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Joining methods for CIPP products in pressure pipe systems

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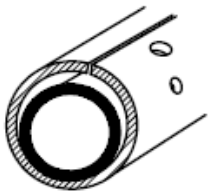
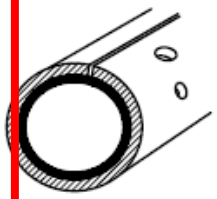
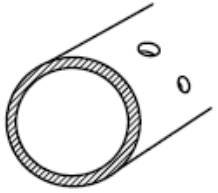
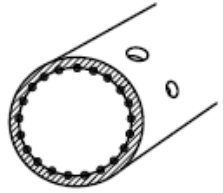
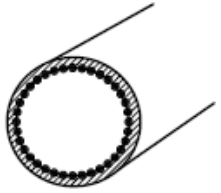
DIRINGER & SCHEIDEL ROHRSANIERUNG GmbH & Co. KG

Joining methods for CIPP products in pressure pipe systems

CIPP METHODS, DEFINITIONS

Pressure hose liner of classes A, B, C in acc. with EN ISO 11295

Class A		Class B	Class C	Class D
				
loose-fit	close-fit	inherent ring stiffness	relies on adhesion	relies on adhesion
Independent		**Interactive**		
Fully structural		**Semi-structural**		**Non-structural**
Lining with continuous pipes				This International Standard is not applicable
	Lining with close-fit pipes			
	Lining with cured-in-place pipes			
			Lining with adhesive-backed hoses	
—	—	Lining with sprayed polymer material	—	

NOTE 1 Lining with drawn-in hoses is still to be classified, as the development of product standards for these technical families is still pending.
NOTE 2 The dots in the images for Classes C and D represent the gluing connections

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Joining methods for CIPP products in pressure pipe systems

CIPP METHODS

Inversion of a flexible glass/needlefelt-liner and curing by heat (steam)

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Joining methods for CIPP products in pressure pipe systems

CIPP METHODS

Insertion (Pull-In) of a GRP Liner, UV curing

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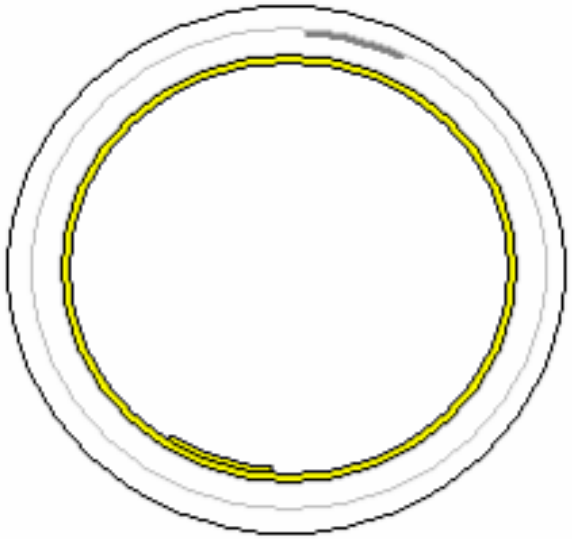
Joining methods for CIPP products in pressure pipe systems

CIPP METHODS - CHARACTERISTICS



CIPP products are a composit of
- inner coating
- stability GRP (GRP/NF) layers
- (outer coating / foil)

They are not weldable like e.g. steel or PE

The CIPP product itself is useless without a proper joining method

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Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – SELECTION CRITERIA

- Condition of host pipe
  - grade of deterioration
  - condition of inner surface
  - condition of potential inner coating

- Material of host pipe
  - weldable
  - clampable
  - force locking nature

- Diameter of host pipe

- Aspects of planning

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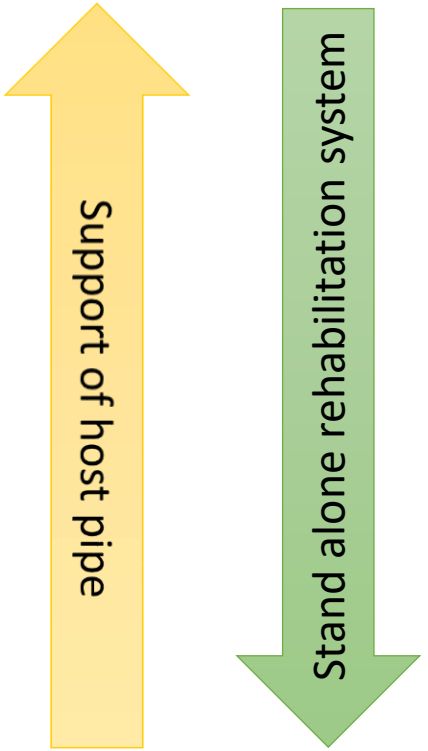
Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – REQUIREMENTS AND DEFINITIONS

- Connection via the old pipe
  - old pipe remains as full part of the system
  - structural
  - seal face
  - longitudinal forces

- Connection via a fitting
  - new fitting extends old pipe
  - old pipe only takes over longitudinal forces

- Connection via the pressure hose liner
  - stand alone solution
  - applicable even without host pipe



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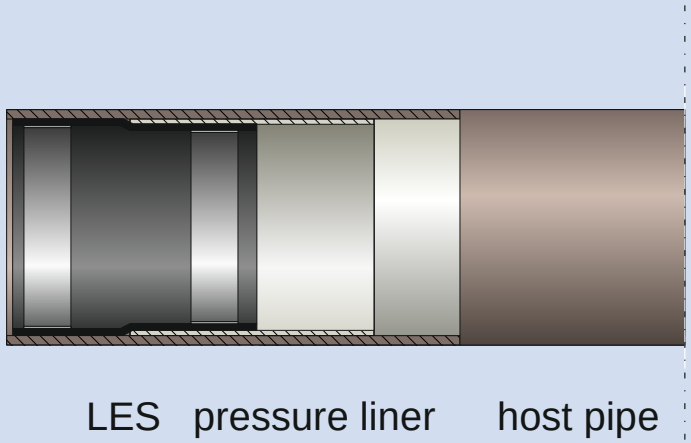
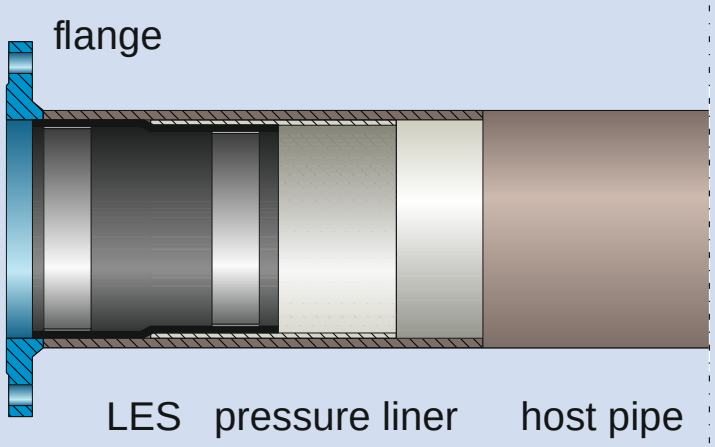
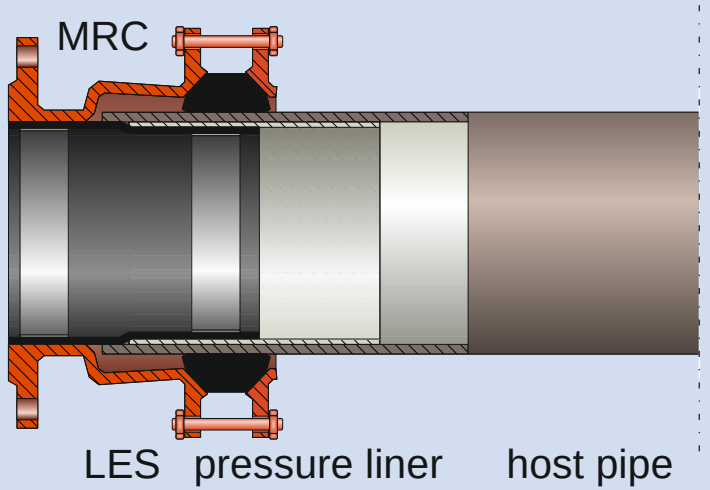
Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – CONNECTION VIA THE OLD PIPE

old pipe – spigot end	welding neck flange	multi-range coupling
		
>= DN 200 / liner class A,B,C	>= DN 200 / liner class A,B,C	>= DN 200 / liner class A,B,C

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Joining methods for CIPP products in pressure pipe systems

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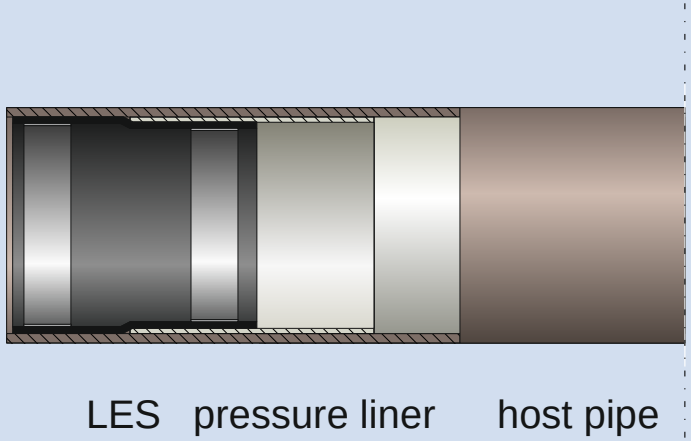		
>= DN 200 / liner class A,B,C	>= DN 200 / liner class A,B,C	>= DN 200 / liner class A,B,C

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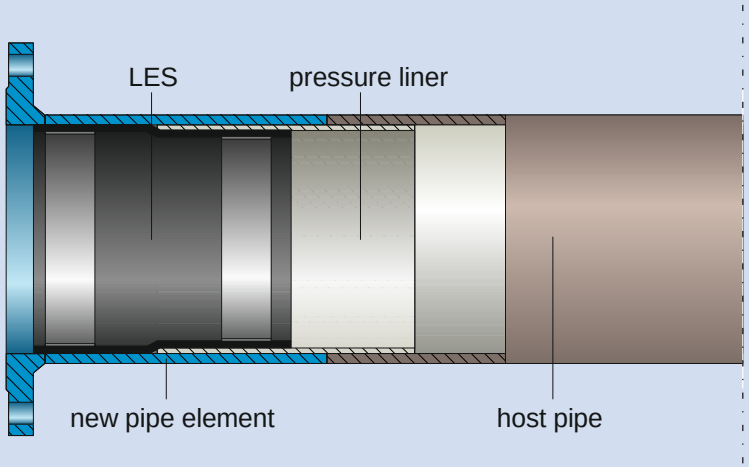
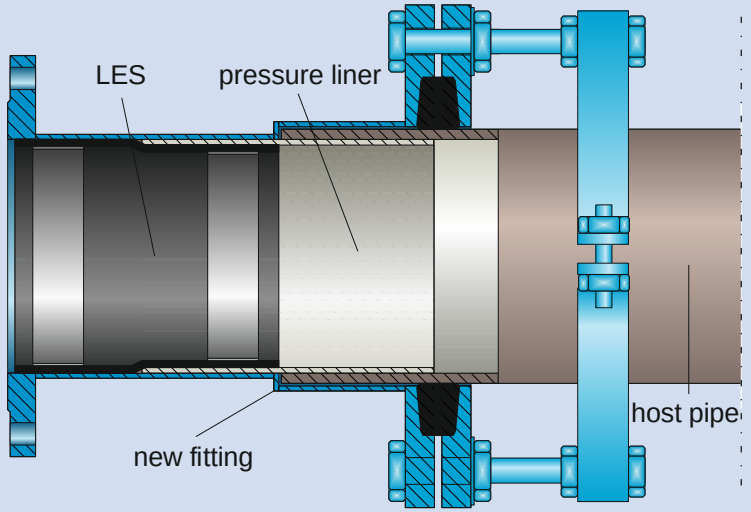
Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – CONNECTION VIA A FITTING

new pipe element with flange or spigot end	special flange with force lock
	
>= DN 200 / liner class A,B,C	>= DN 200 / liner class A,B,C

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Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – CONNECTION VIA A FITTING

new pipe element with flange or spigot end	special flange with force lock
	
>= DN 200 / liner class A,B,C	>= DN 200 / liner class A,B,C

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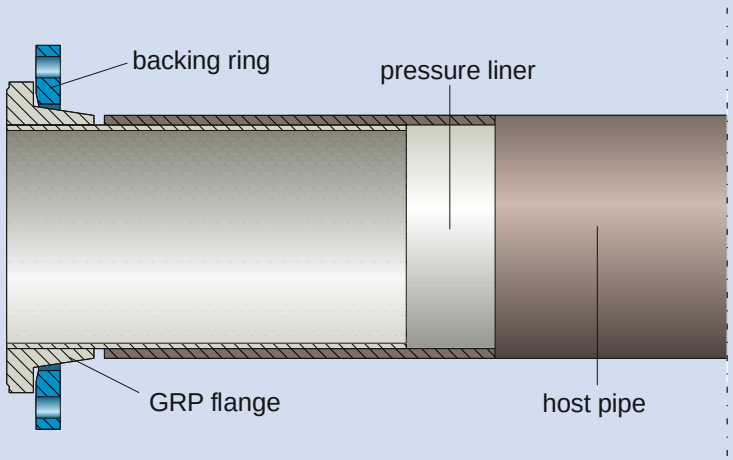
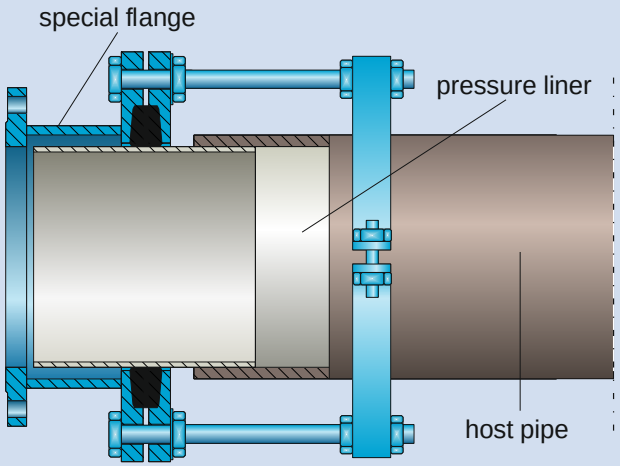
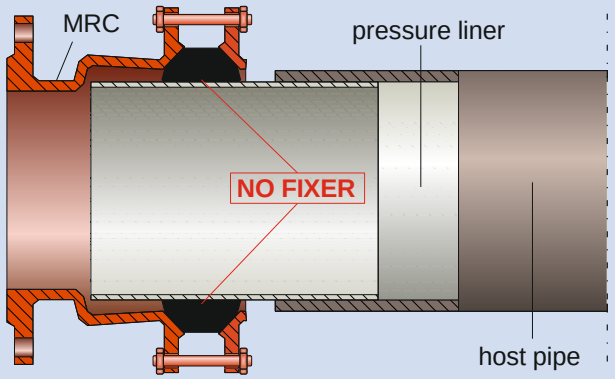
Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – CONNECTION VIA THE LINER

GRP-flange	special flange with force lock	multi-range coupling
		
>= DN 100 / liner class A	>= DN 100 / liner class A	>= DN 100 / liner class A

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Joining methods for CIPP products in pressure pipe systems

JOINING METHODS – CONNECTION VIA THE LINER

GRP-flange	special flange with force lock	multi-range coupling
		
>= DN 100 / liner class A	>= DN 100 / liner class A	>= DN 100 / liner class A

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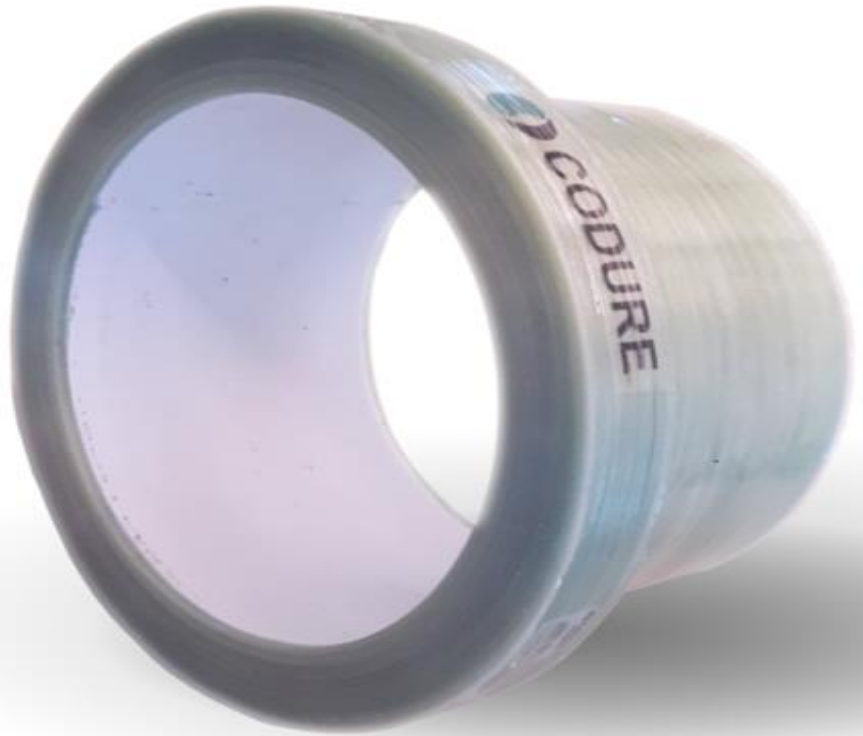
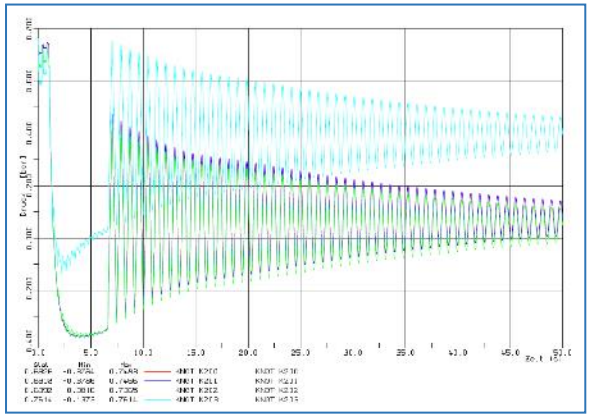
Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE





ZERTIFIKAT

siebert+knipschild
Materialprüfung von Kunststoffen

Hiermit wird bestätigt, dass das Schlauchlinersystem

BlueLine

des Herstellers

Pipe-Aqua-Tec GmbH & Co. KG
Zechenring 9
44628 Herne
Deutschland

mit dem Flanschsystem

CODURE

des Herstellers

MOCS
Molengraaffsingel 12
2629 JD Delft
Niederlande

10.000.000 Druckwechselzyklen
In Anlehnung an DIN 50100 ausgesetzt wurde.

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Oststeinbek, 26. Januar 2018

A. Haacker
Dipl.-Ing. Andreas Haacker
Geschäftsführer

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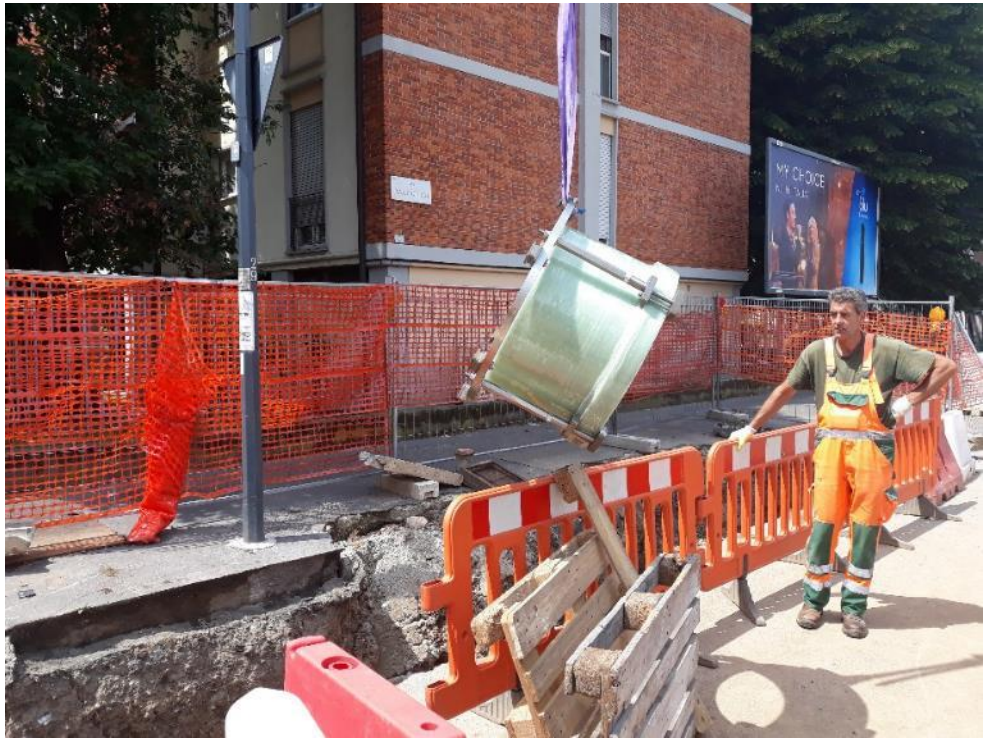
Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE

Mounting accessories



Transportation into installation pit

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Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE

Alignment tool

Fixation at host pipe

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Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE

Installation of BlueLiner (Starting point)

Exit point

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Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE

Sealing of the cutting edge

Finished CODURE with sealing

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Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE

Pressure test

No abudment to counter longitudinal forces

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Joining methods for CIPP products in pressure pipe systems

EXAMPLE: PIPA-AQUA-TEC BLUELINE with MOCS CODURE

Connection works in a service chamber

Connected BlueLine with MOCS CODURE

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Joining methods for CIPP products in pressure pipe systems

Thank you very much for your attention!

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