



Watertight solutions that last

The best Sealing Solutions for Plastic Pipes



Introducing Trelleborg Seals & Profiles

Trelleborg Seals & Profiles is a leading supplier of pipe seals and repair solutions for concrete and plastic pipes, manholes and connectors used for potable water, sewerage and drainage.

As part of the Trelleborg Group, we benefit from over 100 years of experience in engineered polymer solutions that seal, damp and protect critical applications in demanding circumstances.

With our global reach, we deliver continuous innovation, logistics and a sales network spanning over 50 countries in Europe, the Middle East, Africa, North and South America, and Asia Pacific.

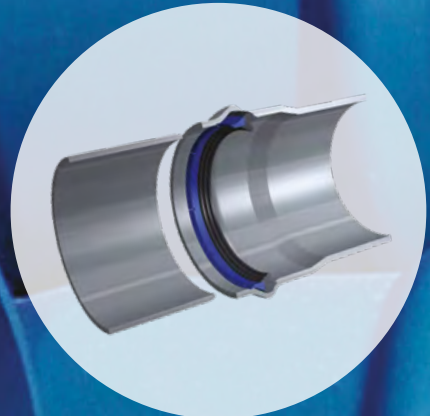
We will support you from the beginning of your project right to the very end with the most advanced polymer technology and engineering expertise. The high performance of our seals ensure the highest reliability standards.

Whether you need an entirely new system or improvements to your existing one, you can choose from a range of market-leading seals and pipe repair solutions that offer:

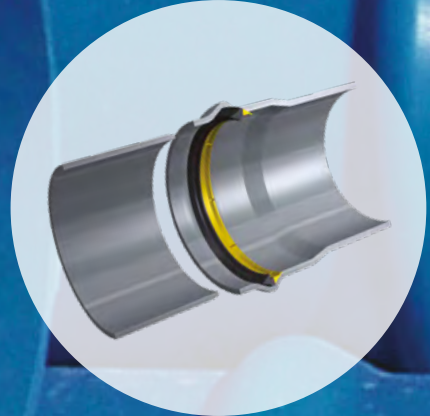
- **High quality**
- **Quick and easy installation**
- **Watertight solutions that last**

Watertight Sealing Solutions

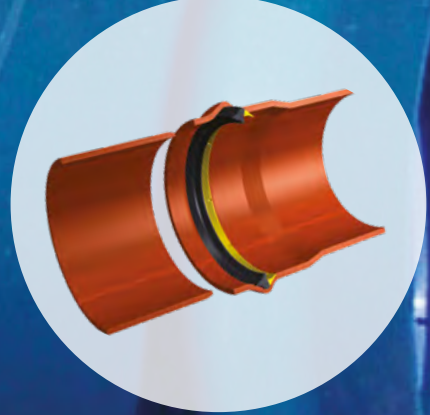
Trelleborg 576
Anger-Lock™



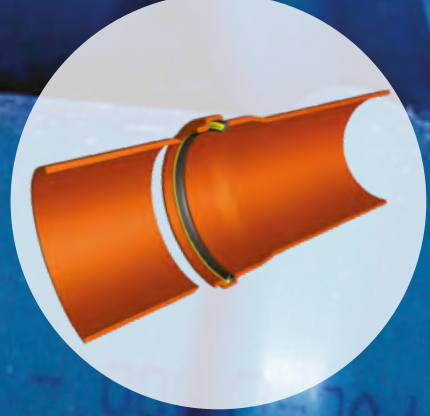
Trelleborg 601
Power-Lock™



Trelleborg 605
Sewer-Lock™



Trelleborg 582
Din-Lock™



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Our concrete and plastic sealing solutions for water, sewerage and drainage live up to the highest standards in pressure and non-pressure applications.

Advantages of our materials

EPDM

Over the years, performance demands for pipe seals have been increasing steadily. Trelleborg has developed a specially formulated EPDM (Ethylene Propylene Diene Monomer) compound that has proven to be the ideal material. EPDM offers increased reliability and it exceeds the requirements of all current industry standards.

The chemical composition of our EPDM provides exceptionally high resistance to the effects of UV light, weathering, oxidization and ozone. EPDM is also resistant to attack from a large number of acidic and alkaline solutions, including hypochlorite. This makes it the perfect solution for pipes transporting treated potable water. Plus, the material's excellent restoring force characteristics mean that it can be expected to offer superb performance for over 120 years.

TPE

Since their introduction, Thermoplastic Elastomers (TPE) have provided a new dimension to a multitude of engineered applications.

Trelleborg has pioneered the use of TPE in pipe sealing applications, fully utilizing its unique processing and material performance. The specially developed low friction compound optimizes jointing performance, gives excellent service life and is oil resistant.

TPE is ideal for sewer applications as it is extremely resistant to contamination found in waste water. It also offers environmental advantages as the thermal bonds are reversible, offering improved recycling opportunities.

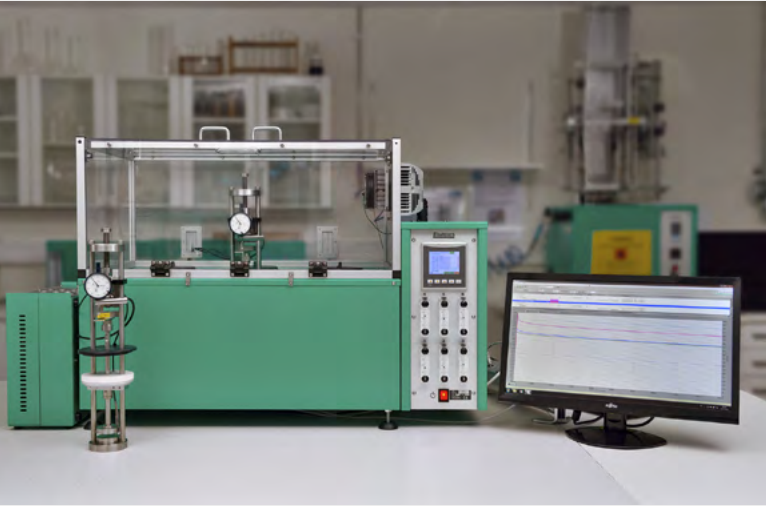
Tested and approved

STRESS RELAXATION – EXTERNAL TESTS BY ELASTOCON

When an elastomer seal is first installed in a pipe joint, a state of physical relaxation occurs for around 30 minutes, before the sealing force becomes stable. This sealing force value is then used to estimate the effective lifetime of the seal.

Using ASTM and ISO methodology, Elastocon AB set up a testing program involving a selection of eight sealing systems currently on the market. These included Trelleborg's compounds used for the Trelleborg 601 Power-Lock for plastic sewage and potable water pipes. Elastocon exposed the elastomer in the seals to a series of elevated temperatures, which enabled them to deduce the effects of temperature on the stress relaxation rate of the seals.

As per the ISO guidelines, a maximum relaxation level of 50% was set and Elastocon estimated the number of years the elastomeric material in the seal will take to reach the threshold. This test has proven that Trelleborg compounds for pipes seals offer **eight times the service life** of competitor systems.



TEST RESULTS BY ELASTOCON

Type of seal tested	Material		Manufacturing Process	After 7 days at 23 °C		After 100 days at 23 °C		Est. time until 50% reduction
	1)			EN681 norm	Actual %	EN681 norm	Actual %	Years
Trelleborg 601 Power-Lock	773	EPDM50	moulding	< 14	14	< 20	19	789
Trelleborg 103 & 102.5	796	EPDM40	extrusion	< 13	11	< 19	16	824
Trelleborg 165	797	EPDM50	extrusion	< 14	12	< 20	17	928
Corrugated Plastic (German)		EPDM50	moulding	< 14	11	< 20	16	139
Integrated Concrete (German)		EPDM55	extrusion	< 14	10	< 20	19	87
Corrugated Plastic (Polish)		SBR60	extrusion	< 15	18	< 22	30	26
Manhole Concrete (German)		SBR40	extrusion	< 13	6	< 19	10	136

1) Short compound reference

Trelleborg 576 Anger-Lock™

Locked-in sealing solution for pressure pipes and fittings

The Trelleborg 576 Anger-Lock™ seal has been specifically designed for use with PVC pipes and joints, as well as cast iron fittings connecting to PVC pipes.

The system meets the requirements of European Standard EN 1452 for the supply of water and can also be used for waste water applications.

ONE-PIECE SEAL

The Trelleborg 576 Anger-Lock™ has a unique design in which the rubber sealing element and the reinforcing plastic are bonded together to make a one-piece seal. The soft plastic reinforcement allows the seal to be fitted easily into the pipes socket either by manually bending the seal into the groove or by using automatic insertion equipment.

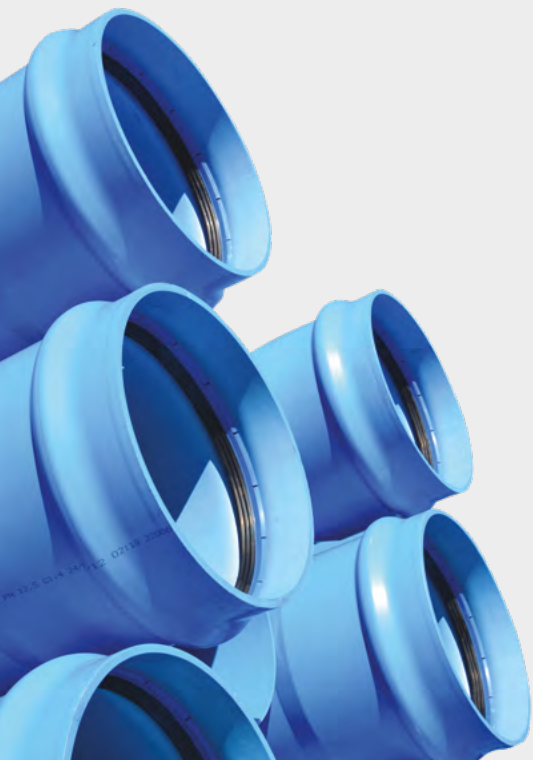
LOW ASSEMBLY FORCE

The unique lip design reduces the assembly force required. Even larger diameter pipes can be jointed without the need for special assembly tools or equipment. Pipes and fittings can be jointed easily and quickly, reducing time and cost.

EXCELLENT JOINT SECURITY

The Trelleborg 576 lip and compression seal is firmly locked into the pipe socket by the pipe manufacturer after the bell has been formed.

Making the seal an integral part of the pipe eliminates many disadvantages of separate sealing rings. The seal is positioned in the socket and the unique design eliminates potential ring displacement during transportation and pipe assembly.



KEY FEATURES AND BENEFITS

- The best solution for drinking water pipes (incl. PVC-O)
- Fully retained seal cannot be lost during stocking or transport
- Low jointing force for easy installation
- EPDM rubber, designed to last more than 120 years
- Ozone resistant

Seal installation

The Trelleborg 576 can be fitted into the pipe automatically using commercially available ring insertion machines. The seal can also be inserted by hand:



Locate the bending zone of the seal



Bend the seal into a heart shape



Insert the seal into the pipe and press the seal into the groove

SIZE CHART

PIPE SIZE (mm)	A (mm)	B (mm)
50	7,2	12,3
63	10,4	17,8
75	11,6	19,9
90	12,7	21,7
100*	13,8	21,6
110	13,8	22,0
125	13,8	23,6
140	14,8	25,3
150*	17,2	23,5
160	15,9	27,2
180	17,5	28,8
200	16,9	29,0
200*	20,2	32,0
225	18,0	30,8
225*	21,8	33,8
250	21,1	34,2
250*	23,6	37,0
280	22,5	36,1
300*	23,7	40,4
315	23,6	37,6
355	25,8	40,9
400	28,0	44,9
450	29,5	47,0
500	31,6	51,4
630	38,2	61,3
710	42	67,4
800	43,3	69,4

*Seal for Australian Standard AS-4441

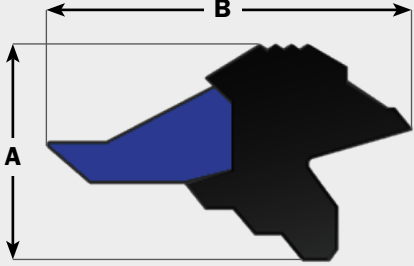
APPROVALS

■ CE-marking	■ EN 681-1 WC, WA
■ BSI “Kitemark”	■ AS1646, AS/NZS 4020
■ Swedcert	■ IRAM 113035
■ KIWA-ATA	■ AFNOR XP P 41-250
■ IRAM	■ Hydrocheck (Belgaqua)
■ Watermark	■ Elastomerleitlinie
■ ACS	■ BS 6920
■ WRAS	■ W270
	■ BRL K17504

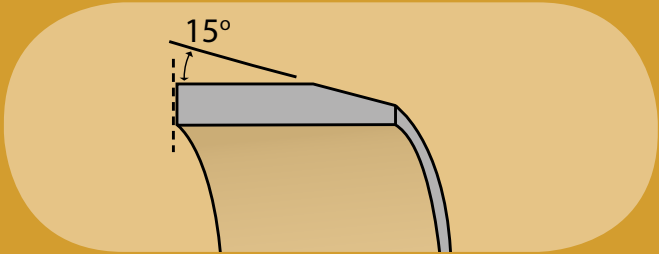
STANDARDS

MATERIAL

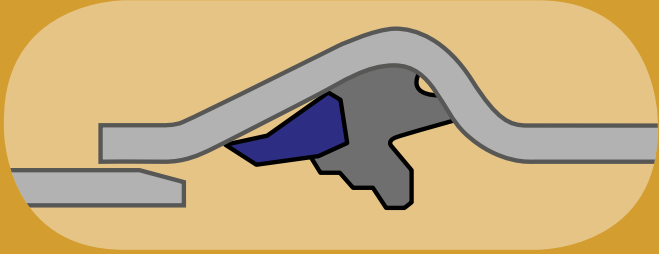
- Synthetic rubber (EPDM)
- Hardness 60+/-5 IRHD
- Approved for drinking water



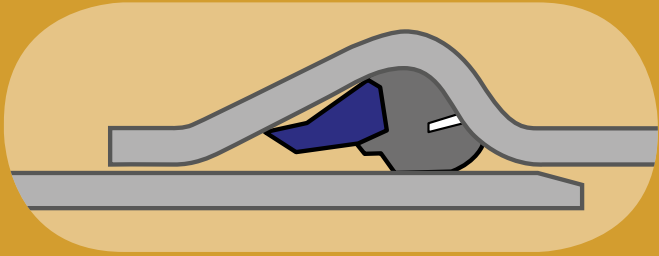
Joint assembly



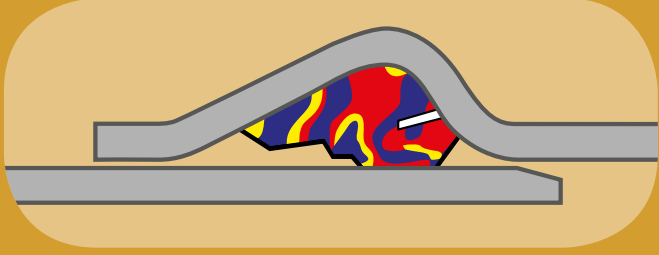
Check the spigot, pipe socket and seal for damage or dirt prior to assembly.
Chamfer the spigot end and remove all burrs



Apply lubricant to the spigot end and immediately bring it into contact with the socket



Align spigot and socket, and slide the spigot into the pipe, past the seal



By compressing the sealing element, the EPDM rubber will deform and create pressure on both spigot and socket. This results in a watertight seal.

Trelleborg 601 Power-Lock™ 605 Sewer-Lock™

Fully integrated sealing systems for PVC pipes and fittings

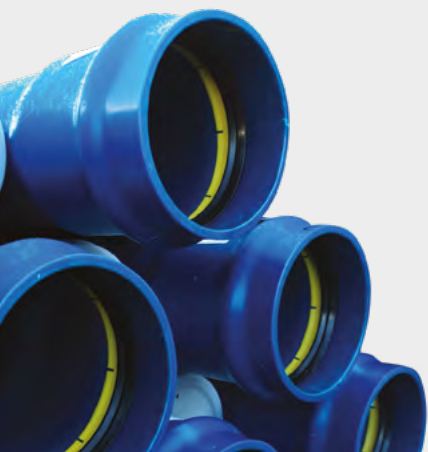
True to our engineering expertise, Trelleborg is applying the same ground-breaking technology to two different pipe systems: potable water and sewer.

The Trelleborg 601 Power-Lock™ is meant for high pressure, drinking water pipes and the Trelleborg 605 Power-Lock™ is for sewer systems and storm-water pipes.

THE HIGHEST STANDARD OF JOINT SECURITY

During the manufacturing process, the mandrel and seal are used as a tool to form the pipe socket. The seal becomes part of the socket, effectively shaping its own seal groove. This reduces irregularities in the socket and provides a watertight seal.

With the Power-lock™ and Sewer-lock™ bellings system, seal insertion is fully automatic. This means that time consuming measurement of pipe sockets and separate installation procedures are no longer necessary. The number of extrusion lines that can be supervised by each operator is greater. This improves return on investment and increases productivity of more than 10% over conventional solutions.



KEY FEATURES AND BENEFITS

- Fully automated insertion eliminates risk of human error
- Increases productivity
- Greater joint reliability due to joint tolerance reduction
- Low jointing force, eliminating risk of seal displacement
- Integrated seal cannot be lost during stocking or transport

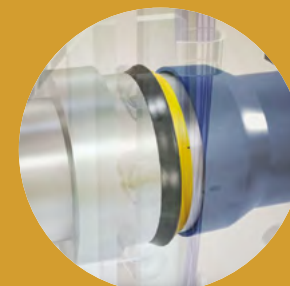
Manufacturing process



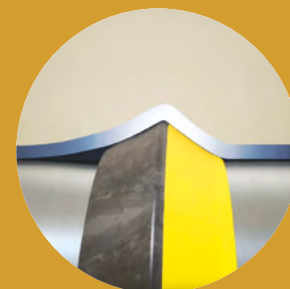
The pipe is heated to allow forming of the socket



The seal is automatically loaded on the socketing mandrel against the support flange



The mandrel is inserted into the softened pipe which flows over the seal, thus forming the socket



The support flange is retracted, and internal vacuum and external pressure forms the pipe around the contours of the seal



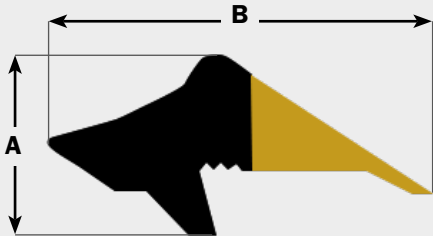
The pipe socket is cooled either by air or water and the mandrel withdrawn from the socket

Trelleborg 601 Power-Lock™

SIZE CHART

PIPE SIZE (mm)	A (mm)	B (mm)
50	8.0	17.2
63	8.0	17.3
75	9.0	20.0
90	11.0	24.3
100-S2*	14.0	32.3
110	12.0	26.6
125	14.0	32.3
140	14.0	32.0
150-S2*	16.0	35.9
160	15.0	33.5
200	16.0	35.9
200-S2*	17.0	37.1
225	17.0	37.1
250	19.0	42.9
250-S2*	20.0	43.6
280	20.0	43.6
315	21.0	45.8
355	23.0	50.2
400	25.0	54.5
450	23.5	58.2
500	30.0	65.4
630	37.0	83.9
710	41.0	92.3

*Seal for Australian Standard AS-4441



MATERIAL

- Synthetic rubber (EPDM)
- Hardness 50+/-5 IRHD
- Approved for drinking water

APPROVALS

- CE-marking
- BSI “Kitemark”
- Swedcert
- IRAM
- Watermark
- ACS
- WRAS

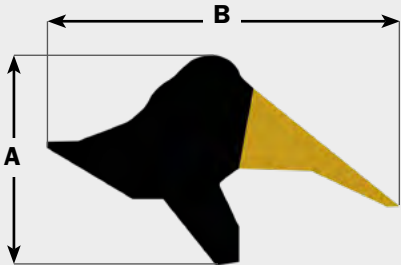
STANDARDS

- EN 681-1 WC, WA
- AS1646, AS/NZS 4020
- IRAM 113035
- AFNOR XP P 41-250
- BS 6920

Trelleborg 605 Sewer-Lock™

SIZE CHART

PIPE SIZE (mm)	A (mm)	B (mm)
100	10.7	16.9
110	11.5	17.7
125	13.9	19.9
160	15.0	21.8
200	15.3	26.6
250	17.5	29.6
315	21.4	38.0
355	17.0	31.5
400	25.3	43.6
450	19.0	34.1
500	22.0	41.9
630	26.9	48.9
710	29.6	53.7
800	43.8	75.0



MATERIAL

- Synthetic rubber (EPDM) or Thermoplastic elastomer (TPE)
- Hardness 50+/-5 IRHD or 60+/-5 IRHD

APPROVALS

- CE-marking
- BSI “Kitemark”
- Swedcert
- IRAM
- Komo
- Benor

STANDARDS

- EN 681-1 WC
- EN 681-2 WT, WH
- BRL 2020
- IRAM 113061
- IRAM 113035

JOINT ASSEMBLY

Please refer to the joint assembly instructions on page 13.



Trelleborg 582 Din-Lock™

Expertly designed for plastic pipes and fittings

Trelleborg 582 Din-Lock™ is expertly designed for highly effective sealing of all DIN-grooved plastic pipes and fittings.

Comprised of thermoplastic elastomers (TPE-V) and polypropylene, the seal requires low jointing force and ensures security across a wide range of pipe joint tolerances.

ONE-PIECE SEAL

The Trelleborg 582 Din-Lock™ has a unique design in which the rubber sealing element and the reinforcing plastic are bonded together to make a one-piece seal. The soft plastic reinforcement allows the seal to be fitted easily into the pipes socket either by manually bending the seal into the groove or by using automatic insertion equipment.

VERSATILE PERFORMANCE GUARANTEED

The Trelleborg 582 can be used across a range of low pressure sewer and drainage applications, as well as more specialized pipelines, such as electric cable ducting.

NEW STANDARDS OF JOINT SECURITY

The Trelleborg 582 provides a combined lip and compression seal, which is firmly locked into the pipe socket.

Making the seal an integral part of the pipe eliminates many disadvantages of separate sealing rings. The seal is positioned in the socket by the pipe manufacturer and the unique design eliminates potential ring displacement during transportation and pipe assembly.

Pressure in pipelines may vary considerably. Under such circumstances the seal can move slightly and many traditional seals allow solid particles to enter the joint. This design however, has eliminated this problem.



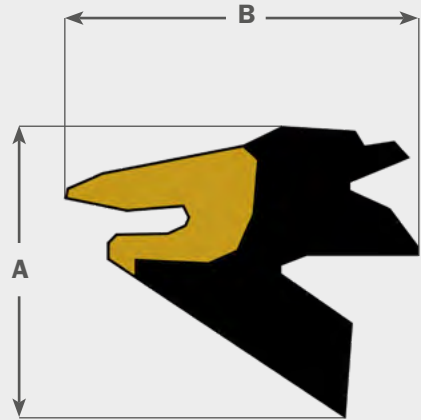
KEY FEATURES AND BENEFITS

- Cannot be displaced during transportation & installation
- Fully fills the groove to prevent dirt intrusion before joint assembly
- TPE-V for increased oil resistance
- Low friction rubber compound optimizes jointing performance
- The most reliable solution for above and below ground drainage



SIZE CHART

PIPE SIZE (mm)	A (mm)	B (mm)
50	7.2	9.9
75	7.2	9.9
82	6.9	9.1
100	7.6	10.1
110	8.6	10.5
125	10.4	11.8
160	11.8	13.6
200	11.4	15.3
250	16.5	23.8
315	19.6	19.4
400	20.8	21.6
500	25.6	28.0



APPROVALS

- CE-marking
- BSI “Kitemark”
- Swedcert
- IRAM
- Komo
- Benor

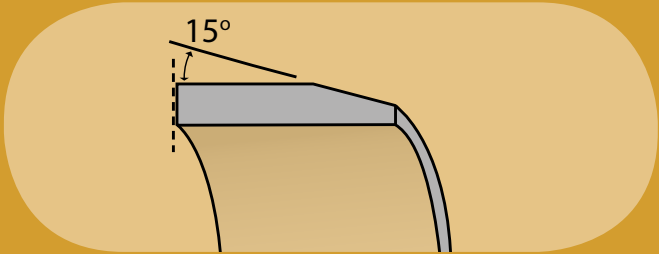
STANDARDS

- EN 681-2 WT, WH
- BRL 2020
- IRAM 113061

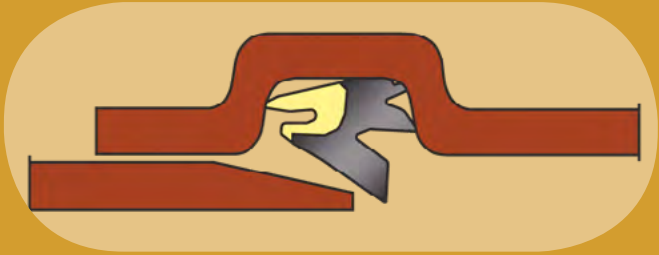
MATERIAL

- Thermoplastic elastomer (TPE)
- Hardness 60+/-5 IRHD

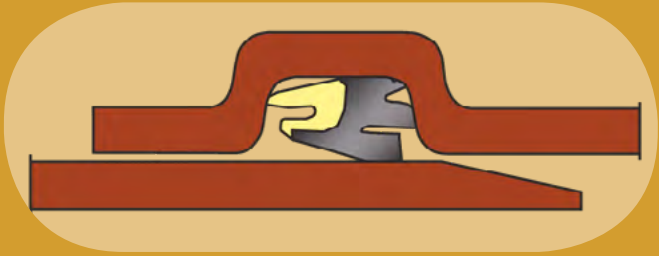
Joint assembly



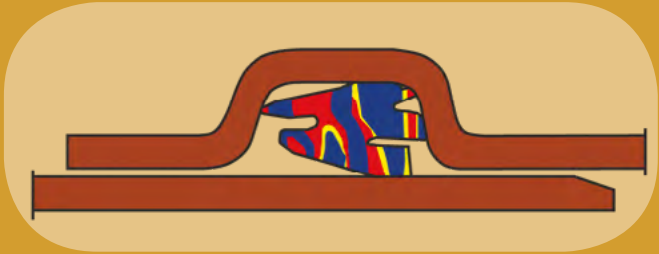
Check the spigot, pipe socket and seal for damage or dirt prior to assembly.
Chamfer the spigot end and remove all burrs



Apply lubricant to the spigot end and immediately bring it into contact with the socket



Align spigot and socket, and slide the spigot into the pipe, past the seal



When two pipes are pushed together the rubber sealing element is designed to deform creating a sealing pressure acting on both spigot and socket.



Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has annual sales of about SEK 34 billion (EUR 3.32 billion, USD 3.92 billion) in about 50 countries.

The Group comprises five business areas: Trelleborg Coated Systems, Trelleborg Industrial Solutions, Trelleborg Offshore & Construction, Trelleborg Sealing Solutions and Trelleborg Wheel Systems. The Trelleborg share has been listed on the Stock Exchange since 1964 and is listed on Nasdaq Stockholm, Large Cap.

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