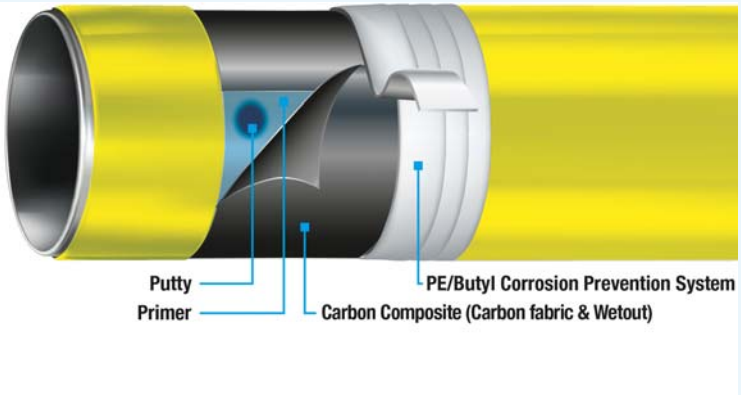
DEXPAND®-CF70

System for restoring pipeline integrity based on Carbon Composite materials.



Special Advantages

- Permanent restoration of the integrity of piping systems.
- Rehabilitation in operation — without pipeline interruptions.
- Highly cost-effective.
- For operating temperatures up to +70°C (+158°F).
- Availability at short notice

Product description

DEXPAND®-CF70 is a repair system for pipelines with a diameter of ≥ 2 inches (≥ DN 50), and helps to extend the **life expectancy of pipelines.**

After being repaired with DEXPAND®-CF70, pipelines that have been damaged by corrosion or erosion regain their **original structural integrity** and can once again be used safely and permanently under **maximum operating pressure**.

DEXPAND®-CF70 is also suitable for offshore pipelines thanks to its excellent resistance to salt water.

Repairs can be carried out during ongoing operation and **without time-intensive and cost-intensive pipeline interruptions**.

DEXPAND®-CF70 meets the requirements of **ISO/TS 24817 [2006]** and is a suitable **permanent repair method** for the restoration of defects with a minimum residual wall thickness of 20% — regardless of the wall thickness and strength values.

The independent laboratories of **TÜV Süd (certificate: IS-AN11-MUC/ml-1915)** have verified the fatigue strength.

The DEXPAND®-CF70 **System** comprises the DEXPAND®-CF70 **Putty**, the DEXPAND®-CF70 **Primer** and a high-strength, mechanical reinforcement consisting of DEXPAND®-CF70 **Carbon fabric** and DEXPAND®-CF70 **Wetout**.

In order to reduce air pockets during the application process, the DEXPAND®-CF70 **Compression wrap** is temporarily wrapped around the reinforcement while it hardens.

This unique system guarantees that the weakened pipelines receive long-lasting repairs of the highest quality.

The **system structure** in detail:

The DEXPAND®-CF70 **Putty** is used to easily even out indentations in the pipe surface. The force is transferred directly to all of the DEXPAND®-CF70 components.

The DEXPAND®-CF70 **Primer** is a two-component epoxide primer, which enables the transfer of force between the repair system and the pipeline.

The DEXPAND®-CF70 **Carbon fabric** is a bi-directional carbon fibre fabric, which absorbs the circumferential forces and axial forces of the pipeline.

Carbon fibres are among the strongest industrially produced fibres. Pipeline repair systems that use carbon fibre technology are currently the most durable non-metallic repair systems.

The DEXPAND®-CF70 **Wetout** is a two-component resin. It forms a bond with the layers of mechanical reinforcement. The Wetout ensures that the forces are distributed evenly across the DEXPAND®-CF70 system.

The **BUTYLEN Corrosion Prevention Systems** based on PE/butyl rubber round off the system's corrosion prevention features — ensuring reliable pipeline operation for decades.

Procedure — four steps to success

The pipeline operator determines the data relating to the **damaged pipeline section and the operating conditions** (pressure and temperature). This data provides the **basis** for the use of the DEXPAND®-CF70 System.

DEKOTEC produces and delivers the **tailored, project-specific repair kit** to the pipeline operator.

Based on this data, a DEKOTEC **calculation tool** calculates the **material required** to restore the integrity of the pipeline, particularly with regard to the number of reinforcement layers.

The pipeline operator commissions qualified persons that have been certified in advance by DEKOTEC to apply the DEPAND®-CF70 System **with the strictest adherence to the currently applicable processing guidelines**.

The system has been specifically developed for the repair of pipeline systems. It is not suitable for the repair of leaks. Please refer to the application recommendation available separately.

Typical product properties

Property		Unit	Typical value	Test method
Operating temperature		°C (°F)	to +70 (to +158)	
Nominal thickness per individual fabric layer		mm	approx. 0.55	ISO 21809-3
Percentage of carbon fibres		%	100	
Adhesive strength of **DEXPAND®-CF70 Primer** (+23°C/ +80°C) (+73°F/+176°F)		N/mm^2	approx. 9.5	EN 10290
Pressure resistance of **DEXPAND®-CF70 Putty** after 24 hours/7 days (+60°C/+140°F)		N/mm^2	≥ 40 / 70	EN ISO 604
Shore D hardness after 24 hours/48 hours (at room temperature)			≥ 80/84	ISO 868
E-module in the direction of the pipe circumference		N/mm^2	approx. 6.90 x 104	DIN EN ISO 527
E-module in the axial direction (flow direction)		N/mm^2	approx. 2.10 x 104	DIN EN ISO 527
Tensile strength in the direction of the pipe circumference		N/mm^2	approx. 1.00 x 103	DIN EN ISO 527
Tensile strength in the axial direction (flow direction)		N/mm^2	approx. 2.40 x 102	DIN EN ISO 527
Thermal expansion in the direction of the pipe circumference		mm/mm/°C	approx. -7.28 x 10-6	ISO 11359-2
Thermal expansion in the axial direction (flow direction)		mm/mm/°C	approx. 1.33 x 10-5	ISO 11359-2
Adhesive strength of BUTYLEN-AS40 Plus with HT Primer on DEXPAND®	(+23°C/+73°F)	N/cm	≥ 20	EN 12068
	(+50°C/+122°F)		≥ 3	
Adhesive strength of BUTYLEN-N60 with HT Primer on DEXPAND®	(+23°C/+73°F)	N/cm	≥ 20	EN 12068
	(+50°C/+122°F)		≥ 3	

Ordering Information and Packaging

DEXPAND®-CF70 kits are designed and packaged on a project-specific basis. Therefore, it is not possible to order individual system components.

Storage

When stored in its original, unopened packaging, the DEXPAND®-CF70 kit can be stored for at least 12 months after the manufacturing date. Storage temperature: +5°C to +30°C (+41°F to +86°F). Store in a dry location and do not rest anything against the front of the product.

All advice we provide relates exclusively to products manufactured and supplied by us. Due to the specific liability risks involved in providing potentially inaccurate advice, our advice is binding only if confirmed by us in writing. Our employees are not authorised to provide any form of verbal information, approval or advice that is binding on our company.

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