

Rubber Spreader Rolls Elastomer Selection Guide

POLYMER PROPERTIES

RELATIVE RATING Excellent Above Average Average Fair Poor	NEOPRENE	NITRILE	CARBOXYLATED NITRILE	POLYURETHANE	SILICONE (STANDARD)	EPDM	HYPALON	VITON
	Hardness Range	20-95	20-100	45-95	40-95	30-90	25-95	30-90
Tensile Strength								
Modulus								
Elongation at Break								
Tear Strength								
Cut Resistance								
Resistance to Compression Set								
Resistance to Permanent Set								
Resilience								
Resilience to Heat Build-up								
Resistance to Abrasion								
Ozone Resistance								
Hydrolytic Stability								
Dielectric Strength								
Release Characteristics								
Maximum Service Temperature (° F)	250	250	275	212	500	350	300	500
Acids (Mineral) Nitric, Sulfuric Hydrochloric, Phosphoric (Organic) Acetic, Boric								
Caustics Sodium Hydroxide, Calcium Hydroxide								
Aliphatic Hydrocarbons Kerosene, Gasoline, Hexane, Naphtha, Mineral Spirits, Most Offset/Letterpress Printing Inks, Many lubricants and greases								
Aromatic Hydrocarbons Toluol or Toluene, Xylol or Xylene								
Chlorinated Hydrocarbons Methylene Chloride, 1, 1, 1- Trichloroethylene, Perchloroethylene								
Esters Ethyl Acetate, Dioctyl Phthalate, Tricresyl, Phosphate								
Alcohols Methanol, Ethanol, Isopropyl Alcohol								
Water								
Glycols Ethylene Glycol, Glycerine								
Ketones Methyl Ethyl Ketone (MEK), Methyl Isobutyl Ketone								

How to specify the right elastomer

Use this elastomer chart to help determine which rubber compound is best suited to your particular situation. If in doubt, call us. We'll help you determine the best possible covering based on the web handling parameters you have to share with us.

Note: The following elastomers are not standard on Webex Grooved Rubber Rolls.

- Neoprene
- Nitrile
- Carboxylated Nitrile
- Polyurethane
- EPDM
- Hypalon
- Viton

How to specify the right grooved rubber roll

This literature presents four different groove configurations for the standard rubber-covered idlers. Other options are also available, including additional groove variations and non-groove designs.

To specify the best possible groove or rubber roll design, call us. Chances are we've already designed a rubber-covered roll for an application similar to yours.

ELASTOMER SELECTION GUIDE

Any Webex roll can be Rubber-Covered to meet process needs. The appropriate selection of a rubber cover is important to the success of many process applications. The following is a summary guide to a few of the most popular choices of rubber elastomers used in the web converting industry.

NEOPRENE: Neoprene is considered a good choice for general purpose applications. It has good mechanical properties, good chemical resistance and high resilience. Neoprene is a workhorse in the industry. It is used on nip rolls, pull rolls, feed rolls and in flexo and gravure printing.

NITRILE: Also known as NBR or Buna-N, Nitrile is the most commonly used elastomer in the industry. It has good resistance to oils, chemicals and water. Nitrile is also a workhorse covering with applications as nip rolls, pull rolls and rolls in printing applications. Carboxylated Nitrile is a modified Nitrile rubber, possessing most of the properties of Nitrile along with outstanding abrasion resistance and other physical characteristics, including tensile strength. Nitrile/PVC blends are also very popular in the web converting industry. The addition of PVC enhances the physical properties, abrasion resistance, strength, chemical and ozone resistance of Nitrile.

POLYURETHANE: Urethane rubber is available in two basic chemical types, polyester and polyether. Polyester urethane is a tough elastomer with good chemical and solvent resistance while polyethers work better in applications that come in contact with water. Urethane is typically used in applications where toughness, wear resistance and cut resistance are desired. Urethane generally has high-friction characteristics making it a favorite for pull rolls.

SILICONE: Silicone rubber is known for two main attributes, high temperature (500° F) capability and improved release characteristics. Silicone is a more expensive covering but along with heat resistance and release it has good chemical resistance and excellent ozone resistance. Silicone has generally weak physical characteristics but is widely applied in situations where its temperature and release characteristics are needed.

EPDM: Sometimes called EPT, EPDM consists mostly of Ethylene and Propylene. It has excellent ozone resistance and chemical resistance, especially with polar solvents such as ketones. EPDM is also heat resistant to 350° F. It is typically used where its chemical and temperature capabilities are required such as coating applications.

HYPALON: Hypalon has good physical characteristics, good chemical resistance, excellent ozone resistance and good temperature (350° F) capability. Hypalon is ideal for many roller applications and is a favorite as a covering for nip rolls.

VITON: Viton is known for its excellent chemical resistance and high temperature (500° F) capability. Viton is very expensive so its applications are limited to extreme cases where other compounds fail and the high price can be justified.



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