



RE PipeSeal, LLC · 224 Woodvale Drive · Chambersburg, PA 17201 · (717) 658-4532 · info@repipetech.com

SALES CONDITIONS & MANUAL for REPIPESEAL POINT REPAIR SYSTEM

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1. SALES CONDITIONS

RE PipeSeal, LLC is the solely licensed and exclusively contracted manufacturer and distributor of all Obduramus Circum-Mini products in and for North America.

Obduramus GmbH is the inventor of the Circum-Mini system and holds various worldwide issued patents and certifications to this product, which RE PipeSeal, LLC is manufacturing and distributing under her own name in North America.

All "Made in the USA" stainless steel sleeves will be labeled as such on a sticker attached to the EPDM rubber gasket.

RE PipeSeal, LLC uses Obduramus GmbH current and original design CAD files and strictly maintains their manufacturing process and procedures, without modifications.

1.1 Indemnification

Buyer hereby agrees to defend, indemnify and hold harmless seller (RE PipeSeal, LLC), its employees and agents against any and all liability, damages, loss, fines, penalties or costs and expenses (including reasonable attorney's fees, expert fees and court costs) of any nature arising out of or resulting from any lawsuits, proceedings, actions, or claims relating to personal injury (including death) or property damage resulting from, relating to or arising out of Buyer's negligence or intentional wrongful acts in handling, installing and maintaining the product(s) purchased or otherwise obtained hereunder.

1.2 Nonconformity.

All product(s) distributed by the Seller (RE PipeSeal, LLC) are to be inspected upon receipt by Buyer, and should any of such product(s) prove defective due to faults in manufacture, or fail to meet the written specifications accepted by the Seller, the Buyer shall not return the product(s), but shall notify the Seller within five (5) business days of receipt, stating full particulars in support of his claim, and the Seller will either replace



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the product(s) upon return of the defective or unsatisfactory product(s) or adjust the matter fairly and promptly, **but under no circumstances shall the Seller be obligated for consequential or other damages, losses, or expenses in connection with or by reason of the use of or inability to use product(s) purchased for any purpose.**

Product(s) shipped to Buyer are deemed conforming in all respects if Buyer does not give the required notice to Seller with the five (5) day period.

1.3 Customer Training

Each Buyer shall undergo Seller's then standard training for the product purchased. The advice of the technical staff of the Seller is available to the trade, but the Seller, not controlling or supervising the subsequent use after sale, does not warrant or guarantee such advice. The product(s) sold to Buyer are subject to a Limited Warranty, which is given Buyer herewith; provided, however, that such Warranty shall not be effective and binding upon Seller and may be voided, if Buyer's operators have not successfully completed Seller's training, prior to, or immediately upon equipment delivery.

1.4 Limited Warranty

This Limited Warranty covers the original purchaser or recipient only. The term "original purchaser" as used in this Limited Warranty is deemed to be that person, firm, association, corporation or other entity to whom this product was sold initially by Seller (RE PipeSeal, LLC), or its certified agents or dealers.

This Limited Warranty shall NOT apply to this product if it has been repaired or altered, except by Seller or its authorized agents, or if it has been subject to accident, negligence, abuse or misuse, or has not been maintained or stored by the purchaser in strict accordance with the product manual or if damage to the product is a result of a defective or inadequate packer, or CCTV camera for the installation of product. This Limited Warranty shall NOT apply to any "wear" part (i.e. any part which is in periodic contact with another part or surface) of this product unless repair or replacement is required as the primary result of a defect in workmanship or material.



1.5 Installer Safety Requirements

Installer qualifications shall include the following:

1. Installer shall participate in and obtain the mandatory RE PipeSeal, LLC standard training for all its installation personnel.
2. Installer must maintain certification of product safety training and manhole or confined space entry for all personnel participating in pipeline rehabilitation operations, including the names of all personnel, including the trainer; the date, time, and duration of the training; and a statement that all necessary protective gear and equipment are to be available for the use by personnel on the site.
3. At all times, Installer shall follow and comply with all applicable and current federal, state and local safety rules and regulations. (i.e. OSHA)



2.0 MANUAL & INSTALLATION

2.1 Trenchless pipe point repair system REPIPESEAL

REPIPESEAL is a strictly mechanical point repair system for the inside repair of pipes. No resin is used! Application range is from 4 inch to 32 inch pipe diameter. For each individual pipe diameter a specific sleeve diameter has to be chosen. The components consist of a 316L stainless steel sleeve, covered by an EPDM compression rubber seal. This system can be used for all common sewage, well and potable water piping systems. All metal components are made of the same 316L steel, thus no corrosion – unlike all other products.

Patented Locking Mechanism: Two tooth strips are punched into the left and right side of the sleeve. In each tooth strip, there is a spring-loaded slide plate locking mechanism, attached on the outer contour, which is guiding the sleeve sheet while being installed. After reaching maximum compression pressure against the inner pipe wall, the gear is and remains permanently locked.

Usually, the sleeves are delivered completely pre-assembled so that the EPDM rubber seal can also serve as a kind of transportation protection. An additional transportation safety device (for \geq Dia 15inch) provided by the manufacturer must be removed right before the actual installation.

These sleeves must be stored vertically on the flared edge, kept dry and protected from UV-sunlight. During storage and transporting the 316L steel components must not come into contact with any unalloyed steel.

After a long storage time, the talcum powder between EPDM rubber gasket and stainless-steel sleeve must be checked and refreshed – whenever necessary.

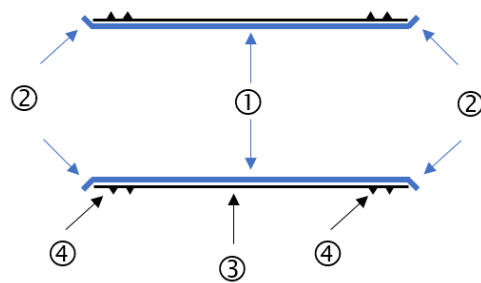


To ensure the functionality and correct sleeve installation a slow and uniform expansion of the packer is essential. Packer

pressure applications that are too rapid must be avoided, as this may jeopardize the installation quality. Packer pressures vary depending on the packer size and pipe condition.

It is imperative that the sleeve is located centrally on the packer.

2.2 System Description



Sectional view of stainless steel sleeve and EPDM seal

- ① Stainless steel sleeve
- ② Flaring (Bevel)
- ③ EPDM rubber gasket
- ④ Sealing lips

2.3 Required Installation Equipment

- Packer with correct wheelset
- Filling set with pressure gauge
- Camera (if required or desired)
- Personal protective equipment
- Compressor with min. 6 bar (90PSI) stable working pressure.
- For serial installation – possibly a laser pointer



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2.4 System Function

This trenchless pipe point repair system was developed to repair pipe connections and partially damaged areas rapidly and effectively.

REPIPESEAL sleeves are available for pipe diameters from 4 to 32 inches.

The method is based on the principle of compression sealing: using an inflatable packer the 316L (V4A) stainless steel sleeve and the EPDM rubber gasket are expanded and pressed against the inner pipe wall until the desired compression is reached. The pipe area between the sealing knobs is thereby completely and permanently sealed.

The special external closure guarantees that the EPDM sleeve is pressed-on permanently. Re-tensioning of the sleeve is possible at any time.

2.5 Installation of the inner point repair “REPIPESEAL”





2.5.1 Line Preparation

Prior to the installation the entire line (or at least from entry to the repair point) must be cleaned. No deposits, sand, gravel, roots, encrusts, or any other solids or hard objects may remain in the repair section, or the travel ways towards it. A milling robot may be considered.

Joint offsets of up to 3/8" can be overcome by one correctly installed sleeve. For larger offsets, they must either be milled off, or 2 sleeves are to be installed in a serial installation (see chapter 4.3).

Ideally, the installation is performed in a dry line to prevent any new contamination of the repair spot after its cleaning. A visual inspection (CCTV) of the repair location is highly recommended right before and right after the point repair – as evidence and to eliminate future controversies.

2.5.2 Sleeve Preparation

Usually, the sleeves are delivered pre-mounted. If this is not the case, or if the EPDM sleeve has been removed, please proceed as follows:

1. Apply talcum powder to the outer sleeve body so that the EPDM rubber gasket can easily be slipped over and to also reduce friction during the installation process.
2. Position the EPDM seal centrally on the sleeve body.
3. If necessary, secure the EPDM rubber gasket to the sleeve body at both ends with a drop of superglue. This is to prevent the EPDM gasket from slipping off the sleeve body when moving through the line.



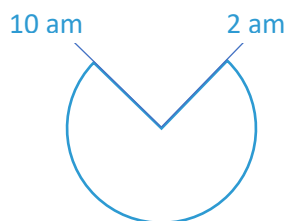
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ATTENTION: Absolutely no superglue on the locking mechanism or between the sheet metal overlaps!

- Optional: the blue hydrophilic rubber gasket can provide additional sealing and is positioned in between the sealing lips on both ends.



- Position the REPIPESEAL sleeve on the packer so that the teeth of the locking mechanism are at the top (between 10 am and 2 pm).



6. “Hold” the REPIPESEAL sleeve centered on the packer by applying up to 7psi air pressure to the packer. The sleeve should not start to open but nevertheless sit tightly on the packer.

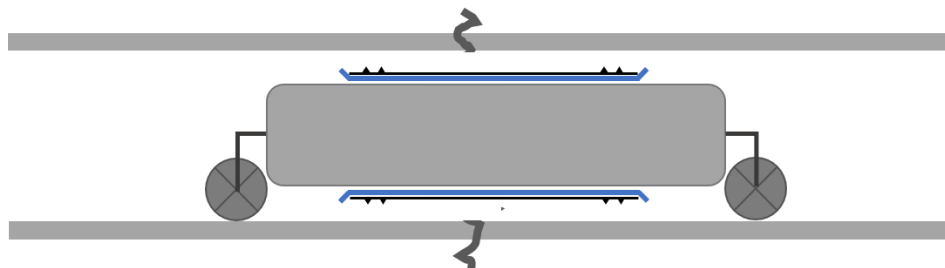


To ensure proper installation, it is imperative that the sleeve is positioned centrally on the packer.



2.5.3 Single installation

1. Transport the REPIPESEAL sleeve on the packer to the repair point and position it so that the damaged area is centered in between the sealing knobs.



To ensure the functionality and correct sleeve installation a **slow and uniform expansion** of the packer is essential.

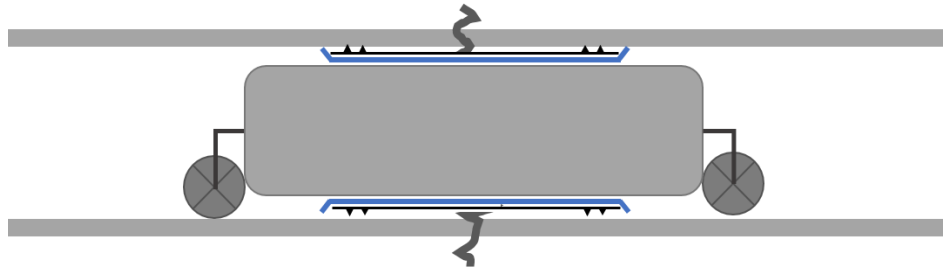
Packer pressure applications that are too rapid must be avoided, as this may jeopardize the installation quality.

Applicable packer pressures vary – depending on the packer type and actual pipe condition.

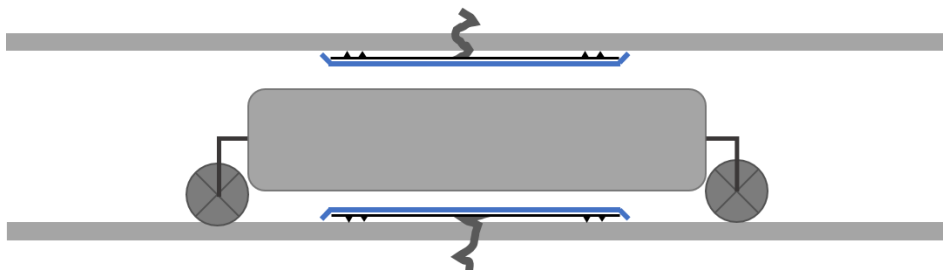
2. Depending on the packer type and the actual pipe condition, air pressure of between 20 to 65psi is needed to expand and press the sleeve against the inner pipe wall. (For installations with Obduramus packers we recommend a set pressure of 40psi for Dia. 6 to 10inch; for 12inches and up we recommend a set pressure of 26psi.)



The maximum pressure as specified by the packer manufacturer must not be exceeded!



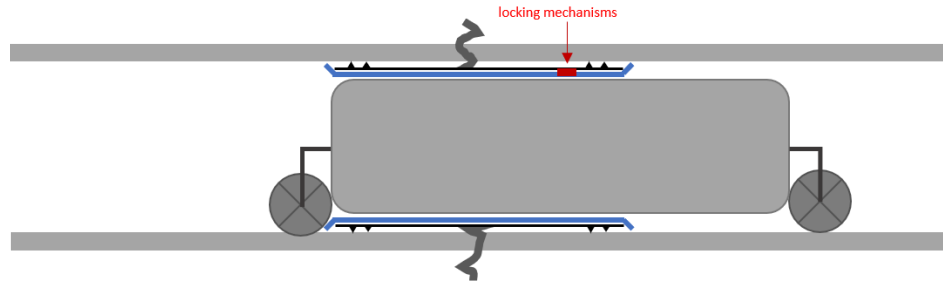
3. Deflate the packer.



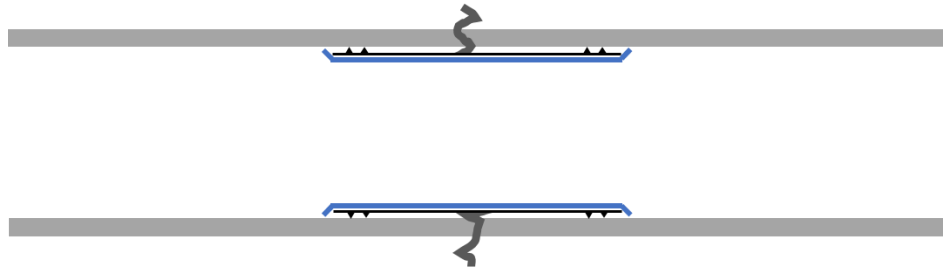


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4. When using a packer from Obduramus, repeat steps 2 and 3 WITHOUT moving the packer. Step 5 is omitted.
5. If you are installing the sleeve with a different (shorter) packer, position the packer center under the respective locking mechanisms at both ends of the sleeve and apply 20 to 65psi air pressure again – depending on the actual pipe condition!



6. Deflate and remove the packer.



The REPIPESEAL sleeve is properly installed and effectively seals the damaged spot permanently. Re-tensioning, if necessary, is possible at any time.

2.5.4 Serial installation

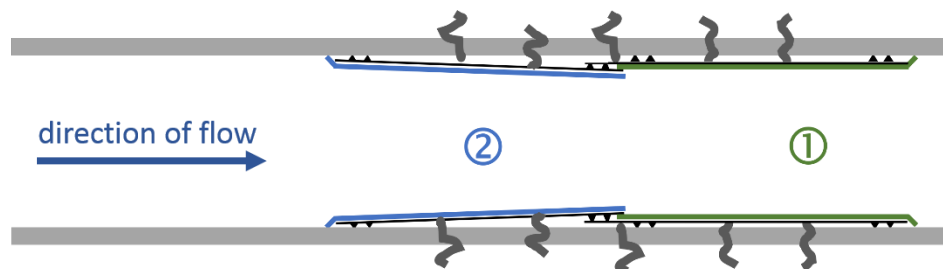
For pipe damage exceeding the distance between the sealing knobs of one REPIPESEAL sleeve, a serial installation may provide a viable solution.

Always start the installation process with the last downstream sleeve at the end of the damaged area and then work your way up.

Preparations and the inflation pressure correspond to those of the individual installation. (2.5.3).

2.5.5 Serial installation with 2 sleeves (CCTV camera required!)

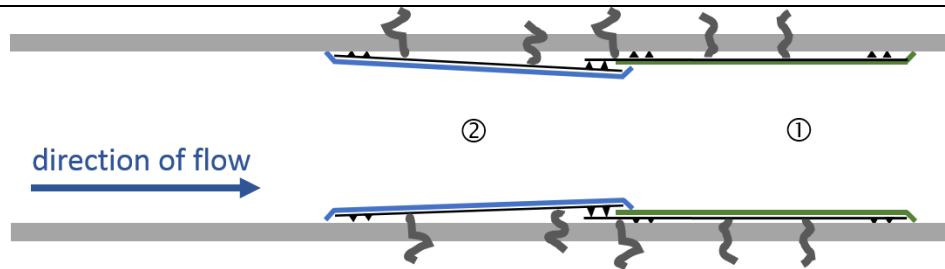
For minimizing cross-section reduction, a one-beveled REPIPESEAL with extended EPDM rubber gasket is installed first (pos 1) and another one-beveled sleeve (pos 2) with a trimmed EPDM gasket is then installed into sleeve 1.



Below: It is also possible to point repair using a conventional REPIPESEAL sleeve Pos 2 (both ends flared with associated EPDM seal) and a REPIPESEAL sleeve with one-end flared and extended EPDM seal, Pos 1. However, this leads to a larger reduction in cross-section.

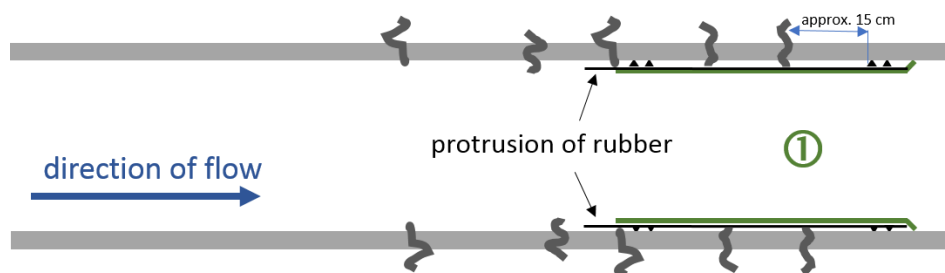
RE pipeSEAL

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The EPDM gasket extension should be treated with talcum powder on the inside before installation to easier facilitate passage of the second sleeve. It is also recommended to secure the EPDM gasket with a drop of superglue at both ends of the sleeve body, opposite each other. This prevents the EPDM gasket from slipping off the steel body while passing through.

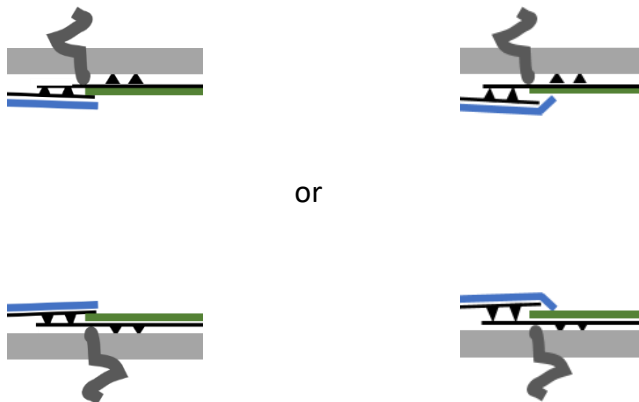
Start with the installation of the one-end flared sleeve with the protruding (extended) EPDM gasket. ①



It is highly recommended that the downstream sealing lips of the first sleeve (Pos 1) are at a minimum 6 inches away from where the actual damage in the pipe begins.

The installation steps and the contact pressure correspond to those of the individual installation (see chapter 2.5.3).

The second sleeve ② is also inserted and installed against flow direction. This means that sleeve ② **has to travel through** sleeve ①.



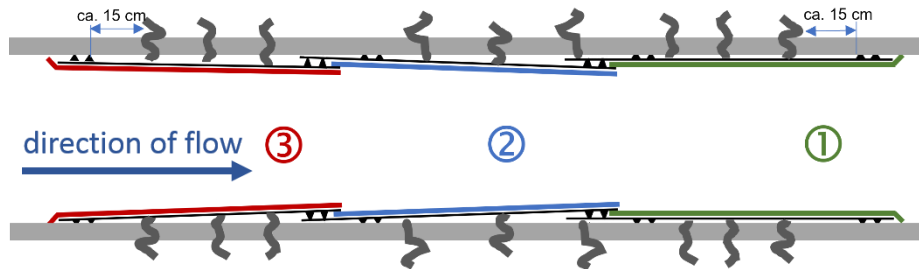
or

The stainless steel sleeve bodies should overlap at least 0.25inch.

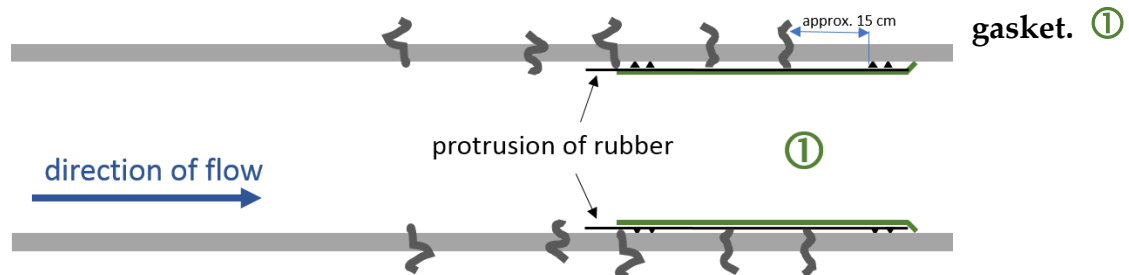
The installation steps and the applied pressures also correspond to those of the individual installation.

2.5.6 Serial installation with 3 or more sleeves (CCTV camera required!)

For a serial installation with 3 or more sleeves: *one REPIPESEAL sleeve with one-end flared and with protruding EPDM rubber gasket, one sleeve with one-end flared and trimmed EPDM gasket, and at least one or more sleeves without flare but with protruding EPDM gasket.* The protrusion of the EPDM seal guarantees the correct connection of the sleeves and thus the sealing effect. These rubber protrusions should be treated with talcum powder from the inside before installation to facilitate passage by the other sleeves. It is also recommended to secure the EPDM rubber gasket to the sleeve body with a drop of superglue at both ends opposite each other. This prevents the EPDM seal from slipping off the sleeve body while passing through.



Start with the installation of the one-flared sleeve with protruding EPDM



It is highly recommended that the downstream sealing lips of the first sleeve (Pos 1) are at a minimum 6 inches away from where the actual damage in the pipe begins.

The installation steps and the contact pressure correspond to those of the individual installation (see chapter 5.2).

The second sleeve ②, which is not flared but has a rubber protrusion, must pass through the first sleeve, and is then installed as previously described.

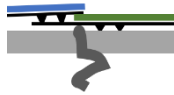
These rubber protrusions may snag and roll up when traveling through already installed sleeves. Should this be the case, move through the previous sleeve entirely and start over.



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The stainless steel sleeves should overlap by at least 0.25inch.



The installation steps and the applied pressure correspond to those of the individual assembly (see chapter 2.5.3).

This procedure can be carried out as many times as needed.

Proceed with installing sleeves ② as many as are needed. The Final Sleeve is sleeve ③ (upstream end sleeve) as described above. The upstream sealing lips of this sleeve should be positioned at least 6-inches away from the last damage and into good pipe.

WE THANK YOU FOR YOUR BUSINESS!