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RENOVATION OF PIPELINES

Tightenings with casing seals in larger pipelines

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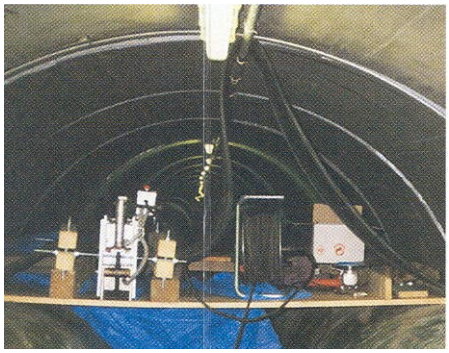
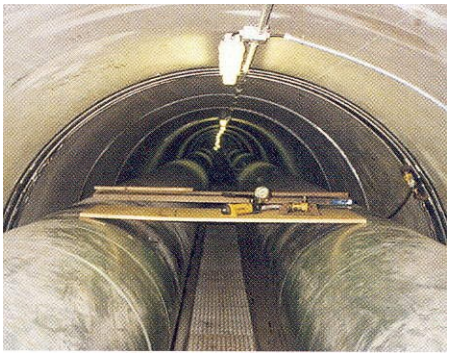
Tightenings with casing seals in larger pipelines

The tightenings system Red Ex are a patent-protected renovationsmethod for tightening of connections as well as damaged places inside the pipelines can be strengthen with a insert of a casing seal, consisting of a casing seal with a tension band, which gives a longer lifetime.
The applications are many in accessible pipelines. The inside mounted casing seal can be used for drinking water, waste water, gaspipelines and district heating ect..
This renovationmethod for mechanical tightening of connections has been used all over the world for the last 30 years as renewal without digging and renovation og gas-, drinking water- and waste waterpipelines from DN 600.

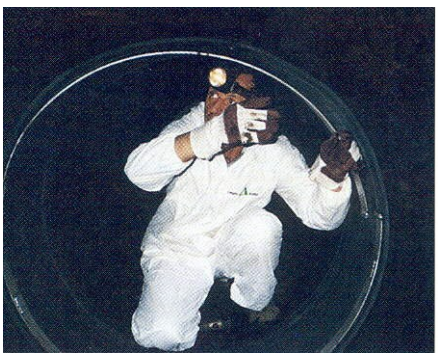
Egg shaped pipe

DN 3000 Pipe canal





Drinking water pipeline



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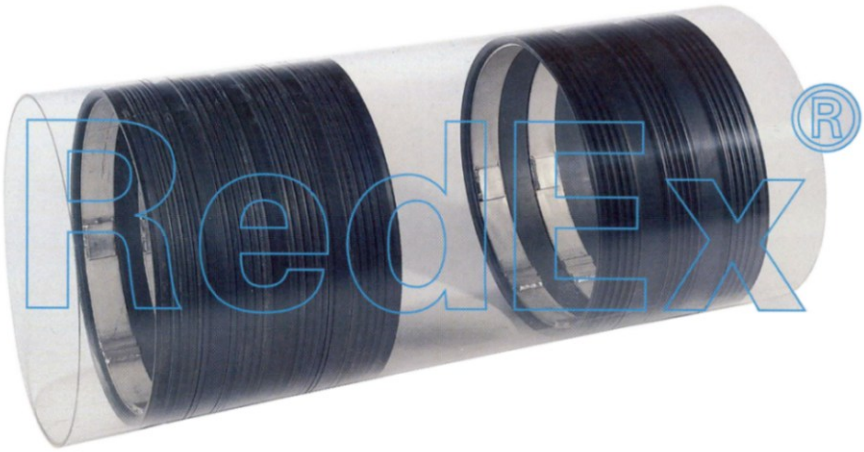
Advantages by this renovationsmethod:

- Coinsiderable saving by digging, when it according to excavation nominel width require pits to descent within distance from 100 to 1000 meter or more.
- Manholes and bubble cover/cap could likewise be tightned with these casing seals.
- All casing seals can be strengthen with a special textile.
- The casing seal can be mounted side by side where longitudinal cracks appears, so that the pipe appears as a new pipe.
- Also eggshaped canals can be renovated.

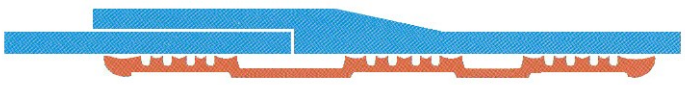
This casing seal are developed to inside tightening of connections in pipelines made of iron, cast iron, steel, concrete reinforced steel, PVC or other plastic material plus concrete or pipelines which are covered with concrete. By gas and water the high quality of rubber gives the casing seal good physically conditions and constancy.



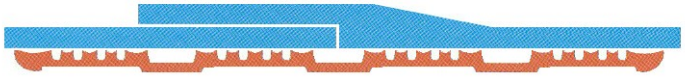
Profiles of tighteningssurfaces:

Normal inside tightening from 180 to 480 mm width

Variation with several layers



Inside tightening with extra tighteningssurface by contact face



Inside tightening with double tighteningssurface and contact face

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Tightenings with casing seals in larger pipelines

TECHNICAL DATA							
Medium		Gas			Srinking water, waste water		
Tension band, fitting pjeces, support plates, valves		RST 60.2			Werkstoff 1.4571		
Rubber quality		NBR			EDPM		
Shore		70 ± 5					
Dimensions		DN 600 to DN 3000					
Thickness 4 mm	Width	180	230	280	330	mm	
	Stiffer	30	90	140	190	mm	
Thickness 6 mm	Width			280	480	mm	
	Stiffer			140	340	mm	
Thickness 4 mm		From 180 to 330 tightening lip attachment					
Thickness 6 mm				Normal lip attachment			
Temperature		60°		130°			
Pressure range		Inside pressure up to 16 ba Outside pressure to 0,5 bar By strengthen casing seals; outside pressure from 0,5 to 3 bar					
Testing		Pressure tested					
Specification test		Single pressure test of every socket with a special valve in the casing seal					
Extent of neccessary digging		Entrance through manholes (especially drinking water, waste water and industry) od digging (especially gas) for each 100 to 1000 meter depending on pipe dimension					

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Mounting instruction

This renovationsmethod for mechanical tightening of connections in accessible pipelines has been used all over the world the past 30 years for renewal without digging and renovation af gas-, drinkingwater- and waste water pipelines from DN 600.

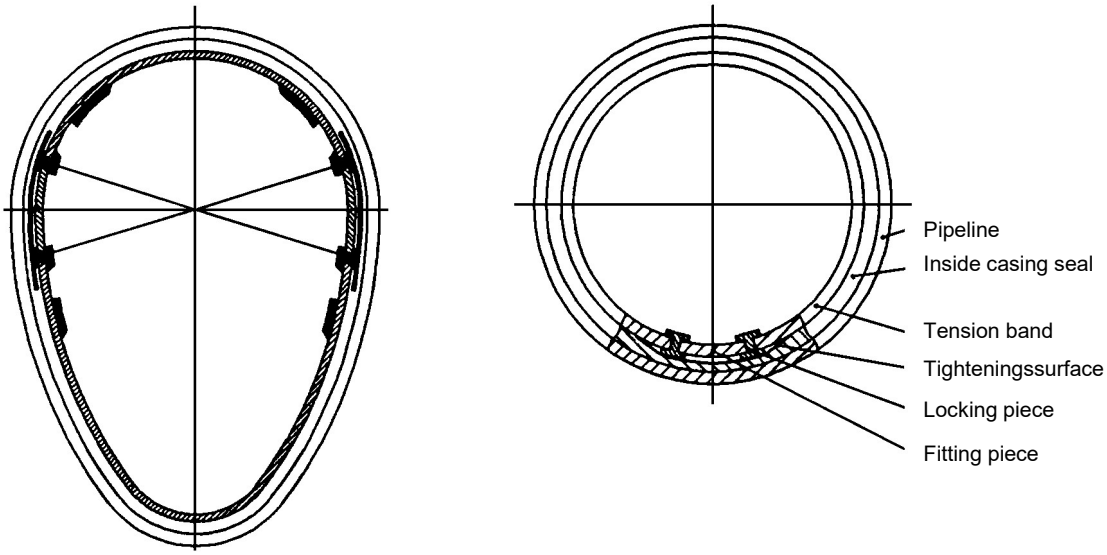
1. Pipe cleaning is that deposits of all kinds as sand, stones, mud ect. has been removed from the inside. The remaining water has to be sucked out of the pipeline. In concrete pipes the mounting area has to be cleaned and smootend. In cast iron and steelpipes the surface has to be fryed to be able to grind the mounting area with a special grinding machine to reach a metallic brightness and smootend mounting surface. In cast iron and steelpipes the grinded surface has to be coated with a protecion media.

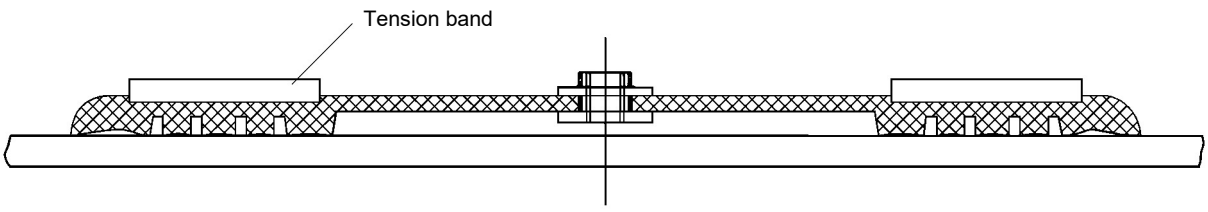
2. Place the casing seal and the tensison band in the pipe on the pipe sledge and drive to location.

3. Place the casing seal with the tightening lips totally on the cleaned and smootend tighteningsarea and place the valve at 3 or 9 o'clock.

4. Press the casing seal, put the force plug between the locking piece and press light. Control the tension bands right position. Pump slowly up while hammering on the steelring till pressure on the manometer stop falling.
   Place a suitable fitting piece in the locking piece with a hammer and special chisel.

5. Test the casing seal. Unscrew the plug of the valve. Unscrew the test nipple in the valve.Place the testingpistol in the test nipple and pump air into the casing seal (from 0,5 to 1,0 bar). Test the casing seal with leak decetion spray or wash of with soapy water on a) pipe and casing seal, b) valve and c) connection place to check if the casing seal is absolutely tight. Fasten the valve plug in the valve.





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