

## CSC Canusa SuperCase

One-piece heat shrinkable casing for foam-in-place pre-insulated pipes

For more than 35 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 - CSC is a heat shrinkable casing for the joint protection of pre-insulated pipes (example: district heating pipes). The CSC combines a crosslinked, high density polyethylene casing with a high shear and peel strength adhesive to provide a high quality, reliable system for protection and sealing of joints. As a result of its design, the ends of the CSC casing preferentially shrink. This innovation makes it perfect for foam-in-place applications.

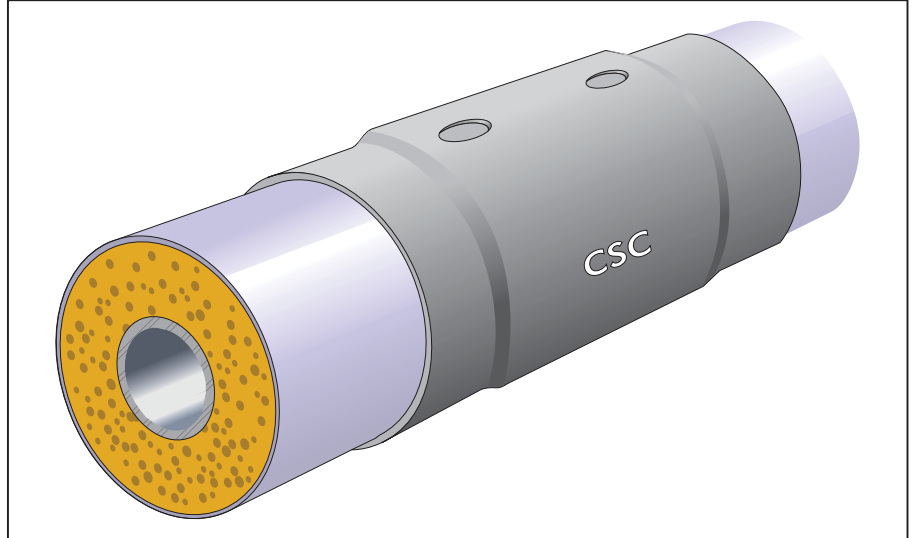
### Features & Benefits

#### The Strongest Seal Available

The Canusa SuperCase - CSC has been engineered to provide an effective and reliable seal every time. This is achieved by focusing the full strength of the crosslinked shrinkable casing directly onto a high shear and peel strength adhesive. The CSC combines the structural integrity of a tubular product and performance of a hot-melt adhesive which results in excellent resistance to soil stress, chemicals, abrasion, mechanical stress, foaming pressures, temperature cycling effects and pipe movements resulting in a strong and effective long term seal. The CSC also uses special non-crosslinked polyethylene sections to aid during foam hole sealing. These innovations allow field personnel to quickly and easily use conventional equipment and standard techniques to permanently seal foaming holes with weldable plugs.

#### Easy to Install

The Canusa SuperCase - CSC can be installed using standard propane torches. As a result of its crosslinked polyethylene backing, the casing can withstand the heat involved with shrinking without suffering damage or



burning. Also, the CSC can be stored and transported without risk of damage, even at high temperatures (up to 80°C). The CSC will retain its shape over the lifetime of the pre-insulated pipe system.

#### Reduces Installation Time per Joint

The Canusa SuperCase - CSC is a crosslinked, tubular, heat-shrinkable product with unique non-crosslinked polyethylene enhancements. As a result of its unique design, the extra field step of shrinking additional sleeves on the ends of a non-crosslinked casing to ensure a proper seal is eliminated. This allows the pipe to be buried directly after foaming, resulting in greatly reduced installation times. Furthermore, the installation can be done more consistently with the assurance of a quality joint every time. To double seal the joint, if required, installation of Canusa Superseal™ heat shrink sleeves over the ends of the casing (instead of air pressure testing) is possible.

#### Assured Performance

The Canusa SuperCase - CSC meets and exceeds the stringent requirements of the European Standard, EN489 for District Heating products. The CSC withstands stringent soil box tests and high pressure and water impermeability tests. The CSC has been fully EN489 tested and approved by FFI (Fernwarme-Forschungs Institut in Hannover, Germany).

### Applications



Pre-Insulated Pipes



Foam-In-Place

### Configurations



Tubular

### Pipe Sizes



63 - 1200 mm

### Approvals



EN 489

# Features & Benefits for CSC 90 - CSC 1200

## 2-Layer PE Design

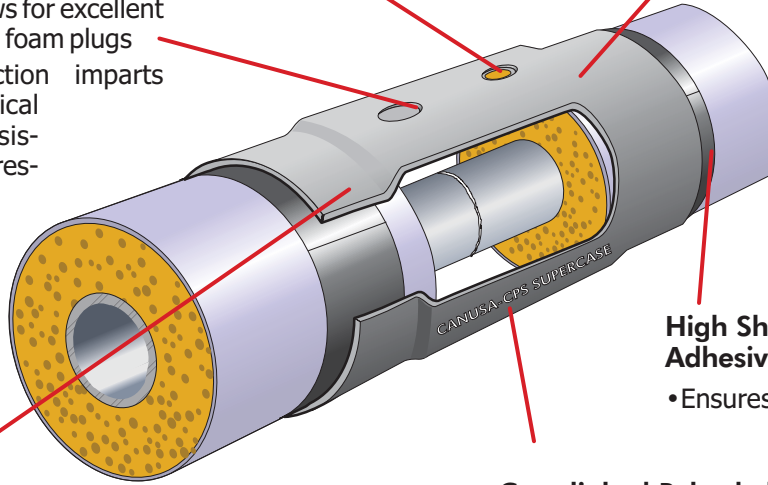
- Non-crosslinked inner sheet in the middle section allows for excellent welding of weldable foam plugs
- Thick middle section imparts excellent mechanical strength and resistance to foam pressures
- Together with optional Canusa Foam Seals (CFS), assures watertight seal

## Foam-In-Place

- Specially designed to allow complete foam fill

## One-Piece Casing with Shrinkable Ends

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



## High Shear and Peel Strength Adhesive

- Ensures strong, watertight seal

## Tapered Ends

- Fast and uniform shrinking
- Preferential shrink zones
- Reduces profile, providing excellent soil stress resistance
- Optimizes heat transfer to sealing adhesive
- Reduces installation time and pre-heat requirements
- Reduces cooling down time for air-pressure test and foaming

## Crosslinked 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

**System Components and Sizing Guidelines (CSC 90-YYY BK through CSC 1200-YYY BK)**

| Pipe                  | CSC Casing             |                         |   |                     |                   |                         | Accessory Materials (Kit) |             |                    |            |
|-----------------------|------------------------|-------------------------|---|---------------------|-------------------|-------------------------|---------------------------|-------------|--------------------|------------|
|                       | Ordering Info (Casing) | Supplied Size<br>Ø (mm) | Recovered Size (Shrink Zones)<br>Ø (mm) | Supplied Thickness  |                   | Supplied Length<br>(mm) | Ordering Info (Kit)       | Adhesive    | Spacers            | TT         |
|                       |                        |                         |   | Middle Section (mm) | Shrink Zones (mm) |                         |                           | Length (mm) | Size (S, M, L, XL) | Length (m) |
| 90                    | CSC 90-750 BK          | 103                     | 87                                      | 4                   | 2                 | 700                     | CSC Kit 90                | 2 x 315     | 2 x S              | --         |
| 110                   | CSC 110-750 BK         | 125                     | 105                                     | 4                   | 2                 | 700                     | CSC Kit 110               | 2 x 380     | 2 x S              | --         |
| 125                   | CSC 125-750 BK         | 140                     | 119                                     | 4                   | 2                 | 700                     | CSC Kit 125               | 2 x 430     | 2 x S              | --         |
| 140                   | CSC 140-750 BK         | 156                     | 134                                     | 4                   | 2                 | 700                     | CSC Kit 140               | 2 x 480     | 2 x S              | --         |
| 160                   | CSC 160-750 BK         | 178                     | 155                                     | 4                   | 2                 | 750                     | CSC Kit 160               | 2 x 545     | 4 x S              | --         |
| 180                   | CSC 180-750 BK         | 198                     | 175                                     | 4                   | 2                 | 750                     | CSC Kit 180               | 2 x 610     | 4 x S              | --         |
| 200                   | CSC 200-750 BK         | 218                     | 190                                     | 4                   | 2                 | 750                     | CSC Kit 200               | 2 x 680     | 4 x S              | --         |
| 225                   | CSC 225-750 BK         | 244                     | 215                                     | 4                   | 2                 | 750                     | CSC Kit 225               | 2 x 760     | 4 x M              | --         |
| 250                   | CSC 250-750 BK         | 270                     | 235                                     | 4                   | 2                 | 750                     | CSC Kit 250               | 2 x 845     | 4 x M              | --         |
| 280                   | CSC 280-750 BK         | 300                     | 260                                     | 4                   | 2                 | 750                     | CSC Kit 280               | 2 x 940     | 4 x M              | --         |
| 315                   | CSC 315-750 BK         | 335                     | 285                                     | 4                   | 2                 | 750                     | CSC Kit 315               | 2 x 1055    | 4 x L              | --         |
| 355                   | CSC 355-750 BK         | 378                     | 320                                     | 6                   | 2                 | 750                     | CSC Kit 355               | 2 x 1185    | 4 x L              | 2 x 5m     |
| 400                   | CSC 400-750 BK         | 425                     | 360                                     | 6                   | 4                 | 750                     | CSC Kit 400               | 2 x 1335    | 4 x L              | 2 x 5m     |
| 450                   | CSC 450-750 BK         | 478                     | 405                                     | 6                   | 4                 | 750                     | CSC Kit 450               | 2 x 1500    | 4 x L              | 2 x 5m     |
| 500                   | CSC 500-750 BK         | 530                     | 440                                     | 6                   | 4                 | 750                     | CSC Kit 500               | 2 x 1665    | 4 x L              | 2 x 5m     |
| 520                   | CSC 520-750 BK         | 551                     | 460                                     | 6                   | 4                 | 750                     | CSC Kit 520               | 2 x 1730    | 4 x L              | 2 x 5m     |
| 560                   | CSC 560-750 BK         | 592                     | 490                                     | 6                   | 4                 | 750                     | CSC Kit 560               | 2 x 1860    | 4 x L              | 2 x 5m     |
| 630                   | CSC 630-750 BK         | 664                     | 550                                     | 8                   | 4                 | 750                     | CSC Kit 630               | 2 x 2090    | 4 x L              | 2 x 5m     |
| 710                   | CSC 710-750 BK         | 745                     | 610                                     | 8                   | 4                 | 750                     | CSC Kit 710               | 2 x 2355    | 4 x L              | 2 x 5m     |
| 800                   | CSC 800-750 BK         | 839                     | 680                                     | 10                  | 4                 | 750                     | CSC Kit 800               | 2 x 2650    | 4 x L              | 2 x 5m     |
| 860                   | CSC 860-750 BK         | 900                     | 730                                     | 10                  | 4                 | 750                     | CSC Kit 860               | 2 x 2850    | 4 x L              | 2 x 5m     |
| 900                   | CSC 900-750 BK         | 940                     | 760                                     | 12                  | 4                 | 750                     | CSC Kit 900               | 2 x 2980    | 4 x L              | 2 x 5m     |
| 1000                  | CSC 1000-750 BK        | 1040                    | 840                                     | 12                  | 4                 | 750                     | CSC Kit 1000              | 2 x 3310    | 4 x L              | 4 x 5m     |
| 1100                  | CSC 1100-750 BK        | 1140                    | 920                                     | 12                  | 4                 | 750                     | CSC Kit 1100              | 2 x 3635    | 4 x L              | 4 x 5m     |
| 1200                  | CSC 1200-750 BK        | 1244                    | 1000                                    | 12                  | 4                 | 750                     | CSC Kit 1200              | 2 x 3965    | 4 x L              | 4 x 5m     |
| <b>Special Orders</b> |                        |                         |   |                     |                   |                         |                           |             |                    |            |
| XXX                   | CSC XXX-YYY BK         |                         |   |                     |                   | YYY - 600, 700          | CSC Kit XXX               |             |                    |            |

# Features & Benefits for CSC 63 - CSC 180 (Alternate Design)

## Foam-In-Place

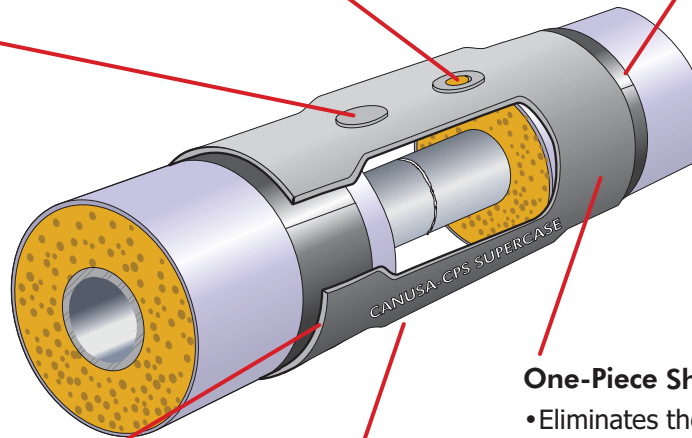
- Specially designed to allow complete foam fill

## High Shear and Peel Strength Adhesive

- Ensures strong, watertight seal

## Weldable Puck

- Non-crosslinked PE welding puck allows for excellent welding of weldable foam plugs.



## One-Piece Shrinkable Casing

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

## Bevelled Ends

- Reduces profile, providing excellent soil stress resistance

## 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

**System Components and Sizing Guidelines (CSC 63-YYY BK through CSC 180-YYY BK)**

| Pipe           | CSC Casing             |                         |   |                     |                   |                         | Accessory Materials (Kit) |             |                    |            |
|----------------|------------------------|-------------------------|---|---------------------|-------------------|-------------------------|---------------------------|-------------|--------------------|------------|
|                | Ordering Info (Casing) | Supplied Size<br>Ø (mm) | Recovered Size (Shrink Zones)<br>Ø (mm) | Supplied Thickness  |                   | Supplied Length<br>(mm) | Ordering Info (Kit)       | Adhesive    | Spacers            | TT         |
|                |                        |                         |   | Middle Section (mm) | Shrink Zones (mm) |                         |                           | Length (mm) | Size (S, M, L, XL) | Length (m) |
| 63             | CSC 63-750 BK          | 77                      | 63                                      | 2                   | 2                 | 700                     | CSC Kit 63                | 2 x 225     | 2 x S              | --         |
| 75             | CSC 75-750 BK          | 89                      | 75                                      | 2                   | 2                 | 700                     | CSC Kit 75                | 2 x 265     | 2 x S              | --         |
| 90             | CSC 90-750 BK          | 103                     | 87                                      | 2                   | 2                 | 700                     | CSC Kit 90                | 2 x 315     | 2 x S              | --         |
| 110            | CSC 110-750 BK         | 125                     | 105                                     | 2                   | 2                 | 700                     | CSC Kit 110               | 2 x 380     | 2 x S              | --         |
| 125            | CSC 125-750 BK         | 140                     | 119                                     | 2                   | 2                 | 700                     | CSC Kit 125               | 2 x 430     | 2 x S              | --         |
| 140            | CSC 140-750 BK         | 156                     | 134                                     | 2                   | 2                 | 700                     | CSC Kit 140               | 2 x 480     | 2 x S              | --         |
| 160            | CSC 160-750 BK         | 178                     | 155                                     | 2                   | 2                 | 700                     | CSC Kit 160               | 2 x 545     | 4 x S              | --         |
| 180            | CSC 180-750 BK         | 198                     | 175                                     | 2                   | 2                 | 700                     | CSC Kit 180               | 2 x 610     | 4 x S              | --         |
| Special Orders |                        |                         |   |                     |                   |                         |                           |             |                    |            |
| XXX            | CSC XXX-YYY BK         |                         |   |                     |                   | YYY - 600, 700          | CSC Kit XXX               |             |                    |            |

XXX = PE Size (mm)    YYY = Nominal Casing Width (mm)

\* CSC (Alternate Design) is functionally equivalent to the standard CSC design.

# Canusa SuperCase

## Typical Product Properties

|                 | Test Standard  | Unit        | Typical Result    |           |
|-----------------|--|-------------|-------------------|-----------|
| <b>Adhesive</b> | Softening Point  | ASTM E28    | °C (°F)           | 80 (176)  |
|                 | Low Temperature Flexibility                            | ASTM D2671  | °C (°F)           | -15 (5)   |
|                 | Lap Shear @ 23°C                                       | DIN 30672   | N/cm <sup>2</sup> | 90        |
|                 | Peel to PE @ 23°C                                      | DIN 30672   | N/cm (pli)        | 75 (43)   |
| <b>Backing</b>  | Specific Gravity                                       | ASTM D792   | --                | 0.94      |
|                 | Tensile Strength                                       | ASTM D638   | Mpa               | 27        |
|                 | Elongation   | ASTM D638   | %                 | 600       |
|                 | Water Absorption                                       | ASTM D570   | %                 | < 0.05    |
|                 | Hardness   | ASTM D2240  | Shore D           | 61        |
| <b>Casing</b>   | Soil Stress Resistance                                 | EN 489:2009 | 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        |

\* When peeled with thin heat-shrinkable sleeve backing, peel testing of thick casing material is not practical, nor is it recommended.

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

|                    |   |                              |  |  |  |  |
|--------------------|---|------------------------------|--|--|--|--|
| <b>Casing</b>      | <b>CSC XXX-YYY BK</b>                                     |                              |  | CSC Casing Ordering Options                  |  |  |
|                    |   | Colour ▶                     |  | BK - Black                                   |  |  |
|                    |   | Casing Length ▶              |  | YYY - 750 mm                                 |  |  |
|                    |   | PE Pipe Size ▶               |  | XXX - 90 - 1200+ mm                          |  |  |
|                    | Configuration ▶   |                              | CSC - Canusa SuperCase Foam in Place Joint Casing System |  |  |  |
| <b>Accessories</b> | <b>CSC Kit XXX</b>  |                              |  | CSC Accessory Materials Kit Ordering Options |  |  |
|                    |   | PE Pipe Size ▶               |  | XXX - 90 - 1200+ mm                          |  |  |
|                    |   | Configuration ▶              |  | CSC Kit - Accessory Kit                      |  |  |
|                    | Accessory Materials and Equipment - Bulk Ordering Options |                              |  |  |  |  |
|                    |   | Adhesive Rolls ▶             | SA-B 100-ZZ BK   | Roll Length (m) ZZ - 15, 120                 |  |  |
|                    |   | Foam Hole Ventilation Plug ▶ | FHP-Vent 20  | 50 pieces                                    |  |  |
|                    |   | Foam Hole Weldable Plug ▶    | FHP-Weld 35  | 50 pieces                                    |  |  |
|                    |   | Tension Tape Roll ▶          | TT-B 60-C  | Roll Length (m) C-5, 66                      |  |  |
|                    |   | Plug Welder ▶                | Electrically powered plug welder kit                     |  |  |  |
|                    |   | Foam Seal ▶                  | CFS  | 50 pieces                                    |  |  |
|                    | Spacers ▶   | Small (mm) 25 x 13 x 6       | Medium (mm) 38 x 19 x 10                                 | Large (mm) 50 x 25 x 15                      |  |  |

\* Please consult with your local Canusa-CPS representative for special project requirements.