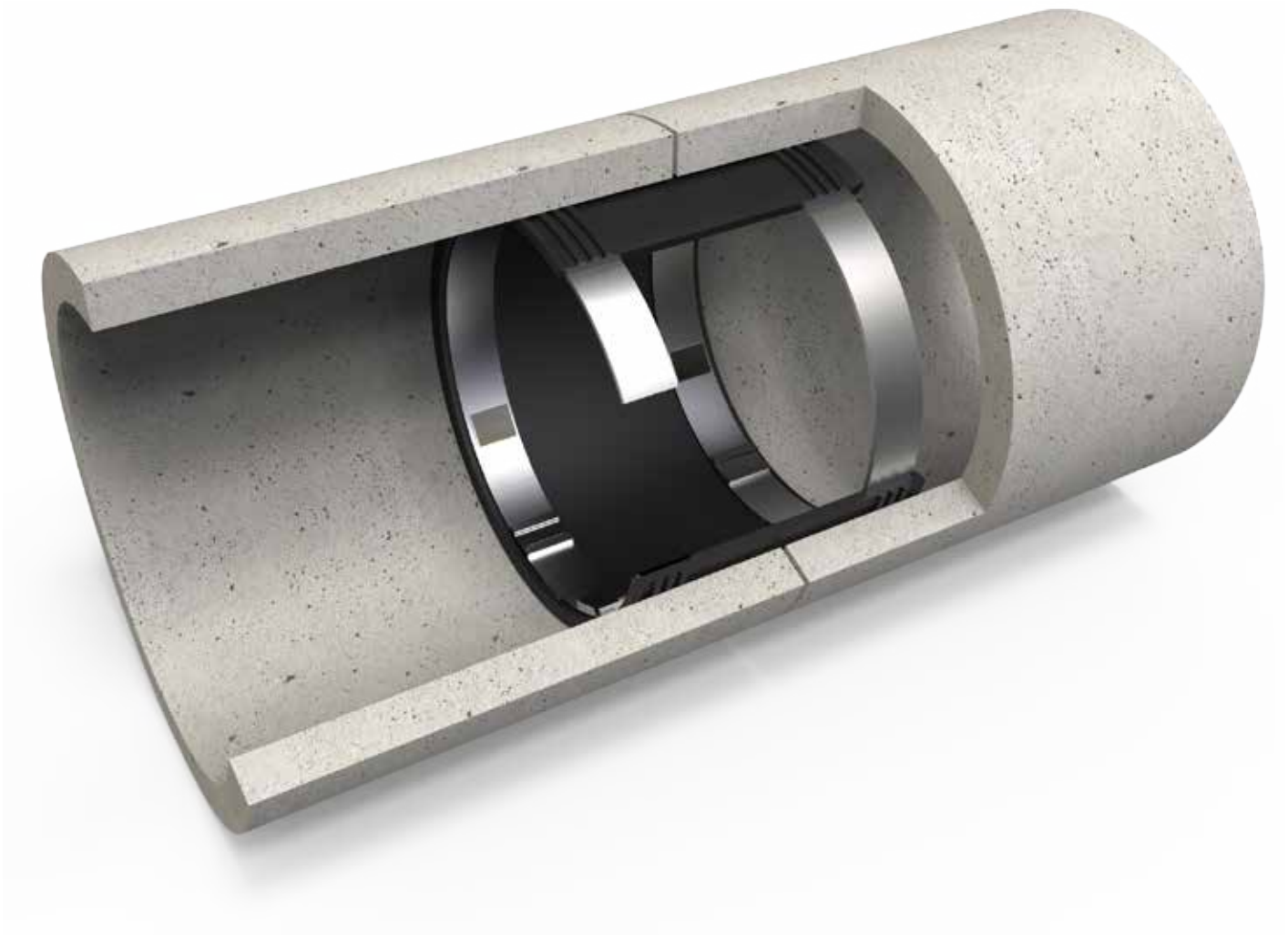
VIPWECO

No-dig pipe repair seals

Installation Instructions and Information Pack



VIP-Polymers Ltd. 15 Windover Road, Huntingdon, PE29 7EB, UK
Tel: +44 (0) 1480 411333 **Fax:** +44 (0) 1480 413991 **Email:** info@vip-polymers.com
www.vip-polymers.com

VIP-WECO SEAL COMPONENTS




Rubber Sleeve

The VIP-Weco is available in various configurations depending upon the type of repair being carried out. The basic seal comprises two stainless steel retaining bands and a rubber sleeve of either 280mm or 480mm width. The stainless steel retaining bands are 5mm thick and available in EN 1.4301 / A1S1 304, EN 1.4401 / A1S1 316 and Duplex grades upon request.

The following configurations are available depending on the application.



External pressure option 1	
Internal Pressure:	20bar
External Pressure:	0.4bar
Number of retaining bands	2
Steel reinforcing sheet	Not needed



External pressure option 2	
Internal Pressure:	20bar
External Pressure:	0.8bar
Number of retaining bands	3
Steel reinforcing sheet	Not needed



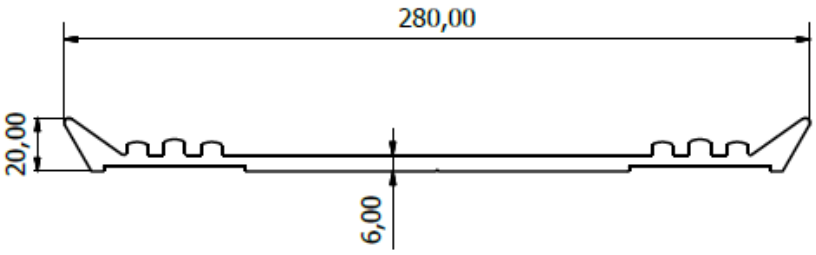
External pressure option 3	
Internal Pressure:	20bar
External Pressure:	2.0bar
Number of retaining bands	4
Steel reinforcing sheet	Yes

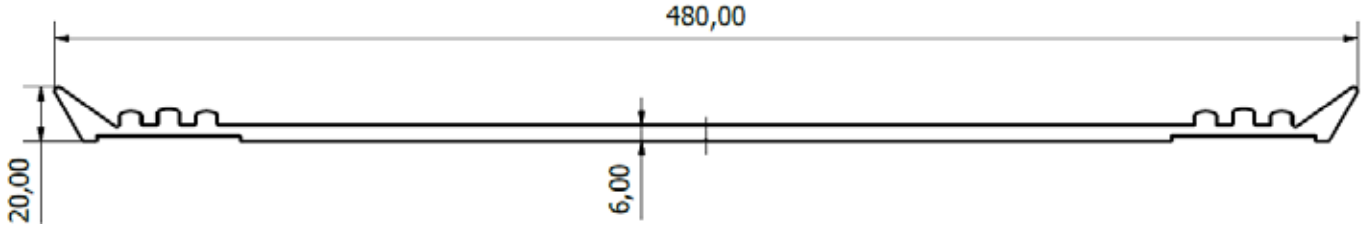


End liner sealing application	
Internal Pressure:	20bar
External Pressure:	up to 0.8bar
Number of retaining bands	1-3
Steel reinforcing sheet	Not needed

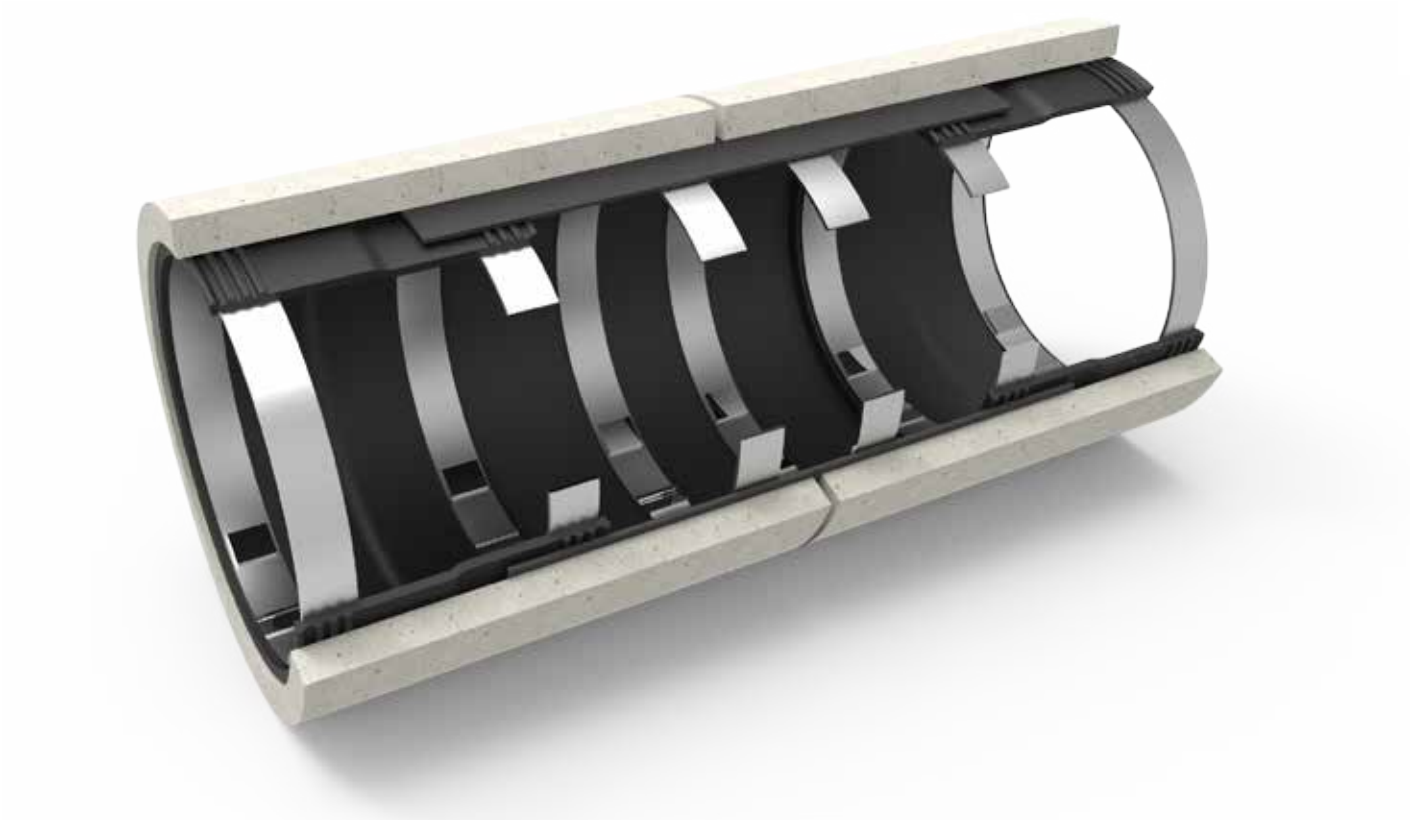
RUBBER SLEEVE

Rubber sleeves are available in 70 Shore A EPDM or Nitrile material and in widths of either 280mm or 480mm and are 6mm in thickness. The 280mm width are suitable for repairing joints up to a maximum of 144mm width and the 480mm width is suitable for repairing joints up to 343mm in width.





For repairs where the affected area is wider than 343mm, an ‘extra wide’ configuration is offered. This configuration consists of a bespoke central rubber ‘hose’ section which is held in place with additional retaining bands. VIP-Weco seals at either end complete the seal.



INSTALLATION

Tools

Aside from PPE you will need the following tools:

- Wire brush
- Cement trowel
- Cloths
- Paint brush
- Hammer
- Chisel
- Angle Grinder

Pipe Surface Preparation



The inside of the pipe should be smooth and clean and any surface irregularities or cavities filled using material suitable for repairing active water leaks such as a waterproof cement grout.

The spread of longitudinal crack can be prevented by spot drilling at the ends of the cracks. The area where the VIP-Weco will be positioned also has to be cleaned and any surface debris removed. This is critical to the sealing properties of the VIP-Weco internal repair seal.

Rubber Sleeve Installation



For pipes with a rough / abrasive surface, the area where the VIP-Weco will be positioned should be generously lubricated as this will help when locating the seal into the optimum position.

The rubber sleeve should be positioned centrally over the area to be sealed and positioned so that the vulcanised join is located at the 11 o'clock position.







Retaining Band Installation



Lubricate both the retaining band and locating groove within the sleeve in order to aid positioning. The retaining band at the rear of the seal (i.e. furthest away) should be installed first and positioned so that the locking wedge is positioned in either the 5 or 7 o'clock position, i.e. opposite the vulcanised join on the rubber sleeve.



A steel stainless steel shim should be positioned behind the locking wedge section. This will prevent the rubber sleeve being pinched or damaged as the locking wedge is inserted. The shims should be positioned evenly behind the locating jacking points.

Spreading the Retaining Bands



The hydraulic spreading tool should be used to expand the tension bands using the jacking points to generate leverage.

It is critical that the hydraulic pistons are not extended by more than 30mm otherwise the seals will fail. Where greater extension is required, spacers can be used to reduce the distance between the jacking points and the hydraulic pistons. The spreading force applied should be in accordance with the 'Spreader Forces' table, available from VIP.



To help locate the retaining bands during installation, it is recommended that a light hammering is applied around the entire inside circumference of the bands. As the retaining band moves to locate correctly, the pressure reading on the hydraulic spreading tool may drop. If this occurs, continue to pump the spreading tool until the correct spreading force is reached and no longer drops. This indicates that the retaining bands are seated correctly.

Inserting the locking wedge



Several locking wedges are supplied with the VIP-Weco seal however it is likely that one of these may need to be trimmed to fit. The locking wedge should be tapped into position using a hammer and chisel.

Once the locking wedge is in place, release the pressure on the hydraulic spreading tool and repeat the process for the 2nd retaining band.

External Pressure Option 2



This configuration is for applications where the external pressure is between 0.4 and 0.8bar. In addition to the VIP-Weco external pressure option 1, an extra retaining band is located across the centre of the seal.

Follow the same steps for inserting the seal as previously specified, beginning with the retaining band furthest away.



Once the first band is installed, install the central retaining band. Unlike the two outside bands, there is no locating groove in the rubber sleeve however it should be located in the centre of the seal.

Once the central band is installed, the third (and nearest) retaining band should be installed. It is important that this sequence is followed otherwise access to the jacking points will be restricted.

External Pressure Option 3



This configuration is for applications where the external pressure is between 0.8 and 2.0bar. In addition to the VIP-Weco external pressure option 1, this configuration includes a steel reinforcing sheet and 2 extra retaining bands across the centre of the seal.

Follow the same steps for inserting the seal as previously specified, beginning with the retaining band furthest away.



Once the first band is installed, locate the steel reinforcing sheet across the centre of the seal. Once located install 2 retaining bands across the steel reinforcing sheet (starting from the band furthest away), ensuring that they are evenly spaced across the steel reinforcing sheet.

As these bands are going across the steel reinforcing sheet they do not require the steel shim.



Once the central bands are installed, move on to the fourth (and nearest retaining band. It is important that this sequence is followed otherwise access to the jacking points will be restricted.

GENERAL INFORMATION

Pressure Test

An optional pressure test valve can be fitted to the VIP-Weco seal. This valve is located in the middle of the rubber sleeve and inflated after installation. After installation, leaks will be visible both by inflating the seal using the valve and checking for air leaks using a spray solution.

Installation Time

Provided the area has been prepared correctly, typical installation times per VIP-Weco seal vary from around 30-60 minutes. The VIP-Weco can be installed by a single operator although space permitting, the job is made easier by using two persons.

Health & Safety

Installation operators should be trained in accordance with the relevant confined space training legislation. A full H&S risk assessment should be carried out and measures put in place designed to remove or reduce those risks.

Hydraulic Spreading Tools

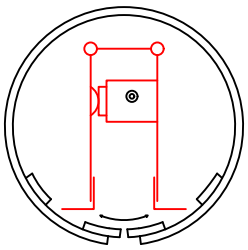


The installation kit comprises of:

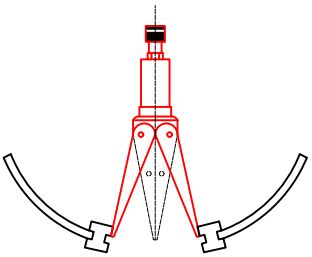
1 x hydraulic pump
1 x hydraulic hose (approx 1.5m long)
1 x hydraulic spreading piston

There is a choice of three spreader pistons depending on the VIP-Weco seal diameter.

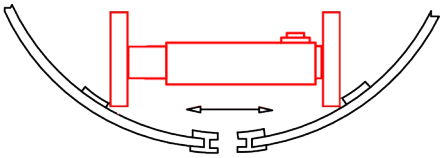
▶ Type 1: DN185 - DN239



▶ Type 2: DN240 - DN359



▶ Type 3: DN360+



Installation and Training

Installation of the VIP-Weco internal pipe repair seal can be carried out by the client or by installers nominated by VIP-Polymers. As the VIP-Weco is an internal pipe repair seal, it is essential that confined space regulations are adhered to. Training and demonstrations can be provided upon request.

Contact us for more information

VIP-Polymers Ltd 15 Windover Road, Huntingdon, Cambridgeshire, PE29 7EB, United Kingdom

+44 (0)1480 411333 | **sales@vip-weco.com** | **www.vip-polymers.com**