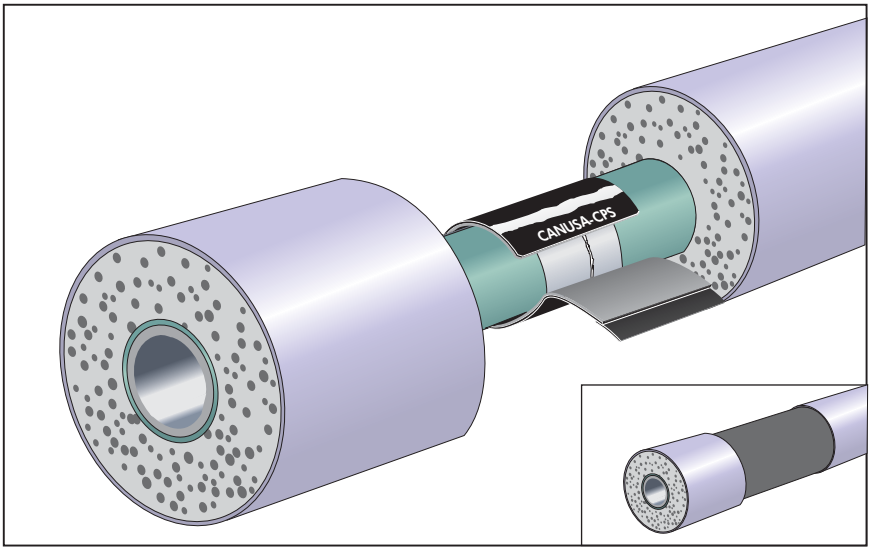
CANUSA-CPS
A SHAWCOR COMPANY

Product Data Sheet

MIS-65 / MIS-100

Wraparound Sleeve for Offshore Heated Infill Systems

Canusa-CPS is a leading manufacturer of specialty pipeline coatings which, for over 30 years, have been used for sealing and corrosion protection of pipeline joints and other substrates. Canusa high performance products are manufactured to the highest quality standards and are available in a number of configurations to accommodate your specific project applications.



Product Description

Corrosion Protection of Girth-Welds under heated infill systems on offshore service environments

MIS-65 and MIS-100 heat-shrinkable sleeves provide superior corrosion protection and effective long-term adhesion to pipelines operating offshore at temperatures up to 100°C (212°F). MIS-65 and MIS-100 sleeves are specifically engineered for use in combination with hot marine mastic pour, polyurethane foam or other infill systems. MIS-65 and MIS-100 sleeves are resistant to the severe conditions of hot mastic pour operations and maintain their full set of anti-corrosion properties. MIS-65 and MIS-100 are fully compatible with a wide range of pipeline coatings, including PP, FBE, PE, Coal Tar and Tape.

Features & Benefits

Flexible & Time Efficient Installation

MIS-65 and MIS-100 sleeves have a patented one-piece construction that incorporates a pre-attached closure seal. This contributes to a rapid and consistent field installation procedure. Without any requirements for the wrapping of multiple layers, the field installation is fast, efficient and in-line with timing requirements of offshore laybarge operations. The crosslinked high-density polyethylene (HDPE) backing is designed to provide a rapid and consistent shrink response when installed with propane torch equipment. MIS-65 and MIS-100 sleeves can be conveniently wrapped and installed in low ambient temperatures due to its excellent low temperature flexibility attributes.

Unique Adhesive Technology

Canusa's unique (open time) adhesive technology allows for lower installation preheat temperatures, superior adhesion to a wide range of mainline pipe coatings and consistent performance in rugged offshore environments. The adhesive has been formulated to provide long-term adhesion and excellent cathodic disbondment resistance properties.

Hot Mastic & Foam Infill Compatibility

MIS-65 and MIS-100 sleeves can be used with hot mastic pour, polyurethane foam or other infill systems to provide effective long-term corrosion protection. MIS-65 and MIS-100 sleeves are resistant to hot mastic pour systems and meet the requirements of the Drum Skin Test for high temperature effects.

Maximize Cost Savings

Precious time is saved in several areas when using MIS-65 and MIS-100 sleeves on laybarge operations in combination with infill systems; lower preheat temperature equates to lower installation times, single wrap configuration eliminates the requirements for muitiple wrapping, and the pre-attached closure seal means less time is used handling, positioning and installing the joint protection materials. The overall system minimizes installation time and labour costs while promoting high production rates.

Applications

- Offshore Pipelines
- Oil & Gas
- Infill Systems
- Reel, J & S Lay
- Girth-Weld Joints

Configurations

- Wrapid Sleeve™
- 2-Layer
- Standard Shrink

Pipe Sizes

55 - 1220 *(2″ - 48″)*

Temperature Range

up to 100°C *(212°F)*

The product selection chart shown here is intended as a guide for standard products.
Consult your Canusa representative for specific projects or unique applications.

MIS-65 / MIS-100

Wraparound Sleeve for Offshore Heated Infill Systems

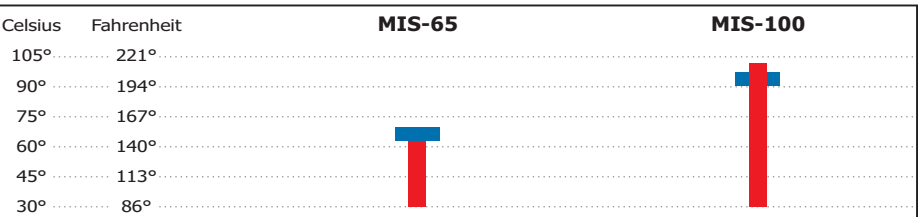
Product Selection Guide

Sleeve Operating Characteristics

Choose your sleeve based on Operating Temperature and Characteristics listed below.

Pipeline Operating Temperature

Pre-heat Temperature



	MIS-65	MIS-100
Minimum Installation Temperature	65°C (150°F)	90°C (194°F)
Maximum Operating Temperature	65°C (149°F)	100°C (212°F)
Resistance to Hot Infill Pour	excellent	excellent
Compatibility to Hot Marine Mastic	excellent	excellent
Compatibility to Polyurethane Foam	excellent	excellent
Main Line Coating Compatibility	Bit, Tape, CTE, FBE, PE	Tape, FBE, PE, PP
Recommended Surface Preparation	St 3 (min) SA 2½(rec)	St 3 (min) SA 2½(rec)

Typical Product Properties

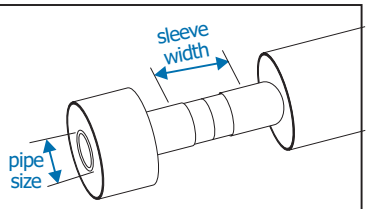
	Test Standard	Unit	MIS-65	MIS-100
Adhesive				
Softening point	ASTM E28	°C (°F)	102 (216)	124 (255)
Lap shear @ 23°C	DIN 30 672	N/cm^2 (psi)	40 (58)	52 (75)
Backing				
Tensile strength	ASTM D638	MPa (psi)	24 (3480)	24 (3480)
Elongation	ASTM D638	%	700	700
Heat Aging - Elongation @ Break	ASTM D638	%	500	500
Heat Shock - 4hrs @ 250°C	ASTM D2671	Visual	pass	pass
Hardness	ASTM D2240	Shore D	52	52
Abrasion resistance	ASTM D1044	mg	30	30
Volume Resistivity	ASTM D257	ohm-cm	10^{18}	10^{18}
Dielectric Strength	ASTM D149	kV/mm	20	20
Sleeve				
Impact	DIN 30 672	--	> 8 J	> 8 J
Indentation Resistance	DIN 30 672	--	no holiday @ 10kV	no holiday @ 10kV
Peel Strength to Steel, PE, PP	ASTM D1000	N/cm (pli)	80 (46)	115 (66)
Peel Strength @ 23°C	DIN 30672	N/cm (pli)	65 (37)	90 (51)
Cathodic Disbondment @ 23°C	ASTM G8	mm rad	8	17
Cathodic Disbondment @ max OT	ASTM G42	mm rad	10	20
Hot Water Immersion	ASTM D870	Visual	pass	pass
Water Absorption	ASTM D570	%	0.05	0.05
Low Temp. Flexibility	ASTM D2671-C	°C (°F)	-14 (7)	-15 (5)
Drum Skin Test	D024 A P50-F SD004	Visual	no melt or sag	no melt or sag
Fully Recovered Thickness		mm (mils)	1.8 (73)	1.8 (73)
Resistance to Infill				
Visual Inspection	pipe 24", mold 26", mastic @ 200°C	Visual	pass, no holidays @ 10kV	pass, no holidays @ 10kV
Change in Peel Strength	ASTM D1000	%	< 10%	< 10%
Change in Tensile Strength	ASTM D638	%	< 15%	< 15%
Change in Elongation	ASTM D638	%	< 15%	< 15%

How To Order:

Dimensions & Ordering Info

MIS-65 315-450 BK

	Standard MIS-65 and MIS-100 Options
Colour	**BK-** Black
Sleeve Width	**300, 450, 600, 700mm** (12, 18, 24, 28")
Pipe Size	**55 - 1220mm** (2 -48")
Maximum Operating Temperature	**MIS-65 -** 65°C (149°F) **MIS-100 -** 100°C (212°F)
Adhesive (thickness as supplied)	**0.88mm** (35 mils)
Backing (thickness as supplied)	**0.63mm** (25mils)
Backing (thickness fully recovered)	**0.80mm** (32mils)
Application	**Heated Infill Systems**



Min. Sleeve Width =
Bare Steel Dimension + **50 mm** (2")
on each side of the pipe joint.

The above represent standard ordering options. Consult your Canusa representative for any unique project requirements or CanusaWrap™ configuration.

CANUSA-CPS
A SHAWCOR COMPANY

www.canusacps.com

Canada
CANUSA-CPS
a division of SHAWCOR LTD.
25 Bethridge Road
Rexdale, Ontario
M9W 1M7,
Canada
Tel: +1 (416) 743-7111
Fax: +1 (416) 743-5927

U.S.A./Latin America
CANUSA-CPS
a division of SHAWCOR INC.
2408 Timberloch Place
Building C-8
The Woodlands, Texas
77380, U.S.A.
Tel: +1 (281) 367-8866
Fax: +1 (281) 367-4304

Europe/Middle East
CANUSA-CPS
a division of Canusa Systems Ltd.
Unit 3, Sterling Park
Gatwick Road
Crawley, West Sussex
England RH10 9QT
Tel: +44 (1293) 541254
Fax: +44 (1293) 541777

Asia/Pacific
CANUSA-CPS
BrederoShaw (S) Pte Ltd
101 Thomson Road
#17-01/02, United Square
Singapore
307591
Tel +65-6732-2355
Fax +65-6732-9073

PDS-A4-MIS-65&100-rev012