

RING FLANGE-TYTE® Gasket



2018 EDITION

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The RING FLANGE-TYTE® Gasket is a high performance gasket for flanged joint piping systems.

The most vulnerable element of a piping system is the joint. Many times, the weakest part of the joint is the gasket that is used. Lots of time and money are spent in the design and specification of the pipe, fittings, valves, and various components of the project to insure the piping system is able to withstand the requirements of your application, only to have all that time and expense undermined by the lowest cost item in the piping system; a flat sheet of thin rubber between the flanges. U.S. Pipe offers a solution that will provide peace of mind through superior performance, the RING FLANGE-TYTE® Gasket. Below we list some of the high performance features this product provides.

Pressure:

By combining the effectiveness of "o-ring" technology into a molded flat gasket, the RING FLANGE-TYTE® Gasket can operate safely at high internal pressures, high velocities, and still handle the common occurrence of surges in pressure without fear of joint leaks. The gasket may also help to resolve installation issues that arise such as imperfections in the flange face, flange alignment, and pipe or equipment alignment.

The RING FLANGE-TYTE® Gasket is rated for a water working pressure of 350 psi for 4"-24" sizes, 250 psi for 30"-48" sizes, 150 psi for 54"-64" sizes. If your application requires higher working pressures, please contact your U.S. Pipe Sales Representative. The gasket is listed by Underwriters Laboratories and flanged joints with RING FLANGE-TYTE® Gaskets are approved by Factory Mutual.

Torque:

The RING FLANGE-TYTE® Gasket employs (3) - "bulb type" rings on the faces of both sides of the gasket (see drawing page 5). This provides 3 times the sealing peace of mind than gaskets that provide only (1) bulb, or none at all. By using (3) - "bulb type" rings on the face of the gasket, the bolt torque required to effectively complete the seal is greatly reduced. This results in reducing stresses on flanges, bolts, and nuts in addition to providing a much safer and dependable assembly for the installer. Please refer to the bolt torque ratings in Table 1 on page 5.

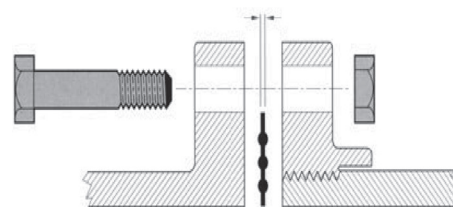
Compatibility:

The RING FLANGE-TYTE® Gasket is compatible with flanges conforming to **ANSI/AWWA C115/A21.15**, **ANSI/AWWA C110/A21.10**, ASME B16.1 class 125, **ANSI/AWWA C207** class B, D, E and F flanges, and **ANSI B16.5** in sizes 4"-24". RING FLANGE TYTE® Gaskets have been successfully employed in flange joint assemblies conforming to **ASME/ANSI B16.1**, Class 250 flanges (both flat face and raised face).



Ring Style Gasket

1/8" thick.



NOTE: U.S. Pipe recommends the use of **FULL FACE FLANGE-TYTE®** Gaskets or **RING FLANGE-TYTE®** Gaskets with all ductile iron flanged joint products supplied by U.S. Pipe. Failure to use a Flange- TYTE® gasket on any fabricated pipe product 14" or larger could result in voiding the manufacturer's warranty. Flange- TYTE® gaskets were designed for superior sealing performance on ductile iron flanges of all types and to aid in alignment issues that may arise on projects. Flat rubber gaskets are NOT considered equal in performance and may not provide the sealing capability requirements of a project. In addition, their use could result in unintended damage to the flanges and threads of the fabricated pipe by applying excess torque to the bolts/flanges in order to seal the joint.

FULL FACE FLANGE-TYTE® and **RING FLANGE-TYTE®** are Registered Trademarks of United States Pipe and Foundry Company, LLC.

Special Elastomers & Applications

U.S. Pipe offers RING FLANGE-TYTE® Gaskets made of special elastomers which may be necessary for special applications. High temperature water and air applications and piping systems transmitting fluids with elevated contact with certain oils or chemicals may require elastomers with enhanced performance criteria. The table below can be used to assist in gasket selection. If special elastomers are required for your project, it is necessary to include the requirement in the project specifications and on the purchase order to U.S. Pipe.

| Description | Maximum Service Temperature ^{1,2} | | Uses ³ |
|---|--|---------------------|---|
| | Water & Sewer °F | Air ⁴ °F | |
| SBR (Styrene Butadiene) | 150 | 125 | Common: Drinking Water, Sea Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water |
| Nitrile (NBR) (Acrylonitrile Butadiene) | 150 | 125 | Common: Alcohols, Dilute Acids, Dilute Alkalis, Ketones (MEK, Acetone), Vegetable Oil Other Acceptable Services: Drinking Water, Sea Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water |
| Neoprene® (Polychloroprene) | 200 | 150 | Common: Hydrocarbons, Fats, Oils, Greases, Chemicals, Oils & Fluids, Refined Petroleum Other Acceptable Services: Drinking Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water |
| EPDM (Ethylene Propylene Diene Monomer) | 212 | 150 | Common: Greasy Waste. Other Acceptable Services: Sea Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water |
| FKM⁵ | 212 | 300 | Common: Aromatic Hydrocarbons and Fuels, Acids, Vegetable Oils, Petroleum Products, Chlorinated Hydrocarbons, Most Chemicals and Solvents Other Acceptable Services: Drinking Water, Reclaimed Water, Raw Water, Storm Water |

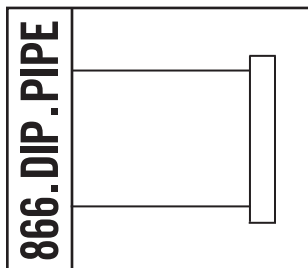
¹ Maximum service temperatures listed are intended as general guidelines for ductile iron pipe gaskets. For service temperatures greater than those listed, consult pipe manufacturer for specific recommendations.

² Maximum service temperature is not usually a meaningful parameter for piping gaskets; however, low temperatures during pipeline installation may necessitate precautions. Consult your U.S. Pipe Sales Representative for pertinent recommendations.

³ Water, including sewage, with low levels of the listed contaminants.

⁴ Lubricating oil in the air will adversely affect SBR and EPDM performance.

⁵ Consult your U.S. Pipe Sales Representative for availability of FKM gaskets.



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Gasket Thickness and Materials:

The RING FLANGE-TYTE® Gasket is only offered in 1/8" thickness per the recommendation of ANSI/AWWA C115/A21.15 Appendix A, Sec. A.2. The RING FLANGE-TYTE® Gasket is commonly provided in SBR elastomer which is adequate for most conditions of service for potable or domestic wastewater contact. SBR elastomer carries a maximum service temperature of 150°F for water and 125°F for air applications.

Suggested Specification:

Ductile Iron pipe flanged joints shall conform to **ANSI/AWWA C115/A21.15**. Gaskets for Ductile Iron flanged joints shall be ring type SBR elastomer per **ANSI/AWWA C111/A21.11** and shall be 1/8" thickness. Flanged gaskets shall be the high performance type satisfying the special requirements of **ANSI/AWWA C111/A21.11** Appendix C, Sec. C.2 and have at least (3) bulb type rings molded into both faces of the gasket. Flanged gaskets shall be U.S. Pipe RING FLANGE-TYTE® Gasket or pre-approved equal.

Assembly Procedures:

The RING FLANGE-TYTE® Gasket should be assembled using the same general procedures and practices for installing flanged joints. **ANSI/AWWA C115/A21.15** Appendix C, Sec. C.3 can be used for general guidance.

The use of flanged joints underground is NOT recommended because of the rigidity of the joint.

The faces of the flanges must be free of sand, grit, grease, or other foreign matter.

For smaller diameter joints, align the flanges and insert several bolts in the lower half of the flanges. Drop the RING FLANGE-TYTE® Gasket between the two flanges so that the gasket rests on the lower bolts. Insert the remaining bolts and follow the tightening procedure below. For large diameter flanges and **ASME/ANSI B16.1**, Class 250 flanges, it may be necessary to glue the gasket to the face of one of the flanges prior to aligning the flanges.

Flanged bolts should be tightened in a progressively crisscross pattern, such as tightening the bottom bolt; then, the top bolt; next, the bolts at either side; and finally, the remaining bolts. This process should be repeated until all bolts are sufficiently tightened.

See Table 1, Page 5 for bolt torque requirements.

Storage Recommendation:

Gaskets should be stored in a cool location, out of direct sunlight and shall not come in contact with petroleum products. Gaskets should be inaccessible to vermin and should be stored away from any electrical equipment such as switchgear unless adequate precautions are taken to avoid the concentration of ozone in the storage area.

Gaskets should be used on a first-in, first-out basis and should be inspected annually and prior to installation. Evidence of surface cracking, dry rot, or vermin attack is cause for discarding the gaskets and replacement with new gaskets.

ANSI/AWWA Standards

ANSI/AWWA C115/A21.15

Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.

ANSI/AWWA C110/A21.10

Ductile-Iron and Gray-Iron Fittings for Water

ANSI/AWWA C153/A21.53

Ductile-Iron Compact Fittings for Water Service

ANSI/AWWA C111/A21.11

Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

ASME/ANSI B16.1

Cast Iron Pipe Flanges and Flanged Fittings

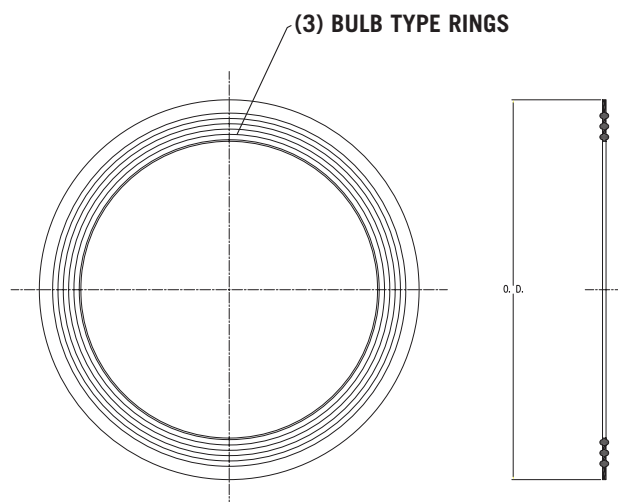
ASME/ANSI B16.5

Pipe Flanges and Flanged Fittings

AWWA C207

Steel Pipe Flanges for Waterworks Service - Sizes 4 in. through 144 in.

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Table 1. Technical Data

| SIZE Inches | OD Inches | Bulb-type rings each side | WORKING PRESSURE psi | | |
|----------------|--------------|------------------------------|-------------------------|-----|-----|
| | | | 150 | 250 | 350 |
| | | | BOLT TORQUE ft-lb | | |
| 4 | 6.88 | 3 | - | 90 | 110 |
| 6 | 8.75 | 3 | - | 90 | 110 |
| 8 | 11.00 | 3 | - | 90 | 110 |
| 10 | 13.38 | 3 | - | 90 | 130 |
| 12 | 16.13 | 3 | - | 90 | 130 |
| 14 | 17.75 | 3 | - | 110 | 150 |
| 16 | 20.25 | 3 | - | 110 | 160 |
| 18 | 21.63 | 3 | - | 120 | 180 |
| 20 | 23.88 | 3 | - | 120 | 200 |
| 24 | 28.25 | 3 | - | 130 | 220 |
| 30 | 34.75 | 3 | - | 140 | - |
| 36 | 41.25 | 3 | - | 160 | - |

NOTE:

Gasket Thickness: All RING FLANGE-TYTE® Gaskets are 1/8" thickness. Thinner gaskets are NOT recommended for use with Ductile Iron flanges.

Material: Unless otherwise specified by the purchaser, gaskets will be furnished as SBR. Special elastomers such as neoprene, nitrile, EPDM, and fluorocarbon are available upon request. Gaskets made with special elastomers are marked with color dots. Neoprene is yellow, EPDM is orange, Nitrile is green, Fluorocarbon is red.

Assembly: See Page 5 of the RING FLANGE-TYTE® Brochure for guidance.

Compatibility: The RING FLANGE-TYTE® Gasket is compatible with flanges conforming to **ANSI/AWWA C115/A21.15**, **ANSI/AWWA C110/A21.10**, **ASME B16.1 class 125**, **ANSI/AWWA C207 class B, D, E and F flanges**, and **ANSI B16.5** in sizes 4"-24". RING FLANGE TYTE® Gaskets have been successfully employed in flange joint assemblies conforming to **ASME/ANSI B16.1**, Class 250 flanges (both flat face and raised face).

Products for Water, Wastewater and Fire Protection

| Ductile Iron Pipe | SIZE RANGE |
|--|----------------------|
| TYTON JOINT® Pipe | 3"-64" Ductile Iron |
| Mechanical Joint Pipe | 4"-12" Ductile Iron |
| TR FLEX® Pipe | 4"-36" Ductile Iron |
| HP LOK® Pipe | 30"-64" Ductile Iron |
| Flanged Pipe | 3"-64" Ductile Iron |
| Grooved Pipe | 4"-36" Ductile Iron |
| USIFLEX® Boltless Ball Joint Pipe For Subaqueous Installations | 4"-48" Ductile Iron |
| Restrained Joints | |
| TR FLEX® Restrained Joint | 4"-36" Ductile Iron |
| HP LOK® Restrained Joint | 30"-64" Ductile Iron |
| MJ FIELD LOK® Gaskets | 4"-24" |
| FIELD LOK 350® Gaskets | 4"-24" |
| FIELD LOK® Gasket | 30" & 36" |
| TR FLEX GRIPPER® Rings | 4"-36" Ductile Iron |
| TR TELE FLEX® Assemblies | 4"-24" Ductile Iron |
| Fittings | |
| TYTON® Fittings | 14"-24" Ductile Iron |
| TRIM TYTON® Fittings | 4"-12" Ductile Iron |
| TR FLEX® Fittings and TR FLEX® Telescoping Sleeves | 4"-36" Ductile Iron |
| HP LOK® Fittings and HP LOK® Telescoping Sleeves | 30"-64" Ductile Iron |
| Mechanical Joint Fittings | 30"-48" Ductile Iron |
| Flanged Fittings | 30"-64" Ductile Iron |
| XTRA FLEX® Couplings | 4"-24" Ductile Iron |
| Miscellaneous Products | |
| PROTECTO 401™ Lined Ductile Iron Pipe for Domestic Sewage and Industrial Wastes | 4"-64" Ductile Iron |
| GLASS Lined Ductile Iron Pipe for Wastewater Treatment Plants | 4"-30" Ductile Iron |
| RING FLANGE-TYTE® Gaskets | 4"-36" |
| FULL FACE FLANGE-TYTE® Gaskets | 4"-64" |
| MJ Harness-Lok | 4"-48" Ductile Iron |
| Saddle Outlets | Various Ductile Iron |
| Welded Outlets | Various Ductile Iron |
| Polyethylene Encasement | 4"-64" |

Our products are manufactured in conformance with National Standards so that our customers may be assured of getting the performance and longevity they expect. Use of accessories or other appurtenances that do not comply with recognized standards may jeopardize the performance and longevity of the project.