

# DualSeal-III Two-sealant Wraparound Sleeve

A high-performance sleeve specially designed for sealing of joints in pre-insulated pipe systems and for jacket continuation applications.



## Product description

**DUALSEAL-III with PCI (Permanent Change Indicator) sealing of pre-insulated pipe joints**

**Adhesives:** Visco-elastic sealant & high shear-strength, thermoplastic copolymer adhesive.

**Backing:** Radiation cross-linked, high density polyethylene with **PCI** (Permanent Change Indicator).

**Additional:** thermo-indicating paint strips

DualSeal-III is a heat-shrinkable, wraparound sleeve for demanding pre-insulated pipe joint sealing applications and jacket continuation. DualSeal-III is suitable for most standard pipe jackets and for most standard joint types (oversized, aluminium/riveted metal, heat-shrinkable casings, half shells). Here is how it works:

- A visco-elastic sealant in the middle acts as a primary moisture seal.
- A high shear-strength, thermoplastic adhesive at each side of the sleeve provides mechanical anchoring and acts as an additional seal.
- An anti-slip zone keeps the sleeve in place during installation.
- Thermo-indicating paint strips in the area of the thermoplastic adhesive indicate to apply more heat in these specific zones.
- Dimpled backing provides a Permanent Change Indicator for the complete sleeve.

During shrinking, the visco-elastic sealant in the middle easily melts and flows, filling in the transition between the pipe jacket and the oversized casing. The copolymer adhesive seals off and anchors the sleeve at its both edges. The uncoated zone (anti-slip zone) between the sealant and the thermoplastic adhesive bonds directly to the underlying casing surface keeping the sleeve in place. The dimpled backing permanently indicates that the sleeve is completely shrunk and the thermo-indicating paint strips indicate sufficient heating of the thermoplastic adhesive during installation.

## Product features/benefits

- **Permanent Change Indicator (dimpled backing)**  
Ensures correct application heat & allows easy post-heat inspection. Reliable inspectability at any time.
- **Anti-Slip zone**  
Faster installation. No waiting times and consistent preheat temperatures.
- **Enlarged visco-elastic sealant/sleeve width**  
Accommodates wider pipe tolerances. Reduces inventory. Allows for axial movements & outer casing expansion stresses.
- **High shrink force HDPE backing**  
Provides strong, permanent bond & keeps sleeve in place.
- **Can be used for test hole, casing and pipe repair**  
Extremely versatile for special applications.
- **Extremely resistant to mechanical stress and soil movements**  
Field tested & application ready!
- **Survives thermal cycling and is resistant to most common solvents and fluids**  
Copolymer reliability on millions of joints!

## Product selection guide

	DualSeal-III
<b>Max. operating temperature</b>	50°C (122°F), (60°C (140°F) under expansion cushion)
<b>Joint design</b>	Oversized casing, Heat-shrinkable casing, Metal sheet casing, Half shell
<b>Min. preheat temperature</b>	60°C (140°F)
<b>Recommended pipe preparation</b>	Cleaning & Abrading
<b>Soil stress restrictions</b>	None, when used in district heating networks
<b>Pressure testing after installation</b>	No (foaming before installation)
<b>Product recommended for</b>	Main lines, Distribution, Service lines
<b>Performance</b>	> 1000 cycles, 8% sand humidity FFI > 200 cycles, 1.5% sand humidity > 150 cycles, 0.5% sand humidity

## Product thickness

	DualSeal-III
<b>Backing (as supplied)</b>	0.035 in. 0.9 mm
<b>Backing (fully free recovered)</b>	0.045 in. 1.15 mm
<b>Mastic sealant (as supplied)</b>	0.079 in. 2.0 mm
<b>Copolymer adhesive (as supplied)</b>	0.032 in. 0.8 mm

## Product properties: DualSeal-III (1)

Property	Test method	Typical value
<b>Backing</b>		
Tensile strength	ASTM D-638	3300 psi (22.8 MPa)
Elongation	ASTM D-638	600%
Hardness, shore D	ASTM D-2240	55
Shrink force	ASTM D-638, 150°C (302°F)	40 psi
Thermal ageing	ASTM D-3045 150°C (302°F), 21 days	
Followed by elongation	ASTM D-638 23°C (73°F)	> 450%
Weathering (UV) resistance	ASTM D-2565, 30 days	
Followed by elongation	ASTM D-638, 23°C (73°F)	> 450%
Water absorption	ASTM D-570	0.05%

## Product properties: DualSeal-III (2)

Property	Test method	Typical value	
<b>Adhesive</b>		<b>Visco-elastic</b>	<b>Copolymer</b>
Softening point	ASTM E-28	92°C (198°F)	94°C (201°F)
Peel strength (to PE)	EN 12068 @ 10 mm (0.4")/min	9 N/cm	70 N/cm
Shear strength	EN12068	8 N/cm <sup>2</sup> @ 23°C (73°F)	120 N/cm <sup>2</sup> @ 23°C (73°F) 55 N/cm <sup>2</sup> @ 50°C (122°F)
<b>Sleeve</b>			
Soil stress resistance	EN 489		
	0.5% sand humidity	Min 150 cycles	
	1.5% sand humidity	Min 200 cycles	
	8.0% sand humidity	Min 1000 cycles	
External pressure test after soil stress	EN 489, @ 23°C (73°F), 0.7 bar, 24 hrs.	Pass	
Relative outer casing movement temperature cycling test	RUD 6100 * 10 cycles of 10 mm (0.4") @ 23°C (73°F), 0.5 mm (0.02") per min.	Pass	
Low temperature impact	RUD 6100 *, -25°C (-13°F), 1 kg at 1 m height, Ø22 mm, 30 drops	Pass	

\* Berry Plastics CPG technical specification

## Ordering information

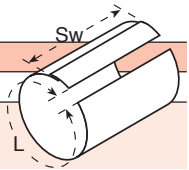
### DualSeal-III type products are available:

- as Uni-sleeve (pre-cut sleeve with pre-attached closure patch)
- as a roll (closure patches to be ordered separately)

#### \* Unisleeve

##### Example: DUALSEAL-III-190-DIA140

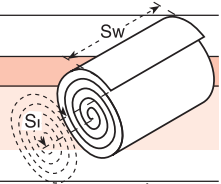
		Standard ordering options
190	Uni-sleeve width in mm (Sw)	190 mm (7.5"), 255 mm (10"), 320 mm (12.75"), 430 mm (17"), 640 mm (25.25"), 770 mm (30.5"), 900 mm (35.5")
DIA140	Casing pipe diameter in mm	Ø90 (3.54") – Ø1200 (47.24")



#### \* Roll form (closure patches to be ordered separately)

##### Example: DUALSEAL-III-190x30M

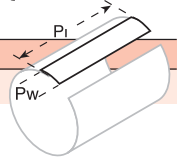
190	Roll width in mm (Sw)	190 mm (7.5"), 255 mm (10"), 320 mm (12.75"), 430 mm (17"), 640 mm (25.25"), 770 mm (30.5"), 900 mm (35.5")
30M	Roll length in meter (Sl)	30 m (100 ft)



#### \* Closure patch

##### Example: WPCP-IV-100x190

100	Closure patch width in mm (Pw)	100 mm (4"), 150 mm (6")
190	Closure patch length in mm (Pl)	190 mm (7.5"), 255 mm (10"), 320 mm (12.75"), 430 mm (17"), 640 mm (25.25"), 770 mm (30.5"), 900 mm (35.5")



Sleeve cut lengths and appropriate closure patch widths depend on the pipe size and product construction, see latest application table AT-DH-JOINT. For proper product installation, see latest installation instruction.

DS-DUALSEALIII-REV-5-0809



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