



Watertight solutions that last

The best Sealing Solutions for Plastic Pipes

Introducing Trelleborg Seals & Profiles

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**

Advantages of our materials

SBR

Styrene Butadiene Rubber (SBR) has good abrasion resistance and aging stability when protected by additives. About 50 % of car tires are made from various types of SBR.

Trelleborg introduced the use of SBR in pipe sealing applications, fully utilizing its unique processing and material performance.

Our specially developed SBR is similar to natural rubber, offering good resilience, strength and abrasion resistance. We have improved its performance at low temperatures, removing the risk of microbiological deterioration. Trelleborg's SBR is specially compounded to be weather and ozone resistance. This makes it a good choice for integrated seals.

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 drinking 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 drinking 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
				EN681 norm	Actual %	EN681 norm	Actual %	
	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

Contents

Introducing Trelleborg Seals & Profiles	02
Our materials put to the test	04
Drinking Water Application	
Trelleborg 552 Anger-Lock IPS™	08
Trelleborg 584 Anger-Lock™	08
Trelleborg 603 Power-Lock IPS™	12
Trelleborg 560 Rieber IPS	12
Trelleborg 565 Rieber C-900	12
Sewer Application	
Trelleborg 569 Rieber Sewer	20
Irrigation Application	
Trelleborg 607 PIP-Lock	24
Trelleborg 592 Rieber PIP	24

Front cover image courtesy of IPLEX, NZ

Drinking Water Application

Trelleborg 552 Anger-Lock IPS™
Trelleborg 584 Anger-Lock™
Trelleborg 603 Power-Lock IPS™
Trelleborg 560 Rieber IPS
Trelleborg 565 Rieber C-900

Trelleborg 552 Anger-Lock IPS™ 584 Anger-Lock™

Locked-in sealing solution for pressure pipes and fittings

The Trelleborg 552 Anger-Lock IPS™ and the Trelleborg 584 Anger-Lock™ have been specifically designed for PVC and PVC-O pipes and fittings.

Both systems meet or exceed ASTM and AWWA pipe sealing requirements for drinking water and can also be used for waste water applications.

ONE-PIECE SEAL

The Trelleborg 552 Anger-Lock IPS™ and the Trelleborg 584 Anger-Lock™ seals have 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 seals to be fitted easily into the pipe 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 552 Anger-Lock IPS™ and the Trelleborg 584 Anger-Lock™ seals lip and compression seals are 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

- Cannot be displaced or lost during stocking, transportation and installation
- Easy pipe installation due to low jointing force
- EPDM rubber, designed to last more than 120 years
- Approved for drinking water application
- Ozone resistant

Seal installation

The Trelleborg 552 Anger-Lock IPS™ and the Trelleborg 584 Anger-Lock™ seals can be fitted into the pipe automatically using commercially available ring insertion machines. The seal can also be inserted by hand:



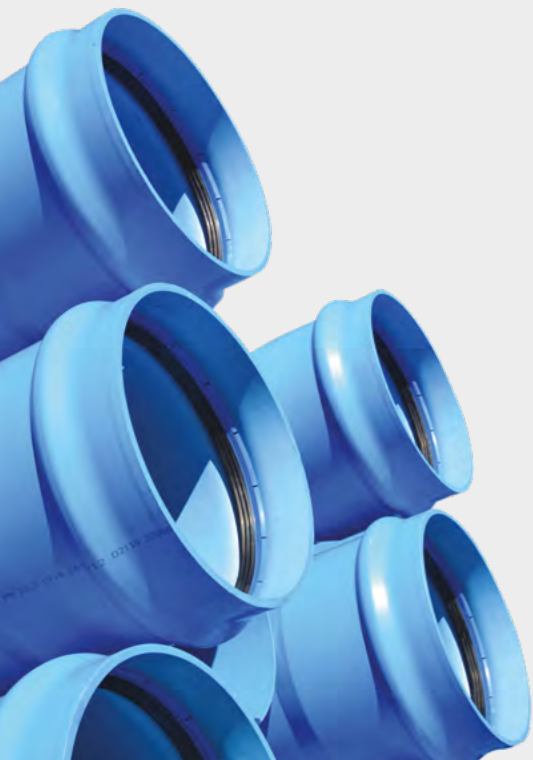
Locate the bending zone of the seal



Bend the seal into a heart shape



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



Watch the video online!



Trelleborg Anger-Lock IPS™

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
2 in (60 mm)	0.40	0.70
3 in (90 mm)	0.50	0.85
4 in (114 mm)	0.55	0.93
6 in (165 mm)	0.62	1.07
8 in (216 mm)	0.66	1.13
10 in (267 mm)	0.83	1.34
12 in (318 mm)	0.92	1.37

STANDARDS AND APPROVALS

Our **Trelleborg 552 Anger-Lock IPS™** seal is approved in accordance with:

NSF/ANSI 14

NSF/ANSI 61

ASTM 2241

ASTM F477

Trelleborg 584 Anger-Lock™

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
4	0.748	1.047
6	0.866	1.173
8	0.929	1.339
10	1.102	1.614
12	1.165	1.732
14	1.248	1.854
16	1.39	1.99
18	1.531	2.079

STANDARDS AND APPROVALS

Our **Trelleborg 584 Anger-Lock C-900/C-909™** seal is approved in accordance with:

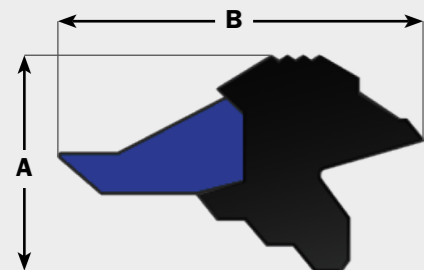
NSF/ANSI 14

NSF/ANSI 61

ASTM F477

AWWA C-909

UL 1285



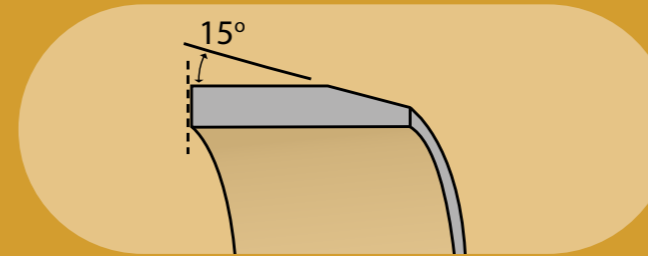
MATERIAL

EPDM rubber – Hardness 60±5 Shore A

Reinforced retaining ring

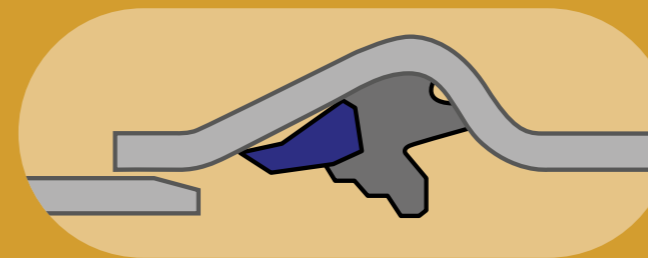
Ozone resistant

Joint assembly

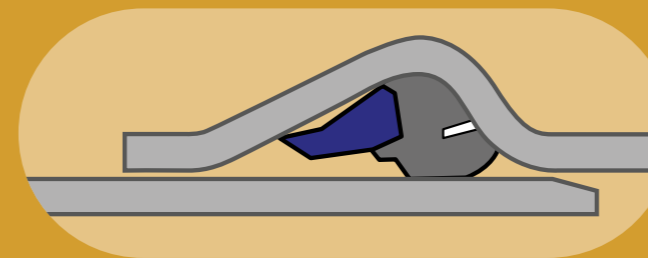


Check the spigot, pipe socket and seal for damage or dirt prior to assembly.

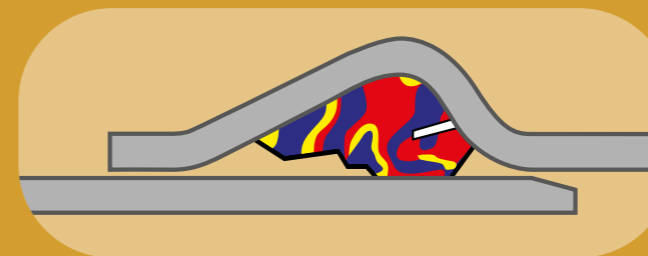
Chamfer the spigot end and remove all burrs.



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 603 Power-Lock IPS™ 560 Rieber IPS 565 Rieber C-900

Fully integrated sealing systems for pressure pipes and fittings

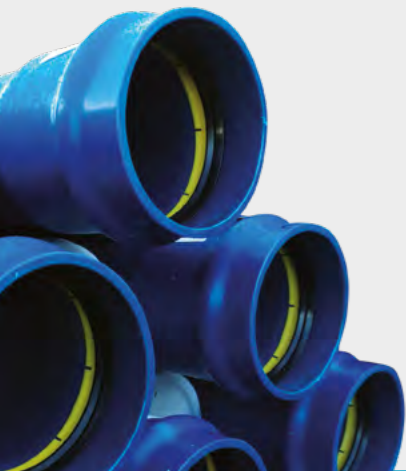
True to our engineering expertise, Trelleborg is applying the same ground-breaking technology to different pipe systems for drinking water pipes.

The Trelleborg 603 Power-Lock IPS™ and Trelleborg 560 seals are meant for IPS pressure pipes and the Trelleborg 565 for AWWA C-900 pressure 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.

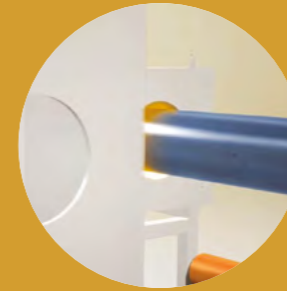
Time consuming measurement of pipe sockets and separate installation procedures are no longer necessary. At production, the number of extrusion lines that can be supervised by each operator is greater. This results in productivity increases for both pipe producer and pipe installer.



KEY FEATURES AND BENEFITS

- Cannot be displaced or lost during stocking, transportation and installation
- Improved productivity and lower scrap rates
- Greater joint reliability, due to joint tolerance reduction
- Easy installation, due to joint tolerance reduction
- Trelleborg 603 Power-Lock IPS™: EPDM rubber, designed to last more than 120 years

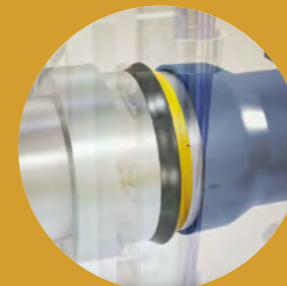
Manufacturing process



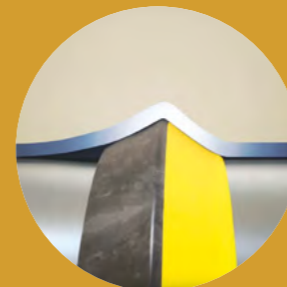
The pipe is heated to allow forming of the socket



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

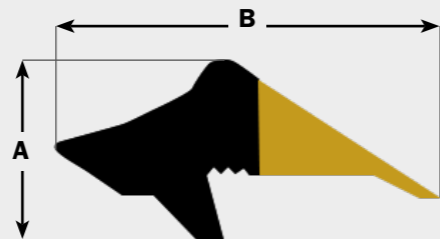
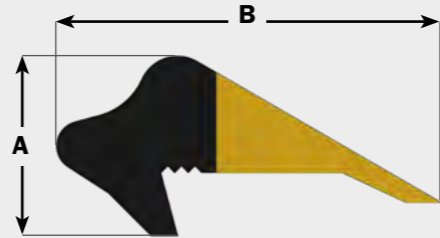


Watch the video online!

Trelleborg 603 Power-Lock IPS™

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
2	0.314	0.673
2.5	0.433	0.944
3	0.472	1.011
4	0.512	1.098
5	0.551	1.260
6	0.590	1.271
8	0.669	1.460
10	0.787	1.716
12	0.866	1.889



STANDARDS AND APPROVALS

The **Trelleborg 603 Power-Lock IPS™** seal is approved in accordance with:

NSF / ANSI 14

NSF / ANSI 61

ASTM 2241

ASTM F477

NOM-001-CONAGUA 2011

MATERIAL

EPDM rubber – Hardness 50±5 IRHD

Reinforced retaining ring

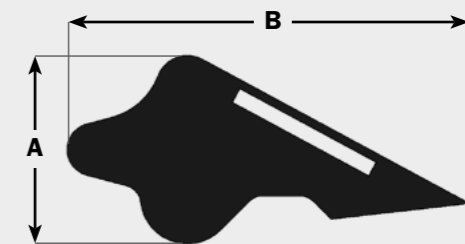
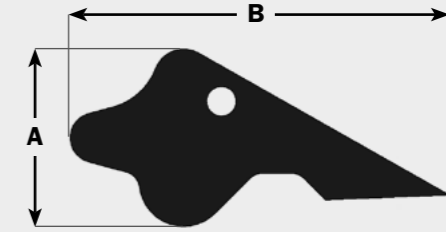
Ozone resistant

For joint assembly instructions, please refer to page 11.

Trelleborg 560 Rieber IPS

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
1-1/2	0.315	0.673
2	0.315	0.673
2-1/2	0.433	0.929
3	0.472	1.012
4	0.512	1.099
5	0.551	1.181
6	0.590	1.264
8	0.669	1.433
10	0.787	1.689
12	0.869	1.854
14	0.944	2.020
16	1.060	2.269
18	1.142	2.444
20	1.210	2.696
24	1.418	3.034



STANDARDS AND APPROVALS

The **Trelleborg 560 Rieber IPS** seal is approved in accordance with:

NSF / ANSI 14

NSF / ANSI 61

ASTM 2241

ASTM F477

NOM-001-CONAGUA 2011

MATERIAL

SBR rubber – Hardness 55±5 Shore A

Metal reinforcement

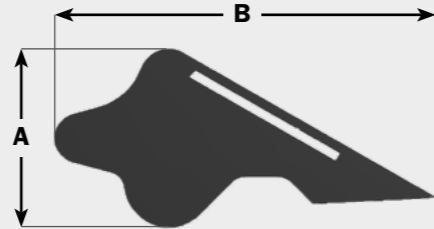
Available in EPDM, Nitrile or other elastomeric material by special order

For joint assembly instructions, please refer to page 11.

Trelleborg 565 Rieber C-900

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
4	0,512	1,099
6	0,591	1,264
8	0,669	1,433
10	0,788	1,689
12	0,869	1,854
14	0,944	2,02
16	1,06	2,269
18	1,142	2,444
20	1,26	2,696
24	1,418	3,034
30	1,575	3,37
36	1,575	3,37
42	2,047	4,381
48	2,047	4,381



STANDARDS AND APPROVALS

The **Trelleborg 565 Rieber C-900** seal is approved in accordance with:

AWWA C-900 standard

NSF / ANSI 14

NSF / ANSI 61

ASTM F477

UL 1285

NOM-001-CONAGUA 2011

MATERIAL

SBR rubber – Hardness 55±5 Shore A

Metal reinforcement

Available in EPDM, Nitrile or other elastomeric material by special order





Sewer application

Trelleborg 569 Rieber Sewer

Trelleborg 569 Rieber Sewer

Fully integrated sealing system for plastic pipes for wastewater applications

The Trelleborg 569 Rieber Sewer seal meets or exceeds current ASTM pipe sealing requirements and incorporates the traditional Rieber seal design.



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.

Time consuming measurement of pipe sockets and separate installation procedures are no longer necessary. At production, the number of extrusion lines that can be supervised by each operator is greater. This results in productivity increases for both pipe producer and pipe installer.

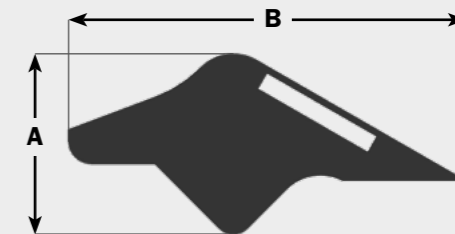
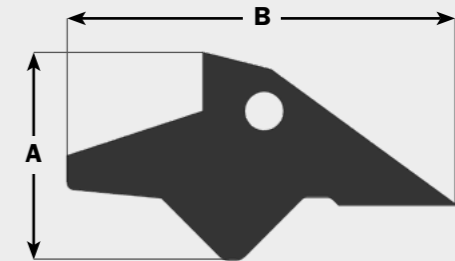
KEY FEATURES AND BENEFITS

- Cannot be displaced or lost during stocking transportation and installation
- Greater joint reliability due to joint tolerance reduction
- Traditional Rieber style seal for sewer pipes
- Improved productivity and lower scrap rates
- Ozone resistant

SIZE CHART

PIPE SIZE (Inch)	A (Inch)	B (Inch)
4	0.378	0.724
5	0.402	0.770
6	0.425	0.815
8	0.472	0.906
10	0.58	1.087
12	0.614	1.177
15	0.616	1.358
18	0.712	1.539
21	0.786	1.720
24	0.863	1.902
27	0.945	2.083

For pipe size 30 to 48 inch, you can use the Trelleborg 565 Rieber C-900.



STANDARDS AND APPROVALS

The **Trelleborg 569 Rieber Sewer** seal is approved in accordance with:

ASTM F477

NOM-001-CONAGUA 2011

MATERIAL

SBR rubber – Hardness 55±5 Shore A

Metal reinforcement

Available in EPDM, Nitrile or other elastomeric material by special order

For joint assembly instructions, please refer to page 11.



Irrigation application

Trelleborg 592 Rieber PIP

Trelleborg 607 PIP-Lock

Trelleborg 607 PIP Lock 592 Rieber PIP

Fully integrated sealing system for PIP irrigation pipes

The Trelleborg 607 PIP-Lock has been designed for indoor, irrigation and wastewater applications.

The Trelleborg 592 fits irrigation pipes that use belling systems for Rieber style seals.

Both systems meet current ASTM pipe seal requirements.

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.

Time consuming measurement of pipe sockets and separate installation procedures are no longer necessary. At production, the number of extrusion lines that can be supervised by each operator is greater. This results in productivity increases for both pipe producer and pipe installer.



KEY FEATURES AND BENEFITS

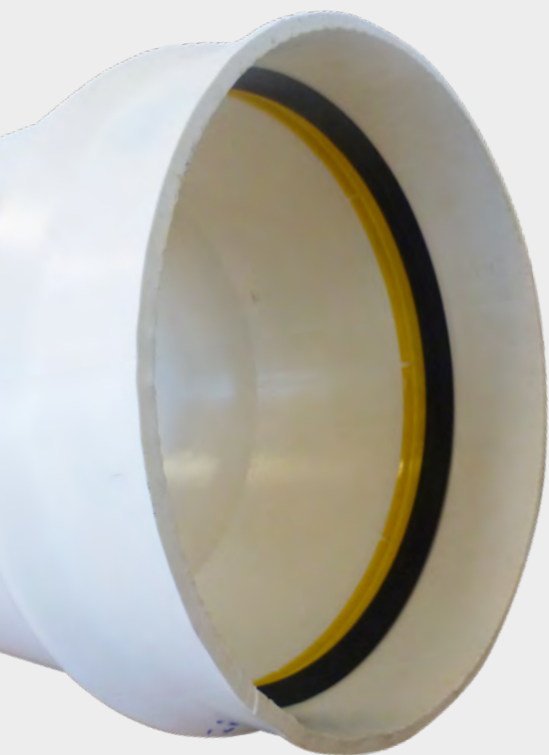
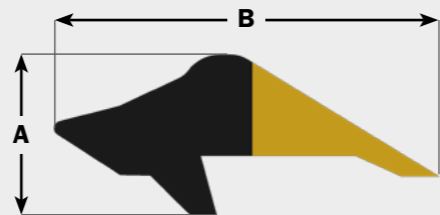
- Cannot be displaced or lost during stocking, transportation and installation
- Greater joint reliability due to joint tolerance reduction
- Improved productivity and lower scrap rates
- Trelleborg 607 PIP Lock: high grade material for better performance
- Trelleborg 592 Rieber PIP: traditional Rieber seal design for irrigation pipes



Trelleborg 607 PIP Lock

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
6	0,4	0,96
8	0,44	1,06
10	0,54	1,28
12	0,58	1,38



STANDARDS AND APPROVALS

The **Trelleborg 607 PIP Lock** seal is approved in accordance with:

ASTM F477

MATERIAL

TPE

Reinforced retaining ring

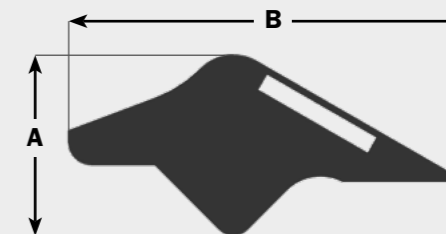
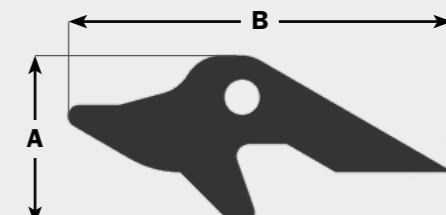
Oil and ozone resistant

For joint assembly instructions, please refer to page 11.

Trelleborg 592 Rieber PIP

SIZE CHART

PIPE SIZE (inch)	A (inch)	B (inch)
6	0.435	0.957
8	0.472	1.063
10	0.567	1.276
12	0.614	1.382
15	0.616	1.358
18	0.712	1.539
21	0.786	1.72
24	0.863	1.902
27	0.945	2.083



STANDARDS AND APPROVALS

The **Trelleborg 592 Rieber PIP** seal is approved in accordance with:

ASTM F477

NOM-001-CONAGUA 2011

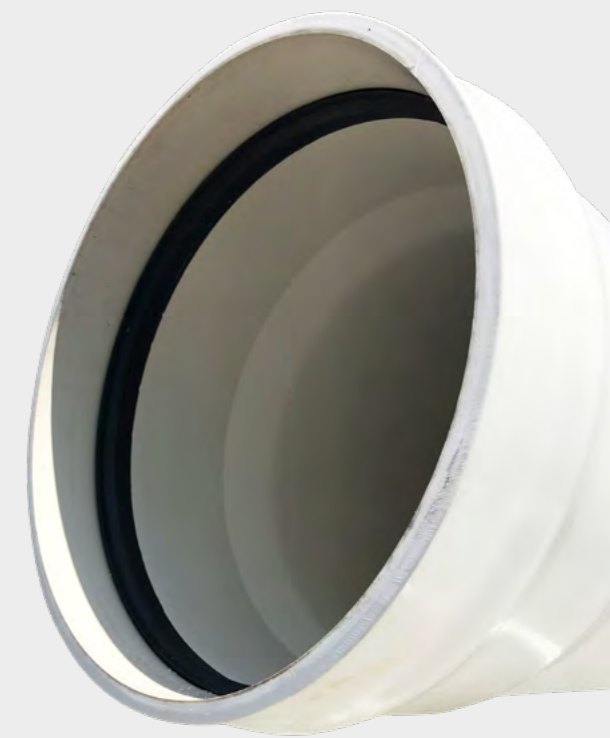
MATERIAL

SBR rubber – Hardness 55±5 Shore A

Metal reinforcement

Available in EPDM, Nitrile or other elastomeric material by special order

For joint assembly instructions, please refer to page 11.



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linkedin.com/company/trelleborg-seals-profiles/