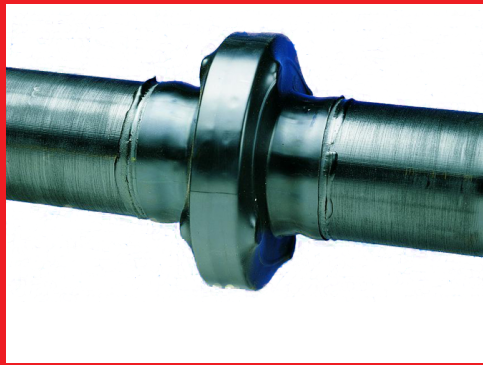




# FCTS/FCWS

## Flange Protection Product

Heat-shrinkable sleeve providing strong moisture-proof seal between flange & pipe



Market	Application	Temperature Range	Performance
Oil and Gas Pipelines Pipeline Rehabilitation Offshore Pipelines	Mechanical and flange couplers.	up to 30°C (86°F)	EN12068

### System Description

**Construction:** Two-layer system

**First layer:**

Visco-elastic sealant.

**Second layer:**

Thick-walled, radiation-cross-linked, high density polyethylene.

FCTS/FCWS are available in a variety of flange sizes. Both products eliminate the need for molding and filling compounds or jellies. The visco-elastic properties of adhesives in the installed product protect against pipe stresses caused by ground movement. The wall thickness of the installed product offers additional mechanical strength in the critical transition area. The design of FCTS/FCWS flange protection products keeps nuts and bolts free from foreign substances (such as mastics), allowing easy re-entry and disassembly when necessary. FCTS/FCWS are installed using standard gas torches. Both sleeves can be placed directly onto the cleaned and prepared pipe and flange surface after preheating. FCTS: the

tubular sleeve is to be slid over the pipe before assembling the flanges. FCWS: the wraparound sleeve.

For pipe sizes above DN150, a heat-activated, pre-attached closure is used to bond the sleeve ends together. In addition, a corrugated cardboard support sheet adds structural support in the transition area, keeping nuts and bolts free from adhesive. During recovery, the adhesive softens and flows forming a tight bond. The bond strength builds up during cool-down, forming a moisture-proof seal that is mechanically strong and resistant to vibration, impact, abrasion and corrosive gases & fluids.

DS-FCTS-FCWS-REV5-AUG12-AARFS-0463

### Product Advantages

- **No primer required**  
No drying time and easy application.
- **Low preheat sensitivity & proven functionality**  
Easy to apply. Saves time.
- **High impact and penetration resistance**  
Tough, but flexible.
- **High shrink force backing**  
Easy & clean installation even at the difficult step-down area.
- **Specially formulated sealant**  
Ensures a strong bond & reliable protection.
- **Sealing adhesive automatically flows and repairs minor**  
"Self-healing effect." Saves time.
- **No special equipment or skills required**  
Makes installation fast and easy. Keeps installation costs low.

### Product Selection Guide

- **Max operating temperature:**  
30°C (86°F)
- **Compatible line coatings**  
PE, PP, FBE, Coal Tar, Tape & Asphalt
- **Min preheat temperature**  
60°C (140°F)
- **Recommended pipe preparation**  
ST3
- **Soil stress restrictions**  
None

### Product Construction

	FCTS (tubular system)	FCWS (patch closure system)
• <b>Backing (as supplied)</b>	0.4-0.6 mm* (0.02-0.23")	0.7 mm (0.02")
• <b>Backing (fully free recovered)</b>	1.8 mm (0.07")	1.4 mm (0.05")
• <b>Adhesive (as supplied)</b>	1.0 mm (0.04")	1.5 mm (0.06")

\* depending on the product size

## Product Properties

Properties	Test Method	Typical Value
<b>Backing</b>		
Tensile strength	ISO R527	3300 psi (22.8 MPa)
Elongation	ISO R527	600%
Water absorption	ISO 62	0.05%
<b>Adhesive</b>		
Softening point	ASTM E-28	92°C (198°F)
Lap shear	EN12068 @ 10 mm (0.4")/min.	8 N/cm <sup>2</sup>
<b>Sleeve</b>		
Peel to steel	EN12068 @ 10 mm (0.4")/min.	9 N/cm

## Ordering Information

**FCTS type products are available as a kit, containing:**

- a support sheet
- a tubular sleeve

### FCTS - DN 150

Pipe diameter	DN80/100, DN150, DN200
Product type	FCTS

**FCWS type products are available as a kit, containing:**

- a support sheet
- a wraparound sleeve, closed by a heat-activated closure (for pipe Ø above DN 150)

### FCWS - DN 300 - 450

Sleeve width	450 mm, 600 mm
Pipe diameter	DN200 - DN 1000
Product type	FCWS

For proper selection of FCTS/FCWS size and kit content, see latest application table AT-FCTS-FCWS.



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