

TYTON JOINT[®] Pipe



2013 EDITION

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TYTON JOINT Pipe

Each of the following is a nationally recognized standards organization:

- American National Standards Institute (ANSI)
- American Water Works Association (AWWA)
- American Society for Testing and Materials (ASTM)
- Underwriters Laboratories (UL)
- National Fire Protection Association (NFPA)
- National Sanitation Foundation (NSF)
- Factory Mutual (FM)

TYTON JOINT is U.S. Pipe's trademark for pipe with a push-on type connection. Simplicity, sturdiness and water-tightness of the system are built into the system by design. Convincing proof of its worldwide acceptance is shown by the fact that more than 95% of the pipe now sold by U.S. Pipe is TYTON JOINT Pipe.

TYTON JOINT Pipe is available in sizes 3" through 64". Sizes 3" through 42" are available in nominal 18-foot laying lengths. 6" through 24" sizes along with sizes 48" through 64" are available in nominal 20-foot laying lengths.

TYTON JOINT Pipe in sizes 4" through 36" are UL Listed and sizes 4" through 16" are FM Approved.

When TYTON JOINT Pipe are used for bridge crossings or other above-ground installations, each length of pipe must be supported in a manner to restrict both vertical and horizontal movement.

TYTON[®] Gasket is the only accessory required when installing TYTON JOINT Pipe. It is a circular rubber gasket which has a modified bulb shape in cross section. Gaskets are furnished in accordance with ANSI/AWWA C111/A21.1. Composition and dimensions of the gasket have been carefully engineered to ensure a water-tight and lasting seal. The standard TYTON Gasket is manufactured of SBR - styrene butadiene rubber. Gaskets of special elastomers may be ordered for special applications. The gasket contour and bell socket contour ensure that the gasket will remain seated during proper assembly of the pipe. When joint restraint is required for push-on joint pipe, two options are available from U.S. Pipe. For joint restraint of 4" through 24", FIELD LOK 350[®] Gaskets may be used and for joint restraint for 30" and 36", FIELD LOK[®] Gaskets may be used. FIELD LOK 350 Gaskets are rated for 350 psi in sizes 4" through 24". In addition, for 4" through 36" sizes, TR FLEX Pipe and Fittings may be used and for 30" through 64" sizes, HP LOK[®] Pipe and Fittings may be used. TR FLEX Pipe and Fittings are rated for working pressures for 350 psi in 4" through 24" sizes, 250 psi in sizes 30" through 36" and for HP LOK Pipe and Fittings, the working pressure is 350 psi for 30" through 64". For higher pressure applications contact your U.S. Pipe representative. Complete details on both FIELD LOK 350 Gaskets and TR FLEX Pipe and Fittings can be found on our website, www.uspipe.com.

NOTE: U.S. Pipe qualifies for Federal Procurement under Public Law No. 94-580, Section 6002, known as the Resource Recovery Act of 1976, since, due to modern technology, recycled iron and steel scrap is used to a large degree in our Ductile Iron Pipe production.

The plain end of the pipe is furnished beveled or with a quarter ellipse on the edge to allow assembly. More than 40 years of successful experience have proved its sealing capabilities. Hydrostatic tests have shown that the system will withstand pressures far in excess of rated pressures.

TYTON[®], TYTON JOINT[®], TR FLEX[®] and FIELD LOK 350[®] are Registered Trademarks of U.S. Pipe and Foundry Company, LLC.

ANSI/AWWA Standards

ANSI/AWWA C151/A21.5, Ductile-Iron Pipe, Centrifugally Cast for Water.

Ductile Iron TYTON JOINT Pipe is centrifugally cast in metal molds in accordance with ANSI/AWWA C151/A21.5.

The asphaltic outside coating is in accordance with ANSI/AWWA C151/A21.5.1.

As specified in ANSI/AWWA C151/A21.5.1, pipe weights have been calculated using standard barrel weights and weights of bells being produced.

ANSI/AWWA C104/A21.4, Cement-Mortar Lining For Ductile-Iron Pipe and Fittings For Water.

The cement-mortar lining and inside coating are in accordance with ANSI/AWWA C104/ A21.4. Special linings and/or coatings can be furnished for specific conditions.

ANSI/AWWA C111/A21.11, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

TYTON[®] Gaskets are furnished in accordance with ANSI/AWWA C111/A21.11.

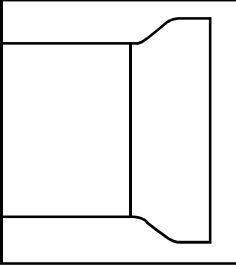
ANSI/AWWA C105/A21.5, Polyethylene Encasement for Ductile Iron Pipe Systems.

If specifiers and users believe that corrosive soils will be encountered where our products are to be installed, please refer to ANSI/AWWA C105/A21.5, for proper external protection procedures.

ASTM A746-03 "Standard specification for Ductile Iron Gravity Sewer Pipe."

ASTM A716-08 "Standard Specification for Ductile Iron Culvert Pipe."

ASTM A536 "Standard Specification for Ductile Iron Castings."



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Thickness Class – Thicknesses, Dimensions and Weight

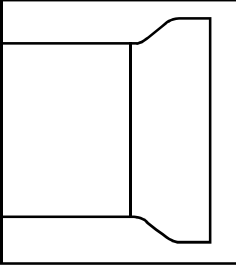
SIZE Inches	THICKNESS CLASS	THICKNESS Inches	OUTSIDE DIAMETER* Inches	BARREL WEIGHT PER FOOT Pounds	18-FOOT LAYING LENGTH 20-FOOT LAYING LENGTH	
					WEIGHT PER LENGTH† Pounds	WEIGHT PER LENGTH† Pounds
3	51	0.25	4.02	8.9	170	—
3	52	0.28	4.02	9.9	185	—
3	53	0.31	4.02	10.9	205	—
3	54	0.34	4.02	11.8	220	—
3	55	0.37	4.02	12.8	240	—
3	56	0.40	4.02	13.7	255	—
4	51	0.26	4.80	11.3	215	—
4	52	0.29	4.80	12.6	235	—
4	53	0.32	4.80	13.8	260	—
4	54	0.35	4.80	15.0	280	—
4	55	0.38	4.80	16.1	300	—
4	56	0.41	4.80	17.3	320	—
6	50	0.25	6.90	16.0	305	335
6	51	0.28	6.90	17.8	335	370
6	52	0.31	6.90	19.6	370	410
6	53	0.34	6.90	21.4	400	445
6	54	0.37	6.90	23.2	435	480
6	55	0.40	6.90	25.0	465	515
6	56	0.43	6.90	26.7	495	550
8	50	0.27	9.05	22.8	430	475
8	51	0.30	9.05	25.2	475	525
8	52	0.33	9.05	27.7	520	575
8	53	0.36	9.05	30.1	560	620
8	54	0.39	9.05	32.5	605	670
8	55	0.42	9.05	34.8	650	720
8	56	0.45	9.05	37.2	690	765

NOTE: Thicknesses and dimensions of 3" through 64" Ductile Iron pipe conform to ANSI/AWWA C151/A21.51.
Weights may vary from the standard because of differences in bell weights.

*Tolerance of O.D. of spigot end: 3-12 in., ± 0.06 in.; 14-24 in., $+0.05$ in., -0.08 in.; 30-48 in., $+0.08$ in., -0.06 in.; 54-64 in., $+0.04$ in., -0.10 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

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Thickness Class – Thicknesses, Dimensions and Weight (cont.)

SIZE Inches	THICKNESS CLASS	THICKNESS Inches	OUTSIDE DIAMETER* Inches	BARREL WEIGHT PER FOOT Pounds	18-FOOT LAYING LENGTH	20-FOOT LAYING LENGTH
					WEIGHT PER LENGTH† Pounds	WEIGHT PER LENGTH† Pounds
10	50	0.29	11.10	30.1	570	630
10	51	0.32	11.10	33.2	625	690
10	52	0.35	11.10	36.2	680	750
10	53	0.38	11.10	39.2	730	810
10	54	0.41	11.10	42.1	785	870
10	55	0.44	11.10	45.1	840	930
10	56	0.47	11.10	48.0	890	990
12	50	0.31	13.20	38.4	725	800
12	51	0.34	13.20	42.0	790	875
12	52	0.37	13.20	45.6	855	945
12	53	0.40	13.20	49.2	920	1015
12	54	0.43	13.20	52.8	985	1090
12	55	0.46	13.20	56.3	1045	1160
12	56	0.49	13.20	59.9	1110	1230
14	50	0.33	15.30	47.5	910	1005
14	51	0.36	15.30	51.7	985	1090
14	52	0.39	15.30	55.9	1060	1170
14	53	0.42	15.30	60.1	1135	1255
14	54	0.45	15.30	64.2	1210	1340
14	55	0.48	15.30	68.4	1285	1420
14	56	0.51	15.30	72.5	1360	1505
16	50	0.34	17.40	55.8	1065	1175
16	51	0.37	17.40	60.6	1150	1275
16	52	0.40	17.40	65.4	1240	1370
16	53	0.43	17.40	70.1	1325	1465
16	54	0.46	17.40	74.9	1410	1560
16	55	0.49	17.40	79.7	1495	1655
16	56	0.52	17.40	84.4	1580	1750

NOTE: Thicknesses and dimensions of 3" through 64" Ductile Iron pipe conform to ANSI/AWWA C151/A21.51.
Weights may vary from the standard because of differences in bell weights.

*Tolerance of O.D. of spigot end: 3-12 in., ± 0.06 in.; 14-24 in., $+0.05$ in., -0.08 in.; 30-48 in., $+0.08$ in., -0.06 in.; 54-64 in., $+0.04$ in., -0.10 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

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FIELD LOK 350[®] GASKET



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FIELD LOK 350[®] Gasket

Restrained joint pipe and fittings are used in pressurized Ductile Iron pipelines to prevent the joints of the line from separating due to thrust forces. Thrust forces generally occur at changes of direction in the line. Usually, a calculated length of pipeline extending from the location of the thrust force is restrained in the joints so that this force can be transmitted to the soil surrounding the line. The entire pipeline is often restrained for installations in poor soil or for critical lines.

U.S. Pipe's FIELD LOK 350 Gasket has proven to be an extremely successful, trouble-free means of joint restraint for well over one million Ductile Iron pipe and fitting joint assemblies across North America. By simply inserting a FIELD LOK 350 Gasket into the socket of a TYTON JOINT[®] Pipe, Fitting or Valve, restraint is instantly achieved when the joint is assembled. Stainless steel locking segments vulcanized into the FIELD LOK 350 Gasket grip the pipe to prevent joint separation.

FIELD LOK 350 Gaskets, utilizing patented improvements, are rated by U.S. Pipe for operating pressures up to 350 psi — a rating that now matches that of Pressure Class 350 pipe — giving the engineer and user new flexibility in designing piping systems.

Underwriters Laboratories lists the 4"–24" sizes for 350 psi. Factory Mutual, utilizing a safety factor of 4, approves the 4"–16" sizes for 250 psi and the 18"–24" sizes for 200 psi service.

With the use of the FIELD LOK 350 Gasket, push-on joint Ductile Iron TYTON JOINT Pipe or Fittings can be quickly and securely restrained as the joint is assembled. The restraint provided shall be a boltless, integral restraining system and shall be rated for 350 psi in accordance with the performance requirements of ANSI/AWWA C111/A21.11. Field cut pipe are no longer a problem to restrain. No pipe surface preparation* or grooving is required for field cut pipe other than the cut end needing to be beveled as required for any push-on joint spigot end. With the FIELD LOK 350 Gasket in place, the joints are restrained without thrust blocks, bolts, grooves, rods, clamps or retainer glands, resulting in savings of labor, material and time.

CAUTION: U.S. Pipe does not recommend FIELD LOK 350 Gaskets for use above ground. The long-term effect of cyclical movements can be gradual joint separation to the point that the seal on the gasket bulb is compromised. Sources of cyclical movements include vibration as may be found on bridge crossings, and thermal expansion and contraction resulting from atmospheric temperature changes. These conditions are not experienced with buried pipe lines.

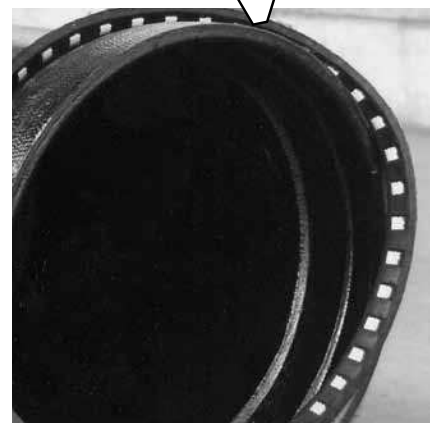
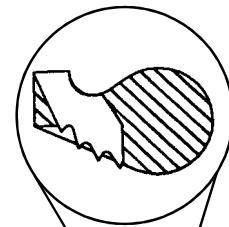
*See note on page 5 regarding pipe with thick coatings or tape wrap.

FIELD LOK[®], FIELD LOK 350[®], TYTON[®], TYTON JOINT[®] and TR FLEX[®] are Registered Trademarks of U.S. Pipe and Foundry Company.

ANSI/AWWA Standards

ANSI/AWWA C111/A21.11 Standard for Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

FIELD LOK 350 Gaskets are available in 4"–24" sizes and the pressure rating is based on the performance requirements of ANSI/AWWA C111/A21.11.



NOTE: If specifiers and users believe that corrosive soils will be encountered where products are to be installed, please refer to ANSI/AWWA C105/A21.5 Polyethylene Encasement for Ductile Iron Pipe Systems for proper external protection procedures.

Pressure Rating: The working pressure rating of the FIELD LOK 350 Gasket Restrained Joint System does not exceed that of the working pressure rating of the pipe in which it is installed.