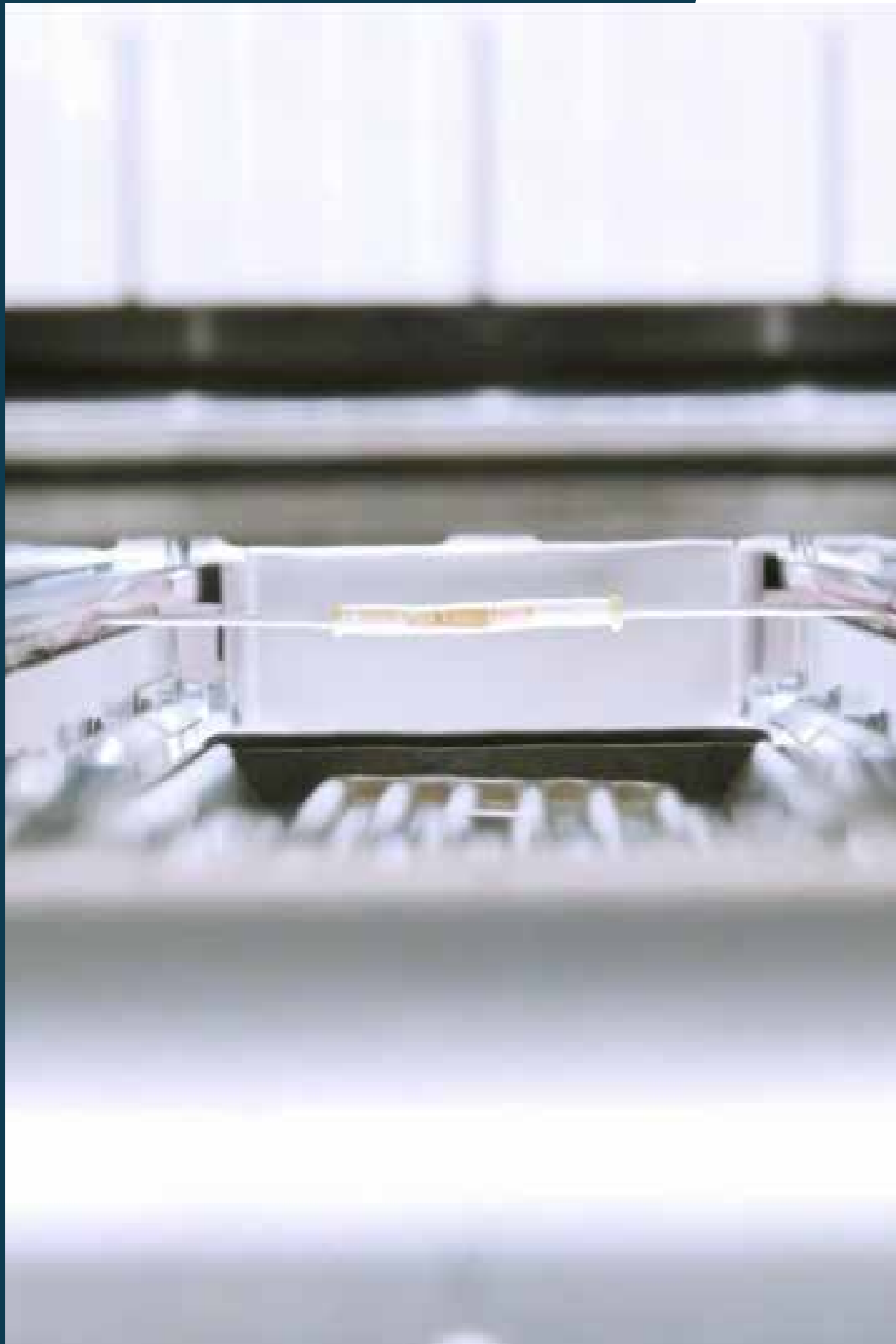




**AEROSPACE
DEFENSE
MASS TRANSIT**



CONTENT

- Specialist for Heat Shrink and Cold Applied Technology 5
- Our HSE Standard & Serving Globally 6
- Integrated Systems 8
- The ADM Markets & Relevant Standards 11
- ADM Standards & Approvals 14

- INSULATION & MARKING 16-35**
 - CNP 200 – Thin wall crosslinked chlorinated polyolefin 18
 - CPX 876 – Thin wall crosslinked polyolefin 20
 - DERAY®-HB – Thin wall crosslinked polyolefin 22
 - DERAY®-HDP – Medium wall crosslinked polyolefin 24
 - DERAY®-I – Thin wall crosslinked polyolefin 26
 - DERAY®-I 3000 – Thin wall crosslinked polyolefin 28
 - DERAY®-IGY – Thin wall crosslinked polyolefin 30
 - DERAY®-LSB – Thin wall crosslinked polyolefin 32
 - DERAY®-MC 225 – Medium wall crosslinked polyethylene 34

- LOW SMOKE 36-43**
 - DERAY®-ZHF125 – Heat shrink identification sleeve 38
 - DERAY®-ZOH125 – Halogen free heat shrink tubing 40
 - DMS NH – Halogen free heat shrink identification sleeve 42

- DUAL WALL TUBING 44-63**
 - CCB – Crosslinked polyolefin cable breakout boots 46
 - CFHR – High shrink ratio crosslinked polyolefin 50
 - CPA 300 – Thin wall adhesive lined crosslinked polyolefin 52
 - Crimpseal II – Heat shrink insulated connectors 54
 - DERAY®-IHKT – Thin wall adhesive lined polyolefin 58
 - DERAY®-SpliceMelt – Adhesive lined crosslinked polyolefin 60
 - FCFW – Heavy wall crosslinked polyolefin 62

- HIGH TEMPERATURE PRODUCTS 64-75**
 - DERAY®-KY 175 – Semi-rigid thin wall Kynar® 66
 - DERAY®-KYF 190 – Flexible thin wall Kynar® 68
 - DERAY®-PTFE – Modified crosslinked fluoropolymer 70
 - DERAY®-PTFE AWG – Modified crosslinked fluoropolymer 72
 - DERAY®-V25 / V25 TW – Crosslinked elastomer 74
 - DERAY®-VT 220 – Crosslinked Viton® 76
 - DERAY®-VT 220 TW – Thin wall crosslinked Viton® 78

- APPLICATION EQUIPMENT PRODUCTS 80-83**
 - Product Selection Chart 84
 - Product Index & Our Catalogs 88
 - Processing & Ordering Information 90



SPECIALIST FOR HEAT SHRINK AND COLD-APPLIED TECHNOLOGY

For more than 45 years, DSG-Canusa is known for developing and producing high-quality heat shrink tubing and cold-applied accessories. Our growing portfolio of heat shrink products includes thin, medium and heavy wall products made of e.g. polyolefin, fluoropolymer and elastomer with or without adhesive. Our mission is to lead the industry in manufacturing superior heat and cold shrink products.

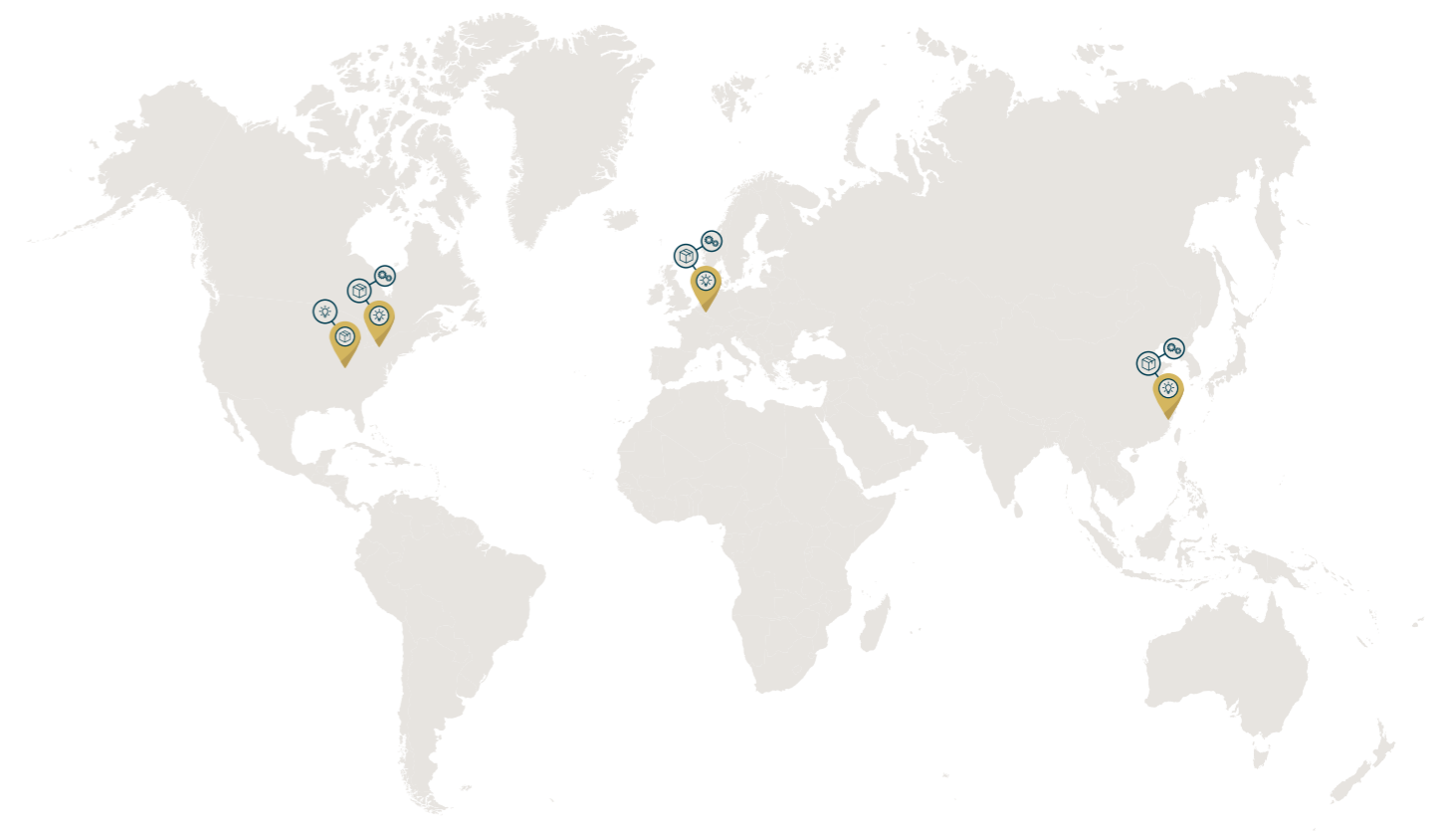
In addition to the heat and cold shrink tubing product lines, we provide a full range of technically advanced shrink appliances. Years of experience in processing heat shrink materials have resulted in the creation of a variety of processing devices, from a simple heat gun to customer specific, process-integrated high-performance shrink equipment.

Being part of the energy services provider Shawcor with over 6,000 employees in over 20 countries, we combine the resources, expertise and technologies to maintain a reputation for excellence that stems from our unparalleled customer service and catalog of top quality products.

OUR HSE STANDARD

Shawcor's vision is an Incident and Injury-Free (IIF) workplace, with no harm to people and no damage to the environment. We view Health, Safety and Environment (HSE) as a core value and an integral part of all business activities, and are committed to achieving HSE excellence at all of our locations around the world.

As a member of Shawcor, we share these values and promote safety awareness with a number of features and programs. Some of these activities are a monthly focus on a high-risk activity to contribute to an incident and injury-free workplace, Advanced Safety Audits (ASA) to enhance the ability of managers and supervisors to engage in positive interactions with workers regarding safety and the Take 5 for Safety initiative to improve safety performance and to reduce incidents when performing non-routine tasks.



SERVING GLOBALLY

LOCAL PRODUCTION FOR LOCAL DEMAND

To deliver the best performing products to all our customers on-time and to meet their expectation, we are organized globally and have chosen our sites strategically. We produce locally to serve local demand while optimizing lead times, transport time and cost.

Our global team utilizes resources from our different locations to support our customer's needs. We embrace customer driven supply chain development and increasing customer service expectations as an opportunity to show our strengths.



R&D, Application Engineering, Marketing



Production



Warehouse and Dispatch

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 appliances for integrated systems that address your needs for efficiency, safety, quality and performance.





THE ADM MARKETS

ADM - AEROSPACE, DEFENSE, MASS TRANSIT

We recognize the special requirements for the Aerospace, Defense and Mass Transit (ADM) markets and have grown our product portfolio and position in these markets through long term, technological partnerships. The number of industrial applications is endless as the use of electrics and electronics continues to evolve and spread as equipment becomes more advanced. We satisfy the need for superior quality through our engineering and design approach and various certifications.

AEROSPACE



We specifically address the requirements of the aerospace market. Our product portfolio includes e.g. halogen free products with excellent fire safety characteristics for the unlikely event of an emergency and high temperature products for protection against extreme temperatures and harsh environments. Our products ensure reliable and durable insulation in the engine area and all electrical wiring harnesses.

We are certified as a manufacturer and supplier of heat shrinkable products, insulating caps and sealing systems by IAQG for EN 9100:2018.

AEROSPACE RANGE OF APPLICATION

In serving the aerospace market for many years, we have the necessary expertise on standards and qualifications, as well as a broad application knowledge. The following solutions are a sample of the wide range of different fields of application we serve with our products:

- Engines (e-propulsions, hybrid, jet-propulsions)
- Wiring harness technologies for electrical insulation, fibre optics, water treatment, EWIS (electrical wire insulation system), fluid handling
- MRO (maintenance, repair & overhaul)
- High temperature applications (up to 260°C) for insulation and protection
- Reliable and cost-saving identification and marking systems
- Colour coding

DEFENSE



The area of application in the Defense sector is very diverse. High abrasion, cut and chemical resistance, as well as a high continuous operating temperature are key requirements for the various applications in this market. We serve this area of application by offering a broad product portfolio complying with the norms VG 95343, QPL SAE AS23053, DEF STAN 59-97 and BS G198.

VG 95343 - DEFENSE EQUIPMENT NORM

For the development and procurement of military equipment, the German defense sector primarily refers to suitable civil standards such as DIN, EN or ISO. If those standards are not applicable, experts of various disciplines, like manufacturers and end-users, develop and maintain VG standards.

Each of the VG standards is handling a special product group and is combining civil standards and regulations with the dedicated military requirements. The VG standards not only define the product itself but also give a guideline on necessary testing that must be performed regularly internally and externally at special testing laboratories.

QPL SAE AS23053 - SAE MILITARY AND AEROSPACE STANDARD

The QPL SAE for AS23053 focuses on the military and aerospace requirements for the American defense market. This standard declares the product specification and defines rules for the testing and approval process.

The qualified products are listed on the Qualified Product List (QPL) for SAE AS23053. This list contains products that have met the qualification requirements set forth in the applicable specification, including appropriate product identification, tests or qualification reference, and the name and plant address of the manufacturer and authorized distributor. The QPL SAE AS23053 listing is used by the government to determine approved sources of supply for items they wish to procure.

DEFENSE RANGE OF APPLICATION

Our expertise ensures our customers choose the perfect product for their applications:

- Land vehicles (combat and transportation)
- Air and Missile Defense Systems
- Radar Systems
- Military Communication Systems
- Electro-Optical Systems
- Naval vehicles
- Unmanned Combat Air Vehicle (UCAV)
- Air Transport

MASS TRANSIT



Mass Transit and public transportation has special requirements regarding fire retardancy, low smoke and toxic fume generation. Electrical applications call for superior insulation and long term identification while providing a minimal risk in case of fire.

To comply with the stringent requirements of the European rail norm, our halogen free identification sleeves fulfill the EN45545-2.

EN 45545-2 - EUROPEAN RAIL NORM

Overview of the necessary hazardous levels depending on the design category. Our low smoke halogen free identification sleeve solutions comply with the EN45545-2 and HL3 R22/R23.

OPERATION CATEGORY	DESIGN CATEGORY			
	N: Standard vehicles	A: Vehicles forming part of automatic train w/o emergency trained staff on board	D: Double decked vehicle	S: Sleeping and couchette vehicles
1	HL1	HL1	HL1	HL2
2	HL2	HL2	HL2	HL2
3	HL2	HL2	HL2	HL3
4	HL3	HL3	HL3	HL3

Requirement set	Test method reference	Parameter and unit	Maximum or minimum	Hazardous level		
				HL1	HL2	HL3
R22	T01 EN ISO 4589-2; 0l	Oxygen content %	Minimum	28	28	32
	T10.03 EN ISO 5659-2; 25 kW/m ²	D _s max. dimensionless	Maximum	600	300	150
	T12 NF X 70-100-1 and -2; 600°C	CIT _{NLP} dimensionless	Maximum	1.2	0.9	0.75
R23	T01 EN ISO 4589-2; 0l	Oxygen content %	Minimum	28	28	32
	T10.03 EN ISO 5659-2; 25 kW/m ²	D _s max. dimensionless	Maximum	-	600	300
	T12 NF X 70-100-1 and -2; 600°C	CIT _{NLP} dimensionless	Maximum	-	1.8	1.5
R24	T01 EN ISO 4589-2; 0l	Oxygen content %	Minimum	28	28	32

MASS TRANSIT RANGE OF APPLICATION

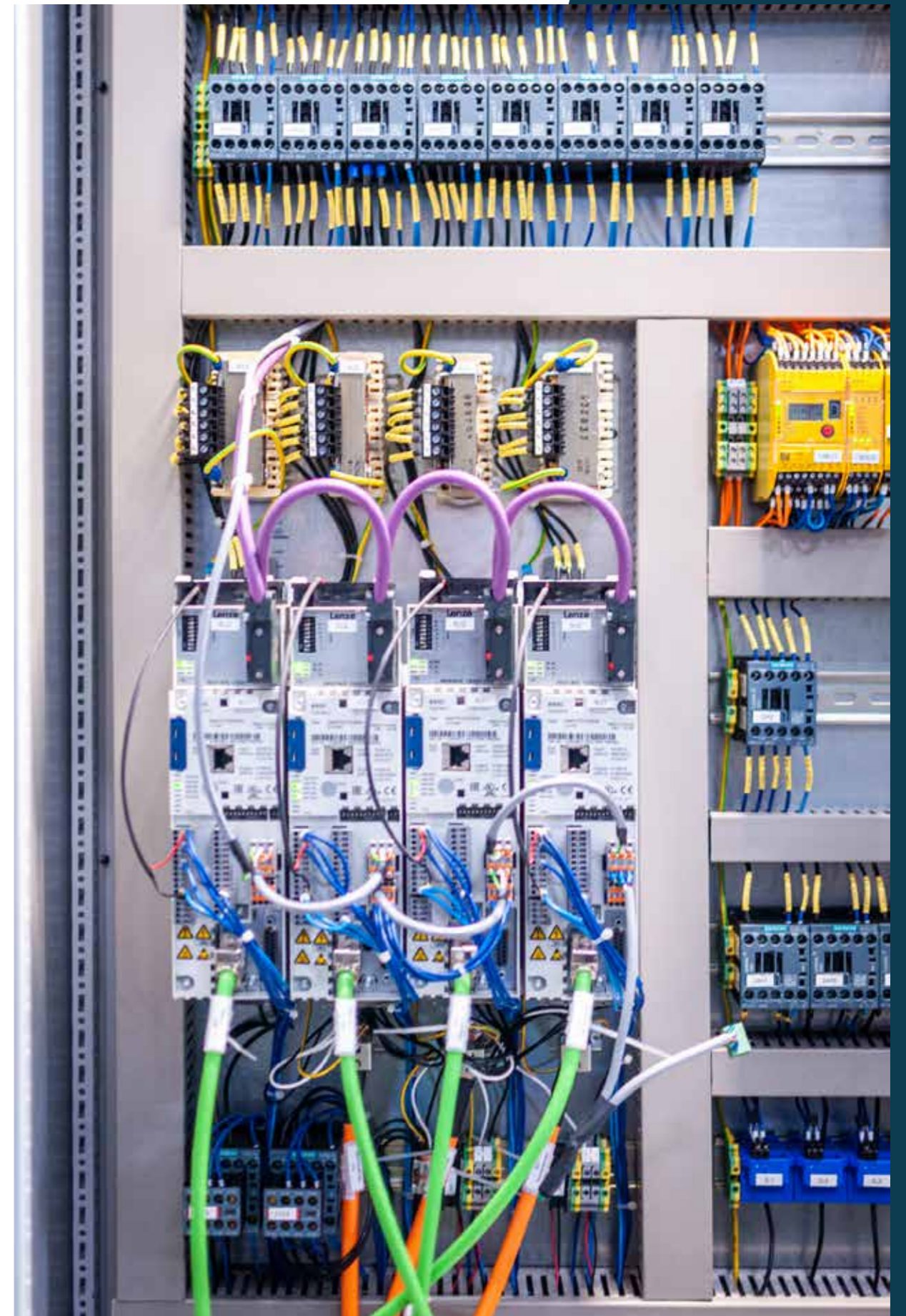
We serve the rolling stock market as well as infrastructural applications like:

- Wiring harness technologies for electrical insulation, fibre optics, fluid handling
- Wildlife Mitigation products
- Track Control systems, Track Maintenance Kits, Point-Heating-Kits
- Mechanical and Electrical Protection
- Security & Safety, CCTV
- Station Management, Platforms, Passenger Routing and Information Management, Ticketing
- Advertising, Billboards,
- Lighting Infrastructure, Emergency-Systems, Rescue Management Systems
- Reliable and cost-saving identification and marking systems
- Colour coding

ADM STANDARDS & APPROVALS

	PRODUCT CATEGORY	CLASSIFICATION	PRODUCT NAME	PAGE
VG 95343	Insulation & Marking	VG 95 343 T 05 B...	DERAY®-I clear	26
		VG 95 343 T 05 A ...	DERAY®-I coloured	26
		VG 95 343 T 05 A ...	DERAY®-I 3000	28
		VG 95 343 T 05 A ...	DERAY®-IGY	30
	Dual Wall Tubing	VG 95 343 T 12 D ...	DERAY®-IHKT	58
	High Temperature Products	VG 95 343 T 05 F ...	DERAY®-KY 175	66
		VG 95 343 T 05 D ...	DERAY®-V25	74
VG 95 343 T 05 D ...		DERAY®-V25 TW	74	
QPL SAE AS23053	Insulation & Marking	M23053/1 ...	CNP 200 black	18
		M23053/5 ...	DERAY®-I clear	26
		M23053/5 ...	DERAY®-I colored	26
	Dual Wall Tubing	M23053/4 ...	CPA 300 colored	52
		M23053/15 ...	FCFW black	62
	High Temperature Products	M23053/8 ...	DERAY®-KY 175 black	66
		M23053/18 ...	DERAY®-KYF 190 clear	68
		M23053/18 ...	DERAY®-KYF 190 HT colored	68
		M23053/16 ...	DERAY®-V25 black	74
M23053/13 ...	DERAY®-VT 220 TW black	78		
EN 45545-2	Low Smoke & Marking	HL3 R22/R23	DERAY®-ZHF125	38
		HL3 R22/R23	DERAY®-ZOH 125	40
		HL3 R22/R23	DMS NH	42
CNES APPROVED AND LISTED IN MATREX DATABASE	Insulation & Marking	-	DERAY®-I	26
		-	DERAY®-I 3000	28
	High Temperature Products	-	DERAY®-KY 175	66
		-	DERAY®-KYF 190	68
		-	DERAY®-PTFE	70
		-	DERAY®-V25 / V25 TW	74
		-	DERAY®-VT 220	76

This table shows only a selection of the standards that the respective product meets. To learn more about the products and their certifications, please see the respective product page.





INSULATION & MARKING

PROVIDING RELIABLE AND ENDURING PRODUCTS FOR APPLICATIONS, WHERE WIRE AND CABLE IDENTIFICATION, PROTECTION AND INSULATION IS NECESSARY

The number of electronic components and connections in industrial applications and high-tech industries is growing. Our single wall heat shrink tubing portfolio offers insulation of electrical components, protects against mechanical damage and abrasion, provides strain relief and is available in a wide range of colours and sizes.

For ease of maintenance and fast identification different tubing colors can be assigned to different areas of the application.

INSULATION & MARKING	16-35
CNP 200 – Thin wall crosslinked chlorinated polyolefin	18
CPX 876 – Thin wall crosslinked polyolefin	20
DERAY®-HB – Thin wall crosslinked polyolefin	22
DERAY®-HDP – Medium wall crosslinked polyolefin	24
DERAY®-I – Thin wall crosslinked polyolefin	26
DERAY®-I 3000 – Thin wall crosslinked polyolefin	28
DERAY®-IGY – Thin wall crosslinked polyolefin	30
DERAY®-LSB – Thin wall crosslinked polyolefin	32
DERAY®-MC 225 – Medium wall crosslinked polyethylene	34



Thin wall crosslinked chlorinated polyolefin heat shrink tubing suitable for harnessing, hydraulic couplings and applications requiring exceptional flexibility.

FEATURES AND BENEFITS

- Superior cut-through and abrasion resistance
- Very flexible even at low temperatures
- Excellent oil resistance
- Shrink ratio: 2:1
- Continuous operating temperature: -70°C to 120°C
- Shrink temperature: 135°C min.

STANDARDS

- MIL-R-46846 Type 1
- QPL SAE AS23053/1 Class 1 and 2

TYPICAL APPLICATIONS

- Insulation, strain relief and abrasion resistance for wire harnesses exposed to fluids and solvents



2:1
SHRINK RATIO

-70°C to 120°C
(-94°F to 248°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Aerospace, Defense, Industrial

STANDARDS:



Thin wall crosslinked chlorinated polyolefin

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
0125	3.18	0.125	1.57	0.062	0.76	0.030	60	200
0187	4.75	0.187	2.36	0.093	0.89	0.035	60	200
0250	6.35	0.250	3.18	0.125	0.89	0.035	60	200
0375	9.53	0.375	4.75	0.187	1.02	0.040	60	100
0500	12.70	0.500	6.35	0.250	1.22	0.048	30	100
0625	15.88	0.625	7.92	0.312	1.32	0.052	30	100
0750	19.05	0.750	9.53	0.375	1.45	0.057	30	100
0875	22.23	0.875	11.10	0.437	1.65	0.065	30	100
1000	25.40	1.000	12.70	0.500	1.78	0.070	15	50
1250	31.75	1.250	15.88	0.625	2.21	0.087	15	50
1500	38.10	1.500	19.05	0.750	2.41	0.095	15	50
1750	44.45	1.750	22.23	0.875	2.72	0.107	15	50
2000	50.80	2.000	25.40	1.000	2.79	0.110	15	50
3000	76.20	3.000	38.10	1.500	3.18	0.125	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: Black (BK)
 - Approval: Standard or QPL
- Please specify the product name, order number and options you require
- *Example:* CNP 200, 0250, black, unprinted, 200 ft lengths, QPL

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



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.



2:1
SHRINK RATIO

-55°C to 135°C
(-67°F to 275°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Aerospace, Defense, Mass Transit, Industrial, Consumer electronics

STANDARDS:



Thin wall crosslinked polyolefin

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
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.



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 to 125°C
(-67°F to 257°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:
Industrial, Aerospace, Automotive

STANDARDS:

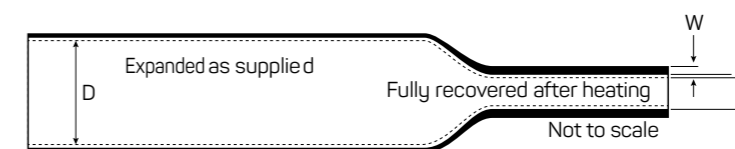


Thin wall crosslinked polyolefin

DIMENSIONS

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 1/2	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

*Items only available in black



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.



Halogen free, high density heat shrink tubing specially designed to meet the form stable demands in ADM-related 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 to 135°C
(-40°F to 275°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Industrial, Mass Transit, Aerospace, Automotive

STANDARDS:



Medium wall crosslinked polyolefin

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
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.



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 to 135°C
(-67°F to 275°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Aerospace, Defense, Industrial, Mass Transit, Automotive

STANDARDS:



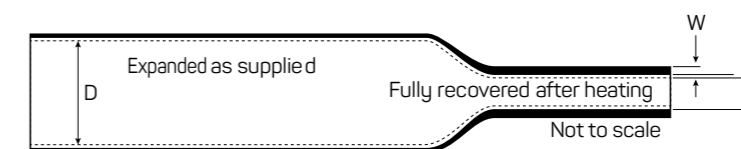
Thin wall crosslinked polyolefin

DIMENSIONS

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	0.4	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	10
0375	9.5	3/8	4.8	0.189	0.60	0.024	150	492	75	246	10
0500	12.7	1/2	6.4	0.252	0.60	0.024	100	328	50	164	10
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 1/4	15.9	0.626	0.90	0.035	50	164	30	98	-
1500	38.0	1 1/2	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.



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.

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

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

3:1
SHRINK RATIO

-55°C to 135°C
(-67°F to 275°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Aerospace, Defense, Industrial, Mass Transit, Automotive

STANDARDS:



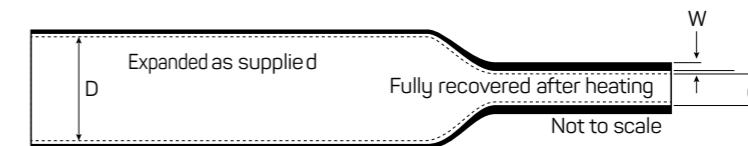
Thin wall crosslinked polyolefin

DIMENSIONS

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	1.60	1/16	0.50	0.020	0.45	0.018	300	984	150	492	25
0125	3.20	1/8	1.00	0.039	0.55	0.022	300	984	150	492	25
0187	4.80	3/16	1.50	0.059	0.60	0.024	300	984	75	246	25
0250	6.40	1/4	2.00	0.079	0.65	0.026	300	984	75	246	10
0375	9.50	3/8	3.00	0.118	0.75	0.030	150	492	75	246	10
0500	12.70	1/2	4.00	0.157	0.75	0.030	100	328	50	164	10
0750	19.00	3/4	6.00	0.236	0.85	0.033	50	164	30	98	10
1000	25.40	1	8.00	0.315	1.00	0.039	50	164	30	98	10
1500	39.00	1 1/2	13.00	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.



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 to 135°C
(-67°F to 275°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

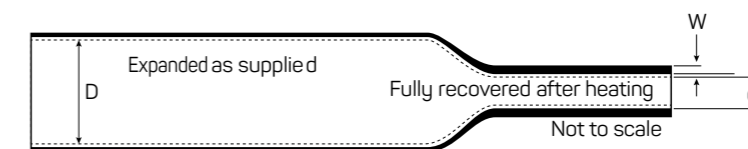
STANDARDS:



Thin wall crosslinked polyolefin

DIMENSIONS

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	1.22M / 48IN
0125	3.20	1/8	1.00	0.039	0.55	0.022	150	492	25
0187	4.80	3/16	1.50	0.059	0.60	0.024	75	246	25
0250	6.40	1/4	2.00	0.079	0.65	0.026	75	246	10
0375	9.50	3/8	3.00	0.118	0.75	0.030	75	246	10
0500	12.70	1/2	4.00	0.157	0.75	0.030	50	150	10
0750	19.00	3/4	6.00	0.236	0.85	0.033	30	96	10
1000	25.40	1	8.00	0.315	1.00	0.039	30	96	10
1535	39.00	1 1/2	13.00	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.



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 to 125°C
(-49°F to 257°F)
CONTINUOUS OPERATING
TEMPERATURE**

MARKETS:

Industrial, Commercial, Aerospace, Mass Transit, Automotive

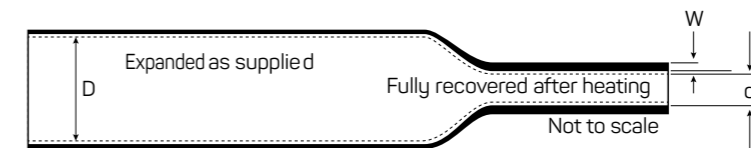
STANDARDS:



Thin wall crosslinked polyolefin

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
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.



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 to 135°C
(-40°F to 275°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:



Medium wall heat shrink crosslinked modified polyethylene

DIMENSIONS

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	5
75/22	75.0	2.953	22.0	0.866	3.00	0.118	5
85/25	85.0	3.346	25.0	0.984	3.00	0.118	5
95/25	95.0	3.740	25.0	0.984	3.00	0.118	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:* DERAY®-MC 225, 50/16, black

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



LOW SMOKE

SUPPORTING THE SAFETY OF PASSENGERS AND PERSONNEL

The importance of mobility is constantly increasing. Besides cars, airplanes and trains are among the most important means of transportation. When designing aerospace and mass transit vehicles, the safety of passengers and personnel is a major consideration.

In case of fire, the generated heat and flames but also the creation of smoke and potentially toxic gases are critical risks. Our products comply and even exceed the requirements of EN 45545-2.

LOW SMOKE 36-43

DERAY®-ZHF125 – Heat shrink identification sleeve38

DERAY®-ZOH125 – Halogen free heat shrink tubing40

DMS NH – Halogen free heat shrink identification sleeve42



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
- LUL E 1042 A6
- BS 6853 vehicle category 1a
- DIN 5510
- EN 50343*
- SAE AS81531 4.6.2*
- MIL-STD-202G Method 215*

TYPICAL APPLICATIONS

- Cable identification

2:1
SHRINK RATIO

-40°C to 125°C
(-40°F to 257°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:



Halogen free heat shrink identification sleeve

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
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.

*hardware used "XD4" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa



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
- LUL E 1042 A6
- BS 6853 vehicle category 1a
- DIN 5510

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 to 125°C
(-40°F to 257°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:

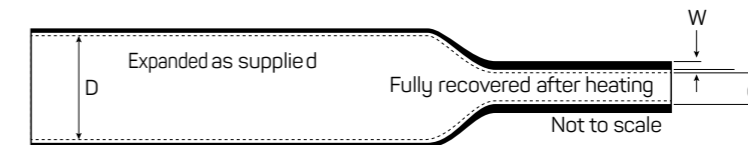


EN 45545-2

Halogen free heat shrink tubing

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
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.



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
- LUL E 1042 A6
- BS 6853 vehicle category 1a
- DIN 5510
- EN 50343*
- SAE AS81531 4.6.2*
- MIL-STD-202G Method 215*

TYPICAL APPLICATIONS

- Cable identification



2:1
SHRINK RATIO

-40°C to 125°C
(-40°F to 257°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:



Halogen free heat shrink identification sleeve

DIMENSIONS

ORDER NUMBER	EXPANDED				RECOVERED				DELIVERY UNITS
	Internal Diameter (min) D		Width (min)		Internal Diameter (max) d		Total Wall Thickness (nom) W		
	MM	IN	MM	IN	MM	IN	MM	IN	Pieces per reel
2.4	2.4	3/32			1.2	3/64	0.51	0.020	2,500
3.2	3.2	1/8			1.6	1/16	0.51	0.020	2,500
4.8	4.8	3/16			2.4	3/32	0.51	0.020	1,000
6.4	6.4	1/4			3.2	1/8	0.64	0.025	1,000
9.5	9.5	3/8			4.8	3/16	0.64	0.025	1,000
12.7	12.7	1/2			6.4	1/4	0.64	0.025	500
19.0	19.0	3/4			9.5	3/8	0.76	0.030	500
25.4	25.4	1			12.7	1/2	0.89	0.035	500
38.1	38.1	1 1/2			19.0	3/4	1.02	0.040	500



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.

*hardware used "XD4" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa



DUAL WALL TUBING

SEALING AND PROTECTING AGAINST MOISTURE AND CORROSION WITH HIGH-PERFORMANCE ADHESIVE LINED HEAT SHRINK TUBING

Adhesive lined heat shrink tubing is most frequently applied on terminals, connectors and splices. It is used to provide an environmental seal to prevent moisture ingress which can affect electrical performance and initiate corrosion.

Dual wall tubing is extruded with an inner layer of adhesive. Upon recovery, the inner layer of adhesive will melt and flow, encapsulating and bonding to the substrate, providing an environmental seal against moisture.

DUAL WALL TUBING	44-63
CCB – Crosslinked polyolefin cable breakout boots	46
CFHR – High shrink ratio crosslinked polyolefin	50
CPA 300 – Thin wall adhesive lined crosslinked polyolefin	52
Crimpseal II – Heat shrink insulated connectors	54
DERAY®-IHKT – Thin wall adhesive lined polyolefin	58
DERAY®-SpliceMelt – Adhesive lined crosslinked polyolefin	60
FCFW – Heavy wall crosslinked polyolefin	62



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

FEATURES AND BENEFITS

- Boots for 2, 3, 4, 5 and 6 way cable breakouts
- Strain relief and mechanical protection
- Resistant to fluids and solvents
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- 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.

STANDARDS

- IEC 62677
- ESI 09-11

TYPICAL APPLICATIONS

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



3:1
SHRINK RATIO

-40°C to 100°C
(-40°F to 212°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:



Crosslinked polyolefin cable breakout boots

CCB2 - TWO CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER				FINGER DIAMETER				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				FINGER DIAMETER				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				FINGER DIAMETER				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	1.772	22.0	0.866	10

CCB5 - FIVE CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER				FINGER DIAMETER				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	1.339	9.0	0.354	20

CCB6 - SIX CORE BREAKOUTS

ORDER NUMBER	BREAKOUT MAIN DIAMETER				FINGER DIAMETER				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

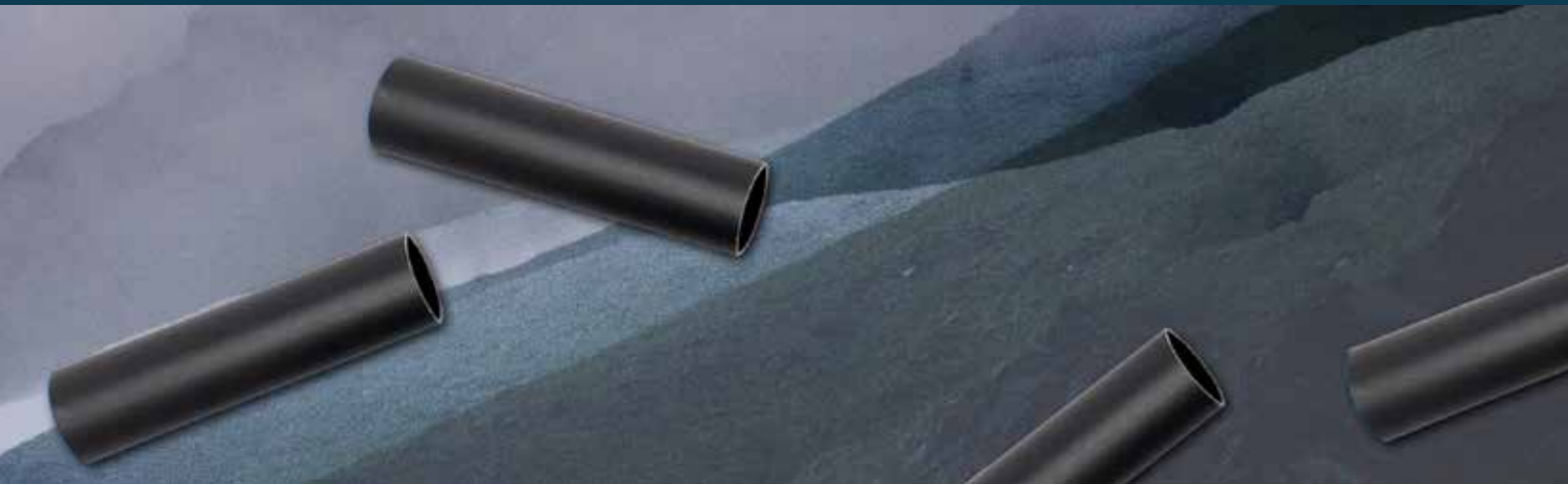


ORDERING

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
 - Printing: Printed or unprinted
 - Color: Black (BK)
- 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.



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

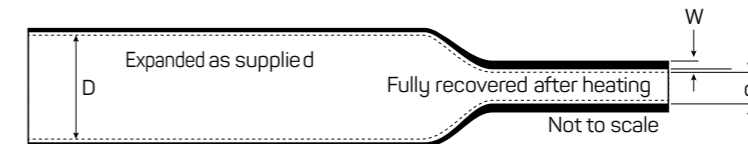
STANDARDS:



High shrink ratio crosslinked polyolefin

DIMENSIONS

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.



Adhesive lined heat shrink tubing ideal for applications where both exceptional flame retardancy and environmental sealing capabilities 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
- 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 to 125°C
(-67°F to 257°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Aerospace, Defense, Mass Transit, Industrial, Automotive

STANDARDS:



Thin wall adhesive lined crosslinked polyolefin

DIMENSIONS

ORDER NUMBER	EXPANDED		RECOVERED				DELIVERY UNITS		
	Internal Diameter (min) D		Internal Diameter (max) d		Total Wall Thickness (nom) W		Meltable Wall Thickness (nom)	Lengths	
	MM	IN	MM	IN	MM	IN	MM	IN	1.22M / 48 IN
0125	3.2	1/8	1.0	0.040	1.0	0.040	0.5	0.020	25
0187	4.7	3/16	1.5	0.060	1.0	0.040	0.5	0.020	25
0250	6.4	1/4	2.0	0.080	1.0	0.040	0.5	0.020	25
0375	9.5	3/8	3.2	0.125	1.5	0.060	0.7	0.027	25
0500	12.7	1/2	4.1	0.160	1.8	0.070	0.8	0.030	25
0750	19.1	3/4	6.4	0.250	1.8	0.070	0.8	0.030	25
1000	25.4	1	8.1	0.320	2.5	0.100	1.0	0.040	25
1250	31.8	1¼	10.6	0.416	2.5	0.100	1.0	0.040	25
1500	39.9	1½	13.0	0.510	2.5	0.100	1.0	0.040	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), white (WT), red (RD)
- Please specify the product name, order number and options you require
- *Example:* CPA 300, 0125, black, 48 in lengths

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



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 to 125°C
- Shrink temperature: 100°C min.

STANDARDS

- UL 746A - 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 to 125°C
(-67°F to 257°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

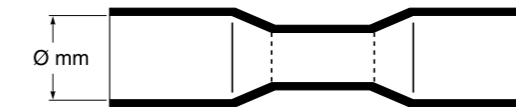
STANDARDS:



Butt connector

DIMENSIONS

COLOUR	WIRE RANGE		STUD SIZE		TUBE DIAMETER	
	AWG	MM ²	IN	MM	EXPANDED MM	RECOVERED MM
Clear	28-22	0.1-0.5	n/a	n/a	3.7	1.0
Red	22-18	0.5-1.5	n/a	n/a	4.3	1.4
Blue	16-14	1.5-2.5	n/a	n/a	5.0	1.8
Yellow	12-10	4-6	n/a	n/a	6.5	2.2



Ring connector

DIMENSIONS

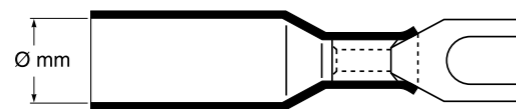
COLOUR	WIRE RANGE		STUD SIZE		TUBE DIAMETER	
	AWG	MM ²	IN	MM	EXPANDED MM	RECOVERED MM
Red	22-18	0.5-1.5	#8	4	4.3	1.4
Red	22-18	0.5-1.5	#10	5	4.3	1.4
Red	22-18	0.5-1.5	1/4	6	4.3	1.4
Red	22-18	0.5-1.5	5/16	8	4.3	1.4
Red	22-18	0.5-1.5	3/8	10	4.3	1.4
Blue	16-14	1.5-2.5	#8	4	5.0	1.8
Blue	16-14	1.5-2.5	#10	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

DIMENSIONS

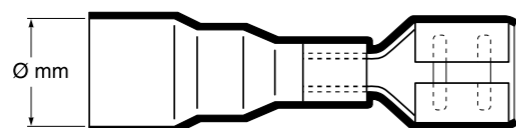
COLOUR	WIRE RANGE		STUD SIZE		TUBE DIAMETER	
	AWG	MM ²	IN	MM	EXPANDED MM	RECOVERED MM
Red	22-18	0.5-1.5	#8	4	4.3	1.4
Red	22-18	0.5-1.5	#10	5	4.3	1.4
Blue	16-14	1.5-2.5	#8	4	5.0	1.8
Blue	16-14	1.5-2.5	#10	5	5.0	1.8
Yellow	12-10	4-6	#8	4	6.5	2.2
Yellow	12-10	4-6	#10	5	6.5	2.2



Push connector

DIMENSIONS

COLOUR	WIRE RANGE		STUD SIZE		TUBE DIAMETER	
	AWG	MM ²	IN	MM	EXPANDED MM	RECOVERED MM
Red	22-18	0.5-1.5	n/a	n/a	4.3	1.4
Blue	16-14	1.5-2.5	n/a	n/a	5.0	1.8
Yellow	12-10	4-6	n/a	n/a	6.5	2.2



Tab connector

DIMENSIONS

COLOUR	WIRE RANGE		STUD SIZE		TUBE DIAMETER	
	AWG	MM ²	IN	MM	EXPANDED MM	RECOVERED MM
Red	22-18	0.5-1.5	n/a	n/a	4.3	1.4
Blue	16-14	1.5-2.5	n/a	n/a	5.0	1.8
Yellow	12-10	4-6	n/a	n/a	6.5	2.2



ORDERING

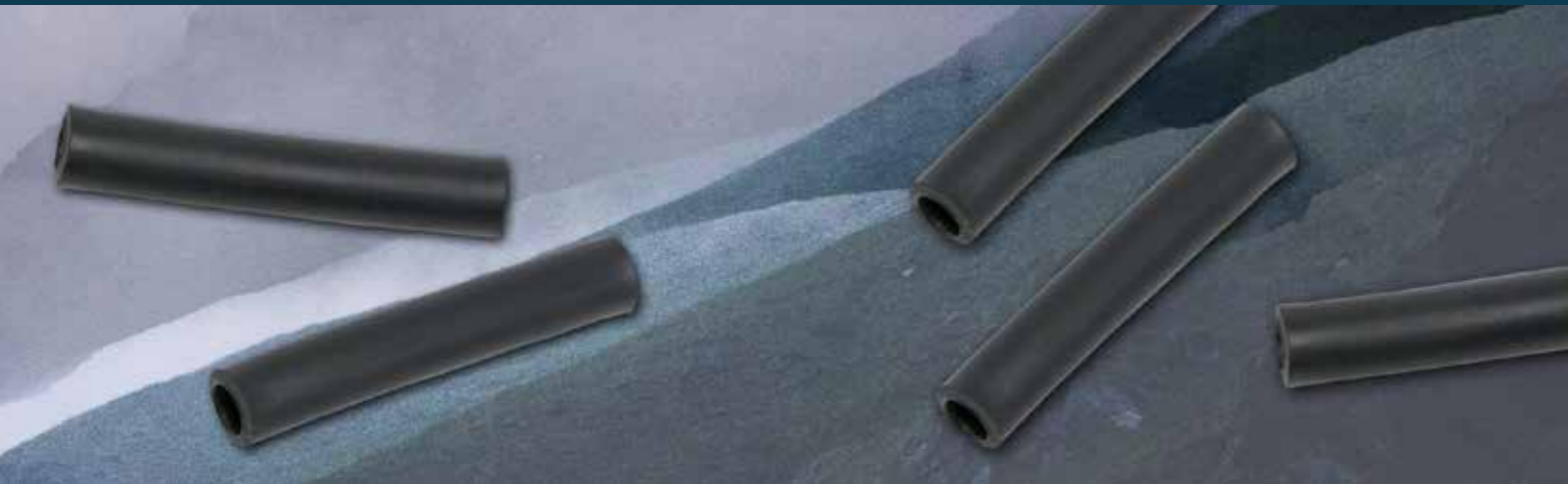
- Determine the wire gauge size that you require
- Select the most appropriate connector for your application
- Please specify the product name, order number and options you require
- Order example: CrimpSeal II, butt connector, 22-18 AWG, red

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.



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.

STANDARDS

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

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:

Industrial, Defense, Automotive

STANDARDS:



Thin wall adhesive lined crosslinked polyolefin

DIMENSIONS

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	1.22m / 48in
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



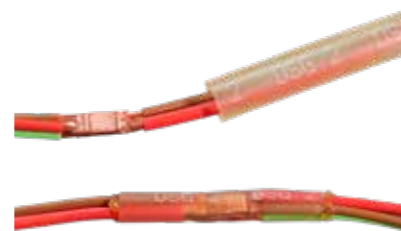
ORDERING

- 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.



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.

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
- Abrasion protection and electrical insulation of automotive wiring harness splices

4:1

SHRINK RATIO

-40°C to 125°C

(-40°F to 257°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Aerospace, Defense, Mass Transit, Automotive, Industrial

STANDARDS:



Adhesive lined crosslinked polyolefin

DIMENSIONS

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	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.



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



FEATURES AND BENEFITS

- Flame retardant
- High impact and abrasion resistance - capable of withstanding severe mechanical abuse of U.R.D., submersible and direct burial installations
- FCFW tubing will not split or rupture during installation, even when overheated
- Optional thermoplastic adhesive liner provides complete environmental protection and insulation
- Rated for 2 kV, 90°C continuous use
- Shrink ratio: 3:1
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C min.

STANDARDS

- UL 486D - UL file # E132914
- UL94 V-0 - UL file # E167396
- CSA C22.2 No. 198.2
- QPL SAE AS23053/15 Class 1
- ANSI C119- 1
- Western Underground Guides No. 2.4 and 2.5
- IEEE 383 Vertical Flame Test
- ANSI C37.20.2
- ICEA S-19-8 and NEMA insulation thickness requirements
- DNV Ttype approval

TYPICAL APPLICATIONS

- Insulation of low voltage cables
- Battery cable protection
- Flame retardant system

3:1
SHRINK RATIO

-55°C to 110°C
(-67°F to 230°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:
Mass Transit, Electrical, Industrial

STANDARDS:

Heavy wall crosslinked polyolefin

DIMENSIONS

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			
	MM	IN	MM	IN	MM	IN	MM	IN	AWG/MCM	Lengths
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 3500 and FCFW 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:
 - 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.



HIGH TEMPERATURE PRODUCTS

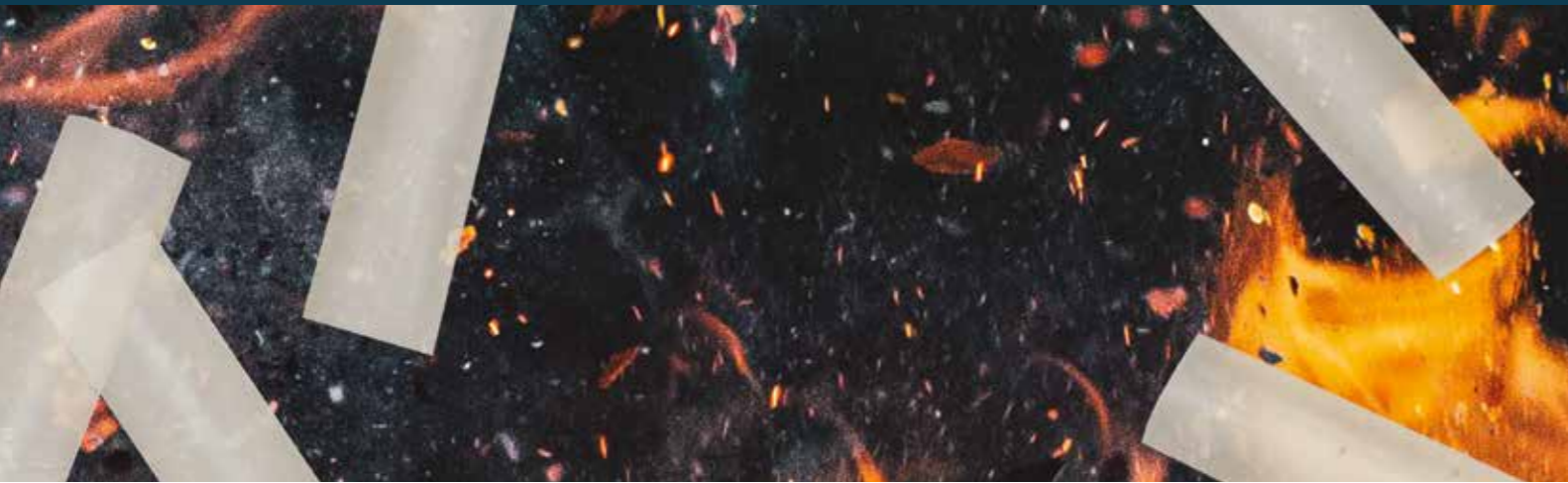
SEALING AND PROTECTING CABLE CONNECTIONS, WIRE HARNESSES, ELECTRONIC SYSTEMS AND BUS BARS WITH HEAT SHRINK TUBING

With the increasing electric content in vehicles, wire and cable sensors are being exposed to higher temperatures in the engine department, emissions systems, commercial vehicle applications and electric vehicles.

Traditionally temperatures in the engine department have been less than 135°C, but now industrial applications are more frequently requiring temperatures above 150°C. Also areas of application such as renewable energies require products that can be exposed to higher temperature ranges.

Our products provide special materials for these demanding applications. These products, made of materials ranging from elastomers to fluoropolymers, offer increased protection against extreme temperatures and harsh operating environments. The temperature range includes 175°C and 190°C-rated PVDF materials and goes up up to 220°C and even 260°C.

HIGH TEMPERATURE PRODUCTS	64-75
DERAY®-KY 175 – Semi-rigid thin wall Kynar®	66
DERAY®-KYF 190 – Flexible thin wall Kynar®	68
DERAY®-PTFE – Modified crosslinked fluoropolymer	70
DERAY®-PTFE AWG – Modified crosslinked fluoropolymer	72
DERAY®-V25 / V25 TW – Crosslinked elastomer	74
DERAY®-VT 220 – Crosslinked Viton®	76
DERAY®-VT 220 TW – Thin wall crosslinked Viton®	78



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



2:1
SHRINK RATIO

-55°C to 175°C
(-67°F to 347°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Industrial, Aerospace, Defense, Mass Transit, Automotive

STANDARDS:



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.

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

TYPICAL APPLICATIONS

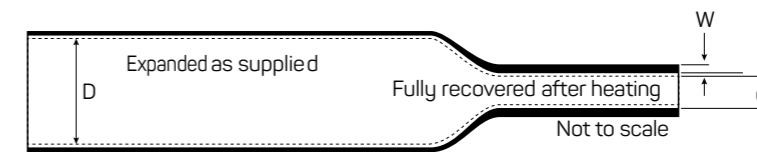
- Strain relief and insulation of high temperature wires
- Excellently suitable for applications where high chemical and abrasion resistance is required
- All areas where outstanding electrical insulation is required

Kynar® is a registered trademark of ATOFINA

Semi-rigid thin wall Kynar®

DIMENSIONS

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	25
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.



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
- Additionally available in RAL2003 orange color
- 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:

Industrial, Defense, Aerospace, Mass Transit, Automotive

STANDARDS:



Flexible thin wall Kynar®

DIMENSIONS

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	1.22M / 48IN
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	-

*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) & orange (OE)
 - Approval: Standard or QPL
- 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.

Kynar® is a registered trademark of ATOFINA



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: -65°C to 260°C
- Shrink temperature: 340°C min.

TYPICAL APPLICATIONS

- 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
- Areas where an extreme low coefficient of friction is required
- Used to cover hydraulic hose and couplings to prevent contamination and corrosion



4:1
SHRINK RATIO

-65°C to 260°C
(-85°F to 500°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Industrial, Aerospace, Defense, Mass Transit, Automotive

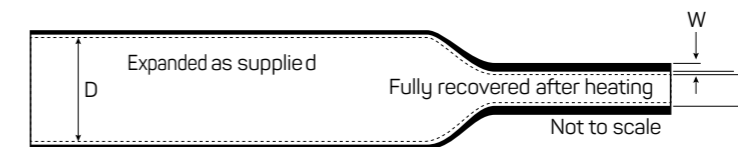
STANDARDS:



Modified crosslinked fluoropolymer

DIMENSIONS

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	1.22M / 48IN
0078	1.98	5/64	0.64	0.025	0.23	0.009	25
0094	2.36	3/32	0.80	0.031	0.25	0.010	25
0125	3.18	1/8	0.94	0.037	0.31	0.012	25
0187	4.76	3/16	1.27	0.050	0.31	0.012	25
0250	6.35	1/4	1.60	0.063	0.31	0.012	10
0375	9.52	3/8	2.44	0.096	0.31	0.012	10
0500	12.70	1/2	3.66	0.144	0.38	0.015	10
0625	15.88	5/8	4.52	0.178	0.38	0.015	10
0750	19.05	3/4	5.69	0.224	0.38	0.015	10
1000	25.40	1	7.06	0.278	0.38	0.015	10
1250	31.75	1 1/4	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.



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: -65°C to 260°C
- Shrink temperature: 340°C min.

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
- Used to cover hydraulic hose and couplings to prevent contamination and corrosion



2:1
SHRINK RATIO

-65°C to 260°C
(-85°F to 500°F)
CONTINUOUS OPERATING TEMPERATURE

MARKETS:

Industrial, Aerospace, Defense, Mass Transit, Automotive

STANDARDS:



Modified crosslinked fluoropolymer

DIMENSIONS

ORDER NUMBER	EXPANDED		RECOVERED		DELIVERY UNITS
	Internal Diameter (min) D		Internal Diameter (max) d	Total Wall Thickness (nom) W	Lengths
	AWG	MM	MM	MM	1.22M / 48IN
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.



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.

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

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

2:1
SHRINK RATIO

-75°C to 150°C
(-103°F to 302°F)

CONTINUOUS OPERATING TEMPERATURE

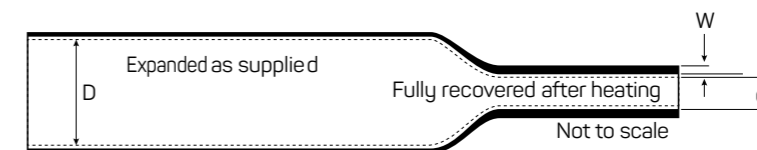
MARKETS:
Industrial, Aerospace Defense, Mass Transit, Utility, Renewables/ Wind, Automotive

STANDARDS:

Modified crosslinked elastomer

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	V25		V25 TW		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	0.033	30	98
1000	25.4	1	12.7	0.500	1.90	0.075	0.95	0.037	30	98
1250	31.8	1 1/4	15.9	0.626	-	-	1.05	0.041	30	98
1500	38.0	1 1/2	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	1.05	0.041	-	-
3000	76.0	3	38.0	1.496	3.00	0.118	1.05	0.041	-	-



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.



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

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

2:1
SHRINK RATIO

-55°C to 220°C
(-67°F to 428°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:



Crosslinked Viton®

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
0125	3.20	1/8	1.60	0.063	0.80	0.031	50	164
0187	4.80	3/16	2.40	0.094	0.90	0.035	50	164
0250	6.40	1/4	3.20	0.126	0.90	0.035	50	164
0375	9.50	3/8	4.80	0.189	1.00	0.039	50	164
0500	12.70	1/2	6.40	0.252	1.20	0.047	30	98
0750	19.00	3/4	9.50	0.374	1.40	0.055	30	98
1000	25.40	1	12.70	0.500	1.80	0.071	30	98
1500	38.00	1 1/2	19.00	0.748	2.40	0.094	15	49
2000	50.80	2	25.40	1.000	2.80	0.110	15	49
3000	76.00	3	38.00	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.



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



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.

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
- 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 to 220°C
(-67°F to 392°F)

CONTINUOUS OPERATING TEMPERATURE

MARKETS:

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

STANDARDS:

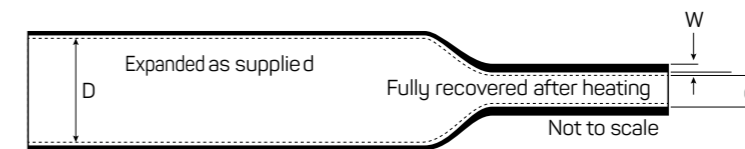


Thin wall crosslinked Viton®

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
0125	3.2	1/8	1.6	0.063	0.80	0.031	50	164
0187	4.7	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	4.7	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	19.1	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	1 1/4	15.9	0.626	1.40	0.055	30	98
1500	38.1	1 1/2	19.1	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.



APPLICATION EQUIPMENT PRODUCTS

ENGINEERING AND BUILDING HIGH-PERFORMANCE HEAT SHRINK APPLIANCES IN-HOUSE FOR STANDARD MACHINES AS WELL AS UNIQUE APPLICATIONS

In addition to the standard heat shrink tubing product line, we provide a full range of technically advanced shrink appliances. Years of experience in processing heat shrink materials have resulted in the creation of a variety of processing devices, from a simple heat gun to high-performance shrink equipment. Beyond the numerous standard machines, our Machine Technology Center (MTC) designs and constructs custom machines for unique applications.



DERAY®-SPLICEMAN IR

DESCRIPTION

DERAY®-SpliceMan IR is a heat shrink system with infrared heating elements designed to process adhesive lined heat shrink tubes onto ultrasonically welded- and crimped splice joints.

FEATURES AND BENEFITS

- Up to 125 data sets storable
- Automatic communication with ultrasonic welding machine ensures process safety



DERAY®-FST 950 2.0

DESCRIPTION

The DERAY®-FST 950 2.0 is a belt driven shrink tunnel with infrared heating elements designed to process a wide variety of heat shrink tubes for safe high volume production.

FEATURES AND BENEFITS

- Fully automatic calibration
- Automatic error detection
- Extended cooling zone to control adhesive flow



DERAY®-BOARD-WORKMAN TP ADE

DESCRIPTION

DERAY®-Board-Workman TP ADE is a mobile shrink equipment with outer diameter detector (ADE) which is used on the harness board with a balancer. It is designed to process adhesive lined heat shrink tubes onto end splices on stationary and mobile cable boards.

FEATURES AND BENEFITS

- Automatic outside diameter detection of wires and allocation of shrink parameters



DERAY®-WORKMAN TP

DESCRIPTION

The DERAY®-WorkMan TP is a hot air shrink equipment designed to process heat shrink tubes onto a wide variety of applications. The universal machine can be used for both pre-assembly and wire harness series production purposes.

FEATURES AND BENEFITS

- Up to 125 data sets storable
- Quick-change system of shrink chambers for minimal process interruption



DERAY®-LEAKAGE TESTER

DESCRIPTION

The DERAY®-Leakage Tester is a testing device designed for the leaking test of wire applications assembled with heat shrink tubes. Using compressed air and four test chambers it can leakage test up to 20 cables at once.

FEATURES AND BENEFITS

- The testable wire cross sections are 0.13 mm² - 10 mm²
- Automatic self-testing based on predefined parameters for leakage and pressure-sensor tests



DERAY®-SHUTTLE 240 / 60

DESCRIPTION

The DERAY®-Shuttle 240 / 60 is a heat shrink system with infrared heating elements to process heat shrink tubes onto terminals and end splices.

FEATURES AND BENEFITS

- Up to 20 applications per cycle
- Two customized frames for optimized working process
- Processable cable cross section of up to 85 mm²



DERAY®-TSD COMPACT

DESCRIPTION

The DERAY®-TSD Compact is a space-saving terminal sealing device with infrared heating elements designed to process heat shrink tubes onto terminals and splices. The shrink device has an exchangeable frame and processes up to 20 terminals per cycle.

FEATURES AND BENEFITS

- 3 heating zones for consistent heat distribution
- PLC-Controlled sequential movement of heating chambers



For more information on our DSG-Canusa Shrink Appliances, please ask your Sales Representative for a copy of our Application Equipment Catalog.

PRODUCT SELECTION CHART

INSULATION & MARKING

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	SHRINK TEMP.	OPERATING TEMPERATURE		FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MIN	MAX				
CNP 200	2:1	Very flexible, chlorinated polyolefin	135 °C	-70 °C	120 °C	ASTM D2671	MIL-R-46846 Type 1, QPL SAE AS23053/1, Class 1 and 2	3.18 - 76.2	18-19
CPX 876	2:1	High performance, flexible polyolefin	85 °C	-55 °C	135 °C	UL 224 VW-1, CSA OFT	UL 224 125C VW-1 - UL file # E107857, CSA 22.2 No 198.1 125C OFT and Class 1 - CSA file # 265111	1.2 - 51.0	20-21
DERAY®-HB	2:1	Economical, general purpose, halogen free, flexible polyolefin	110 °C	-55 °C	125 °C	FMVSS 302	-	1.6 - 51.0	22-23
DERAY®-HDP	>2:1	Halogen free, high density heat shrink tubing	120 °C	-40 °C	135 °C	FMVSS 302	VW 60360-3, GS 95003-3-3	15.0 - 20.0	24-25
DERAY®-I	2:1	Multipurpose tubing, flexible polyolefin	90 °C	-55 °C	135 °C	Colors: UL 224 ATF, CSA, clear: FMVSS 302	VG95343 Part 5 Type A/B, QPL SAE AS 23053/5 Class 1+2, DEF STAN 59-97 Type 2b, BS G198 Part 3 Type 11B, UL 224 125C ATF - UL file # E107857, CSA 22.2 No 198.1 125C - CSA file # 066150_0_000, CNES approved and listed in Matrex database, ECSS-Q-ST-70-02	0.8 - 101.6	26-27
DERAY®-I 3000	3:1	High shrink ratio, flexible polyolefin	90 °C	-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 224 125C ATF - UL file # E107857, CNES approved and listed in Matrex database, ECSS-Q-ST-70-02	1.6 - 39.0	28-29
DERAY®-IGY	3:1	Striped green & yellow, high shrink ratio, flexible polyolefin	90 °C	-55 °C	135 °C	UL 224 ATF	DEF STAN 59-97 Type 2b, BS G198 Part 3 Type 11B	3.2 - 39.0	30-31
DERAY®-LSB	2:1	Very low shrink temperature, flexible polyolefin	70 °C	-45 °C	125 °C	FMVSS 302	-	3.2 - 25.4	32-33
DERAY®-MC 225	3:1	High resistance to impact and abrasion	120 °C	-40 °C	135 °C	FMVSS 302	VG 95343 Part 5 Type G, GMW 17136, GS 95008-3-3	12.0 - 95.0	34-35

LOW SMOKE

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	SHRINK TEMP.	OPERATING TEMPERATURE		FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MIN	MAX				
DERAY®-ZHF125	2:1	Flattened, halogen free, flame retardant, low smoke generation polyolefin	120 °C	-40°C	125°C	EN45545-2 HL3 R22/R23	EN45545-2 HL3 R22/R23, LUL E 1042 A, BS 6853 vehicle category 1a, DIN 5510, EN 50343*, SAE AS81531 4.6.2*, MIL-STD-202G Method 215*	2.4 - 38.1	38-39
DERAY®-ZoH125	2:1	Halogen free, flame retardant, low smoke generation polyolefin	120 °C	-40°C	125°C	EN45545-2 HL3 R22/R23	EN45545-2 HL3 R22 & R23, LUL E 1042 A6, BS 6853 vehicle category 1a, DIN 5510	2.4 - 38.1	40-41
DMS NH	2:1	Flattened, halogen free, flame retardant, low smoke generation polyolefin in ladder style	120 °C	-40°C	125°C	EN45545-2 HL3 R22/R23	EN45545-2 HL3 R22/R23, LUL E 1042 A, BS 6853 vehicle category 1a, DIN 5510, EN 50343*, SAE AS81531 4.6.2*, MIL-STD-202G Method 215*	2.4 - 38.1	42-43

* hardware used "XD4" printer from CAB and "RBZ11DR" ribbon from DSG-Canusa

DUAL WALL TUBING

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	SHRINK TEMP.	OPERATING TEMPERATURE		FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MIN	MAX				
CCB	3:1	Heat shrinkable boot for 2, 3, 4, 5, 6-way cable breakouts	125 °C	-40°C	100°C	FMVSS 302	IEC 62677, ESI 09-11	33.0 - 140.0	46-48
CFHR	6:1	Flexible polyolefin, flame retardant, very high shrink ration, optionally adhesive lined	120 °C	-55 °C	110 °C	ASTM-D2671	IEC 60684-3-247, UL-94-V-0 - UL file# E132914	19.0 - 119.4	50-51
CPA 300	3:1	High spec. flexible polyolefin, adhesive lined	120 °C	-55 °C	125 °C	Colors: UL 224 ATF, CSA OFT	UL 224 125C - UL file # E63390, CSA C22.2 No.198.1 125°C	3.2 - 39.9	52-53
DERAY®-Crimpseal II	3:1	Halogen free, crystal clear and adhesive lined tubing with integral solderless splice connector	100 °C	-55 °C	125 °C	FMVSS 302	UL 746A - UL file# E470828	3.7 - 6.5	54-57
DERAY®-IHKT	4:1	Adhesive lined, superior sealing against water and moisture, high shrink ratio	100 °C	-55 °C	125 °C	ASTM-D876	VG 95343 Part 12 Type D	4.0 - 52.0	58-59
DERAY®-SpliceMelt	4:1	Adhesive lined, moisture-resistant, splice sealing	125 °C	-40 °C	125 °C	Colors: ASTM-D876, clear: FMVSS 302	-	6.0 - 18.0	60-43
FCFW	3:1	Heavy wall polyolefin, flame retardant, optionally adhesive lined	120 °C	-55 °C	110 °C	UL94 V-0	IEEE 383, ANSI C119-1, Western Underground Guides No. 2.4 and 2.5, ANSI C37202, ICEA S-19-8 and NEMA insulation thickness requirements, IEC60684-3-247, UL 486D - UL File # E132914, UL94 V-0 - UL file # E167396, CSA C 22.2 No. 198.2, QPL SAE AS23053/15 Class 1	8.9 - 119.9	62-63

HIGH TEMPERATURE PRODUCTS

PRODUCT NAME	SHRINK RATIO	DESCRIPTION	SHRINK TEMP.			OPERATING TEMPERATURE	FLAME RATING	STANDARDS	SIZES	PAGES
			MIN	MIN	MAX					
DERAY®-KY 175	2:1	Semi-rigid thin wall Kynar® heat shrink tubing, excellent chemical/solvent resistance	175 °C	-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 224 125C VW-1 - UL file # E107857, CSA 22.2 OFT - CSA file # 066150_0_000, CNES approved and listed in Matrex database, ECSS-Q-ST-70-02	1.2 - 25.4	66-67
DERAY®-KYF 190	2:1	High temperature, flexible thin wall Kynar® heat shrink tubing, extreme chemical/solvent resistance	175 °C	-55 °C	190 °C		UL 224 VW-1	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	1.2 - 15.0	68-69
DERAY®-PTFE	4:1	High temperature heat shrink tubing, chemically inert, high shrink ratio	340 °C	-65 °C	260 °C		UL 224 VW-1	CNES approved and listed in Matrex database, ECSS-Q-ST-70-02	1.98 - 31.75	70-71
DERAY®-PTFE AWG	2:1	High temperature heat shrink tubing, chemically inert, AWG sizes	340 °C	-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	150 °C	-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, CNES approved and listed in Matrex database	2.4 - 76.0	74-75
DERAY®-VT 220	2:1	High temperature fluoroelastomer, abrasion resistant, withstand to corrosive fluids in extreme temperature	160 °C	-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, CNES approved and listed in Matrex database, ECSS-Q-ST-70-02	3.2 - 76.0	76-77
DERAY®-VT 220 TW	2:1	Highly abrasion resistant, very flexible	160 °C	-55 °C	220 °C		UL 224 VW-1	QPL SAE AS23053/13	3.2 - 38.1	78-79

Visit our Website for more information about Shawcor's Connections Systems Group including DSG-Canusa and ShawFlex:

www.shawcor.com/connections-systems

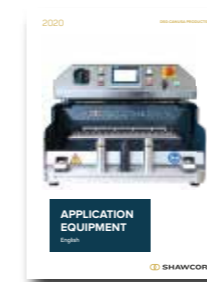
PRODUCT INDEX

PRODUCT	PAGE
CCB.....	46
CFHR.....	50
CNP 200.....	18
CPA 300.....	52
CPX 876.....	20
Crimpseal II.....	54
DERAY®-HB.....	22
DERAY®-HDP.....	24
DERAY®-I.....	26
DERAY®-I 3000.....	28
DERAY®-IGY.....	30
DERAY®-IHKT.....	58
DERAY®-KY 175.....	66
DERAY®-KYF 190.....	68
DERAY®-LSB.....	32
DERAY®-MC 225.....	34
DERAY®-PTFE.....	70
DERAY®-PTFE AWG.....	72
DERAY®-SpliceMelt.....	60
DERAY®-V25 / V25 TW.....	74
DERAY®-VT 220.....	76
DERAY®-VT 220 TW.....	78
DERAY®-ZHF125.....	38
DERAY®-ZoH125.....	40
DMS NH.....	42
FCFW.....	62

OUR CATALOGS

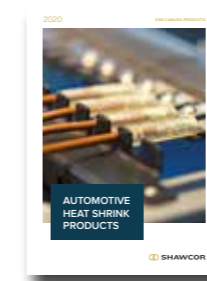
CATALOGS FOR YOUR INDIVIDUAL CHALLENGES AND REQUIREMENTS

In order to respond to the respective industry requirements and applications and to give you a better overview, we offer the following catalogs.



APPLICATION EQUIPMENT CATALOG

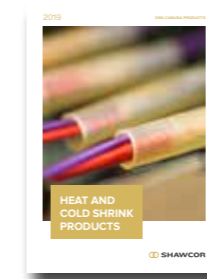
As a manufacturer of heat shrink tubes, we also supply the tools and application equipment to reliably apply our products in your factory or at your work site. This catalog showcases our hot air based equipment, our infrared technologies and our test equipment.



AUTOMOTIVE CATALOG

In the Automotive Catalog, we showcase solutions that insulate, seal and protect electronic components, wire, terminals, hoses and pipes, cables and splices.

The catalog includes heat shrink tubes, adhesive lined or single-wall, water blocking systems, protective sleeves and caps, and application equipment to automate the shrink process.



STANDARD CATALOG

The Standard Catalog represents our growing portfolio of heat shrink products that include thin-, medium- and heavy wall products made of polyolefin, fluoropolymer and elastomer with or without adhesive.

Your Customer Service Representative or your Sales Representative will be happy to send you the respective catalog, in printed or digital version.

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

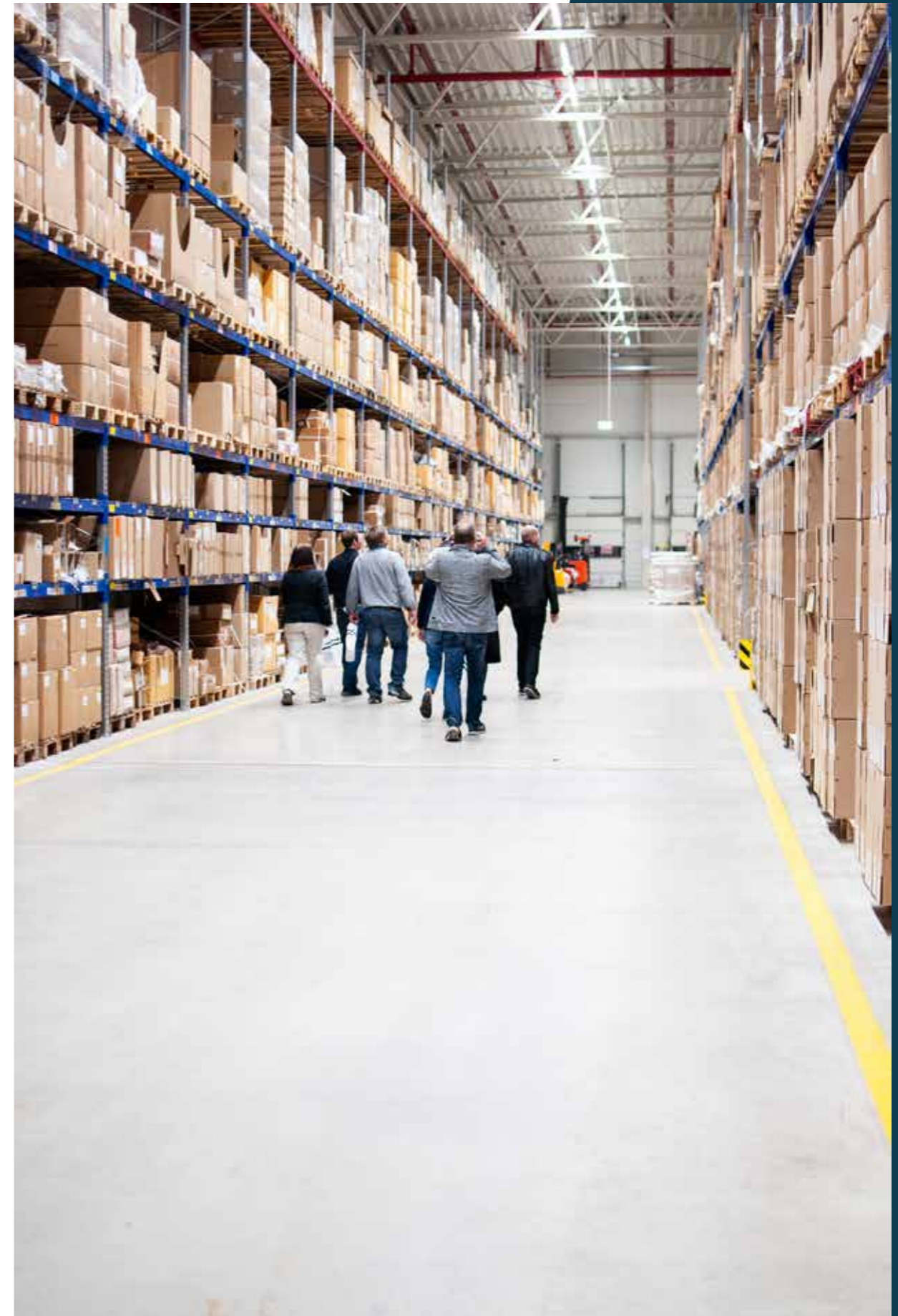
Example: **DERAY®-H, 0250 or 1/4", black, 300 m**

The catalog shows a selection of our product portfolio and does not reflect our full product range. If you cannot find the right product for your application or requirements, please contact us.

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

We advise that customers should separately evaluate the suitability of our products for their particular application. Our responsibilities are only those listed in our Standard Terms and Conditions of Sale for these products. Please ask for the latest version of this catalog. Subject to modification without prior notice.

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