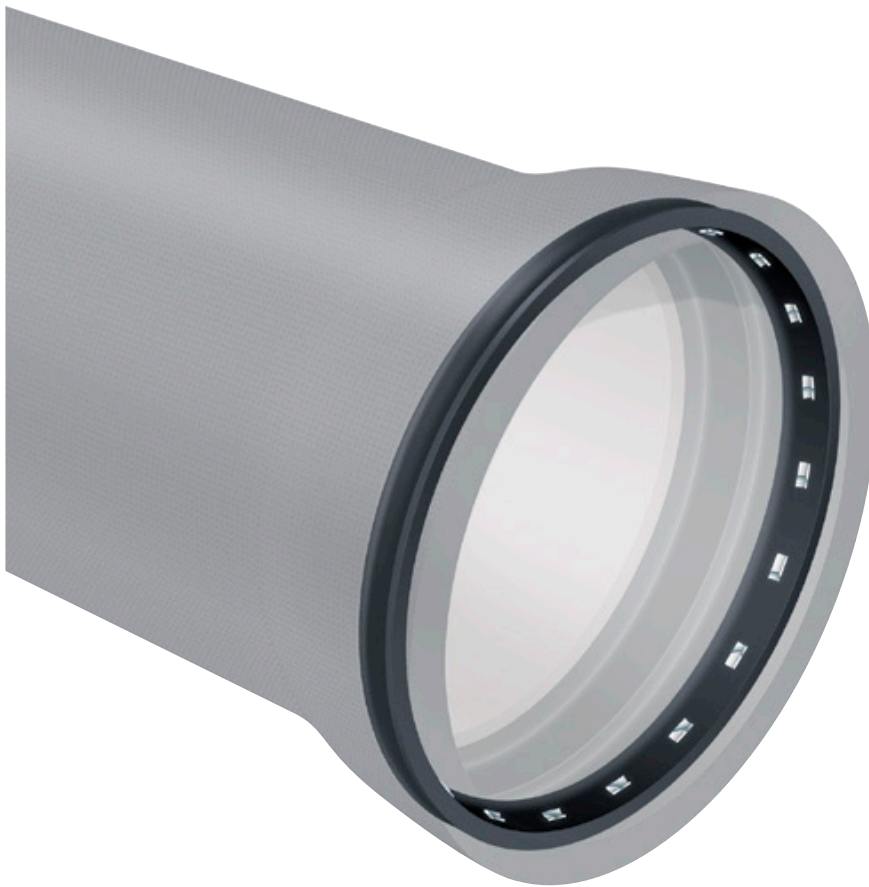


# TYTON-LOK® RESTRAINED RUBBER RING JOINTS DUCTILE IRON PIPELINE SYSTEMS

DN 100 - DN 375. GASKETS UTILISE UNIQUE STAINLESS STEEL LOCKING SEGMENTS FOR A SELF RESTRAINING JOINT



Dispenses with the traditional concrete thrust blocks

Provides additional thrust restraint in poor soil conditions

Provides additional security for strategic pipelines

Suitable for 'in ground' applications only

Maximum allowable joint deflection up to 3.5 degrees

## APPLICATIONS

The TYTON-LOK system should be used only with TYTON® Ductile Iron Pipe with a minimum wall thickness of PN 35 or greater or TYTON Flange Class Pipe

The Allowable Operating Pressure should not exceed 1.6 MPa

Installers should ensure that pipeline design has been verified by a competent and qualified engineer and that TYTON-LOK gaskets are used only in genuine TYTON brand pipes, fittings and valves. Failure to do so may void warranties

Incorrect installation and application of TYTON-LOK joints may result in serious injury

## GENERAL APPLICATION

TYTON-LOK Gaskets are suitable for use in TYTON JOINT® pipeline fittings and valves to provide self restrained rubber ring joints

## LIMITATIONS

The TYTON-LOK system is not suitable for above ground applications. TYTON-LOK joints are not suitable for use with PN 20 pipe. Use only with PN 35, flange class, K9 or K12 pipes

A combination of TYTON-LOK joints and thrust blocks where both contribute to the overall restraint of the system is not recommended

TYTON-LOK gaskets should only be used with genuine TYTON® brand pipes, fittings or valves. Do not use with other DI sockets

Do not use TYTON-LOK gaskets with pipe materials other than Ductile Iron. TYTON-LOK is not suitable for use on epoxy or fusion coated pipes, fittings and spigots or **TYTONXTREME** pipe

## TECHNICAL DATA

**Size Range** DN 100 - DN 375

**Allowable Operating Pressure** 1600kPa

**Maximum Temperature** 50°C

**Standards** AS 1646 - Elastomeric seals for waterworks purposes

**Certification** StandardsMark Licence No. 2258. Certified to AS/NZS 4020 - Suitable for contact with drinking water

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## INSERTION OF GASKET

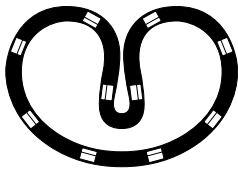
Before inserting the gasket, thoroughly clean the socket mouth, particularly the sealing chamber, ensuring there is no dirt particles or foreign matter, protrusions or coating build-up in anchor groove or sealing chamber. Use a scraper or wiper brush to remove any irregularities.

The gasket seat should be thoroughly inspected to be certain it is clean. Failure to do this may cause a leak under the gasket.

Occasionally there may be some excess paint, remnant core sand or metal. If this cannot be removed easily, to ensure clean seating of the gasket contact the Viadux Water Networks Solutions Project Office.

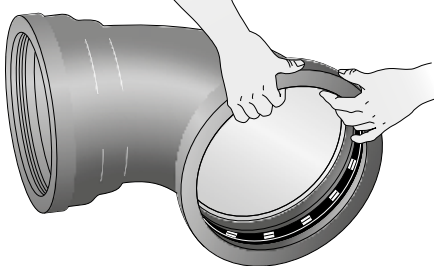
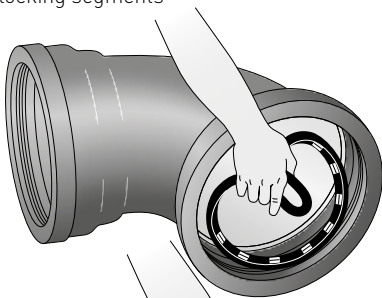
The gasket must be wiped clean with a clean cloth, flexed, and then placed in the socket with the bulb leading, so that the gasket is seated evenly around the inside of the socket with the heel of the gasket fitting snugly in the retaining groove.

Loop the gasket to facilitate insertion. The inner loop should be positioned between locking segments.



Note. It is important to do this, otherwise damage to the TYTON-LOK® gasket may result.

Position the inner loop between the locking segments



Seat the gasket evenly around the inside of the socket with the heel of the gasket fitted snugly in the retaining groove.

## ASSEMBLY OF TYTON-LOK GASKET JOINTING SYSTEM

A film of TYTON JOINT® lubricant should be applied with a brush to the exposed surface of the gasket which will come into contact with the entering pipe spigot. Lubricant should NOT be applied by hand, as the TYTON-LOK teeth are sharp and injury may result.

**1** Thoroughly clean the leading 150mm of the spigot and apply lubricant to cover the chamfer and 25mm of the pipe barrel.

Note. Only the lubricant supplied by Viadux Water Network Solutions should be used. This lubricant does not attack the gasket and does not affect water quality.

**2** The spigot end of the pipe should be aligned and carefully inserted into the socket until it just makes contact with the gasket. Note where the witness marks are located. Pipes and fittings should always be jointed initially in a straight line.

DO NOT walk the pipe or fitting when jointing. Misalignment may cause premature locking of the joint.

**3** Joint assembly should then be completed by forcing the spigot end of the pipe past the gasket until the second witness mark aligns with the face of the socket. At this point, deflection of the joint can be set. The pipe should then be backed off approximately 3mm to lock the joint.

## GENERAL

Pipelines utilising TYTON-LOK gaskets should be bled completely of air before application of the field test pressure. Pressure should be introduced at the low points in the pipeline only.

## IDENTIFICATION

To indicate identification of a buried TYTON-LOK restraining joint, Viadux recommends the use of identification tape, placed along the top of the restrained pipeline. This will alert operators as to the need to maintain the integrity of the restrained length of pipeline.

## COMPUTER SOFTWARE

The length of pipeline to be restrained is a function of the pipe diameter, fitting type, embedment, trench conditions and operating pressure.

An easy to use software program is available to help calculate the number of joints that need to be restrained. Contact the Viadux Project Office or Customer Centre for further details.

## GASKET REQUIREMENTS FOR RESTRAINED JOINTS

The following tables provide a conservative estimate of the number of TYTON-LOK gaskets required for installation of specific fittings.

**The number indicated includes all gaskets required to lock full length pipes installed either side of the fitting together with those used in the fitting.**

The estimates have been calculated using the Viadux Water Networks Solutions Thrust Restraint Calculator with the following installation variables – good sand, Trench Type 3, depth 0.6m, pressure 1.6MPa, Safety Factor 1.5, pipe sleeved.

Where installation variables are different to those described

OR

fittings other than those shown in these tables are used;

configurations other than those shown in these tables are used;

pipe lengths other than standard are used on either side of the fitting;

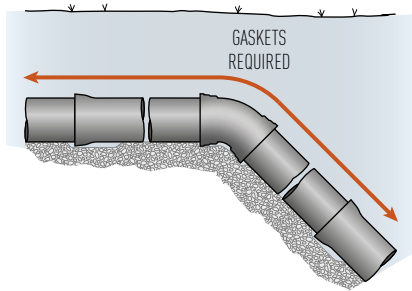
fittings are in such proximity that the estimated number of gaskets for each fitting encroach or overlap;

refer to the Viadux Water Networks Solutions Thrust Restraint Calculator, seek a pipeline designer's advice or contact the Viadux Water Networks Solutions Project Office for assistance.

# TYTON-LOK® RESTRAINED RUBBER RING JOINTS DUCTILE IRON PIPELINE SYSTEMS

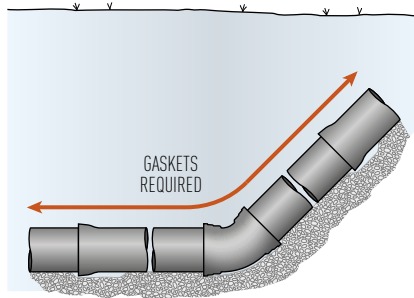
DN 100 - DN 375. GASKETS UTILISE UNIQUE STAINLESS STEEL LOCKING SEGMENTS FOR A SELF RESTRAINING JOINT

## DOWNWARD BENDS



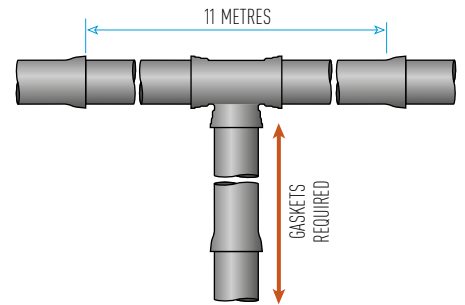
Nominal Size DN	Angle of Bend		
	11¼°	22½°	45°
100	2	4	6
150	2	4	8
200	2	4	8
225	4	6	10
250	4	6	10
300	4	6	12
375	4	8	14

## UPWARD BENDS



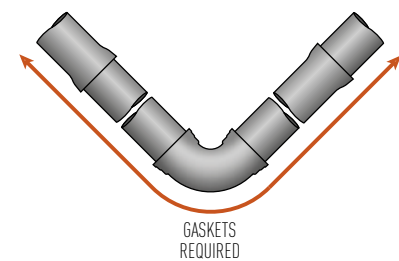
Nominal Size DN	Angle of Bend		
	11¼°	22½°	45°
100	2	2	2
150	2	2	4
200	2	2	4
225	2	2	4
250	2	2	4
300	2	4	6
375	2	4	6

## TEES AND TAPERS



Nominal Size DN	Branch Size dn	Tee Branch only	Taper larger DN
100	100	3	-
150	100	1	4
	150	5	-
200	100	1	7
	150	4	4
	200	7	-
225	100	1	8
	150	3	6
	200	6	3
	225	8	-
250	100	1	10
	150	2	7
	200	6	4
	225	7	3
	250	9	-
300	100	1	12
	150	1	10
	200	5	8
	225	6	6
	250	8	5
	300	11	-
375	100	1	15
	150	1	14
	200	3	12
	225	5	10
	250	6	9
	300	9	6
375	13	-	

## HORIZONTAL BENDS

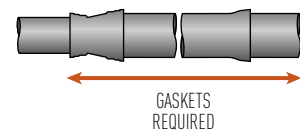


Nominal Size DN	Angle of Bend			
	11¼°	22½°	45°	90°
100	2	2	2	6
150	2	2	4	6
200	2	2	4	8
225	2	2	4	10
250	2	2	4	10
300	2	4	6	12
375	2	4	6	14

## DEAD ENDS & HYDRANT TEES



Nominal Size DN	
100	6
150	8
200	10
225	11
250	12
300	14
375	16



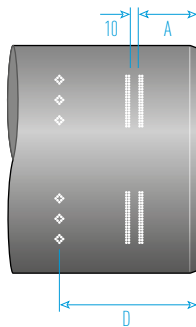
# TYTON-LOK® RESTRAINED RUBBER RING JOINTS DUCTILE IRON PIPELINE SYSTEMS

DN 100 - DN 375. GASKETS UTILISE UNIQUE STAINLESS STEEL LOCKING SEGMENTS FOR A SELF RESTRAINING JOINT

## FIELD CUT PIPE

When pipes are cut in the field, the cut must be prepared so that it can be used to make up the next joint. The outside of the cut end should be chamfered for about 12mm at an angle of approximately 20 degrees and the leading edge rounded.

To ensure that the field cut joint is properly assembled, so that the maximum deflection may be obtained, mark the prepared cut end in accordance with the dimensions shown below.



Nominal Size DN	Location of Witness Mark A	Location of LPS Limit D
100 - 150	71	194
200 - 250	84	194
300	84	218
375	102	218

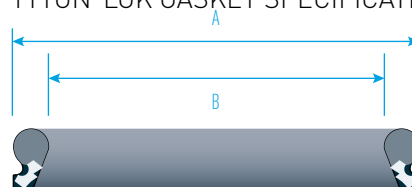
## TYTON® GASKET LUBRICANT

Only lubricant supplied by Viadux Water Networks Solutions should be used. This lubricant has the required lubricity, does not attack the gasket and does not affect water quality. Do not use oil or grease as these will attack the gasket.

## RECOMMENDED QUANTITIES FOR TYTON JOINT® LUBRICANT ISSUE

Nom. Size DN	Container Size gms	Joints per Container	Number of Joints													
			10	25	50	75	100	200	300	400	500	600	700	800	900	1000
100	500	29	1	1	2	3	4	7	10	14	17	21	24	27	31	34
	1250	71	0	0	0	1	2	3	5	6	7	9	10	12	13	15
150	500	23	1	1	2	4	5	9	13	18	22	27	31	35	40	44
	1250	55	0	0	1	2	2	4	6	8	9	11	13	15	17	19
200	500	14	1	2	4	6	8	15	22	30	37	45	52	59	67	74
	1250	32	0	1	2	3	3	6	10	18	16	19	22	25	28	31
225	500	13	1	2	4	6	8	15	23	31	38	46	53	61	69	76
	1250	32	0	1	2	3	4	7	10	13	16	19	22	26	29	32
250	5000	10	1	2	5	7	10	19	29	39	48	58	67	77	87	96
	1250	25	0	1	2	3	4	8	12	16	20	24	28	32	36	40
300	500	9	1	3	6	8	11	22	33	43	54	65	76	87	97	108
	1250	22	0	1	3	4	5	9	14	18	23	27	32	36	41	45
375	500	6	2	5	9	13	17	34	51	68	85	102	119	136	153	170
	1250	14	1	2	4	6	7	14	22	29	36	43	50	57	64	71

## TYTON-LOK GASKET SPECIFICATIONS



Nom Size DN	A	B	Suits Pipe	Maximum Allowable Joint Deflection
100	145	117	122	3.5
150	200	173	177	3.5
200	258	227	232	3.5
225	285	254	259	3.5
250	311	282	286	3.5
300	371	342	345	2.5
375	463	421	426	2.5

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