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DSG-CANUSA

DSG-Canusa

Heat- and Cold-Shrink Products

Specialist for Heat-Shrink and Cold-applied Technology

For more than 50 years, DSG-Canusa has been known for developing and producing high quality heat-shrink tubing and cold-applied accessories. In addition to our heat- and cold-shrink tubing product line, we provide a full range of heat-shrink equipment.

DSG-Canusa is a Mattr brand

Mattr delivers advanced materials technologies and complex manufacturing expertise. Through a portfolio of brands, we offer highly engineered solutions, technology and products to support infrastructure projects and markets worldwide.

DSG-Canusa's heat-shrink tubing products and cold-shrink tubes

DSG-Canusa's mission, as a leading specialist for heat-shrink tubing, is to play a major guiding role in the industry in manufacturing superior heat– and cold–shrink products that meet CSA, UL and other industry approved certifications. Driven by our long-term commitment to the research and development of outstanding materials, products and technologies, our growing portfolio of heat–shrink products includes thin-, medium- and heavy–wall tubing made of polyolefin, fluoropolymer and elastomer, with or without adhesive. With these reliable materials and thoroughly tested products, we develop durable solutions to seal, mark and protect wire harnesses, cables, pipes and tubes.

We manufacture in Europe, North America and China; DSG-Canusa has reliable global supply chain availability for our customers in all regions.

DSG-Canusa's heat-shrink application equipment

Years of innovation and experience have resulted in the creation of a full range of technically advanced heat-shrink equipment for applying heat-shrink tubing in demanding manufacturing processes. Our products have evolved from simple heat guns to high-performance automated shrink machines in standard or customized designs. Please contact us to learn more about how DSG-Canusa's heat-shrink products and equipment can be used together to meet your processing and quality assurance needs.

Our HSE Standards

DSG-Canusa's continuous focus on safety

DSG-Canusa's vision is an Incident and Injury-Free (IIF) workplace, with no harm to people and no damage to the environment. At all of our locationsaround the world, we view Health, Safety and Environment (HSE) as a core value and an integral part of all business activities; we are committed to sustaining advances that result in HSE excellence for the long term.

DSG-Canusa's Commitment to Environment Stewardship

DSG-Canusa's commitment to the environment is always a top priority, with both a Certified ISO 14001 environmental management system and a Certified ISO 50001 energy management system in place. With an established Green Team and resource-efficient manufacturing, we are constantly optimizing work and production processes. Some examples of these initiatives are:

- We are reducing our CO^2 footprint by using a 100% green electricity energy supply while also optimizing our consumption.
- Eliminating hazardous substances from our processes.
- Reduction of water consumption
- Reduction of natural gas consumption by heating buildings with waste heat from compressors
- Reduction of compressed air consumption
- Use of LED lights instead of fluorescent tubes
- Training our teams in sustainable practices

Serving Globally

DSG-Canusa provides global service

With our application expertise and our unique technical solutions, we serve diverse industrial markets, including Automotive, Electrical and Utility, Renewables, Communications, Aerospace and Defense and Transportation. We are organized globally and have chosen our sites strategically to deliver superior products to our customers – on time and exceeding expectations.

Local production for local demand

As an established global heat-shrinkable sleeve manufacturer, we produce our cold- and heat-shrink products at four locations worldwide: Toronto, Canada; Fairfield, USA; Rheinbach, Germany and Suzhou, China. Our global team utilizes resources from our different locations to support every customer's needs. By producing regionally and serving the local demand, we optimize lead time, transport time and costs. We welcome customer-driven supply chain development and consider increasing expectations as our opportunity to innovate.

Our Product Portfolio

Single Wall Tubing

Serving a variety of applications in the automotive, electronics, military and aerospace markets

DSG Canusa's single wall tubing provides reliable insulation of electrical components, protection against mechanical damage and abrasion, as well as strain relief. Our single wall tubing offers a temperature range from -200°C to 260°C (-418°F to 500°F) in a variety of colors and sizes. Our single wall tubing portfolio includes many different shrink ratios to serve a variety of applications in the automotive, electronics, aerospace, defense and transportation markets. In addition to DSG-Canusa's high spec products, our team creates custom designs made to your individual specifications. All our single-wall tubes are engineered to order.

Thin Wall Tubing for applications with limited space
The largest share of our single wall heat-shrink tubes is thin wall tubing. With its wall thickness of just 0.2 mm, it serves applications with limited space and is also especially economical.

More about Single Wall Tubing on pages 12 to 27

Dual Wall Tubing

Sealing and protecting against moisture and corrosion with high-performance adhesive lined heat-shrink tubing

DSG-Canusa's dual wall heat-shrink tubes are made to seal and protect your applications against moisture and corrosion and enhance their mechanical properties. Dual wall tubes are extruded with an inner layer of adhesive. Upon recovery, the inner layer of adhesive melts, encapsulates and bonds to the substrate, thus providing environmental sealing against moisture. Our dual wall heat-shrink tubing is available in standard dimensions, metric and imperial sizes, as well as many custom designs, colors and prints. With our extensive experience, innovative technologies and material expertise, we can meet your needs and develop a reliable and safe solution for every project.

More about Dual Wall Tubing on pages 28 to 47

Medium & Heavy Wall Tubing

Sealing and protecting electrical connections and terminations

Our specially designed medium and heavy wall heat-shrink tubing provide excellent insulation and environmental sealing as well as impact and abrasion resistance.
Such tubing is used to seal electrical connections and terminations or provide mechanical protection in a variety of applications. To meet the medium and heavy wall heat-shrink tubing needs of our customers, DSG-Canusa's quality manufacturing system ensures that the entire supply chain, from design, through procurement, production and shipping, follows strict production and quality requirements. Customizable characteristics of our medium and heavy wall heat-shrink tubing, such as shrink ratio, wall thickness, materials, adhesives and levels of resistance results in innovative solutions that fit each application perfectly.

More about Medium & Heavy Wall Tubing on pages 48 to 65

High Temperature Products

Sealing and protecting cable connections, wire harnesses, electronic systems and bus bars with heat-shrink tubing

DSG-Canusa's high temperature heat-shrink products offer reliable protection, sealing, insulation and identification for applications in automotive, industrial, aerospace, defense and renewables markets. Our products, made of materials ranging from elastomers to fluoropolymers, offer reliable protection against harsh operating environments and extreme temperature ranges, including 175°C and 190°C-rated PVDF materials, and as high as 260°C. The DSG-Canusa high temperature heat-shrink portfolio includes high spec products that are qualified for QPL SAE, VG, CNES and major automotive OEM standards.

High Temperature heat-shrink applications
Our high temperature heat-shrink tubing is used to seal and protect cable connections, wire harnesses, electronic systems and bus bars in high temperature environments. With the increased number of electric components in vehicles, wire and cable sensors are exposed to high temperatures in the engine compartment and emissions systems, including in commercial vehicles and electric vehicles (EVs). Historically, temperatures in the engine compartment have been less than 150°C, but current industrial applications are more frequently reaching temperatures above 150°C. As future applications result in even higher temperatures, we are continuously expanding our high temperature heat-shrink product portfolio. We have the capabilities and expertise to design new heat resistant sealant products, as well as innovative technologies to offer any high temperature heat-shrink product your project may require.

More about High Temperature Products on pages 66 to 79

Marker Sleeves

Reliable and persistent products that ensure permanent cable marking

The number of electronic components and connections in industrial and technology industries is continuously growing. As the number of objects that are embedded with sensors, software, and other technologies grows, demand rises for the clear identification of every single wire in an application. Marker sleeves provide identification, organization and protection during installation and beyond. To avoid dangerous and costly errors during maintenance, repair, or emergencies, it is critical that cable and wire identification capabilities remain, even after years of use. Industries such as mass transit, aerospace, defense, automotive and electronics manufacturing use marker sleeves. Cable marker sleeves and wire marking sleeves are commonly used in new installations and during maintenance, reducing errors and increasing efficiency. Different tubing colors can be assigned to different areas of the application for quick identification. Marker sleeves can be supplied in either continuous style or ladder style. DSG-Canusa's identification sleeves are made of single wall heat-shrink tubing and are available in a wide range of colors and sizes. Identification sleeves insulate electrical components, providing strain relief and protect against mechanical damage and abrasion. Our wire marking sleeves can meet specific needs such as low-smoke, non-toxicity, zero-halogen, diesel-resistant and flame-retardancy requirements. Our products are certified to standards including EN45545 and NFPA 130 and are safe to use in transportation applications such as vehicles, ships, helicopters, railway cars, buses and subways. Marker sleeve applications are commonly found in cabins, interiors, tunnels, lighting, low voltage, air conditioning, security, switchgear panels and anywhere safety is a priority.

More about Marker Sleeves on pages 80 to 91

Wildlife Mitigation

Protecting substations and overhead lines from unexpected interaction with wildlife

The DSG-Canusa wildlife mitigation product portfolio includes preformed covers, such as line covers, conductor covers and covers for suspension clamps, as well as insulation sheets, tapes and heat-shrinkable sleeves. These products are used to prevent electrical outages and protect assets such as overhead lines, substations, distribution or transmission networks and railway infrastructure. Our wildlife mitigation products offer effective encapsulation against accidental phase-to-phase or phase-to-ground faults caused by contact from wildlife or vegetation. The wildlife mitigation covers are cost effective and easy to install. They are adjustable in design to adapt to differing application situations. They offer excellent anti-tracking material characteristics and are tested against DIN VDE V 0212-490:2014 and IEC 60060-1:2010. Our wildlife mitigation products hold a voltage rating up to 36 kV and are suitable for installation on polymeric, ceramic and hybrid insulators and suspension clamps. DSG-Canusa's wildlife mitigation products ensure durable and effective protection for your assets. They enhance power reliability while preventing disruptive, expensive power outages of substations and overhead lines in the utility market. In the railway market, our wildlife mitigation products protect against service delays and disruptions, along with expensive repairs.

More about Wildlife Mitigation on pages 92 to 99

Electrical Products

Unique solutions for low and medium voltage applications

Electrical utilities and power distribution systems are critically dependant on reliable equipment to deliver uninterrupted electricity used by industry. Our products are therefore engineered with well-proven polyolefin materials that include a comprehensive line of high performance cable accessories designed for insulation and connection of low and medium voltage cables, electrical equipment and retrofit applications.

We provide solutions that offer superior performance, reliability, lower installation costs and ease of installation.

More about Eletrical Products on pages 100 to 145

Market Specific Products

Providing specialty product solutions to our key markets

DSG-Canusa is distinguished from our competitors because we provide custom engineered solutions of the highest quality, using advanced technology for market specific applications. Our customer centric orientation supports the development of engineered market specific solutions that meet individual project requirements and industry standards. We are also supported by custom supply chain solutions. With more than 50 years of experience, DSG-Canusa offers an array of market specific solutions that meet market qualifications and OEM approvals. With world class lab operations and internal quality testing capabilities, our products meet EN 9100, ISO 9001, IATF 16949, ISO 14001, ISO 50001 standards, ensuring high quality product availability and complete customer satisfaction.

More about Market Specific Products on pages 146 to 175

Integrated Systems

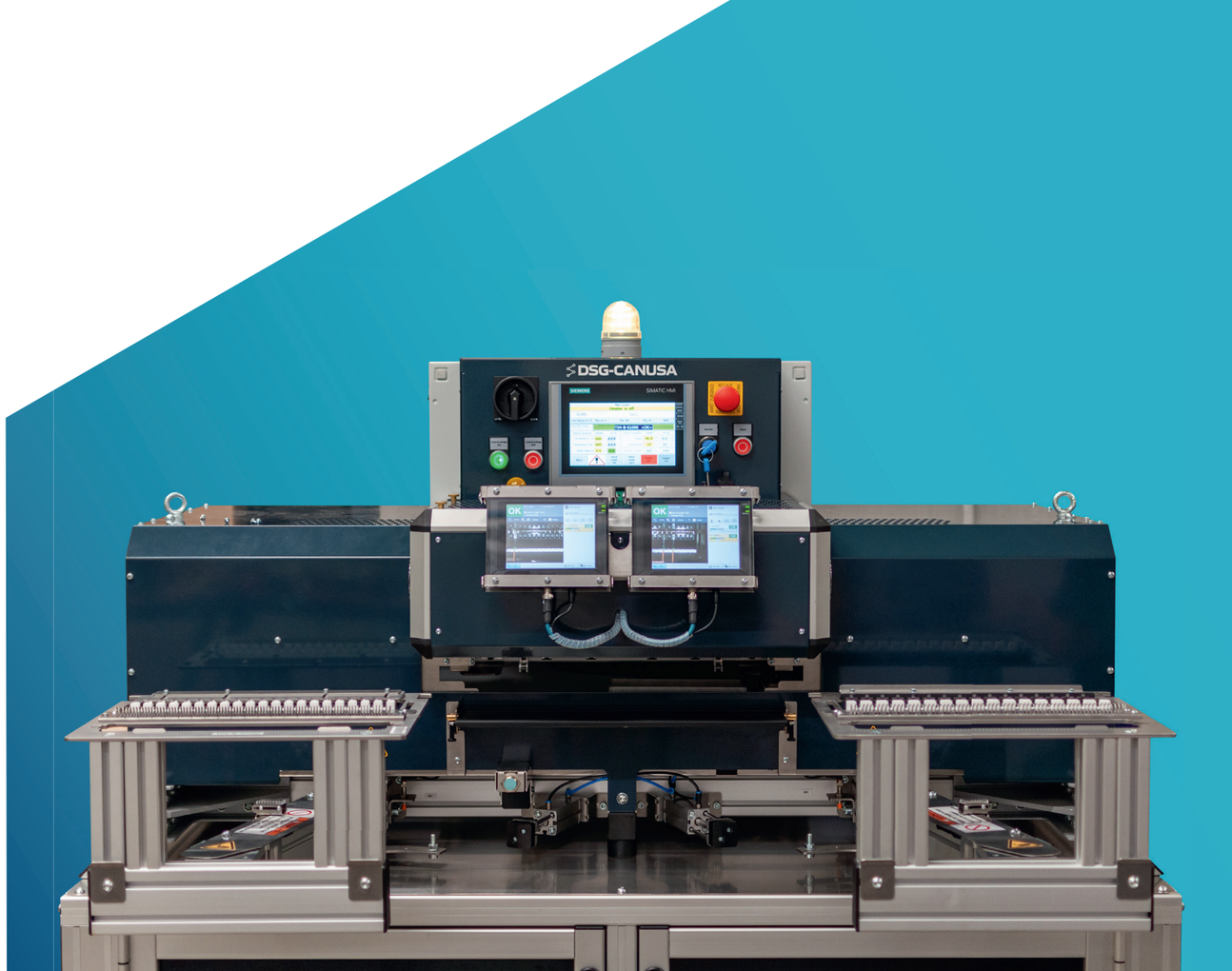
We are more than just a supplier of standard heat- and cold-shrink products, as we also supply the tools and application equipment to reliably apply our products in your factory or at your work site.

Our focused teams on machine development, applications engineering, product engineering and research and development are dedicated professionals from electrical engineering to materials science. They have the skills and experience to design and execute technology and customer specific solutions from concept to commercial reality.

When these teams work side by side with you they can provide advanced integrated solutions using our superior heat-shrink tubing and our high-performance application equipment.

Working with our teams provides you with access to custom products, new materials, and application specific shrink devices for integrated systems that address your needs for efficiency, safety, quality and performance.

More about Application Equipment on pages 176 to 177



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CPX 876

Thin Wall Crosslinked Polyolefin

Thin wall, highly flame retardant, crosslinked polyolefin.

Features and Benefits

- Highly flame retardant
- Low shrink temperature reduces risk of damage to electronic components
- Flexible
- Resistant to common fluids and solvents
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 85°C min.

Standards

- UL 224 125C VW-1 - UL File # E107857
- CSA 22.2 No 198.1 125C OFT and Class 1 - CSA File # 265111

Typical Applications

- Strain relief of wire connections
- Insulation of in-line splices
- Protection and bundling of small harnesses

2:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Aerospace, Defense, Mass Transit, Industrial, Consumer electronics

Standards:

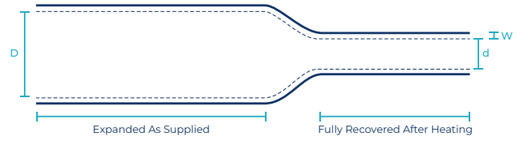
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0047	1.2 (3/64)	0.6 (0.024)	0.45 (0.018)	300 (984)
0063	1.6 (1/16)	0.8 (0.031)	0.45 (0.018)	300 (984)
0094	2.4 (3/32)	1.2 (0.047)	0.50 (0.020)	300 (984)
0125	3.2 (1/8)	1.6 (0.063)	0.50 (0.020)	300 (984)
0187	4.8 (3/16)	2.4 (0.094)	0.50 (0.020)	300 (984)
0250	6.4 (1/4)	3.2 (0.126)	0.65 (0.026)	300 (984)
0375	9.5 (3/8)	4.8 (0.189)	0.65 (0.026)	150 (492)
0500	12.7 (1/2)	6.4 (0.252)	0.65 (0.026)	100 (328)
0625	16.0 (5/8)	8.0 (0.315)	0.65 (0.026)	100 (328)
0750	19.0 (3/4)	9.5 (0.374)	0.75 (0.030)	50 (164)
1000	25.4 (1)	12.7 (0.500)	0.90 (0.035)	50 (164)
1250	31.8 (1 1/4)	15.9 (0.626)	0.90 (0.035)	50 (164)
1500	38.0 (1 1/2)	19.0 (0.748)	1.00 (0.039)	50 (164)
2000	51.0 (2)	25.4 (1.000)	1.15 (0.045)	50 (164)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

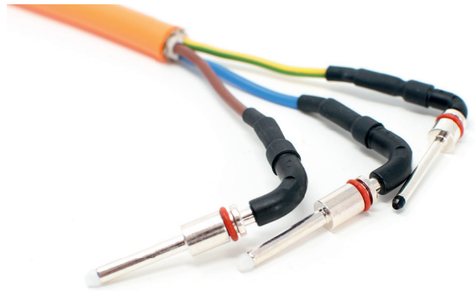
- Select options:
  - Color: Black (BK), red (RD), white (WT), blue (BL), yellow (YL), green (GR) - all (except black) with MOQ
  - Printing: Printed or unprinted
- Please specify the product name, order number and options you require
- Example: CPX 876, 0125, black, unprinted, 300 m spool

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Thin Wall Crosslinked Polyolefin

Multi-purpose, flame retardant, flexible heat-shrink tubing.



Features and Benefits

- Self-extinguishing (colors only)
- Flexible
- Suitable for various applications
- Good resistance to common fluids and solvents
- High dielectric strength
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 110°C min.

Typical Applications

- Abrasion and mechanical protection
- Cable insulation, marking and bundling of electrical or mechanical components
- Strain relief
- Corrosion protection

Standards

- UL 224 125C ATF - UL file # E107857 (colors only)
- CSA 22.2 No 198.1 125C - CSA file # 066150_0_000 (colors only)
- Approved to major automotive OEM specifications

2:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

DERAY®-H

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS		
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	MINI-SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*m (ft)*	*1.22 m (48 in)*
0047	1.2 (3/64)	0.6 (0.024)	0.40 (0.016)	300 (984)	150 (492)	25
0063	1.6 (1/16)	0.8 (0.031)	0.40 (0.016)	300 (984)	150 (492)	25
0094	2.4 (3/32)	1.2 (0.047)	0.50 (0.020)	300 (984)	150 (492)	25
0125	3.2 (1/8)	1.6 (0.063)	0.50 (0.020)	300 (984)	150 (492)	25
0187	4.8 (3/16)	2.4 (0.094)	0.50 (0.020)	300 (984)	75 (246)	25
0250	6.4 (1/4)	3.2 (0.126)	0.60 (0.024)	300 (984)	75 (246)	25
0375	9.5 (3/8)	4.8 (0.189)	0.60 (0.024)	150 (492)	75 (246)	25
0500	12.7 (1/2)	6.4 (0.252)	0.60 (0.024)	100 (328)	50 (164)	25
0625	16.0 (5/8)	8.0 (0.315)	0.60 (0.024)	100 (328)	50 (164)	10
0750	19.0 (3/4)	9.5 (0.374)	0.80 (0.031)	50 (164)	30 (98)	10
1000	25.4 (1)	12.7 (0.500)	0.90 (0.035)	50 (164)	30 (98)	10
1250	31.8 (1 ¼)	15.9 (0.626)	0.90 (0.035)	50 (164)	30 (98)	-
1500	38.0 (1 ½)	19.0 (0.748)	1.00 (0.039)	50 (164)	30 (98)	-
2000	51.0 (2)	25.4 (1.000)	1.00 (0.043)	50 (164)	30 (98)	-
3000	76.0 (3)	38.0 (1.496)	1.30 (0.051)	25 (82)	15 (49)	-
4000	101.6 (4)	50.8 (2.000)	2.00 (0.055)	25 (82)	15 (49)	-

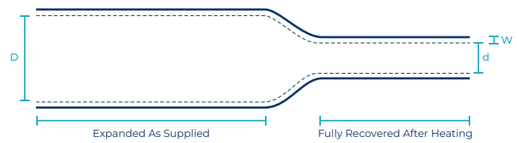
Clear items not UL or CSA listed.
*Delivery unit spool only available for black items

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), red (RD), white (WT), clear (CL), blue (BL), yellow (YL), green (GR), brown (BN), grey (GY)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-H, 0250 or 1/4 in, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-HB

Thin Wall Crosslinked Polyolefin

Halogen free, economical, heat-shrink tubing.

Features and Benefits

- Flexible
- Economical
- General Purpose
- Halogen free alternative to PVC
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 125°C
- Shrink temperature: 110°C min.

Typical Applications

- Abrasion protection
- Insulation of electrical or mechanical components
- Protection against mechanical damage and corrosion

2:1

Shrink ratio

-55°C - 125°C

(-67°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Aerospace

Standards:
RoHS

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	MINI-SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*m (ft)*
0063	1.6 (1/16)	0.8 (0.031)	0.40 (0.016)	300* (984*)	150 (492)
0094	2.4 (3/32)	1.2 (0.047)	0.50 (0.020)	300* (984*)	150 (492)
0125	3.2 (1/8)	1.6 (0.063)	0.50 (0.020)	300 (984)	150 (492)
0187	4.8 (3/16)	2.4 (0.094)	0.50 (0.020)	300 (984)	75 (246)
0250	6.4 (1/4)	3.2 (0.126)	0.60 (0.024)	300 (984)	75 (246)
0375	9.5 (3/8)	4.8 (0.189)	0.60 (0.024)	150 (492)	75 (246)
0500	12.7 (1/2)	6.4 (0.252)	0.60 (0.024)	100 (328)	50 (164)
0625	16.0 (5/8)	8.0 (0.315)	0.60 (0.024)	- (-)	50 (164)
0750	19.0 (3/4)	9.5 (0.374)	0.80 (0.031)	50 (164)	30 (98)
1000	25.4 (1)	12.7 (0.500)	0.90 (0.035)	50 (164)	30 (98)
1500	38.0 (1 ½)	19.0 (0.748)	1.00 (0.039)	50 (164)	30 (98)
2000	51.0 (2)	25.4 (1.000)	1.00 (0.043)	50 (164)	30 (98)

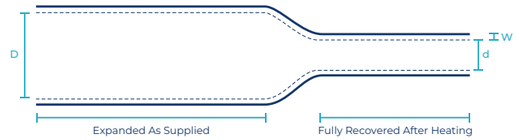
*Delivery unit spool only available for black items

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

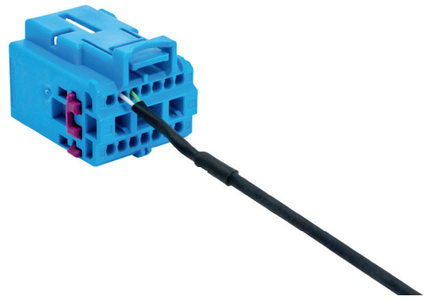
- Select options:
  - Color: Black (BK), clear (CL)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-HB, 0500 or 1/2 in, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Thin Wall Crosslinked Polyolefin

Universal heat-shrink tubing with excellent physical and mechanical properties.



Features and Benefits

- Self-extinguishing (colors only)
- Flexible
- Very good resistant to common fluids and solvents
- Excellent physical and electrical performance
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 90°C min.

Standards

- UL 224 125C ATF - UL file # E107857 (colors only)
- CSA 22.2 No 198.1 125C - CSA file # 066150_0_000 (colors only)
- DEF STAN 59-97 Type 2b
- BS G198 Part 3 Type 11B
- VG95343 Part 5 Type A/B
- QPL SAE AS23053/5 Class 1 + 2
- CNES approved and listed in Matrex database
- ECSS-Q-ST-70-02
- Approved to major automotive OEM specifications

Typical Applications

- Electrical insulation of wire splices and terminals
- Protection against chemical strength
- Strain relief of wire terminations
- Cable marking and bundling of electrical or mechanical components
- Secures components from abrasion and fluids

2:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Automotive, Aerospace, Defense, Industrial, Mass transit

Standards:

RoHS · DEF STAN 59/97 · VG · QPL

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS		
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	MINI-SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*m (ft)*	*1.22 m (48 in)*
0031	0.8 (1/32)	0.4 (0.016)	0.40 (0.016)	300 (984)	- (-)	- (-)
0047	1.2 (3/64)	0.6 (0.024)	0.40 (0.016)	300 (984)	150 (492)	25
0063	1.6 (1/16)	0.8 (0.031)	0.40 (0.016)	300 (984)	150 (492)	25
0094	2.4 (3/32)	1.2 (0.047)	0.50 (0.020)	300 (984)	150 (492)	25
0125	3.2 (1/8)	1.6 (0.063)	0.50 (0.020)	300 (984)	150 (492)	25
0187	4.8 (3/16)	2.4 (0.094)	0.50 (0.020)	300 (984)	75 (246)	25
0250	6.4 (1/4)	3.2 (0.126)	0.60 (0.024)	300 (984)	75 (246)	25
0375	9.5 (3/8)	4.8 (0.189)	0.60 (0.024)	150 (492)	75 (246)	25
0500	12.7 (1/2)	6.4 (0.252)	0.60 (0.024)	100 (328)	50 (164)	25
0625	16.0 (5/8)	8.0 (0.315)	0.60 (0.024)	100 (328)	50 (164)	10
0750	19.0 (3/4)	9.5 (0.374)	0.80 (0.031)	50 (164)	30 (98)	10
1000	25.4 (1)	12.7 (0.500)	0.90 (0.035)	50 (164)	30 (98)	10
1250	31.8 (1 ¼)	15.9 (0.626)	0.90 (0.035)	50 (164)	30 (98)	-
1500	38.0 (1 ½)	19.0 (0.748)	1.00 (0.039)	50 (164)	30 (98)	-
2000	51.0 (2)	25.4 (1.000)	1.10 (0.043)	50 (164)	30 (98)	-
3000	76.0 (3)	38.0 (1.496)	1.30 (0.051)	25 (82)	15 (49)	-
4000	101.6 (4)	50.8 (2.000)	1.40 (0.055)	25 (82)	15 (49)	-

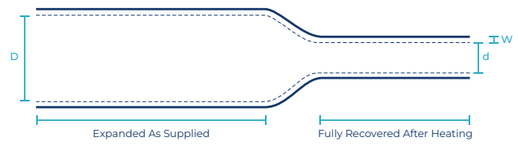
Clear items not UL or CSA listed.
*Delivery unit spool only available for black items

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), red (RD), white (WT), clear (CL), blue (BL), yellow (YL), green (GR), brown (BN), grey (GY)
  - Approval: Standard, VG or QPL
- Please specify the product name, order number and options you require:
  - Example: DERAY®-I, 0375 or 3/8 in, black, QPL

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-I 3000

Thin wall crosslinked polyolefin

High shrink ratio, multiple specifications flexible heat-shrink tubing with excellent physical and mechanical properties.

Features and Benefits

- Self-extinguishing (colors only)
- Flexible
- High shrink ratio
- Resistant to common fluids and solvents
- Additionally available in RAL2003 orange color
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 90°C min.

Typical Applications

- Electrical insulation of in-line splices
- Strain relief of terminals
- Color coding of electronic components
- Insulation and protection of objects with large diameter variations

Standards

- UL 224 125C ATF - UL file # E107857 (colors only)
- DEF STAN 59-97 Type 2b
- BS G198 Part 3 Type 11B
- VG95343 Part 5 Type A/B
- CNES approved and listed in Matrex database
- ECSS-Q-ST-70-02
- Approved to major automotive OEM specifications
- Fiat 91992

3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:

Automotive, Aerospace, Defense, Industrial, Mass transit

Standards:

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS		
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	MINI-SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*m (ft)*	*1.22 m (48 in)*
0063	1.6 (1/16)	0.5 (0.020)	0.45 (0.018)	300 (984)	150 (492)	25
0125	3.2 (1/8)	1.0 (0.039)	0.55 (0.022)	300 (984)	150 (492)	25
0187	4.8 (3/16)	1.5 (0.059)	0.60 (0.024)	300 (984)	75 (246)	25
0250	6.4 (1/4)	2.0 (0.079)	0.65 (0.026)	300 (984)	75 (246)	25
0375	9.5 (3/8)	3.0 (0.118)	0.75 (0.030)	150 (492)	75 (246)	25
0500	12.7 (1/2)	4.0 (0.157)	0.75 (0.030)	100 (328)	50 (164)	25
0750	19.0 (3/4)	6.0 (0.236)	0.85 (0.033)	50 (164)	30 (98)	10
1000	25.4 (1)	8.0 (0.315)	1.00 (0.039)	50 (164)	30 (98)	10
1500	38.0 (1 ½)	13.0 (0.512)	1.15 (0.045)	50 (164)	30 (98)	-

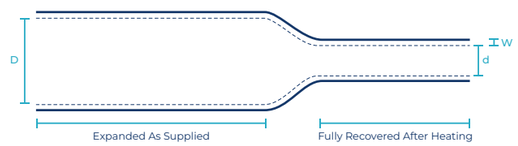
Clear items not UL listed.
*Delivery unit spool only available for black items

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), red (RD), white (WT), clear (CL), blue (BL), yellow (YL), orange (OE)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-I 3000, 0375 or 9/3 in, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Thin wall crosslinked polyolefin

Yellow-green striped, quick shrinking heat-shrink tubing with a high shrink ratio.

Features and Benefits

- Flame retardant
- Flexible
- Striped color combination designates international electrical grounding
- Resistant to common fluids and solvents
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 90°C min.

Standards

- DEF STAN 59-97 Type 2b
- BS G198 Part 3 Type 11B

Typical Applications

- Insulating and marking of earthing conductors

3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Construction Projects, Industrial, Marine, Shipboard, Mass Transit, Aerospace

Standards:

RoHS DEF STAN 59/97

DERAY®-IGY

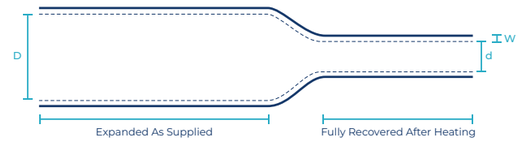
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL	LENGHTS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*1.22 m (48 in)*
0125	3.2 (1/8)	1.0 (0.039)	0.55 (0.022)	150 (492)	25
0187	4.8 (3/16)	1.5 (0.059)	0.60 (0.024)	75 (246)	25
0250	6.4 (1/4)	2.0 (0.079)	0.65 (0.026)	75 (246)	10
0375	9.5 (3/8)	3.0 (0.118)	0.75 (0.030)	75 (246)	10
0500	12.7 (1/2)	4.0 (0.157)	0.75 (0.030)	50 (164)	10
0750	19.0 (3/4)	6.0 (0.236)	0.85 (0.033)	30 (96)	10
1000	25.4 (1)	8.0 (0.315)	1.00 (0.039)	30 (96)	10
1535	39.00 (1½)	13.0 (0.512)	1.15 (0.045)	30 (96)	-

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

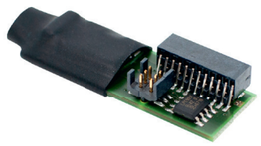
- Select options:
  - Color: Green-yellow (GY)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-IGY 0750, green-yellow

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Thin wall crosslinked polyolefin

Halogen free, low shrink temperature heat-shrink tubing; ideal for covering sensitive electronic components.



Features and Benefits

- Halogen free
- Highly flexible
- Ideal for high volume production lines
- Low shrink temperature allows for physical and electrical protection of heat sensitive components
- Shrink ratio: 2:1
- Continuous operating temperature: -45°C to 125°C
- Shrink temperature: 70°C min.

Typical Applications

- Protection of heat sensitive devices
- Insulation of electrical terminations
- Offers exceptionally fast recovery for maximum efficiency in high volume commercial and automotive applications
- Mechanical protection

2:1

Shrink ratio

-45°C - 125°C

(-49°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Commercial, Aerospace, Mass Transit

Standards:

RoHS

DERAY®-LSB

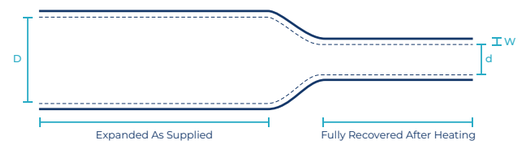
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0125	3.2 (1/8)	1.6 (0.063)	0.50 (0.020)	300 (984)
0187	4.8 (3/16)	2.4 (0.094)	0.50 (0.020)	300 (984)
0250	6.4 (1/4)	3.2 (0.126)	0.60 (0.024)	300 (984)
0375	9.5 (3/8)	4.8 (0.189)	0.60 (0.024)	150 (492)
0500	12.7 (1/2)	6.4 (0.252)	0.60 (0.024)	100 (328)
0625	16.0 (5/8)	8.0 (0.315)	0.60 (0.024)	100 (328)
0750	19.0 (3/4)	9.5 (0.374)	0.80 (0.031)	50 (164)
1000	25.4 (1)	12.7 (0.500)	0.90 (0.035)	50 (164)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-LSB, 0375 or 3/8 in, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-ZoH125

Halogen free flame retardant heat-shrink tubing.

Zero halogen & low smoke heat-shrink tubing. The product complies with the stringent requirements of the European rail norm EN45545-2 and the HL3 R22/R23 classification and even exceeds those.

The material is suitable for use in all classes required for the construction of locomotives and rolling stock. It is also suitable for use in underground environments as well as marine, military and aerospace applications.

Features and Benefits

- Low smoke generation - excellent fire safety characteristics
- Emissions of toxic fumes are well below the levels required to meet the relevant standards
- Flexible
- Flame retardant
- Good fluid resistance
- Shrink ratio: 2:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.

Standards

- EN45545-2 HL3 R22 & R23
- Meets LUL E 1042 A6
- Meets BS 6853 vehicle category 1a
- DIN 5510
- NFPA 130

Typical Applications

- Insulation of electrical components in mass transit applications
- Mechanical and environmental protection in the marine, military, aerospace and heavy industry
- General fire safety applications where there is a risk to people or equipment

2:1

Shrink ratio

-40°C - 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Mass Transit, Subways, Defense, Offshore, Marine, Industrial, Commercial

Standards:

RoHS | EN 45545-2 | NFPA 130

DERAY®-ZoH125

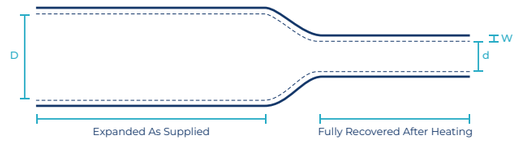
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0094	2.4 (3/32)	1.2 (3/64)	0.51 (0.020)	100 (328)
0125	3.2 (1/8)	1.6 (1/16)	0.51 (0.020)	100 (328)
0187	4.8 (3/16)	2.4 (3/32)	0.51 (0.020)	75 (246)
0250	6.4 (1/4)	3.2 (1/8)	0.64 (0.025)	75 (246)
0375	9.5 (3/8)	4.8 (3/16)	0.64 (0.025)	75 (246)
0500	12.7 (1/2)	6.4 (1/4)	0.64 (0.025)	50 (164)
0750	19.0 (3/4)	9.5 (3/8)	0.76 (0.030)	30 (98)
1000	25.4 (1)	12.7 (1/2)	0.89 (0.035)	30 (98)
1500	38.1 (1 1/2)	19.0 (3/4)	1.02 (0.040)	30 (98)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), yellow (YL), white (WT)
  - Printing: Printed or unprinted
  - Length: Continuous reels
- Please specify the product name, order number and options you require
- Example: DERAY®-ZoH125, 0125, black, unprinted, 100 m reel

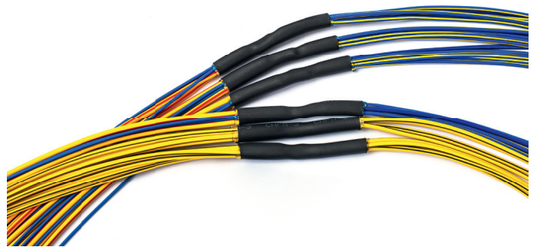
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CHPA

Adhesive Lined Crosslinked Polyolefin

Adhesive lined heat-shrink specifically designed to insulate, seal and protect wire splices in underhood automotive wire harnesses and electronic assemblies with broad temperature range.



Features and Benefits

- High shrink ratio to fit varying splice configurations and substrate profiles
- Seals and protects against water, moisture and chemicals
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Shrinks rapidly for quick installation
- Jacket and adhesive are flame retardant
- Semi-rigid
- Shrink ratio: 4:1
- Continuous operating temperature: -40°C to 150°C
- Shrink temperature: 140°C min.

Typical Applications

- Environmental sealing of wire splices
- Sealing and strain relief of connectors and terminals
- Abrasion protection and electrical insulation of automotive wiring harness splices

Standards

- FCA: MS-DB-56 /MS:50107, CPN #5229
- GMW17136

4:1

Shrink ratio

-40°C - 150°C

(-40°F to 302°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:
RoHS

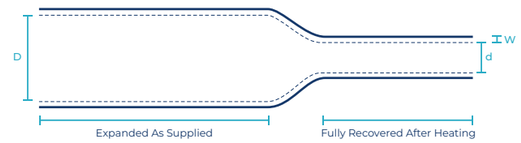
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*
CHPA 0	4.0 (0.157)	1.0 (0.039)	1.4 (0.039)	50 (1.969)
CHPA 1	6.0 (0.236)	1.4 (0.055)	1.45 (0.057)	50 (1.969)
CHPA 2	8.0 (0.315)	1.6 (0.063)	1.75 (0.069)	50 (1.969)
CHPA 3	12.0 (0.472)	2.5 (0.098)	2.35 (0.093)	65 (2.559)
CHPA 3A	14.0 (0.551)	3.7 (0.146)	2.6 (0.102)	65 (2.559)
CHPA 4	18.0 (0.709)	4.5 (0.177)	2.65 (0.104)	75 (2.953)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: CHPA 3, 12.0 mm, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CPA 300

Thin wall adhesive lined crosslinked polyolefin

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

Features and Benefits

- Highly flame retardant
- High shrink ratio allows for coverage of irregularly shaped connectors and components
- Adhesive liner bonds to plastics, rubber, steel and polyethylene
- Superior sealing against water, moisture and other contaminants
- Superior protection for ring terminals without excessive adhesive flow
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 125°C
- Shrink temperature: 120°C min.

Standards

- UL 224 125C - UL file # E63390
- CSA C22.2 No.198.1 125°C
- QPL SAE AS23053/4
- Approved to major automotive OEM specifications

Typical Applications

- Environmental sealing of simple in-line splices
- Strain relief and sealing of connectors and terminals
- Mechanical protection of components

3:1

Shrink ratio

-55°C - 125°C

(-67°F to 257°F)

Continuous operating temperature

Markets:
Aerospace, Defense, Mass Transit, Industrial, Automotive

Standards:

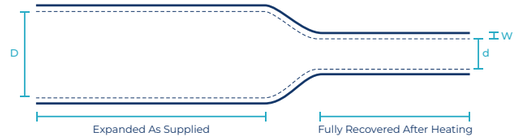
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0047	1.2 (3/64)	0.6 (0.024)	0.45 (0.018)	300 (984)
0063	1.6 (1/16)	0.8 (0.031)	0.45 (0.018)	300 (984)
0094	2.4 (3/32)	1.2 (0.047)	0.50 (0.020)	300 (984)
0125	3.2 (1/8)	1.6 (0.063)	0.50 (0.020)	300 (984)
0187	4.8 (3/16)	2.4 (0.094)	0.50 (0.020)	300 (984)
0250	6.4 (1/4)	3.2 (0.126)	0.65 (0.026)	300 (984)
0375	9.5 (3/8)	4.8 (0.189)	0.65 (0.026)	150 (492)
0500	12.7 (1/2)	6.4 (0.252)	0.65 (0.026)	100 (328)
0625	16.0 (5/8)	8.0 (0.315)	0.65 (0.026)	100 (328)
0750	19.0 (3/4)	9.5 (0.374)	0.75 (0.030)	50 (164)
1000	25.4 (1)	12.7 (0.500)	0.90 (0.035)	50 (164)
1250	31.8 (1 1/4)	15.9 (0.626)	0.90 (0.035)	50 (164)
1500	38.0 (1 1/2)	19.0 (0.748)	1.00 (0.039)	50 (164)
2000	51.0 (2)	25.4 (1.000)	1.15 (0.045)	50 (164)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), red (RD), white (WT), blue (BL), yellow (YL), green (GR) - all (except black) with MOQ
  - Printing: Printed or unprinted
- Please specify the product name, order number and options you require
- Example: CPX 876, 0125, black, unprinted, 300 m spool

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-CHPX-150

Corrosion protection for microchannel heat exchangers

Adhesive lined heat-shrink tubing specifically designed for heat exchanger applications to ensure sealing of aluminum-copper joints to mitigate and protect against corrosion.

Features and Benefits

- Highly protective against corrosion at Al-Cu joints
- Shrink ratio: Positioning on the application without excessive slippage at elevated temperatures
- Adhesive liner bonds exceptionally to copper and aluminum
- Superior sealing against water, moisture and other contaminants
- Superior mechanical protection against abrasion
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 150°C
- Shrink temperature: 180 - 200°C
- Max. peak core temperature while shrinking (copper): 90°C - 100°C

Typical Applications

- Corrosion protection for microchannel heat exchangers especially for aluminum-copper joints
- High adherence to ensure stickiness on the application for elevated temperatures
- Mechanical protection of components
- HVAC applications: Heating, Ventilation and Air-Conditioning applications

2:1

Shrink ratio

-55°C - 150°C

(-67°F to 302°F)

Continuous operating temperature

Markets:
HVAC, Industrial

Standards:
RoHS

DERAY®-CHPX-150

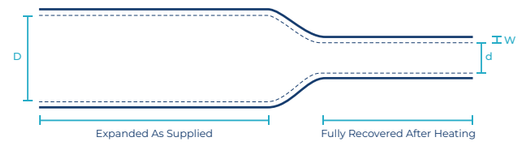
ORDER NUMBER	EXPANDED	RECOVERED		SUGGESTED RANGE OF USE	DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	OUTSIDE SUBSTRATE DIAMETER	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
6340200951L1220	20 (0.787)	10 (0.394)	1.7 (0.067)	12.5-17 (0.492-0.669)	1.22 m (48 in)
6340200951L050	20 (0.787)	10 (0.394)	1.7 (0.067)	12.5-17 (0.492-0.669)	50 mm (1.969 in)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
  - Printing: Printed
- Please specify the product name, order number and options you require:
  - Example: DERAY®-CPHX-150, 20-10/1.7, black, 1.22m length

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Thin wall adhesive lined polyolefin

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

Features and Benefits

- Flexible
- Adhesive bonds to plastics, rubber, steel polyethylene and other materials
- Shrink ratio: 3:1 & 4:1
- Continuous operating temperature of outer jacket: -55°C to 110°C
- Shrink temperature: 95°C min.

Standards

- Industrial and automotive OEM specifications

Typical Applications

- Environmental sealing and strain relief of connectors and terminals
- Moisture sealing and electrical insulation of simple in-line splices
- Abrasion resistance for tubes and pipes
- Repair of damaged wire harnesses

3:1 & 4:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

RoHS

DERAY®-IAKT

Dimensions for shrink ratio 3:1

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*1.22 m (48 in)*
3.0/1.0	3.0 (0.118)	1.0 (0.039)	1.00 (0.039)	300 (984)	25
4.5/1.5	4.5 (0.177)	1.5 (0.059)	1.10 (0.043)	300 (984)	25
6.0/2.0	6.0 (0.236)	2.0 (0.079)	1.20 (0.047)	300 (984)	10
9.0/3.0	9.0 (0.354)	3.0 (0.118)	1.40 (0.055)	150 (492)	10
12.0/4.0	12.0 (0.472)	4.0 (0.157)	1.70 (0.067)	100 (328)	10
19.0/6.0	19.0 (0.748)	6.0 (0.236)	2.10 (0.083)	50 (164)	10
24.0/8.0	24.0 (0.945)	8.0 (0.315)	2.40 (0.094)	50 (164)	10
40.0/13.0	40.0 (1.575)	13.0 (0.512)	2.40 (0.094)	30 (98)	10

Dimensions for shrink ratio 4:1

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*1.22 m (48 in)*
4.0/1.0	4.0 (0.157)	1.0 (0.039)	1.00 (0.039)	300 (984)	25
8.0/2.0	8.0 (0.315)	2.0 (0.079)	1.20 (0.047)	150 (492)	10
12.0/3.0	12.0 (0.472)	3.0 (0.118)	1.40 (0.055)	100 (328)	10
16.0/4.0*	16.0 (0.630)	4.0 (0.157)	1.70 (0.067)	50 (164)	10
24.0/6.0	24.0 (0.945)	6.0 (0.236)	2.10 (0.083)	50 (164)	10
32.0/8.0	32.0 (0.1.260)	8.0 (0.315)	2.40 (0.094)	50 (164)	10
52.0/13.0*	52.0 (2.047)	13.0 (0.512)	2.40 (0.094)	30 (98)	10

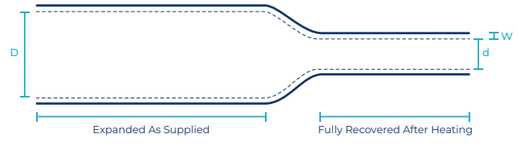
*IAKT 4:1 sizes 16.0/4.0 & 52.0/13.0 clear have different delivery units

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), clear (CL)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-IAKT 3:1, 40.0/13.0, black

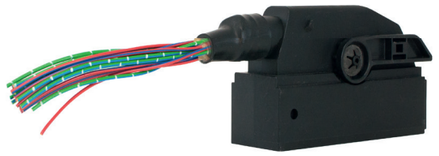
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-IHKT

Thin wall adhesive lined polyolefin

Flexible heat-shrink tubing with a temperature resistant polyamide adhesive inner lining; ideal for protecting components in a wide range of electrical and mechanical applications where adhesion to connector and metal substrates is critical.



Features and Benefits

- High shrink ratio allows for coverage of irregularly shaped connectors and components
- Flame retardant
- Specially designed polyamide adhesive protects components at elevated temperatures
- Superior sealing against water and other contaminants
- Inner adhesive bonds to plastics, rubbers and metals
- Shrink ratio: 4:1
- Continuous operating temperature: -55°C to 125°C
- Shrink temperature: 100°C min.

Typical Applications

- Retrofit protection of connectors
- Repair of damaged wire harnesses
- Moisture sealing and strain relief at connectors and terminals

4:1

Shrink ratio

-55°C to 125°C
(-67°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Defense

Standards:

Standards

- VG 95343 Part 12 Type D
- Approved to major automotive OEM specifications

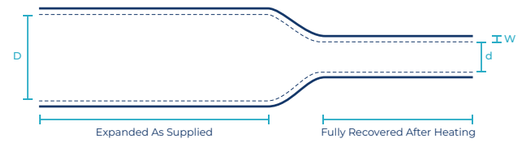
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*1.22 m (48 in)*
0157	4.0 (0.157)	1.0 (0.039)	1.00 (0.039)	300 (984)	25
0315	8.0 (0.315)	2.0 (0.079)	1.20 (0.047)	150 (492)	10
0472	12.0 (0.472)	3.0 (0.118)	1.40 (0.055)	100 (328)	10
0630	16.0 (0.630)	4.0 (0.157)	1.70 (0.067)	50 (164)	10
0945	24.0 (0.945)	6.0 (0.236)	2.10 (0.083)	50 (164)	10
1260	32.0 (1.260)	8.0 (0.315)	2.40 (0.094)	50 (164)	10
2047	52.0 (2.047)	13.0 (0.512)	2.40 (0.094)	30 (98)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-IHKT, 0630 or 16.0/4.0, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-IXKT

Rigid heat-shrink tubing with a temperature resistant polyolefin adhesive inner lining specifically designed for critical applications that require an increased adherence on wiring insulations and metal substrates while maintaining a versatility for various other areas of application.

Features and Benefits

- High shrink ratio ensuring an easy installation over crucial geometry and components
- Adhesive liner bonds exceptionally to insulations, plastics, rubbers and metals
- Flame retardant
- High component protection against elevated temperatures
- Superior sealing against water, moisture and other contaminants
- Superior mechanical protection against abrasion
- Shrink ratio: 4:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: ~100°C min

Typical Applications

- Repair of damaged wire harnesses
- Mechanical protection of components
- Moisture sealing of terminals and components
- Optimal adherence for fixation of loose components

4:1

Shrink ratio

-40°C to 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

RoHS

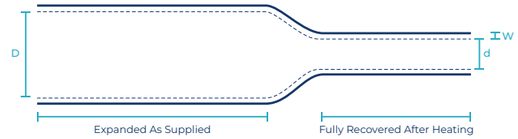
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*m (in)*
6330040954	4.0 (0.157)	1.0 (0.039)	1.00 (0.039)	300 (984)	On request
6330080954	8.0 (0.315)	2.0 (0.079)	1.05 (0.040)	150 (492)	On request
6330120954	12.0 (0.472)	3.0 (0.118)	1.40 (0.055)	100 (328)	On request
6330160954	16.0 (0.630)	4.0 (0.157)	1.70 (0.067)	50 (164)	On request
6330240954	24.0 (0.945)	6.0 (0.236)	2.05 (0.081)	50 (164)	1.22 (48)
6330320954	32.0 (1.260)	8.0 (0.315)	2.35 (0.093)	50 (164)	1.22 (48)
6330520954	52.0 (2.047)	13.0 (0.512)	2.40 (0.094)	30 (98)	1.22 (48)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-IXKT, 12/3, black, 1.22m

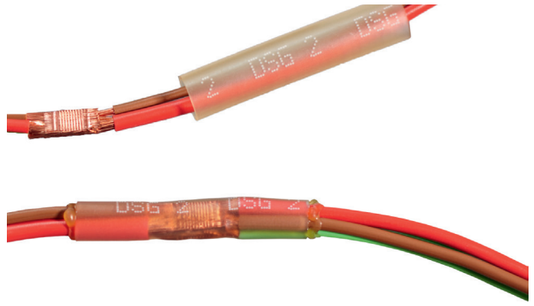
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-SpliceMelt

Adhesive lined crosslinked polyolefin

Adhesive lined heat-shrink tubing specifically designed to insulate, seal and protect in-line splices in automotive wire harnesses and electronic assemblies.



Features and Benefits

- High shrink ratio to fit varying splice configurations
- Seals and protects against water, moisture and chemicals
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Quick installation due to rapid shrinkage
- Shrink ratio: 4:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.
- Abrasion protection and electrical insulation of automotive wiring harness splices

Standards

- Approved to major automotive OEM splice sealing specifications

Typical Applications

- Environmental sealing of in-line splices
- Sealing and strain relief of connectors and terminals

4:1

Shrink ratio

-40°C - 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

RoHS

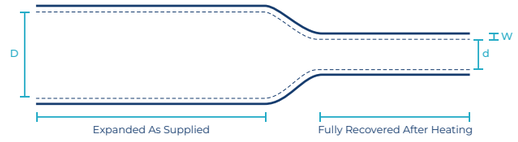
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNIT
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	CUT LENGHTS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*
1	6.0 (0.236)	1.4 (0.055)	1.45 (0.057)	50 (1.97)
2	8.0 (0.315)	1.6 (0.063)	1.75 (0.069)	50 (1.97)
3	12.0 (0.472)	2.5 (0.098)	2.35 (0.093)	65 (2.56)
4	18.0 (0.709)	4.5 (0.177)	2.65 (0.104)	75 (2.955)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), clear (CL)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-SpliceMelt, size 3, 65 mm, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-SpliceMelt Cap

Adhesive lined insulating caps

Adhesive lined, heat-shrink insulating caps specifically designed to insulate, seal and protect end or stub splices in wiring harnesses and electronic assemblies.

Features and Benefits

- High shrink ratio allows fewer sizes to cover a wide range of profiles
- Seals and protects against water, moisture and chemicals
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Quick installation due to rapid shrinkage
- Shrink ratio: 4:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 125°C min.

Standards

- Approved to major automotive OEM splice sealing specifications

Typical Applications

- Sealing & protection of end and stub splices

4:1

Shrink ratio

-40°C - 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

RoHS

DERAY®-SpliceMelt Cap

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNIT
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	CUT LENGHTS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*
0	4.5 (0.177)	1.6 (0.063)	1.75 (0.069)	35 (1.37)
1	6.0 (0.236)	1.4 (0.055)	1.45 (0.057)	50 (1.97)
2	8.0 (0.315)	1.6 (0.063)	1.75 (0.069)	50 (1.97)
3	12.0 (0.472)	2.5 (0.098)	2.35 (0.093)	65 (2.56)
4*	18.0 (0.709)	4.5 (0.177)	2.65 (0.104)	75 (2.955)

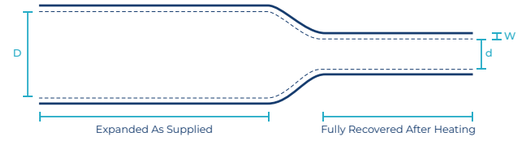
*Cap tip open

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK), clear (CL)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-SpliceMelt Cap, size 3, 65mm, clear

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-T-Melt 150

Adhesive lined crosslinked polyolefin

Adhesive lined heat-shrink with a special design to not only insulate, seal and protect but to withstand exceptional requirements for various applications where normal adhesive linings would reach their limitations e.g. high temperature conditions.

Features and Benefits

- High shrink ratio to fit varying splice configurations and substrate profiles
- Seals and protects against water, moisture and chemicals
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Shrinks exceptionally fast for quick installation
- Very good flame retardancy
- Semi-rigid
- Special adhesive characteristic to ensure an optimal sealing for high temperature applications
- Shrink ratio: 4:1
- Continuous operating temperature: -40°C to 150°C
- Shrink temperature: 125°C min.

Typical Applications

- Environmental sealing of various applications, e. g. wire splices, terminals
- Sealing and strain relief
- Abrasion protection and electrical insulation

4:1

Shrink ratio

-40°C - 150°C

(-40°F to 302°F)

Continuous operating temperature

Markets:
Industrial, Automotive

Standards:
RoHS

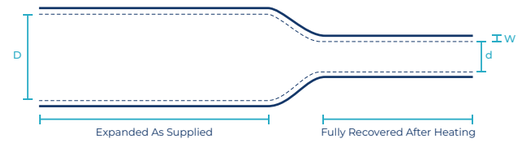
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*mm / 1.22 m (48 in)*	*m (in)*
6-1,2	6.0 (0.236)	1.2 (0.047)	1.35 (0.053)	50 / 10	on request
8-1,6	8.0 (0.315)	1.6 (0.063)	1.75 (0.069)	50 / 10	on request
12-2,5	12.0 (0.472)	2.5 (0.098)	2.35 (0.093)	65 / 10	on request
18-4,5	18.0 (0.709)	4.5 (0.177)	2.65 (0.104)	75 / 10	on request
24-6,0	24.0 (0.945)	6.0 (0.236)	2.10 (0.083)	on request / 10	on request
32-8,0	32.0 (1.260)	8.0 (0.315)	2.40 (0.094)	on request / 10	on request

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require
- Example: DERAY®-T-Melt 150, 12-2,50 mm, 65 mm, black

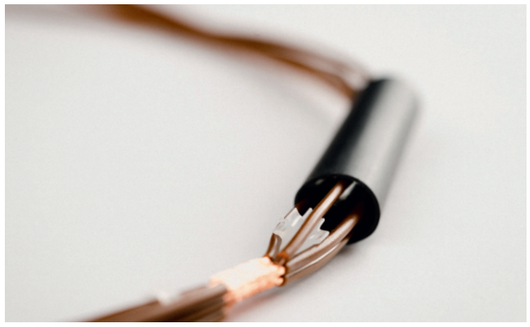
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-UMS

Adhesive lined crosslinked polyolefin

Adhesive lined heat-shrink tubing specifically designed to insulate, seal and protect splices and ring terminals in automotive wire harnesses.



Features and Benefits

- High shrink ratio to fit varying splice configurations
- Seals and protects against water, moisture and chemicals
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Abrasion protection and electrical insulation of automotive wiring harness splices
- Quick installation
- Shrink ratio: 4:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.

Standards

- Ford ESLU5T-1A263-AA (CCC41A)
- LV312-3

Typical Applications

- Environmental sealing of in-line splices
- Sealing and strain relief of connectors and ring terminals

4:1

Shrink ratio

-40°C - 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

RoHS

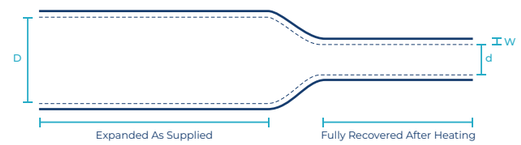
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*
1	6.0 (0.236)	1.2 (0.047)	1.35 (0.053)	50 (1.97)
2	8.0 (0.315)	1.6 (0.063)	1.75 (0.069)	50 (1.97)
3	12.0 (0.472)	2.5 (0.098)	2.35 (0.093)	65 (2.56)
4	18.0 (0.709)	4.5 (0.177)	2.65 (0.104)	75 (2.955)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

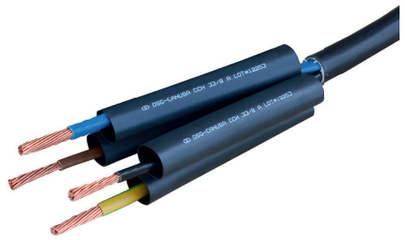
- Select options:
  - Color: Black (BK), Transparent (CL)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-UMS, size 3, 65 mm, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Heavy wall crosslinked polyolefin

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



Features and Benefits

- Withstands severe mechanical requirements of U.R.D., submersible and direct burial installations
- Rated for 1000V, 90°C continuous use
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

Standards

- DIN EN 60684-3-247
- DIN V 47640

Typical Applications

- Cable jacket repair
- Retrofit protection of connectors
- Low voltage cable splicing
- Conduit repair

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Electrical Utility, Industrial, Commercial

Standards:

RoHS

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS*	
	mm (in)	*mm (in)*	*mm (in)*	*1.22 m (48 in)*	*1 m (39 in)*
CCH 9/3	9.0 (0.354)	3.0 (0.118)	2.00 (0.079)	100	100
CCH 15/4	15.0 (0.512)	4.0 (0.157)	2.50 (0.098)	80	80
CCH 22/6	22.0 (0.866)	6.0 (0.236)	2.70 (0.106)	75	75
CCH 33/8	33.0 (1.299)	8.0 (0.315)	3.20 (0.126)	60	60
CCH 40/12	40.0 (1.575)	12.0 (0.472)	4.10 (0.161)	36	36
CCH 55/16	55.0 (2.165)	16.0 (0.630)	4.10 (0.161)	24	24
CCH 65/19	65.0 (2.559)	19.0 (0.748)	4.10 (0.161)	20	20
CCH 75/22	75.0 (2.953)	22.0 (0.866)	4.10 (0.161)	16	16
CCH 85/25	85.0 (3.346)	25.0 (0.984)	4.10 (0.161)	10	10
CCH 95/29	95.0 (3.740)	29.0 (1.142)	4.10 (0.161)	10	10
CCH 115/34	115.0 (0.591)	34.0 (1.339)	4.30 (0.169)	6	6
CCH 130/36	130.0 (5.118)	36.0 (1.417)	4.30 (0.169)	6	6
CCH 160/55	160.0 (6.299)	55.0 (2.165)	4.30 (0.169)	6	6
CCH 175/55	175.0 (6.890)	55.0 (2.165)	4.30 (0.169)	6	6
CCH 200/65	200.0 (7.874)	65.0 (2.559)	4.30 (0.169)	6	6

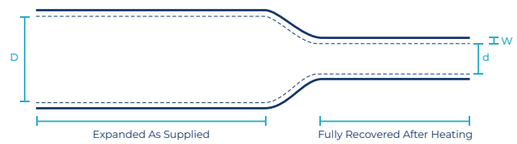
*Spools on request (unlined only).

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

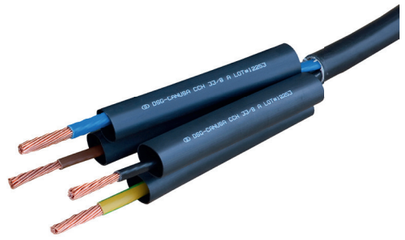
- Select options:
  - Color: Black (BK)
  - Printing: Printed or unprinted
  - Adhesive Lining: Lined (A) or unlined (U)
- Please specify the product name, order number and options you require
- Example: CCH 65/19, A, black, unprinted, lined, 1.22m in length

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Medium wall crosslinked polyolefin

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 and Benefits

- Seals and protect cable splices and terminations
- High resistance to impact and abrasion
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

Standards

- DIN EN 60684-3-247

Typical Applications

- Cable jacket repair
- Retrofit protection of connectors
- Low voltage cable splicing
- Conduit repair

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Electrical Utility, Industrial, Commercial

Standards:

RoHS

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS*	
	mm (in)	*mm (in)*	*mm (in)*	*1.22 m (48 in)*	*1 m (39 in)*
CCM 12/3	12.0 (0.472)	3.0 (0.118)	2.00 (0.079)	80	80
CCM 16/5	16.0 (0.630)	5.0 (0.197)	2.20 (0.087)	80	80
CCM 22/6	22.0 (0.866)	6.0 (0.236)	2.50 (0.098)	75	75
CCM 28/6	28.0 (1.102)	6.0 (0.236)	2.50 (0.098)	75	75
CCM 33/8	40.0 (1.575)	8.0 (0.315)	2.50 (0.098)	60	60
CCM 40/12	40.0 (1.575)	12.0 (0.472)	2.70 (0.106)	36	36
CCM 55/16	55.0 (2.165)	16.0 (0.630)	2.70 (0.106)	24	24
CCM 65/19	65.0 (2.559)	19.0 (0.748)	3.0 (0.118)	20	20
CCM 75/22	75.0 (2.953)	22.0 (0.866)	3.0 (0.118)	16	16
CCM 85/25	85.0 (3.346)	25.0 (0.984)	3.0 (0.118)	10	10
CCM 95/25	95.0 (3.740)	25.0 (0.984)	3.0 (0.118)	10	10
CCM 115/34	115.0 (0.591)	34.0 (1.339)	3.0 (0.118)	6	6
CCM 140/42	140.0 (5.512)	42.0 (1.339)	3.0 (0.118)	6	6
CCM 160/50	160.0 (6.299)	50.0 (1.969)	3.0 (0.118)	6	6
CCM 175/58	175.0 (6.890)	58.0 (2.283)	3.50 (0.138)	6	6
CCM 200/65	200.0 (7.874)	65.0 (2.559)	3.50 (0.138)	6	6

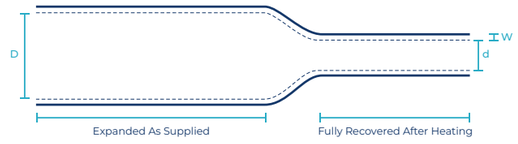
*Spools on request (unlined only).

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
  - Printing: Printed or unprinted
  - Adhesive Lining: Lined (A) or unlined (U)
- Please specify the product name, order number and options you require
- Example: CCM 65/19, A, black, unprinted, lined, 1.22m length

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



High shrink ration crosslinked polyolefin

High shrink ratio heat-shrink tubing accommodates extreme differences between cables, connectors and backshells.

Features and Benefits

- Flame retardant
- Accommodates a wide variety of connector shapes and configurations
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Shrink ratio: 6:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

Standards

- UL-94-V-0 - UL file #E132914
- IEC 60684-3-247

Typical Applications

- Wire harnesses
- Abrasion and impact resistance
- Strain relief and protection of cables and connectors

6:1

Shrink ratio

-55°C to 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Electrical Utility, Industrial, Commercial, Mass Transit

Standards:

RoHS

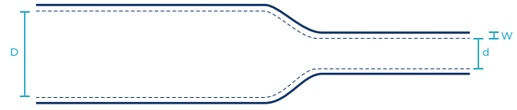
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) d	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*1.22 m (48 in)*
0750	19.0 (0.750)	3.2 (0.125)	3.2 (0.123)	35
1300	33.0 (1.300)	5.5 (0.220)	3.4 (0.135)	60
1750	44.4 (1.750)	7.4 (0.290)	3.6 (0.140)	40
2000	50.8 (2.000)	8.3 (0.330)	4.3 (0.170)	25
2750	69.8 (2.750)	11.7 (0.460)	4.8 (0.190)	15
3500	88.9 (3.500)	17.1 (0.673)	4.3 (0.170)	10
4700	119.4 (4.700)	22.9 (0.900)	4.8 (0.190)	5

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Printing: Printed or unprinted
  - Adhesive Lining: Lined (D) or unlined (U)
  - Lengths: 1.22 m or 7.62 m spool (unlined only)
- Please specify the product name, order number and options you require
- Example: CFHR, 0750, U, black, unprinted, 1.22 m length

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Medium wall crosslinked polyolefin

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

Features and Benefits

- Seals and protects cable splices and terminations
- Rugged mechanical protection
- Complete moisture sealing
- Strain relief for delicate wire connections
- High resistance to impact and abrasion
- UV resistant
- Halogen free
- Rated for 1000 V, 90°C continuous use
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

Typical Applications

- Strain relief and environmental protection
- Splice covers for electrical cables
- HVAC systems for pipes and ducts
- Insulation cover or jacket repair on low voltage cables

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Industrial, Commercial, Utility

Standards:

RoHS

Standards

- DIN EN 60684-3-247

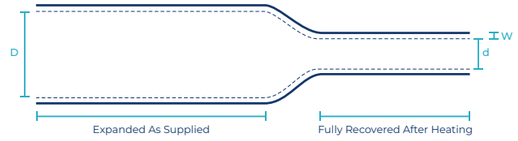
ORDER NUMBER	EXPANDED	RECOVERED		APPLICATION RANGE	DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	GENERAL USE	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*1.22 m (48 in)*
0400	10.2 (0.40)	3.8 (0.15)	2.0 (0.080)	4.5-8.5 (.18-.34)	100
0750	19.1 (0.75)	5.6 (0.22)	2.0 (0.080)	6.0-16.5 (.24-.65)	75
1100	27.9 (1.10)	10.2 (0.40)	2.4 (0.095)	11.5-25 (.45-1.0)	35
1300	33.0 (1.30)	10.2 (0.40)	2.4 (0.095)	11.5-30 (.45-1.2)	75
1500	38.1 (1.50)	12.7 (0.50)	2.4 (0.095)	14.0-35 (.55-1.4)	40
1700	43.2 (1.70)	12.7 (0.50)	2.5 (0.100)	14.0-40 (.55-1.6)	25
2050	52.1 (2.05)	19.1 (0.75)	2.5 (0.100)	21.0-45 (.82-1.8)	15
2750	69.9 (2.75)	25.4 (1.00)	2.5 (0.100)	30.0-63 (1.2-2.5)	10
3500	88.9 (3.50)	29.9 (1.18)	2.5 (0.100)	33-83.8 (1.3-3.3)	10
4700	119.4 (4.70)	39.9 (1.57)	2.7 (0.105)	40.6-114 (1.6-4.5)	10
6000	152.4 (6.00)	50.8 (2.00)	3.0 (0.120)	53.3-147 (2.1-5.8)	5
6700	170.2 (6.70)	58.4 (2.30)	3.0 (0.120)	70.0-165 (2.4-6.5)	5
9000	228.6 (9.00)	77.0 (3.00)	3.3 (0.130)	71.0-220 (2.8-8.7)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
  - Printing: Printed or unprinted
  - Adhesive lining: Lined (D) or unlined (U)
  - Lengths: 1 m or 1.22 m, or 7.62 m spool on request (only unlined)
- Please specify the product name, order number and options you require
- Example: CFM, 1100, U, black, unprinted, 1.22 m length

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Heat-shrink cable sleeve

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

Features and Benefits

- Craft friendly installation
- Exceptional split resistance
- CFTV adhesive retains bond providing long term protection
- Selective strippability to meet CATV industry specifications
- Minimal heat required to produce error free installation without splitting
- Thermochromatic lines change color to signal waterproof seal
- Shrinks and seals in half the time of alternative products
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

Typical Applications

- Strain relief of coaxial connections
- Waterproof protection of CATV connectors

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:

Industrial

Standards:

RoHS

ORDER NUMBER	EXPANDED	RECOVERED		APPLICATION RANGE	DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	GENERAL USE	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*1.22 m (48 in)*
400	10.2 (0.40)	3.8 (0.15)	2 (0.08)	4.5 - 8.5 (.18 - .34)	75
750	19.0 (0.75)	5.6 (0.22)	2 (0.08)	6.0 - 16.5 (.24 - .65)	35
1100	27.9 (1.10)	10.2 (0.40)	2 (0.08)	11.5 - 25.0 (.45 - 1.0)	75
1300	33.0 (1.30)	10.2 (0.40)	2 (0.08)	11.5 - 30.0 (.45 - 1.2)	60
1500	38.1 (1.50)	12.7 (0.50)	2 (0.08)	14.0 - 35.0 (.55 - 1.4)	40
1700	43.2 (1.70)	12.7 (0.50)	2 (0.08)	14.0 - 40.0 (.55 - 1.6)	40
2050	52.1 (2.05)	19.0 (0.75)	2 (0.08)	21.0 - 45.0 (.82 - 1.8)	25
2750	69.8 (2.75)	25.4 (1.00)	2 (0.08)	30.0 - 63.0 (1.2 - 2.5)	15

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Please specify the product name, order number and options you require:
  - Example: CFTV, 1700, lined

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Heavy wall crosslinked polyolefin

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

Features and Benefits

- Withstands severe mechanical requirements of U.R.D., submersible and direct burial installations
- Except for clear or transparent tubing, all colors are UV resistant
- Halogen free
- High impact, abrasion, corrosion and chemical resistance
- Optional thermoplastic adhesive liner for complete environmental protection and insulation
- Rated to 1000V
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C, cable emergency overload temperature to 130°C
- Shrink temperature: 120°C min.

Standards

- UL 486D - UL file # E132914
- CSA C22.2 No. 198.2
- ANSI C119-1
- ICEA and NEMA insulation thickness requirements
- DIN EN 60684-3-247

Typical Applications

- Strain relief and mechanical protection
- Insulation of primary low voltage cables

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Industrial Construction, Automation, Mining, Transit, Utility, Power Distribution

Standards:

ORDER NUMBER	EXPANDED	RECOVERED		APPLICATION RANGE	DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	GENERAL USE	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*1.22 m (48 in) / 1 m (39 in)*
0350	8.9 (0.350)	3.0 (0.118)	1.80 (0.071)	3.5 - 8 (0.15 - 0.3)	100
0500	13.0 (0.512)	4.1 (0.161)	2.40 (0.094)	4.5 - 11 (0.2 - 0.45)	75
0750	19.1 (0.752)	6.1 (0.240)	2.40 (0.094)	6.5 - 16.5 (0.25 - 0.65)	35
1100	27.9 (1.098)	8.9 (0.350)	3.00 (0.118)	10 - 24 (0.4 - 0.95)	75
1500	38.1 (1.500)	11.9 (0.469)	4.00 (0.157)	13 - 35 (0.5 - 1.4)	40
2000	50.8 (2.000)	16.0 (0.630)	4.10 (0.161)	17.5 - 44 (0.7 - 1.75)	25
2700	68.1 (2.681)	22.1 (0.870)	4.10 (0.161)	24 - 59 (0.95 - 2.3)	15
3500*	89.9 (3.539)	29.9 (1.181)	4.10 (0.161)	33 - 80 (1.3 - 3.1)	10
4700*	119.9 (4.720)	39.9 (1.571)	4.30 (0.169)	44 - 104 (1.75 - 4.1)	5
5100*	129.5 (5.098)	39.9 (1.571)	4.30 (0.169)	43 - 109 (1.7 - 4.3)	5
6000*	152.4 (6.000)	50.8 (2.000)	4.30 (0.169)	56 - 130 (2.2 - 5.1)	5
6700*	$^{170.2}_{(6.701)}$	56.6 (2.228)	4.30 (0.169)	61 - 145 (2.4 - 5.7)	5

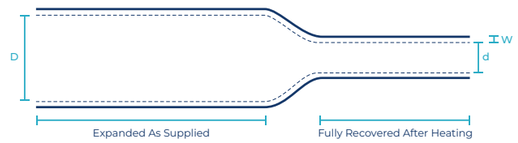
All colors except clear are UV resistant
*CFW sizes 3500 to 6700 are not UL or CSA listed.

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK) or red (RD)
  - Printing: Printed or unprinted
  - Adhesive lining: Lined (D) or unlined (U)
  - Lengths: 1 m or 1.22 m or 7.62 m spool on request (unlined only)
- Please specify the product name, order number and options you require
- Example: CFW, 1500, U, black, unprinted, 1.22 m length

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet..



DERAY®-MC 225

Medium wall crosslinked polyethylene

Medium wall heat-shrinkable tubing suitable for a variety of mechanical, electrical and thermal applications.

Features and Benefits

- High resistance to impact and abrasion
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 135°C
- Shrink temperature: 120°C min.

Standards

- VG 95343 Part 5 Type G
- GMW 17136
- GS 95008-3-3

Typical Applications

- Shaping on battery cables
- Bundling

3:1

Shrink ratio

-40°C - 135°C

(-40°F to 275°F)

Continuous operating temperature

Markets:
Electrical Utility, Power Distribution, Industrial, Commercial Construction Projects, Aerospace, Defense, Marine, Automotive

Standards:

RoHS VG

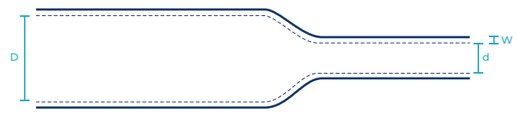
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*1.22 m (48 in)*
12/3	12.0 (0.472)	3.0 (0.118)	1.00 (0.039)	10
19/5	19.0 (0.748)	5.0 (0.197)	2.00 (0.079)	10
28/8	28.0 (1.102)	8.0 (0.315)	2.50 (0.098)	10
38/12	38.0 (1.496)	12.0 (0.472)	2.50 (0.098)	10
50/16	50.0 (1.969)	16.0 (0.630)	2.50 (0.098)	10
65/19	65.0 (2.559)	19.0 (0.748)	2.50 (0.098)	10
75/22	75.0 (2.953)	22.0 (0.866)	3.00 (0.118)	10
85/25	85.0 (3.346)	25.0 (0.984)	3.00 (0.118)	10
95/25	95.0 (3.740)	25.0 (0.984)	3.00 (0.118)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-MC 225, 50/16, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



FCFW

Heavy Wall Crosslinked Polyolefin

Heavy wall heat-shrink tubing insulates and protects electrical splices and terminations where maximum flame retardancy and exceptional insulating and sealing characteristics are required.

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Mass Transit, Electrical, Industrial

Standards:

Features and Benefits

- Flame retardant
- UV resistant
- High impact and abrasion resistance - capable of withstanding severe mechanical abuse of U.R.D., submersible and direct burial installations
- Optional thermoplastic adhesive liner provides complete environmental protection and insulation
- Rated for up to 2 kV
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

Standards

- UL 486D - UL file # E132914
- UL 94 V-0 - UL file # E167396
- CSA C22.2 No. 198.2
- IEC 60684-3-247
- ICEA S-19-81 and NEMA insulation thickness requirements
- QPL SAE AS23053/15 Class 1 (Black)
- Flame-retardant in accordance with ASTM D2671

Typical Applications

- Insulation of low voltage cables
- Flame retardant system

ORDER NUMBER	EXPANDED	RECOVERED		APPLICATION RANGE	SINGLE CONDUCTOR SIZE	DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) d	TOTAL WALL THICKNESS (NOM) W	GENERAL USE		LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*AWG/MCM*	*mm (in)*
0350**	8.9 (0.35)	3.0 (0.12)	1.8 (0.07)	3.5 - 8 (.15 - .3)	#14 - #10	100
0400***	10.2 (0.40)	3.3 (0.13)	1.8 (0.07)	3.5 - 9 (.15 - .35)	#10 - #8	80
0500**	13.0 (0.51)	4.1 (0.16)	2.4 (0.08)	4.5 - 11 (.2 - .45)	#8 - #6	75
0750	19.1 (0.75)	6.1 (0.22)	2.5 (0.09)	6.5 - 16.5 (.25 - .65)	#6 - #2	35
1100	27.9 (1.10)	8.9 (0.35)	3.0 (0.12)	10 - 24 (.4 - .95)	#1 - 3/0	75
1500	38.1 (1.50)	11.9 (0.47)	4.1 (0.16)	13 - 35 (.5 - 1.4)	2/0 - 350	40
2000	50.8 (2.00)	16.0 (0.63)	4.1 (0.16)	17.5 - 44 (.7 - 1.75)	250 - 500	25
2700	68.1 (2.70)	22.1 (0.87)	4.1 (0.16)	24 - 59 (.95 - 2.3)	600 - 1000	15
3500*	89.9 (3.54)	29.9 (1.18)	4.1 (0.16)	33 - 80 (1.3 - 3.1)	800 - 1250	10
4700*	119.9 (4.72)	39.9 (1.57)	4.2 (0.17)	44 - 104 (1.75 - 4.1)	1500 - 2500	5

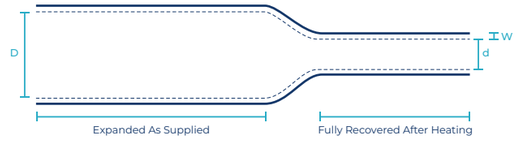
* FCFW 3500 and FCFW 4700 are not UL, CSA, or QPL listed.
** Meets the material performance of MIL spec.
*** It is nor CSA listed.

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Colour: Black (BK) or red (RD)
  - Printing: Printed or unprinted
  - Adhesive Lining: Lined (D) or unlined (U)
  - Approval: Standard, VG or QPL
- Please specify the product name, order number and options you require
- Example: FCFW, 1500, U, black, unprinted, 1.22 m lengths

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



FCFW-N

Heavy wall flame retardant heat-shrink tube

Heavy wall flame retardant heat-shrinkable tubing suitable for use in a nuclear environment, insulates and protects electrical splices and terminations.

Features and Benefits

- Functional after 850 kGy cumulative dose
- High resistance to impact and abrasion, lined with thermoplastic adhesive
- Rated for 600/1000V
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.
- The sleeves according NF M 64-001, are qualified for use in zones K1, K2 and K3

Standards

- UL 94 V-0 - UL file # E167396
- IEEE 383
- IEC 60684-3-247
- NF M 64-001
- IEC 60068
- LOCA/POSTLOCA in accordance with RCC-E 2007 NF M64-001

Typical Applications

- Continous use in a nuclear environment, strain relief, sealing, insulable protection on LV cable

3:1

Shrink ratio

-55°C - 110°C

(-67°F to 230°F)

Continuous operating temperature

Markets:
Electrical, Nuclear Power Generation

Standards:

ORDER NUMBER	EXPANDED	RECOVERED		APPLICATION RANGE	SINGLE CONDUCTOR SIZE	DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) d	TOTAL WALL THICKNESS (NOM) W	GENERAL USE	600 / 1000 V	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*AWG/MCM*	*1.22m (48in)*
0350**	8.9 (0.35)	3.0 (0.12)	1.8 (0.07)	3.5 - 8 (.15 - .3)	#14 - #10	100
0500**	13.0 (0.51)	4.1 (0.16)	2.4 (0.08)	4.5 - 11 (.2 - .45)	#8 - #6	75
0750	19.1 (0.75)	6.1 (0.22)	2.5 (0.09)	6.5 - 16.5 (.25 - .65)	#6 - #2	35
1100	27.9 (1.10)	8.9 (0.35)	3.0 (0.12)	10 - 24 (.4 - .95)	#1 - 3/0	75
1500	38.1 (1.50)	11.9 (0.47)	4.1 (0.16)	13 - 35 (.5 - 1.4)	2/0 - 350	40
2000	50.8 (2.00)	16.0 (0.63)	4.1 (0.16)	17.5 - 44 (.7 - 1.75)	250 - 500	25
2700	68.1 (2.70)	22.1 (0.87)	4.1 (0.16)	24 - 59 (.95 - 2.3)	600 - 1000	15
3500*	89.9 (3.54)	29.9 (1.18)	4.1 (0.16)	33 - 80 (1.3 - 3.1)	800 - 1250	10
4700*	119.9 (4.72)	39.9 (1.57)	4.2 (0.17)	44 - 104 (1.75 - 4.1)	1500 - 2500	5

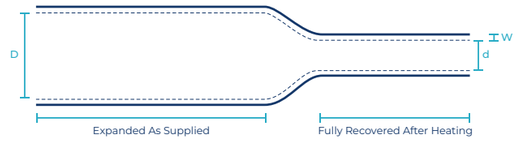
*FCFW-N 3500 and FCFW-N 4700 are not UL or CSA listed
**Meets the material performance of MIL spec only

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Colors: Black (BK), red (RD)
  - Adhesive Lining: Lined (D) or unlined (U)
- Please specify the product name, order number and options you require
- Example: FCFW-N 0350, D, black, 200 pieces, 1.22 m lengths

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-KY 175

Semi-rigid thin wall Kynar®

Clear, thin wall Kynar® heat-shrink tubing ideal for electronic, automotive and military applications requiring protection and see through inspection in aggressive environments.

Features and Benefits

- Highly flame retardant
- Semi-rigid
- High withstand to abrasion and cut-through
- Excellent chemical and solvent resistance
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 175°C
- Shrink temperature: 175°C min.

Typical Applications

- Strain relief and insulation of high temperature wires
- Excellently suitable for applications where high chemical and abrasion resistance is required
- All areas where outstanding electrical insulation is required

Standards

- UL 224 125C VW-1 - UL file # E107857
- CSA 22.2 OFT - CSA file # 066150_0_000
- DEF STAN 59-97 Type 3
- BS G198 Part 4 Type 20
- VG 95343 Part 5 Type F
- QPL SAE AS23053/8
- PAN 6491
- VW 60360-3
- CNES approved and listed in Matrex database
- ECSS-Q-ST-70-02

2:1

Shrink ratio

-55°C - 175°C

(-67°F to 347°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Aerospace, Defense, Mass Transit

Standards:

RoHS · DEF STAN 59/97 · VG · PAN · QPL

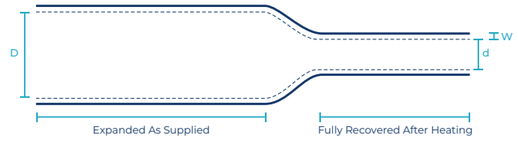
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*1.22 m (48 in)*
0047	1.2 (3/64)	0.6 (0.024)	0.24 (0.009)	300 (984)	25
0063	1.6 (1/16)	0.8 (0.031)	0.24 (0.009)	300 (984)	25
0094	2.4 (3/32)	1.2 (0.047)	0.24 (0.009)	300 (984)	25
0125	3.2 (1/8)	1.6 (0.063)	0.24 (0.009)	300 (984)	25
0187	4.8 (3/16)	2.4 (0.094)	0.24 (0.009)	300 (984)	25
0250	6.4 (1/4)	3.2 (0.126)	0.30 (0.012)	300 (984)	10
0375	9.5 (3/8)	4.8 (0.189)	0.30 (0.012)	150 (492)	10
0500	12.7 (1/2)	6.4 (0.252)	0.30 (0.012)	100 (328)	10
0750	19.0 (3/4)	9.5 (0.374)	0.40 (0.016)	50 (164)	10
1000	25.4 (1)	12.7 (0.500)	0.50 (0.020)	50 (164)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Clear (CL)
  - Approval: Standard, VG or QPL
- Please specify the product name, order number and options you require:
  - Example: DERAY®-KY 175, 0125 or 1/8 in, clear, VG

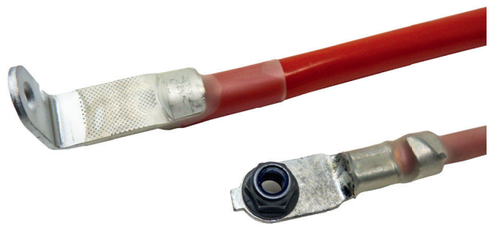
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-KYF 190

Flexible thin wall Kynar®

High temperature Kynar® thin wall heat-shrink tubing, with extreme chemical resistance ideal for protection of components in a wide range of severe temperature and harsh environments.



Features and Benefits

- Highly flame retardant
- Flexible
- High temperature resistance
- Excellent chemical and solvent resistance
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 190°C
- Shrink temperature: 175°C min.

Standards

- VW 60360-3
- UL 224 125C VW-1 - UL file # E132910
- QPL SAE AS23053/18 Class 2
- CNES approved and listed in Matrex database
- ECSS-Q-ST-70-02

Typical Applications

- High temperature performance that meets or exceeds military, industrial and automotive standards
- Provides excellent electrical insulation
- High flexible and abrasion resistance requiring applications
- Protective see through covering for high temperature and aggressive chemical applications
- Protecting component for connectors and HV cable-lugs in electric vehicles

2:1

Shrink ratio

-55°C to 190°C (-67°F to 374°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Defense, Aerospace, Mass Transit

Standards:

RoHS QPL

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL*	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*	*1.22 m (48 in)*
0047	1.2 (3/64)	0.6 (0.024)	0.24 (0.009)	300 (984)	25
0063	1.6 (1/16)	0.8 (0.031)	0.24 (0.009)	300 (984)	25
0094	2.4 (3/32)	1.2 (0.047)	0.24 (0.009)	300 (984)	25
0125	3.2 (1/8)	1.6 (0.063)	0.24 (0.009)	300 (984)	25
0187	4.8 (3/16)	2.4 (0.094)	0.24 (0.009)	300 (984)	25
0250	6.4 (1/4)	3.2 (0.126)	0.30 (0.012)	300 (984)	10
0375	9.5 (3/8)	4.8 (0.189)	0.30 (0.012)	150 (492)	10
0500	12.7 (1/2)	6.4 (0.252)	0.30 (0.012)	100 (328)	10
0591*	15.0 (0.591)	6.4 (0.252)	0.80 (0.031)	100 (328)	-
0750	19.0 (3/4)	9.5 (0.374)	0.40 (0.016)	100 (328)	-
1000	25.4 (1)	12.7 (0.500)	0.50 (0.020)	50 (164)	-
1500	38.1 (1 1/2)	19.0 (0.748)	0.60 (0.024)	50 (164)	-

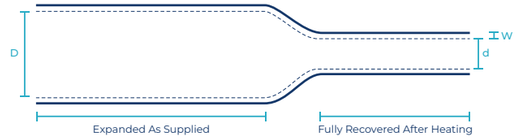
*Size 0591 in black and clear against MOQ

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

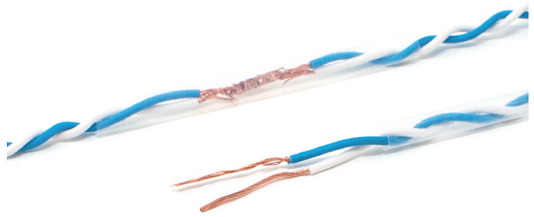
- Select options:
  - Color: Clear (CL), black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-KYF 190, 0125 or 1/8 in, clear, QPL

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Modified Fluoropolymer

High shrink ratio PTFE heat-shrink tubing specially designed for protecting applications in extreme electrical, chemical and thermal environments.



Features and Benefits

- Highly flame retardant
- Semi-rigid
- High shrink ratio
- Chemically inert
- Shrink ratio: 4:1
- Continuous operating temperature: -200°C to 260°C
- Shrink temperature: 340°C min.
- Areas where an extreme low coefficient of friction is required
- Used to cover hydraulic hose and couplings to prevent contamination and corrosion

Standards

- CNES approved and listed in Matrex database
- ECSS-Q-ST-70-02

Typical Applications

- Extremely suitable for insulating and protecting objects from thermal load and chemical influence
- PTFE's excellent dielectric properties make this an ideal material for covering, protecting, and insulating wire harnesses and other bundled electrical cables

4:1

Shrink ratio

-200°C - 260°C

(-85°F to 500°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Aerospace, Defense, Mass Transit

Standards:

RoHS

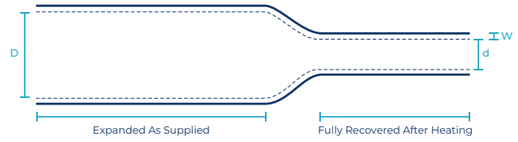
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*1.22 m (48 in)*
0078	1.9 (5/64)	0.64 (0.025)	0.23 (0.009)	25
0094	2.4 (3/32)	0.80 (0.031)	0.25 (0.010)	25
0125	3.2 (1/8)	0.94 (0.037)	0.31 (0.012)	25
0187	4.8 (3/16)	1.27 (0.050)	0.31 (0.012)	25
0250	6.4 (1/4)	1.60 (0.063)	0.31 (0.012)	10
0375	9.5 (3/8)	2.44 (0.096)	0.31 (0.012)	10
0500	12.7 (1/2)	3.66 (0.144)	0.38 (0.015)	10
0625	15.9 (5/8)	4.52 (0.178)	0.38 (0.015)	10
0750	19.0 (3/4)	5.69 (0.224)	0.38 (0.015)	10
1000	25.4 (1)	7.06 (0.278)	0.38 (0.015)	10
1250	31.8 (1 ¼)	8.81 (0.347)	0.38 (0.015)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Clear (CL); black (BK) against MOQ
- Please specify the product name, order number and options you require:
  - Example: DERAY®-PTFE 4:1, 0250 or 6.35/1.6, clear

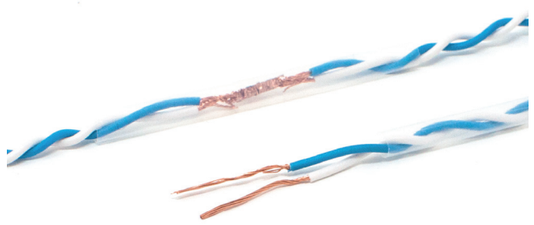
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-PTFE AWG

Modified Fluoropolymer

High shrink ratio PTFE heat-shrink tubing specially designed for protecting applications in extreme electrical, chemical and thermal environments.



Features and Benefits

- Highly flame retardant
- Semi-rigid
- High shrink ratio
- Chemically inert
- Shrink ratio: 2:1 (AWG sizes)
- Continuous operating temperature: -200°C to 260°C
- Shrink temperature: 340°C min.
- Used to cover hydraulic hose and couplings to prevent contamination and corrosion

Typical Applications

- Extremely suitable for insulating and protecting objects from thermal load and chemical influence
- PTFE's excellent dielectric properties make this an ideal material for covering, protecting, and insulating wire harnesses and other bundled electrical cables
- Areas where an extreme low coefficient of friction is required

2:1

Shrink ratio

-200°C - 260°C

(-85°F to 500°F)

Continuous operating temperature

Markets:
Automotive, Industrial, Aerospace, Defense, Mass Transit

Standards:

RoHS

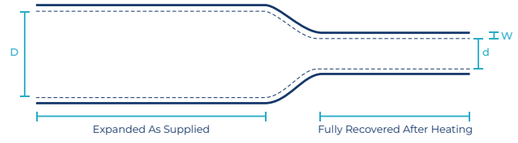
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	awg (mm)	*mm*	*mm*	*1.22 m (48 in)*
AWG 30	30 (0.86)	0.38	0.23	25
AWG 28	28 (0.97)	0.46	0.23	25
AWG 26	26 (1.17)	0.56	0.23	25
AWG 24	24 (1.27)	0.64	0.25	25
AWG 22	22 (1.40)	0.80	0.25	25
AWG 20	20 (1.52)	0.97	0.30	25
AWG 18	18 (1.93)	1.17	0.30	25
AWG 16	16 (2.36)	1.45	0.30	25
AWG 14	14 (3.05)	1.82	0.30	25
AWG 12	12 (3.81)	2.26	0.30	25
AWG 10	10 (4.85)	2.80	0.30	25
AWG 8	8 (6.10)	3.55	0.38	10
AWG 6	6 (7.67)	4.40	0.38	10
AWG 4	4 (9.40)	5.45	0.38	10
AWG 2	2 (10.92)	6.90	0.38	10
AWG 0	0 (11.94)	8.56	0.38	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Clear (CL); black (BK) against MOQ
- Please specify the product name, order number and options you require:
  - Example: DERAY®-PTFE AWG 2:1, AWG 30, clear

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-V25 / V25 TW

Crosslinked elastomer

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

Features and Benefits

- Flame retardant
- Flexible
- High abrasion and cut resistance
- Resistant to diesel, hydraulic fluids and chemicals
- Shrink ratio: 2:1
- Continuous operating temperature: -75°C to 150°C
- Shrink temperature: 150°C min.

Typical Applications

- Developed for rugged demands with view to high fuel, chemical and insulation requirements
- Suitable to use in rough environments where an optimum high-temperature fluid resistance, and long term heat resistance is required
- Military, aerospace and automotive cables and harnessing
- Insulation of wind-generator bus bars

Standards

- DEF STAN 59-97 Type 6b, BS G198 Part 3 Type 10A
- VG 95343 Part 5 Type D
- QPL SAE AS23053/16 (only DERAY®-V 25)
- PAN 6480K
- GS 95008-3-3
- CNES approved and listed in Matrex database

2:1

Shrink ratio

-75°C - 150°C

(-103°F to 302°F)

Continuous operating temperature

Markets:

Automotive, Industrial, Aerospace, Defense, Mass Transit, Utility, Renewables/Wind

Standards:

RoHS, DEF STAN 59/97, VG, QPL, PAN

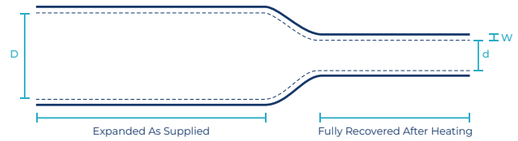
ORDER NUMBER	EXPANDED	RECOVERED			DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	TOTAL WALL THICKNESS (NOM) W	SPOOL
			V 25	V 25 TW	
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*m (ft)*
0094	2.4 (3/32)	1.2 (0.047)	-	0.55 (0.022)	50 (164)
0125	3.2 (1/8)	1.6 (0.063)	0.80 (0.031)	0.55 (0.022)	50 (164)
0187	4.8 (3/16)	2.4 (0.094)	0.90 (0.035)	0.55 (0.022)	50 (164)
0250	6.4 (1/4)	3.2 (0.126)	1.00 (0.039)	0.65 (0.026)	50 (164)
0375	9.5 (3/8)	4.8 (0.189)	1.10 (0.043)	0.65 (0.026)	50 (164)
0500	12.7 (1/2)	6.4 (0.252)	1.30 (0.051)	0.65 (0.026)	30 (98)
0750	19.0 (3/4)	9.5 (0.374)	1.50 (0.059)	0.85 (0.037)	30 (98)
1000	25.4 (1)	12.7 (0.500)	1.90 (0.075)	0.95 (0.037)	30 (98)
1250	31.8 (1 ¼)	15.9 (0.626)	-	1.05 (0.041)	30 (98)
1500	38.0 (1 ½)	19.0 (0.748)	2.30 (0.091)	1.05 (0.041)	15 (49)
2000	51.0 (2)	25.4 (1.000)	2.70 (0.106)	-	-
3000	76.0 (3)	38.0 (1.496)	3.00 (0.118)	-	-
4000	102.0 (4)	50.8 (2.000)	3.50 (0.138)	-	15 (49)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
  - Approval: Standard, VG or QPL (only DERAY®-V 25)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-V 25, 0750 or 3/4 in, black, VG

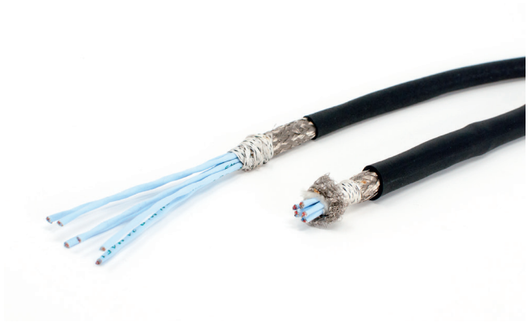
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-VT 220

Crosslinked Viton®

Fluoroelastomer heat-shrink tubing suitable for use in electronic systems and components in military, aerospace, automotive, and industrial applications requiring outstanding heat and fluid resistance.



Features and Benefits

- Flame retardant
- Flexible
- Highly abrasion resistant
- High withstand to corrosive fluids in extreme temperatures up to 220°C
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 220°C
- Shrink temperature: 160°C min.

Standards

- DEF STAN 59-97 Type 4a
- BS G198 Part 3 Type 12A
- VG95343 Part 5 Type E
- PAN6480L
- GS 95008-3-3
- CNES approved and listed in Matrex database
- ECSS-Q-ST-70-02

Typical Applications

- Bundling and strain relief of wire harnesses in high temperature applications and environments
- Excellently suitable for applications where severe chemical and thermal requirements are crucial
- Highly cut through resistant
- Commonly used for protection of cables against contamination by nearly all commercial hydraulic fluids, minerals and synthetic oils
- Widely used in hydraulic equipment, aerospace and marine ship building applications

2:1

Shrink ratio

-55°C - 220°C

(-67°F to 428°F)

Continuous operating temperature

Markets:

Defense, Aerospace, Automotive, Industrial, Shipboard, Utility, Renewables / Wind, Mass Transit

Standards:

RoHS DEF STAN 59/97 VG PAN

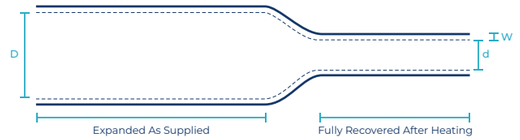
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0125	3.2 (1/8)	1.6 (0.063)	0.80 (0.031)	50 (164)
0187	4.8 (3/16)	2.4 (0.094)	0.90 (0.035)	50 (164)
0250	6.4 (1/4)	3.2 (0.126)	0.90 (0.035)	50 (164)
0375	9.5 (3/8)	4.8 (0.189)	1.00 (0.039	50 (164))
0500	12.7 (1/2)	6.4 (0.252)	1.20 (0.047)	30 (98)
0625	15.90 (5/8)	8.00 (0.315)	1.10 (0.043)	50 (164)
0750	19.0 (3/4)	9.5 (0.374)	1.40 (0.055)	30 (98)
1000	25.4 (1)	12.7 (0.500)	1.80 (0.071)	30 (98)
1500	38.0 (1 ½)	19.0 (0.748)	2.40 (0.094)	15 (49)
2000	51.0 (2)	25.4 (1.000)	2.80 (0.110)	15 (49)
3000	76.0 (3)	38.0 (1.496)	1.80 (0.071)	15 (49)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-VT 220, 0375 or 3/8 in, black

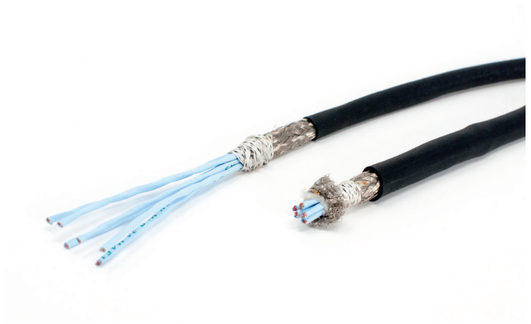
Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-VT 220 TW

Thin wall crosslinked Viton®

Thin wall very flexible fluoroelastomer heat-shrink tubing suitable for use in electronic systems and components in military, aerospace, automotive and industrial applications requiring outstanding heat and fluid resistance.



2:1

Shrink ratio

-55°C - 220°C

(-67°F to 428°F)

Continuous operating temperature

Markets:
Defense, Aerospace, Automotive, Hose & Pipe Protection, Industrial, Shipboard, Utility, Renewables, Mass Transit

Standards:

Features and Benefits

- Flame retardant
- Very flexible
- Highly abrasion resistant
- High withstand to corrosive fluids in extreme temperatures up to 220°C
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 220°C
- Shrink temperature: 160°C min.
- Commonly used for protection of cables against contamination by nearly all commercial hydraulic fluids, minerals and synthetic oils
- Widely used in hydraulic equipment, aerospace and marine ship building applications

Standards

- QPL SAE AS23053/13

Typical Applications

- Bundling and strain relief of wire harnesses in high temperature applications and environments
- Excellently suitable for applications where severe chemical and thermal requirements are crucial
- Highly cut through resistant

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0125	3.2 (1/8)	1.6 (0.063)	0.80 (0.031)	50 (164)
0187	4.8 (3/16)	2.4 (0.094)	0.90 (0.035)	50 (164)
0250	6.4 (1/4)	3.2 (0.126)	0.90 (0.035)	50 (164)
0375	9.5 (3/8)	4.8 (0.189)	0.90 (0.035)	50 (164))
0500	12.7 (1/2)	6.4 (0.252)	0.90 (0.035	30 (98)
0625*	15.9 (5/8)	7.9 (0.315)	1.10 (0.043)	30 (98)
0750	19.0 (3/4)	9.5 (0.374)	1.10 (0.043)	30 (98)
0875*	22.2 (7/8)	11.1 (0.437)	1.20 (0.047)	30 (98)
1000	25.4 (1)	12.7 (0.500)	1.20 (0.047)	30 (98)
1250*	31.8 (1¼)	15.9 (0.626)	1.40 (0.055)	30 (98)
1500	38.0 (1 ½)	19.0 (0.748)	1.40 (0.055)	15 (49)

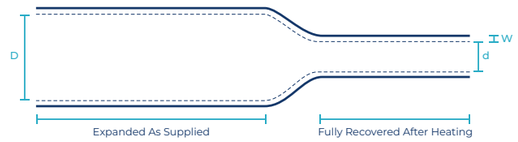
*Sizes 5/8 in, 7/8 in, 1 1/4 in are MOQ items

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
  - Approval: Standard or QPL
- Please specify the product name, order number and options you require:
  - Example: DERAY®-VT 220 TW, 0375 or 3/8 in, black, QPL

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Diesel resistant crosslinked polyolefin

Flattened and flexible, diesel resistant printable permanent identification sleeve.

Features and Benefits

- Diesel resistant
- Excellent for extreme conditions in aerospace, rail and construction industries
- Continuous operating temperature: -55°C to 135°C
- Shrink ratio: 3:1

Standards

- SNCF qualified in accordance with NFF00-608 Category A and H
- EN 50343*
- SAE AS81531 4.6.2* & MIL-STD-202G Methode 215*

Typical Applications

- Cable identification

3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Rail, Military, Aerospace, Offshore, Marine

Standards:

RoHS

*Hardware used “XD Q” printer from CAB and “RBZ11DR” ribbon from DSG-Canusa.

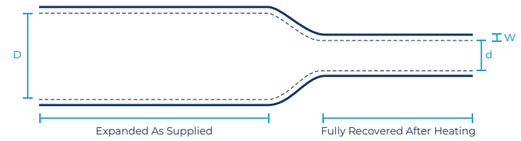
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0125	3.2 (1/8)	1.0 (0.039)	0.55 (0.022)	100 (328)
0187	4.8 (3/16)	1.5 (0.059)	0.60 (0.024)	70 (230)
0250	6.4 (1/4)	2.0 (0.079)	0.65 (0.026)	70 (230)
0375	9.5 (3/8)	3.0 (0.118)	0.75 (0.030)	70 (230)
0500	12.7 (1/2)	4.0 (0.157)	0.75 (0.030)	45 (148)
0750	19.0 (3/4)	6.0 (0.236)	0.85 (0.034)	25 (82)
1000	25.4 (1)	8.0 (0.315)	1.00 (0.039)	25 (82)
1500	39.0 (1 1/2)	13.0 (0.512)	1.15 (0.045)	25 (82)

Ordering

Select a dimension which will shrink snugly over the component to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Yellow (YL)
- Please specify the product name, order number and options you require
- Example: DERAY®-MTDR, 0250 or 6.4/2.0mm, yellow

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-MTSR

Thin wall crosslinked polyolefin

Flattened and flexible heat-shrinkable identification sleeve with high shrink ratio and a smooth surface finish.

Features and Benefits

- Excellent print quality
- Ready to use for thermal transfer printers*
- Resistant to common fluids and solvents
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 135°C
- Shrink Temperature: 90°C min.

Standards

- Meets the material requirements of QPL SAE AS23053/5 Class 1
- Meets the material requirements of DEF STAN 59-97 Type 2b
- Meets the material requirements of VG 95343-5
- SAE AS81531 4.6.2 & MIL-STD-202F Method 215J*

Typical Applications

- Cable and wire identification

3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Commercial, Industrial installation, Military

Standards:

RoHS

*Hardware used "XD Q" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa.

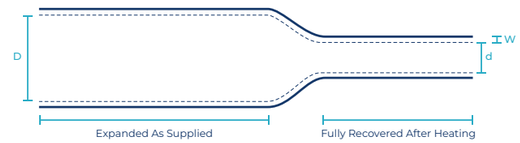
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
0125	3.2 (1/8)	1.0 (0.039)	0.55 (0.022)	100 (328)
0187	4.8 (3/16)	1.5 (0.059)	0.60 (0.024)	70 (230)
0250	6.4 (1/4)	2.0 (0.079)	0.65 (0.026)	70 (230)
0375	9.5 (3/8)	3.0 (0.118)	0.75 (0.030)	70 (230)
0500	12.7 (1/2)	4.0 (0.157)	0.75 (0.030)	45 (148)
0750	19.0 (3/4)	6.0 (0.236)	0.85 (0.034)	25 (82)
1000	25.4 (1)	8.0 (0.315)	1.00 (0.039)	25 (82)
1500	39.0 (1 1/2)	13.0 (0.512)	1.15 (0.045)	25 (82)

Ordering

Select a dimension which will shrink snugly over the component to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Yellow (YW), White (WT)
- Please specify the product name, order number and options you require
- Example: DERAY®-MTSR, 0250 or 6.4/2.0mm, yellow

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-ZHF 125

Halogen free, flame retardant heat-shrink identification sleeve

Zero halogen & low smoke heat-shrink identification sleeve. The product complies with the stringent requirements of the European rail norm EN45545-2 and the HL3 R22/R23 classification and even exceeds those.

The material is suitable for use in all classes required for the construction of locomotives and rolling stock. It is also suitable for use in underground environments as well as marine, military and aerospace applications.

Features and Benefits

- Low smoke generation - excellent fire safety characteristics
- Emissions of toxic fumes are well below the levels required to meet the relevant standards
- Flexible
- Flame retardant
- Good fluid resistance
- Soft surface finish supports good printability
- Shrink ratio: 2:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.

Standards

- EN45545-2 HL3 R22/R23
- Meets LUL E 1042 A6
- Meets BS 6853 vehicle category 1a
- DIN 5510
- EN 50343*
- SAE AS81531 4.6.2* & MIL-STD-202G Method 215*
- NFPA 130

Typical Applications

- Cable identification

2:1

Shrink ratio

-40°C - 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Mass Transit, Defense, Aerospace, Offshore, Marine, Industrial

Standards:

RoHS | EN 45545-2 | NFPA 130

*Hardware used "XD Q" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa.

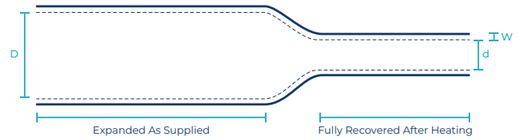
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
2.4	2.4 (3/32)	1.2 (3/64)	0.51 (0.020)	100 (328)
3.2	3.2 (1/8)	1.6 (1/16)	0.51 (0.020)	100 (328)
4.8	4.8 (3/16)	2.4 (3/32)	0.51 (0.020)	75 (246)
6.4	6.4 (1/4)	3.2 (1/8)	0.64 (0.025)	75 (246)
9.5	9.5 (3/8)	4.8 (3/16)	0.64 (0.025)	75 (246)
12.7	12.7 (1/2)	6.4 (1/4)	0.64 (0.025)	50 (164)
19.0	19.0 (3/4)	9.5 (3/8)	0.76 (0.030)	30 (98)
25.4	25.4 (1)	12.7 (1/2)	0.89 (0.035)	30 (98)
38.1	38.1 (1 1/2)	19.0 (3/4)	1.02 (0.040)	30 (98)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

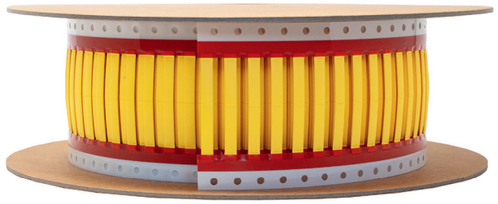
- Select options:
  - Color: Yellow (YL), white (WT)
  - Printing: Printed or unprinted
  - Length: Continuous reels
- Please specify the product name, order number and options you require
- Example: DERAY®-ZHF125, 2.4, white, printed, 100 m spool

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Diesel resistant heat-shrink identification sleeve

Diesel resistant printable permanent identification sleeve.



Features and Benefits

- Diesel resistant
- Excellent for extreme conditions in aerospace, rail and construction industries
- Continuous operating temperature: -55°C to 135°C
- Shrink ratio: 3:1

Standards

- SNCF qualified in accordance with NFF00-608 Category A and H
- EN 50343*
- SAE AS81531 4.6.2* & MIL-STD-202G Methode 215*

Typical Applications

- Cable identification

3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Rail, Military, Aerospace, Offshore, Marine

Standards:

RoHS

*Hardware used “XD Q” printer from CAB and “RBZ11DR” ribbon from DSG-Canusa.

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	PIECES PER REEL
	mm (in)	*mm (in)*	*mm (in)*	
DMS DR 2.4	2.4 (3/32)	0.8 (0.031)	0.50 (0.020)	5,000
DMS DR 3.2	3.2 (1/8)	1.0 (0.040)	0.50 (0.020)	5,000*
DMS DR 4.8	4.8 (3/16)	1.6 (0.063)	0.50 (0.020)	2,500*
DMS DR 6.4	6.4 (1/4)	2.0 (0.079)	0.55 (0.022)	2,500*
DMS DR 9.5	9.5 (3/8)	3.0 (0.118)	0.55 (0.022)	1,000*
DMS DR 12	12.7 (1/2)	4.0 (0.157)	0.55 (0.022)	1,000
DMS DR 18	19.0 (3/4)	6.0 (0.236)	0.60 (0.024)	1,000
DMS DR 25	25.4 (1)	8.0 (0.315)	0.70 (0.028)	1,000
DMS DR 38	38.1 (1 1/2)	18.0 (0.709)	0.70 (0.028)	500

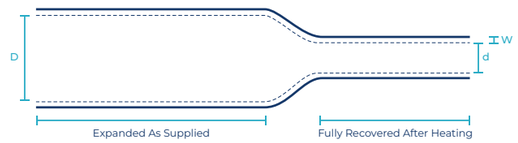
*Different delivery units per request.

Ordering

Select a dimension which will shrink snugly over the component to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Yellow (YL)
  - Perforation and lengths: no perforation (P0) with 50 mm lengths, 1 perforation (P1) with 25 mm lengths, 2 perforations (P2) with 16,6 mm lengths, 3 perforations (P3) with 12,5 mm lengths
- Please specify the product name, order number and options you require
- Example: DMS DR, P1, 4.8, yellow, 1,000 pieces

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DMS MT

Thin wall crosslinked polyolefin

Flattened and flexible heat-shrinkable identification sleeve with high shrink ratio and a smooth surface finish.

Features and Benefits

- Flame retardant
- Flexible
- Excellent print quality
- Ready to use for thermal transfer printers*
- Resistant to common fluids and solvents
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 135°C
- Shrink Temperature: 90°C min.

Standards

- Meets the material performance class of QPL SAE AS23053/5 Class 1
- Meets the material performance class of DEF STAN 59-97 Type 2b
- SAE AS 81531 4.6.2 & MIL-STD-202F Methode 215J

Typical Applications

- Cable identification

3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:

Commercial, Industrial installation, Military

Standards:

RoHS

*Hardware used "XD Q" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa.

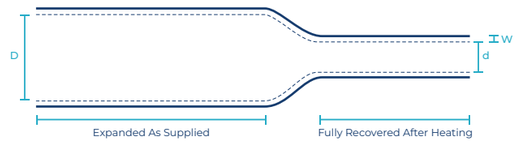
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	PIECES
	mm (in)	*mm (in)*	*mm (in)*	
DMS MT 3.2	3.2 (1/8)	1.0 (0.039)	0.55 (0.022)	2,500
DMS MT 4.8	4.8 (3/16)	1.5 (0.059)	0.60 (0.024)	1,000
DMS MT 6.4	6.4 (1/4)	2.0 (0.079)	0.65 (0.025)	1,000
DMS MT 9.5	9.5 (3/8)	3.0 (0.118)	0.75 (0.030)	1,000
DMS MT 12.7	12.7 (1/2)	4.0 (0.157)	0.75 (0.030)	500
DMS MT 19.0	19.0 (3/4)	6.0 (0.236)	0.85 (0.033)	500
DMS MT 25.4	25.4 (1)	8.0 (0.315)	1.00 (0.039)	500
DMS MT 39.0	39.0 (1 1/2)	13.0 (0.512)	1.15 (0.045)	500

Ordering

Select a dimension which will shrink snugly over the component to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Yellow (YL), White (WT)
  - Perforation and lengths: no perforation (P0) with 50 mm lengths, 1 perforation (P1) with 25 mm lengths, 2 perforations (P2) with 16,6 mm lengths, 3 perforations (P3) with 12,5 mm lengths
- Please specify the product name, order number and options you require
- Example: DMS MT, 4.8, yellow, P1

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Halogen free, flame retardant heat-shrink identification sleeve

Zero halogen & low smoke heat-shrink identification sleeve. The product complies with the stringent requirements of the European rail norm EN45545-2 and the HL3 R22/R23 classification and even exceeds those.

The material is suitable for use in all classes required for the construction of locomotives and rolling stock. It is also suitable for use in underground environments as well as marine, military and aerospace applications.

Features and Benefits

- Low smoke generation - excellent fire safety characteristics
- Emissions of toxic fumes are well below the levels required to meet the relevant standards
- Special packing enables immediate installation on the application
- Flexible
- Flame retardant
- Good fluid resistance
- Soft surface finish supports good printability
- Shrink ratio: 2:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.

Standards

- EN45545-2 HL3 R22/R23
- Meets LUL E 1042 A6
- Meets BS 6853 vehicle category 1a
- DIN 5510
- EN 50343*
- SAE AS81531 4.6.2* & MIL-STD-202G Method 215*
- NFPA 130

Typical Applications

- Cable identification

2:1

Shrink ratio

-40°C - 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Mass Transit, Subways, Defense, Aerospace, Offshore, Marine, Industrial

Standards:

RoHS | EN 45545-2 | NFPA 130

*Hardware used “XD Q” printer from CAB and “RBZ11DR” ribbon from DSG-Canusa.

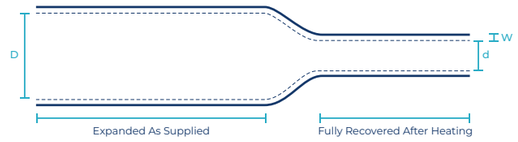
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS	RECOMMENDED CABLE DIAMETER
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	PIECES PER REEL	
	mm (in)	*mm (in)*	*mm (in)*		*mm (in)*
2.4	2.4 (3/32)	1.2 (3/64)	0.51 (0.020)	2,500	0,64 - 1,83 (0,025 - 0,072)
3.2	3.2 (1/8)	1.6 (1/16)	0.51 (0.020)	2,500	1,02 - 2,59 (0,040 - 0,102)
4.8	4.8 (3/16)	2.4 (3/32)	0.51 (0.020)	1,000	1,63 - 4,12 (0,064 - 0,162)
6.4	6.4 (1/4)	3.2 (1/8)	0.64 (0.025)	1,000	2,59 - 5,82 (0,102 - 0,229)
9.5	9.5 (3/8)	4.8 (3/16)	0.64 (0.025)	1,000	4,12 - 8,25 (0,162 - 0,325)
12.7	12.7 (1/2)	6.4 (1/4)	0.64 (0.025)	500	5,20 - 10,80 (0,205 - 0,425)
19.0	19.0 (3/4)	9.5 (3/8)	0.76 (0.030)	500	6,80 - 16,10 (0,268 - 0,634)
25.4	25.4 (1)	12.7 (1/2)	0.89 (0.035)	500	8,80 - 21,20 (0,346 - 0,835)
38.1	38.1 (1 1/2)	19.0 (3/4)	1.02 (0.040)	500	12,60 - 34,20 (0,496 - 1,346)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Yellow (YL), white (WT)
  - Perforation and lengths: no perforation (P0) with 50 mm lengths, 1 perforation (P1) with 25 mm lengths, 2 perforations (P2) with 16,6 mm lengths, 3 perforations (P3) with 12,5 mm lengths
- Please specify the product name, order number and options you require
- Example: DMS NH, P1 , 4.8, yellow, 1,000 pieces

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Wildlife Mitigation Covers for Substations

Medium voltage protective covers for insulators, bushings, surge arresters, cut-outs and clamps

The protective covers CCAPU, CFIN, CCONEC, CCOF, CCDE and CMVBP are available in different designs and sizes.

They offer an effective encapsulation against accidental phase-to-phase or phase-to-ground fault caused by fauna and flora.

Features and Benefits

- Excellent anti-tracking material characteristic
- Voltage rating up to 36kV
- UV resistant
- Suitable for polymeric / ceramic / hybrid insulators and suspension clamps
- Designed to protect problem span areas
- Cost-effective and variable design on particular application situations
- Easy to install
- Plastic rivets included
- Additional rivets available on request
- Continuous operating Temperature: -40°C to 105°C

Standards

- DIN VDE V 0212-490:2014
- VDE-AR-N 4210-11:2011-08
- IEC 60060-1:2010
- EN 60243-1

Typical Applications

- Protection of pole mounted substations
- Protection of air insulated substations

≤36 kV

Voltage Rating

UV resistant

Excellent anti-tracking material characteristic

Markets:
Electrical Utility, Industrial

Standards:

RoHS

Wildlife Mitigation Covers for Substations

Covers: CCAPU / CFIN / CCONEC / CCOF / CCDE / CMVBP

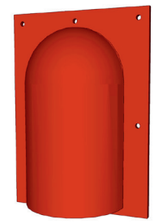
Electrical Properties

TECHNICAL DATA	CURRENT VALUES	TEST METHODS
Dielectric strength	≤36 kV	EN 60243-1
AC withstand (dry) 1 minute	15 kV / 25 kV; no breakdown or flashover	DIN VDE V 0212-490
AC withstand (wet) 1 minute	15 kV / 25 kV; no breakdown or flashover	DIN VDE V 0212-490

CCAPU

Dimensions of Bushing Covers

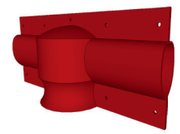
ORDER NUMBER	SHED DIAMETER	COVERAGE AREA	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CCAPU 10	105 (4.134)	180 (7.087)	3
CCAPU 12	120 (4.724)	150 (5.906)	3
CCAPU 15	150 (5.906)	225 (8.858)	3
CCAPU GR	140 (5.512)	200 (7.874)	3



CFIN

Dimensions of Standoff Insulator Cover

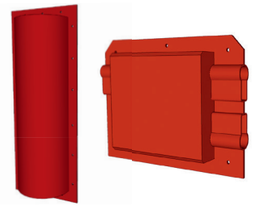
ORDER NUMBER	SHED DIAMETER	COVERAGE AREA	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CFIN 10	100 (3.937)	300 (11.811)	3



CCONEC

Dimensions of Conductor Covers

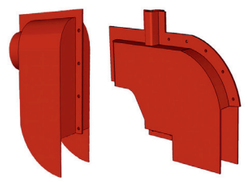
ORDER NUMBER	SHED DIAMETER	COVERAGE AREA	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CCONEC 8	85 (3.346)	89 (3.504)	3
CCONEC 9	95 (3.740)	395 (15.551)	3
CCONEC 14	145 (5.709)	395 (15.551)	3
CCONEC 17	145 (5.709)	179 (7.047)	3



CCOF

Dimensions of Cut-Out Fuse Cover

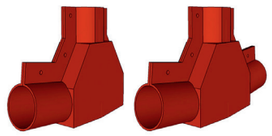
ORDER NUMBER	WIDTH	HEIGTH	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CCOF-P1	75 (2.952)	250 x 130 (9.84 x 5.12)	3
CCOF-P2	75 (2.952)	320 x 150 (12.60 x 5.91)	3
CCOF-C	110 / 160 (4.33 x 6.30)	140 x 400 (12.60 x 5.91)	3



CCDE

Dimensions of Conductor to Dead End Cover

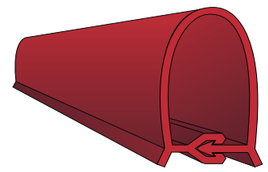
ORDER NUMBER	WIDTH	HEIGTH	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CCDE-1 ex	53 / 61 (2.09 / 2.40)	135 x 95 (5.31 x 3.74)	3
CCDE-2 ex	53 / 61 (2.09 / 2.40)	135 x 95 (5.31 x 3.74)	3



CMVBP

Dimensions of Bare Conductor Cover

ORDER NUMBER	CONDUCTOR SIZE		VOLTAGE RATING	DELIVERY UNITS
	Cross Section *mm^2*	Maximum *mm (in)*	Maximum *kV*	Bundle *m (ft)*
CMVBP 18	up to 185	18 (0.709)	15	35 (115)
CMVBP 18 M	up to 185	18 (0.709)	25 (mastic lined closure)	35 (115)
CMVBP 38	up to 800	38 (1.496)	15	35 (115)
CMVBP 18 M	up to 800	38 (1.496)	25 (mastic lined closure)	35 (115)



Ordering

Select options:

- Color: Red-brown (RD-BN)
- Dimensions: Customization to different accessories on request

· Please specify the product name, order number and options you require

· Example: CCONEC 14, red-brown, 4 sets of 3 (12 pieces)

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Wildlife Mitigation Covers for Overhead Lines

Medium voltage protection covers for insulators, suspension clamps and conductors

The protective covers CTSC, CCTI, CASC and CMVBP are available in different designs and sizes.

They offer an effective encapsulation against accidental phase-to-phase or phase-to-ground contact caused by fauna and flora.

Features and Benefits

- Excellent anti-tracking material characteristic
- Voltage rating up to 36kV
- UV resistant
- Suitable for polymeric / ceramic / hybrid insulators and suspension clamps
- Designed to protect problem span areas
- Cost-effective and variable design on particular application situations
- Easy to install
- Plastic rivets included
- Additional rivets available on request
- Continuous operating Temperature: -40°C to 105°C

Standards

- DIN VDE V 0212-490:2014
- VDE-AR-N 4210-11:2011-08
- IEC 60060-1:2010
- EN 60243-1

Typical Applications

- Protection of overhead lines
- Protection of pole-down installations

≤36 kV

Voltage Rating

UV resistant

Excellent anti-tracking material characteristic

Markets:

Electrical Utility, Industrial

Standards:

RoHS

Wildlife Mitigation Covers for Overhead Lines

CTSC / CCTI / CASC / CMVBP

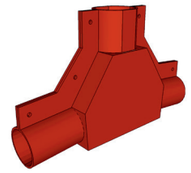
Electrical Properties

TECHNICAL DATA	CURRENT VALUES	TEST METHODS
Dielectric strength	≤36 kV	EN 60243-1
AC withstand (dry) 1 minute	15 kV / 25 kV; no breakdown or flashover	DIN VDE V 0212-490
AC withstand (wet) 1 minute	15 kV / 25 kV; no breakdown or flashover	DIN VDE V 0212-490

CTSC

Dimensions of T-shaped Suspension Clamp

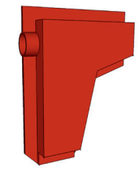
ORDER NUMBER	WIDTH	HEIGTH	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CTSC 31/116	130 (5.118)	100 (3.937)	3
CTSC 116/180	190 (7.480)	150 (5.906)	3



CCTI

Dimensions of Conductor to Tension Insulator

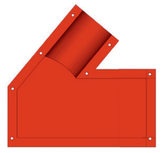
ORDER NUMBER	WIDTH	HEIGTH	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CCTI 31/116	245 (9.646)	250 (9.843)	3
CCTI 116/180	280 (11.024)	330 (12.992)	3



CASC

Dimensions of Angled Suspension Clamp

ORDER NUMBER	WIDTH	HEIGTH	DELIVERY UNITS
	Maximum *mm (in)*	Maximum *mm (in)*	Set of 3
CASC 1	350 (13.780)	160 (6.299)	3
CASC 2	330 (12.992)	80 (3.150)	3

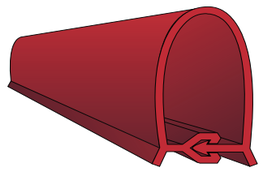


Wildlife Mitigation Covers for Overhead Lines

CMVBP

Dimensions of Bare Conductor Cover

ORDER NUMBER	CONDUCTOR SIZE		VOLTAGE RATING	DELIVERY UNITS
	Cross Section	Maximum	Maximum	Bundle
	mm²	*mm (in)*	*kV*	*m (ft)*
CMVBP 18	up to 185	18 (0.709)	15	35 (115)
CMVBP 18 M	up to 185	18 (0.709)	25 (mastic lined closure)	35 (115)
CMVBP 38	up to 800	38 (1.496)	15	35 (115)
CMVBP 18 M	up to 800	38 (1.496)	25 (mastic lined closure)	35 (115)



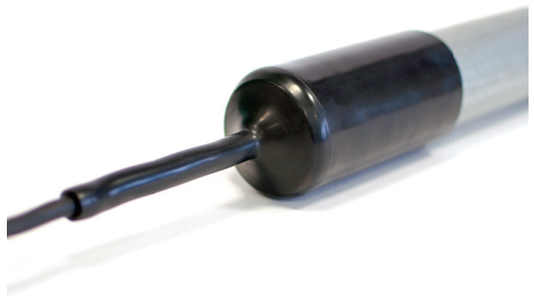
Ordering

- Select options:
  - Color: Red-brown (RD-BN)
  - Dimensions: Customization to different accessories on request
- Please specify the product name, order number and options you require
- Example: CTSC 31/116, red-brown, 30 m, 4 sets of 3 (12 pieces)

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Heat-shrinkable anode cap

The tight fitting, heat-shrinkable anode caps provide stress relief, moisture proofing and electrical insulation at the lead wire point. It is the ideal solution to premature system failure.



Features and Benefits

- Specially designed adhesive to adhere to anode materials and wire installations
- Highly stabilized polyolefin material
- Water tight encapsulation
- Flexible
- Continuous operating temperature: -55°C to 100°C
- Shrink temperature: 120°C min.

Typical Applications

- Impressed Current Cathodic Protection (ICCP) for pipeline corrosion protection
- Cathodic protection on ships and boats
- Corrosion protection on all metal works used in water pipes, water storage tanks and water heating systems
- Corrosion protection on large structures like motorway, bridges and dock yards

-55°C - 100°C

(-67°F to 212°F)

Continuous operating temperature

Markets:
Industrial, Electrical, Marine

Standards:

RoHS

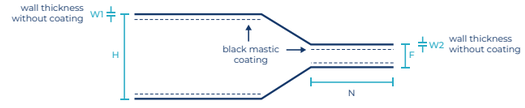
ORDER NUMBER	MAIN DIAMETER		FINGER DIAMETER		WALL THICKNESS W1 / W2	LENGTH	FINGER LENGTH N	DELIVER UNITS
	EXPANDED (MIN) H	RECOVERED (MAX) H	EXPANDED (MIN) F	RECOVERED (MAX) F	RECOVERED (NOM)			PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	
CANC 40/13	40 (1.57)	21 (0.83)	13 (0.51)	5 (0.20)	3.5 / 2.5 (1.4 / 1.0)	135 (5.31)	75 (2.95)	50
CANC 50/13	50 (1.87)	21 (0.83)	13 (0.51)	5 (0.20)	3.5 / 2.5 (1.4 / 1.0)	135 (5.31)	75 (2.95)	50
CANC 82/15	82 (3.23)	40 (1.57)	15 (0.59)	5 (0.20)	4.5 / 3.5 (1.8 / 1.4)	180 (7.09)	80 (3.15)	30
CANC 108/20	108 (4.25)	50 (1.87)	20 (0.79)	6 (0.24)	4.5 /4.5 (1.8 / 1.8)	250 (9.84)	135 (5.31)	20

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: CANC 82/15, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Heavy wall crosslinked polyolefin bus bar tubing

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

Features and Benefits

- Halogen free and flame retardant
- Reduces bus bar clearance requirements
- Protects against accidental flashover
- Anti-track
- Rated to 36 kV
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.

Standards

- ANSI C37.20.2
- ANSI C37.20.3
- UL file # E205844

Typical Applications

- Insulation of medium voltage bus bars in switchgear equipment, transformers and generators

3:1

Shrink ratio

-40°C to 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Industrial OEM, Utility, Power Distribution

Standards:

Dimensions

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
1100	27.9 (1.098)	8.9 (0.350)	3.90 (0.154)	15.24 (50)
2000	50.8 (2.000)	16.0 (0.630)	4.10 (0.161)	15.24 (50)
2700	68.0 (2.677)	22.1 (0.870)	4.10 (0.161)	15.24 (50)
3500	89.9 (3.539)	29.9 (1.177)	4.20 (0.165)	15.24 (50)
4700	119.9 (4.720)	39.9 (1.571)	4.20 (0.165)	15.24 (50)
6600	167.6 (6.598)	65.0 (2.559)	4.20 (0.106)	15.24 (50)

Application Ranges

ORDER NUMBER	RECTANGULAR BARS		ROUND BUS BARS
	MINIMUM	MAXIMUM	MINIMUM - MAXIMUM
	mm (in)	*mm (in)*	*mm (in)*
1100	9.5 x 6.4 (0.374 x 0.252)	12.7 x 15.9 (0.500 x 0.626)	10.6 - 17.7 (0.417 - 0.697)
2000	25.4 x 6.4 (1.000 x 0.252)	34.9 x 15.9 (1.374 x 0.626)	19.3 - 33.0 (0.760 - 1.299)
2700	34.9 x 6.4 (1.374 x 0.252)	40.8 x 15.9 (1.606 x 0.626)	26.1 - 43.1 (1.028 - 1.697)
3500	50.8 x 6.4 (2.000 x 0.252)	76.2 x 15.9 (3.000 x 0.626)	35.8 - 58.4 (1.409 - 2.299)
4700	69.8 x 6.4 (2.748 x 0.252)	111.1 x 15.9 (4.374 x 0.626)	47.7 - 81.2 (1.878 - 3.197)
6600	107.9 x 6.4 (4.248 x 0.252)	177.8 x 15.9 (7.000 x 0.626)	69.5 - 124.4 (2.736 - 4.898)

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.

CBTH

Clearances with insulation

SYSTEM VOLTAGE	BIL KV	CBTH HEAVY WALL TUBING	
		P TO P	P TO G
		mm (in)	*mm (in)*
15 kV	95.0	55.0 (2.165)	66.0 (2.598)
25 kV	125.0	71.0 (2.795)	101.0 (3.976)
36 kV	150.0	142.0 (5.591)	190.0 (7.480)

P to P: Phase to Phase orientation

P to G: Phase to Ground orientation

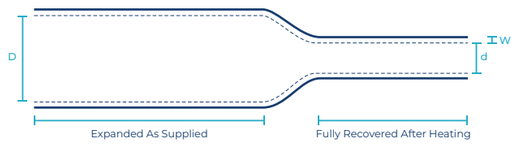
Spacing based on metal to metal dimension prior to insulation. Spacing based on insulation wall thickness per application range of above table.

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Red-brown (RD-BN)
- Please specify the product name, order number and options you require:
  - Example: CBTH, 2700, 68.0/22.1, red-brown

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Medium wall crosslinked polyolefin bus bar tubing

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

Features and Benefits

- Halogen free
- Reduces bus bar clearance requirements
- Protects against accidental flashover
- Anti-track
- CBTM medium wall tubing rated to 25 kV
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C min.

Standards

- ANSI C37.20.2
- ANSI C37.20.3
- UL file # E205844

Typical Applications

- Insulation of medium voltage bus bars in switchgear equipment, transformers and generators

3:1

Shrink ratio

-40°C to 125°C

(-40°F to 257°F)

Continuous operating temperature

Markets:
Industrial, Industrial OEM, Utility, Power Distribution

Standards:

RoHS

Dimensions

ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
750	19.0 (0.748)	5.5 (0.217)	2.70 (0.106)	15.24 (50)
1300	33.0 (1.299)	10.1 (0.398)	3.00 (0.118)	15.24 (50)
2050	52.0 (2.047)	19.0 (0.748)	2.80 (0.110)	15.24 (50)
2750	69.8 (2.748)	25.4 (1.000)	2.90 (0.114)	15.24 (50)
3500	88.9 (3.500)	29.9 (1.177)	3.10 (0.122)	15.24 (50)
4700	119.3 (4.697)	39.9 (1.571)	3.20 (0.126)	15.24 (50)
6700	170.1 (6.697)	58.4 (2.999)	3.20 (0.126)	15.24 (50)
METRIC DIMENSIONS				
19/6	19.0 (0.748)	6.0 (0.236)	2.00 (0.079)	50 (164)
33/10	33.0 (1.299)	10.0 (0.394)	2.50 (0.098)	50 (164)
52/19	52.0 (2.047)	19.0 (0.748)	2.50 (0.098)	25 (82)
76/30	76.0 (2.992)	30.0 (1.181)	2.50 (0.098)	15 (49)
100/40	100.0 (3.937)	40.0 (1.575)	2.50 (0.098)	15 (49)

Application Ranges

ORDER NUMBER	RECTANGULAR BARS		ROUND BUS BARS
	MINIMUM	MAXIMUM	MINIMUM - MAXIMUM
	mm (in)	*mm (in)*	*mm (in)*
0750 and 19/6	6.4 x 6.4 (0.252 x 0.252)	6.4 x 15.9 (0.252 x 0.626)	6.8 - 15.2 (0.268 - 0.598)
1300 and 33/10	12.7 x 6.4 (0.500 x 0.252)	28.5 x 15.9 (1.122 x 0.626)	12.4 - 27.9 (0.488 - 1.098)
2050 and 52/19	31.5 x 6.4 (1.240 x 0.252)	50.8 x 15.9 (2.000 x 0.626)	22.3 - 43.1 (0.878 - 1.697)
2750	44.4 x 6.4 (1.748 x 0.252)	76.2 x 15.9 (3.000 x 0.626)	29.7 - 58.4 (1.169 - 2.299)
76/30	63.9 x 6.4 (2.520 x 0.252)	90.1 x 15.9 (3.547 x 0.626)	45.0 - 68.0 (1.772 - 2.677)
3500	57.1 x 6.4 (2.248 x 0.252)	101.6 x 15.9 (4.000 x 0.626)	35.8 - 73.6 (1.409 - 2.898)
100/40	103.6 x 6.4 (4.079 x 0.252)	114.1 x 15.9 (4.492 x 0.626)	70.0 - 83.0 (2.756 - 3.268)
4700	73.0 x 6.4 (2.874 x 0.252)	142.8 x 15.9 (5.622 x 0.626)	47.7 - 101.6 (1.878 - 4.000)
6700	114.3 x 6.4 (4.500 x 0.252)	203.2 x 15.9 (8.000 x 0.626)	69.5 - 144.7 (2.736 - 5.697)

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.

CBTM

Clearances with insulation

SYSTEM VOLTAGE	BIL KV	CBTM MEDIUM WALL TUBING	
		P TO P	P TO G
		mm (in)	*mm (in)*
15 kV	95.0	86.0 (3.386)	106.0 (4.173)
25 kV	125.0	114.0 (4.488)	152.0 (5.984)
36 kV	150.0	165.0 (6.496)	203.0 (7.992)

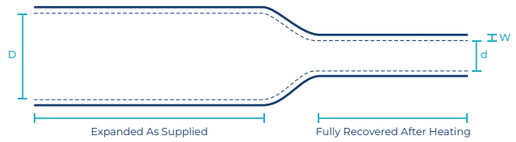
P to P: Phase to Phase orientation
P to G: Phase to Ground orientation
Spacing based on metal to metal dimension prior to insulation. Spacing based on insulation wall thickness per application range of above table.

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Red-brown (RD-BN)
- Please specify the product name, order number and options you require:
  - Example: CBTM, 2050, red-brown, or CBTM, 76/30, red-brown

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Crosslinked polyolefin cable breakout boots

Heat-shrink boots seal and electrical protection multi-conductor cable and conduit breakouts.

Features and Benefits

- Boots for 2, 3, 4, 5 and 6 way cable breakouts
- Thermoplastic adhesive liner provides complete environmental protection and electrical insulation
- Strain relief and mechanical protection
- Resistant to fluids and solvents
- Anti-track medium voltage breakouts and semi-conductive breakouts available on request
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 100°C
- Shrink temperature: 125°C min.

Typical Applications

- Sealing and electrical protection of wire connections in eletrical vehicles
- Strain relief for multi-core cables
- Moisture sealing and environmental protection

Standards

- IEC 62677
- ESI 09-11

3:1

Shrink ratio

-40°C - 100°C

(-40°F to 212°F)

Continuous operating temperature

Markets:
Renewables, Industrial, Power Distribution, Utility, Defense, Mass Transit

Standards:

RoHS

CCB2 - TWO CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		DELIVERY UNITS
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
CCB2 33/14	33.0 (1.299)	10.0 (0.394)	14.0 (0.551)	3.0 (0.118)	50
CCB2 50/21	50.0 (1.969)	22.0 (0.866)	21.0 (0.827)	6.7 (0.264)	20
CCB2 70/30	70.0 (2.756)	35.0 (1.378)	30.0 (1.185)	7.0 (0.276)	20

CCB3 - THREE CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		DELIVERY UNITS
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
CCB3 38/11	38.0 (1.496)	14.0 (0.551)	11.0 (0.433)	4.0 (0.157)	50
CCB3 60/24	60.0 (2.362)	22.0 (0.866)	24.0 (0.945)	8.0 (0.315)	20
CCB3 80/36	80.0 (3.150)	33.0 (1.299)	36.0 (1.417)	16.0 (0.630)	20
CCB3 110/48	110.0 (4.331)	47.0 (1.850)	48.0 (1.890)	20.0 (0.787)	10
CCB3 125/55	125.0 (4.921)	47.0 (1.850)	55.0 (2.165)	20.0 (0.787)	10
CCB3 140/62	140.0 (5.512)	54.0 (2.126)	62.0 (2.441)	27.0 (1.063)	10

CCB4 - FOUR CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		DELIVERY UNITS
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
CCB4 38/15	38.0 (1.496)	14.0 (0.551)	15.0 (0.591)	3.0 (0.118)	50
CCB4 55/20	55.0 (2.165)	25.0 (0.984)	20.0 (0.787)	6.0 (0.236)	20
CCB4 72/25	72.0 (2.835)	22.0 (0.866)	25.0 (0.984)	8.5 (0.335)	20
CCB4 100/35	100.0 (3.937)	33.0 (1.299)	35.0 (1.378)	14.0 (0.551)	10
CCB4 125/45	125.0 (4.921)	47.0 (1.850)	45.0 (1.722)	22.0 (0.866)	10

CCB

CCB5 - FIVE CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		DELIVERY UNITS
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
CCB5 80/26	80.0 (3.150)	30.0 (1.181)	26.0 (1.024)	7.5 (0.295)	20
CCB5 100/34	100.0 (3.937)	33.0 (1.299)	34.0 (1.399)	9.0 (0.354)	20

CCB6 - SIX CORE BREAKOUTS

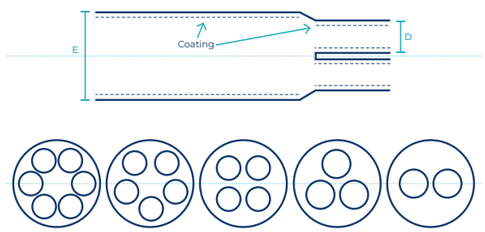
ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		DELIVERY UNITS
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
CCB6 85/25	85.0 (3.346)	35.0 (1.378)	25.0 (0.984)	6.0 (0.236)	20

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Finger: 2, 3, 4, 5 or 6
  - Color: Black (BK)
  - Printing: Printed or unprinted
- Please specify the product name, order number and options you require
- Example: CCB3 38/11, black, unprinted, 350 pcs

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CCBA

Anti-track cable breakout boots

CCBA, anti-track medium voltage breakout boots, seal and protect multi-conductor cable and conduit breakouts.

Features and Benefits

- Boots for 3 way cable breakouts
- Strain relief and mechanical protection
- Resistant to common fluids and solvents
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Shrink ratio: >2:1
- Continuous operating temperature: -40°C to 100°C
- Shrink temperature: 125°C min.

Standards

- IEC 62677
- ESI 09-13

Typical Applications

- Strain relief for multi-core cables
- Moisture sealing and environmental protection

>2:1

Shrink ratio

-40°C - 100°C

(-40°F to 212°F)

Continuous operating temperature

Markets:
Industrial, Power Distribution, Utility

Standards:

RoHS

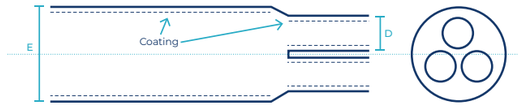
ORDER NUMBER	EXPANDED		RECOVERED				DELIVERY UNITS
	BREAKOUT MAIN DIAMETER (MIN) (E)	FINGER DIAMETER (MIN) (D)	BREAKOUT MAIN DIAMETER (MAX)	FINGER DIAMETER (MAX)	FULL LENGTH +- 10 %	FINGER LENGTH +- 10 %	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	
CCBA 60/24	60.0 (2.36)	24.0 (0.95)	22.0 (0.87)	8.0 (0.31)	185.0 (7.28)	45.0 (1.77)	30
CCBA 80/36	80.0 (3.15)	36.0 (1.42)	33.0 (1.30)	16.0 (0.63)	210.0 (8.27)	50.0 (1.97)	20
CCBA 110/48	110.0 (4.33)	48.0 (1.89)	47.0 (1.85)	20.0 (0.79)	225.0 (8.86)	75.0 (2.95)	20
CCBA 125/55	125.0 (4.92)	55.0 (2.17)	47.0 (1.85)	20.0 (0.79)	250.0 (9.84)	75.0 (2.95)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Printing: Printed or unprinted
- Please specify the product name, order number and options you require
- Example: CCBA 60/24, red-brown, unprinted, 2.000 pcs

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Conductive cable breakout boots

CCB-CON, conductive breakout boots, seal and protect multi-conductor cable and conduit breakouts.

Features and Benefits

- Boots for 3 way cable breakouts
- Strain relief and mechanical protection
- Resistant to common fluids and solvents
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Shrink ratio: >2:1
- Continuous operating temperature: -40°C to 100°C
- Shrink temperature: 125°C min.

Standards

- IEC 62677
- ESI 09-13

Typical Applications

- Strain relief for multi-core cables
- Moisture sealing and environmental protection

>2:1

Shrink ratio

-40°C - 100°C

(-40°F to 212°F)

Continuous operating temperature

Markets:
Civil Construction Projects, Industrial, Power Distribution, Utility

Standards:

RoHS

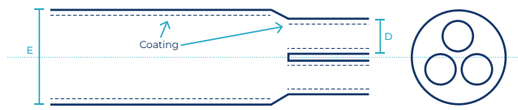
ORDER NUMBER	EXPANDED		RECOVERED				DELIVERY UNITS
	BREAKOUT MAIN DIAMETER (MIN) (E)	FINGER DIAMETER (MIN) (D)	BREAKOUT MAIN DIAMETER (MAX)	FINGER DIAMETER (MAX)	FULL LENGTH +- 10 %	FINGER LENGTH +- 10 %	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	*mm (in)*	
CCB-CON 60/24	60.0 (2.36)	24.0 (0.95)	22.0 (0.87)	8.0 (0.31)	185.0 (7.28)	45.0 (1.77)	30
CCB-CON 80/36	80.0 (3.15)	36.0 (1.42)	33.0 (1.30)	16.0 (0.63)	210.0 (8.27)	50.0 (1.97)	20
CCB-CON 110/48	110.0 (4.33)	48.0 (1.89)	47.0 (1.85)	20.0 (0.79)	260.0 (10.24)	75.0 (2.95)	20
CCB-CON 125/55	125.0 (4.92)	55.0 (2.17)	47.0 (1.85)	20.0 (0.79)	260.0 (10.24)	75.0 (2.95)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Printing: Printed or unprinted
- Please specify the product name, order number and options you require
- Example: CCB-CON 60/24, black, unprinted, 2.000 pcs

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Heat-shrinkable boots for nuclear environment

Heat-shrinkable boots, suitable for use in a nuclear environment, insulate and protect electrical splices and termination on multi core cables.

Features and Benefits

- Functional after 850 kGy cumulative dose
- Rated for 600/1000V
- High resistance to impact and abrasion, lined with thermoplastic adhesive
- Boots for 2, 3, 4 and 5 way breakouts
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 100°C
- Shrink Temperature: 125°C min.

protection on LV cable

- Boots are qualified for for use in zones K1, K2 and K3 according to NF M 64-001

Standards

- IEEE 383
- IEC 62677-3-101
- NF M 64-001
- IEC 60068
- LOCA/POST LOCA in accordance with RCC-E 2007 NF M64-001

Typical Applications

- Continous use in a nuclear environment for strain relief, sealing, insulable

3:1

Shrink ratio

-40°C - 100°C

(-40°F to 212°F)

Continuous operating temperature

Markets:
Electrical, Nuclear Power Generation

Standards:

RoHS

CCB-N2 - TWO CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		RECOVERED FULL LENGTH +/- 10%	
	EXPANDED (MIN)	RECOVERED (MAX)	EXPANDED (MIN)	RECOVERED (MAX)		
	mm	*mm*	*mm*	*mm*	*mm*	*mm*
CCB-N2 33/14	33.0	10.0	14.0	3.00	90.00	20.00
CCB-N2 50/21	50.0	22.0	21.0	6.70	119.00	35.00

CCB-N3 - THREE CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		RECOVERED FULL LENGTH +/- 10%	
	EXPANDED (MIN)	RECOVERED (MAX)	EXPANDED (MIN)	RECOVERED (MAX)		
	mm	*mm*	*mm*	*mm*	*mm*	*mm*
CCB-N3 28/10	28.00	8.50	12.00	2.50	70.00	20.00
CCB-N3 38/11	38.00	14.00	11.00	4.00	110.00	20.00
CCB-N3 60/24	60.00	22.00	24.00	8.00	185.00	45.00
CCB-N3 80/36	80.00	33.00	36.00	16.00	210.00	50.00
CCB-N3 110/48	110.00	47.00	48.00	20.00	260.00	75.00
CCB-N3 125/55	125.00	47.00	55.00	20.00	260.00	75.00
CCB-N3 140/62	140.00	54.00	62.00	27.00	250.00	65.00

CCB-N4 - FOUR CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		RECOVERED FULL LENGTH +/- 10%	
	EXPANDED (MIN)	RECOVERED (MAX)	EXPANDED (MIN)	RECOVERED (MAX)		
	mm	*mm*	*mm*	*mm*	*mm*	*mm*
CCB-N4 28/10	28.00	8.50	10.00	1.80	70.00	20.00
CCB-N4 38/15	8.00	14.00	15.00	3.00	105.00	20.00
CCB-N4 55/20	55.00	25.00	20.00	6.00	180.00	45.00
CCB-N4 72/25	72.00	22.00	25.00	8.50	190.00	45.00
CCB-N4 100/35	100.00	33.00	35.00	14.00	215.00	50.00
CCB-N4 125/45	125.00	47.00	45.00	22.00	245.00	72.00

CCB-N

CCB-N5 - FIVE CORE BREAKOUTS

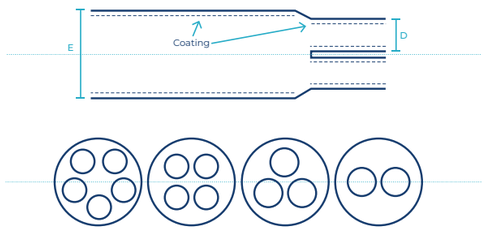
ORDER NUMBER	BREAKOUT MAIN DIAMETER (E)		FINGER DIAMETER (D)		RECOVERED FULL LENGTH +/- 10%	
	EXPANDED (MIN)	RECOVERED (MAX)	EXPANDED (MIN)	RECOVERED (MAX)		
	mm	*mm*	*mm*	*mm*	*mm*	*mm*
CCB-N5 80/26	80.00	33.00	26.00	9.00	215.00	30.00
CCB-N5 100/34	100.0	33.00	34.00	9.00	215.00	40.00

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Please specify the product name, order number and options you require
- Example: CCB-N4 55/20, 100 pieces, lined

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CCRDW

Heat-shrinkable cable repair sleeve

Adhesive-lined, heat-shrinkable wraparound 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 and Benefits

- Provides water tight seal upon recovery
- Excellent mechanical strength
- Application procedure is quick, simple and clean
- Thermochromatic paint that changes color upon correct shrink temperature available on request
- Sleeve can be cut to suit shorter application requirements
- Stainless steel channel provides permanent closure system
- Reinforced version available for high impact requirements or special direct burial installations
- Easy to install in situ over live cable without cutting the cable or shutting down power
- Shrink ratio: 5:1
- Continuous operating temperature: -35°C to 100°C
- Shrink temperature: 120°C min.

Typical Applications

- Electrical insulation of in-line splices
- Cable jacket repair
- Re-jacketing cover for power cables

5:1

Shrink ratio

-35°C to 100°C (-31°F to 212°F)

Continuous operating temperature

Markets:
Civil Construction Projects, Industrial, Power Distribution, Utility

Standards:

RoHS

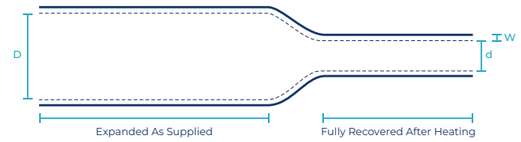
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) d	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*1 m (39 in)*
50/10	50.0 (1.969)	10.0 (0.394)	2.30 (0.091)	10
75/15	75.0 (2.953)	15.0 (0.591)	2.40 (0.094)	10
105/30	105.0 (4.134)	30.0 (1.181)	2.40 (0.094)	10
137/34	137.0 (5.394)	34.0 (1.339)	2.50 (0.098)	5
160/42	160.0 (6.299)	42.0 (1.654)	2.50 (0.098)	5
200/48	200.0 (7.874)	48.0 (1.890)	2.70 (0.106)	5
240/65	240.0 (9.449)	65.0 (2.559)	2.90 (0.114)	5

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require
- Example: CCRDW, 105/30, black, 1.000 pcs

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Crosslinked polyolein end cap

Adhesive-lined heat-shrinkable end cap, which electrically insulates cable ends and protects them from environmental influences.

Features and Benefits

- UV stabilized
- Good chemical and solvent resistance
- Thermoplastic liner provides complete environmental seal
- Shrink ratio: >2:1
- Continuous operating temperature: -40°C to 100°C
- Shrink temperature: 125°C min.

Standards

- IEC 62677
- ESI 09-11

Typical Applications

- Sealing of cables against moisture
- Rated to 1000V for stop ends under load

>2:1

Shrink ratio

-40°C - 100°C (-40°F to 212°F)

Continuous operating temperature

Markets:

Renewables, Industrial, Power Distribution, Utility

Standards:

RoHS

ORDER NUMBER	EXPANDED	RECOVERED				DELIVER UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTH (MIN)	RECOMMENDED DIAMETER RANGE	PIECES
	mm (in)	*mm (in)*			*mm (in)*	
CEC 10/4	10 (0.394)	4 (0.157)	2 (0.079)	35 (1.378)	4.5-8.0 (0.18-0.31)	200
CEC 15/4.5	15 (0.591)	4.5 (0.177)	2 (0.079)	45 (1.772)	5.0-12.0 (0.20-0.47)	150
CEC 20/6	20 (0.787)	6 (0.236)	2.7 (0.106)	60 (2.362)	7.0-17.5 (0.28-0.69)	150
CEC 25/9	25 0.984)	9 (0.354)	2.7 (0.106)	70 (2.756)	10.0-22.0 (0.39-0.87)	100
CEC 36/15	36 (1.417)	15 (0.591)	2.8 (0.11)	95 (3.74)	17.0-30.0 (0.67-1.18)	100
CEC 40/15*	40 (1.57)	15 (0.591)	3.0 (0.118)	93 (3.66)	17.0-34.0 (0.67-1.34)	100
CEC 63/24	63 (2.48)	24 (0.945)	3.6 (0.142)	110 (4.331)	28.0-55.0 (1.10-2.17)	50
CEC 80/40	80 (3.15)	40 (1.575)	3.6 (0.142)	130 (5.118)	45.0-70.0 (1.77-2.76)	30
CEC 102/60	102 (4.016)	60 (2.362)	3.6 (0.142)	152 (5.984)	68.0-90.0 (2.68-3.54)	20
CEC 124/60	124 (4.882)	60 (2.362)	3.6 (0.142)	152 (5.984)	75.0-110.0 (2.95-4.33)	20
CEC 148/57	148 (5.827)	57 (2.244)	4.5 (0.177)	152 (5.984)	80.0-135.0 (3.15-5.31)	10

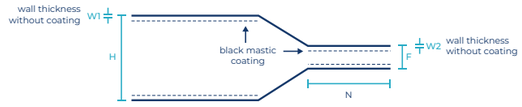
*Non standard size

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
- Example: CEC 36/15, black, 1.000 pcs

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CNTT

Medium voltage crosslinked polyolefin

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

Features and Benefits

- Non-tracking
- UV stabilised
- Flame retardant
- Exceptional electrical and weathering properties
- Suitable for outdoor & indoor terminations
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 125°C
- Shrink temperature: 120°C min.
- Bus bar outdoor application
- Bus bars in harsh enviromments, e.g. nuclear application

Standards

- HD 629.1 S2
- IEC 60502-4
- IEC 60055-1
- IEEE 48-1996
- Salt fog test IEC 1109

Typical Applications

- Medium voltage joints and terminations up to 36kV

3:1

Shrink ratio

-55°C - 125°C (-67°F to 257°F)

Continuous operating temperature

Markets:
Industrial Construction, Automation, Mining, Transit, Utility, Power Distribution

Standards:

RoHS

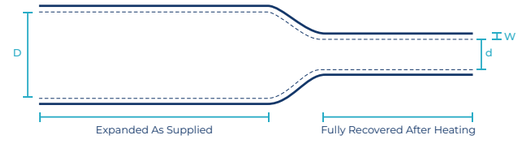
ORDER NUMBER	EXPANDED	RECOVERED		DELIVER UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	LENGTHS
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
CNTT 33/10	33.0 (1.299)	10.0 (0.394)	2.80 (0.110)	15 (50)
CNTT 45/15	45.0 (1.772)	15.0 (0.591)	2.80 (0.110)	15 (50)
CNTT 60/19	60.0 (2.362)	19.0 (0.748)	3.10 (0.122)	15 (50)
CNTT 80/25	80.0 (3.150)	25.0 (0.984)	2.90 (0.144)	15 (50)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Red-brown (RD-BN)
- Please specify the product name, order number and options you require:
- Example: CNTT 45/15, red-brown, 150m

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CRSA – Non-tracking rain sheds

Rain sheds are used as creepage extenders on medium voltage cable termination and insulators in outdoor applications. The recommended number of sheds to be used varies according to the voltage rating of the cable.

Features and Benefits

- Non-tracking
- UV stabilised
- Flame retardant
- Rubber based red sealant seals the shed to the cable
- Exceptional electrical and weathering properties
- Suitable for outdoor & indoor terminations
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 100°C
- Shrink temperature: 125°C min.

resistance in harsh environments
- Suitable for the complete range of electrical cables with XPLE or PILC insulation

Standards

- HD 629.1 S2
- IEC 60502-4
- IEC 60055-1

Typical Applications

- Creepage extension on medium voltage terminations up to 36kV
- Improved tracking

3:1

Shrink ratio

-40°C - 100°C (-40°F to 212°F)

Continuous operating temperature

Markets:
Renewables/Wind, Industrial, Power Distribution, Utility

Standards:

RoHS

CRSA – Non-tracking rain sheds

ORDER NUMBER	EXPANDED	RECOVERED			DELIVERY UNITS
	SHED DIAMETER (MIN)	SHED DIAMETER (MAX)	SKIRT DIAMETER	LENGTH OF NECK	PIECES
	mm (in)	*mm (in)*	*mm (in)*	*mm (in)*	
37/16	37.0 (1.46)	16.0 (0.63)	90.0 (3.54)	25.0 (0.98)	30
57/16	57.0 (2.24)	16.0 (0.63)	115.0 (4.53)	25.0 (0.98)	30
75/35	75.0 (2.95)	35.0 (1.38)	145.0 (5.71)	35.0 (1.38)	15

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Red-brown (RD-BN)
- Please specify the product name, order number and options you require
- Example: CRSA 37/16, red-brown

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Cold shrink end caps

CSEC Series cold shrink end caps are designed to provide a reliable, moisture proof method of sealing exposed cable ends without the use of additional tools, tapes or mastics. Made of EPDM rubber, the end caps are pre-expanded over a rip core that are simple and easy to install.

Features and Benefits

- Quick and easy installation
- Accommodates a wide range of electrical cables, pipes and conduits in four different sizes
- Excellent insulation, sealing and abrasion resistance
- No tapes, mastics or heat source required
- Protects cables and pipes from exposure to moisture, contamination and corrosion
- UV, ozone and water resistant
- Easily removable
- Continuous operating temperature: -20°C to 105°C

2:1

Shrink ratio

-20°C - 105°C

(-4°F to 221°F)

Continuous operating temperature

Markets:
Industrial, Utility

Standards:

RoHS

ORDER NUMBER	EXPANDED	RECOVERED		DELIVER UNITS
	APPLICATION RANGE USE	APPLICATION RANGE USE	LENGTH	PIECES
	mm (in)	*mm (in)*	*mm (in)*	
CSEC-1	20.9 (0.82)	11.6 (0.46)	50.8 (2)	20
CSEC-2	30.1 (30.1)	15.9 (0.63)	57.15 (2.25)	15
CSEC-3	49.2 (1.94)	26.0 (1.02)	69.85 (2.5)	10
CSEC-4	84.3 (3.32)	45.5 (1.79)	88.9 (3.5)	10

Ordering

Select a dimension which will shrink snugly over the application to be covered.

- Please specify the product name, order number and options you require:
- Example: CSEC-1, black, 20 pieces

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Cold shrink splice kits

CSS-EP Series cold shrink splice kits are designed to provide a reliable, moisture proof method of sealing and protecting low voltage in-line cable connections and premolded splice kits without the use of additional tools. Made of EPDM rubber, the product is ideal for splice sealing and protection in submersible and direct burial applications and harsh environments. The cold shrink tubes are pre-expanded over a rip cord that is simple and easy to install.

Features and Benefits

- Quick and easy installation
- Accommodates a wide range of electrical cable sizes
- Excellent insulation, sealing and abrasion resistance
- Protects cables and pipes from exposure to moisture, contamination and corrosion
- Ozone and Water Resistant
- 1000V rating as a primary insulation cover
- Shrink ratio: 2:1
- Continuous operating temperature: -40°C to 105°C
- Option to include end sealing mastic for added environmental protection

Typical Applications

- Submersible or direct buried cable connections
- In-line connector covers
- Environmental sealing for general, non electrical applications
- Cable jacket repairs
- Suitable for indoor and outdoor application

Standards

- ANSI C119.1-2011

2:1

Shrink ratio

-40°C - 105°C

(-40°F to 221°F)

Continuous operating temperature

Markets:
Electrical Utility, Industrial, Renewables

Standards:

RoHS

Dimensions for CSS-EP - Insulation and cable splice protection

ORDER NUMBER	APPLICATION USE RANGE	CONDUCTOR SIZE RANGE		RECOVERED TUBE LENGTH
	MINIMUM - MAXIMUM	(AWG-KCMIL)		NOMINAL
	mm (in)	*min*	*max*	*mm (in)*
CSS-EP 0750-6	7.8-14.3 (0.31-0.56)	#6	#4	152 (6)
CSS-EP 1000-8	9.9-20.9 (0.39-0.82)	#2	1/10	203 (8)
CSS-EP 1300-9	13.9-30.1 (0.55-1.18)	2/0	300	229 (9)
CSS-EP 1300-11	13.9-30.1 (0.55-1.18)	2/0	300	279 (11)
CSS-EP 1500-6*	17.5-35.1 (0.69-1.38)	-	-	152 (6)
CSS-EP 1500-12	17.5-35.1 (0.69-1.38)	250	250	305 (12)
CSS-EP 1500-16	24.0-49.3 (0.69-1.38)	250	250	406 (16)
CSS-EP 2000-6*	24.0-49.3 (0.95-1.94)	-	-	152 (6)
CSS-EP 2000-12	24.0-49.3 (0.95-1.94)	500	800	305 (12)
CSS-EP 2000-18	24.0-49.3 (0.95-1.94)	500	800	457 (18)
CSS-EP 2750-6*	32.2 - 66.0 (1.27-2.60)	-	-	152 (6)
CSS-EP 2750-9	32.2 - 66.0 (1.27-2.60)	900	1000	229 (9)
CSS-EP 2750-12	32.2 - 66.0 (1.27-2.60)	900	1000	305 (12)
CSS-EP 2750-15	32.2 - 66.0 (1.27-2.60)	900	1000	381 (15)
CSS-EP 2750-18	32.2 - 66.0 (1.27-2.60)	900	1000	457 (18)
CSS-EP 4000-9*	42.6-93.7 (1.68-3.69)	-	-	229 (9)
CSS-EP 4000-18	42.6-93.7 (1.68-3.69)	1250	2000	457 (18)

*Recommended for use in terminal lug sealing
Confirm minimum and maximum cable insulation/jacket and connector dimension are within range.

Dimensions for CSS-EPRS - Protective outer jacket for MV premolded splice kits

ORDER NUMBER	APPLICATION USE RANGE	CONDUCTOR SIZE RANGE		RECOVERED TUBE LENGTH
	MINIMUM - MAXIMUM	(AWG-KCMIL)		NOMINAL
	mm (in)	*min*	*max*	*mm (in)*
CSS-EPRS1	7.8-14.3 (0.31-0.56)	#6	#4	152 (6)
CSS-EPRS2	9.9-20.9 (0.39-0.82)	#2	1/10	203 (8)
CSS-EPRS3	13.9-30.1 (0.55-1.18)	2/0	300	229 (9)

Installation notes

Allow a minimum of 50 mm coverage on either side of connector during installation of sleeve. Tube length dimensions are nominal.

Ordering

Select a dimension which will shrink snugly over the application to be covered.

- Specify product name, order number and options:
- Example: CSS-EP 0750-6”

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

DERAY®-KSF

Medium & heavy wall bus bar tubing

Medium and heavy wall anti-track heat-shrinkable tubing specifically designed for insulating medium voltage bus bars in switchgear equipment rated to 36kV.

Features and Benefits

- Halogen free
- Reduces bus bar clearance requirements
- Protects against accidental flash-over
- Anti-track
- Shrink ratio: 3:1
- Continuous operating temperature: -40°C to 135°C
- Shrink temperature: 125°C min.

Standards

- IEC 60684

Typical Applications

- Insulation of medium voltage bus bars in switchgear equipment, transformers and generators

3:1

Shrink ratio

-40°C - 135°C

(-40°F to 275°F)

Continuous operating temperature

Markets:

Industrial, OEM, Utility, Power Distribution

Standards:

RoHS

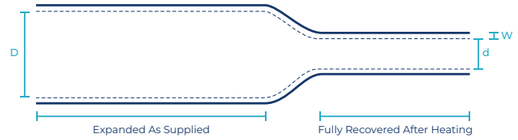
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
19/6	19.0 (0.748)	6.0 (0.236)	2.00 (0.079)	50 (164)
25/10	25.0 (0.984)	10.0 (0.394)	4.10 (0.161)	50 (164)
32/12	32.0 (1.260)	12.0 (0.472)	2.80 (0.110)	50 (164)
38/12	38.0 (1.496)	12.0 (0.472)	2.80 (0.110)	50 (164)
43/19	43.0 (1.693)	19.0 (0.748)	3.50 (0.138)	25 (82)
45/16	45.0 (1.772)	16.0 (0.630)	4.10 (0.161)	25 (82)
52/19	52.0 (2.047)	19.0 (0.748)	3.50 (0.138)	25 (82)
58/19	58.0 (2.283)	19.0 (0.748)	3.50 (0.138)	25 (82)
68/25	68.0 (2.677)	25.0 (0.984)	3.50 (0.138)	25 (82)
76/32	76.0 (2.992)	32.0 (1.260)	3.50 (0.138)	25 (82)
100/40	100.0 (3.937)	40.0 (1.575)	4.10 (0.161)	10 (33)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

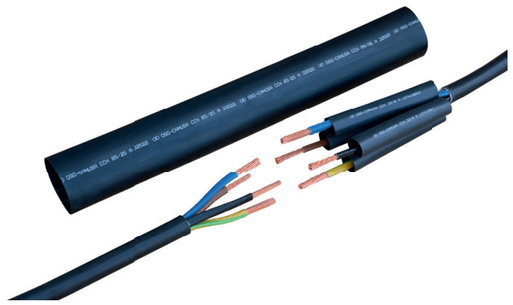
- Select options:
  - Color: Red-brown (RD-BN)
- Please specify the product name, order number and options you require
- Example: DERAY®-KSF, 19/6, red-brown

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Heat-shrinkable cable joints

LVJUAC, LVJUAM and LVJUAS are perfectly suitable for joining multi-core, polymeric insulated energy cables in the low voltage range.



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

Features and Benefits

- Quick, simple installation
- Exceptionally good electrical insulation
- Good mechanical load-bearing ability
- No maintenance time necessary
- Usable immediately

Standards

- DIN EN 50393 (VDE 0278-393):2006-11
- DIN V 47640:2008-10
- HD 623

Typical Applications

- Low voltage joints, transition joints and terminations
- Standard Content
- 1 outer sleeve
- 3, 4 or 5 inner sleeves
- Cleaning cloth
- Abrasive strip

Installation Instructions

- Screen continuity where applicable
- On request the sleeves can also be supplied in different lengths and/or diameters.

1 kV

Voltage Rating

Markets:
Industrial Construction/Automation, Power Distribution, Utility

Standards:

RoHS

Joint Kits for Plastic-Insulated 0.6/1kV Cables

ORDER NUMBER	CROSS SECTION RANGE FOR SCREW CONNECTORS	CABLE TYPE E.G.
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), aluminum (al) or copper (cu) conductors
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	

Joint Kits for Plastic-Insulated 0.6/1kV Cables

ORDER NUMBER	CROSS SECTION RANGE FOR CRIMP CONNECTORS	CABLE TYPE E.G.
LVJUAC 4 x 2.5 - 4 x 16	4 x 2.5 - 4 x 16	NYY, NXY, NYX, NXX with round (r) or sectorial (s), solid (e) or stranded (m), aluminum (al) or copper (cu) conductors
LVJUAC 5 x 2.5 - 5 x 16	5 x 2.5 - 5 x 16	
LVJUAC 4 x 6 - 4 x 35	4 x 6 - 4 x 35	
LVJUAC 5 x 6 - 5 x 35	5 x 6 - 5 x 35	
LVJUAC 4 x 16 - 4 x 50	4 x 16 - 4 x 50	
LVJUAC 4 x 35 - 4 x 150	4 x 35 - 4 x 150	
LVJUAC 4 x 120 - 4 x 240	4 x 120 - 4 x 240	
LVJUAC 4 x 185 - 4 x 300	4 x 185 - 4 x 300	

Joint Kits for Screened-Insulated 0.6/1kV Cables

ORDER NUMBER	CROSS SECTION RANGE FOR SCREW OR CRIMP CONNECTORS	CABLE TYPE E.G.
LVJUAS 4 x 2.5 - 4 x 16	4 x 2.5 - 4 x 16	NYCY, NYCWY, NHXH with round (r) or sectorial (s), solid (e) or stranded (m), aluminum (al) or copper (cu) conductors
LVJUAS 5 x 2.5 - 5 x 16	5 x 2.5 - 5 x 16	
LVJUAS 4 x 6 - 4 x 35	4 x 6 - 4 x 35	
LVJUAS 5 x 6 - 5 x 35	5 x 6 - 5 x 35	
LVJUAS 4 x 16 - 4 x 50	4 x 16 - 4 x 50	
LVJUAS 4 x 35 - 4 x 150	4 x 35 - 4 x 150	
LVJUAS 4 x 120 - 4 x 240	4 x 120 - 4 x 240	
LVJUAS 4 x 185 - 4 x 300	4 x 185 - 4 x 300	

Low Voltage Kits

Joint Kit for armoured cables

CODE	CROSS SECTION RANGE
CJK 4	4 x 1.5 - 4 mm²
CJK 16	4 x 6 - 16 mm²
CJK 50	4 x 25 - 50 mm²
CJK 95	4 x 70 - 120 mm²
CJK 240	4 x 150 - 240 mm²

Termination kit for armoured cables

CODE	CROSS SECTION RANGE
CTK 16	4 x 6 - 16 mm²
CTK 50	4 x 25 - 50 mm²
CTK 95	4 x 70 - 120 mm²
CTK 240	4 x 150 - 240 mm²

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: LVJUAM 4 x 6 - 4 x 25

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Heat-shrinkable power cable joints kits consist of selected quality products to ensure the best possible protection.

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

Standards

- HD 629.1 S2
- IEC 60502-4
- IEC 60055-1

Typical Applications

- Single core or three-core medium voltage heat-shrinkable joints for XLPE, PE, PVC, PILC power cable rated up to 24kV

Features and Benefits

- 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

≤24 kV

Voltage Rating

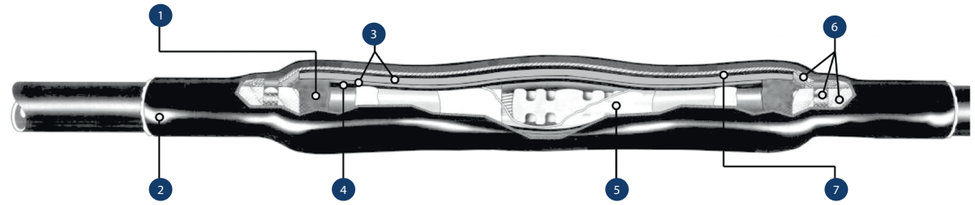
Unsurpassed Reliability and performance in polluted environments

Markets:
Industrial Construction/Automation, Power Distribution

Standards:

RoHS

Heat-shrinkable power cable joints

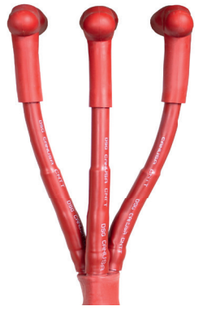


1. Sealant - Internal moisture seal prevents migration of moisture
2. Heat-shrinkable adhesive lined tube - Adhesive lining provides moisture seal between the cable and splice; Provides impact- and abrasion-resistance
3. Insulation layer - Delivers consistent insulation thickness without field measurement, in a factory-engineered system; Insulation thickness should meet or exceed that of the cable
4. Heat-shrinkable stress control tubing - Reduces electrical stress to safe operating levels
5. Stress relief material - Minimizes stress around the connector and the shield cutback
6. Grounding and shielding - Ground braid provides continuity across the splice; Ground clamp provide secure grounding without soldering; Shielding mesh surrounds the splice for personnel protection
7. Semi-conductive layer - Reconstructs the cable insulation shield

Ordering

Please contact your Customer Service Representative for information on available solutions selected by voltage class, crosssection, application, cable type and required hardware.

Medium voltage terminations make use of heat-shrink technology to provide a solution for both indoor and outdoor applications.



Suitable for both single and three core cable they combine different grades of heat-shrink tubing and mastics to completely restore the integrity of the cable after the cable has been terminated. The control of the electrical field being essential for the safe operation of medium voltage devices.

Features and Benefits

- Suitable for 1 and 3 core cable
- Range includes kits for XLPE, PE, PVC and PILC cables for a wide range of conductor cross sections
- Kits are available for both armoured and 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

Standards

- HD 629.1 S2
- IEC 60502-4
- IEC 60055-1

Typical Applications

- Single core and three-core medium voltage heat-shrinkable terminations for XLPE, PE, PVC, PILC power cable rated up to 24kV

≤24 kV

Voltage Rating

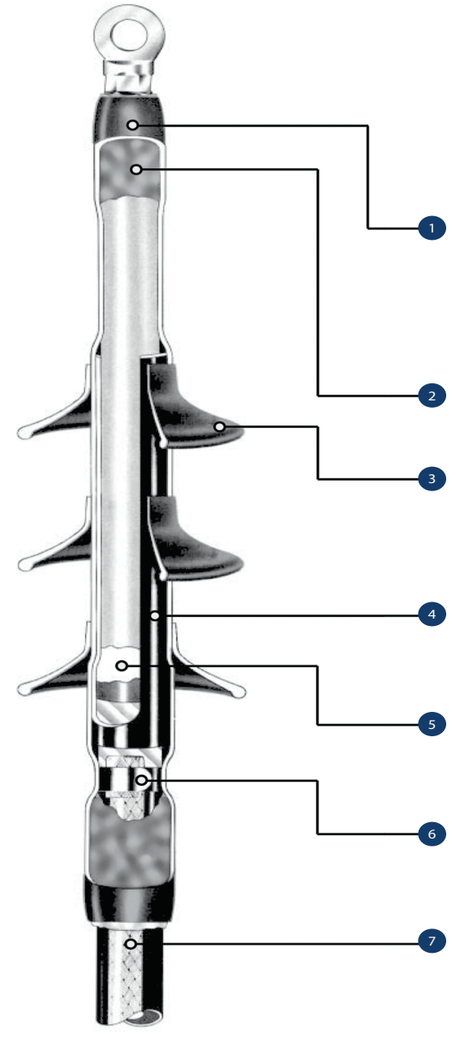
Unsurpassed reliability and performance in polluted environments

Markets:
Industrial Construction/Automation, Mining, Transit, Utility, Power Distribution

Standards:

RoHS

Heat-shrinkable power cable terminations



1. Non-tracking, heat-shrinkable outer insulation tubing - Provides excellent UV stability; Withstands polluted environments; Is proven to withstand severe applications
2. Non-tracking, high voltage sealant - Provides watertight seal over cable lugs
3. Additional heat-shrinkable creepage extenders for outdoor applications - Increase surface creepage distance; Easy to adapt indoor terminations to outdoor conditions
4. Heat-shrinkable stress control tubing - Reduces electrical stress gradient at the end of the cable shield to safe operating levels
5. Stress relief material - Minimizes stress at the shield cutback; Acts as a moisture seal
6. Ground clamp - Has a constant force roll spring, which provides secure grounding without soldering
7. Shielding and solderless grounding with ground braid - Provides shield continuity

Ordering

Please contact your Customer Service Representative for information on available solutions selected by voltage class, crosssection, application, cable type and required hardware.

Signal cable joints

CSK-B signal kits are particularly suitable for connecting screened signal cables in industry, rail and mass transit. Three kits cover the complete size range thus reducing inventory butis customizable for specific projects.

Features and Benefits

- Quick and 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 II - crimp connector
  - Dual wall heat-shrink tubing with crimp connector
- Braid - tinned copper non-corroding for continuation of screen
- Roll spring - gives good mechanical and electrical contact with no insulation damage
- CSAT - mastic tape designed to perform even during flexing and vibration
- DERAY®-I 3000 - heat-shrink tubing to replace inner insulation layer
- DERAY®-IAKT - to continue waterproof seal

Standards

- SNCF Standard
- CFW - high shrink ratio tubing with high performance adhesive provides excellent mechanical and environmental protection

1 kV

Voltage Rating

Markets:
Industrial, Mass transit

Standards:

RoHS

Signal Kits

Signal cable joints for 0,6/1kV Cables

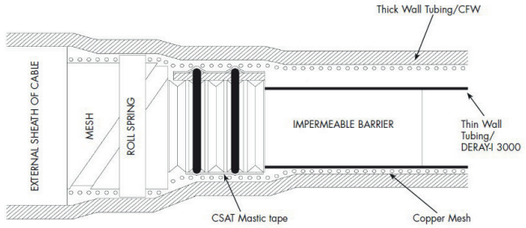
ORDER NUMBER	CABLE RANGE NUMBER OF PAIRS	CABLE TYPE E.G.
CSKB-1	4 - 7	YSLCY, LSYCvY, ZPFU, SZRNtk VM-J with copper conductors 1,5-2,5 mm2
CSKB-2	10 - 22	
CSKB-3	28 - 32	

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: CSKB-2

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CanuFlex PBT V0

Flame retardant braided sleeve

Flame retardant polyester PBT braided sleeve for protecting, strengthening or bundling of cables, wires, pipes and hoses such as electrical harnesses, fluid pipes, air conditioning pipes, flexible technical hoses

Features and Benefits

- Flame retardant PBT monofilaments
- Halogen free
- Particularly chemical and abrasion resistant
- Easy installation due to push-back effect and high flexibility
- Fits well to the application shape
- No emergence of condensation water
- Continuous operating temperature: -50°C to 150°C

Typical Applications

- Cable bundling and protection
- Noise reduction
- Protection against abrasion

-50°C - 150°C

(-58°F to 302°F)

Continuous operating temperature

Flame retardant

Particularly chemical and abrasion resistant

Markets:
Automotive, Industrial

Standards:

RoHS

ORDER NUMBER	NOMINAL	RECOVERED	DELIVERY UNITS	
	INTERNAL DIAMETER	INTERNAL DIAMETER	SPOOL	MINI-SPOOL
	mm (in)	*mm (in)*	*m (ft)*	*m (ft)*
03	2.0 (0.079)	6.0 (0.236)	500 (1640)	100 (328)
04	4.5 (0.177)	8.0 (0.315)	500 (1640)	100 (328)
05	5.0 (0.197)	10.0 (0.394)	500 (1640)	100 (328)
08	6.5 (0.256)	14.0 (0.551)	300 (984)	100 (328)
10	8.8 (0.346)	18.0 (0.709)	300 (984)	100 (328)
12	9.2 (0.362)	21.0 (0.827)	300 (984)	50 (164)
15	10.3 (0.406)	25.0 (0.984)	300 (984)	50 (164)
20	12.5 (0.492)	29.0 (1.142)	200 (656)	50 (164)
25	13.3 (0.524)	36.0 (1.417)	200 (656)	25 (82)
30	23.0 (0.906)	45.0 (1.772)	150 (492)	25 (82)
40	27.0 (1.063)	64.0 (2.520)	100 (328)	25 (82)
50	32.0 (1.260)	75.0 (2.953)	100 (328)	25 (82)

Ordering

- Select options:
  - Color: Black (BK) with grey tracer yarn
- Please specify the product name, order number and options you require
- Example: Canuflex PBT V0, 08, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

CanuFlex PE-HB

Braided sleeve

Multipurpose economic braided sleeve from polyester monofilaments for protection or bundling of cable, wires, pipes and hoses such as electrical harnesses, fluid pipes, air conditioning pipes.

Features and Benefits

- Very flexible
- Halogen free
- Highly expandable
- Lightweight but tough polyester monofilaments
- Push-back effect enables an easy application
- Resistant against chemicals and abrasion
- Self-extinguishing due to braided construction
- Continuous operating temperature: -50°C to 150°C

Standards

- Automotive OEM specifications

Typical Applications

- Cable bundling and protection
- Noise reduction
- Protection against abrasion

-50°C - 150°C

(-58°F to 302°F)

Continuous operating temperature

Highly expandable

Self-extinguishing due to braided construction

Markets:
Automotive, Industrial

Standards:

RoHS

ORDER NUMBER	NOMINAL	EXPANDED	DELIVERY UNITS	
	INTERNAL DIAMETER	INTERNAL DIAMETER	SPOOL	MINI-SPOOL
	mm (in)	*mm (in)*	*m (ft)*	*m (ft)*
03	2.0 (0.079)	6.0 (0.236)	500 (1640)	100 (328)
05	5.0 (0.197)	10.0 (0.394)	500 (1640)	100 (328)
08	6.5 (0.256)	14.0 (0.551)	300 (984)	100 (328)
10	8.8 (0.346)	18.0 (0.709)	300 (984)	100 (328)
12	9.2 (0.362)	21.0 (0.827)	300 (984)	50 (164)
15	10.3 (0.406)	25.0 (0.984)	300 (984)	50 (164)
20	12.5 (0.492)	29.0 (1.142)	200 (656)	50 (164)
25	13.3 (0.524)	36.0 (1.417)	200 (656)	25 (82)
30	23.0 (0.906)	45.0 (1.772)	150 (492)	25 (82)
40	27.0 (1.063)	64.0 (2.520)	100 (328)	25 (82)
50	32.0 (1.260)	75.0 (2.953)	100 (328)	25 (82)
50	32.0 (1.260)	75.0 (2.953)	100 (328)	25 (82)

Ordering

- Select options:
  - Color: Black (BK), orange (OE), grey (GY)
- Please specify the product name, order number and options you require
- Example: Canuflex PE-HB, 08, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

CanuRound

Self-closing wraparound protective sleeve

Self-closing wraparound protective sleeve for wires, cables, pipes, hoses and foam insulation to avoid mechanical degradation arising from exposure to tough conditions.

Features and Benefits

- Easy and quick installation
- Retrofit
- Self-closing due to spring-back effect
- Excellent abrasion resistance
- Noise absorbing
- Continuous operating temperature: -50°C to 150°C

Standards

- Automotive OEM specifications

Typical Applications

- Cable bundling and protection
- Noise reduction
- Protection against abrasion

-50°C - 150°C

(-58°F to 302°F)

Continuous operating temperature

Easy and quick installation

Self-closing due to spring-back effect

Markets:
Automotive, Industrial

Standards:

RoHS

ORDER NUMBER	NOMINAL	DELIVERY UNITS
	INTERNAL DIAMETER	SPOOL
	mm (in)	*m (ft)*
05	5.0 (0.197)	50 (164)
09	8.0 (0.315)	50 (164)
13	12.0 (0.472)	50 (164)
18	20.0 (0.787)	50 (164)
25	25.0 (0.984)	25 (82)
29*	29.0 (1.142)	25 (82)
35	35.0 (1.378)	25 (82)
50	50.0 (1.969)	10 (32)

*Against MOQ.

Ordering

- Select options:
  - Color: Black (BK)
  - Non-standard color: Orange (OR)
- Please specify the product name, order number and options you require
- Example: CanuRound, 09, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Fibre optic splice protector

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

Features and Benefits

- Single holed (preshrunk) ends eliminate improper fibre threading
- Smooth, de-burred stainless steel reinforcing member ends decrease the risk of fibre damage during installation
- Suitable for use with all fusion splicers
- Extended liner length prevents contact between the fibre and the backbone
- Clear sleeve design permits easy centering of splice before heating
- Continuous operating temperature: -40°C to 70°C
- Shrink temperature: 90°C min.

Typical Applications

- Protection of fusion splices in optical networks

3:1

Shrink ratio

-40°C to 70°C

(-40°F to 158°F)

Continuous operating temperature

Markets:
Communications

Standards:

RoHS

Standards

- GR-1380 compliant
- Bellcore SR-4301 Level 2
- British Telecom RC85-92A

ORDER NUMBER	SLEEVE LENGTH	INSIDE DIAMETER OF INNER LINER	SUPPORT ROD DIAMETER	DELIVERY UNITS	
	NOMINAL	MINIMUM	NOMINAL	NUMBER OF SPLICES	PIECES PER BAG
	mm (in)	*mm (in)*	*mm (in)*		
STANDARD					
CFSP-12-61	61.0 (2.40)	1.5 (0.06)	1.2 (0.05)	1	100
CFSP-12-45	45.0 (1.77)	1.5 (0.06)	1.2 (0.05)	1	100
CFSP-12-23	23.0 (0.90)	1.5 (0.06)	1.2 (0.05)	1	100
THIN					
CFSP-9-45	45.0 (1.77)	1.4 (0.06)	0.76 (0.03)	1	100

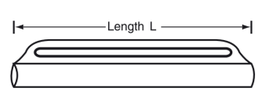
Support rod for CFSP is made from stainless steel.

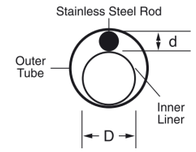
Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Please specify the product name, order number and options you require
- Example: CFSP-12-45, clear, 2.000 pcs.

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.





Gel drop splice enclosure

Gel filled closures are a simple, fast and effective method for providing complete environmental protection for coaxial drop splices.

Features and Benefits

- 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 environmentally sealed coaxial connectors and cable types including quad shielded cable
- Available in two sizes:
  - CE 596 for 59 and 6 series cable
  - CE 711 for 7 and 11 series cable
- Channel provided to retain messenger cable
- Fully re-enterable
- Tough outer shell withstands impacts to 5 ft-lb
- Withstands extreme temperatures (-45°C to 90°C)

Standards

- Meets SCTE IPS-TP-013 (ANSI/SCTE 60 2004) requirements for water immersion and temperature cycling

Typical Applications

- Environmental protection of cable splices

-45°C - 90°C

(-49°F to 149°F)

Continuous operating temperature

Markets:
Communications cable and splice protection, Industrial

Standards:

RoHS

Dimensions of drop splice enclosure

ORDER NUMBER	DIAMETER NOMINAL	LENGTHS
	mm (in)	*mm (in)*
CE 596	25.4 (1.0)	116 (4.6)
CE 711	31.0 (1.2)	165 (6.5)

Applications

- Cables: All 59 and 6 series coaxial cables including quad shield with messengers All 7 and 11 series coaxial cables including quad shield with messengers

Connectors

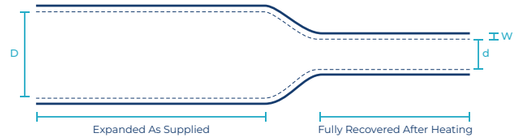
	59 AND 6 SERIES	7 AND 11 SERIES
Digicom	D2, Type II and S	D2, S and RG 11
T & B	F Series, SNS Seires	SNS Series
Corning Gilbert	GF Type, AHS, UltraEase and Ultra Range	GAF, AHS, UltraEase and Ultra Range
PPC	CMP, EX and AquaTight EX	EX and AquaTight EX
Others	F-Conn, Stirling	F-Conn, Stirling

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

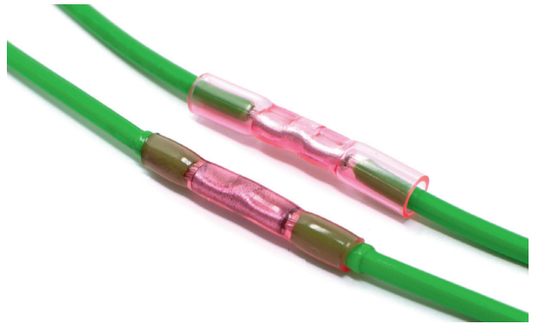
- Select options:
  - Packaging: 12 pieces per box
- Please specify the product name, order number and options you require:
  - Example: CGEL, CE 596

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



Heat-shrink insulated connectors

Crystal clear, semi-rigid, adhesive lined tubing with integral solderless splice connector.



Features and Benefits

- Halogen-free
- Exceptional clarity for visual confirmation of seal
- Seals & protects against water, corrosive compounds, moisture & contaminants
- Tough, durable heat-shrink tubing resists abrasion, crimp tool damage & splitting
- Shrinks 40% faster than nylon, preventing wire damage
- Inner adhesive bonds to plastics, rubbers & metals
- Voltage max. 600V
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 125°C
- Shrink temperature: 100°C min.

Standards

- UL486C - UL file # E470828
- Meets & conforms to OEM wiring specifications for installation & repairs

Typical Applications

- Wire to wire splicing
- Environmental protection for crimp-connections & terminals
- Automotive / trucking repair and maintenance
- Commercial, electronics & appliance wiring
- Marine electronics & fleet maintenance

3:1

Shrink ratio

-55°C - 125°C

(-67°F to 257°F)

Continuous operating temperature

Markets:
Aerospace, Defense, Industrial, Commercial, Automatic Feed Equipment, MRO and Aftermarket, Automotive Aftermarket

Standards:

Butt connector

COLOR	WIRE RANGE	STUD SIZE	TUBE DIAMETER	
			EXPANDED	RECOVERED
	awg (mm²)	*in (mm)*	*mm*	*mm*
Clear	28-22 (0.1-0.5)	- (-)	3.7	1.0
Red*	22-18 (0.5-1.5)	- (-)	4.3	1.4
Blue*	16-14 (1.5-2.5)	- (-)	5.0	1.8
Yellow*	12-10 (4-6)	- (-)	6.5	2.2

* Also available in long version with 24mm (0.944 in) stud. Long version without UL approval.

Ring connector

COLOR	WIRE RANGE	STUD SIZE	TUBE DIAMETER	
			EXPANDED	RECOVERED
	awg (mm²)	*in (mm)*	*mm*	*mm*
Red	22-18 (0.5-1.5)	#8 (4)	4.3	1.4
Red	22-18 (0.5-1.5)	#10 (5)	4.3	1.4
Red	22-18 (0.5-1.5)	1/4 (6)	4.3	1.4
Red	22-18 (0.5-1.5)	5/16 (8)	4.3	1.4
Red	22-18 (0.5-1.5)	3/8 (10)	4.3	1.4
Blue	16-14 (1.5-2.5)	#8 (4)	5.0	1.8
Blue	16-14 (1.5-2.5)	#10 (5)	5.0	1.8
Blue	16-14 (1.5-2.5)	1/4 (6)	5.0	1.8
Blue	16-14 (1.5-2.5)	5/16 (8)	5.0	1.8
Blue	16-14 (1.5-2.5)	3/8 (10)	5.0	1.8
Yellow	12-10 (4-6)	#8 (4)	6.5	2.2
Yellow	12-10 (4-6)	#10 (5)	6.5	2.2
Yellow	12-10 (4-6)	1/4 (6)	6.5	2.2
Yellow	12-10 (4-6)	5/16 (8)	6.5	2.2
Yellow	12-10 (4-6)	3/8 (10)	6.5	2.2

Fork connector

COLOR	WIRE RANGE	STUD SIZE	TUBE DIAMETER	
			EXPANDED	RECOVERED
	awg (mm²)	*in (mm)*	*mm*	*mm*
Red	22-18 (0.5-1.5)	#8 (4)	4.3	1.4
Red	22-18 (0.5-1.5)	#10 (5)	4.3	1.4
Blue	16-14 (1.5-2.5)	#8 (4)	5.0	1.8
Blue	16-14 (1.5-2.5)	#10 (5)	5.0	1.8
Yellow	12-10 (4-6)	#8 (4)	6.5	2.2
Yellow	12-10 (4-6)	#10 (5)	6.5	2.2

Push connector

COLOR	WIRE RANGE	STUD SIZE	TUBE DIAMETER	
			EXPANDED	RECOVERED
	awg (mm²)	*in (mm)*	*mm*	*mm*
Red	22-18 (0.5-1.5)	- (-)	4.3	1.4
Blue	16-14 (1.5-2.5)	- (-)	5.0	1.8
Yellow	12-10 (4-6)	- (-)	6.5	2.2

Tab connector

COLOR	WIRE RANGE	STUD SIZE	TUBE DIAMETER	
			EXPANDED	RECOVERED
	awg (mm²)	*in (mm)*	*mm*	*mm*
Red	22-18 (0.5-1.5)	- (-)	4.3	1.4
Blue	16-14 (1.5-2.5)	- (-)	5.0	1.8
Yellow	12-10 (4-6)	- (-)	6.5	2.2

Ordering

- Determine the wire gauge size that you require
- Select the most appropriate connector for your application
- Please specify the product name, order number and options you require
- Order example: CrimpSeal II, butt connector, 22-18 AWG, red

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Application notes

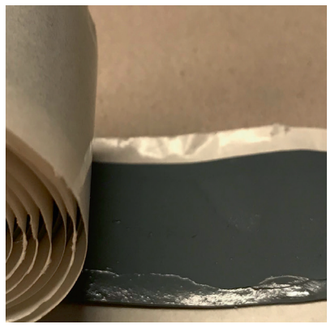
- Strip wires min 7.5 mm & insert into the crimp barrel. Crimp with a DSG-Canusa (or equivalent) hand tool
- Heat the shrink tube along the entire length, working from the centre out to the edges until a water tight seal is formed
- Allow to cool before inspection for splice integrity
- All splice assemblies will conform to most OEM & repair requirements and specifications

Please also refer to working instructions VSPZ 056.

CTSB-2

Tape sealant

Specially designed, rubber based, black sealant tape for use with heat shrink tubing.



Features and Benefits

- Excellent adhesion to PVC, PE and steel
- Softens to fill voids
- Remains flexible over time
- Non-conductive
- Superior waterproof seal when used with other DSG-Canusa products
- Continuous operating temperature: -30°C to 85°C

Standards

- Approved to OEM water blocking specifications

Typical Applications

- Seals and protects low to medium voltage cable joints and terminations

-30°C - 85°C
(-22°F to 185°F)

Continuous operating temperature

Markets:
Industrial, Electrical Utility

Standards:

RoHS

CTSB-2

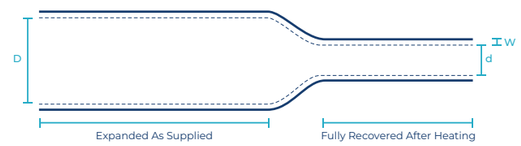
ORDER NUMBER	EXPANDED	DELIVERY UNITS
mm (in)	*mm (in)*	*m (ft)*
50.8 (2.0)	1.5 (0.06)	7.62 (25)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Lengths: 7.62 m or customized lengths on request
- Please specify the product name, order number and options you require
- Example: CTSB-2, 50.8 mm

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



CTSG-1

Sealing tape

Crosslinked, grey butyl tape suitable for high temperature applications. Designed for harsh environments including direct burial and outdoors.

Features and Benefits

- Protects sharp edges and smoothes transitions
- Very good adhesion to cable sheaths and related accessories
- Non-conductive
- UV resistant
- Non-hazardous
- High dielectric strength
- Resistant to common fluids and solvents
- Continuous operating temperature: -30°C to 105°C

Standards

- Approved to OEM water blocking specifications

Typical Applications

- Seals and protects low to medium voltage cable joints and terminations

-30°C - 105°C

(-22°F to 221°F)

Continuous operating temperature

Markets:
Industrial, Electrical Utility

Standards:

RoHS

CTSG-1

WIDTH	THICKNESS	DELIVERY UNITS
mm (in)	*mm (in)*	*m (ft)*
25.4 (0.961)	1.5 (0.059)	7.62 (25)

Ordering

- Please specify the product name, order number and options you require
- Select options:
  - Lengths: 7.62 m or customized lengths on request
- Example: CTSG-1, 25.4 mm

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

DERAY®-HDP

Medium wall crosslinked polyolefin

Halogen free, high density heat-shrink tubing specially designed to meet the form stable demands in automotive battery cable and ground strap areas.

Features and Benefits

- Rigid
- Halogen free
- Form stable
- Highly abrasion resistant
- Shrink ratio: >2:1
- Continuous operating temperature: -40°C to 135°C
- Shrink temperature: 120°C min.

Standards

- VW 60360-3
- GS 95008-3-3

Typical Applications

- Insulation of battery cables and ground straps
- Protection against mechanical damage and corrosion in industrial applications, e.g. tools
- Strain relief and abrasion protection

>2:1

Shrink ratio

-40°C - 135°C

(-40°F to 275°F)

Continuous operating temperature

Markets:
Industrial, Mass Transit, Aerospace, Automotive

Standards:

RoHS

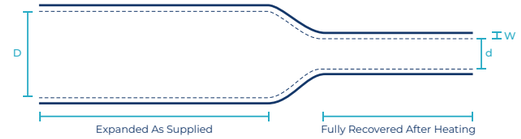
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
15.0/6.5	15.0 (0.591)	6.5 (0.256)	1.25 (0.049)	250 (820)
20.0/6.5	20.0 (0.787)	6.5 (0.256)	2.00 (0.079)	100 (328)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require:
  - Example: DERAY®-HDP, 15.0/6.5, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-IB CON

Semiconducting adhesive lined shrink tube

Adhesive lined semi-conductive heat-shrinkable tube; ideal for the electrostatic discharge of fuel lines.

Features and Benefits

- Specially designed for electrostatic discharge of fuel lines
- Continuously printed with "Ω"
- Semi-conductive
- Specific surface resistivity < 1,000 kΩ at 125 V
- Inner adhesive bounds to metals
- Shrink ratio: >3:1
- Continuous operating temperature: -30°C to 105°C
- Shrink temperature: 110°C min.

Standards

- Approved to automotive fuel line specifications

Typical Applications

- Electrostatic discharge of fuel lines

>3:1

Shrink ratio

-30°C - 105°C

(-22°F to 221°F)

Continuous operating temperature

Markets:
Automotive, Safety Systems, Industrial

Standards:

RoHS

DERAY®-IB CON

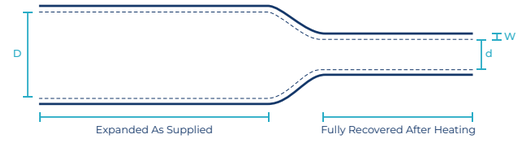
ORDER NUMBER	EXPANDED	RECOVERED		DELIVERY UNITS
	INTERNAL DIAMETER (MIN) D	INTERNAL DIAMETER (MAX) D	TOTAL WALL THICKNESS (NOM) W	SPOOL
	mm (in)	*mm (in)*	*mm (in)*	*m (ft)*
13.5/4.0	13.5 (0.531)	4.0 (0.157)	1.20 (0.047)	100 (328)
17.5/4.0	17.5 (0.689)	4.0 (0.157)	1.20 (0.047)	100 (328)

Ordering

Select a dimension which will shrink snugly over the application to be covered. If recovery is restricted the resultant wall thickness will be less than specified.

- Select options:
  - Color: Black (BK)
- Please specify the product name, order number and options you require
- Example: DERAY®-IB CON, 13.5/4.0, black

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.



DERAY®-IOK

Soft PVC insulation cap

Non-shrinkable insulation cap made of soft PVC for reliable electrical protection.

Features and Benefits

- Ensures 100 % electrical insulation
- Easy and low-cost installation without processing appliances
- Various colors available on request
- Continuous operating temperature: -35°C to 85°C

Standards

- Approved to German automotive OEM specifications

Typical Applications

- Insulation of ultrasonically welded end splices
- Mechanical protection

-35°C - 85°C

(-31°F to 185°F)

Continuous operating temperature

Markets:
Automotive, Industrial

Standards:

RoHS

DERAY®-IOK

ORDER NUMBER	DIMENSIONS		DELIVERY UNITS		
	INTERNAL DIAMETER (MIN) D	TOTAL WALL THICKNESS (NOM) W	CAP LENGTHS	COLOR	PIECES
	mm (in)	*mm (in)*	*mm (in)*		*(Packed in bags)*
9915300700	3.0 (0.118)	0.75 (0.030)	15.0 (0.59)	grey	10,000
9915400100	4.0 (0.157)	1.00 (0.039)	20.0 (0.79)	yellow	5,000
9915500500	5.0 (0.197)	1.00 (0.039)	20.0 (0.79)	blue	5,000
9915600950	6.0 (0.236)	1.00 (0.039)	25.0 (0.98)	black	4,000
9915750100	7.5 (0.295)	1.25 (0.049)	25.0 (0.98)	yellow	2,000
9915950900	9.5 (0.374)	1.25 (0.049)	35.0 (1.38)	white	2,000
9911200300	12.0 (0.472)	1.25 (0.049)	35.0 (1.38)	red	2,000
9911450700	14.0 (0.551)	2.00 (0.079)	50.0 (1.97)	grey	1,000
9911610700	16.0 (0.630)	1.50 (0.059)	50.0 (1.97)	grey	500

Ordering

- Select options:
  - Color: Black (BK), red (RD), white (WT), clear (CL), blue (BL), yellow (YL), green (GR), grey (GY)
- Please specify the product name, order number and options you require
- Example: DERAY®-IOK, 9915500500 or 5.0x20 mm, blue

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Reducing field installation time and improving effectiveness.

DSG-Canusa brand kits combine a variety of different sizes, diameters and colors of our specially designed heat-shrink tubing. Our sets are a convinient solution for distributors and craftsmen.

Features and Benefits

- Great selection of different diameters and colors suitable for various applications
- Refillable compartments
- Universal flame retardant flexible thin wall heat-shrink
- Ready-to-use sections
- Customized sets available on request
- Shrink ratio: 2:1
- Continuous operating temperature: -55°C to 135°C
- Shrink temperature: 110°C min.

Standards

- UL224

Typical Applications

- Electrical repair and maintenance
- Strain relief
- Insulation

2:1 & 3:1

Shrink ratio

-55°C - 135°C

(-67°F to 275°F)

Continuous operating temperature

Markets:
Industrial, Commercial

Standards:

RoHS

DERAY®-Set Six

Description
Small assortment box with flame retardant thin wall heat-shrinkable tubing in different diameter and colors which allows use for various application.

Standard Content

Ø 1.2-0.6 L: 50 mm 60 pcs blue, gray, black, brown	Ø 2.4-1.2 L: 50 mm 30 pcs blue, gray, black, brown	Ø 4.8-2.4 L: 50 mm 16 pcs blue, gray, black, brown	Ø 9.5-4.8 L: 50 mm 8 pcs blue, gray, black, brown	Ø 19.0-9.5 L: 50 mm 4 pcs blue, gray, black, brown	Ø 38.0-19.0 L: 50 mm, 1 pcs yellow-green

DERAY®-Set 2000

Description
Big assortment box with flame retardant thin wall heat-shrinkable tubing in different diameter and colors which allows use for various application.

Standard Content

Ø 1.2-0.6 L: 40 mm 125 pcs black, yellow, white, red, blue	Ø 1.6-0.8 L: 40 mm 125 pcs black, yellow, white, red, blue	Ø 2.4-1.2 L: 40 mm 125 pcs black, yellow, white, red, blue	Ø 3.2-1.6 L: 40 mm 80 pcs black, yellow, white, red, blue	Ø 4.8-2.4 L: 40 mm 40 pcs black, yellow, white, red, blue	Ø 6.4-3.2 L: 40 mm 20 pcs black, yellow, white, red, blue
Ø 1.2-0.6, L: 250 mm, 5 pcs, blue Ø 1.6-0.8, L: 250 mm, 5 pcs, red Ø 3.2-1.6, L: 250 mm, 5 pcs, blue			Ø 4.8-2.4 L: 250 mm, 5 pcs, yellow Ø 6.4-3.2, L: 250 mm, 5 pcs, black Ø 9.5-4.8, L: 250 mm, 3 pcs, black		
Ø 9.5-4.8, L: 250 mm, 4 pcs, yellow Ø 9.5-4.8, L: 250 mm, 4 pcs, red Ø 9.5-4.8, L: 250 mm, 4 pcs, blue			Ø 12.7-6.4, L: 250 mm, 3 pcs, yellow Ø 12.7-6.4, L: 250 mm, 3 pcs, red Ø 12.7-6.4, L: 250 mm, 3 pcs, blue		

DERAY®-Set 5000

Description
Assortment box with crimp connectors and flame retardant thin wall heat-shrink tubing with shrink ratios 2:1 and 3:1.

Standard Content

Crimp connector red - AWG 22-18 / 0.5-1.5mm2 - 20 pieces Crimp connector blue - AWG 16-14 / 1.5-2.5mm2 - 20 pieces Crimp connector yellow - AWG 12-10 / 4-6mm2 - 5 pieces Crimp connector clear - AWG 28-22 / 0.1-0.5mm2 - 5 pieces					
Ø 1.6-0.8 L: 70 mm 28 pcs blue, gray, black, brown	Ø 2.4-1.2 L: 70 mm 28 pcs blue, gray, black, brown	Ø 3.2-1.6 L: 70 mm 20 pcs blue, gray, black, brown	Ø 4.8-2.4 L: 70 mm 16 pcs blue, gray, black, brown	Ø 6.4-3.2 L: 70 mm 12 pcs blue, gray, black, brown	Ø 6.4-2.0 L: 70 mm, 5 pcs Ø 3.2-1.0 L:70 mm 5 pcs yellow-green

DV Tape

Adhesive lined crosslinked polyolefin tape

Adhesive lined, heat-shrink duct and vacuum tape specifically designed for sealing joints on spiral, flexible or flat oval ducts used in heating, ventilating, air conditioning and exhaust recovery systems.

Features and Benefits

- Eliminates air leakage in vacuum and ventilation systems
- Seals against moisture ingress and other contaminants
- Powerful adhesive bonds to galvanized steel, aluminum and stainless steel
- Effective, reproducible seal allows for resistance to bending, vibrations and other mechanical stresses over a wide range of temperatures
- Application procedure is quick, simple and clean
- Shrink ratio: 1.1:1
- Continuous operating temperature: -25°C to 45°C
- Shrink temperature: 120°C

Typical Applications

- Sealing HVAC duct systems

Installation Notes

Cut the DV Tape to the circumference of the duct plus the recommended overlap noted in the Dimensions table. DV Tape is supplied with the adhesive side face up on the roll. Wrap around the joint and hold in place. Upon application of heat using a propane gas torch, the tape shrinks tightly around the joint, forcing the melted adhesive to flow in surface contours, spiral seams or corrugations. After cooling, the adhesive solidifies and bonds tenaciously to galvanized steel, aluminum or stainless steel. The ducting can be handled immediately after cooling.

1.1:1

Shrink ratio

-25°C - 45°C

(-13°F to 113°F)

Continuous operating temperature

Markets:
Civil & Commercial Construction, Industrial, Mining

Standards:

RoHS

DV TAPE WIDTH	DUCT DIA APPLICATION RANGE	STANDARD LENGTH	RECOMMENDED MINIMUM JOINT OVERLAP
mm (in)	*mm (in)*	*m (ft)*	*mm (in)*
50 (2)	50 - 250 (2 - 10)	25 (82)	50 (2.0)
75 (3)	280 - 500 (11 - 20)	25 (82)	63 (2.5)
100 (4)	550 - 1000 (22 - 40)	25 (82)	75 (3.0)
100 (4)	1050 - 1500 (42 - 60)	25 (82)	100 (4.0)

Ordering

Select a dimension which will shrink snugly over the application to be covered.

- Please specify the product name, order number and options you require
- Example: DV Tape, 2 in width

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet.

Tapes

Tapes made of vinyl or elastomer for easy application in the field that provide insulation, protection and identification for various applications.

Features and Benefits

- Highly elastic
- Cold and weather resistant
- High dielectric strength
- Highly resistant to sun, water, oil, acids, alkalies, corrosive chemicals
- Flame retardant
- Abrasion resistant

Typical Applications

- Insulation and jacketing of splices
- Wrapping of wire harnesses
- Insulation of degaussing coils
- Quick identification of e.g. electrical phases, circuits, feeders and branches
- Corrosion protection
- Fire protection of cable conduits

Standards

- ASTM D 3005, Type I
- ASTM D 1000
- HH-I-595C/A-A-55809A
- EN 60454-3-1, Type 11
- UL 510
- CSA C22.2 no.197
- Federal Specification L-T-1512A

≤30 mm

Thickness

Easy to apply

Markets:
Industrial, Utility, Power Distribution, Automotive

Standards:
RoHS

CET33

Professional Grade Vinyl Electrical Tape
All-weather, professional grade, pressure sensitive vinyl tape which applies easily and gives excellent performance over a wide range of temperatures. Cold resistant and weatherproof. Flame retardant. CET33 can be used as primary insulation for splices up to 600 volts. Used as protective outer jacket over splices and for all low temperature applications.

The information given is not generally valid for all DSG-Canusa brand tapes, but reflects a selection of characteristics of the product range.

CET35

Professional Grade Color Coding Vinyl Electrical Tape
All-weather, professional grade, pressure sensitive vinyl tape that is available in nine colors for color coding and insulating. Cold resistant and weatherproof. Flame retardant. Used for quick identification of electrical circuits, containers, and conduit systems, as well as primary insulation for splices at not more than 600 volts.

CET50

Pipe Wrap Tape
A corrosion protection, pressure sesitive vinyl tape giving complete environmental, mechanical and electrical protection for all types of pipewrapping applications. UV, bacteria and fungus resistant. CET50 tape can be used for both overhead and direct burial applications.

CET77

Arc & Fire Proofing Tape
An unsupported, linerless elastomeric tape for arc and fire proofing high voltage & communication cables and splices. The unsupported construction offers excellent flexibility and conformability for easy application. When subjected to severe flame conditions, CET77 will generate a thermally insulating residue for cable protection.

CET88

Heavy Duty Vinyl Electrical Tape
All-weather, heavy duty grade, pressure sensitive vinyl tape that provides heavier thickness for added mechanical and electrical protection. Cold resistant and weatherproof. Flame retardant. CET88 can be used as primary insulation for splices up to 600 volts. Excellent protective jacket over all types of splices. Excellent cold weather performance.

CET130C

Linerless EPR High Voltage Insulating and Jacketing Tape
EPR, self bonding, high voltage tape for insulating and jacketing splices through 69kV. The linerless feature permits much quicker taping speeds than tape with a liner and yield a uniform, void-free build-up. CET130C is compatible with all extruded cable insulations and the excellent stretch allows conformance to the most complex shapes and contours.

Application Equipment

Heat-shrink-machines and heat-shrink-equipment: in-house design made in Germany

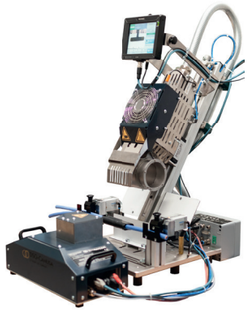
Our DSG-Canusa Machine Technology Center (MTC) designs and manufactures both standard and customized shrink and inspection systems, to assemble and test heat-shrink applications. Engineering and manufacturing are located in the same facility, giving us the opportunity to develop high-quality heat-shrink machines, such as infrared technology equipment and hot air machines, as well as machines for testing purposes, for example, leakage testing. Providing both heat-shrink products and heat-shrink equipment makes us unique in the market. A full-service package of support before, during and after the introduction of one of our heat-shrink machines is a customer favorite. Our devices feature state-of-the-art designs that enable continuous improvement of shrink temperatures and times, a high level of operator convenience and automation, and maximum production efficiency. These high-quality attributes apply to our hot-air-based equipment, our infrared technologies and all components. In addition to the fulfilment of basic functions, we focus on high-level monitoring and continuous improvement. At the Rheinbach, Germany facility, our engineers and customers work together to develop new and different types of heat-shrink machines and shrink tunnel machines that offer superior technical performance and withstand the mechanical stresses of everyday use. Our application engineers excel at innovations that are highly flexible and efficient. By working closely with our customers, we can create solutions tailored to their needs and also support their projects from the initial use through their application's standard operating procedure and beyond. Our portfolio includes several heat-shrink machines and technologies, some examples of which are viewable on our website; we also offer fully customized solutions. Please reach out to our team to discuss your needs so that you and DSG-Canusa can build the future together. Standard features available on our appliances:

- High quality and constant heat distribution for continuous reproducibility
- Modular plug and play options allow for device upgrades (instead of procuring new ones), resulting in cost efficiency and sustainability
- Poka-Yoke designed process (by software and hardware) to minimize operator influence
- Camera-based inspection systems for 100% process safety
- Full digital integration of our devices into your Manufacturing Execution System (MES)

DERAY®-Vision System

Description
The Vision System is a camera-based inspection system as a plug & play add-on for DERAY®-WorkMan 2.0. It controls visual characteristics of any application like e.g. positioning of the heat-shrink sleeve and application, colours of wires.

Features and Benefits
- Picture backup for traceability
- Fixture integration for Poka-Yoke
- Automatic visual feedback of error messages in the process



DERAY®-Shuttle Vision System 2.0

Description
The Vision System is a camera-based inspection system as a plug & play add-on for DERAY®-Shuttle 2.0. It is designed to control visual characteristics of any application like positioning of the heat-shrink sleeve and the application, colors of wires and several more.

Features and Benefits
- Picture backup for traceability
- Visual Feedback by separate touch panel
- RFID tagged Frames for individual process launch

DERAY®-ACIS

Description
The DERAY®-ACIS is an extension to enable the entire system for 100% accuracy of splice conductor and heat-shrink sleeve off-center positioning in a balanced and as well unbalanced splice configuration in correlation to the wire bundle diameter difference.

Features and Benefits
- Automatic positioning of the entire splice towards to the center spot to allow a more operator-friendly and efficient insertion process
- Off-center sleeve and eccentric wire positioning to equalize shrinking behavior on balanced and unbalanced splices
- Detection and measurement of full conductor length to follow latest OEM welding standards

DERAY®-VaDi 2.0

Description
The DERAY®-Vacuum-Leakage Tester is a testing device to proof wires and cables sealed with adhesive lined heat-shrink tubes against a predefined leak rate.

Features and Benefits
- 5 independently usable test stations
- Test of 10 – 80 mm2 Cable cross section
- Quick test by "the Bell"
- RFID tagged slots to ensure 100% traceability

Scan the QR-code and learn more about our heat-shrink machines online!

Product Selection Chart

Single Wall Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
CPX 876	2:1	High performance, flexible polyolefin	-55 °C	135 °C		UL 224 VW-1, CSA OFT	UL file # E107857, CSA file # 265111	1.2 - 101.6	12-13
DERAY®-H	2:1	Multipurpose tubing, flexible polyolefin	-55 °C	135 °C		Colors: UL 224 ATF, CSA OFT, clear: FMVSS 302	UL file # E107857, CSA file # 066150_0_000	1.2 - 101.6	14-15
DERAY®-HB	2:1	Economical, general purpose, halogen free, flexible polyolefin	-55 °C	125 °C		FMVSS 302	-	1.6 - 51.0	16-17
DERAY®-I	2:1	Multipurpose tubing, flexible polyolefin	-55 °C	135 °C		Colors: UL 224 ATF, CSA OFT, clear: FMVSS 302	QPL SAE AS23053/5 Class 1+2, DEF STAN 59-97 Type 2b, BS G198 Part 3 Type 11B, VG95343 Part 5 Type A/B, UL file # E107857, CSA file # 066150_0_000	1.2 - 101.6	18-19
DERAY®-I 3000	3:1	High shrink ratio, flexible polyolefin	-55 °C	135 °C		Colors: UL 224 ATF, clear: FMVSS 302	DEF STAN 59-97 Type 2b, BS G198 Part 3, Type 11B, VG95343 Part 5 Type A/B, UL file # E107857	1.6 - 39.0	20-21
DERAY®-IGY	3:1	Striped green & yellow, high shrink ratio, flexible polyolefin	-55 °C	135 °C		UL 224 ATF	DEF STAN 59-97 Type 2b, BS G198 Part 3 Type 11B	3.2 - 39.0	22-23
DERAY®-LSB	2:1	Very low shrink temperature, flexible polyolefin	-45 °C	125 °C		FMVSS 302	-	3.2 - 25.4	24-25
DERAY®-ZoH 125	2:1	Halogen free, flame retardant, low smoke generation polyolefin	-40°C	125°C		EN45545-2 HL3 R22/R23	Meets LUL E 1042 A6, meets BS 6853 vehicle category 1a, DIN5510, EN 50343	2.4 - 38.1	26-27

Dual Wall Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
CHPA	4:1	Adhesive lined, elevated temperature Polyolefin	-40 °C	150 °C		ASTM-D876	FCA: MS-DB-56 / MS:50107, CPN #5229; GMW17136	4.0 - 18.0	28-29
CPA 300	3:1	High spec. flexible polyolefin, adhesive lined	-55 °C	125 °C		Colors: UL 224 ATF, CSA OFT	QPL SAE AS23053/4 Class 3, UL file # E63390	3.2 - 39.9	30-31
DERAY®-CHPX-150	2:1	Adhesive lined, specifically designed for heat exchanger applications	-55 °C	150 °C		FMVSS 302	-	20.0	32-33
DERAY®-IAKT 3:1 / 4:1	3:1 / 4:1	Adhesive lined, moisture-resistant	-55 °C	110 °C		Colors: ASTM-D876, clear: FMVSS 302	Industrial, electronic and automotive OEM specifications	3.0 - 52.0	34-35
DERAY®-IHKT	4:1	Adhesive lined, superior sealing against water and moisture, high shrink ratio	-55 °C	125 °C		ASTM-D876	-	4.0 - 52.0	36-37
DERAY®-IXKT	4:1	Rigid, adhesive lined, increased adherence on wiring insulations and metal substrates	-40 °C	125 °C		FMVSS 302	-	4.0 - 52.0	38-39
DERAY®-SpliceMelt	4:1	Adhesive lined, moisture-resistant, splice sealing	-40 °C	125 °C		Colors: ASTM-D876, clear: FMVSS 302	Automotive OEM specifications	6.0 - 18.0	40-41
DERAY®-SpliceMelt Cap	4:1	Adhesive lined, moisture-resistant end cap, stub splice sealing	-40 °C	125 °C		Colors: ASTM-D876, clear: FMVSS 302	Automotive OEM specifications	4.5 - 18.0	42-43
DERAY®-T-Melt 150	4:1	Adhesive lined, special design to withstand exceptional requirements e.g. high temperature conditions	-40 °C	150 °C		ISO 6722-1	-	6.0 - 32.0	44-45
DERAY®-UMS	4:1	Adhesive lined, high shrink ratio, fast splice sealing	-40 °C	125 °C		Colors: ISO 6722-1, clear: FMVSS 302	Ford ESLU5T-1A263-AA (CCC41A), LV312-3	6.0 - 18.0	46-47

Medium & Heavy Wall Tubing

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
CCH	3:1	Heavy wall polyolefin, optionally adhesive lined	-55 °C	110 °C		FMVSS 302	DIN EN 60684-3-247, DIN V 47640	9.0 - 200.0	48-49
CCM	3:1	Medium wall polyolefin, flexible, optionally adhesive lined	-55 °C	110 °C		FMVSS 302	DIN EN 60684-3-247	12.0 - 200.0	50-51
CFHR	6:1	Flexible polyolefin, flame retardant, very high shrink ration, optionally adhesive lined	-55 °C	110 °C		ASTM-D2671	IEC 60684-3-247, UL 486D - UL file# E132914	19.0 - 119.4	52-53
CFM	3:1	Medium wall polyolefin, optionally adhesive lined	-55 °C	110 °C		FMVSS 302	DIN EN 60684-3-247	10.2 - 228.6	54-55
CFTV	3:1	Flexible polyolefin, adhesive lined, with heat indicating lines	-55 °C	110 °C		FMVSS 302	-	10.2 - 69.8	56-57
CFW	3:1	Heavy wall polyolefin, optionally adhesive lined	-55 °C	110 °C		FMVSS 302	ANSI C119-1, Western Underground Guide Numbers 2.4 and 2.5, ICEA and NEMA insulation thickness requirements, DNV Type approval, DIN EN 60684-3-247, UL 486D, UL File # E132914, CSA C 22.2 No. 198.2	8.9 - 170.2	58-59
DERAY®-MC 225	3:1	High resistance to impact and abrasion	-40 °C	135 °C		FMVSS 302	VG 95343 Part 5 Type G, GMW 17136, GS 95008-3-3	12.0 - 95.0	60-61
FCFW	3:1	Heavy wall polyolefin, flame retardant, optionally adhesive lined	-55 °C	110 °C		UL94 V-0	IEEE 383, ANSI C119-1, Western Underground Guides No. 2.4 and 2.5, ANSI C37.20.2, ICEA S-19-8 and NEMA insulation thickness requirements, QPL SAE AS23053/15 Class 1, IEC60684-3-247, UL 486D - UL File # E132914, UL94 V-0 - UL file # E167396, CSA C 22.2 No. 198.2	8.9 - 119.9	62-63
FCFW-N	3:1	Heavy wall polyolefin, flame retardant for nuclear application, optionally adhesive lined	-55°C	110°C		UL94 V-0	IEEE 383, IEC 60684-3-247, NF M 64-001, IEC 60068, LOCA/POST LOCA in accordance with RCC-E 2007 NF M64-001, UL file # E132914	8.9 - 119.9	64-65

High Temperature Products

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
DERAY®-KY 175	2:1	Semi-rigid thin wall Kynar® heat-shrink tubing, excellent chemical/solvent resistance	-55 °C	175 °C		UL 224 VW-1, CSA OFT	QPL SAE AS23053/8, DEF STAN 59-97 Type 3, BS G198 Part 4 Type 20, VG 95343 Part 5 Type F, PAN 6491, VW 60360-3, UL file # E107857, CSA file # 066150_0_000	1.2 - 25.4	66-67
DERAY®-KYF 190	2:1	High temp., flexible thin wall Kynar® heat-shrink tubing, extreme chemical/solvent resistance	-55 °C	190 °C		UL 224 VW-1	QPL SAE AS23053/18 Class 2, VW 60360-3	1.2 - 15.0	68-69
DERAY®-PTFE	4:1	Teflon® based heat-shrink tubing, chemically inert, high shrink ratio	-65 °C	260 °C		UL 224 VW-1	-	1.98 - 31.75	70-71
DERAY®-PTFE AWG	2:1	Teflon® based heat-shrink tubing, chemically inert, AWG sizes	-65 °C	260 °C		UL 224 VW-1	-	0.86 - 11.94	72-73
DERAY®-V25 / V25 TW	2:1	Resistant to diesel, oil, hydraulic fluids and other chemicals	-75 °C	150 °C		UL 224 ATF	DEF STAN 59-97 Type 6b, BS G198 Part 3 Type 10A, QPL SAE AS23053/16, VG 95343 Part 5 Type D, PAN 6480K, GS 95008-3-3	2.4 - 76.0	74-75
DERAY®-VT 220	2:1	High temp. fluoroelastomer, abrasion resistant, withstand to corrosive fluids in extreme temp.	-55 °C	220 °C		UL 224 VW-1	DEF STAN 59-97 Type 4a, BS G198 Part 3 Type 12A, VG95343 Typ E, PAN6480L, GS 95008-3-3	3.2 - 76.0	76-77
DERAY®-VT 220 TW	2:1	Highly abrasion resistant, very flexible	-55 °C	220 °C		UL 224 VW-1	QPL SAE AS23053/13	3.2 - 38.1	78-79

Marker Sleeves

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
DERAY®-MTDR	3:1	Flattened, flexible, diesel resistant, in continuous reels	-55°C	135°C		-	SNCF qualified in accordance with NFF00-608 Category A and H, EN 50343*, SAE AS81531 4.6.2* & MIL-STD-202G Methode 215*	3.2 - 39.0	80-81
DERAY®-MTSR	3:1	Flattened, flexible, flame retardant, in continuous reels	-55°C	135°C		UL 224 ATF, CSA OFT	Meets the material requirements of QPL SAE AS23053/5 Class 1, meets the material requirements of DEF STAN 59-97 Type 2b, meets the material requirements of VG 95343-5 SAE AS81531 4.6.2* & MIL-STD-202F Method 215J*	3.2 - 39.0	82-83
DERAY®-ZHF125	2:1	Flattened, halogen free, flame retardant, low smoke generation, in continuous reels	-40°C	125°C		EN45545-2 HL3 R22/R23	Meets LUL E 1042 A6, meets BS 6853 vehicle category 1a, DIN5510, EN 50343*, SAE AS81531 4.6.2* & MIL-STD-202G Methode 215*	2.4 - 38.1	84-85
DMS DR	3:1	Flattened, flexible, diesel resistantin, in ladder style	-55°C	135°C		-	SNCF qualified in accordance with NFF00-608 Category A and H, EN 50343*, SAE AS81531 4.6.2* & MIL-STD-202G Methode 215*	2.4 - 38.1	86-87
DMS MT	3:1	Flattened, flexible, flame retardant, in ladder style	-55°C	135°C		UL 224 ATF, CSA OFT	Meets the material requirements of QPL SAE AS23053/5 Class 1, meets the material requirements of DEF STAN 59-97 Type 2b, SAE AS81531 4.6.2* & MIL-STD-202F Method 215J*	3.2 - 39.0	88-89
DMS NH	2:1	Flattened, halogen free, flame retardant, low smoke generation, in ladder style	-40°C	125°C		EN45545-2 HL3 R22/R23	Meets LUL E 1042 A6, meets BS 6853 vehicle category 1a, DIN5510, EN 50343*, SAE AS81531 4.6.2* & MIL-STD-202G Methode 215*	2.4 - 38.1	90-91

* hardware used "XD Q" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa

Wildlife Mitigation

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
Substations	-	Medium voltage protective covers for insulators, bushings, surge arresters, cut-outs and clamps	-40°C	105°C		EN 60695-2-11	DIN VDE V 0212-490:2014, VDE-AR-N 4210-11:2011-08, IEC 60060-1:2010, EN 60243-1	-	92-95
Overhead Lines	-	Medium voltage protection covers for insulators, suspension clamps and conductors.	-40°C	105°C		EN 60695-2-11	DIN VDE V 0212-490:2014, VDE-AR-N 4210-11:2011-08, IEC 60060-1:2010, EN 60243-1	-	96-98

Electrical Products

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
CANC	>2:1	Tight fitting, flexible, heat-shrinkable anode cap	-55°C	100°C		FMVSS 302	-	40.0 - 108.0	100-101
CBTH	3:1	Heavy wall, anti-track, halogen free and flame retardant	-40°C	125°C		ASTM-D2671	ANSI C 37.20.2, ANSI C37.20.3, UL file# E205844	27.9 - 167.6	102-104
CBTM	3:1	Medium wall, anti-track, halogen free and flame retardant	-40°C	125°C		ASTM-D2671	ANSI C 37.20.2, ANSI C37.20.3, UL file# E205844	19.0 - 170.1	106-108
CCB	>2.5:1	Heat-shrinkable boot for 2, 3, 4, 5, 6-way cable breakouts	-55°C	100°C		FMVSS 302	IEC 62677, ESI 09-11	33.0 - 140.0	110-112
CCBA	>2:1	Medium voltage heat-shrinkable break-out 3-core, antitracking	-50°C	100°C		ASTM-D2671	IEC 62677, ESI 09-13	60.0 - 125.0	114-115
CCB-CON	>2:1	Medium voltage heat-shrinkable break-out 3-core, semiconductive	-50°C	100°C		FMVSS 302	IEC 62677, ESI 09-13	60.0 - 125.0	116-117
CCB-N	>2.5:1	Flame retardant, heat-shrink boots for nuclear environment	-55°C	100°C		IEC 62329-2	IEEE 383, IEC 62677-3-101, NF M 64-001, IEC 60068; LOCA/POST LOCA in accordance with RCC-E 2007 NF M64-001	28.0 - 140.0	118-120
CCRDW	>3:1	Water tight, heat-shrinkable sleeve with flexible stainless steel locking channel	-35°C	100°C		FMVSS 302	-	50.0 - 240.0	122-123
CEC	>2:1	Adhesive lined, heat-shrinkable end cap	-55°C	100°C		FMVSS 302	IEC 62677, ESI 09-11	10.0 - 148.0	124-125
CNTT	3:1	Medium wall, non-tracking, halogen free and flame retardant, for outdoor use	-55°C	125°C		ASTM-D 2671	HD 629.1 S1, IEEE 48-1996, salt fog test IEC 1109, IEC 60502-4, IEC 60055-1	33.0 - 80.0	126-127
CRSA	>2:1	Non-tracking heat-shrinkable rain shed	-55°C	100°C		ASTM-D 2671	-	37.0 - 75.0	128-129
CSEC	2:1	Cold shrink end cap, UV, ozone and water resistant	-20°C	105°C		FMVSS 302	-	20.9 - 84.3	130-131
CSS-EP	>2:1	UV resistant, 1000V rating. cold applied splice sealing products	-20°C	105°C		FMVSS 302	ANSI C119.1-1986	9.4 - 93.2	132-133
DERAY®-KSF	<3:1	Medium or heavy wall, halogen free, anti-track, protects against accidental flash-over	-40 °C	135 °C		FMVSS 302	IEC 60684	19.0 - 100.0	134-135
LV Kits	-	Low voltage, LVJUAC, LVJUAM and LVJUAS connecting (cable-jointing) sleeves	-40 °C	100°C		-	DIN EN 50393 (VDE 0278-393):2006-11, DIN V 47640:2008-10	-	136-138
MV Joints	-	Medium voltage, heat-shrinkable power cable joints	-40 °C	100°C		-	HD 629.1 S2, IEC 60502-4, IEC 60055-1	-	140-141
MV Terminations	-	Medium voltage, heat-shrinkable power cable joints, indoor and outdoor	-40 °C	100°C		-	HD 629.1 S2, IEC 60502-4, IEC 60055-1	-	142-143
Signal Kits	-	Low voltage signal cable joints up to 32 pairs	-40 °C	100°C		-	SNCF Standard	-	144-145

Market Specific Products

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	OPERATING TEMPERATURE			FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MAX				MM	
Canuflex PBT V0	-	Chemical and abrasion resistant braided sleeve	-50 °C	150 °C		UL 94 V0	-	2.0 - 32.0	146-147
Canuflex PE-HB	-	Highly expandable, multipurpose economic braided sleeve	-40 °C	150 °C		FMVSS 302	Automotive OEM specifications	2.0 - 32.0	148-149
Canuround	-	Retrofit and noise absorbing, abrasion resistance wrap around sleeve	-50 °C	150 °C		FMVSS 302	Automotive OEM specifications	5.0 - 50.0	150-151
CFSP	3:1	Fibre optic splice protector with meltable liner	-40 °C	70 °C		FMVSS 302	GR-1380 compliant, Bellcore SR-4301 Level 2, British Telecom RC85-92A	1.4 - 1.5	152-153
CGEL	-	Gel drop splice enclosure	-45 °C	90 °C		-	Meets SCTE IPS-TP-013 (ANSI/SCTE 60 2004) requirements for water immersion and temperature cycling	25.4 - 31	154-155
Crimpseal II	3:1	Halogen free, crystal clear and adhesive lined tubing with integral solderless splice connector	-55 °C	125 °C		FMVSS 302	UL file# E470828	3.7 - 6.5	156-159
CTSB-2	-	Soft sealant tape, excellent adhesion to PVC, PE and steel	-30 °C	85 °C		-	OEM water blocking specifications	50	160-161
CTSG-1	-	Crosslinked, high temperature, butyl tape	-30 °C	105 °C		-	OEM water blocking specifications	25	162-163
DERAY®-HDP	>2:1	Halogen free, high density heat-shrink tubing	-40 °C	135 °C		FMVSS 302	VW 60360-3, GS 95003-3-3	15.0 - 20.0	164-165
DERAY®-IBCON	3:1	Semiconducting, adhesive lined shrink tube	-30 °C	105 °C		-	Automotive fuel line specifications	13.5 - 17.5	166-167
DERAY®-IOK	-	Soft PVC cap, 100% electrical insulation, mechanical protection	-35 °C	85 °C		FMVSS 302	Automotive OEM specifications	3.0 - 16.0	168-169
DERAY®-Sets	2:1 & 3:1	Assortment boxes with heat-shrink tubing and crimp connectors	-55 °C	135°C		UL224	-	1.2 - 19.0	170-171
DV Tape	1.1:1	Adhesive lined, heat-shrink duct and vacuum tape	-25 °C	45 °C		FMVSS 302	-	50 - 100	172-173
Tapes	-	Tapes made of vinyl or elastomer	Vinyl: -18 °C Elastomer: -40°C	Vinyl: 105 °C Elastomer: 100°C		UL510	ASTM D 3005, Type I, ASTM D 1000, HH-I-595C/A-A-55809A, EN 60454-3-1, Type 11, UL 510, CSA C22.2 no.197, Federal Specification L-T-1512A	19 - 76	174-175

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Processing Information

Tubing Selection and Processing information

Easy processing makes heat-shrink tubing an economical and functional solution. Please keep the following processing notes in mind:

- The inner diameter of the heat-shrink tubing should be selected so that after free shrinkage it is approx. 20% smaller than the object to be covered
- If necessary, cut the shrink tubing to the desired length. Please make 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 device
- The optimal shrink temperature of the selected material is vital to assure a short shrink period. Please make sure to use the appointed shrink temperature for each product
- Ensure even heat distribution to prevent overheating. Overheating the material may cause bubbles, discoloration or damage to the tube
- During shrinking of adhesive lined heat-shrink tubing the adhesive may slightly flow out the end

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

Ordering information

When ordering, please specify for each item the following information:

- Name and/or order number
- Dimension
- Options, if available: e.g. color
- Quantity: Spool, lengths or pieces

Example: DERAY®-H, 0250 or 1/4", black, 300 m

Please contact your Customer Service Representative for information on custom colors, sizes, lengths and material data sheet via phone or e-mail you'll find at the back of this catalog.

Scan the QR-code and find our products online:

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