

## CSC-X Casing Joint System

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

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

The Fully Shrinkable Canusa SuperCase - CSC-X is a crosslinked heat shrinkable casing system for the joint protection of pre-insulated pipes (i.e. district heating). The CSC-X is a completely shrinkable product to be used in conjunction with pre-foamed (i.e. foaming molds or half-shells) pre-insulated pipe joints. The CSC-X combines a crosslinked, high density polyethylene outer layer with a high shear and peel strength adhesive to provide a high quality, reliable system for protection and sealing of joints. The Casing Shrink Film (WC) is also provided to double seal the joint. Canusa can also provide pre-sized PUR half-shells for any service/jacket pipe combination.

### Features & Benefits

#### The Strongest Seal Available

The Fully Shrinkable Canusa SuperCase - CSC-X has been engineered to provide an effective and reliable seal every time. This is achieved by focusing the full strength of the thick crosslinked shrinkable casing backing directly onto a high shear and peel strength adhesive. Since it is not possible to air pressure test a pre-foamed joint, Canusa provides the Casing Shrink Film (WC) to act as a primary seal directly on the foam. The WC product line is supplied in bulk rolls or cut-to-length sizes. Once installed, the film effectively bonds to the polyethylene jacket pipe and the polyurethane foam to provide primary sealing of



the pipe joint insulation. The CSC-X casing retains its shape over the lifetime of the pre-insulated pipe system. With the combined action of the casing hoop stress and adhesive, the CSC-X along with the Casing Shrink Film, provides excellent resistance to soil stress, temperature cycling effects and pipe movements resulting in a strong and effective long term seal without the use of additional shrink sleeves on the casing ends.

#### Crosslinked HDPE Casing

The Fully Shrinkable Canusa SuperCase - CSC-X is constructed with a thick crosslinked polyethylene backing to provide enhanced mechanical protection of the foam. The CSC-X has 30% recovery to ensure it will totally encompass profile irregularities attributed to the foam. The ends are beveled to reduce the overall casing profile and enhance the resistance to soil stresses.

#### Reduced Installation Time per Joint

The CSC-X is a unique, two-piece, fully shrinkable, tubular casing product. As a result of its design, the extra field step of shrinking additional sleeves on the end of a non-crosslinked casing is eliminated.

#### Assured Performance

The CSC-X withstands stringent soil box tests (over 100 cycles).

### Applications



Pre-Insulated Pipes



Pre-Foamed Joints

### Configurations



Tubular



Multi-Sleeve Kit

### Pipe Sizes



63-630mm

# Features & Benefits CSC-X Sealing System

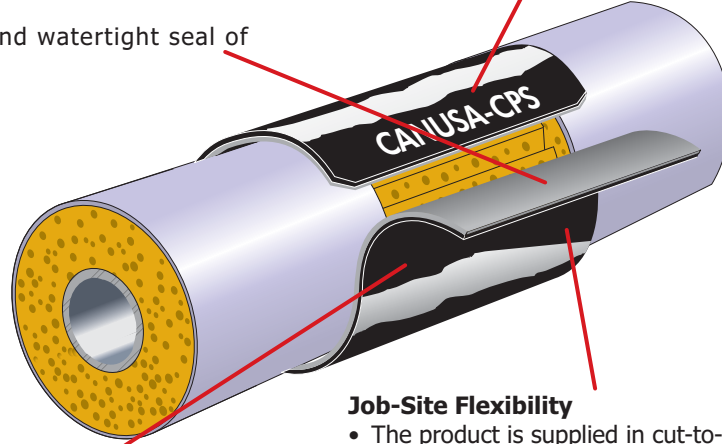
## WC-20R Casing Shrink Film

### **Supersealing Mastic Adhesive**

- Tacky, mastic adhesive bonds to the polyurethane foam and high density polyethylene jacket pipe without pre-heat
- Ensures a long-term, strong and watertight seal of the pre-insulated pipe joint

### **Easy Field Installation**

- Can be installed quickly and easily without any special priming, taping or closure
- No special operator equipment or field service training is required



### **Job-Site Flexibility**

- The product is supplied in cut-to-length pieces with the CSC-X as a joint completion system or in bulk rolls which allow just-time-time customized lengths to protect any pipe size

### **Crosslinked Polyethylene Material**

- Product shrinks quickly with a propane torch and does not burn during shrinking
- The 20% recovery allows the product to seal any profiles that can be attributed to the foam half-shells

## CSC-X Casing

### **Shrink Film**

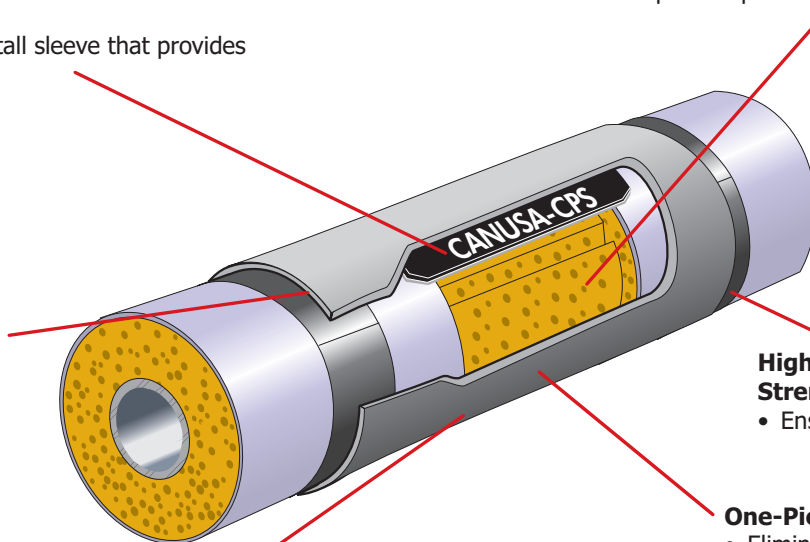
- Quick and easy to install sleeve that provides primary foam sealing

### **Moulded Foaming**

- Specially designed to seal pre-foamed joints
- Canusa can provide pre-sized PUR half-shells

### **Bevelled Ends**

- Reduces profile, providing excellent soil stress resistance



### **High Shear and Peel Strength Adhesive**

- Ensures strong, watertight seal

### **One-Piece Shrinkable Casing**

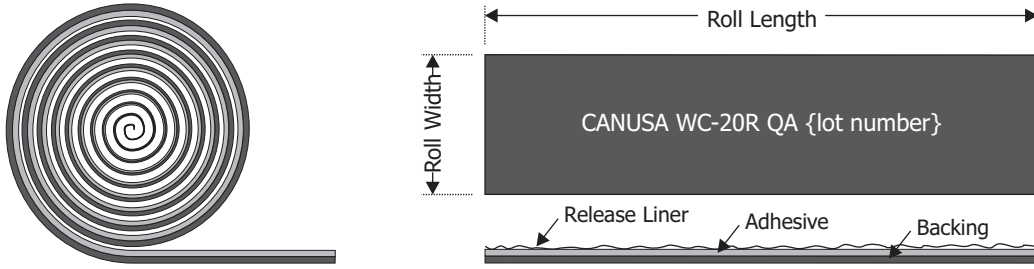
- Eliminates the need to install additional shrink sleeves
- Saves on installation time
- Reduces inventory

### **Crosslinked High Density Polyethylene Material**

- Strong impact resistant material
- Retains its shape and high stress over the lifetime of the pipe system
- Excellent heat resistance to sunlight, results in better field handling and does not pre-shrink
- Does not burn during shrinking

# Dimensions for CSC-X Sealing System

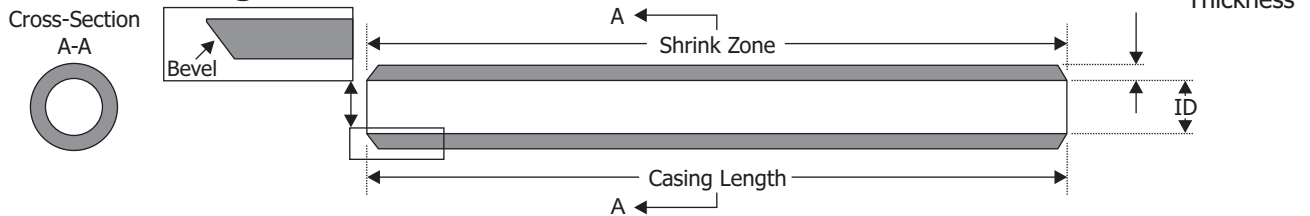
## WC-20R Casing Shrink Film



**Typical Values** (WC-20R-B 305-30 BK through WC-20R-B 605-30 BK - standard widths are bolded)

WC Shrink Film Roll Width (mm) as supplied	WC Shrink Film Roll Length (m) as supplied	Thickness Backing (mm) as supplied	Thickness Backing (mm) fully recovered	Thickness Sleeve (mm) as supplied	Thickness Sleeve (mm) fully recovered	Cutback Maximum (mm)
305	30	0.4	0.5	1.1	1.3	250
<b>405</b>	30	0.4	0.5	1.1	1.3	<b>350</b>
<b>505</b>	30	0.4	0.5	1.1	1.3	<b>450</b>
605	30	0.4	0.5	1.1	1.3	550

## CSC-X Casing



**Typical Values** (CSC-X XXX-YYY BK/ZZZ - standard widths are bolded)

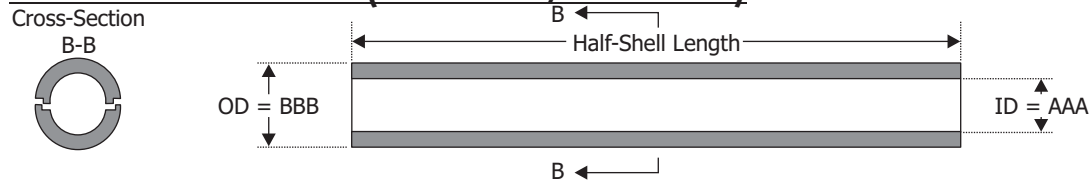
PE Pipe Sizes (mm)	ID CSC (mm) as supplied	ID Shrink Zone (mm) fully recovered	Length Casing (mm)	Thickness Casing (mm) as supplied	Thickness Casing (mm) fully recovered	Length <sup>1</sup> SuperCase Adhesive (mm) required	CSC-X's per SA Bulk Roll (mm)	Cutback Maximum (mm)	Length <sup>2</sup> WC Shrink Film (mm) required	Max. Width <sup>3</sup> WC Shrink Film (mm) required	CSC-X's per WC Bulk Roll (mm)
63	78	56	600, <b>700</b>	2.0	3.2	2 x 225	31	350, <b>450</b>	250	405, 505	115
75	90	66	600, <b>700</b>	2.0	3.1	2 x 265	26	350, <b>450</b>	295	405, 505	97
90	108	81	600, <b>700</b>	2.0	3.2	2 x 315	22	350, <b>450</b>	345	405, 505	83
110	127	99	600, <b>700</b>	2.0	3.3	2 x 380	18	350, <b>450</b>	420	405, 505	68
125	145	114	600, <b>700</b>	2.0	3.4	2 x 430	16	350, <b>450</b>	470	405, 505	60
140	159	125	600, <b>700</b>	2.0	3.5	2 x 480	14	350, <b>450</b>	525	405, 505	54
160	195	145	<b>700</b> , 800	2.0	2.5	2 x 550	12	<b>450</b> , 550	600	405, 505, 605	47
180	215	170	<b>700</b> , 800	2.0	2.5	2 x 610	11	<b>450</b> , 550	670	405, 505, 605	42
200	235	185	<b>700</b> , 800	2.0	2.5	2 x 675	10	<b>450</b> , 550	745	405, 505, 605	38
225	265	200	<b>700</b> , 800	2.0	2.5	2 x 755	9	<b>450</b> , 550	835	405, 505, 605	34
250	285	230	<b>700</b> , 800	2.0	2.5	2 x 835	8	<b>450</b> , 550	925	405, 505, 605	30
280	320	240	<b>700</b> , 800	2.0	2.5	2 x 930	7	<b>450</b> , 550	1030	405, 505, 605	27
315	355	270	<b>700</b> , 800	2.0	2.5	2 x 1045	6	<b>450</b> , 550	1160	405, 505, 605	24
355	405	315	<b>700</b> , 800	2.0	2.5	2 x 1190	6	<b>450</b> , 550	1305	405, 505, 605	21
400	450	340	<b>700</b> , 800	2.0	2.5	2 x 1330	5	<b>450</b> , 550	1465	405, 505, 605	19
450	505	385	<b>700</b> , 800	2.0	2.5	2 x 1490	4	<b>450</b> , 550	1645	405, 505, 605	17
500	560	430	<b>700</b> , 800	2.0	2.5	2 x 1650	4	<b>450</b> , 550	1825	405, 505, 605	15
520	585	460	<b>700</b> , 800	2.0	2.5	2 x 1715	4	<b>450</b> , 550	1900	405, 505, 605	15
560	620	500	<b>700</b> , 800	2.0	2.5	2 x 1835	3	<b>450</b> , 550	2045	405, 505, 605	14
630	680	545	<b>700</b> , 800	2.0	2.5	2 x 2080	3	<b>450</b> , 550	2295	405, 505, 605	12

<sup>1</sup> SuperCase Adhesive is supplied in cut-to-length rolls in the kit with casing. A bulk dimension of Canusa SuperCase Adhesive (SA-B 100-15 BK) is available in 100mm wide by 15m roll lengths.

<sup>2</sup> Canusa Shrink Film (WC) is supplied in a cut-to-length roll in the kit with casing. A bulk dimension of Canusa Shrink Film (WC-20R-B XXX-30 BK) is available in 30m long rolls.

<sup>3</sup> Choose the Canusa Shrink Film (WC) width based on the total cutback length. WC Width = Total Cutback Length + 55mm

## Canusa Half-Shells (CHS AAA/BBB-CCC)



**Typical Values** (CHS AAA/BBB-CCC - standard dimensions are bolded)

ID = Inner Diameter (Service Pipe OD) Canusa Half-Shell (CHS) (mm)	OD = Outer Diameter (Jacket Pipe OD) Canusa Half-Shell (CHS) (mm)	Half-Shell Length Canusa Half-Shell (CHS) (mm)
<b>AAA = 26.9 - 610.0</b>	<b>BBB = 63 - 630</b>	<b>CCC = 300, 450, 600</b>

Canusa can supply various combinations of pipe (AAA) and jacket (BBB) ODs and half-shell lengths (CCC).

# CSC-X Casing Joint System

## Product Selection Guide

PE Pipe Size (mm)	CSC-X CSC-X PE Size-Length Colour/WC Width
75	CSC-X 75-YYY BK/ZZZ
90	CSC-X 90-YYY BK/ZZZ
110	CSC-X 110-YYY BK/ZZZ
125	CSC-X 125-YYY BK/ZZZ
140	CSC-X 140-YYY BK/ZZZ
160	CSC-X 160-YYY BK/ZZZ
180	CSC-X 180-YYY BK/ZZZ
200	CSC-X 200-YYY BK/ZZZ
225	CSC-X 225-YYY BK/ZZZ
250	CSC-X 250-YYY BK/ZZZ
280	CSC-X 280-YYY BK/ZZZ
315	CSC-X 315-YYY BK/ZZZ
355	CSC-X 355-YYY BK/ZZZ
400	CSC-X 400-YYY BK/ZZZ
450	CSC-X 450-YYY BK/ZZZ
500	CSC-X 500-YYY BK/ZZZ
520	CSC-X 520-YYY BK/ZZZ
560	CSC-X 560-YYY BK/ZZZ
630	CSC-X 630-YYY BK/ZZZ
> 630	special inquiry

## Typical Product Properties

Adhesive	Test Standard	Unit	CSC-X Adhesive	WC Adhesive
Softening Point	ASTM E28	°C (°F)	80 (176)	115 (239)
Low Temp. Flexibility	ASTM D2671	°C (°F)	-15 (5)	-35 (-31)
Lap Shear	DIN 30672	N/cm <sup>2</sup> (psi)	90 (130)	6 (9)
Specific Gravity	ASTM D792		0.94	0.93
Tensile Strength	ASTM D638	MPa (psi)	27 (3915)	20 (2900)
Elongation	ASTM D638	%	700	600
Hardness	ASTM D2240	Shore D	61	46
Peel	DIN 30672	N/cm (pli)	85 (49)	16 (9)
Soil Stress Resistance	Canusa	100 cycles	pass	--

## Shrink Film Use

Profile Characteristics

**WC-20R**  
Example of Application

<sup>1</sup> The Casing Shrink Film - WC width is dependent on total cutback length (ensure min. width = Total Cutback Length + 2 x 25mm (2") overlap onto jacket PE ensure max. width = CSC-X length - 195mm)

← Choose your casing size based on the PE Pipe Size and choose the casing length (YYY) and WC shrink film (ZZZ) based on Total Cutback Length. See below for Canusa Half-Shells (CHS).

## How To Order (Dimensions & Ordering Information):

CSC-X Casing	CSC-X XXX-YYY BK/ZZZ	PE 90 - 140 = CSC-X XXX-YYY BK/ZZZ	PE 160 - 630 = CSC-X XXX-YYY BK/ZZZ																			
		<ul style="list-style-type: none"> <li>* Film Width ▶</li> <li>Colour ▶</li> <li>** Casing Length ▶</li> <li>PE Pipe Size ▶</li> <li>Configuration ▶</li> </ul>	<table border="1"> <thead> <tr> <th>Seamless</th> <th>Welded</th> </tr> </thead> <tbody> <tr> <td>ZZZ<sup>1</sup> - 305, 405 or 505 mm</td> <td>ZZZ<sup>1</sup> - 405, 505 or 605 mm</td> </tr> <tr> <td>BK - Black</td> <td>BK - Black</td> </tr> <tr> <td>YYY - 500, 600 or 700 mm</td> <td>YYY - 700 or 800 mm</td> </tr> <tr> <td>XXX - 90 - 140 mm</td> <td>XXX - 160 - 630 mm</td> </tr> </tbody> </table>	Seamless	Welded	ZZZ <sup>1</sup> - 305, 405 or 505 mm	ZZZ <sup>1</sup> - 405, 505 or 605 mm	BK - Black	BK - Black	YYY - 500, 600 or 700 mm	YYY - 700 or 800 mm	XXX - 90 - 140 mm	XXX - 160 - 630 mm	<table border="1"> <thead> <tr> <th>Seamless</th> <th>Welded</th> </tr> </thead> <tbody> <tr> <td>ZZZ<sup>1</sup> - 305, 405 or 505 mm</td> <td>ZZZ<sup>1</sup> - 405, 505 or 605 mm</td> </tr> <tr> <td>BK - Black</td> <td>BK - Black</td> </tr> <tr> <td>YYY - 500, 600 or 700 mm</td> <td>YYY - 700 or 800 mm</td> </tr> <tr> <td>XXX - 90 - 140 mm</td> <td>XXX - 160 - 630 mm</td> </tr> </tbody> </table>	Seamless	Welded	ZZZ <sup>1</sup> - 305, 405 or 505 mm	ZZZ <sup>1</sup> - 405, 505 or 605 mm	BK - Black	BK - Black	YYY - 500, 600 or 700 mm	YYY - 700 or 800 mm
Seamless	Welded																					
ZZZ <sup>1</sup> - 305, 405 or 505 mm	ZZZ <sup>1</sup> - 405, 505 or 605 mm																					
BK - Black	BK - Black																					
YYY - 500, 600 or 700 mm	YYY - 700 or 800 mm																					
XXX - 90 - 140 mm	XXX - 160 - 630 mm																					
Seamless	Welded																					
ZZZ <sup>1</sup> - 305, 405 or 505 mm	ZZZ <sup>1</sup> - 405, 505 or 605 mm																					
BK - Black	BK - Black																					
YYY - 500, 600 or 700 mm	YYY - 700 or 800 mm																					
XXX - 90 - 140 mm	XXX - 160 - 630 mm																					
<b>Fully Shrinkable Canusa SuperCase - CSC-X</b>																						

\* The standard shrink film width is 405 or 505mm (other widths are special orders)

\*\* The standard casing length is 700mm (other widths are special orders)

Standard Ordering Options include: CSC-X with Application Kit - SK-X and cut-to-length Casing Shrink Film - WC (items may be packaged in a sock and carton)

CSC-X Application Kit - SK-X includes: 2 rolls of cut-to-length SuperCase Adhesive [SA] and Tension Tape [TT] (if required)

Accessories	Accessory	Product Designation	Configuration
	CSC-X Kit	SK-X-XXX (25pcs) where XXX = CSC-X Size	XXX sized CSC-X application kit - 25 pieces
	Adhesive Roll	SA-B 100-15 BK (1pc)	100 mm x 1.25 mm x 15 m
	Tension Tape 66m Roll	TT-B 60-66 (10pcs) for CSC-X > 315	60 mm x 66 m - 10 pieces
	Tension Tape 5m Roll	TT-B 60-5 (25pcs) for CSC-X > 315	60 mm x 5 m - 25 pieces

Half-Shell	Accessory	Product Designation	Service Pipe OD	Jacket Pipe OD	Half Shell Length
	Canusa Half-Shell	CHS AAA/BBB-CCC	AAA = 26.9 - 610.0mm	BBB = 63 - 630mm	CCC=300,450,600mm

\* The standard half-shell width is 450mm (other widths are special orders)

WC Casing Shrink Film	WC-20R-B XXX-30 BK	Bulk Roll Ordering Options - See Product Selection Guide for Roll Width Calculation																	
		<ul style="list-style-type: none"> <li>Colour ▶</li> <li>Bulk Roll Length ▶</li> <li>***Bulk Roll Width ▶</li> <li>Bulk Roll Designation ▶</li> <li>Recovery ▶</li> <li>Adhesive (thickness as supplied) ▶</li> <li>Backing (thickness as supplied) ▶</li> <li>Configuration ▶</li> </ul>	<table border="1"> <thead> <tr> <th colspan="2">WC-20R-B XXX-30 BK</th> </tr> </thead> <tbody> <tr> <td>BK - Black</td> <td></td> </tr> <tr> <td>30 m (100ft)</td> <td></td> </tr> <tr> <td>XXX - 305, 405, 505, 605mm (12, 16, 20, 24")</td> <td></td> </tr> <tr> <td>B - Bulk Roll Designation</td> <td></td> </tr> <tr> <td>20R - 20% Recovery</td> <td></td> </tr> <tr> <td>0.7 mm (28 mils)</td> <td></td> </tr> <tr> <td>C - 0.4 mm (16 mils)</td> <td></td> </tr> <tr> <td>W - CanusaWrap™ (no closure required)</td> <td></td> </tr> </tbody> </table>	WC-20R-B XXX-30 BK		BK - Black		30 m (100ft)		XXX - 305, 405, 505, 605mm (12, 16, 20, 24")		B - Bulk Roll Designation		20R - 20% Recovery		0.7 mm (28 mils)		C - 0.4 mm (16 mils)	
WC-20R-B XXX-30 BK																			
BK - Black																			
30 m (100ft)																			
XXX - 305, 405, 505, 605mm (12, 16, 20, 24")																			
B - Bulk Roll Designation																			
20R - 20% Recovery																			
0.7 mm (28 mils)																			
C - 0.4 mm (16 mils)																			
W - CanusaWrap™ (no closure required)																			

\*\*\* The standard shrink film widths are 405 and 505mm (other widths are special orders)

The above represents standard ordering options. Consult your Canusa representative for any unique project requirements.



A SHAWCOR COMPANY

[www.canusacps.com](http://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.  
Darby House  
Bletchingley Road  
Merstham, Surrey  
RH1 3DN, England  
Tel: +44 (1737) 644014  
Fax: +44 (1737) 645800

### Asia/Pacific

CANUSA-CPS  
a division of Shaw Pipeline  
Services (Singapore) PTE Ltd.  
896 Dunearn Road #04-04A  
Sime Darby Centre  
589472, Singapore  
Tel: +65-469-9866  
Fax: +65-469-2632

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