

# Heat Shrink Technology



# DSG-Canusa – A Global Success

DSG-Canusa provides electrical and mechanical insulation solutions for the Automotive, Electrical/Utility, Electronics and Communications markets. Founded in 1972, DSG-Canusa has emerged to become one of the largest heat shrink manufacturers in the world.

## Manufacturing & Distribution

- Germany
- Poland
- Canada
- United States
- United Kingdom

## Research & Development

- Germany
- Canada



## Quality Assurance / Environmental Protection

DSG are committed to quality so all products are manufactured in accordance with DIN EN ISO 9001\_2000, ISO-TS 16949\_2002, DIN EN ISO 14001. Copies of our certification are available upon request.



# Unique Solutions for Customer Applications

DSG-Canusa is the complete source for heat shrink products and related technology. Our product offering includes polyolefin, fluoropolymer, elastomer and PVC heat shrink based materials in thin, medium and heavy wall tubing as well as heat shrink accessories and equipment. New products are continuously being developed to meet industry requirements. Moreover, a commitment to develop unique solutions for customer applications has earned DSG-Canusa a reputation for excellence in customer satisfaction.

**There's no end to what we cover**

# Heat Shrink Technology EMAR Catalogue

## Heat Shrink Tubing Products

Single Wall Products  
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 Market Specific Products

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## Single Wall Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE °C		TYPICAL APPLICATIONS	SHRINK TEMPERATURE °C	FLAME RATING	SPECIFICATIONS	SIZES mm	FEATURES	PAGE
			MAX	MIN							
DERAY®-HB	2:1	Economical, General Purpose, Flexible Polyolefin	105	-55	Abrasion protection, insulation of electrical or mechanical components	125	Non Flame Retardant	-	1,2 - 50,8	Flexible, Halogen Free alternative to PVC	14-15
DERAY®-LSB	2:1	Very Low Shrink Temperature, Flexible Polyolefin	105	-45	Thermally sensitive electronic components, High volume production lines	70	Non Flame Retardant	-	3,2 - 25,4	Low 80°C shrink temperature	16-17
DERAY®-H	2:1	Multipurpose tubing, Flexible Polyolefin	135	-55	Cable insulating, marking and bundling, mechanical protection	110	Flame Retardant (except clear)	UL, CSA	1,2 - 50,8	Flexible, suitable for various applications	18-19
DERAY®-I	2:1	Multipurpose tubing, Flexible Polyolefin	135	-55	Insulation, corrosion and mechanical protection, bundling, marking, bending protection, strain relief	90	Flame Retardant (except clear)	UL, CSA, MIL, VG, DEF STAN, VDE	1,2 - 101,6	Flexible, Flame Retardant, multiple specifications, 135°C operating temp.	20-21
DERAY®-ITW	2:1	Ultra Thin Wall, Very Flexible Polyolefin	135	-55	Insulation & protection of splices in very flexible cables, High volume production lines	90	Clear: Non Flame Retardant, Black: Flame Retardant	-	2,5 - 8,1	Very flexible, Ultra Thin	22-23
DERAY®-I 3000	3:1	High Shrink Ratio, Flexible Polyolefin	135	-55	Insulation & protection of objects with large diameter variations	90	Flame Retardant (except clear)	UL, MIL, VG, DEF STAN, VDE	1,6 - 39,0	Flexible, High shrink ratio	24-25
DERAY®-IGY	3:1	Striped Green & Yellow, High Shrink Ratio, Flexible Polyolefin	135	-55	Insulation & marking of earthing conductors	90	Flame Retardant	DEF STAN	3,2 - 39,0	Flexible, High shrink ratio	26-27
CZT	2:1	Zero Halogen, Flexible Polyolefin	105	-40	Low smoke generation for use in confined areas such as underground transportation systems, military & aerospace applications	115	Flame Retardant	DEF STAN	1,6 - 101,6	Zero Halogen	28-29
CPX876	2:1	High Performance, Flexible Polyolefin	135	-55	Industrial, military, aerospace & automotive applications requiring low recovery temperature & high flame retardancy	110	Highly Flame Retardant	UL-VW1, CSA, MIL, DEF STAN	1,2 - 101,6	Highly Flame Retardant, Multiple Spec. Approvals	30-31

## Dual Wall Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE °C		TYPICAL APPLICATIONS	SHRINK TEMPERATURE °C	FLAME RATING	SPECIFICATIONS	SIZES mm	FEATURES	PAGE
			MAX	MIN							
DERAY®-IAKT 3:1	3:1	High Shrink Ratio, Flexible Polyolefin, adhesive-lined	110*	-55	Ideal for effective moisture-resistant insulation of electrical connections, splices and other components	95	Black: Flame Retardant, Clear: Non Flame Retardant Adhesive: Non Flame Retardant	-	3,0 - 40,0	Adhesive bonds to plastics, rubber, neoprene, steel and polyethylene	34-355
DERAY®-IAKT 4:1	4:1	Very High Shrink Ratio, Flexible Polyolefin, adhesive-lined	110*	-55	Ideal for effective moisture-resistant insulation of electrical connections, splices and other components, very suitable for objects with large diameter variation	95	Black: Flame Retardant, Clear: Non Flame Retardant Adhesive: Non Flame Retardant	-	4,0 - 52,0	Ideal for coverage of irregularly shaped connectors and components	34-35
CPA 300	3:1	High Spec. Flexible Polyolefin, adhesive-lined	125	-55	Ideal for applications where both exceptional flame retardancy and environmental sealing capabilities are required	120	Flame Retardant	UL, MIL, CSA	3,2 - 39,9	Superior sealing against water, moisture or other contaminants	36-37
DERAY®-IHKT	4:1	Very High Shrink Ratio, Flexible Polyolefin, adhesive-lined	125*	-55	Offers reliable protection against short-circuits or malfunctions in electrical assembly components and connections	100	Black: Flame Retardant Adhesive: Non Flame Retardant	VG, VDE	4,0 - 52,0	Specially designed polyamide adhesive protects components at higher temperatures	38-39
CBK	4:1	Very High Shrink Ratio, Semi-rigid Polyolefin, adhesive-lined	125	-55	Designed to insulate and environmentally protect electronic wire harness assemblies	120	Black: Flame Retardant Adhesive: Non Flame Retardant	-	6,0 - 18,0	Easy assembly over large or irregularly shaped connectors, special adhesive flows readily on installation to fill voids	40-41

\*Outer Jacket

## Medium/Heavy Wall Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE °C		TYPICAL APPLICATIONS	SHRINK TEMPERATURE °C	FLAME RATING	SPECIFICATIONS	SIZES mm	FEATURES	PAGE
			MAX	MIN							
CFM	3:1	Medium Wall Polyolefin, optionally adhesive-lined	110	-55	Splice, Termination & Cable Insulation, Mechanical Protection, Environmental Sealing	120	Non Flame Retardant	-	10,2 - 228,6	High resistance against abrasion, corrosion, optional adhesive lined or sealant	44-45
CFW	3:1	Heavy Wall Polyolefin, optionally adhesive-lined	110	-55	Splice, Termination & Cable Applications including Direct Burial, URD and Submersible	120	Non Flame Retardant	UL, CSA	8,9 - 119,9	Rated for 600 V/ 90°C service, excellent insulating & mechanical durability	46-47
CFTV	3:1	Flexible Polyolefin, adhesive-lined, with heat indicating lines	110	-55	Cable TV & Communication Industries, waterproof sealing & mechanical protection for cable connections	120	Non Flame Retardant	-	10,2 - 69,8	Excellent sealing & mechanical protection, easy installation & easy reutilisation of the connection	48-49
CFHR	6:1	Very High Shrink Ratio, Flexible Polyolefin	110	-55	Support & Insulation of Military, Electronic & Transportation Wiring Applications	120	Non Flame Retardant	-	19,0 - 119,4	High ratio to accommodate extreme dimensional differences in connector & wire assemblies	50-51

## Non Polyolefin Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE °C		TYPICAL APPLICATIONS	SHRINK TEMPERATURE °C	FLAME RATING	SPECIFICATIONS	SIZES mm	FEATURES	PAGE
			MAX	MIN							
CVN7	2:1	Thin Wall Flexible PVC	105	-30	Insulation of busbars, connectors, terminals, protection against mechanical stress and corrosion	100	Flame Retardant	UL, CSA, MIL	2,4 - 101,6	Favourable relation of price and quality	54-55
DERAY®-KY 175	2:1	Modified semi rigid PVDF	175	-55	Excellently suitable for applications where very high chemical and abrasion resistance are needed	175	Flame Retardant	UL-VW1, CSA, MIL, VG, DEF STAN, VDE, PAN	1,2 - 25,4	Highly flame retardant, High withstand to abrasion and cut-through	56-57
DERAY®-KYF 190	2:1	Modified flexible PVDF	190	-55	High flexible and abrasion resistance requiring applications. Very well applicable for chemical resistance or high operating temperature requirements	175	Flame Retardant	UL-VW1	1,2 - 12,7	Mechanically resistant, high operating temperature, very flexible	58-59
DERAY®-V 25	2:1	Modified very flexible Elastomer	150	-75	Developed for rugged demands with view to high fuel, chemical and insulation requirements	180	Flame Retardant	MIL, VG, DEF STAN, VDE, PAN	3,2 - 76,0	Diesel, oil, hydraulic fluid resistant	60-61
DERAY®-V 25 TW	2:1	Modified very flexible thin walled Elastomer	150	-75	Mechanical, chemical, temperature protection of sensitive components in combination with extreme flexibility	170	Flame Retardant	VG, VDE	2,4 - 38,0	Diesel, oil, hydraulic fluid resistant, very thinwalled	62-63
DERAY®-VT 220	2:1	Flexible Viton®	220	-55	Designed for applications where highest temperature resistance is required	175	Flame Retardant	MIL, VG, DEF STAN, VDE, PAN	3,2 - 50,8	Severe chemical & thermal environments, high resistance to impact & abrasion	64-65
DERAY®-PTFE 4:1	4:1	Semi rigid Teflon®	260	-65	Extremely suitable for insulating and protecting objects from thermal load and chemical influence	350	Flame Retardant	-	1,98 - 31,75	Resistant to extremes of heat, shock, chemicals, abrasion	66-67
DERAY®-PTFE AWG	2:1	Semi rigid Teflon®	260	-65	Fits to the same kinds applications as PTFE 4:1, but the diameters are related to the AWG	350	Flame Retardant	-	AWG30 (0,86mm) - AWG0 (11,94mm)	Resistant to extremes of heat, shock, chemicals, abrasion	66-67

## Market Specific Products

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE °C		TYPICAL APPLICATIONS	SHRINK TEMPERATURE °C	FLAME RATING	SPECIFICATIONS	SIZES mm	FEATURES	PAGE
			MAX	MIN							
CCAP-RL	3:1	PE End Caps	100	-55	Sealing of cables against moisture	120	Non Flame Retardant	-	10,2 - 119,4 (Diameter)	Superior resistance to weathering, moisture contamination and adverse environmental conditions	70-71
CCB	various	Cable breakouts PE	100	-55	Sealing of cable & conduit breakouts	135	Non Flame Retardant	-	33,0 - 125,0 (Diameter)	Shrink ratio accommodates a wide range of cables, also available as anti-track breakouts and conductive breakouts	72-73
CCBA & CCB-Con	various	Anti-track medium voltage breakouts & Conductive breakouts	100	-55	Sealing of cable & conduit breakouts	135	Non Flame Retardant	-	60,0 - 125,0 (Diameter)	Adhesive liner provides complete protection and insulation	74-75
CEC	various	PE End Caps	100	-55	Sealing of cables against moisture	120	Non Flame Retardant	-	15,0 - 148,0 (Diameter)	Unaffected by ultra-violet light, good chemical and solvent resistance	76-77
CFSP	3:1	Fiber Optic Splice Protection + Support Sleeve	60	-20	Protection of optical fiber splices	90	Non Flame Retardant	-	23,0 - 61,0 (Length)	Deburred stainless steel reinforcing member ends. Preventing contact between fibre and backbone	78-79
CGEL 596/711	-	Gel filled PE Drop Cable Splice Enclosure	80	-40	Waterproof coaxial cable joint	-	-	-	25,4 - 30,48 (Diameter)	Tough outer shell, fully re-enterable gel polymer for complete waterproof protection	80-81
CBTM	3:1	Medium wall anti-track tube	125	-40	Insulation of medium voltage busbars up to 36 kV	120	Flame Retardant	UL	19,0 - 228,6 (Diameter)	Specifically designed anti track tubing for medium voltage applications	82-83
CBTH	3:1	Heavy wall anti-track tube	125	-40	Insulation of medium voltage busbars up to 36 kV	120	Flame Retardant	UL	27,9 - 167,6 (Diameter)	Specifically designed anti track tubing for medium voltage applications	84-85
KSF	>2:1	Heavy wall anti-track tube	135	-40	Insulation of medium voltage busbars up to 36 kV	125	Flame Retardant	-	19,0 - 100,0 (Diameter)	Specifically designed anti track tubing for medium voltage applications	86-87
CNTT	>2:1	Medium wall anti-track tube	125	-55	Insulation of medium voltage joints & terminations up to 36kV, in- and outdoor	120	Flame Retardant	-	33,0 - 70,0 (Diameter)	Exceptional electrical and weathering properties	88-89
CRDW	various	Railed Wraparound Sleeve	70	-30	Cable jacket repair & splicing applications	120	Non Flame Retardant	-	43,0 - 200,0 (Diameter)	Sleeve is closed with a flexible stainless steel locking channel	90-91
CRLS	3:1	RAIL-LESS® Repair Sleeve	110	-55	Cable repair & splicing applications where tubing cannot be used	120	Non Flame Retardant	-	30,0 - 171,0 (Diameter)	RAIL-LESS® Wraparound design for fast installation	92-93
LV Kits	-	Individually to combine	-	-	Joining multi-core, polymeric insulated energy cables in the low voltage range.	-	-	-	-	Quick, simple installation, Exceptionally good electrical insulation	94-95
Signal Kits	-	Individually to combine	-	-	Particularly suitable for connecting screened signal cables in industry, rail and mass transit	-	-	-	-	Good mechanical load-bearing ability, No maintenance time necessary	96-97
MV Joints & Terminations	-	Individually to combine	-	-	Suitable for terminations and joints up to 36 kV for XLPE, PVC, PILC and PE medium voltage cables	-	-	-	-	Good stress control properties, Exceptional insulation characteristics	98-101

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## Tubing Selection and Processing Information:

- The heat shrinkable tubing should be capable of shrinking to a size 20% smaller than the object to be covered.
- Cut the shrink tubing. Be sure to have a smooth cut edge.
- Slide the tubing over the object to be sealed.
- Shrink the tubing onto the object, starting at one end. Use a heating appliance for this process, e.g. a heat gun or a shrink tunnel.
- Optimal shrink temperature of the material is vital to assure a short shrink period. You can find the shrink temperature in the corresponding tables.
- In case of tubing with an adhesive inner lining the adhesive layer may have a slight discharge at the end.
- Ensure even heat distribution to prevent overheating. Overheating the material during the shrink process may cause bubbles, discolouration, or damage to the tube.

If you have any further questions, our application engineers will be happy to assist you.

## Ordering Information:

For each item, please specify the product name plus each of the following options:

- Size: See „Dimensions“ chart in individual datasheet
- Colour Options\*: See „Colour“ chart in individual datasheet
- Total Quantity & Length Options: See „Dimensions“ chart in individual datasheet
- Printing Options: printed, unprinted
- Adhesive lining Options\*\* : lined, unlined

\* Please note that not all standard colours are stock items. Non-stock items require a minimum order quantity. DSG-Canusa also offers predefined special colours, for which the usual lead time is longer and the minimum order quantity generally higher than for standard colours.

\*\* For those products available in two versions

Example: Deray®-HB, 1/2", black, 1.000 mtr, 100 m-pool, unprinted

**For information on custom sizes and length-options please contact your customer service representative.**

All information contained in this catalogue is believed to be reliable. We advise however that customers should separately evaluate the suitability of our products for their particular application.

DSG-Canusa and ShawCor Ltd. give no guarantees in respect of the accuracy or sufficiency of the information presented and disclaim any liability regarding its use.

Our responsibilities are only those listed in our standard terms and conditions of sale for these products.

In no instance will we be liable for any eventual, indirect or consequential damage or damages arising from the sale, resale, transfer, use or misuse of the product.



## Single Wall Products

Single Wall heat shrinkable tubing is used in the electronics, automotive, military & aerospace sectors in a variety of applications, including:

- Mechanical Protection
- Abrasion Protection
- Strain Relief
- Moisture Protection
- Cable Insulation
- Marking & Bundling of electronic components

# DERAY®-HB

Economical, non self-extinguishing,  
halogen free heat shrink tubing

## Features

- Flexible
- Halogen free alternative to PVC
- Continuous Operating  
Temperature: -55°C to 105°C
- Shrink Temperature: 125°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Clear		Lengths 1.22 m pcs.
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
1,2	3/64	0,6	0,40	300	o	150	o	-
1,6	1/16	0,8	0,40	300	o	150	o	-
2,4	3/32	1,2	0,50	300	o	150	o	-
3,2	1/8	1,6	0,50	300	o	150	o	-
4,8	3/16	2,4	0,50	300	o	75	o	-
6,4	1/4	3,2	0,60	300	o	75	o	-
9,5	3/8	4,8	0,60	150	o	75	o**	-
12,7	1/2	6,4	0,60	100	o	50	-	-
19,0	3/4	9,5	0,80	50	-	30	-	-
25,4	1	12,7	0,90	50	-	30	-	-
38,1	1 1/2	19,0	1,00	50	-	30	-	-
50,8	2	25,4	1,10	50	-	30	-	-

\* o = airfilled or oval    \*\* black only, other colours flattened    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	17,0 MPa
Elongation	IEC 60684-2	500%
Longitudinal Change	ASTM-D 2671	6% max.
Secant Modulus	ASTM-D 882	170 MPa max.
Specific Gravity	ASTM-D 792, A-I	0,95 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 150°C)	IEC 811-1-2	470%
Tensile Strength after Heat Aging (168 hrs at 150°C)	IEC 811-1-2	16 MPa
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	480%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	16 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Flammability	FMVSS302	passed

Standard Colours		Special Colours
black	clear	On Request

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	VDE 0303 Part 2	20 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>14</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good
Water Absorption	VDE 0472	0,30%

Printability	Hot stamp	Ink jet	Offset
very good	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: Deray®-HB 1/2" black, 2.500 mtr., 100m-spool, unprinted



# DERAY®-LSB

Low shrink temperature tubing,  
ideal for covering sensitive  
electronic components

## Features

- Flexible
- Ideal for high volume production lines
- Continuous Operating Temperature: -45°C to 125°C
- Shrink Temperature: 70°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Special colours		Lengths 1.22 m pcs.
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
3,2	1/8	1,6	0,50	300	0	150	0	-
4,8	3/16	2,4	0,50	300	0	75	0	-
6,4	1/4	3,2	0,60	300	0	75	0	-
9,5	3/8	4,8	0,60	150	0	75	0**	-
12,7	1/2	6,4	0,60	100	0	50	-	-
16,0	5/8	8,0	0,60	100	-	50	-	-
19,0	3/4	9,5	0,80	50	-	30	-	-
25,4	1	12,7	0,90	50	-	30	-	-

\* 0 = airfilled or oval      \*\* black only, other colours flattened      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	14 MPa
Elongation	IEC 60684-2	420%
Longitudinal Change	ASTM-D 2671	6% max.
Secant Modulus	ASTM-D 882	40 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,2 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 158°C)	UL 224	390%
Tensile Strength after Heat Aging (168 hrs at 158°C)	UL 224	11 MPa
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	450%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	13 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -45°C
Flammability	FMVSS302	passed

Standard Colours	Special Colours
black ■	On Request

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	VDE 0303 Part 2	25 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>14</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good
Water Absorption	VDE 0472	0,20%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-LSB 1/2" black, 2.500 mtr., 100m-spool, unprinted

# DERAY®-H

Flame retardant, multi-purpose heat shrink tubing



## Features

- Flexible
- Suitable for various applications
- Continuous Operating  
Temperature: -55°C to 135°C
- Shrink Temperature: 110°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Coloured		Lengths 1.22 m pcs.
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
1,2	3/64	0,6	0,40	300	o	150	o	25
1,6	1/16	0,8	0,40	300	o	150	o	25
2,4	3/32	1,2	0,50	300	o	150	o	25
3,2	1/8	1,6	0,50	300	o	150	o	25
4,8	3/16	2,4	0,50	300	o	75	o	25
6,4	1/4	3,2	0,60	300	o	75	o	10
9,5	3/8	4,8	0,60	150	o	75	o**	10
12,7	1/2	6,4	0,60	100	o	50	-	10
16,0	5/8	8,0	0,60	100	-	-	-	10
19,0	3/4	9,5	0,80	50	-	30	-	10
25,4	1	12,7	0,90	50	-	30	-	10
31,8	1 1/4	15,9	0,90	50	-	30	-	-
38,0	1 1/2	19,0	1,00	50	-	30	-	-
50,8	2	25,4	1,10	50	-	30	-	-

\* o = airfilled or oval    \*\* black only, other colours flattened    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	15 MPa	19MPa
Elongation	IEC 60684-2	450%	530%
Longitudinal Change	ASTM-D 2671	± 10% max.	± 10% max.
Secant Modulus	ASTM-D 882	175 MPa max.	175 MPa max.
Specific Gravity	ASTM-D 792, A1	1,25 g/cm <sup>3</sup>	1,00 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 158°C)	UL 224	300%	490%
Tensile Strength after Heat Aging (168 hrs at 158°C)	UL 224	12 Mpa	18 MPa
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	400%	500%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	13 MPa	18 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C	does not break at -55°C
Flammability	UL 224 (coloured) FMVSS 302 (clear)	flame retardant	passed

Standard Colours						Special Colours
black	clear*	red	yellow	blue	white	green
■	■	■	■	■	■	■

\*clear not UL or CSA listed

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-H 1/4" black, 2.100 mtr., 300m-spool, unprinted

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	24 kV/mm	26 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>15</sup> Ω x cm	10 <sup>15</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive	non-corrosive
Chemical Resistance		good	good
Water Absorption	VDE 0472	0,15%	0,30%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

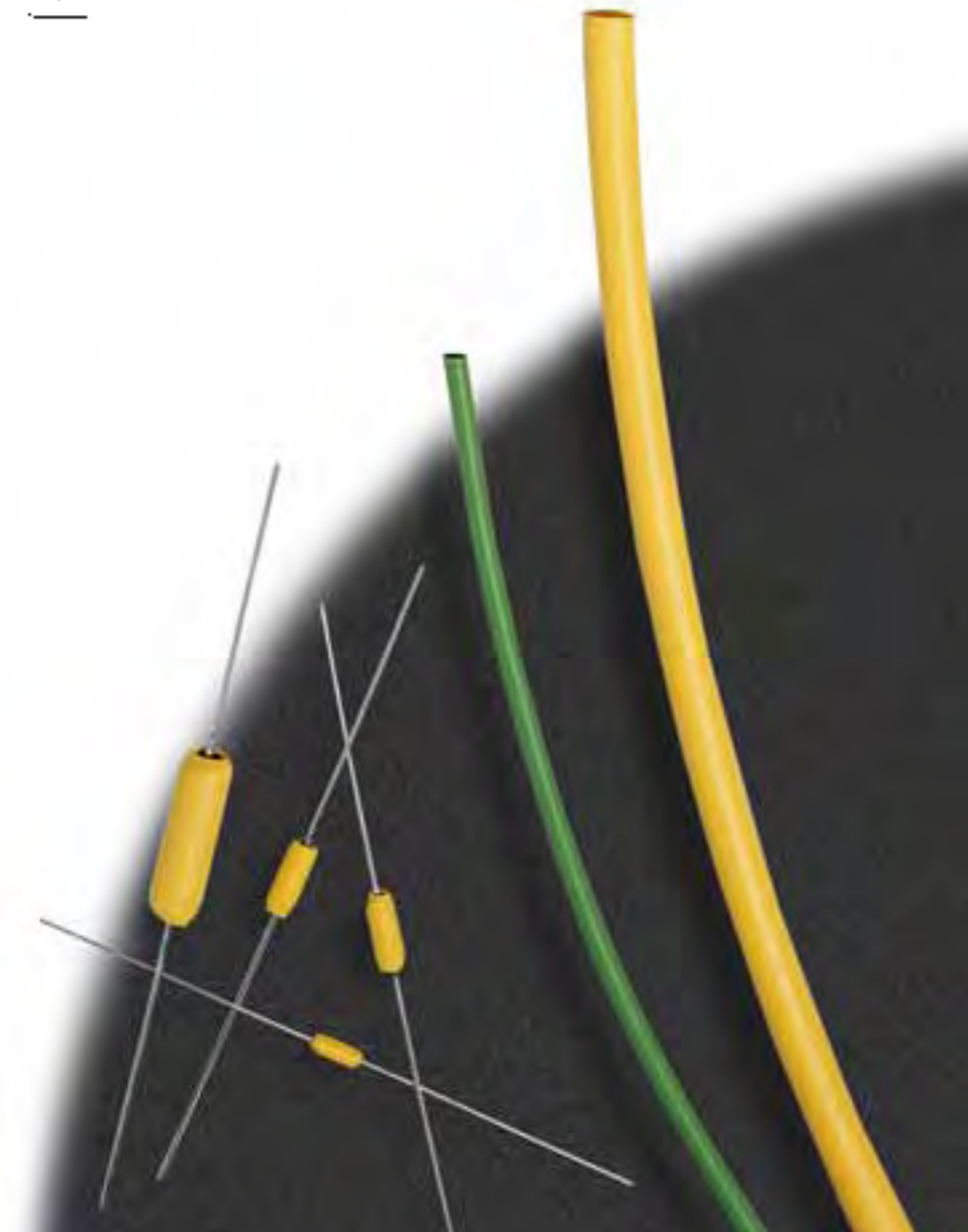
# DERAY®-I

Universal heat shrink tubing with excellent physical and mechanical properties



## Features

- Flexible
- Flame Retardant
- Meets MIL - DTL - 23053/5 class 1+2
- Continuous Operating Temperature: -55°C to 135°C
- Shrink Temperature: 90°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Coloured		Lengths 1.22 m
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
1,2	3/64	0,6	0,40	300	o	150	o	25
1,6	1/16	0,8	0,40	300	o	150	o	25
2,4	3/32	1,2	0,50	300	o	150	o	25
3,2	1/8	1,6	0,50	300	o	150	o	25
4,8	3/16	2,4	0,50	300	o	75	o	25
6,4	1/4	3,2	0,60	300	o	75	o	10
9,5	3/8	4,8	0,60	150	o	75	o**	10
12,7	1/2	6,4	0,60	100	o	50	-	10
16,0	5/8	8,0	0,60	100	-	50	-	10
19,0	3/4	9,5	0,80	50	-	30	-	10
25,4	1	12,7	0,90	50	-	30	-	10
31,8	1 1/4	15,9	0,90	50	-	30	-	-
38,0	1 1/2	19,0	1,00	50	-	30	-	-
51,0	2	25,4	1,10	50	-	30	-	-
76,0	3	38,0	1,30	25	-	15	-	-
101,6	4	50,8	1,40	25	-	15	-	-

\* o = airfilled or oval    \*\* black only, other colours flattened    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	17 MPa	20 MPa
Elongation	IEC 60684-2	500%	550%
Longitudinal Change	ASTM-D 2671	± 5% max.	± 5% max.
Secant Modulus	ASTM-D 882	175 MPa max.	175 MPa max.
Specific Gravity	ASTM-D 792, A1	1,3 g/cm <sup>3</sup>	1,0 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 175°C)	ASTM-D 2671	300%	500%
Tensile Strength after Heat Aging (168 hrs at 175°C)	ASTM-D 2671	13 MPa	18 MPa
Heat Shock (4 hrs at 250°C)	ASTM-D 2671	No cracking or flowing	No cracking or flowing
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-3	15 MPa	19 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C	does not break at -55°C
Flammability	UL 224 (coloured) FMVSS 302 (clear)	flame retardant	passed

Standard Colours						Special Colours - On request				
black	clear*	red	yellow	blue	white	green	brown	orange	grey	violet

\*clear not UL or CSA listed

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	24 kV/mm	24 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>16</sup> Ω x cm	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive	non-corrosive
Chemical Resistance		good	good
Water Absorption	VDE 0472	0,20%	0,20%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-I 1/2" black, 2.500 mtr., 100m-spool, unprinted

# DERAY®-ITW

Ultra thin wall, very flexible  
heat shrink tubing

## Features

- Ultra thin wall
- Very flexible
- Flame retardant
- Continuous Operating  
Temperature: -55°C to 135°C
- Shrink Temperature: 90°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black & Clear Spool Length	Style*	Lengths 1.22 m
mm	IN	mm	mm	m		pcs.
2,5	-	0,8	0,30	300	o	-
4,0	-	1,6	0,30	300	o	-
5,6	-	2,4	0,30	300	o	-
8,1	-	3,2	0,35	150	o	-
11,0	-	4,8	0,35	150	o	-
15,0	-	6,4	0,35	100	-	-
20,0	-	9,5	0,45	50	-	-
26,0	-	12,7	0,50	50	-	-

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	17 MPa	20 MPa
Elongation	IEC 60684-2	500%	550%
Longitudinal Change	ASTM-D 2671	± 10% max.	± 10% max.
Secant Modulus	ASTM-D 882	175 MPa max.	175 MPa max.
Specific Gravity	ASTM-D 792, A1	1,3 g/cm <sup>3</sup>	1,0 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 175°C)	ASTM-D 2671	300%	500%
Tensile Strength after Heat Aging (168 hrs at 175°C)	ASTM-D 2671	13 MPa	18 MPa
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	480%	530%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	15 MPa	19 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C	does not break at -55°C
Flammability	UL 224 (coloured) FMVSS 302 (clear)	flame retardant	passed

Standard Colours	Special Colours - On Request
clear	black

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	24 kV/mm	24 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>16</sup> Ω x cm	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive	non-corrosive
Chemical Resistance		good	good
Water Absorption	VDE 0472	0,20%	0,20%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-ITW 8,1mm clear, 1.500 mtr., 150m-spool, unprinted

# DERAY®-I 3000

High shrink ratio, flexible heat shrink tubing



## Features

- Flexible
- High Shrink Ratio
- Flame retardant
- Resistant to common fluids and solvents
- Meets MIL-DTL-23053/5 class 1+2
- Continuous Operating Temperature: -55°C to 135°C
- Shrink Temperature: 90°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Coloured		Lengths 1.22 m
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
1,6	1/16	0,5	0,45	300	o	150	o	25
3,2	1/8	1,0	0,55	300	o	150	o	25
4,8	3/16	1,5	0,60	300	o	75	o	25
6,4	1/4	2,0	0,65	300	o	75	o	10
9,5	3/8	3,0	0,75	150	o	75	o	10
12,7	1/2	4,0	0,75	100	o	50	-	10
19,0	3/4	6,0	0,85	50	-	30	-	10
25,4	1	8,0	1,00	50	-	30	-	10
39,0	1 1/2	13,0	1,15	50	-	30	-	-

\* o = airfilled or oval    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	17 MPa	20 MPa
Elongation	IEC 60684-2	500%	550%
Longitudinal Change	ASTM-D 2671	± 10% max.	± 10% max.
Secant Modulus	ASTM-D 882	175 MPa max.	175 MPa max.
Specific Gravity	ASTM-D 792, A1	1,3 g/cm <sup>3</sup>	1,0 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 175°C)	ASTM-D 2671	300%	500%
Tensile Strength after Heat Aging (168 hrs at 175°C)	ASTM-D 2671	13 Mpa	18 Mpa
Elongation after Heat Shock (4 hrs at 250°C)	ASTM-D 2671	No cracking or flowing	No cracking or flowing
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-3	15 MPa	19 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C	does not break at -55°C
Flammability	UL 224 (coloured) FMVSS 302 (clear)	flame retardant	passed

Standard Colours					Special Colours - On Request					
black	clear*	red	yellow	blue	white	brown	orange	green	violet	grey

\*clear not UL or CSA listed

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	24 kV/mm	24 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>16</sup> Ω x cm	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive	non-corrosive
Chemical Resistance		good	good
Water Absorption	VDE 0472	0,20%	0,20%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-I 3000 6/2 black, 1.800 mtr., 300m-spool, unprinted

# DERAY®-IGY

Dual colour, flexible, non-meltable, quick shrinking heat shrink tubing with a high shrink ratio

DE-  
STAN  
55017

## Features

- Flexible
- High shrink ratio
- Flame retardant
- Resistant to common fluids and solvents
- Continuous Operating Temperature: -55°C to 135°C
- Shrink Temperature: 90°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Green-Yellow Spool Length	Style*	Lengths 1.22 m
mm	IN	mm	mm	m		pcs.
3,2	1/8	1,0	0,55	150	o	25
4,8	3/16	1,5	0,60	75	o	25
6,4	1/4	2,0	0,65	75	o	10
9,5	3/8	3,0	0,75	75	-	10
12,7	1/2	4,0	0,75	50	-	10
19,0	3/4	6,0	0,85	30	-	10
25,4	1	8,0	1,00	30	-	10
39,0	1 1/2	13,0	1,15	30	-	-

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	15 MPa
Elongation	IEC 60684-2	450%
Longitudinal Change	ASTM-D 2671	± 10% max.
Secant Modulus	ASTM-D 882	175 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,3 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 175°C)	UL 224	300%
Tensile Strength after Heat Aging (168 hrs at 175°C)	UL 224	12 Mpa
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	400%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	14 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Flammability	UL 224	flame retardant

Standard Colours	Special Colours
green-yellow	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	VDE 0303 Part 2	24 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good
Water Absorption	VDE 0472	0,20%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-IGY 19/6 green-yellow, 300 mtr., 30m-spool, unprinted

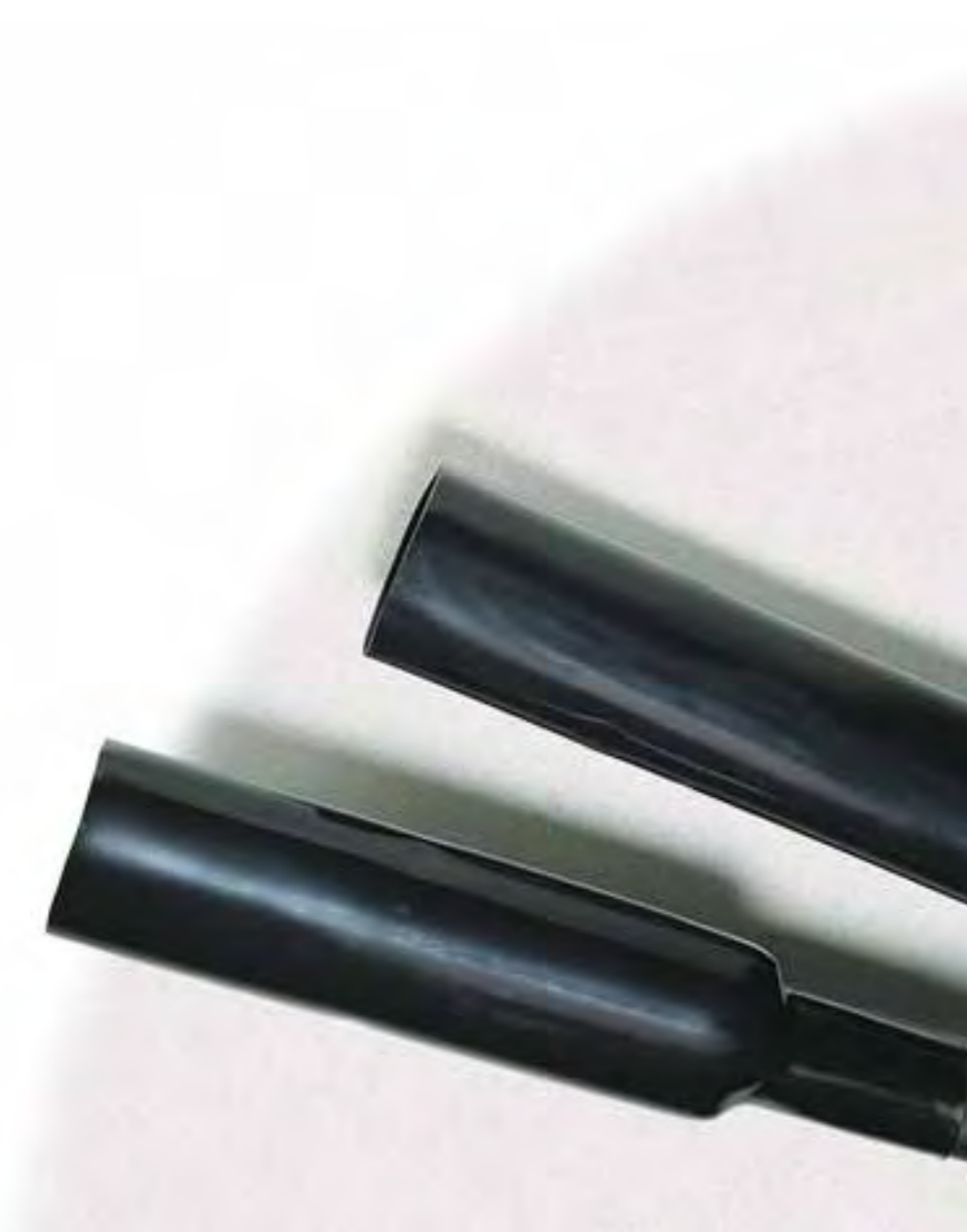
# CZT 200

Zero halogen, flexible heat shrink tubing

DEF-STAN 59-97

## Features

- Flexible
- Zero halogen
- Flame retardant
- Low smoke generation if burning
- Recommended for use with zero halogen wires & cables
- Meets DEF STAN 59-97, issue 3, type 8
- Continuous Operating Temperature: -40°C to 105°C
- Shrink Temperature: 115°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Coloured		Lengths 1.22 m pcs.
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
1,6	1/16	0,8	0,45	300	o	150	o	
2,4	3/32	1,2	0,51	300	o	150	o	-
3,2	1/8	1,6	0,51	300	o	150	o	-
4,8	3/16	2,4	0,51	300	o	75	o	-
6,4	1/4	3,2	0,64	300	o	75	o	-
9,5	3/8	4,8	0,64	150	o	75	o**	-
12,7	1/2	6,4	0,64	100	o	50	-	-
16,0	5/8	8,0	0,64	100	-	50	-	-
19,0	3/4	9,5	0,76	50	-	30	-	-
25,4	1	12,7	0,89	50	-	30	-	-
31,8	1 1/4	16,0	0,89	50	-	30	-	-
38,0	1 1/2	19,0	1,02	50	-	30	-	-
51,0	2	25,4	1,14	50	-	30	-	-
76,0	3	38,0	1,27	25	-	15	-	-
101,6	4	50,8	1,40	25	-	15	-	-

\* o = airfilled or oval    \*\* black only, other colours flattened    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	10 MPa
Elongation	IEC 60684-2	200%
Longitudinal Change	ASTM-D 2671	± 10% max.
Secant Modulus	ASTM-D 882	130 MPa max.
Specific Gravity	ISO/R 1183	1,45 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 158°C)	ISO 37	150%
Elongation after Heat Shock (4 hrs at 150°C)	ASTM-D 2671	100% min.
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -40°C
Flammability	ASTM-D 635	flame retardant

Standard Colours	Special Colours
black  white  yellow	On Request

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	IEC 243	24 kV/mm
Volume Resistivity	ASTM-D 2671	10 <sup>16</sup> Ω x cm

### Chemical

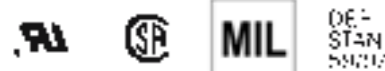
Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good to excellent
Water Absorption	ASTM-D 570	0,20%

Printability	Hot stamp	Ink jet	Offset
good	good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: CZT 200 1/2" black, 2.000 mtr., 100m-spool, unprinted

# CPX 876

Flexible, highly flame retardant heat shrink tubing



## Features

- Highly flame retardant, UL-224 VW-1 & CSA OFT
- Flexible
- Resistant to common fluids and solvents
- Meets MIL-DTL-23053/5, class 3
- Continuous Operating Temperature: -55°C to 135°C
- Shrink Temperature: 110°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black & Coloured		Lengths 1.22 m p.c.
mm	IN	mm	mm	Spool Length m	Style*	Spool Length m	Style*	
1,2	3/64	0,6	0,45	300	o	150	o	-
1,6	1/16	0,8	0,45	300	o	150	o	-
2,4	3/32	1,2	0,50	300	o	150	o	-
3,2	1/8	1,6	0,50	300	o	150	o	-
4,8	3/16	2,4	0,50	300	o	75	o	-
6,4	1/4	3,2	0,65	300	o	75	o	-
9,5	3/8	4,8	0,65	150	o	75	-	-
12,7	1/2	6,4	0,65	100	o	50	-	-
16,0	5/8	8,0	0,65	100	-	50	-	-
19,0	3/4	9,5	0,75	50	-	30	-	-
25,4	1	12,7	0,90	50	-	30	-	-
31,8	1 1/4	15,9	0,90	50	-	30	-	-
38,0	1 1/2	19,0	1,00	50	-	30	-	-
51,0	2	25,4	1,15	50	-	30	-	-
76,0	3	38,0	1,25	25	-	15	-	-
101,6	4	50,8	1,40	25	-	15	-	-

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ISO 37	17 MPa
Elongation	ISO 37	400%
Longitudinal Change	ASTM-D 2671	± 5% max.
Secant Modulus	ASTM-D 882	175 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,4 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 175°C)	ISO 37	400%
Elongation after Heat Shock (4 hrs at 250°C)	ASTM-D 2671	no dripping, flowing or ripping
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Flammability	UL 224, VW-1	flame retardant

Standard Colours	Special Colours - On request								
black	red	blue	white	yellow	brown	green	orange	grey	violet

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	IEC 243	20 kV/mm
Volume Resistivity	ASTM-D 2671	10 <sup>16</sup> Ω x cm

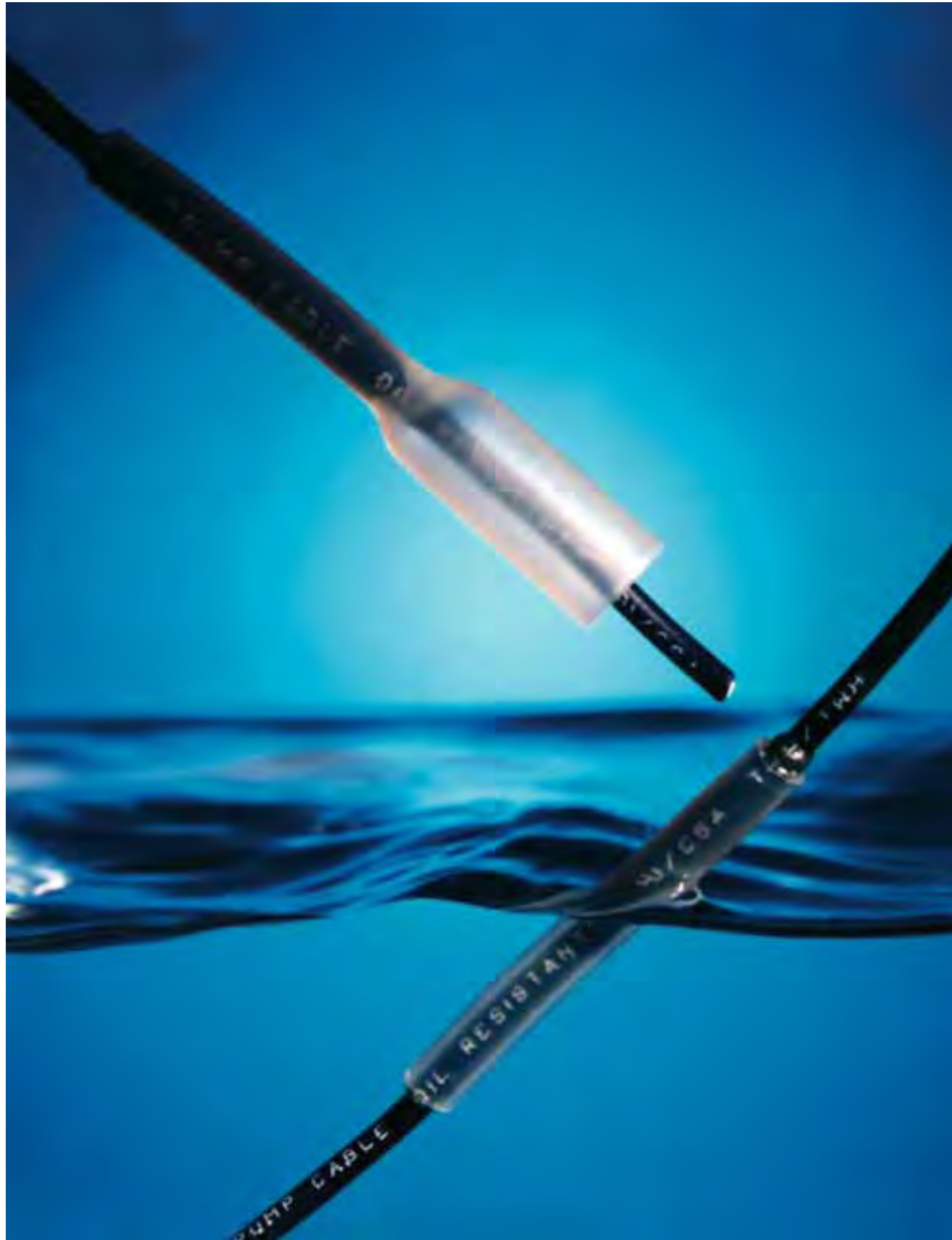
### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good to excellent
Water Absorption	ASTM-D 570	0,50%

Printability	Hot stamp	Ink jet	Offset
good	good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: CPX876 3/8" black, 1.500 mtr., 150m-spool, unprinted





## Dual Wall Products

DSG-Canusa offers a wide range of dual wall products. The available combinations of jacket materials and adhesives allow the customer to choose just the right tubing for the application and environmental conditions.

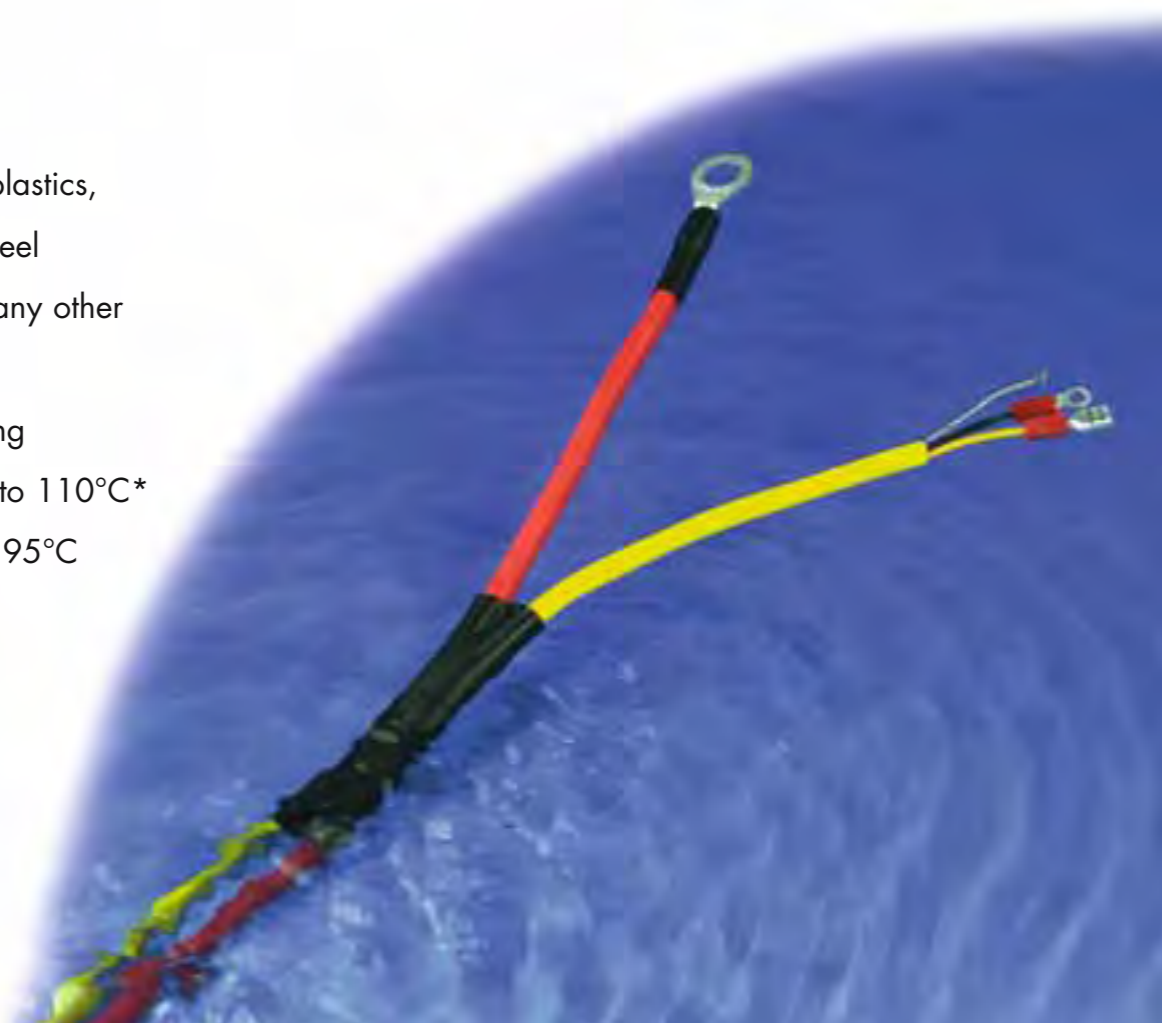
# DERAY®-IAKT

Adhesive-lined heat shrink tubing ideal for effective moisture-resistant insulation

## Features

- Flexible
- High shrink ratio
- Adhesive bonds to plastics, rubber, neoprene, steel polyethylene and many other materials
- Continuous Operating Temperature: -55°C to 110°C\*
- Shrink Temperature: 95°C

\*Outer Jacket



## Dimensions 3:1

EXPANDED		RECOVERED				DELIVERY UNITS			
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS OVERALL (NOM) w	WALL THICKNESS ADHESIVE (NOM) w	Black		Black & Clear		Lengths 1.22 m
mm	IN	mm	mm	mm	Spool Length	Style*	Spool Length	Style*	
3,0	-	1,0	1,00	0,40	300	o	150	o	25
4,5	-	1,5	1,10	0,50	300	o	75	o	25
6,0	-	2,0	1,20	0,50	300	o	75	o	10
9,0	-	3,0	1,40	0,50	150	o	75	o	10
12,0	-	4,0	1,70	0,60	100	o	50	o	10
19,0	-	6,0	2,10	0,60	50	o	30	o	10
24,0	-	8,0	2,40	0,70	50	o	30	o	10
40,0	-	13,0	2,40	0,70	30	o	-	-	10

Small coils on request

## Dimensions 4:1

EXPANDED		RECOVERED				DELIVERY UNITS			
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS OVERALL (NOM) w	WALL THICKNESS ADHESIVE (NOM) w	Black		Black & Clear		Lengths 1.22 m
mm	IN	mm	mm	mm	Spool Length	Style*	Spool Length	Style*	
4,0	-	1,0	1,00	0,40	300	o	150	o	25
8,0	-	2,0	1,20	0,50	150	o	75	o	10
12,0	-	3,0	1,40	0,50	100	o	50	o	10
16,0	-	4,0	1,70	0,60	50	o	-	-	10
24,0	-	6,0	2,10	0,60	50	o	30	o	10
32,0	-	8,0	2,40	0,70	50	o	30	o	10
52,0	-	13,0	2,40	0,70	30	o	-	-	10

\* o = airfilled or oval— = flattened

Small coils on request

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	15,0 MPa	17,0 MPa
Elongation	IEC 60684-2	400%	450%
Longitudinal Change 3:1	ASTM-D 2671	-15% max.	-15% max.
Longitudinal Change 4:1	ASTM-D 2671	-18% max.	-18% max.
Specific Gravity	ASTM-D 792, A1	1,25 g/cm <sup>3</sup>	1,00 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 150°C)	IEC 811-1-2	320%	360%
Tensile Strength after Heat Aging (168 hrs at 150°C)	IEC 811-1-2	14 MPa	15 MPa
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	360%	380%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	15 MPa	16 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C	does not break at -55°C
Flammability	ASTM-D 876 (coloured) FMVSS 302 (clear)	flame retardant jacket	passed

Standard Colours		Special Colours	
black	clear	On Request	

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	22 kV/mm	23 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>14</sup> Ω x cm	10 <sup>14</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive	non-corrosive
Chemical Resistance		good	good
Water Absorption	VDE 0472	0,15%	0,17%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-IAKT 3:1 12,0 mm black, 1.000 mtr., 100m-spool, unprinted

# CPA 300

Adhesive-lined heat shrink tubing ideal for applications where both exceptional flame retardancy and environmental sealing capabilities are required



## Features

- Flame retardant
- Superior sealing against water, moisture or other contaminants
- Meets MIL - DTL - 23053/4 Class 3
- Continuous Operating Temperature: -55°C to 125°C
- Shrink Temperature: 120°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS	
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	WALL THICKNESS ADHESIVE (NOM) w	Lengths 1.22 m
mm	IN	mm	mm	m	pcs.
3,2	1/8	1,0	1,00	0,50	25
4,8	3/16	1,5	1,00	0,50	25
6,4	1/4	2,0	1,00	0,50	25
7,9	5/16	2,5	1,30	0,70	25
9,5	3/8	3,2	1,50	0,70	25
12,7	1/2	4,1	1,80	0,80	25
19,1	3/4	7,5	1,80	0,80	25
25,4*	1	8,1	2,50	1,00	25
31,8*	1 1/4	10,6	2,50	1,00	25
39,9*	1 1/2	13,0	2,50	1,00	20

\* These sizes are not UL listed, Rolled commodities on request

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 638	12,4 MPa
Elongation	ASTM-D 638	450%
Longitudinal Change	ASTM-D 2671	1% to -5% max.
Specific Gravity	MIL-DTL-23053/4	1,22 g/cm <sup>3</sup>
Heat Resistant Properties (168 hrs at 175°C)	MIL-DTL-23053/4	no cracking, flowing or dripping of outer wall
Heat Shock (4 hrs at 250°C)	MIL-DTL-23053/4	no cracking, flowing or dripping of outer wall
Flammability	ASTM-D 2671	flame retardant

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 2671	22 kV/mm
Volume Resistivity	ASTM-D 876	10 <sup>14</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	MIL-DTL-23053/4	non-corrosive
Copper Compatibility	MIL-DTL-23053/4	non-corrosive
Chemical Resistance		good to excellent
Water Absorption	ASTM-D 570	0,20%

Standard Colours	Special Colours
black  white**  red**	On Request

\*\* white and red products are not UL listed

Printability	Hot stamp	Ink jet	Offset
good	good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: CPA 300, 1/4", black, 244 mtr, 1,22 mtr-lengths, unprinted

# DERAY®-IHKT

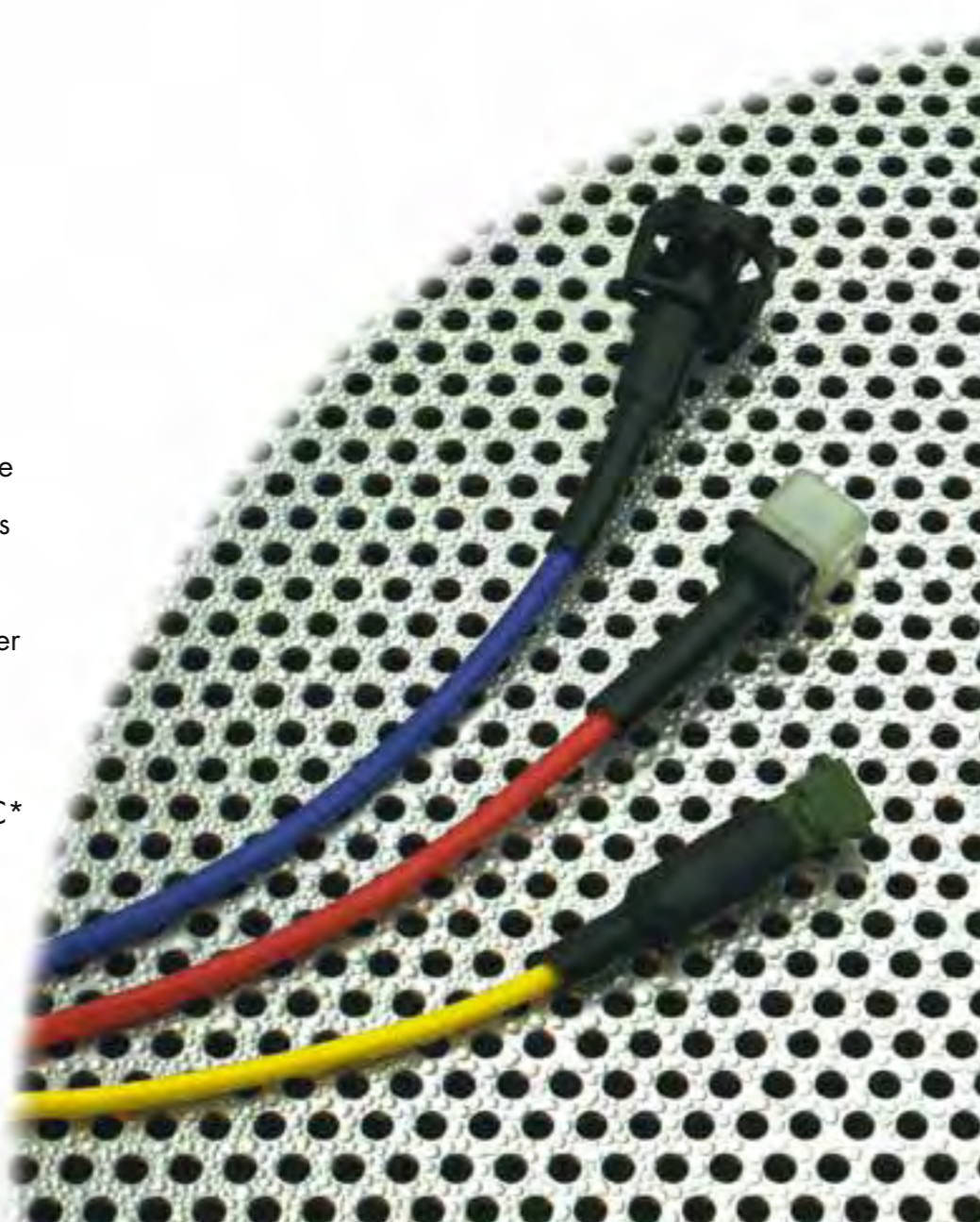
Flexible heat shrink tubing with a temperature resistant polyamide adhesive inner lining

VG

## Features

- Flexible
- Very high shrink ratio
- Specially designed polyamide adhesive protects components at higher temperatures
- Superior sealing against water or other contaminants
- Continuous Operating Temperature: -55°C to 125°C\*
- Shrink Temperature: 100°C

\*Outer Jacket



## Dimensions

EXPANDED		RECOVERED				DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS OVERALL (NOM) w	WALL THICKNESS ADHESIVE (NOM) w	Black		Lengths 1.22 m	
mm	IN	mm	mm	mm	Pool Length	Style*		
4,0	-	1,0	1,00	0,40	300	o	25	
8,0	-	2,0	1,20	0,40	150	o	10	
12,0	-	3,0	1,40	0,40	100	o	10	
16,0	-	4,0	1,70	0,60	50	o	10	
24,0	-	6,0	2,10	0,60	50	o	10	
32,0	-	8,0	2,40	0,70	50	o	10	
52,0	-	13,0	2,40	0,70	30	o	10	

\* o = airfilled or oval    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	17,0 MPa	19,0 MPa
Elongation	IEC 60684-2	600%	500%
Longitudinal Change	ASTM-D 2671	-18% max.	-18% max.
Specific Gravity	ASTM-D 792, A-I	1,25 g/cm <sup>3</sup>	1,00 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	400%	450%
Tensile Strength after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	11 MPa	16 MPa
Elongation after Heat Shock (4 hrs at 210°C)	IEC 811-1-2	360%	450%
Tensile Strength after Heat Shock (4 hrs at 210°C)	IEC 811-1-2	14 MPa	16 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C	does not break at -55°C
Flammability	ASTM-D 876 FMVSS 302	flame retardant jacket	passed

Standard Colours	Special Colours
black	Clear

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	16 kV/mm	18 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>14</sup> Ω x cm	10 <sup>14</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		very good
Water Absorption	VDE 0472	0,10%

Printability	Hot stamp	Ink jet	Offset
very good	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-IHKT 24,0 mm black, 500 mtr., 50m-spool, unprinted

# CBK

Designed to environmentally seal electronic wire harness assemblies

## Features

- Very high shrink ratio
- Special adhesive flows readily during installation to fill voids
- Resistant to acids, alkalis and gasoline
- Continuous Operating Temperature: -55°C to 125°C
- Shrink Temperature: 120°C



## Dimensions

EXPANDED		RECOVERED			DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS OVERALL (NOM) w	WALL THICKNESS ADHESIVE (NOM) w	Black & Clear Style*		Lengths 1.22 m
mm	IN	mm	mm	mm	Spool Length m		pcs.
6,0	-	1,4	1,35	0,95	300	o	-
8,0	-	1,6	1,75	0,95	150	o	-
12,0	-	2,5	2,00	1,10	100	o	-
18,0	-	3,7	2,60	1,50	50	o	-

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Tensile Strength	IEC 60684-2	17,0 MPa	15,0 MPa
Elongation	IEC 60684-2	500%	400%
Longitudinal Change	ASTM-D 2671	± 10% max.	± 10% max.
Specific Gravity	ASTM-D 792, A-I	1,25 g/cm <sup>3</sup>	1,20 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	320%	400%
Tensile Strength after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	12 MPa	14 MPa
Elongation after Heat Shock (4 hrs at 210°C)	IEC 811-1-2	360%	370%
Tensile Strength after Heat Shock (4 hrs at 210°C)	IEC 811-1-2	14 MPa	15 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -30°C	does not break at -30°C
Flammability	ASTM-D 876 (coloured) FMVSS 302 (clear)	flame retardant jacket	passed

Standard Colours		Special Colours	
black	clear	On Request	

### Electrical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Dielectric Strength	VDE 0303 Part 2	18 kV/mm	20 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>14</sup> Ω x cm	10 <sup>14</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured	Typical Performance clear
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive	non-corrosive
Chemical Resistance		very good	very good
Water Absorption	VDE 0472	0,50%	0,50%

Printability	Hot stamp	Ink jet	Offset
	very good	-	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: CBK 12,0mm black, 3.500 mtr., 100m-spool



## Medium & Heavy Wall Products

Medium Wall and Heavy Wall heat shrinkable tubing possesses excellent insulating, environmental sealing, and impact and abrasion resistance.

Medium Wall & Heavy Wall tubing is used in a variety of general purpose applications to seal and protect electrical connections and terminations and provide excellent mechanical protection.

DSG-Canusa's line of specially designed medium & heavy wall products are used as the industry standard in several markets including Electrical/Utility and Mass Transportation.

# CFM

Medium wall heat shrinkable tubing suitable for a variety of low voltage electrical and mechanical applications, where lighter weight and greater flexibility are important

## Features

- Seals and protects cable splices and terminations
- High resistance to impact and abrasion
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Continuous Operating Temperature: -55°C to 110°C
- Shrink Temperature: 120°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Lengths 1.22 m
	mm	IN	mm	mm	pcs.
0400	10,2	-	3,8	2,00	75
0750	19,1	-	5,6	2,00	35
0950	25,0	-	8,0	2,00	25
1100	27,9	-	10,2	2,00	75
1300	33,0	-	10,2	2,00	60
1500	38,1	-	12,7	2,00	40
1700	43,2	-	12,7	2,00	40
2050	52,1	-	19,1	2,00	25
2750	69,9	-	25,4	2,00	15
3500	88,9	-	30,0	2,40	10
4700	119,4	-	39,9	2,70	5
6000	152,0	-	48,0	2,80	5
6700	170,2	-	58,4	2,80	5
9000	228,6	-	77,0	3,00	5

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	14,5 MPa
Elongation	ASTM-D 412, ISO 37	550%
Longitudinal Change	ASTM-D 2671	+1% to -10% max.
Specific Gravity	ASTM-D 792, A-I	1,10 g/cm <sup>3</sup> max.
Elongation after Heat Aging (168 hrs at 150°C)	ASTM-D 2671, ISO 37	500%
Elongation after Heat Shock (4 hrs at 225°C)	ASTM-D 2671	No cracking or flowing
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C

Standard Colours	Special Colours
black 	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149 / IEC 243	20 kV/mm
Volume Resistivity	ASTM-D 257	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Copper Corrosion	ASTM-D 2671	No Corrosion
Chemical Resistance		good to excellent
Water Absorption	ASTM-D 570	0,10%

### Adhesive

Property	Test Method	Typical Performance Adhesive	Typical Performance Sealant
Water Absorption	-	<0,3%	<0,1%
Softening Point	ASTM-E 28	95°C to 105°C	80°C to 90°C

This product is also available with sealant.  
For further information please contact our customer service.

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Lining Options  
For example: CFM 1500 black, 200 pcs., 1,22 mtr lengths, lined

# CFW

Heavy wall heat shrinkable tubing provides maximum reliability for insulating and protecting cable joints and terminations



## Features

- Withstands severe mechanical requirements of U.R.D., submersible and direct burial installations
- Rated for 600V, 90°C continuous use
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Continuous Operating Temperature: -55°C to 110°C
- Shrink Temperature: 120°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Lengths 1.22 m
	mm	IN	mm	mm	pcs.
0350	8,9	-	3	1,80	100
0500	13,0	-	4,1	2,40	75
0750	19,1	-	6,1	2,40	35
1100	27,9	-	8,9	3,00	75
1500	38,1	-	11,9	4,10	40
2000	50,8	-	16	4,10	25
2700	68,1	-	22,1	4,10	15
3500*	89,9	-	30,0	4,10	10
4700*	119,9	-	39,9	4,30	5

\*CFW 3500 and CFW 4700 are not UL or CSA listed

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	14,5 MPa
Elongation	ASTM-D 412, ISO 37	600%
Longitudinal Change	ASTM-D 2671	+1% to -10% max.
Specific Gravity	ASTM-D 792, A-I	1,10 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 150°C)	ASTM-D 2671, ISO 37	500%
Elongation after Heat Shock (4 hrs at 225°C)	ASTM-D 2671	No cracking or flowing
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C

Standard Colours	Special Colours
black	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149	20 kV/mm
Volume Resistivity	ASTM-D 257	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Copper Corrosion	ASTM-D 2671	No Corrosion
Chemical Resistance		good to excellent
Water Absorption	ASTM-D 570	0,10%

### Adhesive

Property	Test Method	Typical Performance Adhesive	Typical Performance Sealant
Water Absorption	-	<0,3%	<0,1%
Softening Point	ASTM-E 28	95°C to 105°C	80°C to 90°C

This product is also available with sealant.  
For further information please contact our customer service.

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Lining Options  
For example: CFW 0750 black, 350 pcs., 1,22 mtr lengths, unlined



# CFTV

Heat shrinkable tubing and adhesive liner combination that established the CATV industry standard for splice and connector protection

## Features

- An absolutely waterproof seal
- Selective strippability to meet CATV industry specifications
- Minimal heat required to produce error-free installation without splitting
- Thermochromatic paint ensures integrity of seal
- Continuous Operating Temperature: -55°C to 110°C
- Shrink Temperature: 120°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Lengths 1.22 m
	mm	IN	mm	mm	pcs.
0400	10,2	-	3,8	2,00	75
0750	19,0	-	5,6	2,00	35
1100	27,9	-	10,2	2,00	75
1300	33,0	-	10,2	2,00	60
1500	38,1	-	12,7	2,00	40
1700	43,2	-	12,7	2,00	40
2050	52,1	-	19,0	2,00	25
2750	69,8	-	25,4	2,00	15

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	14,5 MPa
Elongation	ASTM-D 412, ISO 37	600%
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Abrasion Resistance	ASTM-D 2671	60 mg
Adhesive Softening Point	ASTM-E 28	85° C
Adhesive Peel Strength to PE	ASTM-D 1000	110N/25mm
Adhesive Peel Strength to Aluminium	ASTM-D 1000	80N/25mm
Adhesive Lap Shear (1 in./min. at 23°C)	ASTM-D 1002	0,1 MPa
Adhesive Viscosity (132°C)	ASTM-D 1084	32000 CPS
Water Penetration (on installed tubing: 50°C for 14 days)	ASTM-706	No penetration

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149	20 kV/mm
Volume Resistivity	ASTM-D 257	10 <sup>16</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance
Copper Corrosion	ASTM-D 2671	No Corrosion
Fungus Resistance		no growth
Water Absorption	ASTM-G 21	0,10%

Standard Colours	Special Colours
black	Not Available

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: CFTV 0750 black, 480 pcs., 1,22 mtr.-lengths

# CFHR

High ratio heat shrinkable tubing accommodates extreme differences between cables, connectors and backshells

## Features

- 6:1 Shrink ratio
- Accommodates a wide variety of connector shapes and configurations
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Continuous Operating Temperature: -55°C to 110°C
- Shrink Temperature: 120°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Lengths 1.22 m
	mm	IN	mm	mm	pcs.
0750	19,0	-	3,2	3,20	35
1300	33,0	-	5,5	3,40	60
1750	44,4	-	7,4	3,60	40
2000	50,8	-	8,3	4,30	25
2750	69,8	-	11,7	4,80	15
3500	88,9	-	17,1	4,80	10
4700	119,4	-	22,9	4,80	5

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	14,5 MPa
Elongation	ASTM-D 412, ISO 37	600%
Longitudinal Change	ASTM-D 2671	+1% to -10% max.
Specific Gravity	ASTM-D 792	1,10 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 150°C)	ASTM-D 2671	400%
Elongation after Heat Shock (4 hrs at 225°C)	ASTM-D 2671	No cracking or flowing
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Hardness (Shore D)	ASTM-D 2240	50 D

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149 / IEC 243	20 kV/mm
Dielectric Voltage Withstand (2500 V, 60Hz, 1min)	UL 486D	no breakdown
Volume Resistivity	ASTM-D 257	10 <sup>16</sup> Ω x cm

### Chemical

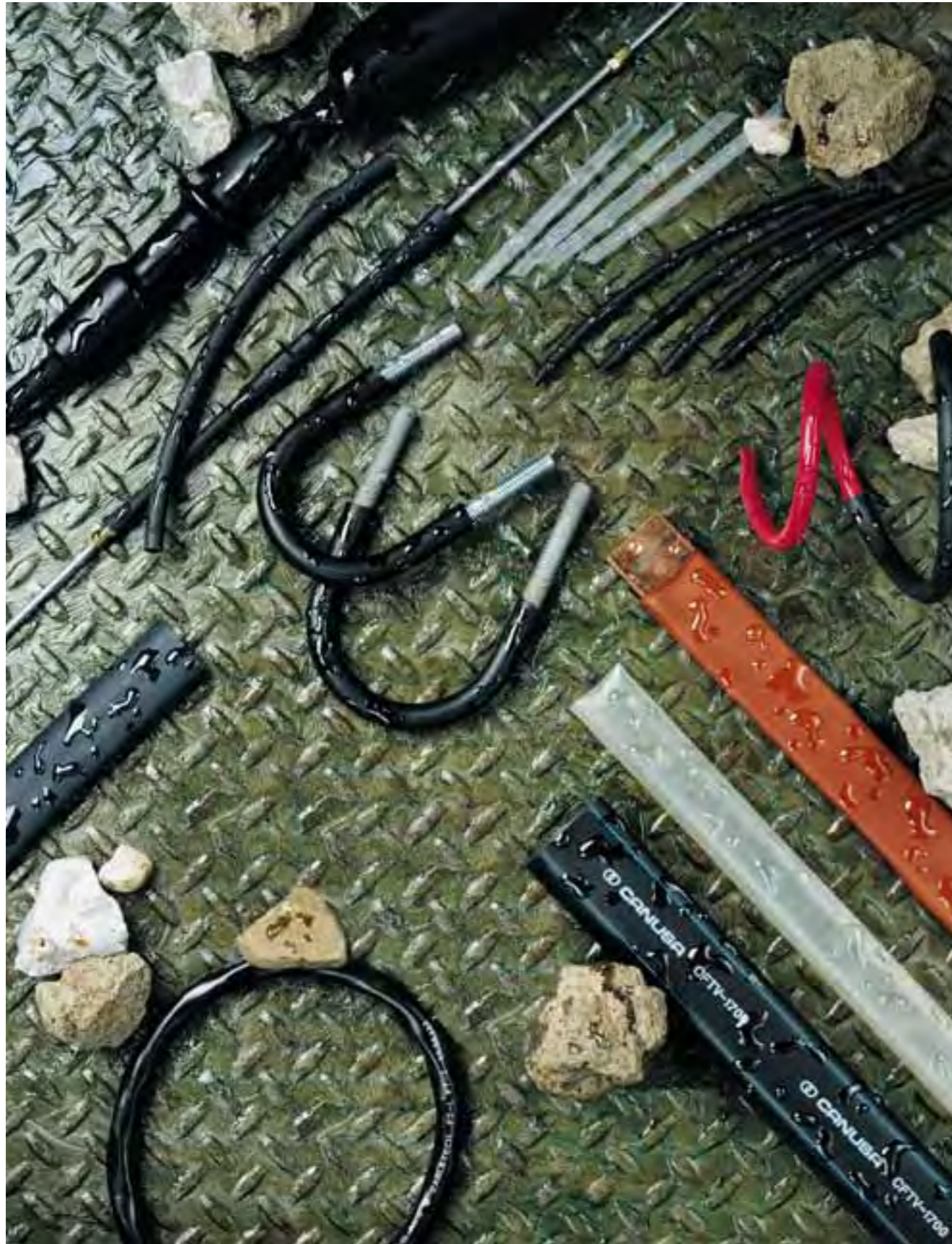
Property	Test Method	Typical Performance coloured
Copper Corrosion	ASTM-D 2671	No Corrosion
Chemical Resistance		good to excellent
Water Absorption	ASTM-D 570	0,10%

### Adhesive

Property	Test Method	Typical Performance
Adhesive Lap Shear (1in./min at 23°C)	ASTM-D 1002	0,875 Mpa
Softening Point	ASTM-E 28	92°C/-5°C
Adhesive Peel Strength (300mm/min at 23°C) > to steel, aluminium, PE > to PVC	ASTM-D 1000	110 N/25mm 80 N/25mm
Adhesive Blocking (30°C)	ASTM-D 1146	no blocking
Water Penetration	ASTM 706	no penetration after 236 hrs. of continuous immersion

Standard Colours	Special Colours
black 	Not Available

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Lining Options  
For example: CFHR 0750 black, 140 pcs., 1,22 mtr lengths, lined



## Non Polyolefin Products

DSG-Canusa provides special materials for demanding applications.

These products, made of materials ranging from elastomers to fluoropolymers, offer increased protection against extreme temperatures and harsh operating environments.

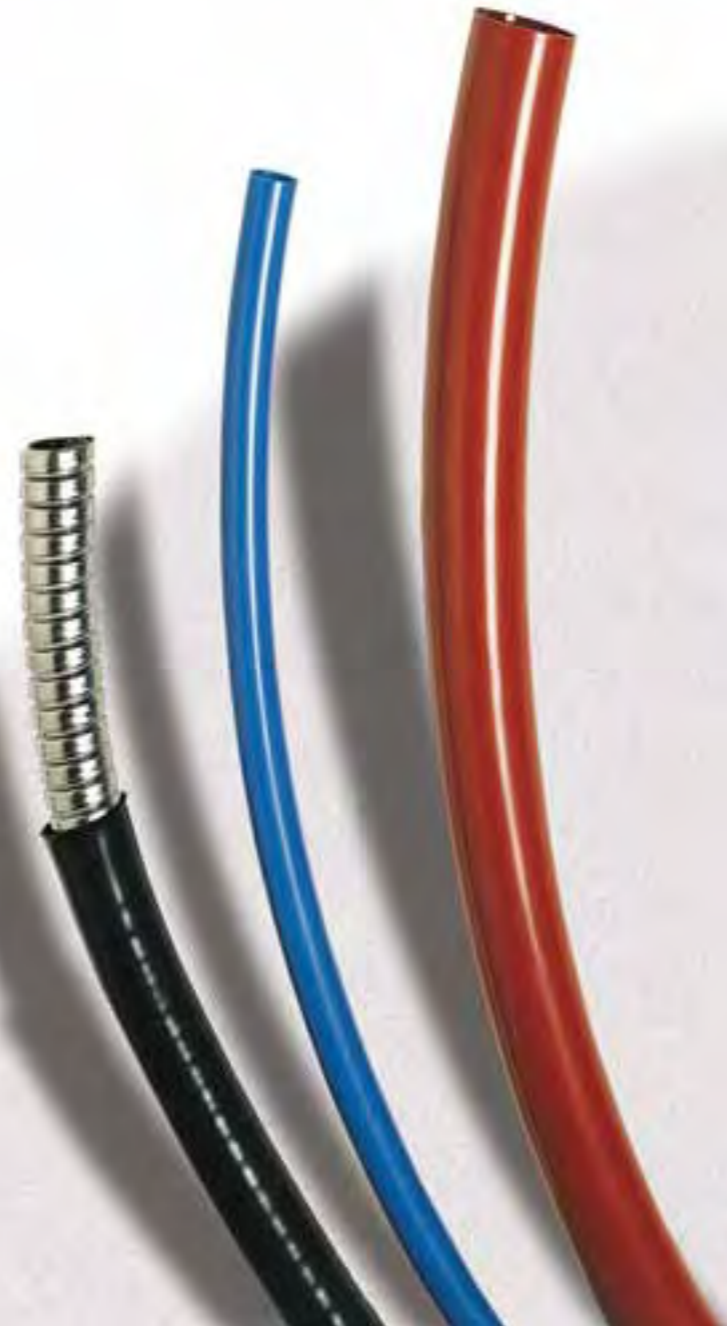
# CVN 7

Thin wall flexible PVC  
heat shrink tubing



## Features

- Flexible
- Meets UL-224 VW-1 & CSA OFT
- Continuous Operating Temperature: -30°C to 105°C
- Shrink Temperature: 100°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black & Coloured Spoollength	Style*	Lengths 1.22 m
mm	IN	mm	mm	m		pcs.
2,4	3/32	1,2	0,51	300	o	-
3,2	1/8	1,6	0,51	300	o	-
4,8	3/16	2,4	0,51	300	o	-
6,4	1/4	3,2	0,64	300	o	-
9,5	3/8	4,8	0,64	150	o	-
12,7	1/2	6,4	0,64	100	o	-
16,0	5/8	8,0	0,64	100	-	-
19,0	3/4	9,5	0,83	50	-	-
25,4	1	12,7	0,89	50	-	-
31,8	1 1/4	15,9	0,89	50	-	-
38,0	1 1/2	19,0	1,02	50	-	-
50,8	2	25,4	1,14	50	-	-
64,0	2 1/2	32,0	1,17	25	-	-
76,0	3	38,1	1,27	25	-	-
101,6	4	50,8	1,40	25	-	-

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ISO 37	23 MPa
Elongation	ISO 37	300%
Longitudinal Change	ASTM-D 2671	+5% to -20%
Specific Gravity	ISO / R 1183	1,3 g/cm <sup>3</sup> max.
Elongation after Heat Aging (168 hrs at 136°C)	ASTM-D 2671	250%
Heat Shock (4hrs. at 180°)	UL 224	no dripping, flowing, or cracking
Low Temperature Flexibility	UL 224	does not break at -30°C
Flammability	UL 224	passed (VW-1 rated to UL 224)
Deformation	UL 224	35% max.
Restricted Recovery	UL 224	passed

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	IEC 243	20 kV/mm

### Chemical

Property	Test Method	Typical Performance
Chemical Resistance	ISO 1817, ISO 37, MIL-1-23053	good
Water Absorption	ASTM-D 570	0,50%

Standard Colours	Special Colours			
black	red	yellow	blue	white

Printability	Hot stamp	Ink jet	Offset
	-	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: CVN 7 black 1/2", 1.500 mtr., 100m-spool, unprinted

Storage: Please note that CVN 7 should be stored at temperatures below 23 °C and used within 6 months of delivery.

# DERAY®-KY 175

Semi-rigid thin wall Kynar®\* heat shrink tubing, ideal for electronic, automotive and military applications requiring protection and see-through inspection



## Features

- Highly flame retardant, UL-224 VW-1 & CSA OFT
- High withstand to abrasion and cut-through
- Excellent chemical and solvent resistance
- Meets MIL - DTL - 23053/8
- Continuous Operating Temperature: -55°C to 175°C
- Shrink Temperature: 175°C

\* Kynar® is a registered trademark of ATOFINA



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Clear		Clear		Lengths 1.22 m
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
				m		m		
1,2	3/64	0,6	0,24	300	o	150	o	30,5 m
1,6	1/16	0,8	0,24	300	o	150	o	30,5 m
2,4	3/32	1,2	0,24	300	o	150	o	30,5 m
3,2	1/8	1,6	0,24	300	o	150	o	30,5 m
4,8	3/16	2,4	0,24	300	o	75	o	30,5 m
6,4	1/4	3,2	0,30	300	o	75	o	12,2 m
9,5	3/8	4,8	0,30	150	-	75	-	12,2 m
12,7	1/2	6,4	0,30	100	-	50	-	12,2 m
19,0	3/4	9,5	0,40	50	-	30	-	12,2 m
25,4	1	12,7	0,50	50	-	30	-	12,2 m

\* o = airfilled or oval    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	50 MPa
Elongation	IEC 60684-2	450%
Longitudinal Change	ASTM-D 2671	6% max.
Secant Modulus	ASTM-D 882	750 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,8 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 200°C)	IEC 811-1-2	230%
Tensile Strength after Heat Aging (168 hrs at 200°C)	IEC 811-1-2	40 MPa
Elongation after Heat Shock (4 hrs at 250°C)	IEC 811-1-2	300%
Tensile Strength after Heat Shock (4 hrs at 250°C)	IEC 811-1-2	48 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Flammability	UL 224 VW-1	flame retardant

Standard Colours	Special Colours
clear	black

### Electrical

Property	Test Method	Typical Performance coloured
Dielectric Strength	VDE 0303 Part 2	31,5 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>13</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		very good
Water Absorption	VDE 0472	0,07%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-KY 175 1/8" clear, 2.100 mtr., 300m-spool, unprinted

# DERAY®-KYF 190

Flexible thin wall Kynar®\* heat shrink tubing, with extreme chemical resistance, ideal for protecting components in a wide range of harsh conditions



## Features

- Highly flame retardant, UL-224 VW-1
- High temperature resistance
- Continuous Operating Temperature: -55°C to 190°C
- Shrink Temperature: 175°C

\* Kynar® is a registered trademark of ATOFINA



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Clear Spool Length	Style*	Lengths 1.22 m
mm	IN	mm	mm	m		
1,2	3/64	0,6	0,24	300	o	30,5 m
1,6	1/16	0,8	0,24	300	o	30,5 m
2,4	3/32	1,2	0,24	300	o	30,5 m
3,2	1/8	1,6	0,24	300	o	30,5 m
4,8	3/16	2,4	0,24	300	o	30,5 m
6,4	1/4	3,2	0,30	300	o	12,2 m
9,5	3/8	4,8	0,30	150	-	12,2 m
12,7	1/2	6,4	0,30	100	-	12,2 m

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	30 MPa
Elongation	IEC 60684-2	450%
Longitudinal Change	ASTM-D 2671	6% max.
Secant Modulus	ASTM-D 882	300 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,8 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 215°C)	IEC 811-1-2	300%
Tensile Strength after Heat Aging (168 hrs at 215°C)	IEC 811-1-2	20 MPa
Elongation after Heat Shock (4 hrs at 275°C)	IEC 811-1-2	250%
Tensile Strength after Heat Shock (4 hrs at 275°C)	IEC 811-1-2	20 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Flammability	UL 224 VW-1	flame retardant

Standard Colours	Special Colours
clear	black  (other colours on request)

### Electrical

Property	Test Method	Typical Performance coloured
Dielectric Strength	VDE 0303 Part 2	33 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>13</sup> Ω x cm

### Chemical

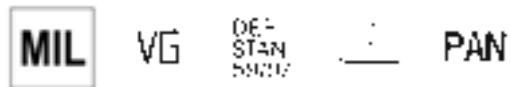
Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		very good
Water Absorption	VDE 0472	0,30%

Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-KYF 190 1/8" clear, 2.100 mtr., 300m-spool, unprinted

# DERAY®-V 25

Diesel resistant elastomeric heat shrink tubing, suited for protecting components in air and space travel as well as for military applications



## Features

- Flexible
- Flame retardant
- High abrasion and cut resistance
- Long-term resistance to diesel, hydraulic fluids and chemicals
- Meets MIL - DTL - 23053/16
- Continuous Operating Temperature: -75°C to 150°C
- Shrink Temperature: 180°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black		Lengths 1.22 m
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
				m		m		
3,2	1/8	1,6	0,80	300	o	50	o	-
4,8	3/16	2,4	0,90	300	o	50	o	-
6,4	1/4	3,2	1,00	300	o	50	o	-
9,5	3/8	4,8	1,10	150	o	50	o	-
12,7	1/2	6,4	1,30	100	o	30	o	-
19,0	3/4	9,5	1,50	50	-	30	-	-
25,4	1	12,7	1,90	50	-	30	-	-
38,0	1 1/2	19,0	2,50	50	-	15	-	-
51,0	2	25,4	3,10	50	-	-	-	-
76,0	3	38,0	3,30	25	-	-	-	-

\* o = airfilled or oval      - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	20 MPa
Elongation	IEC 60684-2	520%
Longitudinal Change	ASTM-D 2671	± 10% max.
Secant Modulus	ASTM-D 882	30 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,5 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	220%
Tensile Strength after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	13 MPa
Heat Shock (4 hrs at 215°C)	IEC 811-1-2	passed
Tensile Strength after Heat Shock (4 hrs at 215°C)	IEC 811-1-2	12 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -75°C
Flammability	UL 224	flame retardant

Standard Colours	Special Colours
black	On Request

### Electrical

Property	Test Method	Typical Performance coloured
Dielectric Strength	VDE 0303 Part 2	22 kV/mm*
Volume Resistivity	VDE 0303 Part 3	10 <sup>12</sup> Ω x cm

\*thickness dependent, min. 12 kV/mm.

### Chemical


Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good
Water Absorption	VDE 0472	1,10%

Printability	Hot stamp	Ink jet	Offset
very good	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-V 25 1/2" black, 900 mtr., 30m-spool, printed

# DERAY®-V 25 TW

Very flexible, thin wall, diesel resistant, elastomeric heat shrink tubing, especially suited for mechanical, thermal and chemical protection of sensitive components

VG 

## Features

- Very flexible
- Flame retardant
- Long-term resistance to diesel, hydraulic fluids and chemicals
- Continuous Operating Temperature: -75°C to 150°C
- Shrink Temperature: 170°C



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS				
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black		Black		Lengths 1.22 m
mm	IN	mm	mm	Spool Length	Style*	Spool Length	Style*	
2,4	3/32	1,2	0,55	300	0	50	0	-
3,2	1/8	1,6	0,55	300	0	50	0	-
4,8	3/16	2,4	0,55	300	0	50	0	-
6,4	1/4	3,2	0,65	300	0	50	0	-
9,5	3/8	4,8	0,65	150	0	50	0	-
12,7	1/2	6,4	0,65	100	0	30	0	-
19,0	3/4	9,5	0,85	50	-	30	-	-
25,4	1	12,7	0,95	50	-	30	-	-
31,8	1 1/4	15,9	1,05	50	-	30	-	-
38,0	1 1/2	19,0	1,05	50	-	15	-	-

\* 0 = airfilled or oval    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	20 MPa
Elongation	IEC 60684-2	520%
Longitudinal Change	ASTM-D 2671	10% max.
Secant Modulus	ASTM-D 882	30 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,5 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	220%
Tensile Strength after Heat Aging (168 hrs at 160°C)	IEC 811-1-2	13 MPa
Heat Shock (4 hrs at 215°C)	IEC 811-1-2	passed
Tensile Strength after Heat Shock (4 hrs at 215°C)	IEC 811-1-2	12 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -75°C
Flammability	UL 224	flame retardant

Standard Colours	Special Colours
black 	On Request

### Electrical

Property	Test Method	Typical Performance coloured
Dielectric Strength	VDE 0303 Part 2	22 kV/mm*
Volume Resistivity	VDE 0303 Part 3	10 <sup>12</sup> Ω x cm

\*thickness dependent, min. 12 kV/mm.

### Chemical

Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		good
Water Absorption	VDE 0472	1,10%

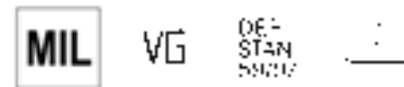
Printability	Hot stamp	Ink jet	Offset
	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-V 25 TW 1/2" black, 2.100 mtr., 30m-spool, printed



# DERAY®-VT 220

Thin wall Viton®\* fluoroelastomer heat shrink tubing, ideal for protecting electronic components in high temperature systems



PAN

## Features

- Very flexible
- Flame retardant
- Highly abrasion resistant
- High withstand to corrosive fluids in extreme temperatures
- Meets MIL - DTL - 23053/13
- Continuous Operating Temperature: -55°C to 220°C
- Shrink Temperature: 175°C

\* Viton® is a registered trademark of du Pont de Nemours and Co. Inc.



## Dimensions

EXPANDED		RECOVERED		DELIVERY UNITS		
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Black Spool Length	Style*	Lengths 1.22 m
mm	IN	mm	mm		m	
3,2	1/8	1,6	0,80	50	0	-
4,8	3/16	2,4	0,90	50	0	-
6,4	1/4	3,2	0,90	50	0	-
9,5	3/8	4,8	1,00	50	0	-
12,7	1/2	6,4	1,20	30	0	-
19,0	3/4	9,5	1,40	30	-	-
25,4	1	12,7	1,80	30	-	-
38,0	1 1/2	19,0	2,40	15	-	-
50,8	2	25,4	2,80	15	-	-

\* 0 = airfilled or oval    - = flattened

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	18 MPa
Elongation	IEC 60684-2	520%
Longitudinal Change	ASTM-D 2671	10% max.
Secant Modulus	ASTM-D 882	70 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,9 g/cm <sup>3</sup>
Elongation after Heat Aging (168 hrs at 250°C)	IEC 811-1-2	220%
Tensile Strength after Heat Aging (168 hrs at 250°C)	IEC 811-1-2	14 MPa
Elongation after Heat Shock (4 hrs at 300°C)	IEC 811-1-2	250%
Tensile Strength after Heat Shock (4 hrs at 300°C)	IEC 811-1-2	17 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -55°C
Flammability	ASTM-D 2671 Proc. A	passed

Standard Colours	Special Colours
black	On Request

### Electrical

Property	Test Method	Typical Performance coloured
Dielectric Strength	VDE 0303 Part 2	16 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>13</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		very good
Water Absorption	VDE 0472	0,20%

Printability	Hot stamp	Ink jet	Offset
very good	very good	good	good

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit 4) Printing Options  
For example: DERAY®-VT 220 3/16" black, 1.000 mtr., 50m-spool, printed

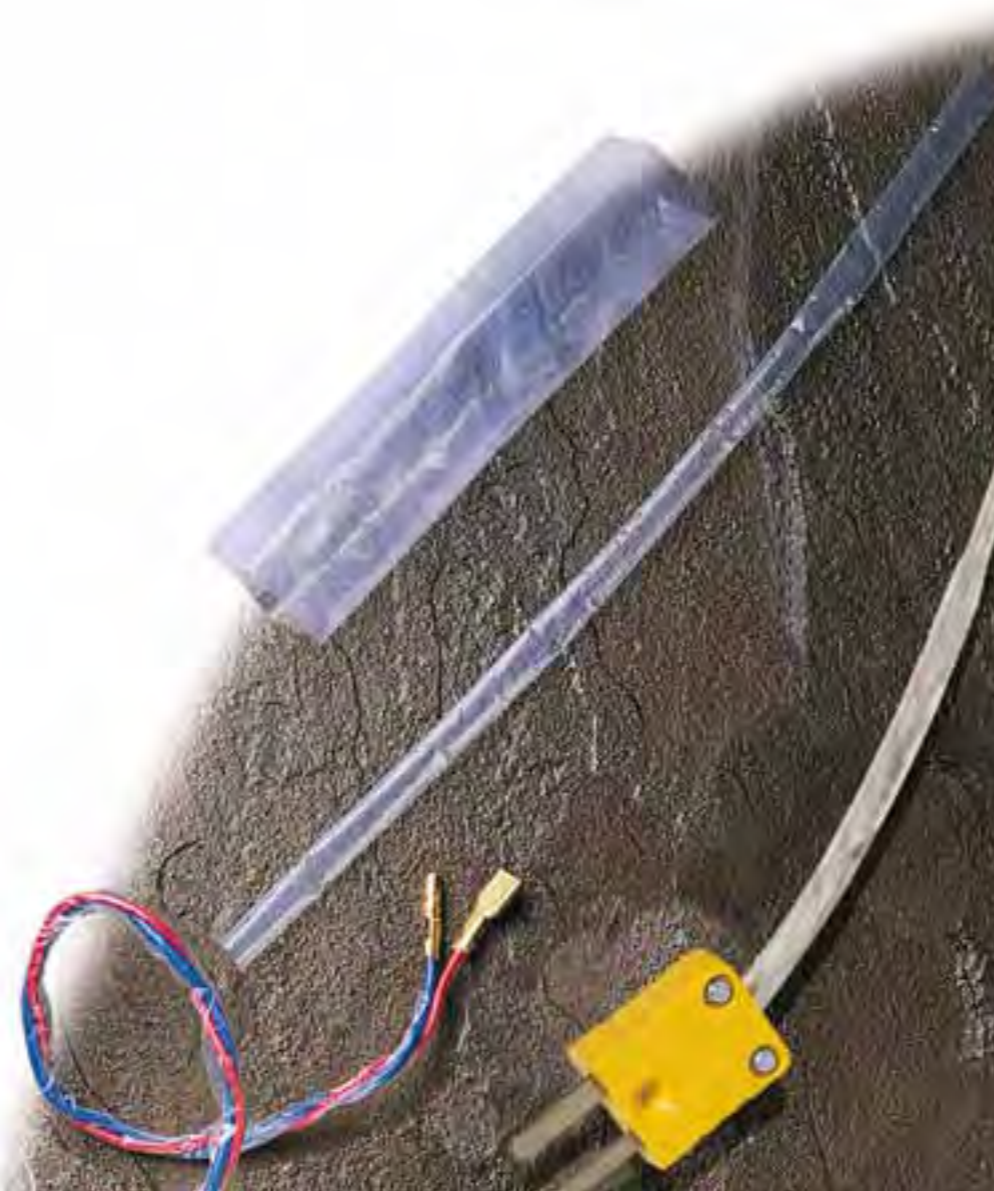
# DERAY®-PTFE

PTFE Teflon®\* heat shrink tubing specially designed for protecting applications in extreme electrical, chemical and thermal environments

## Features

- Semi-rigid
- Highly flame retardant
- Chemically inert
- Continuous Operating Temperature: -65°C to 260°C
- Shrink Temperature: 350°C

\* Teflon® is a registered trademark of du Pont de Nemours and Co. Inc.



## Dimensions

PTFE 4:1				
EXPANDED		RECOVERED		DELIVERY UNITS
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Lengths 1.22 m
mm	IN	mm	mm	
1,98	5/64	0,64	0,23	30,50 m
2,36	3/32	0,80	0,25	30,50 m
3,18	1/8	0,94	0,25	30,50 m
4,76	3/16	1,27	0,30	30,50 m
6,35	1/4	1,60	0,30	12,20 m
9,52	3/8	2,44	0,30	12,20 m
12,70	1/2	3,66	0,38	12,20 m
15,88	5/8	4,52	0,38	12,20 m
19,05	3/4	5,70	0,38	12,20 m
25,40	1	7,06	0,38	12,20 m
31,75	1 1/4	8,82	0,38	12,20 m

PTFE AWG 2:1				
EXPANDED		RECOVERED		DELIVERY UNITS
INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	Lengths 1.22 m
AWG	mm	mm	mm	
30	0,86	0,38	0,23	30,50 m
28	0,97	0,46	0,23	30,50 m
26	1,17	0,56	0,23	30,50 m
24	1,27	0,64	0,25	30,50 m
22	1,4	0,80	0,25	30,50 m
20	1,52	0,97	0,30	30,50 m
18	1,93	1,17	0,30	30,50 m
16	2,36	1,45	0,30	30,50 m
14	3,05	1,82	0,30	30,50 m
12	3,81	2,26	0,30	30,50 m
10	4,85	2,80	0,30	30,50 m
8	6,1	3,55	0,38	12,20 m
6	7,67	4,40	0,38	12,20 m
4	9,4	5,45	0,38	12,20 m
2	10,92	6,90	0,38	12,20 m
0	11,94	8,56	0,38	12,20 m

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 811-1-1	19 MPa
Elongation	IEC 811-1-1	200%
Longitudinal Change	ASTM-D 2671	± 15% max.
Secant Modulus	ASTM-D 882	750 MPa max.
Specific Gravity	ASTM-D 792, A-1	2,1 g/cm <sup>3</sup>
Thermal Aging (168 hrs at 300°C)	IEC 811-1-2	no dropping, flowing or cracking
Thermal Shock (4 hrs at 400°C)	IEC 811-1-2	no dropping, flowing or cracking
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -65°C
Flammability		non combustible

Standard Colours	Special Colours
clear	black

### Electrical

Property	Test Method	Typical Performance coloured
Dielectric Strength	VDE 0303 Part 2	26 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>19</sup> Ω x cm

### Chemical

Property	Test Method	Typical Performance coloured
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Chemical Resistance		very good
Water Absorption	VDE 0472	0,07%

Printability	Hot stamp	Ink jet	Offset
-	-	-	-

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: DERAY®-PTFE 4:1 3/32" clear, 122,0 mtr., 1,22 m-length



## Market Specific Products

Specialty product lines have grown as DSG-Canusa continues with its commitment to be a full service and product supplier to key markets.

Examples include:

- Solutions for the Electrical/Utility market including break-out boots, end caps and RAIL-LESS® sleeves
- Automotive products including wire harness solutions, hose & pipe solutions and a wide variety of shrink appliances
- Products for Electronics applications ranging from high performance tubing for the industrial user to tube kits for the tradesman.
- Communications industry solutions including fiber optic splice protectors and splice closures

# CCAP-RL

Heat shrinkable end caps provide a simple yet effective method for sealing cable ends, pipe conduit, or other similar objects

## Features

- Superior resistance to weathering, moisture contamination and adverse environmental conditions
- Resistant to fluids and solvents
- Optional adhesive liner provides complete environmental protection and insulation
- Heat indicating lines
- Continuous Operating Temperature: -55°C to 110°C
- Shrink Temperature: 120°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED			GENERAL USE DIAMETER
	INTERNAL DIAMETER (MIN) D mm	LENGTH* mm	INTERNAL DIAMETER (MAX) D mm	LENGTH** mm	WALL THICKNESS (NOM) W mm	
0400	10,2	50,8	3,8	42,3	2,0	4,5 - 8,5
0750	19,1	63,5	5,6	42,3	2,0	6,0 - 16,5
1100	27,9	76,2	10,2	57,2	2,4	11,5 - 25,0
1300	33,0	76,2	10,2	57,2	2,4	11,5 - 30,0
1500	38,1	88,9	12,7	59,5	2,4	14,0 - 35,0
1700	43,2	88,9	12,7	59,5	2,5	14,0 - 40,0
2050	52,1	88,9	19,0	59,5	2,5	21,0 - 45,0
2750	69,8	101,6	25,4	81,3	2,5	30,0 - 63,0
3500	88,9	114,3	30,0	91,4	2,5	33,0 - 83,8
4700	119,4	139,7	39,9	118,2	2,7	40,6 - 114,3

\* Length is measured from shoulder to open end of cap    \*\* Recovery dimensions ±6 mm

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	14,5 MPa
Elongation	ASTM-D 412, ISO 37	550%
Specific Gravity	ASTM-D 792, A-I	1,1 g/cm <sup>3</sup> max.
Elongation after Heat Aging (168 hrs at 150°C)	ASTM-D 2671	500%
Heat Shock (4 hrs at 225°C)	ASTM-D 2671	no cracking or flowing
Low Temperature Flexibility	ASTM-D 2671	does not break at -55°C
Hardness (Shore D)	ASTM-D 2240	50D

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149	20 kV/mm
Dielectric Voltage Withstand (2500 V, 60Hz, 1min)	UL 486D	no breakdown
Volume Resistivity	ASTM-D 257	10 <sup>16</sup> Ω x cm

Standard Colours	Special Colours
black 	On Request

Printability	Hot stamp	Ink jet	Offset
	good	good	good

### Seal Integrity

Property	Test Method	Typical Performance
Room Temperature (23°C)	168 hrs/ 40psi	no leaks
Temp. Cycling (-40°C to 60°C)	50 cycles	maintains seal
Burst Pressure		0,70 MPa
Adhesive Lap Shear (1in./min at 23°C)	ASTM-D 1002	130 psi (0,91 MPa)
Softening Point	ASTM-E 28	92°C/-5°C
Adhesive Peel Strength (300mm/min at 23°C) > to steel, aluminium, PE > to PVC	ASTM-D 1000	35 pli 20 pli
Adhesive Blocking (30°C)	ASTM-D 1146	no blocking
Water Penetration	ASTM 706	no penetration after 236 hrs. of continuous immersion

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Fluid Resistance	MIL-DTL-23053	good to excellent
Water Absorption	ASTM-D 570	0,10%
Fungus Resistance	ASTM-G 21	no growth

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity 4) Printing Options 5) Lining Options 6) Valve Options For example: CCAP-RL 0400 black, 1.600 pcs., unprinted, lined, unvalved

# CCB

Heat shrinkable boots seal and protect multi-conductor cable and conduit breakouts

## Features

- Boots for 2, 3, 4, 5 and 6 way cable breakouts
- Strain relief and mechanical protection
- Resistant to fluids and solvents
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Also available as anti-track medium voltage breakouts and as conductive breakouts
- Continuous Operating Temperature: -55°C to 100°C
- Shrink Temperature: 135°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED		RECOVERED FULL LENGTH	RECOVERED FINGER LENGTH
	BREAKOUT MAIN DIAMETER (MIN) mm	FINGER DIAMETER (MIN) mm	BREAKOUT MAIN DIAMETER (MAX) mm	FINGER DIAMETER (MAX) mm	± 10% mm	± 10% mm
<b>CCB Low Voltage Breakouts</b>						
<b>CCB2 - Two Core Breakouts</b>						
CCB2 33/14	33,0	14,0	10,0	3,0	90,0	20,0
CCB2 50/21	50,0	21,0	22,0	6,7	119,0	35,0
CCB2 77/37	77,0	37,0	38,0	12,7	141,0	42,0
<b>CCB3 - Three Core Breakouts</b>						
CCB3 38/11	38,0	11,0	14,0	4,0	110,0	20,0
CCB3 60/24	60,0	24,0	22,0	8,0	185,0	45,0
CCB3 80/36	80,0	36,0	33,0	16,0	210,0	50,0
CCB3 110/48	110,0	48,0	47,0	20,0	260,0	75,0
CCB3 125/55	125,0	55,0	47,0	20,0	260,0	75,0
CCB3 140/62	140,0	62,0	54,0	27,0	250,0	65,0
<b>CCB4 - Four Core Breakouts</b>						
CCB4 38/15	38,0	15,0	14,0	3,0	105,0	20,0
CCB4 55/20	55,0	20,0	25,0	6,0	180,0	45,0
CCB4 72/25	72,0	25,0	22,0	8,5	190,0	45,0
CCB4 100/35	100,0	35,0	33,0	14,0	215,0	50,0
CCB4 125/45	125,0	45,0	47,0	22,0	245,0	72,0
<b>CCB5 - Five Core Breakouts</b>						
CCB5 60/30	60,0	30,0	24,0	7,5	180,0	30,0
<b>CCB6 - Six Core Breakouts</b>						
CCB6 61/21	61,0	20,5	37,0	9,0	137,0	51,0

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 638 (M)	10,0 MPa min.
Elongation	ASTM-D 638 (M)	300% min.
Hardness	Internal	40 Shore D min.
Tensile Strength after thermal aging (120°C, 168 hrs)	ISO - 188	9 Mpa min.
Elongation after thermal aging (120°C, 168 hrs)	ISO - 188	250% min.
Water absorption	ISO - 62	1% max.
Dielectric Strength	IEC - 243	12 kV/mm
Dielectric Constant	IEC - 250/ASTM-D 150	5 max.
Resistance to tracking	ASTM-D 2303	N/A
Volume Resistivity	IEC 93	10 <sup>12</sup> Ω x cm
Flammability	ESI 09-13	Non flame retardant

Standard Colours	Special Colours
CCB black	On Request

Printability	Hot stamp	Ink jet	Offset
	excellent	excellent	excellent

### Delivery Units on request

Ordering: **Specify the product name** and the number of cores plus each of the following options:

- 1) Size 2) Colour 3) Total Quantity 4) Printing Options  
For example: CCB3 38/11 black, 2.000 pcs., unprinted

# CCBA & CCB-Con

Heat shrinkable boots seal and protect multi-conductor cable and conduit breakouts

CCBA = Anti-track medium voltage breakouts

CCB-Con = Conductive breakouts

## Features

- Strain relief and mechanical protection
- Resistant to common fluids and solvents
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Continuous Operating Temperature: -55°C to 100°C
- Shrink Temperature: 135°C



## Dimensions

CCBA Anti-Track Medium Voltage Breakouts - Three Core Breakouts only

ORDER REF. NO.	EXPANDED		RECOVERED		RECOVERED FULL LENGTH	RECOVERED FINGER LENGTH
	BREAKOUT MAIN DIAMETER (MIN) mm	FINGER DIAMETER (MIN) mm	BREAKOUT MAIN DIAMETER (MAX) mm	FINGER DIAMETER (MAX) mm	± 10% mm	± 10% mm
CCBA 60/24	60,0	24,0	22,0	8,0	185,0	45,0
CCBA 80/36	80,0	36,0	33,0	16,0	210,0	50,0
CCBA 110/48	110,0	48,0	47,0	20,0	260,0	75,0
CCBA 125/55	125,0	55,0	47,0	20,0	260,0	75,0

CCB-Con Conductive Breakouts - Three Core Breakouts only



ORDER REF. NO.	EXPANDED		RECOVERED		RECOVERED FULL LENGTH	RECOVERED FINGER LENGTH
	BREAKOUT MAIN DIAMETER (MIN) mm	FINGER DIAMETER (MIN) mm	BREAKOUT MAIN DIAMETER (MAX) mm	FINGER DIAMETER (MAX) mm	± 10% mm	± 10% mm
CCB-CON 60/24	60,0	24,0	22,0	8,0	185,0	45,0
CCB-CON 80/36	80,0	36,0	33,0	16,0	210,0	50,0
CCB-CON 110/48	110,0	48,0	47,0	20,0	260,0	75,0
CCB-CON 125/55	125,0	55,0	47,0	20,0	260,0	75,0

## Technical Data

### Product

Property	Test Method	Typical Performance CCBA	Typical Performance CCB-Con
Tensile Strength	ASTM-D 638 (M)	7,0 MPa min.	12,0 MPa min.
Elongation	ASTM-D 638 (M)	300% min.	300% min.
Hardness	Internal	32 Shore D min.	40 Shore D min.
Tensile Strength after thermal aging (120°C, 168 hrs)	ISO - 188	6 Mpa min.	10 Mpa min.
Elongation after thermal aging (120°C, 168 hrs)	ISO - 188	250% min.	250% min.
Water absorption	ISO - 62	1% max.	1% max.
Dielectric Strength	IEC - 243	12 kV/mm	Conductive
Dielectric Constant	IEC - 250/ASTM-D 150	5 max.	Conductive
Resistance to tracking	ASTM-D 2303	no failure by tracking after 1 hour at 2.5 kV, 1 hour at 2.75 kV, 1 hour at 3.0 kV, 20 minutes at 3.25 kV	N/A
Volume Resistivity	IEC 93	10 <sup>14</sup> Ω x cm	2*10 <sup>4</sup> Ω x cm
Flammability	ESI 09-13	non burning	Non flame retardant

Printability	Hot stamp	Ink jet	Offset
	Excellent	Excellent	Excellent

Standard Colours	Special Colours
CCBA	reddish-brown 
CCB-Con	black  Not Available

Ordering: **Specify the product name** and the number of cores plus each of the following options:

1) Size 2) Colour 3) Total Quantity 4) Printing Options

For example: CCBA 60/24, reddish-brown, 2.000 pcs., unprinted

# CEC

Adhesive-lined heat shrinkable end cap which enables easy protection and sealing of unused cables from environmental effects

## Features

- Unaffected by ultraviolet light
- Good chemical and solvent resistance
- Thermoplastic liner provides complete environmental seal
- Continuous Operating Temperature: -55°C to 100°C
- Shrink Temperature: 120°C



## Dimensions

ORDER REF. NO.	EXPANDED		RECOVERED		GENERAL USE DIAMETER mm
	INTERNAL DIAMETER* (MIN) A mm	INTERNAL DIAMETER* (MAX) A mm	LENGTH (MIN) B mm	WALL THICKNESS (MIN) T mm	
CEC 15/4,5	15,0	4,5	45,0	1,0	5,0 - 12,0
CEC 25/9	25,0	9,0	70,0	2,7	10,0 - 22,0
CEC 36/15	36,0	15,0	95,0	2,8	17,0 - 30,0
CEC 63/24	63,0	24,0	110,0	3,6	28,0 - 55,0
CEC 80/40	80,0	40,0	130,0	3,6	45,0 - 70,0
CEC 102/60	102,0	60,0	152,0	3,6	68,0 - 90,0
CEC 124/60	124,0	60,0	152,0	3,6	75,0 - 110,0
CEC 148/57	148,0	57,0	152,0	4,5	80,0 - 135,0

\* Internal diameter without adhesive coating

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 638 M	12,0 MPa min.
Elongation	ASTM-D 638 M	300% min.
Water Absorption	ISO - 62	1,0% max.
Shore Hardness	ASTM-D 2240	45 Shore D min.
Tensile Strength after Heat Aging (168 hrs at 120°C)	ISO - 188	10,0 MPa min.
Elongation after Heat Aging (168 hrs at 120°C)	ISO - 188	250% min.

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	IEC - 243	12 kV/mm min.
Volume Resistivity	IEC - 93	10 <sup>11</sup> Ω x cm

Printability	Hot stamp	Ink jet	Offset
	good	good	good

Standard Colours	Special Colours
black 	On request

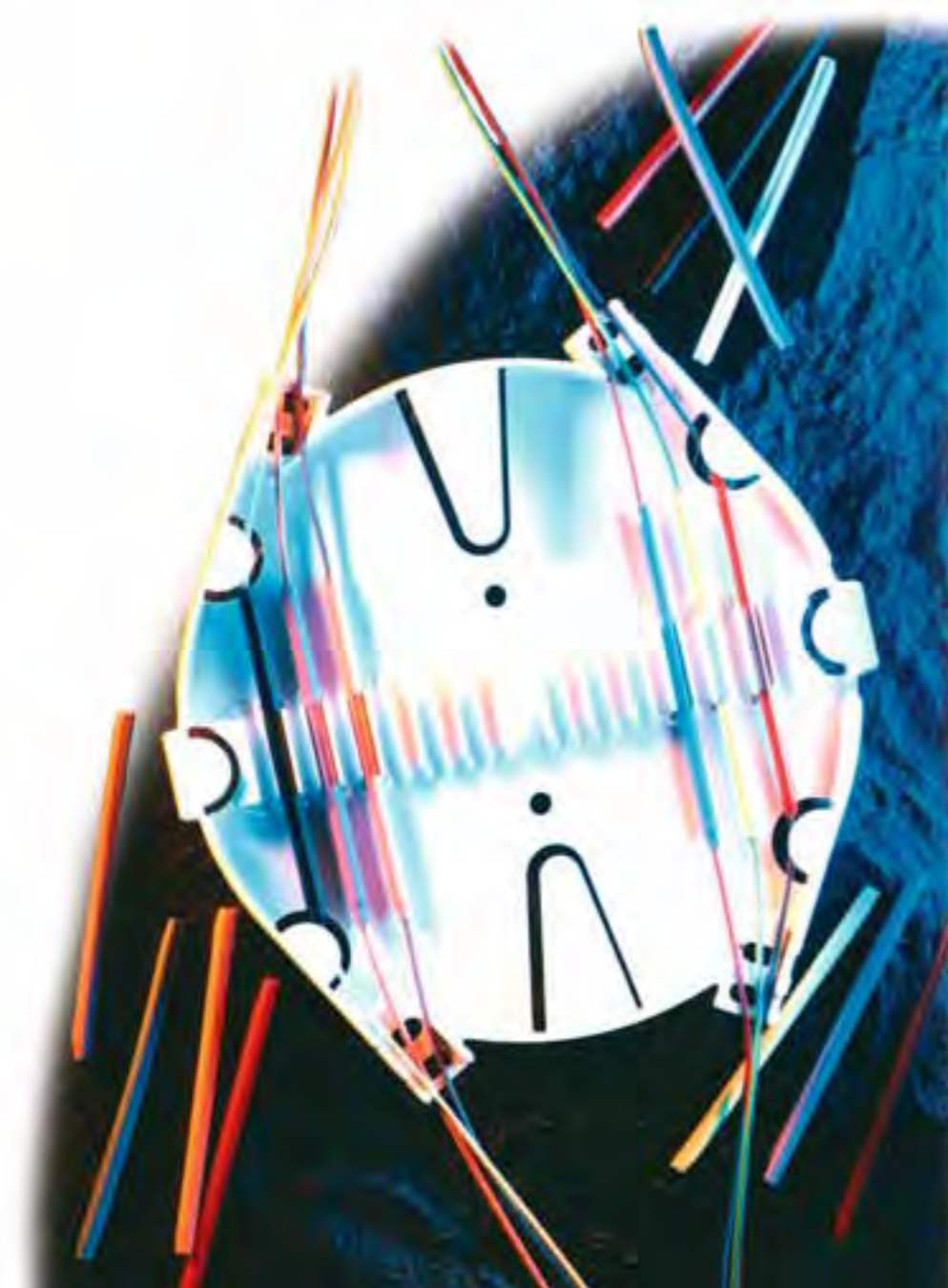
Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity 4) Printing Options  
For example: CEC 36/55 black, 1.075 pcs., unprinted

# CFSP

A specially designed crosslinked polyolefin tubing system, with meltable liner, providing strength and protection to optical fibre splices

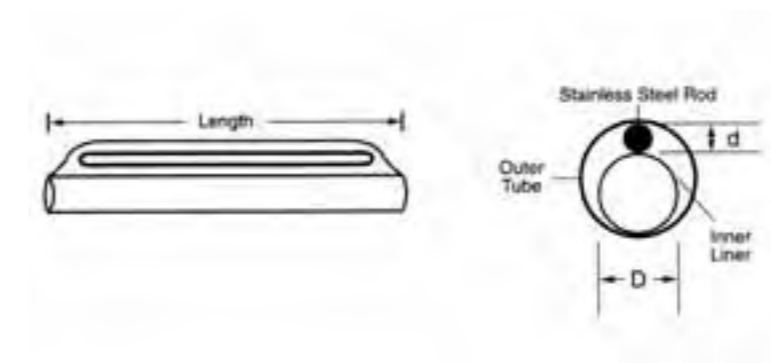
## Features

- Single-holed (preshrunk) ends eliminate improper fibre threading
- Smooth, deburred stainless steel reinforcing member ends decrease the risk of fibre damage during installation
- Extended liner length prevents contact between the fibre and the backbone
- Clear sleeve design permits easy centering of splice before heating
- Continuous Operating Temperature: -20°C to 60°C
- Shrink Temperature: 90°C



## Dimensions

Nominal Sleeve Length	Inside Diameter of Inner Liner (MIN)	Nominal Steel Diameter	DELIVERY UNITS
mm	mm	mm	pcs.
61,0	1,5	1,2	100
45,0	1,5	1,2	100
23,0	1,5	1,2	100



## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 2671, ISO R527	25 MPa
Density	ISO R1183D	0,94
Vicat Softening Point	ISO R306	66°C
Ultimate Elongation	ISO 37	400%
Longitudinal Change	ASTM-D 2671	±5%
Dielectric Strength	IEC 243	20 kV/mm

Standard Colours	Special Colours
clear 	On request

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity  
For example: CFSP 45,0 mm clear, 2.000 pcs.



# CGEL 596 / CGEL 711

Gel filled closure provides complete environmental protection for coaxial drop splices in burial and aerial applications

## Features

- Single piece, clam shell design, requires no additional tools for installation
- Gel filled for complete waterproof protection
- Expansion chambers prevent gel overflow
- Accommodates a wide range of standard F type and environmentally sealed coaxial connectors
- Accommodates all coaxial cable types including quad shielded cable
- Fully re-enterable
- Channel provided for retaining messenger cable
- Tough outer shell withstands impact testing to 5 ft-lbs force
- Meets SCTE IPS-TP-013 requirements for water immersion and temperature cycling



## Dimensions

CGEL	NOMINAL DIAMETER (MIN)	STANDARD LENGTH	DELIVERY UNITS
	mm	mm	pcs.
596	25,4	116,0	12
711	30,48	165,0	12

## Technical Data

### Gel Properties

### Physical

Property	Test Method	Typical Performance
Cone Penetration	ASTM-D 1824	121,0 mm
Surface Tack		3,0 sec
Elongation		> 1.200%
Specific Gravity	ASTM-D 70	0,98 g/cm <sup>3</sup> max.

### Environmental

Property	Test Method	Typical Performance
Heat Aging 60°C for 30 days		passed all tests
Long Term Life		properties retained for 20 years
Hydrophobic Properties		HLB<2

### Electrical

Property	Test Method	Typical Performance
Dielectric Constant	ASTM-D 150	3.3 max at 1kHz 3.0 max at 100 kHz
Power Factor	ASTM-D 150	0.03 max at 1 kHz 0.03 max at 100 kHz

Ordering: Specify: CGEL 596 or CGEL 711 + Total Quantity

## Application Ranges

Cables:

- 596: All 59 & 6 series coaxial cables including quad shield with messengers
- 711: All RG 7 & RG 11 series coaxial cables including quad shield with messengers

CGEL	596	711
	59 & 6 series coaxial connectors	RG 7 & RG 11 series coaxial connectors
Digicon:	Type 2 series, S series, 6 splice series	S series, RG 11 series
Augat:	F series, SNS series, environmentally sealed SNS	F series, SNS series
Gilbert:	GF, GFW and GF 360 F type, ultraseal series	GAF, GF 11S, GAF 360 type 7 & 11

## Closure Properties

Material Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 638	27 MPa
Notched Izod Impact at 23°C	ASTM-D 256A	2.0 ft-lbs/in
Drop Weight Impact Strength at -29°C	Montell	21 ft-lbs
Specific Gravity	ASTM-D 792	0,90 g/cm <sup>3</sup> max.

## Electrical

Property	Test Method	Typical Performance
Moisture Migration	SCTE IPS-TP-013	no moisture migration
Impact Strength	Canusa-AH-01 5 ft-lbs, -18°C, 38°C	no cracking or opening of closure

Standard Colours	Special Colours
black 	Not Available

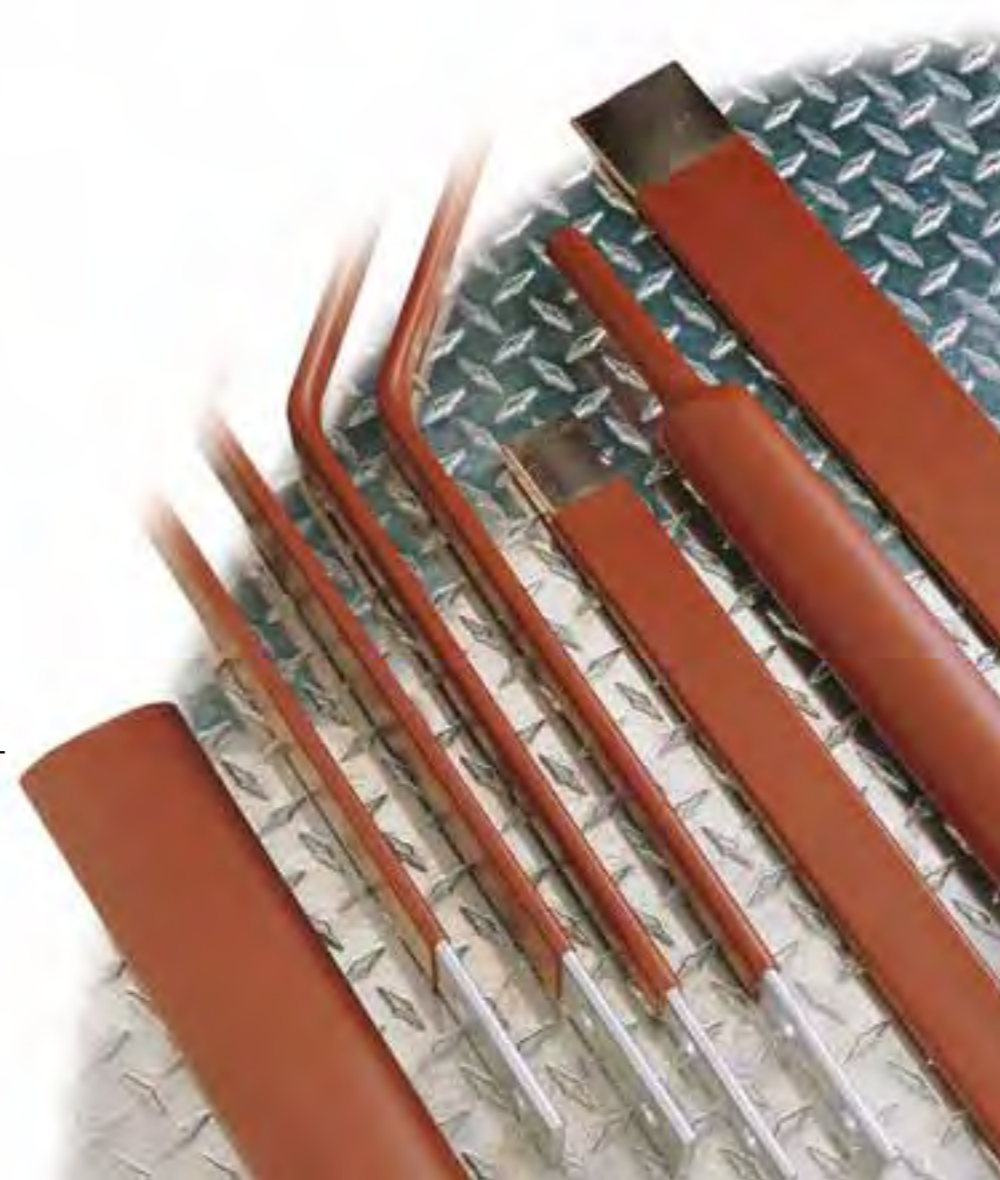
# CBTM

Medium wall anti-track heat shrinkable tubing specifically designed for insulating medium voltage bus bars



## Features

- Flame Retardant
- Reduces bus bar clearance requirements
- Protects against accidental flashover
- Anti-track
- Halogen free
- Tested to ANSI C37.20.2 standards for medium voltage switchgear applications to 36 kV
- UL recognised component
- Continuous Operating Temperature: -40°C to 125°C
- Shrink Temperature: 120°C



## Dimensions

CBTM - for services to 36 kV on unbolted bus bar

ORDER REF. NO.	EXPANDED		RECOVERED		APPLICATION RANGES				DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	RECTANGULAR BUS BARS (MIN) (MAX)	ROUND BUS BARS (MIN) (MAX)		RED		
mm	mm	mm	mm	mm	mm	mm	mm	m	
CBTM 0750	19,0	5,5	2,70	6,4	6,4	6,8	15,2		15
CBTM 1300	33,0	10,1	3,00	12,7	28,5	12,4	27,9		15
CBTM 2050	52,0	19,0	2,80	31,5	50,8	22,3	43,1		15
CBTM 2750	69,8	25,4	2,90	44,4	76,2	29,7	58,4		15
CBTM 3500	88,9	29,9	3,10	57,1	101,6	35,8	73,6		15
CBTM 4700	119,3	39,9	3,20	73	142,8	47,7	101,6		15
CBTM 6700	170,1	58,4	3,20	114,3	203,2	69,5	144,7		15

Rectangular bus bars have thickness of 1/4 to 5/8 inch.

Application ranges noted above selected to obtain minimum insulation thickness required to meet ANSI C37.20.2 withstand requirements at bus bar spacing noted below. These spacings were determined from a limited number of test configurations. Due to the wide variety of bus bar configurations, these spacings should not be employed without actual testing by the user.

### Clearances with Insulation

SYSTEM VOLTAGE	BIL kV	CBTM Medium Wall Tubing	
		p to p (mm)	p to g (mm)
15 kV	95	86,0	106,0
25 kV	125	114,0	152,0
36 kV	150	165,0	203,0

p to p: Phase to Phase orientation  
p to g: Phase to Ground orientation  
Spacing based on metal to metal dimension prior to insulation  
Spacing based on insulation wall thickness per application range of above table

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	8,3 MPa
Elongation	ASTM-D 412, ISO 37	370%
Heat Aging (7 days at 175°C)		
Tensile Strength	ASTM-D 2671	10 Mpa
Elongation	ASTM-D 2671	200%
Heat Shock (4 hrs at 225°C)	ASTM-D 2671	no cracking or flowing
Low Temp. Flexibility (4 hrs at -40°C)	ASTM-D 2671	no cracking
Flammability	ANSI C37.20, ASTM-D 2671	passed

Standard Colours	Special Colours
red 	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149	20 kV/mm
Surface Resistivity	ASTM-D 257	510 x 10 <sup>9</sup> Ω
Volume Resistivity	ASTM-D 257	1.9 x 10 <sup>16</sup> Ω cm
Dielectric Constant	ASTM-D 150	3.4
Tracking Resistance (2500 V, 300 min)	ANSI C37.20, ASTM-D 2303	non-tracking
Weathering	ASTM-G 53	non-tracking after 6000 hours

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671	non-corrosive
Fluid Resistance	MIL-DTL-23053/15	good to excellent
Water Absorption	ASTM-D 570	0,25%

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: CBTM 52/19 red, 1.500 mtr., 15m-spool

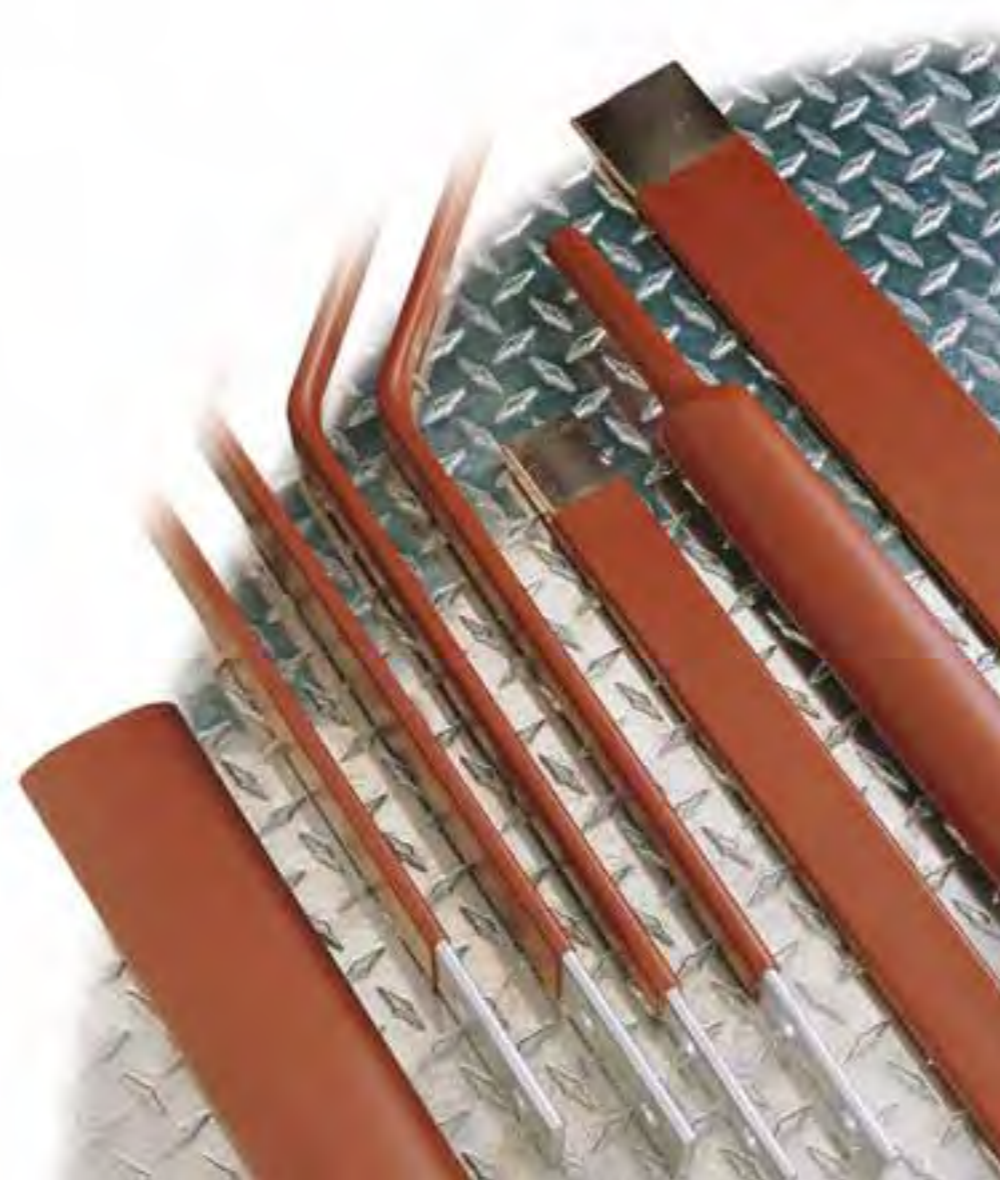
# CBTH

Heavy wall anti-track heat shrinkable tubing specifically designed for insulating medium voltage bus bars



## Features

- Flame Retardant
- Reduces bus bar clearance requirements
- Protects against accidental flash-over
- Anti-track
- Halogen free
- Tested to ANSI C37.20.2 standards for medium voltage switchgear applications to 36 kV
- UL recognised component
- Continuous Operating Temperature: -40°C to 125°C
- Shrink Temperature: 120°C



## Dimensions

CBTH - for services to 36 kV on unbolted bus bar

ORDER REF. NO.	EXPANDED		RECOVERED		APPLICATION RANGES				DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D mm	INTERNAL DIAMETER (MAX) D mm	WALL THICKNESS (NOM) w mm	RECTANGULAR BUS BARS		ROUND BUS BARS			
				(MIN) mm	(MAX) mm	(MIN) mm	(MAX) mm		
CBTH 1100	27,9	8,9	3,90	9,5	12,7	10,6	17,7	15	
CBTH 2000	50,8	16	4,10	25,4	34,9	19,3	33,0	15	
CBTH 2700	68,0	22,1	4,10	34,9	50,8	26,1	43,1	15	
CBTH 3500	89,9	29,9	4,10	50,8	76,2	35,8	58,4	15	
CBTH 4700	119,9	39,9	4,20	69,8	111,1	47,7	81,2	15	
CBTH 6600	167,6	58,4	4,20	107,9	177,8	69,5	124,4	15	

Rectangular bus bars have thickness of 1/4 to 5/8 inch.

Application ranges noted above selected to obtain minimum insulation thickness required to meet ANSI C37.20.2 withstands requirements at bus bar spacing noted below. These spacings were determined from a limited number of test configurations. Due to the wide variety of bus bar configurations, these spacings should not be employed without actual testing by the user.

### Clearances with Insulation

SYSTEM VOLTAGE	BIL kV	CBTM Medium Wall Tubing	
		p to p (mm)	p to g (mm)
15 kV	95	55,0	66,0
25 kV	125	71,0	101,0
36 kV	150	142,0	190,0

p to p: Phase to Phase orientation  
p to g: Phase to Ground orientation  
Spacing based on metal to metal dimension prior to insulation  
Spacing based on insulation wall thickness per application range of above table

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	8,3 MPa
Elongation	ASTM-D 412, ISO 37	370%
Heat Aging (7 days at 175°C)		
Tensile Strength	ASTM-D 2671	10 Mpa
Elongation	ASTM-D 2671	200%
Heat Shock (4 hrs at 225°C)	ASTM-D 2671	no cracking or flowing
Low Temp. Flexibility (4 hrs at -40°C)	ASTM-D 2671	no cracking
Flammability	ANSI C37.20, ASTM-D 2671	passed

Standard Colours	Special Colours
red	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149	20 kV/mm
Surface Resistivity	ASTM-D 257	510 x 10 <sup>9</sup> Ω
Volume Resistivity	ASTM-D 257	1.9 x 10 <sup>16</sup> Ω cm
Dielectric Constant	ASTM-D 150	3.4
Tracking Resistance (2500 V, 300 min)	ANSI C37.20, ASTM-D 2303	non-tracking
Weathering	ASTM-G 53	non-tracking after 6000 hours

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671	non-corrosive
Fluid Resistance	MIL-DTL-23053/15	good to excellent
Water Absorption	ASTM-D 570	0,25%

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: CBTH 50/16 red, 300 mtr., 15m-spool

# DERAY®-KSF

Heavy wall anti-track heat shrinkable tubing specifically designed for insulating medium voltage bus bars

## Features

- Reduces bus bar clearance requirements
- Protects against accidental flash-over
- Anti-track
- Halogen free
- Continuous Operating Temperature: -40°C to 135°C
- Shrink Temperature: 125°C



## Dimensions

EXPANDED	RECOVERED		DELIVERY UNITS
INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	RED
mm	mm	mm	m
19,0	6,0	2,00	50
25,0	10,0	4,10	50
32,0	12,0	2,80	50
38,0	12,0	2,80	50
43,0	19,0	3,50	25
45,0	16,0	4,10	25
52,0	19,0	3,50	25
58,0	19,0	3,50	25
68,0	25,0	3,50	25
76,0	32,0	3,50	15
100,0	40,0	4,10	10

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	IEC 60684-2	14 MPa
Elongation	IEC 60684-2	500%
Longitudinal Change	ASTM-D 2671	6% ± 3% max.
Secant Modulus	ASTM-D 882	30 MPa max.
Specific Gravity	ASTM-D 792, A-I	1,2 g/cm <sup>3</sup> max.
Elongation after Heat Shock (4 hrs at 200°C)	IEC 811-1-2	450%
Tensile Strength after Heat Shock (4 hrs at 200°C)	IEC 811-1-3	11 MPa
Low Temperature Flexibility	ASTM-D 2671 Meth. C	does not break at -40°C
Flammability	FMVSS 302	passed

Standard Colours	Special Colours
red 	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	VDE 0303 Part 2	20 kV/mm
Volume Resistivity	VDE 0303 Part 3	10 <sup>14</sup> Ω x cm
Comparative Tracking Index	IEC 112	CTI 600<0,1

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671 Meth. A	non-corrosive
Copper Compatibility	ASTM-D 2671 Meth. B	non-corrosive
Water Absorption	VDE 0472	0,20%

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: DERAY®-KSF 19/6, red, 500 mtr., 50 m-spool, unprinted

# CNTT

Medium wall heat shrinkable non-tracking tubing for use in MV joints & terminations up to 36kV

## Features

- Non-tracking
- UV stabilised
- Flame retardant
- Exceptional electrical and weathering properties
- Suitable for outdoor & indoor terminations
- Continuous Operating Temperature: -55°C to 125°C
- Shrink Temperature: 120°C



## Dimensions

EXPANDED	RECOVERED		DELIVERY UNITS
INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	SPOOL LENGTH
mm	mm	mm	m
33,0	10,0	2,80	15
45,0	15,0	2,80	15
60,0	19,0	3,10	15
80,0	25,0	2,90	15

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 412, ISO 37	11,2 MPa
Elongation	ASTM-D 412, ISO 37	370%
Longitudinal Change	ASTM-D 2671	-5% max.
Specific Gravity	ISO/R 1183 (A)/ASTM-D 1505	1,31 g/cm <sup>3</sup>
Heat Shock (30 min at 200°C)	ES1-0913	no cracking or flowing
Elongation after Heat Shock (500 hrs at 120°C)	ASTM-D 412, ISO 37	310%
Tensile Strength after Heat Shock (500 hrs at 120°C)	ASTM-D 412, ISO 37	8,56 MPa
Low Temperature Flexibility	ASTM-D 2671	does not break at -40°C
Flammability	ASTM-D 2671 (B)	passed

Standard Colours	Special Colours
red 	Not Available

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 149	20 kV/mm
Surface Resistance	ASTM-D 257	154x10 <sup>9</sup> Ω
Volume Resistivity	ASTM-D 257/IEC-93	2.5*10 <sup>11</sup> Ω cm
Dielectric Constant	ASTM-D 150/IEC-250	2,0 min.
Tracking Resistance (2500 V, 300 min)	ASTM-D 2303-96	no tracking after 12 hrs

### Chemical

Property	Test Method	Typical Performance
Corrosive Action	ASTM-D 2671	non-corrosive
Environmental Salt fog test	IEC 1109	no tracking after 1000 hrs
Chemical Resistance (Transformer Oil)	ISO-175/ISO-37	passed
Water Absorption	ASTM-D 570/ ISO-62	0,11% min., 0,28 max.%

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: CNTT 45/15, red, 150 mtr. 15 mtr.-reel

# CRDW

Adhesive-lined, heat shrinkable wrap-around sleeve with a flexible stainless steel locking channel. Used for general re-jacketing and sealing applications, protection of damaged cable or as outer jacket on XLPE Copper Telecom cable joints from 10 pair to 2000 pair cable

## Features

- Provides water tight seal upon recovery
- Excellent mechanical strength
- Application procedure is quick, simple and clean
- Covered with thermochromatic paint that changes colour upon achieving correct shrink temperature
- Sleeve can be cut to suit shorter application requirements
- Stainless steel channel provides permanent closure system
- Easy to install in situ over live cable without cutting the cable or shutting down power
- Installation temperature range: -30°C to +70°C



## Dimensions

EXPANDED	RECOVERED		DELIVERY UNITS
INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	WALL THICKNESS (NOM) w	BLACK LENGTHS
mm	mm	mm	m
43,0	8,0	2,30	1,0
75,0	15,0	2,30	1,0
93,0	25,0	2,30	1,0
137,0	34,0	2,30	1,0
160,0	48,0	2,30	1,0
200,0	48,0	2,30	1,0

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	DIN 53455/ISO R527	17,0 MPa min.
Elongation	DIN 53455/ISO R527	350% min.
Tensile Strength after Heat Aging (168 hrs at 150°C)	DIN 53455/ISO R527	14 MPa min.
Elongation after Heat Aging (168 hrs at 150°C)	DIN 53455/ISO R527	300% min.
Carbon Black Content for UV Resistance	VDE 0472	2% min.
Low Temperature Flexibility	DIN 53453	no cracking at -40°C
Longitudinal Shrinkage		10% max.

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	DIN 53481/IEC 243	12 kV/mm

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Colour 3) Total Quantity + Delivery Unit  
For example: CRDW 93/25 black, 1.000 pcs., 1,0 mtr.-length

# CRLS

A superior wraparound insulation product that easily installs in repair and splice applications and provides excellent insulation and protection for cable jackets

## Features

- Shut down of system not required for repair
- High shrink ratio covers even irregular shapes
- Simple RAIL-LESS®\* installation with clamshell design
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Meets ICEA and NEMA insulation thickness specifications
- Continuous Operating Temperature: -55°C to 110°C
- Shrink Temperature: 120°C

\* RAIL-LESS® is a registered trademark of Shawcor Ltd.



## Dimensions

	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D mm	INTERNAL DIAMETER (MAX) D mm	WALL THICKNESS (NOM) w mm	BLACK LENGTHS*
CRLS-1	30,0	6,0	2,00	1
CRLS-2	46,0	14,0	2,00	1
CRLS-3	68,0	24,0	2,00	1
CRLS-4	91,0	33,0	2,00	1
CRLS-5	126,0	47,0	2,00	1
CRLS-6	171,0	67,0	2,00	1

\* Standard lengths are: 152 mm, 203 mm, 305 mm, 610 mm and 914 mm

## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM-D 638	19 MPa
Elongation	ASTM-D 638	600%
Heat Shock (4hrs at 225°C)	ASTM-D 2671	no cracking or flowing
Air Oven Aging (7 days at 150°C)		
Tensile Strength	ASTM-D 638	14,5 MPa
Elongation	ASTM-D 638	540%
Specific Gravity	ASTM-D 792	0,94 g/cm <sup>3</sup>
Hardness (Shore D)	ASTM-D 2240	50 D

### Electrical

Property	Test Method	Typical Performance
Dielectric Strength	ASTM-D 2671	28 kV/mm min.
Volume Resistivity	ASTM-D 257	1,9x10 <sup>18</sup> Ω x cm
Dielectric Constant (1 KHZ)	ASTM-D 150	4,05

### Chemical

Property	Test Method	Typical Performance
Fluid Resistance	MIL-DTL-23053/15	good to excellent
Hydraulic Fluid (MIL H5606C)		
Tensile Strength	MIL-DTL-23053/15 ASTM-D 638, ISO 37	17 MPa
Elongation	ASTM-D 638, ISO 37	600%
Lubricating Oil (MIL L7808G)		
Tensile Strength	MIL-DTL-23053/15 ASTM-D 638, ISO 37	16 MPa
Elongation	ASTM-D 638, ISO 37	600%
Diesel Fuel		
Tensile Strength	MIL-DTL-23053/15 ASTM-D 638, ISO 37	14,5 MPa
Elongation	ASTM-D 638, ISO 37	600%
Corrosive Action	ASTM-D 2671	non-corrosive
Fungus Resistance	ASTM-G 21	no growth
Water Absorption	ASTM-D 570	0,1% max.

Ordering: **Specify the product name** plus each of the following options: 1) Size 2) Length 3) Colour 4) Total Quantity  
For example: CRLS 68/24, 203 mm, black, 100 pcs.

# Low Voltage Kits

LVJUAC, LVJUAM and LVJUAS connecting (cable-jointing) sleeves are perfectly suitable for joining multi-core, polymeric insulated energy cables in the low voltage range.

- LVJUAM Multi-region joint sleeve for screw connectors
- LVJUAC Multi-region joint sleeve for crimp connectors
- LVJUAS Joint kits for screened polymeric cable
- CJK/CTK Joint and termination kits for armoured cables

## Features

- Quick, simple installation
- Exceptionally good electrical insulation
- Good mechanical load-bearing ability
- No maintenance time necessary
- Usable immediately
- Tested to DIN 47632/VDE 0278/HD623 part 1 and 3
- Available with the following interior coatings  
A = hot-melt adhesive  
S = sealing composition



## Dimensions

Joint kits for plastic-insulated 0.6/1kV cables

DESCRIPTION	CROSS SECTION OF CONDUCTORS DIN 47632	CABLE TYPE E.G.
For Screw Connectors		
LVJUAM 4 X 1.5 - 4 X 16	4 X 1.5 - 4 X 16	NYY, NXY, NYX, NXX with Round (r) or sectorial (s), solid (e) or stranded (m), aluminium (Al) or Copper (cu) conductor
LVJUAM 5 X 1.5 - 5 X 16	5 X 1.5 - 5 X 16	
LVJUAM 4 X 6 - 4 X 25	4 X 6 - 4 X 25	
LVJUAM 4 X 16 - 4 X 50	4 X 16 - 4 X 50	
LVJUAM 5 X 16 - 5 X 50	5 X 16 - 5 X 50	
LVJUAM 4 X 25 - 4 X 95	4 X 25 - 4 X 95	
LVJUAM 4 X 35 - 4 X 150	4 X 35 - 4 X 150	
LVJUAM 4 X 95 - 4 X 300	4 X 95 - 4 X 300	

For Crimp Connectors		
LVJUAC 4 X 2.5 - 16	4 X 2.5 - 16	NYY, NXY, NYX, NXX with Round (r) or sectorial (s), solid (e) or stranded (m), aluminium (Al) or Copper (cu) conductor
LVJUAC 5 X 2.5 - 16	5 X 2.5 - 16	
LVJUAC 4 X 6 - 35	4 X 6 - 35	
LVJUAC 5 X 6 - 35	5 X 6 - 35	
LVJUAC 4 X 16 - 50	4 X 16 - 50	
LVJUAC 4 X 35 - 150	4 X 35 - 150	
LVJUAC 4 X 120 - 240	4 X 120 - 240	
LVJUAC 4 X 185 - 300	4 X 185 - 300	

Joint kits for screened-insulated 0.6/1kV cables

DESCRIPTION	CROSS SECTION OF CONDUCTORS DIN 47632	CABLE TYPE E.G.
For Crimp Connectors		
LVJUAS 4 X 1.5 - 4 X 16	4 X 1.5 - 4 X 16	NYCY, NYCWY, NHXH with Round (r) or sectorial (s), solid (e) or stranded (m), aluminium (Al) or Copper (cu) conductor
LVJUAS 5 X 1.5 - 5 X 16	5 X 1.5 - 5 X 16	
LVJUAS 4 X 6 - 4 X 25	4 X 6 - 4 X 25	
LVJUAS 4 X 16 - 4 X 50	4 X 16 - 4 X 50	
LVJUAS 5 X 16 - 5 X 50	5 X 16 - 5 X 50	
LVJUAS 4 X 25 - 4 X 95	4 X 25 - 4 X 95	
LVJUAS 4 X 35 - 4 X 150	4 X 35 - 4 X 150	
LVJUAS 4 X 95 - 4 X 300	4 X 95 - 4 X 300	

## Standard Contents

- 1 outer sleeve
- 3, 4 or 5 inner sleeves
- Cleaning cloth
- Abrasive cloth
- Installation instructions
- Screen continuity where applicable

Ordering: Specify the product referring to above dimension chart

Joint kit for armoured cables

CODE	CORE SIZE
CJK 4	4 x 1.5 - 4 mm <sup>2</sup>
CJK 16	4 x 6 - 16 mm <sup>2</sup>
CJK 50	4 x 25 - 50 mm <sup>2</sup>
CJK 95	4 x 70 - 120 mm <sup>2</sup>
CJK 240	4 x 150 - 240 mm <sup>2</sup>

Earth and Armour continuity included in all kits. Connectors not included in kit contents.

Termination kit for armoured cables

CODE	CORE SIZE
CTK16	4 x 6 - 16 mm <sup>2</sup>
CTK 50	4 x 25 - 50 mm <sup>2</sup>
CTK 95	4 x 70 - 120 mm <sup>2</sup>
CTK 240	4 x 150 - 240 mm <sup>2</sup>

N.B. Table is for four core cable only. Kits for two and three core cables including CNE cable available on request.

Earthing kits available as optional extra. Cable Lugs not included.

## Standard Contents

On request the sleeves can also be supplied in different lengths and/or diameters.



# Signal Kits

CSK-B signal kits are particularly suitable for connecting screened signal cables in industry, rail and mass transit. Individual splices can be supplied as separate kits to cover a wide range of sizes with minimal stock

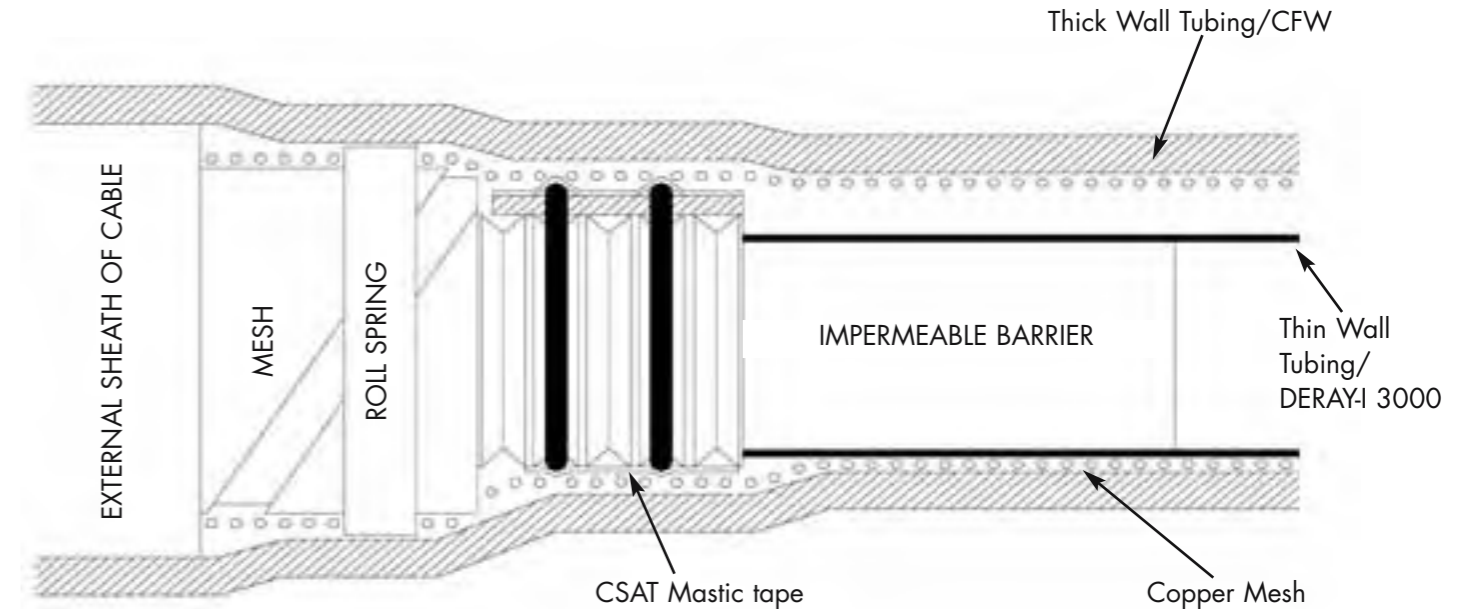
## Features

- Quick, easy installation
- Exceptionally good electrical insulation
- Good mechanical load-bearing ability
- No maintenance time necessary
- Usable immediately
- Include components for continuing electrical earth and shield
- Various connection options
  - crimpseal
  - dual wall heat shrink tubing with crimp connector



## DSG-Canusa Signal Kits

Suitable for 1.5-2.5 mm<sup>2</sup> copper conductor  
Types YSLCY, LSYCVY, ZPFU, SZRMtk VM-J 0.6/1kV armoured.



**CFTV** - high shrink ratio tubing with thermochromatic paint and high performance adhesive gives excellent mechanical and environmental protection

**Braid** - tinned copper non corroding for continuation of screen

**Roll spring** - gives good mechanical and electrical contact with no insulation damage

**CSAT** - mastic designed to perform even during flexing and vibration

**DERAY-I 3000** - heat shrink tubing to replace inner insulation layer and continue waterproof seal

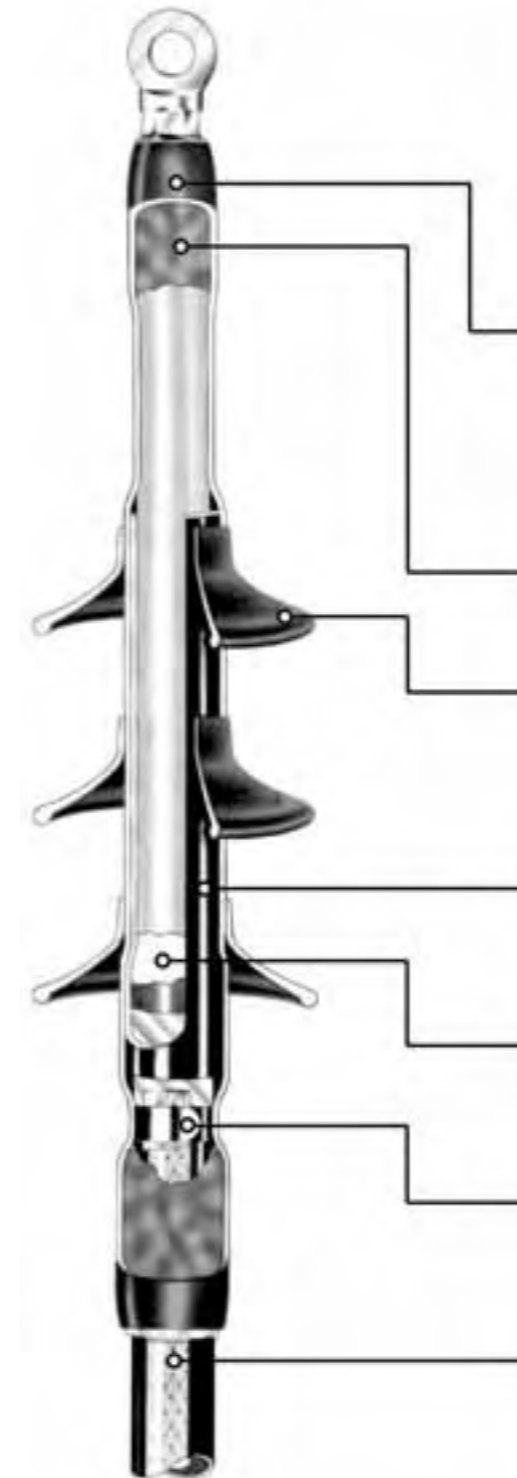
KIT NAME	CABLE RANGE (NO. OF PAIRS)
CSKB - 1	4 - 7
CSKB - 2	10 - 22
CSKB - 3	28 - 32

# Medium Voltage Terminations

Heat shrinkable power cable terminations consist of a non-tracking, weather resistant heat shrinkable protective tubing, heat shrinkable stress control tube and mastic. Each termination consists of appropriate tubes, rainsheds, cable breakouts, sealing materials, hardware and installation instructions

### Benefits of DSG-Canusa components

- Suitable for 1 & 3 core cable
- Range includes kits for XLPE & PILC cables for a wide range of conductor cross sections
- Kits are available for both armoured & unarmoured cable
- Indoor & outdoor applications
- Excellent stress control properties
- Excellent moisture sealing
- Exceptional insulation characteristics
- Very high tracking resistance, good long term weather performance
- Easy to install, even at low temperatures
- Simple cable preparation - no sanding, no grease
- Unsurpassed performance in polluted environments



## Terminations

### Non-tracking, heat shrinkable outer insulation tubing

- Provides excellent UV stability
- Withstands polluted environments
- Is proven to withstand severe applications

### Non-tracking, high voltage sealant

- Provides watertight seal over connector

### Additional heat shrinkable creepage extenders for outdoor applications

- Increase surface creepage distance
- Easy to adapt indoor terminations to outdoor conditions

### Heat shrinkable stress control tubing

- Reduces electrical stress gradient at the end of the cable shield to safe operating levels

### Stress relief material

- Minimizes stress at the shield cutback
- Acts as a moisture seal

### Ground clamp

- Has constant force roll spring, which provides secure grounding without soldering

### Shielding and solderless grounding with ground braid

- Provides shield continuity

# Medium Voltage Joint Kits

Heat shrinkable power cable joints consist of high voltage insulation tubing, stress control to smoothen the electrical field over the connector and screen ends, a conductive heat shrink sleeve to ensure a flawless bond between insulation and screen, copper mesh to ensure continuity of the connect shield, and an outer sealing jacket consisting of a heavy wall heat shrinkable sleeve, internally coated with adhesive resulting a moisture and corrosion barrier on the cable oversheath.

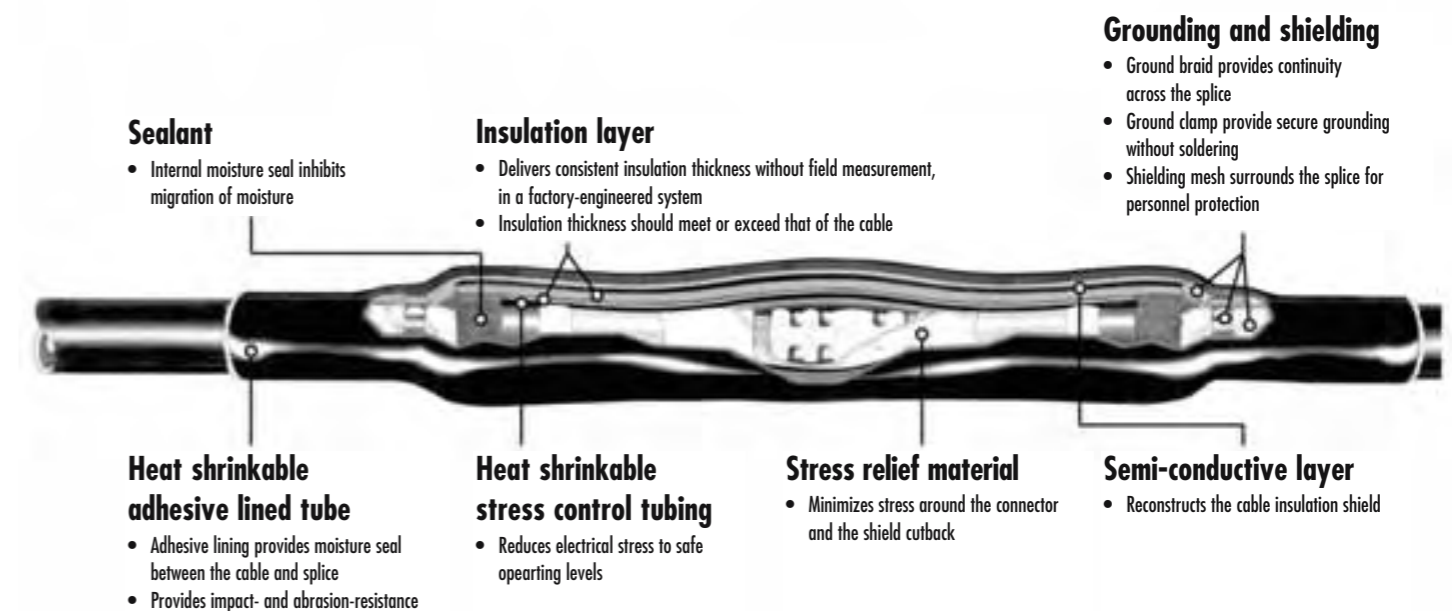
## Benefits of DSG-Canusa components

Rebuild each layer of the cable at the connector and screen cutback:

- Electrical stress control
- Insulation layer
- Semi-conductive layer
- Shielding and grounding
- Environmental sealing
- Mechanical protection



## Cable Joints



## Automotive Wire Harness Solutions

In addition to the standard heat shrink tubing product line, DSG-Canusa provides solutions that are designed specifically for the demanding requirements of automotive wire harnesses.

For insulation of ground connections, splices or for longitudinal water sealing of cable harnesses, DSG-Canusa delivers tailor-made products of optimum quality.



### DERAY®-Splicemelt

Crimped and ultrasonically welded parallel and end splices often require longitudinal water proof sealing as well high resistance against thermal, chemical and mechanical influences. Different sealing applications have these requirements, especially in the automotive sector. DERAY®-SPLICEMELT, a specially modified heat shrinkable sleeve with an inner thermoplastic adhesive, fulfils the requirements of these harsh environments. During the shrink process the hot melt adhesive flows into all the voids within the area to be sealed. The result is a corrosion and waterproof seal. Due to its simple and fast installation the two-in-one shrink tube can be used in continuous production. In general the processing of DERAY®-SPLICEMELT is possible on each of the following shrink machines: DERAY®-SpliceMan, DERAY®-SpliceMan IR, DERAY®-DockMan jr., DERAY®-KST and DERAY®-FST  
=> DERAY®-Splicemelt is the premier SPLICE SEALING system which satisfies most automotive applications.



### DERAY®-Splicemelt-Cap

In addition to the DERAY®-Splicemelt the longitudinal water proof sealing of end splices can easily be effected with the DERAY®-Splicemelt-Cap. Available in black and clear and in 4 standard sizes, this product provides an economical and reliable sealing.



### DERAY®-Pressmelt

DERAY®-Pressmelt is a specially modified sealing system that consists of a modified heat shrinkable sleeve with an inner adhesive and a push-on profile of thermoplastic adhesive. This system guarantees within wide temperature differences absolute sealing and functionality of all sealed cables. It is available for 85°C or 105°C/125°C operating temperatures. DERAY®-Pressmelt can be processed using the following shrink devices: DERAY®-DockMan, DERAY®-WorkMan, DERAY®-KST  
=> DERAY®-Pressmelt system provides efficient LONGITUDINAL WATER BLOCKING IN SMALL CABLE BUNDLES.



### DERAY®-Duomelt

DERAY®-Duomelt is the evolution of DERAY®-Pressmelt system, combining DERAY®-Duomelt adhesive strips with DERAY®-IAKT or DERAY®-IHKT heat shrink tubing. The adhesive strips are lined with a strip of butyl rubber to ensure that the adhesive is evenly distributed throughout the bundle and to assist with the installation. DERAY®-Duomelt can be processed by standard heat shrink appliances; however DSG-Canusa suggests the DERAY®-WorkMan for bench applications and the DERAY®-DockMan for wiring board applications.  
=> DERAY®-Duomelt is ideal for providing WATER BLOCKING IN SMALL AND MEDIUM CABLE BUNDLES.



### DERAY®-Coldmelt I

As some insulating materials are very sensitive to heat, DSG-Canusa designed DERAY®-Coldmelt I, which uses minimal heat during the installation process and thus ensures that individual bundle components are not damaged during installation. The DERAY®-Coldmelt I system consists of DERAY®-Coldmelt butyl rubber strips to provide a tight seal between the individual harness components and a DERAY®-CS heat shrink tubing to encase the installation. DERAY®-Coldmelt I is processed optimally by the DERAY®-SealMan.  
=> DERAY®-Coldmelt I is specifically designed to provide LONGITUDINAL WATER BLOCKING IN LARGE CABLE BUNDLES (UP TO 150 WIRES).



### DERAY®-Coldmelt II

DERAY®-Coldmelt II is based on the reliable, well-known and extensively used DERAY®-Coldmelt I system. This system substitutes a custom designed grommet for the DERAY®-CS heat shrink tubing. The grommet is made up of two half shells which consist of a sealing component from polyamide (PA) and a moulded part (e.g. socket) from TPE. The special shape of the moulded part guarantees perfect sealing in the area of the car body feed-throughs. The special advantage of this new system is the possibility to operate the sealing of the cable bundle or wiring and the car body feedthroughs at the same time. Processing of DERAY®-Coldmelt II is done by the DERAY®-Coldmelt II processor.  
=> DERAY®-Coldmelt II is likewise specifically designed to provide LONGITUDINAL WATER BLOCKING IN LARGE CABLE BUNDLES (UP TO 150 WIRES).



### DERAY®-BIOK

DERAY®-BIOK, the slip-on, non-shrinkable translucent polyolefin insulating caps with an integral butyl rubber mastic liner ensures complete electrical insulation for end or stub splices in wiring harnesses and electronic assemblies. The caps are quickly installed, as they can be simply pushed on and do not require the addition of heat. Cap installation could thus be readily automated. DERAY®-BIOK is resistant to chemicals and fuels and adheres well to various substrates, including PVC, XLPE and PP-EPDM. The continuous operating temperature range of the insulating cap is from -55°C to 85°C or 105°C.

You will find further information about DERAY® shrink appliances on pages 106-107-

## Automotive Hose and Pipe Solutions

DSG-Canusa has pioneered individual solutions to reliably protect media conducting lines and pipes.

DSG-Canusa has also developed solutions for protecting components in the engine compartment, undercarriage, passenger compartment or boot against stone impact, abrasion and corrosion.

Air conditioning lines, brake lines, fuel lines, oil lines, pneumatic springs, seatbelt clasp fixtures and restraint systems are only some of the typical objects that safely withstand numerous demands because of heat shrink tubing.



### DERAY®-IAKT NS, DERAY®-IBKT

This range of adhesive lined heat shrinkable tubes, available in either black or clear, is an ideal solution to prevent corrosion and to protect against stone and gravel damage. Its tough outer jacket also prevents damage to the substrate during installation, fixing or clamping, and servicing. Additionally, it will not separate from the substrate during bending operations. The continuous operating temperature of this product range is from -55°C to 105°C.

=> DERAY®-IAKT NS, DERAY®-IBKT are most suitable for BRAKE PIPES.



### DERAY®-HBNS

DERAY®-HBNS is a heat shrinkable, polyolefin tube specifically designed to adhere to aluminium pipes in automotive applications. The wall material adheres to aluminium during bending operations. DERAY®-HBNS provides superior corrosion protection, protects against stone and gravel damage and eliminates noise and vibration. It has a continuous operating temperature from -55°C to 135°C.

=> This tube provides effective protection of AIR CONDITIONING PIPES.



### DERAY®-INS

Superior abrasion protection, under extreme temperature, is the primary feature of DERAY®-INS. This tube provides excellent adhesion properties and shrinks rapidly in order to avoid damage to the substrate during processing. The tough material of DERAY®-INS gives effective reduction of vibration and noise. The continuous operating temperature of DERAY®-INS is from -55°C to 135°C.

=> DERAY®-INS is the ideal solution for protecting PRESSURIZED RUBBER HOSES.



### DERAY®-KWS

Deray®-KWS is a heat shrinkable (> 2:1) polyolefin tubing with excellent abrasion resistance. The DERAY®-KWS provides bubble and fold-free shrinkage on manifolds with an extreme radius. It gives a smooth appearance and shrinks snugly on curves on the substrate during processing. The continuous operating temperature of DERAY®-KWS is between -55°C and 135°C.

=> DERAY®-KWS is specifically designed to protect COOLING AND HEATING WATER HOSES in automotive applications.



### DERAY®-HB

Deray®-HB is an economical solution for protecting and colour matching of special components. This heat shrinkable tube is characterized by its good abrasion resistance and its customisable colour to match the interior of the car. The continuous operating temperature of DERAY®-HB is between -55°C and 105°C.

=> The DERAY®-HB is the ideal solution for the protection and colour matching of SEAT BELT STALKS.

You will find further information about DERAY® shrink appliances on pages 106-107

## Shrink Appliances

In addition to the standard heat shrink tubing product line, DSG-Canusa also provides a full range of technically advanced shrink appliances. Years of experience in processing heat shrink materials have resulted in the creation of a variety of processing devices, from a simple heat gun to high performance shrink tunnels. Beyond the numerous standard machines, DSG-Canusa can construct custom machines for unique applications.



### DERAY®-WorkMan 2000

DERAY®-WorkMan 2000 is a process controlled heat shrink appliance designed for general purpose shrink applications at a work bench. It is equipped with separate temperature and time settings. The device is most often used for the installation of all DERAY® standard tubes and DERAY®-Duomelt, DERAY®-Pressmelt, DERAY®-Coldmelt Lite sealing systems. Special versions for specific customers demands are also possible.



### DERAY®-Board WorkMan

DERAY®-Board WorkMan is a process controlled heat shrink appliance specifically designed for DERAY®-Splicemelt applications such as parallel splices, end splices and ring terminals on the wiring board. It is equipped with a separate temperature control and three time pre-settings with start buttons on the working head.



### DERAY®-DockMan

DERAY®-DockMan is a process controlled heat shrink appliance designed for general purpose shrink applications on a wiring board. It is equipped with separate temperature and time settings. The device is most often used for the installation of all DERAY® standard tubes and DERAY®-Duomelt, DERAY®-Pressmelt, DERAY®-Coldmelt Lite sealing systems.



### DERAY®-DockMan Endsplices

DERAY®-DockMan Endsplices is a process controlled heat shrink appliance specifically designed for DERAY®-Splicemelt applications on end splices on a wiring board. It is equipped with separate temperature control and three time pre-settings with start buttons on the working head.



### DERAY®-SealMan

DERAY®-SealMan is a process controlled heat shrink appliance specifically designed for DERAY®-Coldmelt I applications on a wiring board. Similar to other equipment, it is equipped with separate temperature and time settings. A unique feature for the DERAY®-Coldmelt I system is its automatic compression mechanism for the sealing area. All three DERAY®-SealMan sizes (35 / 53 / 70) are also available in a bench mount version.



### DERAY®-SpliceMan IR

DERAY®-SpliceMan IR is a process controlled heat shrink appliance specifically designed for sealing parallel splices with DERAY®-Splicemelt at a work bench. It features a Controller menu with 18 pre-adjustable shrink times, and a noise reduced shrinking process. After finishing process the parallel splice is automatically ejected.



### DERAY®-FST 165/600

DERAY®-FST 165/600 is a small process controlled shrink tunnel to process heat shrinkable tubing for the insulation or sealing of small cable bundles. The shrink processor can be used as an individual working station as well as in series production. The continuously adjustable belt speed control enables consistent quality to be maintained.



### DERAY®-HST 35 100 and HST 40 170

DSG-CANUSA also offers a standard selection of tunnel ovens for hose and pipe applications. These high performance industrial tunnel ovens have been designed for economical series production and are outfitted with the following features:

- High performance fan
- Ni-CR heating elements for continuous operations hermetically embedded in stainless steel tubes
- Rod chain conveyor with teflonized fibreglass fabric tape
- High quality heat insulation
- Very economical energy costs



Custom shrink equipment can also be designed and installed for more specialised applications.

## Distribution Sets & Kits - Customising

DSG-Canusa has developed a range of specially configured kits designed to reduce field installation time and improve installation effectiveness. Custom Kitting, Tailored Packaging, ready-to-use Sets, and Blister packs are only a few products in the broad DSG-Canusa range for distributors, craftsmen and do-it-yourselfers.



### **DERAY®-Set Six, DERAY®-Set 1000**

The DSG-Canusa way to have a wide variety of different sizes, diameters and colours of heat-shrink without stocking large quantities.



### **DERAY®-Set 2000 + refill bag**

The DERAY®-Set 2000 combines the advantages of DERAY®-Set Six and DERAY®-Set 1000 with the possibility to refill any emptied compartment with the DERAY®-Tube refill system.



### **DERAY®-Box**

The DERAY®-Box, with four different types of DERAY®-tube, gives the do-it-yourselfer a convenient (and environmentally friendly) package for a wide variety of tasks.

If you need further information about these products don't hesitate to contact us at: [info-uk@dsgcanusa.shawcor.com](mailto:info-uk@dsgcanusa.shawcor.com)

Further information about our special products available on request:

**PRODUCT GROUP**

Canuflex - Braided Sleeves

Identification systems

Crimpseal II – High Performance Crimp connector

Product information DERAY®-Boxes & DERAY®-Sets

DSG-Canusa Newsletter

Automotive Specials

Sealing End Splices

Sealing Parallel Splices

Sealing Cable Systems

Wire Harness Brochure

Pipe & Hose Brochure

Installation instructions Coldmelt I & Coldmelt II (video)

If you are interested please send us an e-mail to [info-uk@dsgcanusa.shawcor.com](mailto:info-uk@dsgcanusa.shawcor.com) or call us at: +44 1752 209880





## Headquarters

DSG-Canusa GmbH  
Heidestrasse 5 | 53340 Meckenheim  
Germany  
Tel.: +49 (0) 22 25 - 88 92-0  
Fax: +49 (0) 22 25 - 88 92-44  
info-de@dsgcanusa.shawcor.com  
www.dsg-canusa.de

## European offices

### Office UK

Tel.: +44 1752 209880  
Fax: +44 1752 209850  
info-uk@dsgcanusa.shawcor.com

### Office Poland

Tel.: +48 5983 23301  
Fax: +48 5983 23304  
info-pl@dsgcanusa.shawcor.com

### Office France

Tel.: +33-4-37 28 8144  
Fax: +33-4-37 28 8145  
info-fr@dsgcanusa.shawcor.com

### Office Spain

Tel.: +34 93 8113280  
Fax: +34 93 8113280  
info-es@dsgcanusa.shawcor.com

### Office Italy

Tel.: +39 010 667 1317  
Fax: +39 010 667 1317  
info-it@dsgcanusa.shawcor.com

### Office Turkey

Tel.: +90 532 522 2725  
Fax: +90 212 347 7544  
info-tr@dsgcanusa.shawcor.com



# DSG-Canusa – Mission Statement

To be the leading global manufacturer and marketer of heat shrink based systems and related products to the electrical, mechanical and electronic insulation markets through excellence in customer service and by identifying and solving application problems with differentiated product solutions.

## Contact us

### Europe / Middle East / Africa / Russia

DSG-Canusa GmbH  
Heidestrasse 5  
53340 Meckenheim  
Germany  
Phone: +49 (0) 22 25 88 92-0  
Fax: +49 (0) 22 25 88 92-44  
e-mail: [info-de@dsgcanusa.shawcor.com](mailto:info-de@dsgcanusa.shawcor.com)

### Canada / Asia Pacific

DSG-Canusa, a division of ShawCor Ltd.  
25 Bethridge Road  
Toronto, Ontario M9W 1M7  
Phone: +1 (416) 743-7111  
Fax: +1 (416) 743-7752  
e-mail: [sales@dsgcanusa.com](mailto:sales@dsgcanusa.com)

### Americas

DSG-Canusa, a division of ShawCor, Inc.  
173 Commerce Blvd.  
Cincinnati, Ohio 45140  
Phone: +1 (513) 683-7800  
Fax: +1 (513) 683-7809  
e-mail: [sales@dsgcanusa.com](mailto:sales@dsgcanusa.com)

Visit our website: [www.dsg-canusa.de](http://www.dsg-canusa.de)

**There's no end to what we cover**