CANUSA-CPS

A SHAWCOR COMPANY

Product Data Sheet

CSC-X Joint Casing System

Heat shrinkable casing system for pre-foamed pre-insulated pipe joints.

For more than 45 years, Canusa-CPS has been a leading developer and manufacturer of specialty pipeline coatings for the sealing and corrosion protection of pipeline joints and other substrates. Canusa-CPS high performance products are manufactured to the highest quality standards and are available in a number of configurations to accommodate many specific project applications.

Product Description

The Canusa SuperCase type, CSC-X is a fully heat shrinkable crosslinked joint casing system designed to provide effective sealing and protection of field joints on pre-insulated pipelines. The CSC-X system combines a crosslinked, high density polyethylene (HDPE) outer casing with high strength adhesive and shrink film applied as the first layer on the foam to provide an effective and proven long term double seal of the insulated field joint area.

The system is fully certified to EN 489 requirements, has an extensive track record of performance on insulated pipelines in the District Heating/Cooling and Oil and Gas industries and provides many benefits in terms of performance and installation flexibility as follows.

Features & Benefits

Crosslinked Joint Casing System

The CSC-X fully shrinkable outer casing is constructed with a thick crosslinked HDPE to provide effective long term mechanical protection of the foam layer. The crosslinked HDPE ensures that the system will not be susceptible to shrinking prior to application in hot climates, as can be the case with other non-crosslinked joint casing systems. Crosslinking of the HDPE joint casing also ensures that it will remain tightly conformed to the foam and jacket pipe over the lifetime of the system.

100% Non-Destructive Foamed Joint Inspection

The CSC-X system is applied after the joint cavity is filled with polyurethane foam, either with a removable mold or with pre-formed foam half shells. This allows the foam to be fully inspected prior to casing application ensuring a properly foamed field joint each and every time.

EN 489 Certified Double Seal

The double sealed CSC-X system has been fully tested and certified to EN 489 standards for up to PE 1200 (1200 mm O.D.) casing pipe sizes.

Available in Wraparound Form

The CSC-X system is also available in wrap-around (open-type) form for the repair of insulated pipeline coatings and for other specialized installation requirements. This configuration is supplied with Canusa-CPS field bonding technology, which allows for the open-type CSC-X casing to be wrapped around the pipe and bonded into a tube while on the pipe. This provides an effective solution for the repair of such pipelines or for other requirements where the pipe has already been welded and it is not possible to apply a tubular product onto the pipe.

Optional Canusa-CPS PUF Mold and Half Shells

Canusa-CPS also offers CHS Canusa Half Shells. A full line of preformed polyurethane foam half shells, as well as lightweight wrap-around re-usable foam mold technology is available to allow for efficient and effective foaming of the joints prior to CSC-X casing system installation.

Applications

- Pre-Insulated Pipes
- Pre-Foamed Joints

Configurations

- Tubular
- Wrap Around

Pipe Sizes

- 90 - 1200 mm

Approvals

- EN 489

CSC-X Joint Casing System Features

1. **CSC-X is Installed After Foaming**
   - Allows 100% Inspection of foam
   - Avoids need to drill holes into casing required for foam injection and venting

2. **Shrink Film**
   - Quick and easy to install
   - Provides primary sealing of joint foam (Shrink together with CSC-X Joint Casing)

3. **High Shear and Peel Strength Adhesive**
   - Ensures strong, watertight seal
   - Provides excellent resistance to soil stresses

4. **Crosslinked High Density Polyethylene Material**
   - Crosslinked material provides very fast response and shortens installation time
   - Excellent resistance to mechanical forces such as impact, indentation and other soil stresses
   - Retains its shape and hoop stress over the lifetime of the pipe system
   - Does not pre-shrink when exposed to sunlight heat
   - Excellent resistance to burning

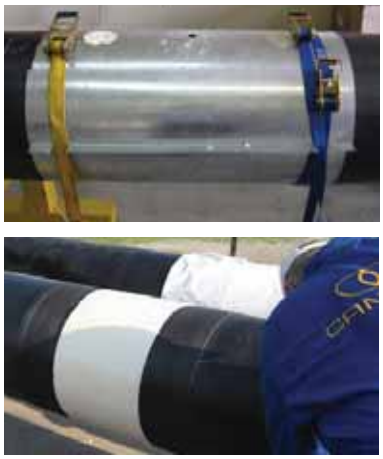
Other Key Advantages/Options

CSC-X Field Bonder

Field Bonding for Repairs and Other Specialized Applications*

- Allows for open-type (non-tubular) CSC-X to be applied to pipe after pipe joints are welded together
- Great for repairs or to reduce shipping costs as CSC-X open-type casings are shipped as flat sheets as opposed to tubes

CSC-X Molded Foam



Molded Foaming*

- Complete size range of Canusa foam molds (CFM) is available
- Canusa provides PU foaming materials
- Molds are light and easy to handle

CSC-X Foam Half-Shells

Pre-Formed Foam Half-Shells*

- Complete size range of Canusa half-shells (CHS) is available
- Eliminates joint foaming in the field

* Please consult with your local Canusa-CPS Representative for specific project requirements.

System Components and Sizing Guidelines

CSC-X System: Ordering Information and Standard Dimensions									
Pipe	CSC-X Casing					Accessory Materials (Kit)			
						Shrink Film		Adhesive Strips	Tension Tape
	Ordering Info	Supplied Size	Recovered Size	Supplied Length[1]	Ordering Info (Kit)	Length	Width[2]	Length	Width
						(mm)	(mm)	(mm)	(mm)
90	CSC-X 90-700 BK/2	105	85	750	CSC-X Kit 90 - 500	395	500	2 x 315	-
110	CSC-X 110-700 BK/2	125	100	750	CSC-X Kit 110 - 500	475	500	2 x 380	-
125	CSC-X 125-750 BK/2	145	115	750	CSC-X Kit 125 - 500	530	500	2 x 430	-
140	CSC-X 140-750 BK/2	160	125	750	CSC-X Kit 145 - 500	590	500	2 x 480	-
160	CSC-X 160-750 BK/2	190	145	750	CSC-X Kit 160 - 500	670	500	2 x 545	-
180	CSC-X 180-750 BK/2	210	160	750	CSC-X Kit 180 - 500	745	500	2 x 610	-
200	CSC-X 200-750 BK/2	230	175	750	CSC-X Kit 200 - 500	825	500	2 x 680	-
225	CSC-X 225-750 BK/2	260	200	750	CSC-X Kit 225 - 500	925	500	2 x 760	-
250	CSC-X 250-750 BK/2	290	220	750	CSC-X Kit 250 - 500	1020	500	2 x 845	-
280	CSC-X 280-750 BK/2	320	240	750	CSC-X Kit 280 - 500	1140	500	2 x 940	-
315	CSC-X 315-750 BK/2	355	265	750	CSC-X Kit 315 - 500	1300	500	2 x 1055	-
355	CSC-X 355-750 BK/3	395	330	750	CSC-X Kit 355 - 500	1455	500	2 x 1185	2 x 5
400	CSC-X 400-750 BK/3	450	375	750	CSC-X Kit 400 - 500	1635	500	2 x 1335	2 x 5
450	CSC-X 450-750 BK/3	500	415	750	CSC-X Kit 450 - 500	1830	500	2 x 1500	2 x 5
500	CSC-X 500-750 BK/3	555	460	750	CSC-X Kit 500 - 500	2025	500	2 x 1665	2 x 5
520	CSC-X 520-750 BK/3	575	475	750	CSC-X Kit 520 - 500	2105	500	2 x 1730	2 x 5
560	CSC-X 560-750 BK/3	615	510	750	CSC-X Kit 560 - 500	2260	500	2 x 1860	2 x 5
630	CSC-X 630-750 BK/3	690	570	750	CSC-X Kit 630 - 500	2535	500	2 x 2090	2 x 5
710	CSC-X 710-750 BK/3	780	645	750	CSC-X Kit 710 - 500	2870	500	2 x 2355	2 x 5
800	CSC-X 800-750 BK/4	875	720	750	CSC-X Kit 800 - 500	3225	500	2 x 2650	1 x 66
860	CSC-X 860-750 BK/4	935	770	750	CSC-X Kit 860 - 500	3460	500	2 x 2850	1 x 66
900	CSC-X 900-750 BK/4	990	815	750	CSC-X Kit 900 - 500	3615	500	2 x 2980	1 x 66
1000	CSC-X 1000-750 BK/4	1090	900	750	CSC-X Kit 1000 - 500	4030	500	2 x 3310	1 x 66
1100	CSC-X 1100-750 BK/4	1195	980	750	CSC-X Kit 1100 - 500	4425	500	2 x 3635	1 x 66
1200	CSC-X 1200-750 BK/4	1300	1065	750	CSC-X Kit 1200 - 500	4815	500	2 x 3965	1 x 66
Special Orders									
XXX	CSC-X XXX-YYY BK/A			YYY - 600, 800	CSC-X Kit XXX - ZZZ		ZZZ - 300, 400, 600		

[1] Optional CSC-X Length: 600mm
[2] Optional Shrink Film Widths include 300mm, 400mm, 600mm

XXX - PE Size (mm)
YYY - Nominal casing Width (mm)

ZZZ - Nominal Shrink Film Width (mm)
A - Nominal Casing Thickness (mm)

Typical Product Properties

		Test Standard	Unit	Shrink Film Adhesive	CSC-X Adhesive
Adhesive	Softening Point	ASTM E28	°C (°F)	115 (239)	80 (176)
	Low Temp. Flexibility	ASTM D2671	°C (°F)	-30 (-22)	-15 (5)
	Lap Shear @ 23°C	DIN 30672	N/cm² (psi)	6	90
	Peel to PE @ 23°C	DIN 30672	N/cm (pli)	16 (9)	75 (43)
CSC-X Backing	Specific gravity	ASTM D792	--	0.93	0.94
	Tensile Strength	ASTM D638	MPa (psi)	20 (2900)	27 (3915)
	Elongation	ASTM D638	%	600	600
	Water Absorption	ASTM D570	%	< 0.05	< 0.05
	Hardness	ASTM D2240	Shore D	46	61
Sleeve	Soil Stress Resistance	EN 489	Pass/Fail	Pass	
	Crosslink Level	STM2009-001	%	55 +/- 10	
	Heat Aging Tensile Strength Retention (150°C, 14 days)	ISO R57	%	95	
	Heat Aging Elongation Retention (150°C, 14 days)	ISO R57	%	95	

How To Order (Dimensions & Ordering Information):

CSC-X Casing and Accessory Materials (Bulk)

CSC-X XXX-YYY BK/A

	CSC-X Casing Ordering Options
Supplied Thickness	**A - Project Specific**
Colour	**BK -** Black
Casing Length	**YYY** - 600, **750** or 800 mm
PE Pipe Size	**XXX** - 90 - 1200+ mm
Configuration	**Fully Shrinkable Canusa SuperCase** - CSC-X

CSC-X Kit XXX-ZZZ

	CSC-X Accessory Materials Kit Ordering Options
Shrink Film Width	**ZZZ -** 300, 400, **500** or 600 mm
PE Pipe Size	**XXX** - 90 - 1200+ mm
Configuration	**Complete Accessory Material Kit**

	CSC-X Accessory Materials Bulk Ordering Options	
Shrink Film Roll	WC-20R-B ZZZ-30 BK	Width ZZZ-300, 400, **500**, 600 mm Roll Length (m) - 30
Adhesive Roll	SA-B 100-15 BK	Roll Length (m) - 15, 120
Tension Tape Roll	TT-B 60-C	Roll Length (m) C - 5, 66

CHS AAA/BBB-CCC

	CSC-X Accessory Materials Kit Ordering Options
Half Shells Length	**CCC -** 300, **450** or 600 mm
PE Pipe Size	**BBB** - 90 - 630 mm
Service Pipe Size	**AAA** - 26.9 - 610 mm
Configuration	**Canusa Half Shells**

CANUSA-CPS
A SHAWCOR COMPANY

www.canusacps.com

Canada
CANUSA-CPS
a division of SHAWCOR LTD.
25 Bethridge Road
Toronto, 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 SYSTEMS
a division of SHAWCOR UK LIMITED
Unit 3, Sterling Park
Gatwick Road
Crawley, West Sussex
England RH10 9QT
Tel: +44 (1293) 541254
Fax: +44 (1293) 541777

Asia/Pacific
CANUSA-CPS
a division of SHAWCOR INC.
#05-31, Blk 52, Frontier
Ubi Avenue 3
Singapore
408867
Tel: +65-6749-8918
Fax: +65-6749-8919

Canusa warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the installation guide when used in compliance with Canusa's written instructions. Since many installation factors are beyond our control, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection therewith. Canusa's liability is stated in the standard terms and conditions of sale. Canusa makes no other warranty either expressed or implied. All information contained in this installation guide is to be used as a guide and is subject to change without notice. This installation guide supersedes all previous installation guides on this product. E&OE

Printed on recycled paper. Recyclable.