Rubber Gasket Compounds

The 20th century was the era of innovation in plastic and rubber materials. Among the new synthetic rubber compounds that most impacted our industry were EPDM (ethylene propylene diene monomer) and Nitrile rubbers.

Please refer to the Gasket Selection Guide beginning on page 196 for additional information relating to service temperatures and chemical resistance.

EPDM is recognized as the most water resistant rubber available today. Good for cold & hot water up to 230ºF (110ºC), waste water, water with acid, deionized water and seawater. EPDM is not recommended for use with petroleum based oils and fuels, hydrocarbon solvents and aromatic hydrocarbons.

Green Stripe
Grade "E"

Violet Stripe
Grade "Lube-E"

Shurjoint Grade "E" EPDM is compounded per ASTM D2000 designation 2CA615A25B24F17Z. Peroxide curing and post curing give a higher crosslink density, which provides a higher aging resistance than required in AWWA C606.

	AWWA C606 2CA615A25B24F17Z	Shurjoint Standard
Basic Requirements		
Hardness, Durometer A, point	65±7	60±5
Tensile strength, psi, min.	1500 psi (10.34 MPa)	1500 psi (10.34 MPa)
Elongation, %, min.	300 %	300 %
Heat Aging Properties	After aged at 212°F (100°C) for 70 hours	After aged at 257°F (125°C) for 70 hours
Change in Durometer hardness, max.	+10 point	+5 points
Change in tensile strength, max.	-25%	-10%
Change in ultimate elongation, max.	-25%	-20%
Compression Set, Method B, max.	25%	20%

Use **Shurjoint** Grade "E-pw" for potable water and food processing services. The Grade "E-pw" is UL classified per NSF/ANSI 61 and NSF/ANSI 372 for cold +86°F (30°C) and hot +180°F (82°C) potable water services. EPDM seals are recommended for use in breweries as they have the least impact on the characteristics of beer or wort.

Double Green
Stripe

Note: EPDM materials used in domestic water applications with high levels of chlorine and or chloramines should be subjected to resistance testing, as not all materials will be suitable. EPDM materials with higher saturated ethylene content and lower carbon black content are recommended for chloramine and chlorine resistance. Contact **Shurjoint** for further information.

Laboratory high temperature oven testing

Laboratory hot water testing

NBR, Buna-N, and Nitrile


Orange Stripe

all represent the same copolymer of butadiene and acrylonitrile (ACN), which is inherently resistant to hydraulic fluids, lubricating oils, transmission fluids and other non-polar petroleum based products and water less than 150° F (65° C). The higher the ACN content, the higher the resistance to oils and heat, but the lower elastic characteristics and compression set. NBR displays poor resistance to hot water and steam.

Shurjoint grade "T" NBR rubber is compounded based on ASTM D2000 designation 5BG615A14B24Z and exceeds the requirements of AWWA C606. Grade "T" is a general purpose compound with a medium ACN level. For fuels, especially those with a low aniline point, such as premium or unleaded gasoline, ASTM referenced fuels B & C and naphtha, use **Shurjoint** grade "M2" Epichloro-Hydrin or grade "O" Flurocarbon.

	AWWA C606 5BG615A14B24Z	Shurjoint Standard
Basic Requirements		
Hardness, Durometer A, point	60±7	60±5
Tensile strength, psi, min.	1500 psi (10.34 MPa)	1500 psi (10.34 MPa)
Elongation, %, min.	300 %	300 %
When heat aged at 212°F (100°C) for 70 hours		
Change in Durometer hardness, max.	+10 point	±10 points
Change in tensile strength, max.	-25%	-20%
Change in ultimate elongation, max.	-30%	-30%
Compression Set, Method B, max.	25%	25%


White Gasket

Use **Shurjoint** Grade "A" white Nitrile gaskets for oily and greasy food products and processing, as well as pharmaceutical and cosmetics manufacturing. The Grade "A" is compounded from FDA approved ingredients (CFR Title 21 Part 177.2600).


Red Stripe

Use **Shurjoint** Grade "S" Nitrile gaskets for joints with AWWA ductile iron pipe. Good for mineral oils, vegetable oils, air with oil vapors and water less than 150°F (65°C).

Silicone (VMQ)


Red Gasket

Shurjoint Grade "L" Silicone compound features high temperature range stability and low temperature flexibility. Recommended for dry heat and air without hydrocarbons up to 350°F (177°C). Silicone compounds are used in many food and medical applications as they do not impart odor or taste. Not recommended for hot water or steam services.

Chloroprene (CR, Neoprene)


Yellow Stripe

Shurjoint Grade "V" chloroprene rubber is a general purpose elastomer that demonstrates good resistance to lubricating oils, animal & vegetable fats and greases. Chloroprene is not effective in aromatic and oxygenated solvent environments and is not recommended for hot water and steam services.

Fluorocarbon (FKM)


Blue Stripe

FKM is a highly fluorinated carbon backboned compound and offers excellent resistance to harsh chemical and ozone attack with a thermal stability to 300°F (149°C). **Shurjoint** Grade "O" fluorocarbon gasket is recommended for use with oils, gasoline, hydraulic fluids, hydrocarbon solvents and extended fuels that fall outside the service parameters of grade T / NBR compounds. Not recommended for steam services.

Epichloro-Hydrin (ECO)


White Stripe

Shurjoint Grade "M2" compound offers good to excellent resistance to aliphatic hydrocarbon and aromatic hydrocarbon fuels at low temperatures, LP gases & fuels, mineral oils and many solvents. ECO offers limited resistance to many organic chemicals.

Halogenated Butyl (CIIR)


Brown Stripe

Shurjoint Grade "M" CIIR is specially compounded for use with AWWA ductile iron pipe for water services, mild dilute acids, oil-free air and many chemicals. The compound is UL classified for potable water use per NSF/ANSI 61 and NSF/ANSI 372.