E)	**SS266**	1¼ -4”	Non-potable water discharge hose.
A-A-59567 Grade 1 Class 2 (MIL-ZZ-H-601E)	**SS267**	1 - 4”	Potable water discharge hose.
A-A-59567 Grade 3 Class 2 (MIL-ZZ-H-601E)	**SS268**	1 - 4”	Potable water discharge hose.
API 1529/6th Edition 2005, Type C, Grade 1, NFPA 407	**SS124**	1 - 1½”	Aviation refueling hose.
API 1529/6th Edition 2005 Type C, Grade 2, NFPA 407	**SS244**	1½ - 4”	Aviation refueling hose.
API 1529/6th Edition 2005 Type E, Grade 2, NFPA 407, BS EN1361:1997/E (British Standard).	**SW344**	1½ - 4”	Aviation fueling & defueling hose.

PETROLEUM

Product	Page	Size	W.P.	Tube	Cover	Description
EW160	53	4" - 12"	100	Nitrile	Synthetic Rubber	Mud suction hose for rotary well drilling.
EW353	59	10" - 12"	65 - 75	Nitrile	Nitrile	Heavy duty petroleum suction hose.
EW499	53	6" - 12"	200	FKM	Synthetic Rubber	Hot tar & asphalt hose.
(X)SP100	54	2" - 6"	N/A	N/A	N/A	PVC slinky banding sleeve.
SP204	54	2" - 6"	75 - 100	Nitrile	Nitrile w/external PVC helix	Light-N-Bright Gasoline drop hose.
SP353	54	2" - 6"	150	Nitrile	Nitrile w/external PVC helix	Light-N-Bright Petroleum suction hose.
SS106	55	1¼" - 4"	350	Nitrile	Nitrile	LPG hose for bulk unloading.
SS107	55	1¼" - 6"	150 - 250	Nitrile	Nitrile	Lightweight fuel discharge hose.
SS110	55	1¼" - 6"	400 - 500	Nitrile	SBR	High pressure, multi-purpose discharge hose.
SS131	56	1½" - 4"	800 - 1000	Nitrile	Synthetic Rubber	Ultra-high pressure multi-purpose hose.
SS145	56	1½" - 6"	300	Nitrile	Nitrile	Heavy duty oil and gas discharge hose.
SS160	56	3" - 6"	300	Nitrile	SBR	Mud discharge hose.
SS242	57	2" - 6"	100 - 200	Nitrile	Nitrile	Petroleum discharge hose for diesel fuels.
SS254	57	6" - 8"	150	Nitrile	Nitrile	Lightweight oil and gas discharge hose.
SW303	57	1¼" - 4"	150 - 200	Nitrile	Nitrile	Premium grade petroleum suction hose.
SW309	58	1" - 6"	100 - 150	Nitrile	Nitrile	Lightweight petroleum transfer hose.
SW327	58	1½" - 4"	150	Vamac®	Vamac®	High temperature hot tar & asphalt hose.
SW333	58	2" - 6"	250	Nitrile	Nitrile	Petroleum suction hose for bottom loading.
SW353	59	5" - 8"	150 - 200	Nitrile	Nitrile	Heavy duty, high pressure tank truck hose.
SW355	59	3" - 6"	300	Nitrile	Nitrile	High pressure petroleum suction hose.
SW387	60	1½" - 4"	150	Nitrile	Nitrile	Hot tar & asphalt hose.
SWC316(R)	60	1" - 6"	125 - 150	Nitrile	Corrug. Nitrile (Blk or Red)	Ultra-flexible petroleum suction hose.
SWC509	61	1" - 6"	125 - 250	Nitrile	Corrug. SBR	Lightweight oil field vacuum hose.
SWC609(R)	61	1½" - 6"	125 - 250	Nitrile	Corrug. Nitrile (Blk or Red)	Ultra-flexible petroleum suction hose.

EW160 MUD SUCTION HOSE

- Flexible connection between slush pump and mud pit to absorb vibration during rotary well drilling.
- Wire helix design provides full vacuum capabilities.
- Cover is oil, cut, scuff and ozone resistant.

Tube: Specially compounded Nitrile.
Reinforcement: High strength tire cord with steel wire helix.
Cover: Oil resistant synthetic rubber.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
4"	5"	24"	100	4.70	Full
6"	7 1/8"	36"	100	8.50	Full
8"	9 1/4"	48"	100	12.80	Full
10"	11 3/8"	60"	100	19.50	Full
12"	13 3/8"	72"	100	24.80	Full

Custom Made Hose Product

Higher working pressures available upon request.

EW499 HOT TAR & ASPHALT HOSE - FKM (VITON®) TUBE

- Ultra-high temperature hose designed for hot tar, hot oil and unrefined petroleum products.
- Premium grade tube provides heat resistance up to 350°F.
- Dual helix wire provides full vacuum capabilities.
- Specially formulated cover is heat and ozone resistant.

Tube: FKM (Viton® or equivalent).
Reinforcement: High strength tire cord with steel wire helix.
Cover: Oil resistant synthetic rubber.
Temperature: -40° to +350°F. **(continuous service)**.

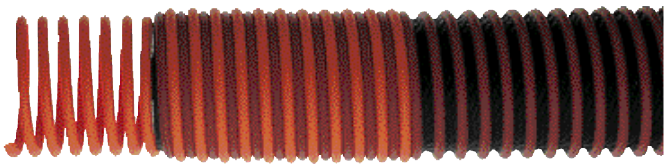
I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6"	7 1/4"	42"	200	7.50	Full
8"	9 7/16"	54"	200	15.25	Full
10"	12 1/4"	66"	200	20.75	Full
12"	14 3/8"	78"	200	26.25	Full

Custom Made Hose Product

Caution: Do not use above 350°F. or for other services.

Refer to SW327 (page 58) and SW387 (page 60) for additional hot tar & asphalt hoses.

SP100 PVC SLINKY BANDING SLEEVE



- Rugged PVC banding sleeve developed to coil between each outer PVC rod to create a uniform banding area for coupling.
- Can be used as a spring guard or kink preventor behind the coupling.
- Colors: Orange, Red, Green, Gray, Gold, & Sand Matte.
- Use with Titan's Light-N-Bright (SP series) hose products.

I.D.	WEIGHT LB/FT.	LENGTH
2"	.19	8 Turns
3"	.33	10 Turns
4"	.46	10 Turns
6"	1.02	16 Turns

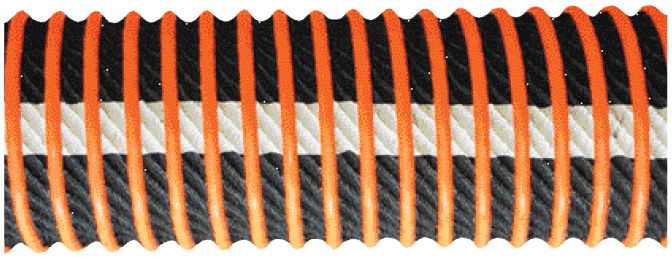
XSP100 PVC HOSE ABRASION PROTECTOR

- PVC hose abrasion protectors help extend the life of your hose in highly abrasive areas.
- Coils over length of hose to protect against scuffs and abrasions.

SP204 LIGHT-N-BRIGHT PLUS PETROLEUM DROP HOSE

Suitable for 60% aromatics.

SP100 PVC Slinky Banding Sleeves recommended for banding.



- Lightweight, ultra-flexible, petroleum drop hose for gravity flow or suction of gasoline and petroleum based products.
- Highly resistant to crushing, kinks and abrasion.
- Internal static wire assures no static build-up.
- Integrated external spiral PVC helix provides abrasion resistance and durability.

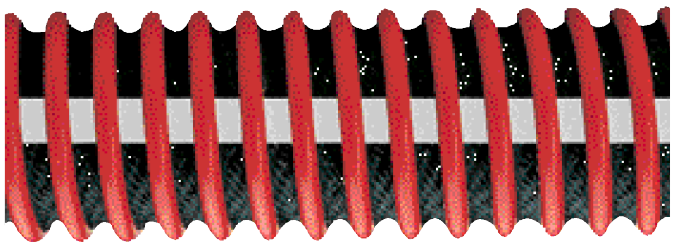
Tube: Extruded Nitrile.
Reinforcement: Textile with static wire and integrated external PVC helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	2 7/8"	4"	100	1.12	Full
3"	3 7/8"	5"	100	1.57	Full
4"	4 7/8"	6"	100	2.06	Full
6"	7"	10"	75	2.99	Full

SP353 LIGHT-N-BRIGHT TANK TRUCK HOSE

Suitable for 60% aromatics.

SP100 PVC Slinky Banding Sleeves recommended for banding.



- Lightweight, flexible, and easy to handle petroleum suction and discharge hose with static wire designed for both drop and pump off service.
- Highly resistant to crushing, kinks and abrasion.
- Internal static wire assures no static build-up.
- Integrated external spiral PVC helix provides abrasion resistance and durability.

Tube: Extruded Nitrile.
Reinforcement: Textile with static wire and integrated external PVC helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +150°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	3"	6"	150	1.25	Full
3"	4"	8"	150	1.78	Full
4"	5"	10"	150	2.32	Full
6"	7"	24"	150	3.49	Full

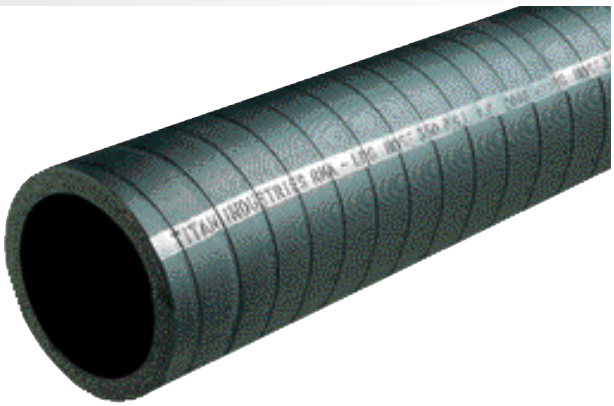
SS106 LPG HOSE WITH STATIC WIRE

- LPG discharge hose designed for bulk unloading.
- Heavy duty construction provides excellent working pressures.
- Pin pricked cover allows for permeation.
- Abrasion resistant cover provides oil and ozone protection.
- Meets all requirements for ISO 2928-1986 (E).

Tube: Extruded enhanced Nitrile.
Reinforcement: Textile with internal static wire.
Cover: Specially compounded Nitrile.
Temperature: -40° to +122°F.

Caution: Do not use indoors or for natural gas applications.

Burst pressure 1750 psi on all sizes.



I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/4"	1 15/16"	4 plies	350	.77
1 1/2"	2 3/16"	4 plies	350	.91
2"	2 11/16"	4 plies	350	1.20
2 1/2"	3 3/16"	4 plies	350	1.45
3"	3 11/16"	4 plies	350	1.74
4"	4 15/16"	6 plies	350	3.16

SS107 LIGHTWEIGHT FUEL DISCHARGE HOSE

- Lightweight, easy to handle fuel discharge hose designed for fuel connector service and delivery of petroleum products.
- Abrasion resistant cover provides oil and ozone protection.

Tube: Extruded Nitrile.
Reinforcement: Textile.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/4"	1 5/8"	2 plies	250	.46
1 1/2"	1 7/8"	2 plies	250	.52
2"	2 3/8"	2 plies	200	.67
3"	3 1/2"	2 plies	200	1.14
4"	4 1/2"	2 plies	150	1.46
6"	6 5/8"	2 plies	150	2.96

SS110 MULTI-PURPOSE DISCHARGE HOSE WITH STATIC WIRE

- High pressure multi-purpose discharge hose excellent for air, water, mild oils, and chemicals.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile with internal static wire.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/4"	1 7/8"	4 plies	500	.79
1 1/2"	2 3/16"	4 plies	500	.96
2"	2 3/4"	4 plies	500	1.25
2 1/2"	3 3/8"	6 plies	500	1.96
3"	3 7/8"	6 plies	500	2.27
4"	5"	6 plies	500	3.34
6"	7 1/8"	8 plies	400	5.67

SS131 HEAVY DUTY MULTI-PURPOSE DISCHARGE HOSE

- Heavy duty, ultra-high pressure discharge hose designed for multi-purpose use and a variety of tough applications.
- Specially compounded tube is oil and heat resistant.
- All purpose cover is abrasion and ozone resistant.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile.
Cover: Abrasion resistant rubber.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/2"	2 3/8"	6 plies	1000	1.53
2"	3"	6 plies	1000	2.01
3"	4 1/8"	6 plies	1000	3.20
4"	5 3/16"	6 plies	800	4.51

SS145 HEAVY DUTY OIL AND GAS HOSE

- Heavy duty discharge hose designed for oil, gasoline, and high pressure water applications.
- Cover is oil, abrasion and chemical resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with internal static wire.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/2"	2 3/8"	4 plies	300	1.34
2"	2 7/8"	4 plies	300	1.69
3"	3 7/8"	4 plies	300	2.34
4"	4 7/8"	4 plies	300	3.11
6"	7 1/16"	6 plies	300	5.64

SS160 MUD DISCHARGE HOSE

- Lightweight mud discharge hose designed for petroleum waste, drilling, mud and high pressure water.
- Heavy duty, abrasion resistant cover.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
3"	3 7/8"	4 plies	300	2.30
4"	4 7/8"	4 plies	300	3.06
5"	5 7/8"	4 plies	300	3.75
6"	7 1/16"	6 plies	300	5.54

SS242 PETROLEUM DISCHARGE HOSE

- Petroleum discharge hose designed for on-shore service of diesel fuels and other petroleum products.
- Durable all-weather cover is oil and ozone resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with internal static wire.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
2"	2 11/16"	2 plies	200	1.21
3"	3 11/16"	2 plies	150	1.70
4"	4 11/16"	2 plies	125	2.26
6"	6 11/16"	2 plies	100	3.30

SS243 with tan cover available upon request.

SS254 OIL AND GAS HOSE

- Lightweight oil and gasoline discharge hose used for transferring petroleum products.
- Rugged cover is oil, abrasion and chemical resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
6"	6 27/32"	4 plies	150	4.10
8"	8 27/32"	4 plies	150	5.52

SW303 PETROLEUM SUCTION HOSE

- Premium grade petroleum suction and discharge hose suitable for 60% aromatics.
- Excellent tank wagon hose where flexibility is a must.
- Dual wire helix construction provides full vacuum capabilities.
- Cover is oil, abrasion and ozone resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/4"	1 11/16"	4"	200	.51	Full
1 1/2"	2"	5"	200	.64	Full
2"	2 1/2"	6"	200	.95	Full
2 1/2"	3"	8"	150	1.32	Full
3"	3 1/2"	12"	150	1.68	Full
4"	4 5/8"	18"	150	2.63	Full

SW309 PETROVAC PETROLEUM SUCTION HOSE

- Lightweight suction and discharge hose for transferring petroleum products.
- Dual wire helix construction provides full vacuum capabilities.
- Tube and cover are ozone, abrasion, and oil resistant.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 7/16"	4"	150	.42	Full
1 1/4"	1 11/16"	5"	150	.50	Full
1 1/2"	1 15/16"	6"	150	.63	Full
2"	2 1/2"	8"	150	.98	Full
2 1/2"	3"	10"	150	1.24	Full
3"	3 1/2"	12"	150	1.70	Full
4"	4 9/16"	18"	150	2.45	Full
5"	5 3/4"	25"	100	3.61	Full
6"	6 3/4"	30"	100	4.78	Full

SW327 HOT TAR & ASPHALT HOSE - VAMAC® TUBE

Caution: Do not use above 350°F. or for other services.

Refer to SW387 (page 60) for intermittent service applications.

- Ultra-high temperature hose designed for hot tar, hot oil and unrefined petroleum products.
- Premium grade tube and cover provide heat and abrasion resistance.

Tube: Extruded heat resistant Vamac®.
Reinforcement: Textile with wire helix.
Cover: Extruded heat resistant Vamac®.
Temperature: -40° to +350°F. **(Continuous service)**.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/16"	6"	150	.92	Full
2"	2 19/32"	8"	150	1.36	Full
2 1/2"	3 1/8"	10"	150	1.87	Full
3"	3 21/32"	12"	150	2.50	Full
4"	4 3/4"	16"	150	3.57	Full

Vamac® is a registered tradename of DuPont

SW333 PETROLEUM SUCTION HOSE

Caution: Not for dock hose service.

- High pressure petroleum suction and discharge hose designed for bottom loading of tank trucks and rail cars.
- Cover is oil, abrasion and ozone resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	2 9/16"	8"	250	1.22	Full
3"	3 3/4"	12"	250	2.29	Full
4"	4 3/4"	18"	250	3.28	Full
6"	6 29/32"	30"	250	5.69	Full

SW353 HEAVY DUTY TANK TRUCK HOSE

- Heavy duty petroleum suction and discharge hose designed for tank truck service.
- Suitable for 50% aromatics.

Tube: Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/4"	1 3/4"	5"	200	.64	Full
1 1/2"	2 1/16"	6"	200	.78	Full
2"	2 9/16"	8"	200	1.07	Full
2 1/2"	3 1/8"	10"	200	1.49	Full
3"	3 9/16"	12"	200	2.07	Full
4"	4 9/16"	18"	200	2.86	Full
5"	5 5/8"	25"	150	3.70	Full
6"	6 3/4"	30"	150	4.83	Full
8"	9 1/4"	42"	150	12.08	Full

EW353 HEAVY DUTY TANK TRUCK HOSE

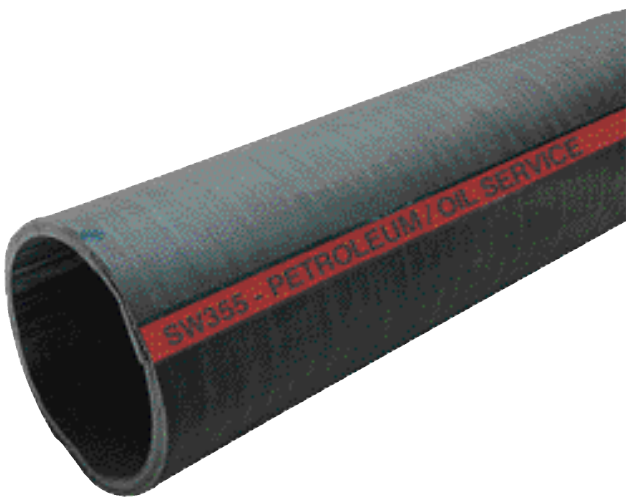
Custom Made Hose Product

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
10"	11"	60"	75	13.00	Full
12"	13 1/4"	72"	65	18.00	Full

SW355 PETROLEUM / OIL SERVICE HOSE - 300 PSI

- High pressure petroleum suction and discharge hose suitable for 60% aromatics.
- Lightweight construction provides excellent flexibility.
- Heavy duty cover protects against oils, chemicals, cuts, abrasions, and ozone attack.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile.
Temperature: -40° to +180°F.



I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
3"	4"	12"	300	2.84	Full
4"	5"	16"	300	3.84	Full
6"	7"	36"	300	7.38	Full

SW387 HOT TAR & ASPHALT HOSE - NITRILE TUBE

Caution: Do not use for continuous service **or** above 350° F.

Refer to SW327 (page 58) for continuous service applications.

- High temperature hose designed for hot tar, hot oil and unrefined petroleum products.
- Premium grade tube handles high temperatures up to 350°F. at intermittent service.
- Dual helix wire provides full vacuum capabilities.
- Specially formulated cover is heat and ozone resistant.

Tube: Extruded heat resistant Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Nitrile.
Temperature: -40° to +350°F. **(Intermittent service only)**.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/8"	6"	150	.95	Full
2"	2 5/8"	8"	150	1.39	Full
2 1/2"	3 3/8"	10"	150	1.82	Full
3"	3 3/4"	12"	150	2.38	Full
4"	4 13/16"	18"	150	3.66	Full

SWC316 PETROMAX PETROLEUM SUCTION - BLACK COVER

- Extremely flexible petroleum suction & discharge hose designed for tank truck service.
- Deep corrugated construction provides extreme flexibility and a tight bend radius without kinking or crushing.
- High grade cover is ozone, abrasion and oil resistant.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Corrugated specially compounded Nitrile (Black or Red).
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 9/16"	3"	150	.61	Full
1 1/2"	2 1/16"	4"	150	.85	Full
2"	2 9/16"	5"	150	1.18	Full
2 1/2"	3 1/16"	6"	150	1.39	Full
3"	3 19/32"	9"	150	1.84	Full
4"	4 19/32"	12"	150	2.60	Full
6"	6 3/4"	18"	125	4.79	Full

SWC316R PETROMAX PETROLEUM SUCTION - RED COVER

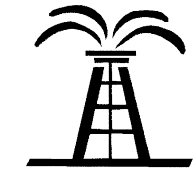
I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 9/16"	3"	150	.61	Full
1 1/2"	2 1/16"	4"	150	.85	Full
2"	2 9/16"	5"	150	1.18	Full
2 1/2"	3 1/16"	6"	150	1.39	Full
3"	3 19/32"	9"	150	1.84	Full
4"	4 19/32"	12"	150	2.60	Full
6"	6 3/4"	18"	125	4.79	Full

SWC509 TITANFLEX® ULTRAVAC OIL FIELD VACUUM HOSE

- Ultra-flexible oil field vacuum hose ideal for transferring diluted industrial chemicals, petroleum waste, sludge, slurry, and sediments.
- Lightweight corrugated design is easy to lift, drag, and maneuver.

Tube: Extruded specially compounded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Corrugated SBR.
Temperature: -40° to +160°F.

Not recommended for refined petroleum products with over 35% aromatics.



I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1"	1 1/2"	1"	250	.48	Full
1 1/2"	2 1/16"	1 1/2"	250	.72	Full
2"	2 9/16"	2"	250	.93	Full
2 1/2"	3 1/8"	2 1/2"	200	1.40	Full
3"	3 5/8"	3"	200	1.66	Full
4"	4 5/8"	4"	150	2.23	Full
6"	6 3/4"	10"	125	4.02	Full

SWC609 TITANFLEX® PETROLEUM SUCTION HOSE - BLACK COVER

- Corrugated petroleum suction and discharge hose designed for commercial gasoline, diesel and fuel oils.
- Extreme flexibility and superior bend radius.
- Unique non-kinking design increases service life.

Tube: Extruded Nitrile.
Reinforcement: Textile with dual wire helix.
Cover: Specially compounded Nitrile (Black or Red).
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/16"	1 1/2"	250	.72	Full
2"	2 9/16"	2"	250	.92	Full
2 1/2"	3 3/16"	2 1/2"	200	1.35	Full
3"	3 11/16"	3"	200	1.66	Full
4"	4 5/8"	4"	150	2.26	Full
6"	6 3/4"	8"	125	4.16	Full

SWC609R TITANFLEX® PETROLEUM SUCTION - RED CVR

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
1 1/2"	2 1/16"	1 1/2"	250	.72	Full
2"	2 9/16"	2"	250	.95	Full
2 1/2"	3 3/16"	2 1/2"	200	1.35	Full
3"	3 11/16"	3"	200	1.70	Full
4"	4 5/8"	4"	150	2.32	Full
6"	6 3/4"	8"	125	4.10	Full

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WATER

Product	Page	Size	W.P.	Tube	Cover	Description
ES104	63	8” - 18”	100 - 175	SBR	SBR	Heavy duty water discharge hose
ES115	64	8” - 18”	50 - 100	SBR	SBR	Lightweight water discharge hose.
EW300	66	6⅝” - 18”	50 - 125	SBR	SBR	2 ply water suction and discharge hose.
EW301	66	8” - 18”	100 - 150	SBR	SBR	Heavy duty, 4 ply water suction hose.
SS104	63	3” - 8”	150 - 200	SBR	SBR	Heavy duty water discharge hose.
SS111	63	2” - 6”	500 - 800	SBR	SBR	Heavy duty, high pressure water jetting hose.
SS115	64	1½” - 8”	75 - 100	SBR	SBR	Economical lightweight water discharge hose.
SS122	64	1¼” - 4”	300 - 500	SBR	SBR	High pressure water jetting hose.
SS155	65	4” - 6”	150 - 200	SBR	SBR	Medium duty water discharge hose.
SS715	65	2” - 6”	100 - 125	EPDM	EPDM	Medium to light duty water discharge hose.
SW300	66	6” - 8”	100	SBR	SBR	Lightweight, 2 ply water suction hose.
SW500	67	2” - 6”	150	EPDM	EPDM	Medium to light duty water suction hose.

SS104 HEAVY DUTY WATER DISCHARGE HOSE

- Heavy duty 4 ply water discharge hose designed to handle tough construction and industrial applications.
- Abrasion resistant cover protects against cuts and abrasions.

Tube: SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
3"	3 5/8"	4 plies	200	1.36
3 1/2"	4"	4 plies	200	1.46
4"	4 5/8"	4 plies	200	1.81
4 1/2"	5 1/8"	4 plies	200	2.07
5"	5 5/8"	4 plies	200	2.29
5 9/16"	6 1/16"	4 plies	200	2.35
6"	6 5/8"	4 plies	200	2.82
6 5/8"	7 1/4"	4 plies	200	3.44
8"	8 5/8"	4 plies	150	3.84

ES104 HEAVY DUTY WATER DISCHARGE HOSE

Custom Made Hose Product

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
8"	8 22/32"	4 plies	175	5.00
8 5/8"	9 11/32"	4 plies	175	5.50
10"	10 11/16"	4 plies	150	6.20
10 3/4"	11 1/2"	4 plies	150	6.70
12"	12 11/16"	4 plies	150	7.00
12 3/4"	13 1/2"	4 plies	150	7.80
14"	14 11/16"	4 plies	125	8.50
16"	16 17/32"	4 plies	100	9.70
18"	18 11/16"	4 plies	100	11.00

SS111 HIGH PRESSURE WATER JETTING HOSE

- High pressure, heavy duty water jetting hose designed for stripping layers from hard surfaces and washdown applications.
- Premium grade cover offers protection against the outdoor elements.

Tube: Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
2"	2 13/16"	6 plies	800	1.58
2 1/2"	3 5/16"	6 plies	800	1.89
3"	3 13/16"	6 plies	800	2.29
4"	4 13/16"	6 plies	800	2.94
5"	5 13/16"	6 plies	500	3.55
6"	7"	8 plies	500	4.94

SS115 LIGHTWEIGHT WATER DISCHARGE HOSE

- Economically designed water discharge hose for construction and light duty industrial applications.
- Durable cover offers protection against outdoor elements.

Tube: SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/2"	1 5/16"	2 plies	100	.43
2"	2 7/16"	2 plies	100	.54
2 1/2"	2 7/8"	2 plies	100	.67
3"	3 7/16"	2 plies	100	.80
3 1/2"	3 15/16"	2 plies	100	.94
4"	4 7/16"	2 plies	100	1.07
4 1/2"	4 15/16"	2 plies	100	1.21
5"	5 7/16"	2 plies	100	1.33
5 9/16"	6"	2 plies	75	1.46
6"	6 7/16"	2 plies	75	1.60
6 5/8"	7 1/16"	2 plies	75	1.74
8"	8 9/16"	4 plies	75	2.99

ES115 LIGHTWEIGHT WATER DISCHARGE HOSE

Custom Made Hose Product

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
8"	8 1/2"	2 plies	100	3.90
8 5/8"	9 1/8"	2 plies	100	4.30
10"	10 17/32"	2 plies	100	5.00
10 3/4"	11 5/16"	2 plies	75	5.30
12"	12 17/32"	2 plies	75	6.00
12 3/4"	13 5/16"	2 plies	75	6.40
14"	14 17/32"	2 plies	75	7.00
16"	16 17/32"	2 plies	50	7.90
18"	18 17/32"	2 plies	50	8.90

SS122 LIGHTWEIGHT WATER JETTING HOSE

- Lightweight water jetting hose for washdown and offshore jetting applications.
- Premium grade cover protects against outdoor elements.

Tube: Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
1 1/4"	1 11/16"	2 plies	500	.49
1 1/2"	1 15/16"	2 plies	500	.60
2"	2 1/2"	2 plies	500	.96
2 1/2"	3"	2 plies	500	1.15
3"	3 1/2"	2 plies	500	1.36
4"	4 1/2"	2 plies	300	1.75

SS155 MEDIUM DUTY WATER DISCHARGE HOSE

- Medium duty water discharge hose designed for demanding water applications.

Tube: Extruded SBR.
Reinforcement: Textile.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
4”	4 7/16”	4 plies	200	1.39
6”	6 7/16”	4 plies	150	2.02

SS715 SEA LION EPDM WATER DISCHARGE HOSE

- Medium duty water discharge hose for construction, mining, drilling, industrial and agricultural applications.
- Effectively conveys water, mild chemicals, slurries, brine, detergents, mild acids, alkalies and glycols.
- Premium grade EPDM tube and cover offers protection against abrasion, ozone and mild chemicals.

Tube: Extruded EPDM.
Reinforcement: Textile.
Cover: EPDM.
Temperature: -40° to +200°F.

I.D.	O.D.	REINFORCEMENT	WORKING PRESSURE PSI	WEIGHT LB/FT
2”	2 5/16”	2 plies	125	.51
2 1/2”	2 13/16”	2 plies	125	.68
3”	3 3/8”	2 plies	125	.82
4”	4 3/8”	2 plies	125	1.13
6”	6 3/8”	2 plies	100	1.71

SW300 LIGHTWEIGHT WATER SUCTION

- Lightweight water suction hose designed for construction and industrial washdown applications.
- Wire reinforcement provides full vacuum capabilities without sacrificing flexibility.
- Abrasion resistant cover protects against ozone attack.

Tube: SBR.
Reinforcement: Textile with wire helix.
Cover: SBR.
Temperature: -40° to +180°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6”	6 5/8”	30”	100	3.64	Full
8”	9 3/16”	48”	100	10.88	Full

EW300 LIGHTWEIGHT WATER SUCTION - 2 PLY

Custom Made Hose Product

- Lightweight 2 ply water suction hose for construction and industrial washdown applications.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
6 5/8”	7 1/2”	40”	125	5.90	Full
7”	7 7/8”	42”	125	7.00	Full
7 1/2”	8 3/8”	45”	125	7.50	Full
8”	8 7/8”	48”	100	8.40	Full
8 5/8”	9 5/8”	52”	100	10.60	Full
10”	10 31/32”	60”	100	13.00	Full
10 3/4”	11 27/32”	65”	75	17.20	Full
12”	13 1/8”	72”	75	18.00	Full
12 3/4”	13 7/8”	77”	75	22.00	Full
14”	15 1/8”	84”	75	24.00	Full
16”	17 1/8”	96”	50	27.30	Full
18”	19 1/8”	108”	50	30.60	Full

EW301 HEAVY DUTY WATER SUCTION - 4 PLY

Custom Made Hose Product

- Heavy duty 4 ply water suction hose for mining, construction, and other industrial applications.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
8”	9 1/8”	48”	150	10.90	Full
8 5/8”	9 3/4”	56”	150	11.70	Full
10”	11 1/8”	60”	150	14.50	Full
10 3/4”	12”	68”	150	18.80	Full
12”	13 5/16”	72”	150	20.90	Full
12 3/4”	14”	80”	150	22.10	Full
14”	15 5/16”	84”	125	26.10	Full
16”	17 5/16”	96”	125	29.60	Full
18”	19 5/16”	108”	100	33.20	Full

SW500 WALRUS EPDM WATER SUCTION HOSE

- Medium to light duty water suction hose for construction, mining, drilling, industrial and agricultural applications.
- Effectively conveys water, mild chemicals, slurries, brine, detergents, mild acids, alkalies and glycols.
- Premium grade EPDM tube and cover offers protection against abrasion, ozone and mild chemicals.

Tube: Extruded EPDM.
Reinforcement: Textile with dual wire helix.
Cover: EPDM.
Temperature: -40° to +200°F.

I.D.	O.D.	BEND RADIUS	WORKING PRESSURE PSI	WEIGHT LB/FT	VACUUM
2"	$2^{7}/_{16}$"	8"	150	.76	Full
$2^{1}/_{2}$"	$2^{15}/_{16}$"	11"	150	1.14	Full
3"	$3^{7}/_{16}$"	14"	150	1.46	Full
4"	$4^{1}/_{2}$"	18"	150	2.12	Full
6"	$6^{5}/_{8}$"	28"	150	3.71	Full

INTERNALLY EXPANDED

Internally expanded couplings consist of a stem and ferrule that provides a permanent connection between the coupling and hose. The stem is internally expanded for maximum holding power and provides a **full flow, unrestricted transition area**.

CARBON STEEL

THREADED END

GROOVED END

HEAVY DUTY (CALIFORNIA) END

PLAIN END

STAINLESS STEEL

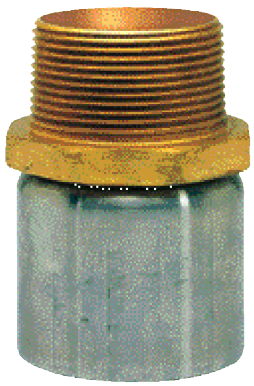
BEVEL SEAT STEM

TUBE END STEM

CLAMP STEM

3500 HOSE SLEEVE

BRASS



BRASS MALE

BRASS FEMALE

EXTERNALLY SWAGED

Externally swaged-on fittings and ferrules are attached by using special equipment to progressively reduce the ferrule diameter to the required finish dimension. Externally swaging provides a permanent connection for **maximum holding power**.

HEAT TREATED

HEAVY DUTY END

GROOVED END

THREADED END

EXTERNALLY SWAGED OR INTERNALLY EXPANDED

FIXED/FLOATING FLANGES

150# OR 300# FLOATING FLANGE

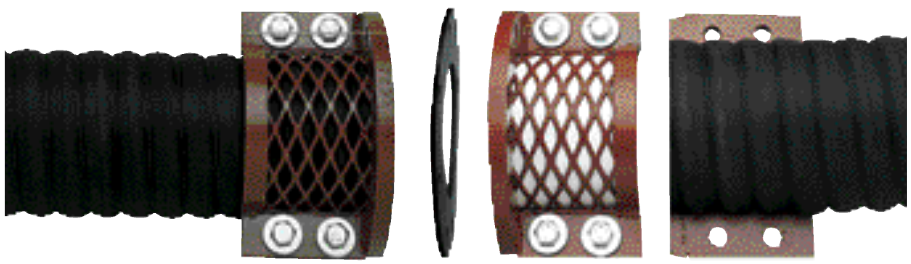
300# FIXED FLANGE

150# FIXED FLANGE

SPLIT-LOK FLANGE COUPLING SYSTEM

Split-Lok flanges are a reusable, universal coupling system designed for large bore material transfer hose that allows the user to fabricate assemblies in the field. This unique full-flow coupling system provides excellent coupling retention and can be used continuously at 150 psi. Split-Lok flanges are available in a smooth steel construction or a corrugated aluminum design to meet the needs of your particular application.

SPLIT-LOK FLANGE GASKET



SPLIT-LOK FLANGE COUPLINGS

HOSE SELECTION

Titan suggests using the **"STAMPED"** guide to assist in determining the correct hose, coupling, and attachment method when selecting a hose.

S	SIZE:	I.D., O.D. and length of hose that is required.
T	TEMPERATURE:	Temperature of the material being conveyed.
A	APPLICATION:	Conditions of use for the hose.
M	MATERIAL:	Type and concentration of material being conveyed.
P	PRESSURE:	Working pressure for which the hose assembly will be exposed.
E	ENDS:	Style, type, and attachment method of end fittings.
D	DELIVERY:	Testing, packaging, and delivery requirements.

You can extend the life of your hose by…

- Choosing the appropriate hose for the job. In addition to multi-purpose hoses, Titan offers hoses that are specifically designed for critical applications.
- Selecting the proper length of hose and keeping the hose from high traffic areas.
- Inspecting the hose before each use especially in critical applications. Inspect for coupling movement, kinks, cover perforations, soft spots or any other visible damage.
- Storing the hose in a cool, dry place off of the ground. Keeping the hose out of direct sunlight.
- Draining and cleaning the hose after each use.
- Pressure testing each hose at 150% of its working pressure at regular intervals. Testing intervals will depend on frequency and critical nature of the application.
- Using proper hose suspension equipment to ensure recommended curvature of the hose is not exceeded, and to provide an uninterrupted flow of material.

You will reduce the life of your hose by…

- Using the hose to move materials it was not designed to convey.
- Exceeding the hose's maximum working temperature and pressure.
- Leaving product trapped in the hose for prolonged periods of time.
- Exceeding the hose's minimum bend radius.
- Not using proper adapters where necessary.
- Dragging the hose over rough surfaces.

Safety

Special note: Working pressures are recommended in accordance with RMA design safety factors at **ambient temperatures**. Do not operate outside hose temperature limits. Even within hose temperature limits, end fittings and hose size can impact performance at higher temperatures. For your safety, Titan recommends the following working pressure reductions at the following temperatures.

80° to 150°F	Reduce working pressure by 15%
150° to 225°F.	Reduce working pressure by 30%
Over 225°F.	Reduce working pressure by 50%

Titan Industries continually strives to make design and material improvements and reserves the right to alter specifications without prior notice.

TITAN INDUSTRIES
Manufacturer of Industrial Hose

Product Recommendation Form

Customer Information: Date: _____

Company: _____ Contact: _____

Address: _____ Phone: _____

_____ Fax: _____

Size	I.D.	O.D.	Overall Length	Tolerance
Temperature	Material being Conveyed		Outside Exposure	
	Min. (˚F or ˚C)	Max. (˚F or ˚C)	Min. (˚F or ˚C)	Max. (˚F or ˚C)
Application	Type of Service			
	Indoor/Outdoor	Flexibility Required	External Conditions	
	Intermittent/Continuous Use		Electrical Static Conductive	
Material	Type of Service			
Pressure	Working Pressure	W.P. Incl. Surges	Burst Pressure	Vacuum Required

Ends	End	Style	Attachment Method	Material	Threads/Bolt Hole
	#1				
	#2				

Delivery	Quantity	Date Required	Ship Via
	Required Testing		Required Certification

Special Requirements	Color	Private Branding	Special Packaging
Other Information			

Fax To: Titan Industries Customer Service Department 562.869.05.92

Form is available for download at our website

PRODUCT RECOMMENDATION FORM

MATERIALS COMMONLY USED IN TITAN HOSE

ASTM Designation	Common Name	Composition	General Properties
BR	Polybutadiene	Butadiene	Excellent abrasion and low temperature resistance. High resilience.
CIIR	Chlorobutyl isoprene	Chlorinated isobutylene	Same general properties as Butyl (see IIR below).
CR	Neoprene®	Polychloroprene	Good weathering resistance and flame retarding. Moderate resistance to petroleum based fluids. Good physical properties.
CSM	Hypalon®	Chlorosulfonyl-Polyethylene	Excellent ozone, weathering and acid resistance. Good abrasion and heat resistance. Good resistance to petroleum based fluids.
EA	Vamac®	Ethylene-Acrylic Elastomer	Outstanding heat, ozone, and oil resistance.
EPDM	Ethylene Propylene Rubber	Ethylene-Propylene diene-terpolymer	Excellent ozone, chemical, and aging characteristics. Poor resistance to petroleum based fluids.
FEP	Teflon®	Fluorinated Ethylene Propylene	Excellent chemical resistance, electrical properties and flame resistance. Low coefficiency to friction, high strength at elevated temps, low permeability.
FKM	Fluoroelastomer	Fluorocarbon Rubber	Excellent high temperature resistance, particularly in air or oil. Very good chemical resistance.
IIR	Butyl	Isobutylene-isoprene	Very good weathering resistance. Low permeability to air. Good physical properties. Poor resistance to petroleum based fluids.
IR	Polyisoprene	Polyisoprene, synthetic	Same properties as Natural Rubber (see NR below).
Mod XLPE	Modified Cross-Linked Polyethylene	Proprietary	Excellent chemical resistance with good heat and electrical properties.
NBR	Nitrile	Acrylonitrile-butadiene	Excellent resistance to petroleum based fluids. Moderate resistance to aromatics. Good physical properties.
NR	Natural Rubber	Polyisoprene, natural	Excellent physical properties including abrasion and low temperature resistance. Poor resistance to petroleum based fluids.
SBR	SBR	Styrene-butadiene	Good physical properties, including abrasion resistance. Poor resistance to petroleum based fluids.
	UHMWPE	Ultra high molecular weight polyethylene	Excellent resistance to a broad range of chemicals with excellent abrasion resistance.
XLPE	Cross-Linked Polyethylene	Polyethylene and cross linking agents	Excellent chemical resistance with good heat and electrical properties.

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Acetal	C	C	B	D	C	C	B	D	A	B	A	A
Acetaldehyde	D	D	A	D	C	C	A	D	A	A	A	A
Acetamide	C	D	A	A	B	B	A	B	A	A	A	A
Acetate Solvents	C	D	C	D	D	D	A	D	A	B	A	A
Acetic Acid, 10%	B	B	B	B	C	C	A	C	A	A	A	A
Acetic Acid, 30%	D	D	B	D	C	B	A	C	A	B	A	A
Acetic Acid, 50%	D	D	B	D	C	D	A	D	A	B	A	A
Acetic Acid, Glacial	D	D	B	D	D	D	A	D	-	A	A	A
Acetic Anhydride	D	D	B	D	D	D	B	D	A	B	A	A
Acetic Ester (Ethyl Acetate)	D	D	B	D	D	D	A	D	A	B	A	A
Acetic Ether (Ethyl Acetate)	D	D	B	D	D	C	A	D	A	B	A	A
Acetic Oxide (Acetic Anhydride)	D	D	B	D	D	D	B	D	A	B	A	A
Acetone	C	C	B	D	C	C	A	D	A	A	A	A
Acetophenome	C	D	A	D	D	D	A	D	A	A	A	A
Acetyl Acetone	D	D	B	C	D	D	B	D	A	A	A	A
Acetyl Chloride	D	D	C	D	D	D	C	B	B	C	B	A
Acetylene	D	D	A	A	B	B	B	A	A	A	A	A
Acrylonitrile	C	D	D	D	C	C	D	D	A	C	A	A
Air	A	A	A	A	A	A	A	A	A	A	A	A
Alcohol Aliphatic	A	B	A	A	A	A	A	C	A	A	A	B
Alcohol, Aromatic	C	D	D	C	C	D	D	A	A	B	A	A
Alk-Tri (Trichloroethylene)	D	D	D	D	D	D	D	A	B	C	B	A
Allyl Alcohol	A	B	A	A	A	A	A	B	A	A	A	A
Allyl Bromide	D	D	D	D	D	D	D	B	B	B	B	A
Allyl Chloride	D	D	D	D	D	D	D	A	B	B	B	A
Alum (Alum Potassium Sulfate)	A	B	A	A	A	A	A	A	A	A	A	A
Aluminum Acetate	C	B	A	C	C	B	A	A	A	A	A	A
Aluminum Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Floride	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Ammonia Anhydrous	TITAN HOSE NOT AVAILABLE											
Ammonia Liquid	B	B	A	B	A	A	A	A	A	A	A	A
Ammonia in Water	B	B	B	C	B	B	A	B	A	A	A	A
Ammonia, Gas (Cold)	TITAN HOSE NOT AVAILABLE											
Ammonia Gas (150°F)	TITAN HOSE NOT AVAILABLE											
Ammonium Carbonate	A	A	A	C	A	A	A	A	A	A	A	A
Ammonium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Hydroxide	B	B	A	B	B	A	A	B	-	A	A	A
Ammonium Metaphosphate	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Ammonium Persulfate	A	D	A	D	A	A	B	A	A	A	A	A
Ammonium Physphate	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Sulfate	A	B	A	A	A	A	A	A	A	A	A	A
Ammonium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Thiocyanate	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Thiosulfate	A	A	A	A	A	A	A	A	A	A	A	A
Amyl Acetate	C	D	B	D	D	D	A	A	-	A	A	A
Amyl Acetone	D	D	B	D	D	D	B	D	A	A	A	A
Amyl Alcohol	A	B	A	A	A	A	A	A	A	A	A	A
Amylamine	TITAN HOSE NOT AVAILABLE											
Amyl Borate	D	D	D	A	A	C	D	A	A	C	A	A
Amyl Chloride	D	D	D	D	D	D	D	A	A	C	A	A
Amyl Chloronapthalene	D	D	D	D	D	D	D	A	A	C	A	A
Amyl Napthalene	D	D	D	D	D	D	D	A	A	C	A	A
Amyl Oleate	D	D	B	D	D	D	B	C	A	B	A	A
Amyl Phenol	D	D	D	D	D	D	D	A	A	C	A	A
Anethole	D	D	D	D	D	D	D	B	B	C	B	A
Aniline	D	D	B	D	C	C	D	B	A	C	A	B
Aniline Dyes	B	C	B	D	B	B	B	B	A	A	A	A
Aniline Hydrochloride	B	C	B	B	D	D	B	B	A	A	A	A
Animal Fats	D	D	C	A	D	D	C	A	A	A	A	A
Animal Grease	D	D	D	A	C	D	C	A	A	A	A	A
Animal Oils	D	D	C	A	D	D	C	A	A	A	A	A
Ansul Ether	D	D	D	D	D	D	C	D	A	B	A	A
Antifreeze	A	A	A	A	A	A	A	A	A	A	A	A
Antimony Chloride	D	B	B	A	D	B	D	A	A	A	A	A
Antimony Pentachloride	D	D	D	B	D	D	D	A	B	A	B	A
Aqua Regia	D	D	C	D	D	B	B	A	D	B	B	A
Aromatic Hydrocarbons	D	D	D	D	D	D	D	A	-	-	-	A
Arquad	A	A	A	A	A	A	A	A	A	A	A	A
Arsenic Acid	B	A	A	A	B	A	A	A	A	A	A	A
Arsenic Chloride	D	D	D	C	A	D	D	D	D	-	D	A
Arsenic Trichloride	D	D	D	A	A	D	D	D	D		D	A
Asphalt	B	D	D	B	C	B	D	A	D	D	B	A
ASTM #1 Oil	D	D	D	A	A	B	D	A	A	A	A	A
ASTM #2 Oil	D	D	D	A	B	D	D	A	-	-	-	A
ASTM #3 Oil	D	D	D	A	C	B	D	A	-	-	-	A
Aviation Gasoline	D	D	D	A	D	D	D	A	-	-	-	A
Barium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Barium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Barium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A
Barium Sulfate	A	A	A	A	A	A	A	A	A	-	A	A

The chemical resistance chart lists elastomers commonly used by Titan for manufacturing hose products. Beneath each elastomer or synthetic rubber material is a listed chemical rating. **This rating is based on application temperatures not to exceed 70ºF (21.1ºC) unless other- wise specified.** The percentage of concentration of the chemical is highly significant (eg. Hydrochloric acid 5% versus 37%) and our recommendation may vary considerably based on this information. **These charts are offered as a guideline only**. There are many variables to be considered with each application. **If there is any question about the resistance of a listed elastomer, please contact Titan's Technical Team at 800-242-HOSE(4673).**

All ratings are based on material at ambient temperature (70° F)

CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Barium Sulfide	A	B	A	A	A	A	A	A	A	A	A	A
Beer	A	A	A	A	B	A	A	A	A	A	A	A
Beet Sugar Liquors	A	A	A	A	B	A	A	A	A	A	A	A
Benzaldehyde	D	D	B	D	D	D	A	D	A	A	A	A
Benzene (Benzol)	D	D	D	D	D	D	D	A	-	-	-	A
Benzene Sulphonic Acid	D	D	D	D	B	B	D	A	A	A	A	A
Benzine Solvent (Ligroin)	D	D	D	A	D	C	D	A	-	-	-	A
Benzoic Acid	D	D	D	D	B	D	D	A	A	A	A	A
Benzoic Aldehyde	D	D	B	D	D	D	A	D	A	A	A	A
Benzotrichloride	-	-	-	-	-	-	-	-	-	-	-	A
Benzoyl Chloride	D	D	D	D	D	D	D	B	B	B	B	A
Benzyl Acetate	D	D	B	D	D	B	B	D	A	B	A	A
Benzyl Alcohol	D	D	B	D	D	B	B	A	-	-	-	A
Benzyl Chloride	D	D	D	D	D	D	D	A	-	-	-	A
Bichromate of Soda (Sodium Dichromate)	B	B	A	A	B	B	A	A	A	-	A	A
Black Sulfate Liquor	A	A	A	A	A	A	A	A	A	A	A	A
Blast Furnace Gas	C	C	C	C	A	C	C	A	A	A	A	A
Bleach Solutions	D	D	B	D	D	C	B	B	B	A	B	A
Borax	A	A	A	A	A	A	A	A	A	A	A	A
Bordeaux Mixture	B	B	A	A	A	A	A	A	A	A	A	A
Brandy	FDA Tube Required											
Brine	A	A	A	A	A	A	A	A	A	A	A	A
Bromine	D	D	D	D	D	C	D	A	B	B	D	A
Bromine Water	D	D	C	C	B	A	C	A	A	-	A	A
Bromobenzene	D	D	D	D	D	D	D	B	C	-	C	A
Bunker Oil	D	D	D	A	B	D	D	A	A	B	A	A
Butanol	A	A	A	A	A	A	A	A	A	A	A	A
Butane	D	D	D	A	B	A	D	A	-	-	-	A
Butter	C	C	A	A	B	A	A	A	-	-	-	-
Butyl Acetate	C	D	B	D	D	D	A	D	-	A	-	A
Butyl Acrylate	D	D	D	D	D	D	D	D	B	-	B	A
Butylamine	B	C	C	C	D	C	C	D	A	A	A	A
Butyl Benzene	D	D	D	D	D	D	D	A	A	-	A	-
Butyl Bromide	D	D	D	D	D	D	D	B	B	-	B	-
Butyl Butyrate	D	D	C	D	D	D	B	C	B	-	B	-
Butyl Carbitol	D	D	A	B	B	B	A	A	A	-	A	-
Butyl Cellosolve	D	D	A	B	B	B	A	D	A	-	A	-
Butyl Chloride	D	D	C	D	D	D	D	A	B	-	B	A
Butyl Ether	D	D	C	B	B	B	C	D	A	A	A	A
Butyl Ethyl Acetaldehyde	D	D	C	D	D	D	D	D	A	-	A	-
Butyl Ethyl Ether	D	D	C	D	D	B	C	C	A	-	A	A
Butyl Oleate	D	D	B	D	D	D	B	A	A	-	A	-
Butyl Phtalate	D	D	C	D	D	D	A	C	-	-	-	-
Butyl Stearate	D	D	C	B	D	D	C	A	A	A	A	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Butyuraldehyde	C	D	D	D	D	D	D	D	A	B	A	A
Butyric Acid	C	D	C	C	C	B	C	C	A	A	A	A
Butyric Anhydride	C	D	C	C	D	B	C	C	A	-	A	A
Calcium Acetate	C	D	A	D	D	D	A	D	A	A	A	A
Calcium Bisulfate	C	C	B	A	A	A	B	A	A	A	A	A
Calcium Bisulfite	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Hypochlorite	D	D	A	D	D	B	A	A	B	B	A	A
Calcium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Caliche Liquor	A	A	A	A	A	A	A	A	A	A	A	A
Cane Sugar Liquors	A	A	A	A	A	A	A	A	A	A	A	A
Carbitol	D	D	A	B	B	B	B	A	A	-	A	-
Carbitol Acetate	D	D	B	D	D	D	B	D	A	-	A	-
Carbolic Acid	C	C	C	C	C	C	A	A	A	A	A	A
Carbon Bisulfide	D	D	D	D	D	D	D	A	-	-	-	A
Carbon Dioxide	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Disulfide	D	D	D	D	D	D	D	A	A	C	C	A
Carbonic Acid	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Monoxide	C	C	C	C	C	B	C	A	A	A	A	A
Carbon Tetrachloride	D	D	D	C	D	D	D	A	-	-	-	A
Carbon Tetraflouride	D	D	D	C	D	D	D	-	C	-	C	A
Castor Oill	A	A	A	A	A	A	A	A	A	A	A	A
Caustic Potash	A	B	A	A	B	A	A	C	A	A	A	A
Caustic Soda	A	B	A	B	B	B	A	C	A	-	A	-
Cellosolve	B	B	A	D	D	B	A	C	A	A	A	A
Cellulose Acetate	C	D	B	D	C	C	B	D	B	A	B	A
Cellulube	C	D	B	D	D	D	A	C	A	-	A	-
China Wood Oil	D	D	A	A	B	B	A	C	A	A	A	A
Chlorine Dioxide	D	D	D	D	D	C	D	A	B		B	
Chlorine Gas	D	D	D	D	D	D	D	A	-	-	-	A
Chlorine Water Solns	D	D	D	D	D	D	D	C	A	A	B	A
Chloroacetic Acid	D	C	D	C	C	A	A	D	A	A	A	A
Chloroacetone	D	D	B	D	D	B	D	D	A	-	A	-
Chlorobenzene	D	D	D	D	D	D	D	A	B	B	B	A
Chlorobutane	D	D	D	D	D	D	D	A	B	-	B	-
Chlorobutadiene	D	D	D	D	D	D	D	A	B	-	B	-
Chloroform	D	D	D	D	D	D	D	A	B	B	B	A
Chlorinated Hydrocarbons	D	D	D	D	D	D	D	A	-	-	-	A
Chloropentane	D	D	D	D	C	D	D	A	A	-	A	-
Chlorophenol	D	D	D	D	C	D	D	A	A	B	A	A

These charts are offered as a guideline only. If there is any question about the resistance of a listed elastomer, please contact Titan's Technical Team at 800-242-HOSE (4673). All ratings are based on material at ambient temperature (70°F).

CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Chloropropanone	D	D	C	D	D	D	C	D	-	-	-	A
Chlorosulfonic Acid	D	D	D	C	C	D	D	D	B	-	D	-
Chlorothene	D	D	D	D	D	D	D	A	B	A	B	A
Chlorotoluene	D	D	D	D	D	D	D	A	-	-	-	A
Chromic Acid	D	D	C	D	D	A	C	C	B	-	C	A
Citric Acid	A	A	A	B	A	A	A	A	A	A	A	A
Coal Oil	D	D	D	A	B	D	D	A	A	-	A	-
Coal Tar	D	D	D	A	B	B	B	A	A	-	A	A
Coal Tar Naptha	D	D	D	C	C	D	D	A	-	-	-	A
Cobalt Chloride	A	A	A	A	A	A	A	A	A	-	A	-
Coconut Oil	D	D	B	A	B	B	A	A	A	-	A	A
Cod Liver Oil	D	D	A	A	B	B	A	A	A	A	A	A
Coke Oven Gas	C	C	C	C	C	A	D	D	C	A	D	A
Copper Arsenate	A	A	A	A	A	A	A	A	A	A	A	A
Copper Chloride	C	A	A	A	B	B	A	A	A	A	A	A
Copper Cyanide	A	A	A	A	A	A	A	A	A	A	A	A
Copper Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Copper Nitrite	A	A	A	A	A	A	A	A	A	A	A	A
Copper Sulfate	C	A	B	A	A	A	A	A	A	A	A	A
Copper Sulfide	C	A	A	A	A	A	A	A	-	A	A	A
Corn Oil	D	C	A	A	B	B	C	A	A	A	A	A
Cottonseed Oil	D	C	A	A	B	B	C	A	A	A	A	A
Creosote (Coal Tar)	D	D	D	A	B	C	D	B	-	-	-	A
Creosote (Wood)	D	D	D	A	B	C	D	A	-	-	A	A
Creosols	C	D	C	C	D	B	D	A	-	-	-	A
Cresylic Acid	D	D	D	C	C	C	D	A	A	-	A	A
Crude Oil	D	D	D	A	C	D	D	A	-	-	-	A
Cumene	D	D	D	C	C	D	D	A	A	B	A	A
Cupric Carbonate	C	C	A	B	B	B	A	A	A	A	A	A
Cupric Chloride	C	C	A	A	B	A	A	A	A	A	A	A
Cupric Nitrate	C	C	A	A	B	A	A	A	A	A	A	A
Cupric Nitrite	C	C	A	A	B	A	A	A	A	A	A	A
Cupric Sulfate	C	B	A	A	B	B	A	A	A	A	A	A
Cyclohexane	D	D	D	B	D	D	D	A	-	-	-	A
Cyclohexanone	D	D	D	D	D	D	D	C	-	-	-	A
Cyclohexanol	D	D	D	B	B	D	D	B	A	B	A	A
Cyclopentane	D	D	D	C	D	D	D	A	A	B	A	A
P-Cymene	D	D	D	C	D	D	D	A	A	B	A	A
DDT in Kerosene	D	D	D	A	B	C	D	A	A	B	A	A
Decaline	D	D	D	D	D	D	D	A	A	D	A	A
Decane	D	D	D	B	D	D	D	A	A		A	
Detergent Solutions	B	B	A	A	B	A	A	A	A	B	A	A
Diacetone Alcohol	D	D	A	D	B	B	B	D	A	A	A	A
Diamylamine	TITAN HOSE NOT AVAILABLE											
Dibenzyl Ether	D	D	B	D	D	D	D	C	A	A	A	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Dibenzylsebacate	C	D	B	D	D	D	B	B	A	A	A	A
Dibromobenzene	D	D	D	D	D	D	D	A	B	-	B	A
Dibutylamine	TITAN HOSE NOT AVAILABLE											
Dibutyl Ether	D	D	D	D	D	D	B	C	A	A	A	A
Dibutyl Phthalate	D	D	B	D	D	D	A	D	A	A	A	A
Dibutyl Sebacate	D	D	B	D	D	D	B	B	B	A	B	A
Dicalcium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Dichloroacetic Acid	D	D	C	D	D	D	C	C	A	-	A	A
P-Dichlorobenzene	D	D	D	D	D	D	D	A	D	B	D	A
Dichlorobutane	D	D	D	D	D	D	D	A	A	-	A	A
Dichloroisopropyl Ether	D	D	C	D	D	D	C	C	A	-	A	-
Dicyclohexylamine	TITAN HOSE NOT AVAILABLE											
Dichlorodifluoromethane (Freon 12)	D	D	D	A	B	D	D	A	A	D	A	A
Dichloroethane	D	D	C	D	D	D	D	A	A	A	C	A
Dichloroethylene	D	D	D	D	D	D	D	A	C	D	C	A
Dichloroethyl Ether	D	D	D	D	D	D	D	C	A	B	A	A
Dichlorohexane	D	D	D	D	D	D	D	A	A	A	A	A
Dichloromethane	D	D	D	D	D	D	D	A	A	A	A	A
Dichloropentane	D	D	D	D	D	D	D	A	A	B	A	A
Dieldrin in Xylene	D	D	D	D	D	D	D	A	A	-	A	-
Dieldrin in Xylene & Water Spray	D	D	D	B	B	D	D	A	A	-	A	-
Diesel Oil	D	D	D	A	D	B	D	A	B	B	B	A
Diethanolamine	C	D	A	B	-	D	A	D	A	A	A	A
Diethylamine	B	B	B	C	B	D	B	D	A	-	A	A
Diethyl Benzene	D	D	D	D	D	D	D	A	A	B	A	A
Diethyl Ether	D	D	D	B	C	D	D	D	A	-	A	-
Diethylene Dioxide	D	D	B	D	D	D	B	D	A	A	A	A
Diethylenetriamine	TITAN HOSE NOT AVAILABLE											
Diethyl Oxalate	C	D	C	D	D	D	A	C	A	B	A	A
Diethyl Phthalate	D	D	A	D	D	D	C	C	A	B	A	A
Diethyl Sebacate	D	D	A	D	D	D	C	B	A	B	A	A
Diethyl Sulfate	D	D	B	D	D	D	A	A	-	A	A	A
Diethyl Triamine	B	C	A	B	B	C	B	C	A	A	A	A
Dihydroxyethyl Amine	TITAN HOSE NOT AVAILABLE											
Dihydroxyethyl Ether	A	A	A	A	B	A	B	A	A	A	A	A
Diisobutylene	D	D	D	A	B	D	D	A	A	B	A	A
Diisobutyl Ketone	D	D	B	D	D	D	A	D	-	-	A	A
Diisodecyl Adipate	D	D	A	D	D	C	A	C	A	-	A	A
Diisodecyl Phthalate	D	D	A	D	D	C	A	C	A	-	A	A
Diisooctyl Adipate	D	D	A	D	D	D	A	C	A	-	A	A
Diisooctyl Phthalate	D	D	B	D	D	D	B	B	A	-	B	A
Diisopropanol Amine	B	C	A	B	D	C	A	C	A	B	A	A
Diisopropyl Benzene	D	D	D	C	D	D	D	A	A	B	A	A
Diisopropyl Ether	D	D	D	B	D	D	D	B	A	B	A	A
Diisopropyl Ketone	D	D	D	D	D	D	A	D	A	B	C	A

These charts are offered as a guideline only. If there is any question about the resistance of a listed elastomer, please contact Titan's Technical Team at 800-242-HOSE (4673). All ratings are based on material at ambient temperature (70°F).

CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Dilauryl Ether	D	D	D	C	D	C	D	C	A	B	A	A
Dimethylamine	TITAN HOSE NOT AVAILABLE											
Dimethyl Benzene	D	D	D	D	D	D	D	A	A	B	A	A
Dimethylaniline	D	D	D	D	D	D	C	D	B	A	B	A
Dimethylformamide (DMF)	C	C	C	D	C	C	C	D	A	A	A	A
Dimethyl Ketone (Acetone)	B	C	A	D	C	C	A	D	A	A	A	A
Dimethyl Phthalate	D	D	A	D	D	D	B	C	A	A	A	A
Dimethyl Sulfate	D	D	B	D	D	D	D	D	A	A	A	A
Dimethyl Sulfide	D	D	C	D	D	D	D	C	B	A	B	A
Dinitrobenzene	D	D	C	D	C	D	C	A	A	B	A	A
Dinitrotoluene	D	D	D	D	D	D	D	B	A	A	A	A
Dioctyl Adipate (DOA)	D	D	A	D	D	D	B	C	A	A	A	A
Dioctylamine	TITAN HOSE NOT AVAILABLE											
Dioctyl Phthalate (DOP)	D	D	B	D	D	D	B	B	A	A	A	A
Dioctyl Sebacate (DOS)	D	D	B	D	D	D	B	B	A	A	A	A
Dioxane	D	D	B	D	D	D	B	D	-	-	-	A
Dioxolane	D	D	C	D	D	D	B	C	A	B	A	A
Dipentene (Limonene)	D	D	D	C	D	D	D	A	A	B	A	A
Diphenyl (Biphenyl)	D	D	D	D	D	D	D	A	A	-	A	-
Dipropyl Ketone	D	D	B	D	D	D	B	D	A	A	A	A
Disodium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Divinyl Benzene	D	D	D	D	D	D	D	A	A	B	A	A
D.M.P. (Dimethyl Phenols)	D	D	D	D	D	D	D	D	C	A	C	A
Dodecyl Benzene	D	D	D	D	D	D	D	A	A	B	A	A
Diphenyl Oxide (Phenylether)	D	D	D	D	D	C	D	A	A	-	A	-
Dipropylamine	TITAN HOSE NOT AVAILABLE											
Dipropylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Dodecyl Toluene	D	D	D	D	D	D	D	A	A	B	A	A
Dowfume W 40, 100%	D	D	D	D	C	C	C	C	B	-	B	-
Dow-Per (Perchloroethylene)	D	D	D	C	D	D	D	A	A	B	A	A
Dowtherm Oil, A & E	D	D	D	D	D	C	D	A	A	A	A	A
Dowtherm S.R.I.	A	A	A	A	A	A	A	A	A	A	A	A
Dry Cleaning Fluids	D	D	D	C	D	D	D	A	B	-	B	-
Epichlorohydrin	D	D	C	D	D	C	B	D	B	B	B	A
Ethanol (Ethyl Alcohol)	A	A	A	A	A	A	A	C	A	A	A	A
Ethanolamine	TITAN HOSE NOT AVAILABLE											
Ethers	C	C	C	C	C	B	D	D	A	A	B	A
Ethyl Acetate	B	D	B	D	D	D	A	D	A	A	B	A
Ethyl Acetoacetate	D	D	B	D	D	D	B	D	A	A	A	A
Ethyl Acrylate	D	D	C	D	D	D	D	D	B	B	B	A
Ethyl Benzene	D	D	D	C	D	D	D	A	A	B	A	A
Ethyl Benzoate	D	D	B	B	C	C	B	C	A	-	A	-
Ethyl Butyl Alcohol	A	A	A	A	A	A	A	B	A	A	A	A
Ethyl Butyl Amine	TITAN HOSE NOT AVAILABLE											

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Ethyl Butyl Ketone	D	D	B	D	D	D	B	D	A	A	A	A
Ethyl Cellulose	B	B	B	B	B		B	D	A	A	A	A
Ethyl Chloride	A	B	A	D	B	B	A	B	B	B	C	A
Ethyl Dichloride	D	D	D	D	D	D	D	B	B	B	B	A
Ethylene	D	D	D	A	B	C	D	A	A		A	
Ethylene Bromide	D	D	D	D	D	D	D	A	B	B	B	A
Ethylene Chloride	D	D	D	D	D	D	D	A	B	B	B	A
Ethylene Diamine	TITAN HOSE NOT AVAILABLE											
Ethylene Dibromide	D	D	D	D	D	D	D	B	B	B	B	A
Ethylene Dichloride	D	D	D	D	D	D	D	B	B	A	B	A
Ethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Ethylene Oxide	D	D	C	D	D	D	C	D	C	-	C	A
Ethylene Trichloride (Trichloroethylene)	D	D	D	C	D	D	D	A	B	B	B	A
Ethyl Ether	D	D	D	C	D	D	D	D	A	B	D	A
Ethyl Formate	D	D	B	D	D	D	C	D	A	A	A	A
Ethyl Hexanol	A	A	A	A	A	A	A	B	A	A	A	A
Ethyl Methyl Ketone	C	D	B	D	D	D	B	D	A	A	A	A
Ethyl Oxalate	A	A	A	D	D	D	B	C	A	A	A	A
Ethyl Phthalate	D	D	A	D	D	D	B	C	A	A	A	A
Ethyl Propyl Ether	D	D	D	D	D	D	D	C	A	A	A	-
Ethyl Propyl Ketone	D	D	B	D	D	D	B	D	A	B	A	A
Ethyl Silicate	C	C	A	A	A	A	A	A	A	A	A	A
Ethyl Sulfate	D	D	B	D	D	D	B	D	A	A	A	A
EX TRI (Trichlorethylene)	D	D	D	C	D	D	D	A	B	B	B	A
Fatty Acids	D	D	D	B	B	B	C	A	A	B	A	A
Ferric Bromide	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Ferrous Acetate	D	D	A	D	D	D	B	D	A	A	A	A
Ferrous Ammonium Sulfate	A	A	A	A	A	A	A	A	A	-	A	-
Ferrous Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Ferrous Hydroxide	B	C	A	B	A	B	A	C	A	A	A	A
Ferrous Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Fish Oil	D	D	A	A	A	A	D	A	A	-	A	A
Fluoroboric Acid	A	C	A	A	B	A	A	C	A	A	A	A
Fluorine	D	D	D	D	D	D	D	D	D	D	D	B
Fluosilic Acid	B	B	A	B	B	A	B	A	A	A	A	A
Formaldehyde (Formalin)	A	A	A	A	C	A	A	A	A	A	A	A
Formamide	A	A	A	A	A	A	A	D	A	A	A	A
Formic Acid	-	-	A	B	C	A	A	D	B	A	A	A
Freon 11	B	D	D	A	B	A	D	A	A	-	A	-
Freon 12	D	D	D	B	C	D	C	B	B	D	B	-

These charts are offered as a guideline only. If there is any question about the resistance of a listed elastomer, please contact Titan's Technical Team at 800-242-HOSE (4673). All ratings are based on material at ambient temperature (70°F).

CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Freon 13	A	A	A	A	A	A	A	A	A	-	A	-
Freon 21	D	D	D	D	B	D	D	D	A	-	A	-
Freon 22	D	D	A	D	A	D	A	D	A	D	A	A
Freon 31	B	B	A	D	A	B	A	D	A	-	A	-
Freon 32	A	A	A	A	A	A	A	C	A	-	A	-
Freon 112	D	D	D	B	B	B	D	A	A	-	A	-
Freon 113	C	B	D	A	A	A	D	B	A	-	A	-
Freon 114	A	A	A	A	A	A	A	B	A	-	A	-
Freon 115	A	A	A	A	A	A	A	B	A	-	A	-
Freon 142b	A	A	A	A	A	A	A	D	A	-	A	-
Freon 152a	A	A	A	A	A	C	A	D	A	-	A	-
Freon 218	A	A	A	A	A	A	A	A	A	-	A	-
Freon C316	A	A	A	A	A	A	A	A	A	-	A	-
Freon C318	A	A	A	A	A	A	A	A	A	-	A	-
Freon 13B1	A	A	A	A	A	A	A	A	A	-	A	-
Freon 114B2	D	C	D	B	A	A	D	B	A	-	A	-
Freon 502	A	A	A	B	A	A	A	B	A	-	A	-
Freon TF	C	B	A	A	A	A	A	A	A	-	A	-
Freon T-WD 602	C	B	A	A	B	B	B	A	A	-	A	-
Freon TMC	B	C	B	B	B	B	B	A	A	-	A	-
Freon T-P35	A	A	A	A	A	A	A	A	A	-	A	-
Freon TA	A	A	A	A	A	A	A	C	A	-	A	-
Freon TC	D	B	A	A	A	A	B	A	A	-	A	-
Freon MF	D	B	D	A	C	B	D	A	A	-	A	-
Freon BF	D	D	D	B	B	B	D	A	A	-	A	-
Fuel Oil	D	D	D	A	A	B	D	A	A	B	B	A
Fuel, ASTM A	D	D	D	A	-	C	D	A	A	-	-	A
Fuel, ASTM B	D	D	D	A	-	C	D	A	A	-	-	A
Fuel, ASTM C	D	D	D	B	C	D	D	A	B	-	-	A
Fumaric Acid	A	A	D	A	B	B	D	A	A	A	A	A
Furan	D	D	C	D	D	D	C	D	A	A	A	A
Furfural	D	C	A	D	C	B	C	D	A	A	A	A
Furfuryl Alcohol	D	D	C	D	C	C	C	D	A	A	A	A
Gallic Acid	A	A	B	B	B	B	B	B	A	A	A	A
Gasoline, Reg	D	D	D	A	A	C	D	A	A	B	A	A
Gasoline, Hi-Test	D	D	D	A	D	D	D	A	A	B	B	A
Gasoline, Lead Free	D	D	D	A	D	D	D	A	A	B	B	A
Gelatin	A	A	A	A	A	A	A	A	A	A	A	A
Gluconic Acid	D	D	C	C	C	B	C	A	A	A	A	A
Glucose	A	A	A	A	A	A	A	A	A	A	A	A
Glue	B	B	B	A	A	A	A	C	A	A	A	A
Glycerine (Glycerol)	A	A	A	A	A	A	A	A	A	A	A	A
Glycois	A	A	A	A	A	A	A	A	A	A	A	A
Grease	D	D	D	A	B	C	D	A	A	A	A	A
Green Sulfate Liquor	-	-	A	-	-	-	A	-	-	A	A	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Halowax oil	D	D	D	D	D	D	D	A	A	A	A	A
Heptachlor in Petroleum Solvents	D	D	D	B	B	D	D	A	A	B	A	A
Heptachlor in Petroleum Solvents, Water Spray	D	D	D	B	B	D	D	A	A	-	A	-
Heptanal (Heptaldehyde)	D	D	D	D	D	D	B	D	A	-	A	A
Heptane	D	D	D	A	A	B	D	A	A	B	A	A
Heptane Carboxylic Acid	D	D	C	C	B	B	C	A	A	A	A	A
Hexaldehyde	D	D	B	D	B	C	B	D	A	B	A	A
Hexane	D	D	D	A	A	C	D	A	A	B	A	A
Hexene	D	D	D	B	B	C	D	A	A	-	A	A
Hexanol (Hexyl Alcohol)	A	A	A	A	A	A	A	A	A	A	A	A
Hexylamine	TITAN HOSE NOT AVAILABLE											
Hexylene	D	D	D	A	B	D	C	A	B	-	B	A
Hexylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Hexyl Methyl Ketone	D	D	B	D	D	D	B	D	A	A	A	A
Hi-Tri (Trichloroethylene)	D	D	D	C	D	D	D	A	B	B	B	A
Hydraulic Fluid (Petroleum)	D	D	D	A	B	B	D	A	A	A	A	A
Hydraulic Fluid (Phospate Ester Base)	D	D	A	D	D	D	A	D	A	A	A	A
Hydraulic Fluid (Poly Alkylene Glycol Base)	B	B	A	A	A	A	A	A	A	-	A	-
Hydrobromic Acid	C	D	A	C	C	A	A	A	A	A	A	A
Hydrochloric Acid, 5%	B	B	B	D	D	A	A	A	A	A	A	A
Hydrochloric Acid, 15%	B	B	B	D	D	A	A	A	A	A	A	A
Hydrochloric Acid, 37%	-	-	-	-	C	A	A	A	A	A	A	A
Hydrocyanic Acid	B	B	C	B	C	A	C	A	A	A	A	A
Hydrofluoric Acid	D	D	C	D	D	A	C	A	A	A	B	A
Hydrofluosilic Acid	A	B	A	B	B	A	A	A	A	A	A	A
Hydrogen Gas	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogen Peroxide, 3%	D	D	C	C	C	C	A	A	A	A	A	A
Hydrogen Peroxide, 10%	D	D	C	D	C	C	A	A	A	A	A	A
Hydrogen Peroxide, 30%	D	D	D	D	D	D	C	A	A	A	A	A
Hydrogen Peroxide, 90%	D	D	D	D	D	D	C	B	B	-	B	A
Hydrogen Sulfide	-	-	-	-	-	-	-	-	-	-	-	-
Hydroquinone	B	B	B	D	D	C	B	D	A	A	A	A
Hypochlorous Acid	B	B	B	D	B	A	B	A	A	-	A	-
Ink Oil (Linseed Oil Base)	D	D	B	B	B	B	B	A	A	B	A	A
Insulating Oil	D	D	D	A	B	D	D	A	A	A	A	A
Iodine	D	D	D	D	D	C	D	C	A	A	A	A
Iron Acetate	D	D	A	D	D	D	B	D	A	A	A	A
Iron Hydroxide	C	C	A	B	A	B	B	C	A	A	A	A
Iron Salts	A	A	A	A	A	A	A	A	A	A	A	A
Iron Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Iron Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Isomyl Acetate	D	D	A	D	D	D	B	D	A	B	A	A

These charts are offered as a guideline only. If there is any question about the resistance of a listed elastomer, please contact Titan's Technical Team at 800-242-HOSE (4673). All ratings are based on material at ambient temperature (70 F).

CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Isomyl Alcohol	A	A	A	A	A	A	A	A	A	A	B	A
Isoamyl Bromide	D	D	D	D	D	D	D	B	B	-	B	A
Isoamyl Butyrate	D	D	C	D	D	D	C	D	B	B	B	A
Isoamyl Chloride	D	D	C	D	D	D	D	B	B	B	B	A
Isomyl Ether	D	D	D	D	D	D	D	D	A	-	A	A
Isoamyl Phthalate	D	D	A	D	D	D	B	C	A	-	A	A
Isobutane	USE LPG HOSE ONLY											
Isobutanel (Isobutyl Alcohol)	A	A	A	B	A	A	A	B	A		A	A
Isobutyl Acetate	D	D	A	D	D	D	B	D	A	B	A	A
Isobutyl Aldehyde	C	D	B	D	D	D	B	D	A	-	A	A
Isobutyl Amine	B	C	B	D	D	C	B	D	A	-	A	A
Isobutyl Bromide	D	D	D	D	D	D	D	B	B	-	B	A
Isobutyl Carbinol	A	A	A	A	B	A	A	B	A	-	A	A
Isobutyl Chloride	D	D	D	D	D	D	D	B	B	B	B	A
Isobutylene	D	D	D	A	D	D	D	A	A	B	A	A
Isobutyl Ether	D	D	D	D	D	D	D	D	A	-	A	A
Isocyanates	C	D	B	D	D	C	B	C	B	B	B	A
Isoctane	D	D	D	A	A	B	D	A	A	B	A	A
Isopentane	D	D	D	A	A	D	D	A	B	B	B	A
Isopropyl Amine	B	C	A	B	A	C	B	D	A	B	A	A
Isopropyl Acetate	D	D	A	D	D	C	B	D	A	A	A	A
Isopropyl Alcohol (iso-propanol)	A	A	A	B	A	A	A	B	A	A	A	A
Isopropyl Amine	B	D	B	C	A	C	B	D	A	B	A	A
Isopropyl Benzene	D	D	D	D	D	D	D	A	A	B	A	A
Isopropyl Chloride	D	D	D	D	D	D	D	B	B	-	B	A
Isopropyl Ether	D	D	D	C	D	C	D	D	A	A	A	A
Isopropyl Toluene	D	D	D	D	D	D	D	A	A	-	A	A
Jet Fuels (JP1-JP6)	D	D	D	A	B	C	D	A	A	A	A	A
Kerosene	D	D	D	A	B	C	D	A	A	A	B	A
Ketones	D	D	B	D	D	D	A	D	A	A	A	A
Lactic Acid	C	C	C	C	C	A	C	A	A	A	A	A
Laquers	D	D	C	D	D	D	D	D	B	A	B	A
Lacquer Solvents	D	D	C	D	D	D	D	D	B	A	B	A
Lard	D	D	D	A	B	D	C	A	A	A	A	A
Lauryl Alcohol	A	A	A	A	A	A	A	B	A	A	A	A
Lead Acetate	D	D	A	C	C	D	B	C	A	A	A	A
Lead Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Lead Sulfamate	B	B	A	B	A	B	A	A	A	-	A	-
Lead Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Ligroin	D	D	D	A	A	D	D	A	A	B	A	A
Lime Water	D	D	A	C	A	A	A	A	A	-	A	-
Linseed Oil	C	D	A	A	B	A	A	A	A	-	A	A
Lindol (Tricresyl Phosphate)	D	D	A	D	D	B	A	A	A	-	A	-
Liquid Soap	A	A	A	A	A	A	A	A	A	A	A	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Liquid Petroleum Gas	D	D	D	A	B	B	D	A	A	-	-	A
Lubricating Oils	D	D	D	A	B	C	D	A	-	-	-	A
Lye (Sodium Hydroxide)	A	B	A	B	A	A	A	D	A	-	A	-
Magnesium Acetate	D	D	A	D	D	D	B	D	A	A	A	A
Magnesium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Magnesium Chloride	A	A	A	A	A	A	A	A	A	-	A	A
Magnesium Hydrate	A	B	A	B	A	B	A	B	A	A	A	A
Magnesium Hydroxide	A	B	A	B	B	A	A	A	A	-	A	A
Magnesium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Magnesium Sulfate	A	A	A	A	A	A	A	A	A	-	A	A
Malathion 50 in Aromatic Solvents	D	D	D	C	C	D	D	A	A	A	A	A
Malathion 50 in Aromatic Solvents, Water Spray	D	D	D	C	C	D	D	A	A	A	A	A
Maleic Acid	D	D	C	D	C	D	C	A	B	A	B	A
Maleic Anhydride	D	D	C	D	C	D	C	A	A	-	A	A
Malic Acid	A	B	D	B	C	B	D	A	A	A	A	A
Manganese Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Manganese Sulfide	C	A	A	A	B	A	B	A	A	A	A	A
Manganese Sulfite	C	A	A	A	B	A	B	A	A	A	A	A
Mercuric Chloride	B	B	A	B	C	A	A	A	A	A	A	A
Mercury	A	A	A	A	A	A	A	A	A	A	A	A
Methane	D	D	D	A	B	B	D	A	A	-	A	A
Methyl Acetate	C	D	B	D	D	D	B	D	A	B	A	A
Methyl Acrylate	C	D	B	D	C	D	B	D	A	A	A	A
Methacrylic Acid	D	D	B	D	B	C	B	D	A	-	A	-
Methyl Alcohol (Methanol)	A	A	A	A	A	A	A	C	A	A	A	A
Methyl Benzene (Toluene)	D	D	D	D	D	D	D	A	A	B	A	A
Methyl Bromide	D	D	D	D	D	D	D	B	B	A	C	A
Methyl Butyl Ketone	D	D	B	D	D	D	B	D	A	A	A	A
Methyl Cellosolve	D	D	B	C	B	C	B	D	A	A	A	A
Methyl Chloride	C	C	C	C	C	D	C	A	B	B	C	A
Methyl Cyclohexane	D	D	D	D	D	D	D	B	B	-	B	A
Methylene Bromide	D	D	D	D	D	D	D	B	B	A	C	A
Methylene Chloride	D	D	D	D	D	D	D	B	A	A	B	A
Methyl Ethyl Ketone(MEK)	D	D	B	D	D	C	A	D	A	B	A	A
Methyl Formate	C	C	B	D	B	C	B	C	B	A	B	A
Methyl Hexanol	A	A	A	A	A	A	A	B	A	A	A	A
Methyl Hexyl Ketone	D	D	B	D	D	D	B	D	A	B	A	A
Methyl Isobutyl Carbinol	B	C	A	B	B	B	A	B	A	A	A	A
Methyl Isobutyl Ketone (MIBK)	D	D	B	D	D	D	A	D	A	B	A	A
Methyl Isopropyl Ketone	D	D	B	D	D	C	C	D	A	A	A	A
Methyl Propyl Ether	D	D	D	D	D	D	D	D	A	B	A	A
Methyl Propyl Ketone	D	D	B	D	D	D	B	D	A	B	A	A
Methyl Methacrylate	D	D	D	D	D	B	D	D	B	B	B	A

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CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Methyl Salicylate	D	D	B	D	D	D	B	C	B	A	B	A
Methyl tert-Butyl Ether (MTBE)	D	D	D	D	D	D	D	D	A	B	D	D
Mineral Oil	D	C	D	A	B	B	D	A	-	-	-	A
Mineral Spirits	D	D	D	A	B	D	D	A	A	A	A	A
Monochlorobenzene	D	D	D	D	D	D	D	A	A	B	A	A
Monochlorodifluoromethane (Freon 22)	D	D	A	D	A	D	A	D	A	-	A	A
Monoethanolamine	TITAN HOSE NOT AVAILABLE											
Monomethylether	B	B	A	A	A	C	A	C	A	-	A	-
Monovinyl Acetate	D	D	B	D	D	C	C	A	A	-	A	-
Motor Oil	D	D	D	A	A	D	D	A	A	A	A	A
Muriatic Acid	-	-	-	-	C	A	A	A	A	A	A	A
Naphtha	D	D	D	A	B	D	D	A	A	A	A	A
Napthalene	D	D	D	D	D	D	D	A	A	-	A	A
Napthenic Acid	D	D	D	C	D	D	D	A	A	A	A	A
Natural Gas	CONTACT TITAN TECHNICAL											
Neatsfoot Oil	D	D	B	A	B	B	B	A	A	A	A	A
Neu-Tri (Trichloroethylene)	D	D	D	C	D	D	D	A	B	B	B	A
Nickel Acetate	D	D	A	D	D	D	B	D	A	A	A	A
Nickel Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Nickel Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Nickel Plating Solution	A	D	B	B	C	B	B	A	A	A	A	A
Nickel Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Niter Cake	A	A	A	A	A	A	A	A	A	A	A	A
Nitric Acid, 10%	D	D	C	D	C	A	C	C	A	A	A	A
Nitric Acid, 20%	D	D	B	D	D	B	C	A	A	A	A	A
Nitric Acid, 30%	D	D	B	D	D	C	C	A	B	A	B	A
Nitric Acid, 30-70%	D	D	C	D	D	C	D	C	B	C	D	A
Nitric Acid, Red Fuming	D	D	D	D	D	D	D	D	D	-	D	A
Nitrobenzene	D	D	D	D	D	D	D	B	A	A	B	A
Nitrogen Gas	A	A	A	A	A	A	A	A	A	A	A	A
Nitrogen Tetraoxide	D	D	D	D	D	D	D	D	D	-	D	A
Nitromethane	B	B	B	D	C	C	B	D	A	-	A	A
Nitropropane	C	C	A	D	C	C	B	D	A	A	A	A
Nitrous Oxide	A	A	A	A	A	A	A	A	A	A	A	A
Octadecanoic Acid	D	D	B	A	B	D	C	C	A	A	A	A
Octane	D	D	D	A	B	D	D	A	B	B	B	A
Octanol (Octyl Alcohol)	B	B	B	B	A	B	B	A	A	A	A	A
Octyl Acetate	D	D	A	D	D	D	B	D	A	B	A	A
Octyl Amine	CONTACT TITAN TECHNICAL											
Octyl Carbinol	A	A	A	A	A	A	A	B	A	A	A	A
Octylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Oil, Petroleum	D	D	D	A	A	C	D	A	A	A	A	A
Oil, ASTM #1	D	D	D	A	A	B	D	A	-	-	-	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Oil, ASTM #2	D	D	D	A	A	C	D	A	-	-	-	A
Oil, ASTM #3	D	D	D	A	B	C	D	A	-	-	-	A
Oleic Acid	D	B	B	B	C	B	B	C	A	A	A	A
Oleum (Fuming Sulfuric Acid)	D	D	D	D	D	D	D	D	D	D	D	A
Olive Oil (Non FDA)	D	D	B	A	B	B	B	A	A	A	A	A
Orthodichlorobenzene	D	D	D	D	D	D	D	A	B	B	B	A
Oxalic Acid	B	C	A	B	B	A	A	A	A	A	A	A
Oxygen, Cold	B	C	A	C	A	B	A	A	A	A	A	A
Oxygen, Hot	B	C	A	C	A	D	A	A	A	-	A	A
Ozone	D	C	B	D	B	A	A	A	A	B	A	A
Paint Thinner (Duco)	D	D	D	D	D	D	D	C	A	B	A	A
Palmitic Acid (Hexadecanoic Acid)	D	B	B	A	A	B	B	A	A	A	A	A
Palm Oil	D	D	A	A	B	B	B	A	A	A	A	A
Papermaker's Alum	A	A	A	A	A	A	A	A	A	A	A	A
Paradichlorobenzene	D	D	D	D	D	D	D	A	B	-	B	-
Paraffin	D	D	D	A	A	D	D	A	D	A	D	A
Paraformaldehyde	D	D	B	B	B	B	B	C	A	-	A	A
Peanut Oil	D	D	C	A	B	B	D	A	A	A	A	A
Pentane	D	D	D	A	A	B	D	A	A	-	A	A
Perchloroethylene	D	D	D	C	D	D	D	A	A	B	C	A
Perchloric Acid	B	B	B	D	A	A	B	A	A	B	A	A
Petrolatum	D	D	D	A	A	C	D	A	A	-	A	-
Petroleum, Crude	D	D	D	A	B	C	D	A	A	A	D	A
Petroleum Ether (Naphtha)	D	D	D	A	A	D	D	A	A	A	A	A
Petroleum Oils	D	D	D	A	A	C	D	A	A	A	A	A
Phenol	C	C	B	D	C	C	C	A	A	B	A	A
Phenol Sulfonic Acid	D	D	C	D	C	D	C	A	B	B	B	A
Phenyl Chloride	D	D	D	D	D	D	D	A	A	B	A	A
Phenylhydrazine	C	D	B	D	D	C	C	A	A	-	A	-
Phorone	D	D	A	D	D	D	B	C	A	A	A	A
Phosphate Esters	D	D	A	D	D	D	A	C	A	-	A	-
Phosphoric Acid, 10%	A	A	A	A	A	A	A	A	A	A	A	A
Phosphoric Acid, 10-85%	C	C	A	C	B	A	A	A	A	B	A	A
Phosphorous Trichloride	D	D	A	D	D	D	A	A	A	-	A	-
Pickling Solution	C	C	C	C	C	C	C	B	A	B	A	A
Picric Acid, Molten	C	C	C	C	C	B	C	C	D	B	D	A
Picric Acid, Water Soln.	A	C	A	B	B	A	B	C	A	B	A	A
Pinene	D	D	D	A	D	D	D	A	A	A	A	A
Pine Oil	D	D	D	C	C	D	D	B	A	A	A	A
Piperidine	D	D	D	D	D	D	D	D	B	C	B	A
Pitch	D	D	D	B	B	C	D	C	A	B	A	A
Plating Solution, Chrome	D	D	A	B	B	C	A	B	A	A	A	A
Plating Solution, Others	A	A	A	B	B	C	A	B	A	-	A	-
Polyvinyl Acetate Emulsion (PVA)	C	C	A	C	B	B	A	C	A	-	A	A

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CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Polyethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Polypropylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bicarbonate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bisulfate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bisulfite	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Chromate	D	D	A	D	C	C	B	A	B	B	A	A
Potassium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Dichromate	D	D	A	D	B	C	B	A	A	B	A	A
Potassium Hydrate	A	B	A	B	B	B	A	C	A	A	A	A
Potassium Hydroxide	B	B	A	C	C	A	A	C	A	A	A	A
Potassium Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Permanganate	D	D	A	D	D	D	A	A	A	A	A	A
Potassium Silicate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Producer Gas	D	D	D	A	B	B	D	A	A	-	A	-
Propane Gas	USE BUTANE HOSE ONLY											
Propanediol	A	A	A	A	B	A	A	A	A	A	A	A
Propyl Acetate	D	D	B	D	D	D	B	D	A	A	A	A
Propyl Alcohol (Propanol)	A	A	A	A	A	A	A	A	A	A	A	A
Propyl Aldehyde	C	D	B	D	D	D	B	D	A	B	A	A
Propyl Chloride	D	D	C	D	C	D	C	B	B	-	B	A
Propylene Diamine	TITAN HOSE NOT AVAILABLE											
Propylene Dichloride	D	D	D	D	D	D	D	B	B	-	B	A
Propylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Pydraul Hydraulic Fluids	D	D	B	D	D	D	B	C	B	A	B	A
Pyranol	D	D	D	C	D	D	D	A	A	-	A	-
Pyridine	D	D	B	D	D	D	B	D	A	B	A	A
Pyroligneous Acid	C	C	B	C	B	B	B	A	A	-	A	-
Pyrrole	C	B	B	D	D	D	C	C	A	-	A	-
Rape Seed Oil	D	D	A	B	B	B	B	A	B	A	B	A
Red Oil (Crude Oleic Acid)	D	D	B	B	B	B	B	B	A	B	A	A
Richfield A Weed Killer, 100%	D	D	D	D	D	D	D	C	B	A	B	A
Richfield B Weed Killer, 33%	D	D	B	B	B	C	D	C	B	A	B	A
Rosin Oil	D	D	D	A	A	B	D	A	A	-	A	-
Rotenone and Water	A	A	A	A	A	A	A	A	A	-	A	-
Rum	FDA TUBE REQUIRED											
Sal Ammoniac (Ammonium Chloride)	A	A	A	A	A	A	A	A	A	-	A	-
Salicylic Acid	A	B	A	D	D	A	A	A	A	A	A	A
Salt Water (Sea Water)	A	A	A	A	A	A	A	A	A	A	A	A
Sewage	C	C	C	A	B	A	C	A	A	A	A	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Silicate of Soda (Sodium Silicate)	A	A	A	A	A	A	A	A	A	A	A	A
Silicate Esters	D	D	D	B	A	A	D	A	A	-	A	-
Silicone Greases	A	A	A	A	A	A	A	A	A	B	A	A
Silicone Oils	-	-	A	A	A	A	A	A	A	A	A	A
Silver Nitrate	A	A	A	A	A	A	A	A	A	A	A	A
Skelly Solvent	D	D	D	A	B	C	D	A	A	-	A	-
Skydrol Hydraulic Fluids	D	D	A	D	D	D	A	D	A	A	A	A
Soap Solutions	A	A	A	A	B	A	A	A	A	A	A	A
Soda Ash (sodium Carbonate)	A	A	A	A	A	A	A	A	A	A	A	A
Soda, Caustic (Sodium Hydroxide)	A	B	A	B	A	A	A	D	A	A	A	A
Soda, Lime	A	B	A	B	B	B	A	C	A	A	A	A
Soda Niter (Sodium Nitrate)	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Acetate	D	D	A	D	D	D	B	D	A	A	A	A
Sodium Aluminate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bicarbonate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulfate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulfite	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Borate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Chromate	D	D	A	D	C	C	B	C	B	-	B	A
Sodium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Dichromate	D	D	A	D	C	C	B	C	A	A	A	A
Sodium Floride	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Hydroxide	-	B	A	C	C	C	A	C	A	A	A	A
Sodium Hypochlorite	D	D	A	D	D	B	A	A	B	B	C	A
Sodium Metaphosphate	A	A	A	A	C	B	A	A	A	A	A	A
Sodium Nitrate	C	C	A	C	C	A	A	A	A	A	A	A
Sodium Nitrite	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Perborate	C	C	A	C	C	A	A	A	A	A	B	A
Sodium Peroxide	C	C	A	C	C	A	A	A	A	B	C	A
Sodium Phosphate	A	B	A	B	C	A	A	A	A	A	A	A
Sodium Silicate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfite	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Thiosulfate	A	A	A	A	A	A	A	A	A	A	A	A
Soybean Oil	D	C	A	A	B	A	A	A	A	A	A	A
Stannic Chloride	A	A	B	A	A	A	B	A	A	A	A	A
Stannic Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Stannous Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Stannous Sulfide	A	A	A	A	A	A	A	A	A	A	A	A
Steam, under 300 degrees F	TITAN HOSE NOT AVAILABLE											
Steam, over 300 degrees F	TITAN HOSE NOT AVAILABLE											
Stearic Acid	D	D	B	B	C	C	B	A	A	A	A	A

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CHEMICAL RESISTANCE

RESISTANCE RATING		
A	Good Resistance:	Usually suitable for service.
B	Fair Resistance:	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.
D	Not Recommended:	Unsuitable for service.

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Stoddards Solvent	D	D	D	A	C	D	D	A	A	B	A	A
Styrene	D	D	D	D	D	D	D	A	-	-	-	A
Sugar Sols. (Sucrose) Non F.D.A.	A	A	A	A	A	A	A	A	A	A	A	A
Sulfamic Acid	C	C	A	B	B	B	A	C	A	A	A	A
Sulfite Liquors	B	B	A	B	B	A	B	A	A	-	A	A
Sulfonic Acid	D	D	D	D	C	C	D	D	B	-	B	A
Sulfur (Molten)	B	B	A	B	A	A	A	A	C	-	A	A
Sulfur Chloride	D	D	D	C	C	A	D	A	A	B	B	A
Sulfur Dioxide	C	C	C	C	C	A	C	A	A	-	A	A
Sulfur Hexafluoride	A	A	A	A	A	A	A	A	A	A	A	A
Sulfur Trioxide	D	C	C	C	C	B	C	A	B	B	D	A
Sulfuric Acid, 25%	B	B	B	B	A	A	-	A	A	A	A	A
Sulfuric Acid, 25-50%	B	D	A	D	C	A	-	A	A	A	A	A
Sulfuric Acid, Fuming	D	D	D	D	D	D	D	A	D	D	D	A
Sulfurous Acid	C	C	C	C	C	A	C	A	A	A	A	A
Tall Oil	D	D	D	A	B	B	D	A	A	B	A	A
Tallow	D	D	D	A	A	D	D	A	A	A	A	A
Tannic Acid	A	C	A	C	A	A	A	A	A	A	A	A
Tar	D	D	D	C	C	C	D	B	D	A	D	A
Tartaric Acid	A	C	B	C	C	A	B	A	A	A	A	A
Terpineol	D	D	C	D	D	D	C	A	B	A	B	A
Tertiary Butyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A
Tetrachlorobenzene	D	D	D	D	D	D	D	B	B	-	B	A
Tetrachloroethane	D	D	D	D	D	D	D	A	B	-	B	A
Tetrachloroethylene	D	D	D	D	D	D	D	A	B	B	B	A
Tetraethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Tetrachloromethane	D	D	D	C	D	D	D	A	B	B	B	A
Tetrachloronapthalene	D	D	D	D	D	D	D	B	B	-	B	A
Tetraethyl Lead	D	D	D	B	C	D	D	A	A	B	A	A
Tetrahydrofuran (THF)	D	D	D	D	D	D	D	D	A	-	A	A
Thionyl Chloride	D	D	D	D	D	D	D	B	A	-	A	A
Tin Chloride	A	A	A	A	A	A	A	A	A	A	A	A
Tin Tetrachloride	A	A	A	A	A	A	A	A	A	A	A	A
Titanium Tetrachloride	D	D	D	B	C	C	C	A	A	B	A	A
Toluene (Toluol)	D	D	D	C	D	D	D	A	A	B	C	A
Toluene Diisocyanate (TDI)	C	C	A	C	D	D	A	B	A	-	A	A
Toxaphene	D	D	D	B	B	D	D	A	A	-	A	-
Transformer Oils (Petroleum Base)	D	D	D	A	B	B	D	A	A	A	A	A
Transformer Oils (Chlorinated Phenyl Base Askerels)	D	D	D	D	D	D	D	A	B	B	B	A
Transmission Fluids - A	D	D	D	B	C	D	D	A	A	A	A	A
Transmission Fluids - B	D	D	D	C	D	D	D	A	A	-	A	-
Tricetin	A	B	A	B	B	B	A	D	A	-	A	-
Tributyl Amine	TITAN HOSE NOT AVAILABLE											
Tributyl Phosphate	D	D	B	D	D	D	B	D	A	A	A	A
Trichlorobenzene	D	D	D	D	D	D	D	B	B	B	B	A

	Natural Rubber	SBR	Butyl	Nitrile	Neoprene	Hypalon®	EPDM	FKM / Viton®	X-Linked Polyethylene	Modified X-Link	UHMWPE	FEP / Teflon®
Trichloroethane	D	D	D	D	D	D	D	A	A	B	A	A
Trichloroethylene	D	D	D	D	D	D	D	A	A	A	B	A
Trichloropropane	D	D	D	D	D	D	D	A	A	-	A	A
Tricresyl Phosphate (TCP)	D	D	A	D	D	D	B	B	A	-	A	A
Triethanolamine (TEA)	TITAN HOSE NOT AVAILABLE											
Triethylamine	TITAN HOSE NOT AVAILABLE											
Triethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A
Trinitrotoluene (TNT)	D	D	D	D	B	B	D	B	D	-	D	-
Triphenyl Phosphate	D	D	A	D	C	C	B	C	A	-	A	A
Trisodium Phosphate	A	A	A	A	A	A	A	A	A	A	A	A
Tung Oil	D	D	C	A	B	B	D	A	A	B	A	A
Turbine Oil	D	D	D	B	B	B	D	A	A	-	A	-
Turpentine	D	D	D	B	D	D	D	A	A	-	B	A
2,4D with 10% Fuel Oil	D	D	D	A	A	D	D	A	A	-	A	-
Ucon Hydrolube Oils	D	D	A	A	B	D	A	A	A	A	A	A
Undecanol	A	A	A	A	A	A	A	B	A	A	A	A
Unsymmetrical Dimethyl-Hydrazine (UDMH)	D	D	A	D	D	A	A	D	C	-	C	-
Uran	B	C	B	B	B	A	B	C	A	-	A	-
Urea	TITAN HOSE NOT AVAILABLE											
Varnish	D	D	D	B	B	C	D	A	A	B	A	A
Vegetable Oils	D	D	A	A	B	B	A	A	A	-	A	A
Versilube	C	C	A	A	C	A	A	A	A	-	A	A
Vinegar	C	C	A	C	C	A	A	A	A	A	A	A
Vinyl Acetate	D	D	A	D	D	D	B	A	B	A	A	A
Vinyl Benzene	D	D	D	D	D	D	D	A	B	-	B	A
Vinyl Chloride (Monomer)	C	D	D	D	D	D	D	A	A	B	A	A
Vinyl Ether	D	D	D	D	D	C	C	D	A	-	A	-
Vinyl Toluene	D	D	D	D	D	D	D	A	B	-	B	A
Vinyl Trichloride	D	D	D	D	D	D	D	A	A	B	A	A
V.M. & P. Naptha	D	D	D	A	A	D	D	A	A	A	A	A
Water, Fresh (non F.D.A.)	A	A	A	A	C	A	A	A	A	A	A	A
Water, Salt	A	B	A	B	A	B	A	A	A	A	A	A
Whiskey, Wines	FDA TUBE REQUIRED											
White Liquor	A	A	B	A	A	A	C	A	A	-	A	-
White Oil	D	D	D	A	B	D	D	A	A	-	A	A
Wood Alcohol (Methanol)	A	A	A	A	A	A	A	D	A	A	A	A
Xylene (Xy101)	D	D	D	C	D	D	D	A	A	-	C	A
Xylidine	D	D	D	D	D	D	D	C	B	B	B	A
Zeolites	B	A	C	C	A	A	A	A	A	-	A	-
Zinc Acetate	C	D	A	C	C	C	B	D	A	A	A	A
Zinc Carbonate	A	A	A	A	A	A	A	A	A	A	A	A
Zinc Chloride	C	C	A	C	C	A	A	A	A	A	A	A
Zinc Chromate	A	C	A	A	A	C	A	A	B	A	B	A
Zinc Sulfate	A	A	A	A	A	A	A	A	A	A	A	A

These charts are offered as a guideline only. If there is any question about the resistance of a listed elastomer, please contact Titan's Technical Team at 800-242-HOSE (4673). All ratings are based on material at ambient temperature (70°F).

FORCE-TO-BEND AND MINIMUM BEND RADIUS

The amount of force required to bend a hose and the minimum bend radius are important factors in hose design and selection. The minimum bend radius is defined as the radius to which the hose can be bent in service without damaging or appreciably shortening the life of the product. Perhaps more important in determining flexibility, the force-to-bend is defined as the amount of stress required to induce bending around a specified radius. The less force that is required, the easier the product is to maneuver in the field.

Different hose constructions may require significantly different forces to attain the same minimum bend radius. Generally, the preferred hose is the more flexible hose, provided all other properties are essentially equivalent.

General formula to determine minimum hose length given hose bend radius and degree of bend required:

$$\frac{\text{Angle of Bend}}{360°} \times 2\pi r = \text{Minimum length of hose to make bend.}$$

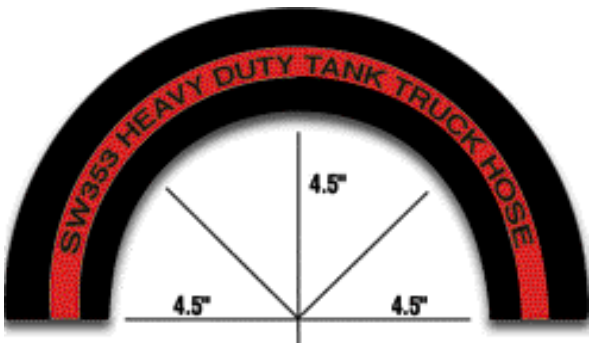
r = Given bend radius of hose.

Example: To make a 90° bend with 2" I.D. hose.
Given r = 4.5 inches.

$$\frac{90}{360°} \times 2 \times 3.14 \times 4.5$$

.25 x 2 x 3.14 x 4.5 = 7" minimum length of hose to make bend without damage to hose.

The bend radius for a given application must be equal to or greater than the rated minimum bend radius. Bending the hose to a smaller bend radius than minimum may kink the hose and result in premature failure.



The minimum bend radius is measured to the inside of the curvature.

SUCTION AND VACUUM

Most hose is used for pressure service; however, some applications require the hose to resist collapse in suction and vacuum service. Such hose is subjected to crushing forces because the atmospheric pressure outside the hose is greater than the internal pressure. The hose can collapse and restrict the flow unless the hose is constructed to resist these pressure differentials.

The most common method of preventing hose collapse is to build a helical wire reinforcement into the hose body. The size and spacing of the wire reinforcement depends on the size of the hose and the pressure differential. In such applications approaching a perfect vacuum, most of the carcass plies are applied over the wire reinforcement.

The hose is constructed with high adhesion between the tube and the carcass to prevent tube separation. Suction hose must be specifically designed for the service for which it is used. Each element -- tube, textile reinforcement, size, spacing, and location of the wire reinforcement -- must be carefully considered.

While suction hose is generally used to convey liquids, vacuum hose carries air under a partial vacuum. Vacuum hose is reinforced to resist collapse and maintain its shape under rough handling and/or mechanical abuse. It does not require the heavy construction of suction hose because the dry materials generally conveyed are much lighter in weight than liquids and the vacuum is usually less than for normal suction service.

Reprinted from **The Rubber Manufacturers Association, Inc. Hose Handbook, © IP-2, Seventh Edition, 2003**

Conductive Hose

Conductive hose constructions are those that are capable of conducting an electrical current.

Static wires and conductive rubber components are used in hose to prevent static electricity build-up and a discharge as a spark. Electrical engineers differ in opinion on the effects of static electricity and the means of dissipating it. In handling gasoline and other petroleum-based liquids, recognized national associations and companies have conflicting opinions on the need for conductive hoses.

Until a consensus is reached among all associations, laboratories and users, and a standard practice is established, it is essential that the user determine the need for static bonded hose based on (a) the intended use of the hose, (b) instructions from the company's Safety Division, (c) the insurer, and (d) the laws of the States in which the hose will be used.

Some types of hose include a body reinforcing wire. This wire can be used for electrical continuity provided that proper contact is made between it and the hose coupling. In non-wire reinforced hose, a static wire can be included in the hose body.

Non-Conductive Hose

Non-conductive hose constructions are those that resist the flow of electrical current.

In some specific applications, especially around high voltage electrical lines, it is imperative for safety that the hose be non-conductive. Unless the hose is designed particularly to be non-conductive and is so branded, one dare not conclude that it is non-conductive. Many black rubber compounds are inherently and inadvertently conductive. Non-conductive hose is usually made to a qualifying standard that requires it to be tested to verify the desired electrical properties. The hose is usually non-black in color and clearly branded to indicate it is designed for non-conductive applications.

UNLESS A HOSE IS DESCRIBED SPECIFICALLY AND CLEARLY BRANDED TO BE CONDUCTING OR NON-CONDUCTING, IT MUST BE ASSUMED THAT THE ELECTRICAL PROPERTIES ARE UNCONTROLLED.