

The logo for ENMC, consisting of the letters 'ENMC' in a bold, white, sans-serif font. The 'E' and 'M' are connected, and the 'C' is a simple circle. The background is a blurred industrial scene with a large yellow wheel in the foreground and various mechanical parts in the background.

ENMC

expertise meets cable

CATALOG 2026

**CABLE MANAGEMENT &
CABLE PROTECTION –
SOLUTIONS FOR INDUSTRY &
VEHICLE MANUFACTURING**

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WHY EMC – WHAT SETS US APART

At EMC, we combine the flexibility of a family-owned medium-sized enterprise with the professionalism of a certified industrial partner.

Our greatest strength is our people – they listen, act quickly, and find practical, tailor-made solutions. Many of our customers particularly appreciate the direct contact with their personal account managers – this closeness makes the difference.

Our promise:
To support our customers quickly, reliably, and precisely – with standard products or bespoke developments together with our long-term partners. This is how we create value and ensure smooth processes every day.



COMPREHENSIVE PRODUCT RANGE & STRONG DELIVERY PERFORMANCE

Deep and complete assortments in our core categories – available from stock in all key sizes and variants.



SPEED & RELIABILITY

Short response times, fast order handling, and dependable delivery dates are standard for us.



PERSONAL SUPPORT

Direct access to dedicated contacts who listen, understand, and solve problems pragmatically.



TECHNICAL EXPERTISE & CONSULTING

Our specialists know the applications and develop the right solution – including custom parts made to order.



QUALITY & TRUST

ISO-certified for over 15 years, working only with audited and certified suppliers worldwide.



FAIR PRICING & ECONOMIC VALUE

Transparent prices, clear terms, and fair volume conditions – always focused on customer benefit.



FOR US, PEOPLE COUNT – IN THE TEAM AND WITH OUR CUSTOMERS.

Our greatest strength is the people at EMC. They advise, listen, react quickly and find pragmatic solutions. Many customers particularly value personal contact with dedicated contacts – and it is precisely this proximity that makes the difference in our collaboration.



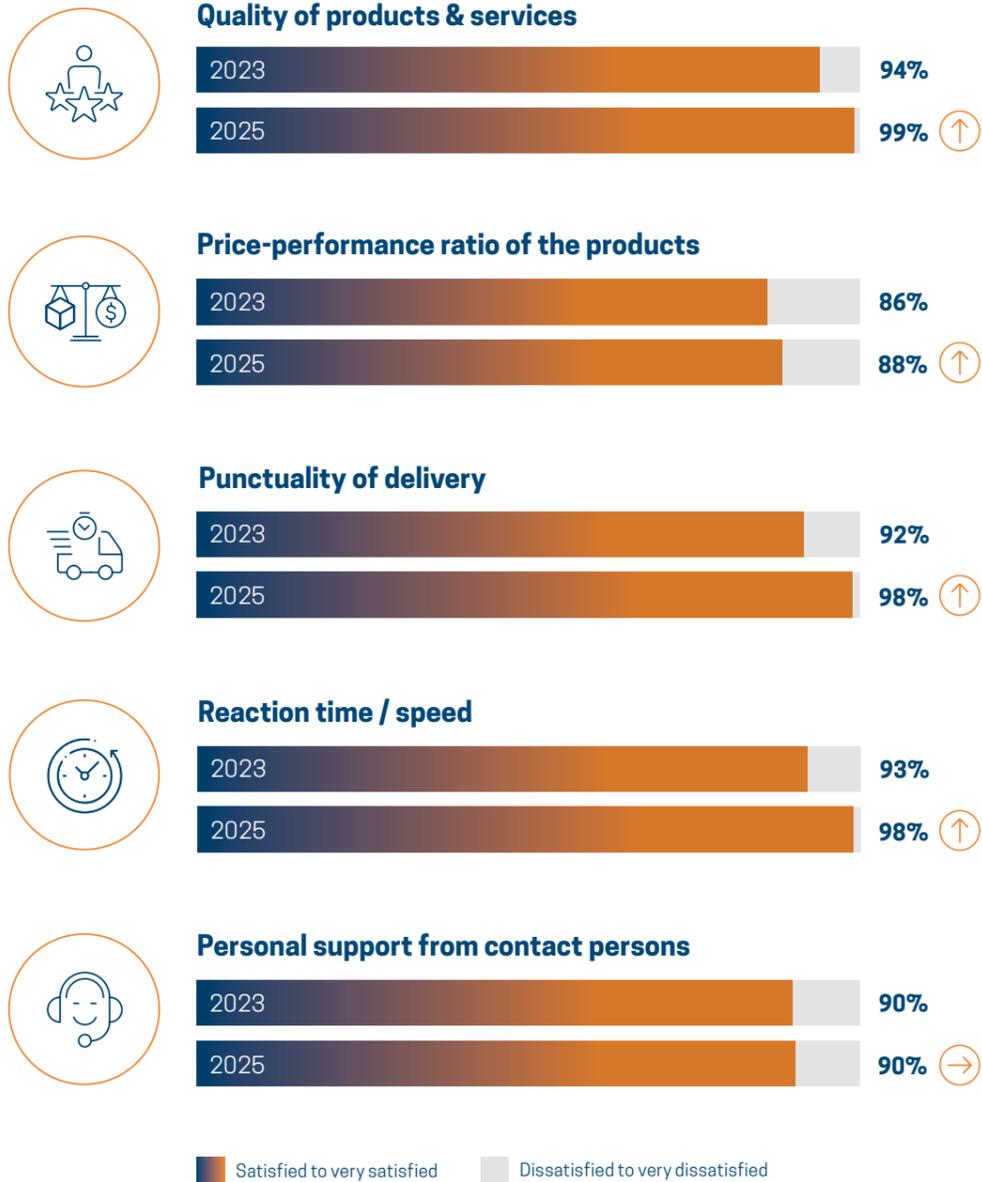
CUSTOMER SATISFACTION 2025

GOOD IS NOT GOOD ENOUGH

Our customers define our success. That's why we regularly conduct detailed satisfaction surveys – most recently in summer 2025 with 142 participants. The results speak for themselves: **an overwhelming majority of our customers are very satisfied with EMC's performance and would actively recommend us.**

 On average, participants took 6:15 minutes to give us honest feedback – invaluable to us.

 The measured Net Promoter Score (NPS) of 69 confirms that EMC is among the preferred partners for cable management, cable protection, and connection technology.



VOICES OF OUR CUSTOMERS

“Excellent and professional support, outstanding value for money, profound tool expertise, and friendly service.”

Hendrikus Salemink, 4e gruenstromen GmbH

“EMC values its customers and provides friendly, reliable service.”

Jenny Lange, Wilke Fahrzeugbau GmbH

“Reliable partner, straightforward order processing, and excellent customer care.”

Jochen Olbort, Sobek Motorsporttechnik GmbH & Co. KG

“Very friendly and responsive contact – quick replies to all inquiries.”

Oliver Köll, Krause Special Machines GmbH

...and many more voices confirm our commitment: high product quality, fast delivery, fair pricing, and genuine appreciation for every customer.



Sustainability means responsibility:
For us, it means acting responsibly – with durable products, fair partnerships, and active commitment to people and the environment.

AS A COMPANY

We continuously work to reduce emissions and contribute to a functioning circular economy. Since 2010, our photovoltaic system has supported our energy supply – we rely on renewable power for a sustainable future. We collaborate only with suppliers who meet high environmental standards.

PRODUCTS & SERVICES

Our product portfolio supports the expansion of renewable energy and includes an increasing share of recyclable and bio-based materials. Developing sustainable material alternatives is one of our key future priorities.



RESPONSIBLE CORPORATE MANAGEMENT

As a participant in the UN Global Compact, we are part of an international network committed to ethical, sustainable business practices and transparency across the entire supply chain. Values such as trust, integrity, and long-term reliability guide how we work – with customers, suppliers, and one another.



SOCIAL ENGAGEMENT

We are committed to social causes, especially supporting children and young people from disadvantaged backgrounds. For many years, EMC has actively supported regional foundations and initiatives that improve access to education, leisure, and opportunity.



EMPLOYEE DEVELOPMENT

Balancing family and career is part of our social responsibility. We promote flexible work models and offer continuous professional and personal development – fostering a culture of trust and partnership.



OUR CORE PRODUCT RANGES & SERVICES

DEEP, DELIVERABLE ASSORTMENTS

In our core product groups – cable ties, fastening clips, corrugated conduits, textile sleeves, shrink tubing, connection technology, and tools – we offer an industrial-grade range with high stock availability. This saves search time, accelerates your processes, and makes procurement predictable.



CABLE TIES



FASTENING CLIPS



SHRINK TUBING



CORRUGATED PIPE



TEXTILE HOSE



PROTECTIVE HOSE



CONNECTION TECHNOLOGY



TOOL



INSULATING, ADHESIVE & SEALING TAPES



WE ARE HAPPY TO ADVISE YOU ON OUR PRODUCTS +49 (0)2369 - 98469-15
The telephone consultation is free of charge and, of course, non-binding.



MORE THAN PRODUCTS – EMC SERVICES

We support industry and vehicle manufacturing with services that simplify procurement, ensure quality, and accelerate processes.



PERSONAL SUPPORT

Dedicated contact, fast, reliable, solution-oriented.



CERTIFICATION & COMPLIANCE

ISO 9001 >15 years, IATF-certified suppliers, UL/DNV/MIL product approvals, IMDS & origin certificates.



PLANNING & DELIVERY RELIABILITY

98 % on-time delivery, call-off orders, and stable long-term pricing.



TECHNICAL COMPETENCE

Application support, testing samples, and on-site consulting.



QUALITY & TRUST

Audited, certified suppliers and hand-selected partners worldwide.



PACKAGING & LOGISTICS SOLUTIONS

custom quantities, labels, and packaging formats tailored to your needs.



OUR HIGHLIGHTS

FIRE-PROTECTION CORRUGATED CONDUITS

Designed for commercial-vehicle and machinery applications, offering outstanding fire resistance and heat stability. Available slitted, unslitted, or two-piece sealable. Benefit from fixed prices for up to 18 months and precise call-off deliveries as required.



Designed for long-term use



Excellent fire and heat resistance



Good dynamic properties



CABLE TIES

The high-performance cable tie for demanding and safety-critical applications – inspired by nature, as strong as a raptor’s claw. Its innovative four-tooth head design provides up to 70 % more tensile strength and stability, ideal for vibration-intense environments and temporary use at temperatures up to +110 °C. Also available as a 15-year UV-stable variant for long-term outdoor exposure.



Innovative 4-tooth head design



Operating temperature up to +110°C



70% more traction and stability



TOOL PROGRAM

We proudly present our partner TOOLOVA® – a specialist manufacturer of premium hand tools for electrical engineering. Once you pick up a TOOLOVA® tool, you’ll never want to use another. Discover the *Crimptool TF Plus* – the best interchangeable-die crimping tool with quick-lock mechanism on the market, also available as a dedicated vehicle-construction set with four dies and holder.



Price-performance winner



Unmistakable design



Zero-risk guarantee



CABLE TIES

As a major importer, we work with a network of hand-picked suppliers worldwide and can offer you almost every common cable tie at attractive prices. We produce special products, including mold construction, through our own manufacturing partner in Germany. With the popular HPER® series you can purchase cable ties in market-leading quality from us, which is characterized by longevity and an excellent price-performance ratio.

CABLE TIES PA 6.6



- » High-quality cable tie for industrial and automotive applications
- » UV-stabilized for indoor and outdoor use (in black)
- » Quick assembly by hand or tools



BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	24	80	100 pieces	22002
	140	35	80	100 pieces	22004
	200	55	80	100 pieces	22006
3.6	140	36	180	100 pieces	22008
	200	52.5	180	100 pieces	22010
	250	70	180	100 pieces	22012
	290	82	180	100 pieces	22014
	360	103	180	100 pieces	22016
4.8	200	49.5	220	100 pieces	22021
	290	82	220	100 pieces	22025
	360	100	220	100 pieces	22027
	385	110	220	100 pieces	22046
	430	122.5	220	100 pieces	22031
7.8	180	50.9	530	100 pieces	22033
	280	82.8	530	100 pieces	22035
	360	103	530	100 pieces	22037
	385	110	530	100 pieces	22041
	450	130.5	530	100 pieces	22039
	540	159	530	100 pieces	22043
	750	226	530	100 pieces	22045
9	550	163.5	800	100 pieces	22049
	780	235	800	100 pieces	22050
	920	280	800	100 pieces	22053
12.5	1220	375	800	100 pieces	22054
	500	140	1150	100 pieces	22061
	720	216	1150	100 pieces	22063
	1000	315	1150	100 pieces	22065

Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)
- Installation temperature -10 °C to +60 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	24	80	100 pieces	22001
	140	35	80	100 pieces	22003
	200	55	80	100 pieces	22005
3.6	140	36	180	100 pieces	22007
	200	52.5	180	100 pieces	22009
	250	70	180	100 pieces	22011
	290	82	180	100 pieces	22013
	360	103	180	100 pieces	22015
4.8	200	49.5	220	100 pieces	22020
	290	82	220	100 pieces	22024
	360	100	220	100 pieces	22026
	385	110	220	100 pieces	22047
	390	111	220	100 pieces	22029
7.8	430	122.5	220	100 pieces	22030
	180	50.9	530	100 pieces	22032
	280	82.8	530	100 pieces	22034
	360	103	530	100 pieces	22036
	385	110	530	100 pieces	22040
	450	130.5	530	100 pieces	22038
	540	159	530	100 pieces	22042
9	750	226	530	100 pieces	22044
	550	163.5	800	100 pieces	22048
	780	235	800	100 pieces	22051
12.5	920	280	800	100 pieces	22052
	1220	375	800	100 pieces	22055
	500	140	1150	100 pieces	22060
	720	216	1150	100 pieces	22062
	1000	315	1150	100 pieces	22064

CABLE TIES PA 6.6 COLORED



Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Color	Contents	Item No.
2.5	100	22	80	blue	100 pieces	22072
				green	100 pieces	22073
				red	100 pieces	22074
				yellow	100 pieces	22075
3.6	140	36	180	blue	100 pieces	22076
				green	100 pieces	22077
				red	100 pieces	22078
				yellow	100 pieces	22079
3.6	200	52	180	blue	100 pieces	22110
				red	100 pieces	22111
				green	100 pieces	22112
				yellow	100 pieces	22113
				orange	100 pieces	22114
				brown	100 pieces	22115
4.8	200	55	220	blue	100 pieces	22081
				green	100 pieces	22082
				red	100 pieces	22083
				yellow	100 pieces	22084
				orange	100 pieces	22092
				blue	100 pieces	22086
4.8	290	82	220	green	100 pieces	22087
				red	100 pieces	22088
				yellow	100 pieces	22089
				brown	100 pieces	22116
				orange	100 pieces	22117

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Color	Contents	Item No.
4.8	360	103	220	red	100 pieces	22094
				blue	100 pieces	22095
				green	100 pieces	22096
				yellow	100 pieces	22097
				orange	100 pieces	22098
				brown	100 pieces	22118
7.6	360	103	530	blue	100 pieces	22120
				red	100 pieces	22121
				green	100 pieces	22122
				yellow	100 pieces	22123
				orange	100 pieces	22124
				brown	100 pieces	22125
7.6	540	160	530	blue	100 pieces	22130
				red	100 pieces	22131
				green	100 pieces	22132
				yellow	100 pieces	22133
				orange	100 pieces	22134
				brown	100 pieces	22135
9	550	163	800	blue	100 pieces	22140
				red	100 pieces	22141
				green	100 pieces	22142
				yellow	100 pieces	22143
				orange	100 pieces	22144
				brown	100 pieces	22145

HPER® CABLE TIES PA 6.6



- » High-performance cable ties with particularly high tensile strength
- » UV-stabilized for indoor and outdoor use (in black)
- » Vibration-resistant and durable under high loads over the long term
- » Depending on the design, 50-70% higher tensile strength than standard specifications.



BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	24	80	100 pieces	22002-H
	140	33	80	100 pieces	22004-H
	200	52	80	100 pieces	22006-H
3.5	140	36	180	100 pieces	22008-H
	200	85	180	100 pieces	22010-H
	290	82	180	100 pieces	22014-H
4.6	200	54	220	100 pieces	22021-H
	290	82	220	100 pieces	22025-H
	360	106	220	100 pieces	22027-H
	430	125	220	100 pieces	22031-H
7.8	180	54	530	100 pieces	22033-H
	280	77	530	100 pieces	22035-H
	360	101	530	100 pieces	22037-H
	450	130	530	100 pieces	22039-H
	540	160	530	100 pieces	22043-H
	750	222	530	100 pieces	22045-H
9	550	160	800	100 pieces	22049-H
	780	226	800	100 pieces	22050-H
	920	280	800	100 pieces	22053-H
	1220	375	800	100 pieces	22054-H
12.5	500	150	1150	100 pieces	22061-H
	720	216	1150	100 pieces	22063-H
	1000	300	1150	100 pieces	22065-H



Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly +110 °C)
- Installation temperature approx. -10 °C to +60 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	24	80	100 pieces	22001-H
	140	33	80	100 pieces	22003-H
	200	52	80	100 pieces	22005-H
3.5	140	34	180	100 pieces	22007-H
	200	52	180	100 pieces	22009-H
	290	82	180	100 pieces	22013-H
4.6	200	54	220	100 pieces	22020-H
	290	82	220	100 pieces	22024-H
	360	106	220	100 pieces	22026-H
	390	110	220	100 pieces	22029-H
	430	125	220	100 pieces	22030-H
	180	54	530	100 pieces	22032-H
7.8	280	77	530	100 pieces	22034-H
	360	101	530	100 pieces	22036-H
	450	130	530	100 pieces	22038-H
	540	160	530	100 pieces	22042-H
	750	222	530	100 pieces	22044-H
	550	160	800	100 pieces	22048-H
9	780	226	800	100 pieces	22051-H
	920	280	800	100 pieces	22052-H
	1220	375	800	100 pieces	22055-H
	500	150	1150	100 pieces	22060-H
12.5	720	216	1150	100 pieces	22062-H
	1000	300	1150	100 pieces	22064-H

HPER® CABLE TIES

15 YEARS UV WEATHER STABILITY



- » High-performance cable ties with particularly high tensile strength
- » UV-stable with guaranteed durability for over 15 years outdoors.
- » High cold resistance and excellent weather stability
- » Depending on the design, 50-70% higher tensile strength than standard specifications.

Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly +110 °C)
- Installation temperature approx. -10 °C to +60 °C

Characteristics:

- UV and weather resistant for 15 years
- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.



BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	21	80	100 pieces	26030-H
	200	52	80	100 pieces	26039-H
3.6	140	34	180	100 pieces	26031-H
	200	52	180	100 pieces	26032-H
4.8	200	54	220	100 pieces	26033-H
	290	81	220	100 pieces	26034-H
	360	106	220	100 pieces	26041-H
7.5	365	106	530	100 pieces	26035-H
	540	160	530	100 pieces	26036-H
	750	222	530	100 pieces	26042-H
8.7	920	278	800	100 pieces	26037-H

CABLE TIES PA 12

20 YEARS UV WEATHER RESISTANT



- » UV and weather resistant for at least 20 years – resistant to sun, rain, heat, snow and extreme cold.
- » High chemical resistance – insensitive to oils, fuels and corrosive liquids, reliable even in harsh industrial environments.
- » Designed for extreme operating conditions – ideal for solar parks, offshore installations, vehicle construction and industrial applications with demanding environmental influences.
- » Extended lifespan – reduces maintenance and lowers overall costs.

Material:

- PA 12 (Premium Polyamide 12)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)
- Installation temperature from -30 °C

Characteristics:

- Internally toothed
- UV and weather resistant for 20 years
- Excellent fire protection properties: heat-resistant and self-extinguishing according to UL94 HB
- Excellent chemical resistance: excellent against conventional liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohols, esters and ketones, as well as a wide range of salt solutions and alkalis; limited resistance to organic acids.
- Very low water absorption (less than 1%)

BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	20.5	80	100	26201
	150	36	180	100	26202
3.6	200	52.5	180	100	26203
	200	49.5	230	100	26204
4.8	300	81	230	100	26205
	370	103.5	230	100	26206
7.6	370	103.5	540	100	26207
	610	181.5	540	100	26208



HEAT-RESISTANT CABLE TIES UP TO 125°C



BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	24.0	80	100 pieces	26302
	150	36.5	80	100 pieces	26304
	200	55.0	80	100 pieces	26306
	380	110.0	80	100 pieces	26308
3.6	150	36.5	180	100 pieces	26310
	200	55.0	180	100 pieces	26312
	300	84.0	180	100 pieces	26314
4.8	200	55.0	220	100 pieces	26316
	300	84.0	220	100 pieces	26318
	370	103.5	220	100 pieces	26320
	450	129.0	220	100 pieces	26322
7.8	300	84.0	530	100 pieces	26324
	370	103.5	530	100 pieces	26326
	550	162.5	530	100 pieces	26328
	750	205.0	530	100 pieces	26330
9	550	162.5	800	100 pieces	26332
	780	235.5	800	100 pieces	26334
	920	280.0	800	100 pieces	26336
	1220	295.0	800	100 pieces	26338

- » Made from heat-stabilized PA66HS for use at temperatures up to 125 °C – ideal for use on assemblies, fans and in the perimeter area of the engine compartment.
- » Increased fire safety
- » Internal tothing for secure hold – ideal for confined installation situations in high-temperature environments

Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -40 °C to +125 °C (briefly up to +150 °C)
- Installation temperature approx. -5 °C to +60 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: highly heat resistant (meets the highest fire protection standards / self-extinguishing according to UL94 V-2)
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	24.0	80	100 pieces	26301
	150	36.5	80	100 pieces	26303
	200	55.0	80	100 pieces	26305
	380	110.0	80	100 pieces	26307
3.6	150	36.5	180	100 pieces	26309
	200	55.0	180	100 pieces	26311
	300	84.0	180	100 pieces	26313
4.8	200	55.0	220	100 pieces	26315
	300	84.0	220	100 pieces	26317
	370	103.5	220	100 pieces	26319
	450	129.0	220	100 pieces	26321
7.8	300	84.0	530	100 pieces	26323
	370	103.5	530	100 pieces	26325
	550	162.5	530	100 pieces	26327
	750	205.0	530	100 pieces	26329
9	550	162.5	800	100 pieces	26331
	780	235.5	800	100 pieces	26333
	920	280.0	800	100 pieces	26335
	1220	295.0	800	100 pieces	26337



HEAT-RESISTANT CABLE TIES UP TO 150°C



- » Made of high-temperature resistant PA 46, suitable for maximum temperatures up to 150 °C – perfect for use near heating elements and exhaust systems.
- » Designed for demanding automotive and railway applications; remains dimensionally stable even under heat.
- » Internal tothing for secure hold – ideal for confined installation situations in high-temperature environments

Material:

- PA 46 (Premium Polyamide 46)

Operating temperature:

- -40 °C to +150 °C
- Installation temperature -10 °C to +60 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: highly heat resistant (meets the highest fire protection standards / self-extinguishing according to UL94 V-2)
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	20.5	80	100 pieces	26401
3.6	150	36	180	100 pieces	26402
	200	52.5	180	100 pieces	26403
4.8	200	49.5	220	100 pieces	26404
	300	81	220	100 pieces	26405
	370	103.5	220	100 pieces	26406
7.6	370	103.5	530	100 pieces	26407



FLAME-RESISTANT CABLE TIES V0



- » Made from flame-retardant PA66 according to UL94 V0 – for the highest fire protection requirements
- » Suitable for applications in rail vehicles, buildings and electrical installations
- » Robust construction for secure hold even at elevated temperatures

Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)
- Installation temperature -10 °C to +60 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: flame-resistant (meets the highest fire protection standards / self-extinguishing according to UL94 V-0)
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.

WHITE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	20.5	80	100 pieces	26501
3.6	150	36	180	100 pieces	26502
	200	52	180	100 pieces	26503
4.8	200	49.5	220	100 pieces	26504
	300	81	220	100 pieces	26505
	370	102	220	100 pieces	26506
7.6	365	103	530	100 pieces	26507

CABLE TIES FOR INCREASED COLD AND IMPACT RESISTANCE



- » Made from impact-modified PA66HI – remains flexible and break-resistant even at -40 °C
- » High impact resistance – withstands mechanical stresses and shocks for a permanently secure hold.
- » UV-stabilized and durable for outdoor use – for a long service life under demanding conditions

Material:

- PA 6.6 (Premium polyamide 6.6 / extra cold and impact resistant)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)
- Installation temperature from -40 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.

BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	20.5	80	100 pieces	26601
3.6	150	36	180	100 pieces	26602
	200	52.5	180	100 pieces	26603
4.8	200	49.5	220	100 pieces	26604
	300	81	220	100 pieces	26605
7.8	370	103.5	220	100 pieces	26606
	370	103.5	530	100 pieces	26607

ACID-RESISTANT CABLE TIES PP



- » Made of polypropylene for high resistance to acids and chemical influences
- » Lightweight and flexible design for gentle cable bundling
- » Ideal for chemical industry, laboratory and outdoor applications

Material:

- PP (Polypropylene)

Operating temperature:

- -50 °C to +90 °C
- Installation temperature from -10 °C

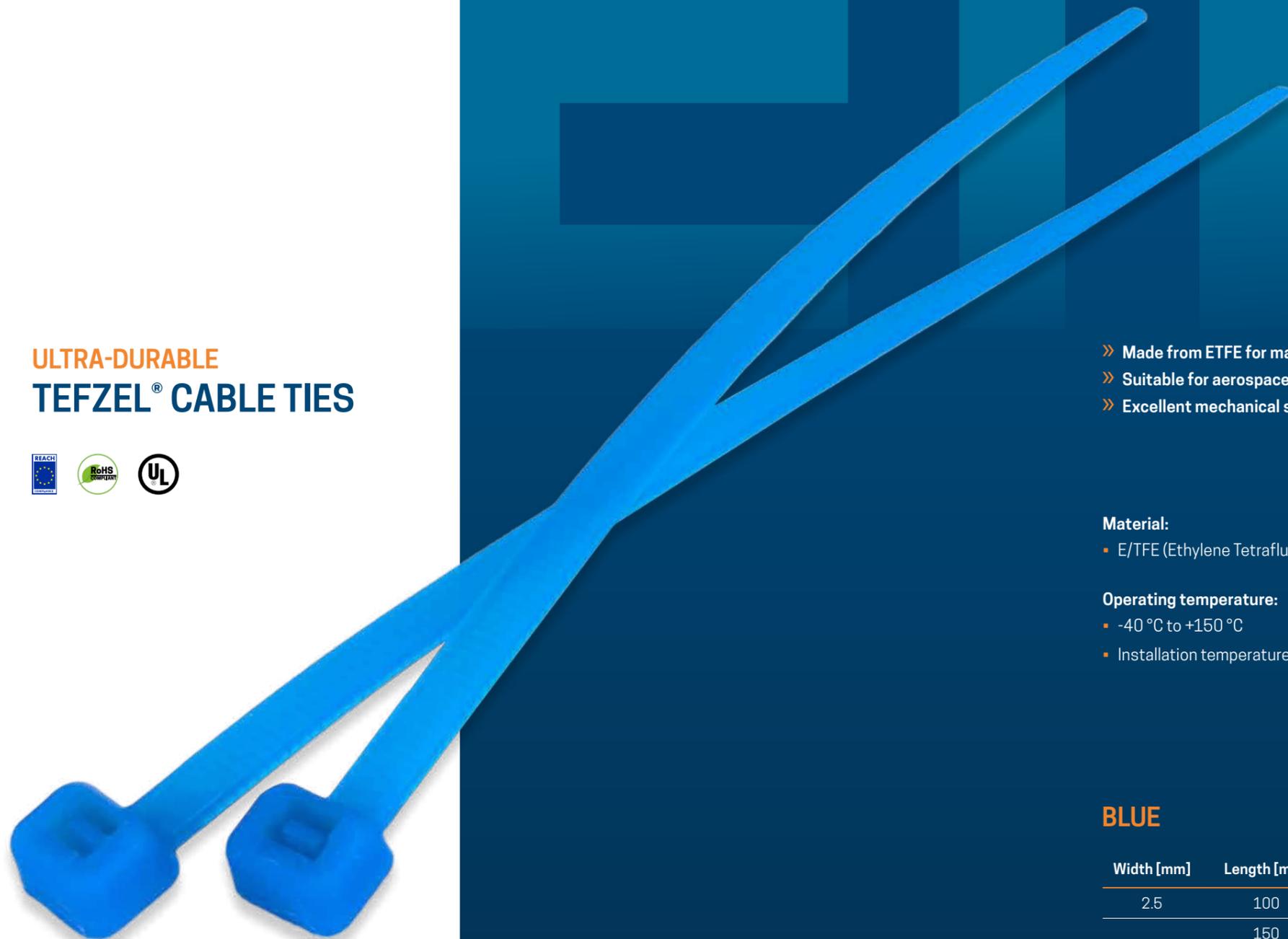
Characteristics:

- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL 94 HB
- Very good chemical resistance: resistant to acids and alkalis, good resistance to many chemicals; suitable for applications with chemical exposure.
- The resin meets the FDA requirements in the Code of Federal Regulations in 21 CFR 177.1520 for contact with food.
- Excellent resistance to brittleness at low temperatures.

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
2.5	100	20.5	50	100 pieces	26701
3.6	140	63	80	100 pieces	26703
	200	49.5	130	100 pieces	26707
4.8	300	81	130	100 pieces	26709
	370	103.5	130	100 pieces	26711
7.6	370	103.5	220	100 pieces	26717

ULTRA-DURABLE
TEFZEL® CABLE TIES



- » Made from ETFE for maximum resistance to chemicals, radiation and extreme temperatures
- » Suitable for aerospace, chemical plants and nuclear applications
- » Excellent mechanical strength and durability under extreme conditions

Material:

- E/TFE (Ethylene Tetrafluoroethylene / halogen-free)

Operating temperature:

- -40 °C to +150 °C
- Installation temperature from -10 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL94 V-0
- Excellent chemical resistance: resistant to aggressive chemicals, UV radiation and elevated temperatures; also radiation resistant

BLUE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	22	80	100 pieces	26801
3.6	150	36	180	100 pieces	26802
	200	53	180	100 pieces	26803
4.6	200	53	220	100 pieces	26804
4.8	300	76	220	100 pieces	26805
	370	102	220	100 pieces	26807
7.6	300	76	530	100 pieces	26806
	370	102	530	100 pieces	26808

RELEASABLE CABLE TIES



- » Reusable cable ties
- » Easy to open thanks to the extended locking tongue.
- » Black, UV-stable for outdoor use
- » With an extra-wide thumb rest for cable ties 7.5 mm and wider.

Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)
- Installation temperature approx. -10 °C to +60 °C

Characteristics:

- Internally toothed
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
3.6	100	22.6	180	100	25302
	160	41.9	220	100	25304
	200	54.8	220	100	25306
4.8	250	65	220	100	25308
	300	88.1	220	100	25310
	380	111	220	100	25312
	150	36	530	100	25314
7.6	200	50	530	100	25316
	250	66.8	530	100	25318
	300	82.8	530	100	25320
	370	103	530	100	25322
	540	160	531	100	25324

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
3.6	100	22.6	180	100	25301
	160	41.9	220	100	25303
	200	54.8	220	100	25305
4.8	250	65	220	100	25307
	300	88.1	220	100	25309
	380	111	220	100	25311
	150	36	530	100	25313
7.6	200	50	530	100	25315
	250	66.8	530	100	25317
	300	82.8	530	100	25319
	370	103	530	100	25321
	540	160	531	100	25323



RELEASABLE SOFTBINDER TPU



- » Made of flexible TPU – especially gentle on sensitive cables and surfaces
- » Reusable thanks to integrated release mechanism
- » Ideal for temporary bundling, maintenance and prototype construction

Material:

- TPU (Thermoplastic Polyurethane)

Operating temperature:

- -40 °C to +85 °C

Characteristics:

- Elongation at break: 400%
- Excellent fire protection properties: self-extinguishing according to UL94 HB/ except green (self-extinguishing)
- Good chemical resistance: resistant to oils/fats and common cleaning agents; not recommended for use with strong acids/alkalis.
- UV and weather resistant: both variants / the green variant has been specially modified for outdoor applications.

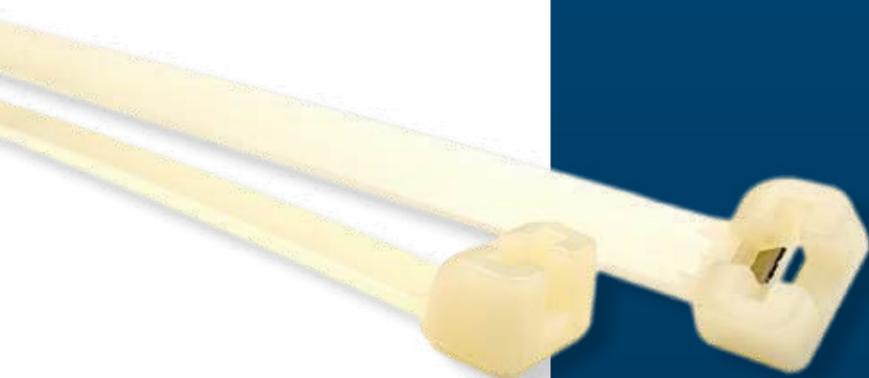
BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
7	180	45	57	50 pieces	25002
	260	70	57	50 pieces	25006
11	260	65	240	50 pieces	25004
	340	90	240	50 pieces	25008
28	580	150	360	50 pieces	25011
	880	250	360	50 pieces	25013

GREEN

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
7	180	45	57	50 pieces	25001
	260	70	57	50 pieces	25005
11	260	65	240	50 pieces	25003
	340	90	240	50 pieces	25007
28	420	100	360	50 pieces	25009
	580	150	360	50 pieces	25010
	880	250	360	50 pieces	25012

CABLE TIES WITH STAINLESS STEEL TONGUE



Material:

- PA 6.6 (Premium polyamide 6.6)

Operating temperature:

- -60 °C to +85 °C (briefly up to +110 °C)
- Installation temperature approx. -10 °C to +60 °C

Characteristics:

- Stainless steel retaining tooth with a cutting angle of 60° (incline 45°)
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

- » Stainless steel tongue for a permanently secure hold, even under vibration and stress.
- » High tensile strength for demanding industrial and automotive applications
- » Infinitely adjustable for precise and low-stress bundling
- » UV-stabilized version in black for outdoor use

BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	24	180	100 pieces	23002
	200	55	180	100 pieces	23004
3.6	140	36	275	100 pieces	23006
	200	55	275	100 pieces	23008
	290	82	275	100 pieces	23010
4.8	200	55	390	100 pieces	23011
	290	82	390	100 pieces	23014
	360	101	390	100 pieces	23016
7.8	360	101	785	100 pieces	23018
	760	225	785	100 pieces	23022

NATURE

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	100	24	180	100 pieces	23001
	200	55	180	100 pieces	23003
3.6	140	36	275	100 pieces	23005
	200	55	275	100 pieces	23007
	290	82	275	100 pieces	23009
4.8	200	55	390	100 pieces	23012
	290	82	390	100 pieces	23013
	360	101	390	100 pieces	23015
7.8	360	101	785	100 pieces	23017
	760	225	785	100 pieces	23025

STAINLESS STEEL CABLE TIES WITHOUT COATING



- » Stainless steel: high strength & reliable corrosion protection
- » UV, weather and temperature resistant for permanent applications
- » For maximum temperature and media resistance

Material:

- stainless steel

Operating temperature:

- Resistant to ambient temperatures from -60 °C to +300 °C (briefly from approx. -80 °C to max. +538 °C)
- Installation temperature from -60 °C

Characteristics:

- UV and weather resistant
- Secure hold thanks to ball-lock closure
- Excellent fire protection properties: non-combustible
- Excellent chemical resistance: unaffected by conventional media / corrosion-resistant
- No water absorption
- TÜV certified

STAINLESS STEEL

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min [N]	Contents	Item No.
4.6	200	61.9	890	100 pieces	24060
	300	90.6	890	100 pieces	24005
	360	112	890	100 pieces	24062
	600	200	890	100 pieces	24008
	800	265.7	890	100 pieces	24011
	1000	300	890	100 pieces	24012
	1200	320	890	100 pieces	24010
7.9	200	61.9	1600	100 pieces	24065
	300	90.6	1600	100 pieces	24013
	360	112	1600	100 pieces	24004
	450	152	1600	100 pieces	24015
	500	160	1600	100 pieces	24069
	600	214.8	1600	100 pieces	24017
	800	265.7	1600	100 pieces	24018
	1000	318	1600	100 pieces	24071
	1200	350	1600	100 pieces	24077
	12	680	214.8	2300	100 pieces

STAINLESS STEEL CABLE TIES WITH COATING



- » Stainless steel: high strength & reliable corrosion protection
- » UV and weather resistant for permanent indoor and outdoor applications
- » The coating protects cables and surfaces and ensures a pleasant feel.

Material:

- Stainless steel with polyester coating

Operating temperature:

- -80 °C to +150 °C
- Installation temperature from -60 °C

Characteristics:

- UV and weather resistant
- Secure hold thanks to ball-lock closure
- Excellent fire protection properties: non-combustible / self-extinguishing coating
- Excellent chemical resistance: unaffected by conventional media / corrosion-resistant
- No water absorption
- TÜV certified

BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.	
4.6	200	61.9	890	100 pieces	24030	
	300	90.6	890	100 pieces	24061	
	360	112.8	890	100 pieces	24031	
	520	163.8	890	100 pieces	24032	
	600	214.8	890	100 pieces	24035	
	800	265.7	890	100 pieces	24036	
	1200	320	890	100 pieces	24064	
7.9	200	61.9	1600	100 pieces	24066	
	300	90.6	1600	100 pieces	24067	
	360	112	1600	100 pieces	24068	
	500	160	1600	100 pieces	24070	
	600	214.8	1600	100 pieces	24072	
	800	265.7	1600	100 pieces	24073	
	1000	318	1600	100 pieces	24074	
	1200	350	1600	100 pieces	24076	
	12	680	214.8	2300	100 pieces	24075

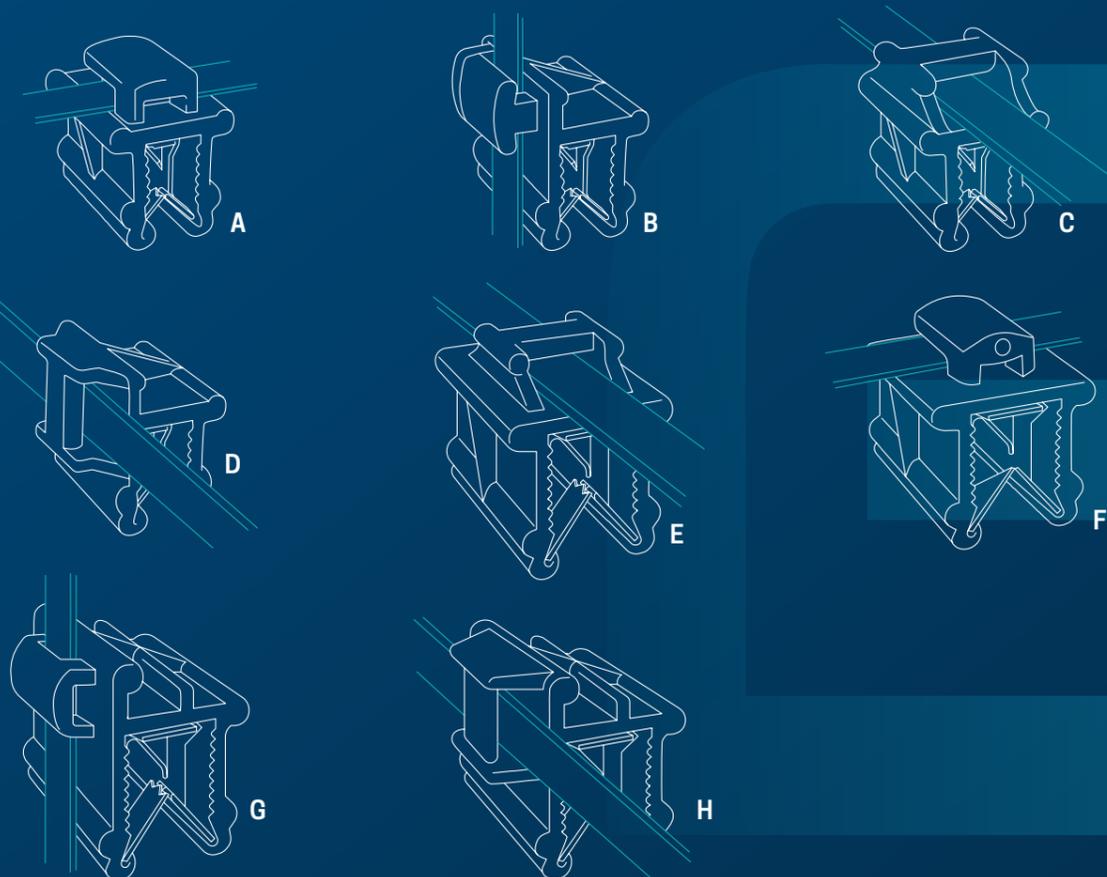


FASTENING CLIPS

Our fastening clips enable the secure and precise assembly of cables, wires, hoses, and corrugated pipes – in automotive engineering as well as in industrial applications and renewable energy projects. With robust plastic and metal versions, we offer durable solutions that function reliably even under demanding conditions. In addition, we develop custom parts and offer reverse engineering services to optimally tailor fastening solutions to individual requirements.

EDGE CLIPS FOR CABLE TIES

2-PIECE SET, WITH CABLE TIES, MADE OF PLASTIC



- » Edge clips for attaching cable ties – 2-piece set with pre-inserted, internally toothed cable tie
- » Tool-free mounting on sheet metal edges, securely fixed by spring steel clamp
- » Cable routing depending on type: longitudinal or perpendicular, above or to the side of the profile
- » For cable bundles, hoses or pipes up to Ø 50 mm – a proven solution in industry and vehicle construction



Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)
- Metal clip made of spring steel, with a special, corrosion-protected surface

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Internally toothed cable ties
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- The spring steel meets the highest corrosion protection requirements.
- UV and weather resistant for 5 to 10 years
- The cable ties on types EC4A, EC5A, EC4B and EC5B are interchangeable, but pre-connected as shown in the table.

BLACK

Cable tie dimensions [mm]	Maximum bundling [mm]	Profile thickness [mm]	Cable tie attachment	sketch	Cable direction towards profile	type	Contents	Item No.
200 x 4.8	50	0.7 - 3.0	Above	A	Longitudinal to the profile	EC4A	100	29000
			Page	B	Longitudinal to the profile	EC5A	100	29001
			Above	C	Perpendicular to the profile	EC4B	100	29002
			Page	D	Perpendicular to the profile	EC5B	100	29003
200 x 4.8	50	3.0 - 6.0	Above	E	Perpendicular to the profile	EC19	100	29005
			Above	F	Longitudinal to the profile	EC20	100	29006
			Page	G	Longitudinal to the profile	EC23	100	29007
			Page	H	Perpendicular to the profile	EC24	100	29008



EDGE CLIPS FOR CABLE TIES

1-PIECE, MULTIDIRECTIONAL,
WITHOUT CABLE TIES, MADE OF PLASTIC



- » Edge clips for attaching cable ties – flexibly usable with cable ties of your choice
- » Multidirectional cable routing: insertion from the top or side, lengthwise or at right angles to the profile.
- » Quick, tool-free mounting on sheet metal edges using spring steel clamps
- » Versatile fastening solution for cable harnesses, hoses and pipes in industry and vehicle construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)
- Metal clip made of spring steel, with a special, corrosion-protected surface

Operating temperature:

- -40 °C to +120 °C

Characteristics:

- Impact resistant and heat stabilized
- The cable tie can be inserted either on top of the clip or on the side so that the cables are guided lengthwise or at a right angle to the profile.
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- The spring steel meets the highest corrosion protection requirements.
- UV and weather resistant for 5 to 10 years

BLACK

Profile thickness [mm]	Cable direction towards profile	Cable tie attachment	sketch	type	Contents	Item No.
0.7 - 3.0	Multidirectional	Top and side	I	KC15	500	29004
3.0 - 6.0	Multidirectional	Top and side	I	KC107	500	29009



EDGE CLIPS FOR CABLE TIES

1-PIECE, MULTIDIRECTIONAL,
WITHOUT CABLE TIES, MADE OF STEEL



- » Edge clips made of coated spring steel – specifically for attaching stainless steel cable ties
- » Multidirectional cable routing: Cable ties can be inserted from the top or side, lengthwise or at right angles to the profile.
- » Secure, tool-free mounting on sheet metal edges from 0.8–3.0 mm without drilling or screws
- » Optimal solution for industry and vehicle manufacturing with the highest demands on strength, corrosion protection and service life

Material:

- Steel (C67S)

Operating temperature:

- The underlying material is temperature resistant from approximately -100 °C to +200 °C (briefly up to approximately +300 °C)

Characteristics:

- Very good fire protection properties
- Very good chemical resistance
- Excellent corrosion protection: No red rust after 720 hours of neutral salt spray according to EN ISO 9227:2012
- We recommend using this clip in conjunction with stainless steel cable ties or cable ties made of PA12.
- UV and weather resistant

STEEL

Profile thickness [mm]	Cable tie width up to [mm]	Cable socket LxWxH [mm]	Cable direction towards profile	Cable tie attachment	Contents	Item No.
0.8 - 3.0	5	14.2x14.2x1.6	multidirectional	Top and side	100	91301

EDGE CLIPS FOR CORRUGATED PIPES

MADE OF PLASTIC



- » Edge clips for securely fastening corrugated pipes without drilling or screws
- » Tool-free attachment to sheet metal edges – secure hold thanks to spring steel clamp
- » Depending on the type, for nominal diameters of 4.5–17 mm and single or double pipe routing.
- » Flexible mounting lengthwise or at right angles, above or to the side of the profile
- » Proven solution for clean and stable corrugated pipe installation in industry and vehicle construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)
- Metal clip made of spring steel, with a special, corrosion-protected surface
- Operating temperature:
- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Profile thickness [mm]	Nominal diameter	Direction of travel: pipe to profile	Pipe mounting	type	Contents	Item No.
0.7 - 3.0	4.5	along	above	KC24	100	38900
	7.5	along	above	KC21	100	38901
	17	along	above	KC32	100	38902
3.0-6.0	4.5	along	above	KC30	100	38903
	13	along	above	KC12	100	38904
	4.5	right angles	above	KC23	100	38905
0.7 - 3.0	10.5	right angles	above	KC22	100	38906
	13	right angles	above	KC31	100	38907
	2 x 10	along	laterally	KC35	100	38908
	4.5	along	laterally	KC25	100	38909
	10	along	laterally	KC26	100	38910
	13	along	laterally	KC36	100	38911
3.0-6.0	1.5	along	laterally	KC28	100	38912
	7.5	along	laterally	KC29	100	38913
	14	along	laterally	KC27	100	38914



Item No. 29012



Item No. 29022



Item No. 29032

EDGE CLIPS FOR 2x6mm CABLE MADE OF PLASTIC



- » Edge clips for the secure routing of two cables (Ø 6 mm) without additional cable ties
- » Tool-free attachment to sheet metal edges – secure hold thanks to spring steel clamp
- » Variants for parallel or right-angled cable routing as well as mounting on the side, at the top or underneath
- » UV and weather-resistant solution for photovoltaics, industry and vehicle construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)
- Metal clip made of spring steel, with a special, corrosion-protected surface

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: underlying material is self-extinguishing
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Profile thickness [mm]	for cables	Cable direction towards profile	Cable insertion	type	Contents	Item No.
0.7-3.0	2 x 6 mm	parallel	laterally	SKC1	100	29012
		below	90°	SKC2	100	29022
		parallel	on the head	SKC4	100	29032



CHASSIS CABLE TIES



- » Cable ties with integrated fastening button, for secure single-hole mounting in vehicle and machine frames
- » Made from heat-stabilized PA 6.6 – robust, UV-resistant, weatherproof and durable.
- » Can be inserted from both sides – flexible fastening of cable and pipe bundles
- » Quick, tool-free installation – simply insert through the existing hole and secure.

Material:

- PA 6.6 HS (Polyamide 6.6)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

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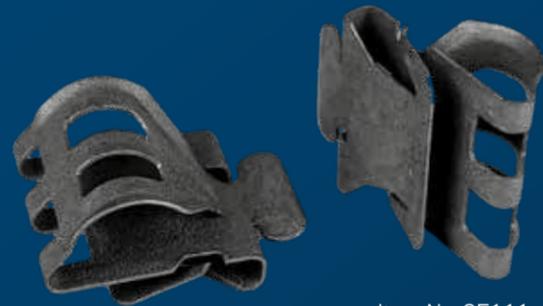
Width [mm]	Length [mm]	Maximum bundling,[mm]	Tensile strength min. [N]	Contents	Item No.
7.6	200	5.8-50	540	100	29450
	200	5.8-82.8	540	100	29451
	370	5.8-103	540	100	29452



Item No. 95113



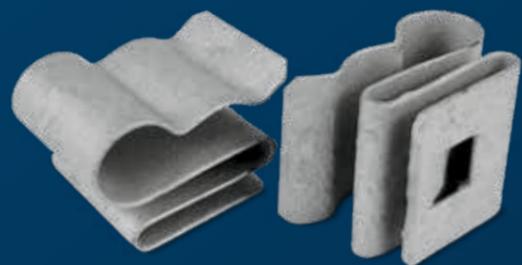
Item No. 95115



Item No. 95111



Item No. 95114



Item No. 95105



Item No. 95112

METAL CABLE CLAMPS FOR PHOTOVOLTAICS

- » Robust and versatile
- » Corrosion-protected by high-quality coating
- » Safe and quick installation

Material:

- Steel (C67S) / Coating: inorganic, zinc-containing basecoat with aluminum-containing, organic topcoat

Explanations

- Single (for one cable/strand) / Double (for two cables) / Multiple (for two or more cables)

Characteristics:

- UV and weather resistant
- Very good fire protection properties
- Excellent corrosion protection: No red rust after 720 hours of neutral salt spray according to EN ISO 9227:2012

execution	Profile thickness [mm]	Cable direction	Contents	Item No.
Simply	0.7 - 2.1	perpendicular to the edge	100 pieces	95113
Simply	0.8 - 3.0	perpendicular to the edge	100 pieces	95115
Simply	1.2 - 2.75	parallel to the edge	100 pieces	95111
Double	1.2 - 2.5	perpendicular to the edge	100 pieces	95114
Double	1.5 - 2.0	parallel to the edge	100 pieces	95105
Multiple	1.2 - 2.5	parallel to the edge	100 pieces	95112



FASTENER
1-PIECE, WITH SLATTED BASE,
WITH PLATE



- » Fastening clamp with integrated lamellar base – quick fixing directly in drill holes or threaded holes
- » Made of heat-stabilized PA 6.6 – impact-resistant, UV and weather-resistant
- » Secure hold without tools: The lamellar base locks securely and protects against the ingress of dirt or splashing water.
- » The support plate stabilizes the cable bundle and prevents damage.
- » Flexible use for different sheet thicknesses – versatile in control cabinet, vehicle and machine construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Hole diameter [mm]	Width [mm]	Length [mm]	Plate diameter [mm]	Sheet thickness [mm]	Bundling [mm]	Tensile strength min. [N]	Contents	Item No.
4.9-5.1	2.5	110	13	3.0-4.0	20	80	100	92211
6.3-7.0	4.6	160	16	0.6-4.2	35	180	100	92212
	4.7	161	16	0.7-3.0	35	150	100	92213
8.0-8.5	4.6	163	16	0.6-6.0	35	225	100	92214
6.3-7.0	4.6	165	16	0.7-7.0	35	180	100	92215
6.1-6.9	4.6	167	16	0.6-8.3	35	222	100	92217
6.3-7.1	5	170	22	3.0-7.0	31	135	100	92218
6.8-7.2	5.3	170	16	0.7-4.5	30	147	100	92219
6.35	5.3	170	16	0.7-5.0	30	200	100	92220
6.8-7.2	4.7	232	16	0.8-5.0	40	225	100	92222
6.1-6.9	5.1	234	16.6	0.6-6.0	50	220	100	92223

FASTENER

2-PIECE SET, WITH SLATTED BASE, WITH PLATE



- » Two-part fastening tie with lamellar base – cable tie and base can be flexibly combined
- » Made from heat-stabilized PA 6.6 – durable, UV and weather resistant
- » Simple, tool-free assembly by inserting into drilled holes or threaded holes.
- » The plate provides a stable base and protects cable bundles from damage.
- » Flexible use for different sheet thicknesses and hole diameters
- » Proven fastening solution for cable and pipe installations in control cabinet, vehicle and machine construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Hole diameter [mm]	Width [mm]	Length [mm]	Plate diameter [mm]	Sheet thickness [mm]	Bundling [mm]	Tensile strength min. [N]	Contents	Item No.
4.5-5	2.5	100	16	0.7-3.0	20	80	100	92231
	3.5	150	16	0.7-3.0	34	135	100	92232
	4.6	150	16	0.7-3.0	35	225	100	92233
6.25 - 7.0	4.6	200	16	0.7-3.0	45	225	100	92234
	2.5	100	16	0.8-3.0	20	80	100	92235
6.4-7.1	3.5	150	16	0.8-3.0	34	135	100	92236
	3.5	150	16	0.8-6.0	35	133	100	92237
6.5-7	4.6	160	16	0.6-6.0	30	225	100	92238
6.4-7.1	4.6	300	16	0.8-6.0	81	356	100	92245
6.4-7.1	5	390	16	0.8-3.0	108	335	100	92247
9.7-10	3.3	150	18	0.8-5.0	35	115	100	92248
9.7-10	4.6	200	18	0.8-5.0	45	225	100	92250
7.7-8	4.6	200	16	0.8-6.0	49	225	100	92251
8-8.5	4.6	202	16	1.5-4.0	45	225	100	92252
9-10.6	7.6	300	20	5.0-11.0	80	535	100	92254



LAMELLA FOOT CABLE TIE CLIPS WITHOUT CABLE TIES



- » Cable tie clips with lamellar base – secure fastening in holes without screws or tools
- » Made of heat-stabilized PA 6.6 – impact-resistant, UV and weather-resistant
- » For cable ties up to Ø 45 mm – flexible use for various bundle sizes
- » Ideal for cable and pipe fastenings in control cabinet, vehicle and machine construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Hole diameter [mm]	Sheet thickness [mm]	Cable diameter [mm]	type	Contents	Item No.
6.3-7.0	0.5-6.0	1.0-45.0	LFC 1	100	92261
	0.5-3.0	1.0-45.0	LFC 2	100	92262



LAMELLA FOOT CABLE TIE CLIPS WITH CABLE TIES



- » Slat foot clip with integrated cable tie – quick complete solution for mounting in drill holes
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » Easy clip insertion without tools – secure hold thanks to the lamellar base, even against dirt and splashes of water.
- » For cable and pipe bundles up to Ø 45 mm – a proven solution in control cabinet, vehicle and machine construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter [mm]	Sheet thickness [mm]	Cable diameter [mm]	type	Contents	Item No.
4.8	200	6.3-7.0	0.5-6.0	1.0-45.0	LFC 1	100	92271
			0.5-3.0	1.0-45.0	LFC 2	100	92272

SLATTED BASE CABLE CLIPS FOR 1 CABLE



- » Lamellar base cable clip for direct attachment of individual cables in drill holes
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » Easy insertion without tools – secure hold even with thin sheet metal thicknesses (0.6-1.2 mm)
- » For cable diameters of 4.5-6 mm – ideal for control cabinet, vehicle and machine construction

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +120 °C (briefly up to +140 °C)

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Hole diameter [mm]	Sheet thickness [mm]	Cable diameter [mm]	type	Contents	Item No.
6.3-7	0.6-1.2	4.5-6	LFC 6	100	92281

FASTENER 1-PIECE, WITH EXPANSION ANCHOR



- » One-piece fastening clamp with integrated expansion anchor – ready for immediate use without additional parts
- » Made of PA 6.6 – UV and weather resistant for long-lasting applications
- » Quick, tool-free installation: Expansion anchor reliably locks into the borehole.
- » Space-saving solution for cable bundles in electrical, automotive and mechanical engineering

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter [mm]	Bundling [mm]	Tensile strength min. [N]	Sheet thickness [mm]	type	Contents [pcs.]	Item No.
3.6	150	4.5	3.5-37.9	180	2.5	A	100	92311
	150	4.5	3.5-37.9	180	2.5	B	100	92312
4.8	200	5.9	3.5-50.8	230	3.5	A	100	92313
	200	5.9	3.5-50.8	230	3.5	B	100	92314
	225	4.8	6-58	230	2.2	C	100	92315

FASTENER

ONE-PIECE, WITH EXPANSION ANCHOR, WITH WINGS, FOR THIN SHEET METAL THICKNESSES



- » One-piece fastening clamp with expansion anchor and wings – flexible for different drill holes and sheet thicknesses
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » The wings brace against the surface and stabilize the hold of the spreader anchor.
- » Quick, tool-free installation in drilled holes – ready for immediate use without additional parts
- » Versatile fastening solution for cable bundles in automotive, electrical and mechanical engineering

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Sheet thickness [mm]	Width [mm]	Length [mm]	Hole diameter [mm]	Bundling [mm]	Tensile strength min. [N]	type	Con-tents	Item No.
0.7-1.3	4.6	156	4.8-5.2	35	180	A	100	92331
	4.6	156	6.3-6.7	35	180	A	100	92333
0.7-1.5	4.6	170	6.1-6.5	31	225	A	100	92336
0.8-2.0	5	225	6.8-7.2	59	225	A	100	92338
0.3-2.2	7.5	150	6.3-6.7	5-31	530	A	100	92347
	2.5	100	4-5	3-21	80	B	100	92339
	4.8	100	4-4.5	3.5-21	230	C	100	92343
	2.5	110	4.2-4.5	3-24.5	80	D	100	92340
	3	110	6.2-6.5	3-21	80	B	100	92341
	4.8	130	6.2-6.5	3.5-30.2	230	B	100	92344
3	3.6	150	6.2-6.5	3.5-36.9	180	B	100	92342
	4.8	167	6.2-6.5	3.5-37	230	B	100	92345
	4.8	200	6.2-6.5	3.5-49.6	230	D	100	92346
0.3-3	8	220	7.1-9	3-42	530	A	100	92348

EXPANSION ANCHOR CABLE TIE CLIPS WITHOUT CABLE TIES



- » Cable tie clips with expansion anchor – quick fastening in holes without drilling or screws
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » For cable ties up to Ø 45 mm – flexible use for various bundle sizes
- » The expansion anchor locks securely in the borehole and enables stable cable or pipe routing.
- » Versatile applications in vehicle, electrical and mechanical engineering

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +120 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fat derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Hole diameter [mm]	Sheet thickness [mm]	Cable diameter [mm]	type	Contents	Item No.
6.5	0.7-2	1-45	LC1	100	92361
	2-3.5	1-45	LC2	100	92362
6.5-7	1.8-2.8	1-45	LC3	100	92363

FASTENER 2-PART FOR PARALLEL GUIDANCE, ROTATABLE BY 90°



- » Two-part cable tie with coupler – for parallel routing of two cable or pipe bundles
- » Rotatable up to 90° – enables flexible alignment and optimal bundle position
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » Also suitable for retrofitting to pre-assembled cable harnesses
- » Proven fastening solution in vehicle and mechanical engineering

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

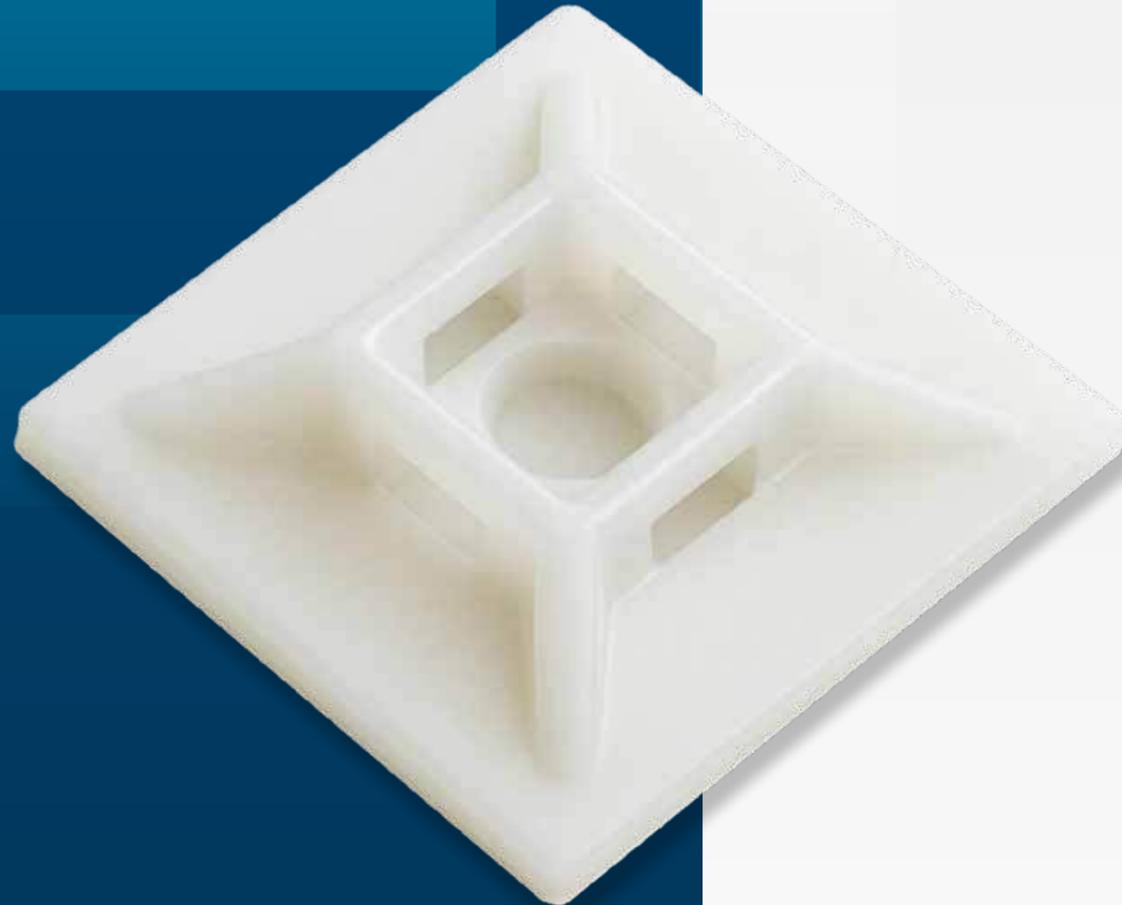
- -40 °C to +125 °C

Characteristics:

- Impact resistant and heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fat derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Article number
4.6	200	47	225	100	96101
7.6	390	105	535	100	96102



**MOUNTING BASE
FOR CABLE TIES**
SQUARE, ADHESIVE
(3M(HIGH-PERFORMANCE ADHESIVE)),
MADE OF PLASTIC



- » Square mounting bases for cable ties – an alternative to screw mounting on smooth surfaces
- » With 3M high-performance adhesive (acrylate) for reliable adhesion, optionally also screwable.
- » Made of PA 6.6 – robust, UV and weather resistant (in black)
- » For cable tie widths up to 9.0 mm – available in sizes from 12.5 × 12.5 mm to 40 × 40 mm
- » Fast and flexible cable routing in electrical, control cabinet and vehicle construction

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

BLACK

Dimensions L x W [mm]	Cable tie width up to [mm]	Contents	Item No.
12.5x12.5	3.6	100	95102
19x19	3.6	100	95104
26x26	7.6	100	95106
28x28	4.8	100	95108
40x40	9	100	95110

NATURE

Dimensions L x W [mm]	Cable tie width up to [mm]	Contents	Item No.
12.5x12.5	3.6	100	95101
19x19	3.6	100	95103
26x26	7.6	100	95105
28x28	4.8	100	95107
40x40	9	100	95109

MOUNTING BASE WITH CABLE HOLDER

ADHESIVE (3M HIGH-PERFORMANCE ADHESIVE),
MADE OF PLASTIC



- » Mounting base with integrated cable holder – a quick alternative to mounting with cable ties.
- » Can be used with 3M high-performance adhesive (acrylate) or screw fixing
- » Made of PA 6.6 – robust, UV and weather resistant (in black)
- » Available in various sizes for cable diameters up to 16 mm
- » Ideal when cables need to be fixed quickly, cleanly and in a space-saving manner – e.g. in vehicle or control cabinet construction.

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

BLACK

O Inside [mm]	Clamping range width [mm]	Clamping range length [mm]	Clamping range height [mm]	Base WxL [mm]	Contents	Item No.
5	9.5	6	7.8	18.5x18.5	100	95202
8	12	11.9	11.5	26x26	100	95204
16	15.4	18.1	17.1	26x26	100	95206

NATURE

O Inside [mm]	Clamping range width [mm]	Clamping range length [mm]	Clamping range height [mm]	Base WxL [mm]	Contents	Item No.
5	9.5	6	7.8	18.5x18.5	100	95201
8	12	11.9	11.5	26x26	100	95203
16	15.4	18.1	17.1	26x26	100	95205

MOUNTING BASE FOR CABLE TIES

FOR ANGLED SURFACES, ADHESIVE (3M HIGH-PERFORMANCE ADHESIVE), MADE OF PLASTIC



- » Angled mounting bases for cable ties are ideal for slanted, rounded or uneven surfaces.
- » With 3M high-performance adhesive (acrylate) for strong adhesion, optionally also screwable.
- » Made from heat-stabilized PA 6.6 – robust, impact-resistant, UV and weather-resistant
- » Suitable for cable tie widths up to 5.4 mm
- » A practical solution when standard bases cannot be used on flat surfaces – e.g. in vehicle and machine construction.

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat stabilized
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Dimensions WxL [mm]	Height [mm]	Cable tie width up to [mm]	Contents	Item No.
28x28	6.3	5.4	100	95302

NATURE

Dimensions WxL [mm]	Height [mm]	Cable tie width up to [mm]	Contents	Item No.
28x28	6.3	5.4	100	95301

MOUNTING BASE FOR CABLE TIES

FOR UNEVEN SURFACES, FOR LIQUID OR PASTE ADHESIVES, MADE OF PLASTIC



- » Mounting bases for cable ties – an alternative when drilling or standard bases are not possible.
- » For bonding with liquid or paste adhesives – geometry ensures a secure fit with the adhesive.
- » Made from heat-stabilized PA 6.6 – robust, impact-resistant, UV and weather-resistant
- » Suitable for cable tie widths up to 4.8 mm
- » Especially suitable for uneven or rough surfaces – e.g. in railway, energy, vehicle and switchgear construction.

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Dimensions WxL [mm]	Height [mm]	Cable tie width up to [mm]	Contents	Article number
36x36	10.7	4.8	100	95401

FASTENING CLAMP WITH WELD STUD RECEPTACLE

1-PIECE, FOR ROUTING CABLES ABOVE THE BOLT



- » Cable ties with weld stud receptacle – for secure cable routing directly above the stud
- » Tool-free assembly – head locks into place on the bolt in a defined manner.
- » Cable routing directly above the weld stud, space-saving and stable
- » Made from heat-stabilized PA 6.6 – robust, impact-resistant, UV and weather-resistant
- » Ideal for applications in automotive and mechanical engineering

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
4.0	160	M5	35	200	100	94101
4.6	160	M6	35	200	100	94102

FASTENING CLAMP WITH WELD STUD RECEPTACLE

1-PIECE, FOR ROUTING CABLES NEXT TO THE BOLT



- » Fastening ties with weld stud receptacle – for cable routing to the side of the stud
- » Space-saving installation parallel to the bolt – ideal for tight installation conditions
- » Quick, tool-free assembly
- » Made of heat-stabilized PA 6.6 – robust, impact-resistant, UV and weather-resistant
- » Frequently used in automotive engineering and commercial vehicles

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- 40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
4.7	160	M5	35	225	100	94201
5.7	175	M8	30	150	100	94202
		M10	30	150	100	94203



FASTENING TIES WELD STUD RECEPTACLE 1-PIECE, WITH TOLERANCE COMPENSATION



- » Fastening clamp with weld stud receptacle and integrated tolerance compensation
- » Flexible fit even with varying bolt diameters (e.g. 5–6 mm)
- » Quick, tool-free assembly for variable installation situations
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » Ideal for vehicle construction, where different sheet thicknesses and bolt tolerances occur.

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
4.6	160	M5-M6	35	170	100	94401
	163	M5	35	225	100	94501
5.0	169	M5-M6	35	170	100	94402



FASTENING TIES WELD STUD RECEPTACLE 1-PIECE, FOR PARALLEL GUIDANCE, HEAVY DUTY



- » Heavy-duty fastening clamp with weld stud receptacle – for parallel cable routing along the stud.
- » For high tensile strength and secure fastening even under vibration and load
- » Tool-free mounting on weld studs or threaded studs (e.g. M6)
- » Made from heat-stabilized PA 6.6 – robust, UV and weather resistant
- » Ideal for commercial vehicles, mechanical engineering and other heavy-duty applications.

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
12.7	488	M6	58	667	100	94602

FASTENING TIES WELD STUD RECEPTACLE

2-PIECE, FOR ROUTING CABLES ABOVE THE BOLT



- » 2-part fastening clamp with weld stud receptacle – for flexible cable routing above the stud
- » Separate clip and cable tie allow for easy pre-assembly and subsequent adjustments.
- » Tool-free mounting on weld studs, secure hold even under vibration
- » Made from heat-stabilized PA 6.6 – robust, impact-resistant, UV and weather-resistant
- » Especially suitable for vehicle construction and industrial applications with variable cable routing.

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

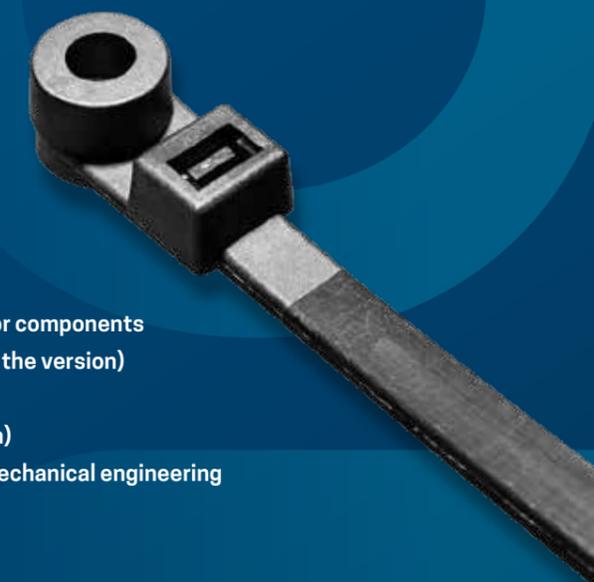
Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Width [mm]	Length [mm]	Hole diameter	Maximum bundling [mm]	Tensile strength min. [N]	Contents	Item No.
3.6	150	M5	35	135	100	94701
4.6	150	M5	35	220	100	94702
	200	M5	45	220	100	94703

FASTENER 1-PIECE WITH SCREW EYELET



- » Cable ties with integrated screw eye – for secure screwing onto panels or components
- » Easy and quick assembly with standard screws (M2.5–M6 depending on the version)
- » Secure hold even under vibrations and dynamic loads
- » Made of PA 6.6 – robust, impact-resistant, UV-resistant (in black version)
- » Commonly used in automotive engineering, electrical installation and mechanical engineering

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly +110 °C)

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV-stable in the black version

BLACK

Width [mm]	Length [mm]	Hole diameter	Bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	110	M2.5	3-19	80	100	93102
3.6	150	M4	3.5-39.5	180	100	93104
	200	M5	3.5-36.8	222	100	93106
4.8	300	M5	3.5-82.2	222	100	93108
	370	M5	3.5-103.8	222	100	93110
7.6	300	M6	8.5-78.7	540	100	93112
	400	M6	8.5-109.2	540	100	93114

NATURE

Width [mm]	Length [mm]	Hole diameter	Bundling [mm]	Tensile strength min. [N]	Contents	Item No.
2.5	110	M2.5	3-19	80	100	93101
3.6	150	M4	3.5-39.5	180	100	93103
	200	M5	3.5-36.8	222	100	93105
4.8	300	M5	3.5-82.2	222	100	93107
	370	M5	3.5-103.8	222	100	93109
7.6	300	M6	8.5-78.7	540	100	93111
	400	M6	8.5-109.2	540	100	93113

**MOUNTING BASE
FOR CABLE TIES**
SQUARE, SCREWABLE,
MADE OF PLASTIC



- » Screw base for cable ties – square design for easy, stable fastening
- » Suitable for cable tie widths from 3.6 to 9 mm (depending on size)
- » Secure mounting using screws, even on rough or uneven surfaces
- » Made of PA 6.6 – robust, durable, UV-stable in black.
- » Versatile use in control cabinet construction, mechanical engineering and vehicle construction

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly +110 °C)

Characteristics:

- Excellent fire protection properties: Material is self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

BLACK

Dimensions WxL [mm]	Cable tie width up to [mm]	Contents	Item No.
12.5x12.5	3.6	100	93302
19x19	3.6	100	93304
26x26	7.6	100	93306
28x28	4.8	100	93308
40x40	9.0	100	93310

NATURE

Dimensions WxL [mm]	Cable tie width up to [mm]	Contents	Item No.
12.5x12.5	3.6	100	93301
19x19	3.6	100	93303
26x26	7.6	100	93305
28x28	4.8	100	93307
40x40	9.0	100	93309

MOUNTING BASE FOR CABLE TIES

SPECIAL SHAPES, SCREWABLE, MADE OF PLASTIC



Type A



Type B



Type C

- » Screw bases in special shapes – for special mounting requirements and confined spaces
- » Different geometries (e.g., raised, angled, compact) for flexible cable routing
- » Secure fastening with screws (M3–M5)
- » Made of PA 6.6 – robust, chemical-resistant, UV-stable in black
- » Ideal for special applications in control cabinet and vehicle construction

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly +110 °C)

Characteristics:

- Excellent fire protection properties: Material is self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids, solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

BLACK

Dimensions WxLxH [mm]	Cable tie width up to [mm]	Hole diameter [mm]	Color	type	Contents	Item No.
16 x 11 x 7	3.6	M3	black	A	100	93402
18 x 13 x 8	4.8	M3	black	A	100	93404
21 x 15 x 11	7.6	M4	black	A	100	93406
22 x 10 x 11	7.6	M5	black	A	100	93408
21 x 15 x 11	7.6	M5	black	B	100	93410
26 x 10 x 12	9.0	M5	black	A	100	93412
23 x 14 x 18	9.0	M5	black	C	100	93414

NATURE

Dimensions WxLxH [mm]	Cable tie width up to [mm]	Hole diameter [mm]	Color	type	Contents	Item No.
16 x 11 x 7	3.6	M3	nature	A	100	93401
18 x 13 x 8	4.8	M3	nature	A	100	93403
21 x 15 x 11	7.6	M4	nature	A	100	93405
22 x 10 x 11	7.6	M5	nature	B	100	93407
21 x 15 x 11	7.6	M5	nature	A	100	93409
26 x 10 x 12	9.0	M5	nature	A	100	93411
23 x 14 x 18	9.0	M5	nature	C	100	93413

MOUNTING BASE FOR CABLE TIES

HEAVY-DUTY, FOR SCREWS OR THREADED BOLTS, MADE OF PLASTIC



- » Heavy-duty screw base for cable ties up to 12.7 mm wide
- » Designed for screw or bolt mounting with different torque classes (standard, medium, high)
- » High pull-out and holding forces, even under heavy loads
- » Made of heat-stabilized PA 6.6 – impact-resistant, UV and weather-resistant
- » Specifically for applications in the automotive and mechanical engineering sectors with high requirements

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Dimensions WxLxH [mm]	Cable tie width up to [mm]	Hole diameter [mm]	torque	Contents	Item No.
19.3x36.3x16.7	12.7	4.8	standard	100	93501
		6.2	standard	100	93502
		7.8	standard	100	93503
24x46x20.7	12.7	8.31	Medium	100	93504
		10.29	Medium	100	93505
		12.7	Medium	100	93506
25x47x20.7	12.7	8.31	High	100	93507
		10.29	High	100	93508
		12.95	High	100	93509

FASTENER

2-PIECE WITH SCREW EYE, HEAVY-DUTY



- » 2-piece heavy-duty binder with screw eye – for particularly high mechanical loads
- » Screw fastening (M6/M8) ensures a secure hold even under strong vibrations.
- » Two parts allow for flexible pre-assembly and subsequent adjustment.
- » Made from heat-stabilized PA 6.6 – UV-stable, impact-resistant and durable.
- » Ideal for automotive, commercial vehicle and mechanical engineering applications with high demands

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Cable tie dimensions WxL [mm]	Bracket dimensions (W x L) [mm]	Height [mm]	Hole diameter [mm]	Bundling [mm]	Contents	Item No.
4.6x200	20x37.5	16	M6	50	100	93201
			M8	50	100	93202
7.6x390	20x37.5	16	M6	105	100	93203
			M8	105	100	93204

MOUNTING BASE FOR CABLE TIES

FOR PARALLEL GUIDANCE, HEAVY-DUTY,
FOR SCREWS AND BOLTS, MADE OF PLASTIC



- » Heavy-duty screw base for parallel cable routing with two cable ties up to 12.7 mm
- » Secure screw or bolt mounting (e.g. Ø 6 mm)
- » Especially suitable for fastening and guiding parallel cable strands or hoses
- » Made from heat-stabilized PA 6.6 – robust, impact-resistant, UV-stable
- » Applications in automotive engineering, mechanical engineering and energy supply

Material:

- PA 6.6 HS (Polyamide 6.6 / heat-stabilized)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Heat-stabilized and impact-resistant
- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant

BLACK

Dimensions WxLxH [mm]	Cable tie width up to [mm]	Hole diameter [mm]	Contents	Item No.
30x45x23	12.7	6.0-6.35	100	93601

MOUNTING BASE FOR CABLE TIES

SCREWABLE, MADE OF STAINLESS STEEL



- » Stainless steel screw base – for extreme environmental conditions and maximum durability
- » Temperature resistant from -60 °C to +538 °C
- » Completely corrosion-resistant, non-flammable, no water absorption
- » Suitable for cable ties up to 10 mm wide
- » Applications in offshore, railway, energy plants, chemical industry and heavy industry

Material:

- stainless steel

Operating temperature:

- Resistant to ambient temperatures from -60 °C to +300 °C (briefly from -80 °C to max. +538 °C)

Characteristics:

- Excellent fire protection properties: non-combustible
- Excellent chemical resistance: unaffected by conventional media / corrosion-resistant
- UV and weather resistant
- No water absorption

STAINLESS STEEL

Width [mm]	Length [mm]	Height [mm]	Hole diameter [mm]	Cable tie width up to [mm]	Contents	Item No.
15	29.2	5.2	4.2	10	100	93801
			6.2	10	100	93802



P-CLAMPS

SCREWABLE, MADE OF PLASTIC



- » Fastening solution for securely fixing individual cables or small bundles of wires
- » Screw mounting allows for easy and quick installation without special tools.
- » Available in various sizes for cable diameters from approximately 3 mm to 33 mm.
- » Made of impact-resistant, heat-stabilized polyamide 6.6 for high durability and longevity.
- » Black versions are additionally UV-stable and suitable for outdoor use.
- » Typical applications in electrical installation, control cabinet construction, vehicle and mechanical engineering

Material:

- PA 6.6 (Polyamide 6.6)

Operating temperature:

- -40 °C to +85 °C (briefly up to +110 °C)

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL94 V-2
- Good chemical resistance: excellent against common liquids/solvents/oils/fats/derivatives; good against bases, gasoline, soaps, alcohol; limited resistance to acids.
- UV and weather resistant, in black finish

BLACK

Inner diameter[mm]	Width [mm]	Length [mm]	Clamping foot length [mm]	Hole diameter [mm]	Color	Contents	Item No.
3	9.6	16.9	8	4	black	100	93902
5.3	9.6	18.5	9.2	4	black	100	93904
6.8	10.1	20	10.4	4	black	100	93906
8.4	10	22.6	11.2	4	black	100	93908
10.8	12.3	26.6	12.5	5	black	100	93910
13.8	12.1	30.3	14.8	5	black	100	93912
17.4	12.4	32.6	15.8	5	black	100	93914
19.9	11.8	37.3	18	5	black	100	93916
23.6	12	40.4	19.5	5	black	100	93918
27.2	12	43.4	21	5	black	100	93920
33.8	12	52.3	26	5	black	100	93922
41.9	12.5	58.3	27.8	5	black	100	93924

NATURE

Inner diameter[mm]	Width [mm]	Length [mm]	Clamping foot length [mm]	Hole diameter [mm]	Color	Contents	Item No.
3	9.6	16.9	8	4	nature	100	93901
5.3	9.6	18.5	9.2	4	nature	100	93903
6.8	10.1	20	10.4	4	nature	100	93905
8.4	10	22.6	11.2	4	nature	100	93907
10.8	12.3	26.6	12.5	5	nature	100	93909
13.8	12.1	30.3	14.8	5	nature	100	93911
17.4	12.4	32.6	15.8	5	nature	100	93913
19.9	11.8	37.3	18	5	nature	100	93915
23.6	12	40.4	19.5	5	nature	100	93917
27.2	12	43.4	21	5	nature	100	93919
33.8	12	52.3	26	5	nature	100	93921
41.9	12.5	58.3	27.8	5	nature	100	93923



SPECIAL PARTS / RE-ENGINEERING

FUNCTIONALLY EQUIVALENT ALTERNATIVES TO COST-INTENSIVE DRAWING PARTS

Many fastening clips and C-parts are often only available as special parts or expensive custom parts. These are often difficult to obtain and associated with high costs.

We offer you a cost-effective solution: re-engineering of special parts. Based on existing samples, we manufacture functionally equivalent alternatives – precisely fitting, reliable in quality, and significantly more cost-effective.

YOUR BENEFITS AT A GLANCE



COST ADVANTAGE

Significant savings compared to OEM or drawing parts



PRECISION FIT

Functionally identical parts, compatible with the original insert



SECURE AVAILABILITY

Even for hard-to-obtain special parts



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HEAT SHRINK TUBING

As an ISO-certified company, we offer you heat-shrink tubing and other shrink-wrap products of the highest quality at fair and transparent prices. Our heat-shrinkable products are 100% certified and also available in German or European production. You need individual packaging shapes, cuts or printed Sections? We're happy to take on such orders and implement them to your satisfaction.

2:1 POLYOLEFIN HEAT SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, IN SMALL CARDBOARD BOXES



- » The premium heat shrink tubing for all applications
- » Ideally processed using a hot air gun or a shrink tunnel.
- » Highly flexible
- » In the practical dispenser box

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approximately -55 °C to +135 °

Shrink temperature:

- +110 °C min.

Characteristics:

- Excellent fire protection properties: flame-resistant and self-extinguishing (UL224 compliant on request)
- Good chemical resistance: resistant to all common liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]



BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
1.2	0.6	0.4	3/64	20 m	12139
1.6	0.8	0.4	1/16	17 m	12140
2.4	1.2	0.5	3/32	15 m	12141
3.2	1.6	0.5	1/8	15 m	12142
4.8	2.4	0.5	3/16	12 m	12143
6.4	3.2	0.6	1/4	12 m	12144
9.5	4.8	0.6	3/8	8 m	12145
12.7	6.4	0.6	1/2	8 m	12146
19	9.5	0.6	3/4	5 m	12148
25.4	12.7	0.9	1	5 m	12149

GREEN-YELLOW

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
3.2	1.6	0.5	1/8	15 m	12235
4.8	2.4	0.5	3/16	12 m	12236
6.4	3.2	0.6	1/4	12 m	12237
9.5	4.8	0.6	3/8	8 m	12238
12.7	6.4	0.6	1/2	8 m	12239
19	9.5	0.8	3/4	5 m	12240
25.4	12.7	0.9	1	5 m	12241

2:1 POLYOLEFIN THIN-WALLED HEAT SHRINK TUBING WITHOUT INNER ADHESIVE, IN SMALL CARDBOARD BOXES, BLUE



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible
- In the practical dispenser box

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.4	3/64	blue	20 m	12181
1.6	0.8	0.4	1/16	blue	17 m	12182
2.4	1.2	0.5	3/32	blue	15 m	12183
3.2	1.6	0.5	1/8	blue	15 m	12184
4.8	2.4	0.5	3/16	blue	12 m	12185
6.4	3.2	0.6	1/4	blue	12 m	12186
9.5	4.8	0.6	3/8	blue	8 m	12187
12.7	6.4	0.6	1/2	blue	8 m	12188
19	9.5	0.8	3/4	blue	5 m	12190
25.4	12.7	0.9	1	blue	5 m	12191

2:1 POLYOLEFIN THIN-WALLED HEAT SHRINK TUBING WITHOUT INNER ADHESIVE, IN SMALL CARDBOARD BOXES, OTHER COLORS



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible
- In the practical dispenser box

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224 (except transparent / meets FMVSS 302 instead), meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.4	3/64	red	20 m	12153
1.6	0.8	0.5	1/16	red	17 m	12154
2.4	1.2	0.5	3/32	red	15 m	12155
3.2	1.6	0.5	1/8	red	15 m	12156
4.8	2.4	0.5	3/16	red	12 m	12157
6.4	3.2	0.6	1/4	red	12 m	12158
9.5	4.8	0.6	3/8	red	8 m	12159
12.7	6.4	0.6	1/2	red	8 m	12160
19	9.5	0.8	3/4	red	5 m	12162
25.4	12.7	0.9	1	red	5 m	12163
3.2	1.6	0.5	1/8	brown	15 m	12325
4.8	2.4	0.5	3/16	brown	12 m	12326

2:1 POLYOLEFIN THIN-WALLED SHRINK TUBING WITHOUT INNER ADHESIVE, IN SMALL CARDBOARD BOX, OTHER COLORS

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
6.4	3.2	0.6	1/4	brown	12 m	12327
9.5	4.8	0.6	3/8	brown	8 m	12328
12.7	6.4	0.6	1/2	brown	8 m	12329
19	9.5	0.5	3/4	brown	5 m	12330
25.4	12.7	0.9	1	brown	5 m	12206
1.6	0.8	0.5	1/16	yellow	17 m	12168
2.4	1.2	0.5	3/32	yellow	15 m	12169
3.2	1.6	0.5	1/8	yellow	15 m	12170
4.8	2.4	0.5	3/16	yellow	12 m	12171
6.4	3.2	0.6	1/4	yellow	12 m	12172
9.5	4.8	0.6	3/8	yellow	8 m	12173
12.7	6.4	0.6	1/2	yellow	8 m	12174
19	9.5	0.8	3/4	yellow	5 m	12176
25.4	12.7	0.9	1	yellow	5 m	12177
1.2	0.6	0.4	3/64	green	20 m	12209
1.6	0.8	0.4	1/16	green	17 m	12210
2.4	1.2	0.5	3/32	green	15 m	12211
3.2	1.6	0.5	1/8	green	15 m	12212
4.8	2.4	0.5	3/16	green	12 m	12213
6.4	3.2	0.6	1/4	green	12 m	12214
9.5	4.8	0.6	3/8	green	8 m	12215
12.7	6.4	0.6	1/2	green	8 m	12216
19	9.5	0.8	3/4	green	5 m	12218
25.4	12.7	0.9	1	green	5 m	12242
1.2	0.6	0.4	3/64	transparent	20 m	12223
1.6	0.8	0.4	1/16	transparent	17 m	12224
2.4	1.2	0.5	3/32	transparent	15 m	12225
3.2	1.6	0.5	1/8	transparent	15 m	12226

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
4.8	2.4	0.5	3/16	transparent	12 m	12227
6.4	3.2	0.6	1/4	transparent	12 m	12228
9.5	4.8	0.6	3/8	transparent	8 m	12229
12.7	6.4	0.6	1/2	transparent	8 m	12230
19	9.5	0.8	3/4	transparent	5 m	12232
25.4	12.7	0.9	1	transparent	5 m	12233
1.2	0.6	0.4	3/64	white	20 m	12195
1.6	0.8	0.4	1/16	white	17 m	12196
2.4	1.2	0.5	3/32	white	15 m	12197
3.2	1.6	0.5	1/8	white	15 m	12198
4.8	2.4	0.5	3/16	white	12 m	12199
6.4	3.2	0.6	1/4	white	12 m	12200
9.5	4.8	0.6	3/8	white	8 m	12201
12.7	6.4	0.6	1/2	white	8 m	12202
19	9.5	0.8	3/4	white	5 m	12204
25.4	12.7	0.9	1	white	5 m	12205

2:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, BLACK



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.4	3/64	black	150 m	12033
1.6	0.8	0.4	1/16	black	150 m	12034
2.4	1.2	0.5	3/32	black	150 m	12035
3.2	1.6	0.5	1/8	black	150 m	12036
4.8	2.4	0.5	3/16	black	75 m	12037
6.4	3.2	0.6	1/4	black	75 m	12038
9.5	4.8	0.6	3/8	black	75 m	12039
12.7	6.4	0.6	1/2	black	50 m	12040
16	8	1.0	1	black	50 m	12298
19	9.5	0.8	3/4	black	50 m	12042
25.4	12.7	0.9	1	black	30 m	12043
31.8	15.9	1.0	1 1/4	black	30 m	12044
38	19	1.0	1 1/2	black	30 m	12045

2:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, BLUE



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.4	3/64	blue	150 m	12075
1.6	0.8	0.4	1/16	blue	150 m	12076
2.4	1.2	0.5	3/32	blue	150 m	12556
3.2	1.6	0.5	1/8	blue	150 m	12078
4.8	2.4	0.5	3/16	blue	75 m	12079
6.4	3.2	0.6	1/4	blue	75 m	12080
9.5	4.8	0.6	3/8	blue	75 m	12081
12.7	6.4	0.6	1/2	blue	50 m	12082
19	9.5	0.8	3/4	blue	30 m	12084
25.4	12.7	0.9	1	blue	30 m	12085
31.8	15.9	0.9	1 1/4	blue	30 m	12403
38	19	1.0	1 1/2	blue	30 m	12087
51	25.4	1.1	2	blue	30 m	12088
76	38	1.3	3	blue	15 m	12277
101.6	50.8	1.4	4	blue	15 m	12278

2:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, GREEN-YELLOW



- The premium shrink tubing for all Applications
- Ideal for processing with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
3.2	1.6	0.5	1/8	green-yellow	150 m	12260
4.8	2.4	0.5	3/16	green-yellow	75 m	12261
6.4	3.2	0.6	1/4	green-yellow	75 m	12262
9.5	4.8	0.6	3/8	green-yellow	75 m	12263
12.7	6.4	0.6	1/2	green-yellow	50 m	12264
19	9.5	0.8	3/4	green-yellow	30 m	12265
25.4	12.7	0.9	1	green-yellow	30 m	12266
38	19	1.0	1 1/2	green-yellow	30 m	12267
50.8	25.4	1.1	2	green-yellow	30 m	12268

2:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, OTHER COLOURS



- The premium shrink tubing for all Applications
- Ideal for processing with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224 (except transparent / meets FMVSS 302 instead), meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.4	3/64	red	150 m	12047
1.6	0.8	0.4	1/16	red	150 m	12048
2.4	1.2	0.5	3/32	red	150 m	12049
3.2	1.6	0.5	1/8	red	150 m	12050
4.8	2.4	0.5	3/16	red	75 m	12051
6.4	3.2	0.6	1/4	red	75 m	12052
9.5	4.8	0.6	3/8	red	75 m	12053
12.7	6.4	0.6	1/2	red	50 m	12054
19	9.5	0.8	3/4	red	30 m	12056
25.4	12.7	0.9	1	red	30 m	12057
31.8	15.9	0.9	1 1/14	red	30 m	12400
38	19	1.0	1 1/2	red	30 m	12059

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
51	25.4	1.1	2	red	30 m	12060
76	38	1.3	3	red	15 m	12297
101.6	50.8	1.4	4	red	15 m	12280
1.6	0.8	0.4	1/16	brown	150 m	12103
3.2	1.6	0.5	1/8	brown	150 m	12255
4.8	2.4	0.5	3/16	brown	75 m	12270
6.4	3.2	0.6	1/4	brown	75 m	12272
9.5	4.8	0.6	3/8	brown	75 m	12290
12.7	6.4	0.6	1/2	brown	50 m	12055
19	9.5	0.8	3/4	brown	30 m	12554
25.4	12.7	0.9	1	brown	30 m	12292
38	19	1.0	1 1/2	brown	30 m	12294
51	25.4	1.1	2	brown	30 m	12600
1.2	0.6	0.4	3/64	yellow	150 m	12061
1.6	0.8	0.4	1/16	yellow	150 m	12062
2.4	1.2	0.5	3/32	yellow	150 m	12063
3.2	1.6	0.5	1/8	yellow	150 m	12064
4.8	2.4	0.5	3/16	yellow	75 m	12065
6.4	3.2	0.6	1/4	yellow	75 m	12066
9.5	4.8	0.6	3/8	yellow	75 m	12067
12.7	6.4	0.6	1/2	yellow	50 m	12068
19	9.5	0.8	3/4	yellow	30 m	12070
25.4	12.7	0.9	1	yellow	30 m	12071
31.8	15.9	0.9	1 1/14	yellow	30 m	12402
38	19	1.0	1 1/2	yellow	30 m	12073
51	25.4	1.1	2	yellow	30 m	12074
76	38	1.3	3	yellow	15 m	12281
101.6	50.8	1.4	4	yellow	15 m	12282

2:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, OTHER COLOURS

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.6	3/64	gray	150 m	12553
3.2	1.6	0.5	1/8	gray	150 m	12256
4.8	2.4	0.5	3/16	gray	75 m	12271
6.4	3.2	0.6	1/4	gray	75 m	12273
9.5	4.8	0.6	3/8	gray	75 m	12291
12.7	6.4	0.6	1/2	gray	50 m	12551
19	9.5	0.8	3/4	gray	30 m	12555
25.4	12.7	0.9	1	gray	30 m	12293
38	19	1.0	1 1/2	gray	30 m	12295
1.6	0.8	0.4	1/16	green	150 m	12104
2.4	1.2	0.5	3/32	green	150 m	12105
3.2	1.6	0.5	1/8	green	150 m	12106
4.8	2.4	0.5	3/16	green	75 m	12107
6.4	3.2	0.6	1/4	green	75 m	12108
9.5	4.8	0.6	3/8	green	75 m	12109
12.7	6.4	0.6	1/2	green	50 m	12110
19	9.5	0.8	3/4	green	30 m	12112
31.8	15.9	0.9	1 1/4	green	30 m	12401
38	19	1.0	1 1/2	green	30 m	12115
51	25.4	1.1	2	green	30 m	12116
76	38	1.3	3	green	15 m	12296
1.2	0.6	0.4	3/64	transparent	150 m	12117
1.6	0.8	0.4	1/16	transparent	150 m	12118
2.4	1.2	0.5	3/32	transparent	150 m	12119
3.2	1.6	0.5	1/8	transparent	150 m	12120
4.8	2.4	0.5	3/16	transparent	75 m	12121
6.4	3.2	0.6	1/4	transparent	75 m	12122
9.5	4.8	0.6	3/8	transparent	75 m	12123
12.7	6.4	0.6	1/2	transparent	50 m	12124

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
19	9.5	0.8	3/4	transparent	30 m	12126
25.4	12.7	0.9	1	transparent	30 m	12127
31.8	15.9	0.9	1 1/4	transparent	30 m	12128
38	19	1.0	1 1/2	transparent	30 m	12129
51	25.4	1.1	2	transparent	30 m	12130
76	38	1.3	3	transparent	15 m	12283
101.6	50.8	1.4	4	transparent	15 m	12284
1.2	0.6	0.4	3/64	white	150 m	12089
1.6	0.8	0.4	1/16	white	150 m	12090
2.4	1.2	0.5	3/32	white	150 m	12091
3.2	1.6	0.5	1/8	white	150 m	12092
4.8	2.4	0.5	3/16	white	75 m	12093
6.4	3.2	0.6	1/4	white	75 m	12094
9.5	4.8	0.6	3/8	white	75 m	12095
12.7	6.4	0.6	1/2	white	50 m	12096
19	9.5	0.8	3/4	white	30 m	12098
25.4	12.7	0.9	1	white	30 m	12099
38	19	1.0	1 1/2	white	30 m	12101
51	25.4	1.1	2	white	30 m	12102
76	38	1.3	3	white	15 m	12285
101.6	50.8	1.4	4	white	15 m	12286

2:1 POLYOLEFIN HIGH-TEMPERATURE SHRINK TUBING UP TO 150 °C HALOGEN-FREE, WITHOUT INTERNAL ADHESIVE, BLACK



- For locations with extreme heat stress
- Possible operating temperatures from -55°C to +150 °C

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, halogen-free)

Operating temperature:

- from approx. -55 °C to +150 °C

Shrinkage temperature:

- +120 °C min.

Characteristics:

- Good fire protection properties: flame retardant according to UL224 (except transparent)
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 5% max.
- Dielectric strength: approx. 15 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
9.5	4.5	0.6	3/8	■ black	75 m	12306
12.5	0.6	0.6	1/2	■ black	50 m	12307
18.7	9	0.8	47/64	■ black	30 m	12308
25.5	12.5	0.9	1	■ black	30 m	12309
38.1	19.1	1.0	1 1/2	■ black	30 m	12310
50.8	25.4	1.2	2	■ black	30 m	12311

2:1 POLYOLEFIN LOW-TEMPERATURE SHRINK TUBING FROM 65 °C WITHOUT INNER ADHESIVE, BLACK



- For temperature-critical locations
- Low shrink temperature from +65 °C
- Possible operating temperatures from -55 °C to +125 °C
- Prevents damage to sensitive electronic components or other goods

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free)

Operating temperature:

- from approx. -55 °C to +125 °C

Shrinkage temperature:

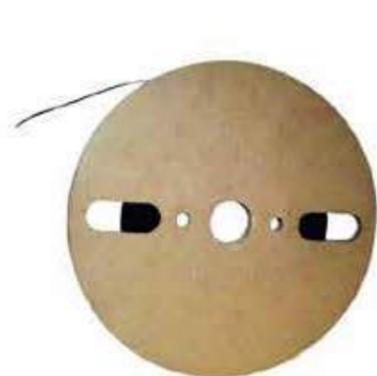
- +65°C min. / fully at +95°C

Characteristics:

- Good fire protection properties: flame retardant according to UL224 (except transparent)
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 5% max.
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.2	0.6	0.4	3/64	■ black	150 m	12041
1.6	0.8	0.4	1/16	■ black	150 m	12058
2.4	1.2	0.5	3/32	■ black	150 m	12069
3.2	1.6	0.4	1/8	■ black	150 m	12025
4.8	2.4	0.5	3/16	■ black	75 m	12026
6.4	3.2	0.6	1/4	■ black	75 m	12027
9.5	4.75	0.6	3/8	■ black	75 m	12028
12.7	6.4	0.6	1/2	■ black	50 m	12029
19	9.5	0.8	3/4	■ black	30 m	12031
25.4	12.7	0.9	1	■ black	30 m	12032
38.1	19.1	0.6	1 1/2	■ black	30 m	12072
50.8	25.4	1.1	2	■ black	30 m	12077

2:1 POLYOLEFIN ULTRA-THIN-WALLED, HIGHLY FLEXIBLE HEAT SHRINK TUBING HALOGEN-FREE, WITHOUT INTERNAL ADHESIVE, BLACK



- Flexible shrink tubing ultra-thin wall
- For applications with particularly high demands on the flexibility
- Halogen-free

Material:

- Particularly thin-walled, radiation-crosslinked Polyolefin (cadmium-free, lead-free, halogen-free)

Operating temperature:

- from approx. -55 °C to +125 °C

Shrinkage temperature:

- +125 °C min.

Characteristics:

- Very good fire protection properties: tested according to UL VW-1
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 5% max.
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
2.5	1	0.3	2 1/4	black	200 m	12243
4	1.71	0.3	5/32	black	200 m	12244
5.5	2.5	0.3	7/32	black	100 m	12245
7.7	3.5	0.4	19/64	black	100 m	12246
10.5	5.5	0.4	27/64	black	100 m	12247
13.5	6.5	0.4	17/32	black	100 m	12248
20.5	10	0.4	13/16	black	100 m	12249
25.7	12.5	0.4	1 1/64	black	50 m	12257

2:1 POLYOLEFIN HALOGEN-FREE SHRINK TUBING WITHOUT INNER ADHESIVE, ON A ROLL, BLACK



- Halogen-free alternative to normal shrink tubing
- For special fire protection requirements
- highly flexible

Material:

- Radiation-crosslinked polyolefin (halogen-free, cadmium-free, lead-free)

Operating temperature:

- from approx. -55 °C to +125 °C

Shrinkage temperature:

- approx. +110 °C

Characteristics:

- Very good fire protection properties: FMVSS 302 passed, the halogen-free material acts flame-retardant
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: approx. 6%
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 17 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.6	0.8	0.4	1/16	black	150 m	12002
2.4	1.2	0.5	3/32	black	150 m	12003
3.2	1.6	0.5	1/8	black	150 m	12004
9.5	4.8	0.6	3/8	black	150 m	12030
12.7	6.4	0.6	1/2	black	50 m	12008
19	9.5	0.8	3/4	black	30 m	12009
38	19	1	1 1/2	black	30 m	12011
51	25.4	1.1	2	black	30 m	12012

2:1 POLYOLEFIN ASSORTMENT BOXES BLACK



- Conveniently sorted
- 280 sections
- Common working lengths
- Quickly at hand

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224 (except transparent / meets FMVSS 302 instead), meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
of 1.2	up to 9.5	from 0.4 to 0.6	from 1/16 to 3/8	black	280 sections	12250
of 1.2	up to 9.5	from 0.4 to 0.6	from 1/16 to 3/8	red/black	280 sections	12251
of 1.2	up to 9.5	from 0.4 to 0.6	from 1/16 to 3/8	brown/blue/black/yellow/green	280 sections	12252

3:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, IN SMALL CARDBOARD BOX, BLACK



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- In the practical dispenser box

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +90 °C min.

Characteristics:

- Good fire protection properties: self-extinguishing and flame-resistant according to UL224 (except transparent / meets FMVSS 302 instead), meets common OEM specifications.
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 17 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.6	0.5	0.5	1/16	black	17 m	13210
3	1	0.6	1/8	black	15 m	13211
4.8	1.5	0.6	3/16	black	13 m	13212
6.4	2	0.7	1/4	black	12 m	13213
9.5	3	0.8	3/8	black	8 m	13214
12.7	4	0.8	1/2	black	8 m	13215
19	6	0.9	3/4	black	5 m	13216
25.4	8	0.5	1	black	3 m	13217

3:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, BLACK



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +90 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 17 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.5	0.5	0.5	1/16	■ black	150 m	13001
3	1	0.6	1/8	■ black	150 m	13002
4.5	1.5	0.6	3/16	■ black	75 m	13003
6.4	2	0.7	1/4	■ black	75 m	13004
9.5	3	0.8	3/8	■ black	75 m	13005
12	4	0.8	15/32	■ black	50 m	13006
18	6	0.9	45/64	■ black	30 m	13007
24	8	1.0	15/16	■ black	30 m	13008
39	13	1.2	1 1/2	■ black	30 m	13009

3:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, BLUE



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +90 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 17 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
4.5	1.5	0.6	3/16	blue	300 m	13030
9	3	0.8	3/8	blue	75 m	13032
12	4	0.8	15/32	blue	30 m	13033
24	8	1.0	15/16	blue	30 m	13035
39	13	1.2	1 1/2	blue	30 m	13036

3:1 POLYOLEFIN SHRINK TUBING THIN-WALLED WITHOUT INNER ADHESIVE, ON A ROLL, GREEN-YELLOW



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +90 °C min.

Characteristics:

- Good fire protection properties: flame-resistant and self-extinguishing according to UL224, meets common OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 17 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
3	1	0.8	1/8	green-yellow	75 m	13029
9	3	0.8	3/8	green-yellow	75 m	13027
12	4	0.8	15/32	green-yellow	50 m	13028
19	6	0.9	3/4	green-yellow	30 m	13254

3:1 POLYOLEFIN

SHRINK TUBING THIN-WALLED

WITHOUT INNER ADHESIVE, ON A ROLL, OTHER COLOURS



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +90 °C min.

Characteristics:

- Good fire protection properties: self-extinguishing and flame-resistant according to UL224 (except transparent / meets FMVSS 302 instead), meets common OEM specifications.
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 17 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
3	1	0.6	1/8	red	150 m	13011
6	2	0.7	15/64	red	75 m	13259
6	2	0.7	15/64	red	300 m	13013
9.5	3	0.8	3/8	red	75 m	13014
12	4	0.8	15/32	red	50 m	13015
18	6	0.9	45/64	red	30 m	13016
25.4	8.4	1.0	1	red	30 m	13017
39	13	1.2	1 1/2	red	30 m	13018
3	1	0.6	1/8	yellow	300 m	13020
6	2	0.7	15/64	yellow	300 m	13022
9.5	3	0.8	3/8	yellow	150 m	13023
12.7	4	0.8	1/2	yellow	100 m	13024
19	6	0.9	3/4	yellow	30 m	13025
24	8	1.0	15/16	yellow	30 m	13026
39	13	1.2	1 1/2	green	30 m	13021
25.4	8.4	1.0	1	orange	50 m	13010
39	13	1.2	1 1/2	orange	30 m	13019
1.5	0.5	0.5	1/16	transparent	150 m	13250
3	1	0.6	1/8	transparent	150 m	13251
4.5	1.5	0.6	3/16	transparent	75 m	13252
9	3	0.8	3/8	transparent	100 m	13253
12	4	0.8	15/32	transparent	50 m	13255
18	6	0.9	45/64	transparent	30 m	13256
24	8	1.0	15/16	transparent	30 m	13257
39	13	1.2	1 1/2	transparent	30 m	13258
51	25.4	1.1	2	transparent	30 m	12130
18	6	0.9	45/64	violet	30 m	13012
3	1	0.7	1/8	white	150 m	13039
6	2	0.7	15/64	white	75 m	13040
9.5	3	0.8	3/8	white	75 m	13041
12	4	0.8	15/32	white	100 m	13042
18	6	0.9	45/64	white	30 m	13043
24	8	1.0	15/16	white	30 m	13044
39	13	1.2	1 1/2	white	30 m	13045

3:1 POLYOLEFIN HEAT SHRINK TUBING THIN-WALLED WITH ADHESIVE INSIDE, ON A ROLL



Meets common industry and automotive specifications



- » The premium heat shrink tubing for all applications
- » Ideally processed using a hot air gun or a shrink tunnel.
- » Highly flexible
- » Excellent oil resistance, particularly suitable for automotive applications.

BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
3	1	2.4	1/8	300 m	99110
6	2	0.85	1/4	300 m	99107
9	3	1.2	3/8	150 m	99108
12	4	1.7	1/2	100 m	99101
24	8	2.4	1	25 m	99103
40	13	2.4	1 1/2	30 m	99104

RED

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
19	6	2.1	3/4	50 m	99102

TRANSPARENT

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
24	8	1.4	1	50 m	99109
40	13	2.4	1 1/2	30 m	99105

Material:

- Radiation-crosslinked polyolefin

Operating temperature:

- from -55 °C to +125 °C

Shrink temperature:

- from +110 °C

Characteristics:

- Good fire protection properties: self-extinguishing sheath (except transparent), flammability according to FMVSS 302, UL224 VW-1 on request
- Good chemical resistance: resistant to all common liquids and solvents. Good resistance to water absorption.
- Meets common industrial and automotive specifications.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]
- Elongation at break: 200% (100% after aging)

3:1 POLYOLEFIN HEAT SHRINK TUBING THIN-WALLED WITH INTERNAL ADHESIVE, AS A ROD



- » The premium heat shrink tubing for all applications
- » Ideally processed using a hot air gun or a shrink tunnel.
- » Highly flexible
- » Excellent oil resistance, particularly suitable for automotive applications.

Material:

- Radiation-crosslinked polyolefin

Operating temperature:

- from -55 °C to +125 °C

Shrink temperature:

- from +110 °C

Characteristics:

- Pole length: 1.22 m
- Good fire protection properties: self-extinguishing sheath (except transparent), flammability according to FMVSS 302, UL224 VW-1 on request
- Good chemical resistance: resistant to all common liquids and solvents. Good resistance to water absorption.
- Meets common industrial and automotive specifications.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]
- Elongation at break: 200% (100% after aging)

BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
3	1	1	1/8	10 pieces	13053
4.5	1.5	1.1	3/16	10 pieces	13054
6	2	1.2	1/4	10 pieces	13055
9	3	1.4	3/8	10 pieces	13056
12	4	1.7	1/2	5 pcs.	13057
19	6	2.1	3/4	10 pieces	13058
24	8	1	1	5 pcs.	13059
40	13	2.4	1 1/2	5 pcs.	13060

TRANSPARENT

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
3	1	1	1/8	10 pieces	13061
4.5	1.5	1.1	3/16	10 pieces	13062
6	2	1.2	1/4	10 pieces	13063
9	3	1.4	3/8	10 pieces	13064
12	4	1.7	1/2	5 pcs.	13065
19	6	2.1	3/4	5 pcs.	13066
24	8	1	1	5 pcs.	13067
40	13	2.4	1 1/2	5 pcs.	13068

3:1 POLYOLEFIN HEAT SHRINK TUBING MIDDLE WALL WITH INTERNAL ADHESIVE, AS A ROD, BLACK



- » The premium heat shrink tubing for all applications
- » For applications with higher mechanical loads
- » The inner adhesive bonding is particularly effective on plastic, rubber, neoprene, steel and polyethylene.
- » Shrinkage creates a watertight seal
- » Excellent oil resistance, particularly suitable for automotive applications.



Material:

- Radiation-crosslinked polyolefin

Operating temperature:

- from approximately -55 °C to +110 °C

Shrink temperature:

- from +110 °C

Characteristics:

- Good fire protection properties: no breaking or dripping under heat exposure up to approx. 225°C
- Good chemical resistance: resistant to all common liquids and solvents. Good resistance to water absorption.
- Meets common industrial and automotive specifications.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 14 MPa [=N/mm²]
- Elongation at break: 350% (200% after aging)
- Pole length: 1 m

BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
10	3	1	25/64	1 pc.	13069
16	5	1	5/8	1 pc.	13070
28	6	2.5	1 7/64	1 pc.	13071
30	8	2.5	1 1/4	1 pc.	13076
35	12	2.6	1 3/8	1 pc.	13072
50	16	2	1 31/32	10 pieces	13073
63	19	2.4	2 31/64	5 pcs.	13074
72	22	3	2 53/64	1 pc.	13075
85	25	2.8	3 11/32	10 pieces	13097
92	35	3	3 5/8	1 pc.	13077
115	34	3.1	4 17/32	1 pc.	13078
140	42	3.1	5 33/64	1 pc.	13079
160	55	3.2	6 19/64	1 pc.	13080
180	60	3.2	7 3/32	1 pc.	13081
300	100	3.8	11 13/16	1 pc.	13096

3:1 POLYOLEFIN SHRINK TUBING MEDIUM-WALLED WITHOUT INNER ADHESIVE, AS A ROD, BLACK



- The premium shrink tubing for all Applications
- For applications with higher mechanical Burdens
- Interior adhesive adheres particularly to plastic, Rubber, neoprene, steel and polyethylene
- Shrinkage closes watertight

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free)

Operating temperature:

- from approx. -40 °C to +110 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: under Heat exposure up to approx. +225°C no breaking or drops
- Good chemical resistance: resistant to all conventional liquids and water intake
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Pole length: 1.22 m
- Dielectric strength: approx. 14 kV/mm
- Tensile strength: approx. 12 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
22	6	2.0	55/64	■ black	1 pc.	13100
28	6	2.0	1	■ black	1 pc.	13101
35	12	2.4	1 1/2	■ black	1 pc.	13102
50	16	2.4	2	■ black	1 pc.	13103
63	19	2.7	2 1/2	■ black	1 pc.	13104
72	22	2.7	2 3/4	■ black	1 pc.	13105
92	29	3.0	3 3/4	■ black	1 pc.	13107
115	34	3.1	4 1/2	■ black	1 pc.	13108
140	42	3.1	5 33/64	■ black	1 pc.	13109
160	55	3.1	6 19/64	■ black	1 pc.	13110
180	60	3.2	7 3/32	■ black	1 pc.	13111

3:1 POLYOLEFIN HEAT SHRINK TUBING THICK-WALLED WITH INTERNAL ADHESIVE, AS A ROD



- » Heavy Duty
- » For extreme applications on land, underground or offshore
- » Particularly suitable for objects with large diameter differences.
- » The inner adhesive bonding is particularly effective on plastic, rubber, neoprene, steel and polyethylene.
- » Shrinkage creates a watertight seal



Material:

- Radiation-crosslinked polyolefin

Operating temperature:

- -55 °C to +110 °C

Shrink temperature:

- from +110 °C

Characteristics:

- Good fire protection properties: no breaking or dripping under heat exposure up to approx. 225°C
- Good chemical resistance: resistant to all common liquids and solvents. Good resistance to water absorption.
- Meets common industrial and automotive specifications.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 14 kV/mm
- Tensile strength: approx. 13 MPa [=N/mm²]
- Elongation at break: 350% (200% after aging)
- Pole length: 1 m

BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
13	4	2.4	33/64	1 pc.	13084
19	6	2.4	3/4	20 pieces	13085
30	8	3.2	1 1/14	1 pc.	13086
34	8	3.2	1 1/4	10 pieces	13095
43	12	3.9	1 3/4	1 pc.	13087
51	16	4.3	2 1/64	1 pc.	13088
70	21	4.1	2 3/4	1 pc.	13089
85	28	4.3	3 1/4	1 pc.	13090
90	30	4.3	3 35/64	1 pc.	13082
100	33	4.3	4	5 pcs.	13106
120	39	4.1	4 3/4	1 pc.	13091
130	36	4.1	5 1/8	1 pc.	13092
160	50	4.1	6 19/64	1 pc.	13093
180	50	4.4	7 3/32	1 pc.	13094

3:1 POLYOLEFIN THICK-WALLED SHRINK TUBING WITHOUT INNER ADHESIVE, AS A ROD, BLACK



- Heavy Duty
- For the most extreme applications on land, under the Earth or offshore
- Particularly suitable for objects with large Diameter differences

Material:

- Radiation-crosslinked polyolefin (lead-free, cadmium-free)

Operating temperature:

- from approx. -40 °C to +120 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Good fire protection properties: flame-retardant, self-extinguishing sheath
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Rod length: 1 m
- Dielectric strength: approx. 10 kV/mm
- Tensile strength: approx. 12 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
12	4	2.7	1/2	black	1 pc.	13180
43	12	3.7	1 1/4	black	1 pc.	13183
92	26	4.1	3 1/2	black	1 pc.	13186

3:1 POLYOLEFIN SHRINK TUBING WITH ANTI-CORROSIVE EVA HOTMELT ADHESIVE, AS A ROD, BLACK



- Provides high protection against impact and abrasion
- Using a special adhesive with high Corrosion protection
- Also ideal for civil engineering, e.g. Protection of ground anchors

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free) with anti-corrosive adhesive EVA hotmelt

Operating temperature:

- from approx. -55 °C to +110 °C

Shrinkage temperature:

- approx. +120 °C

Characteristics:

- Good fire protection properties: FMVSS 302 passed
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Pole length: 1.22 m
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 14.5 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
28	10	2.0	1 7/64	black	1 pc.	13132
33	10.2	2.0	1 1/4	black	1 pc.	13133
38.1	12.7	2.0	1 1/2	black	1 pc.	13134
43.2	12.7	2.0	1 3/4	black	1 pc.	13135
52.1	19.1	2.0	2 3/64	black	1 pc.	13136
88.9	30	2.4	3 1/2	black	1 pc.	13138
119.4	39.9	2.7	4 3/4	black	1 pc.	13139
152	48	2.8	6	black	1 pc.	13140
170.2	58.4	2.8	7	black	1 pc.	13141
228.6	77	3.0	9	black	1 pc.	13142

3:1 POLYOLEFIN SHRINK TUBING

WITH SPECIAL CORROSION PROTECTION INTERIOR ADHESIVE
BUTYL MASTIC, AS A ROD, BLACK



- Provides high protection against impact and abrasion
- Butylene mastic adhesive for excellent Corrosion protection
- UV-resistant
- Adheres excellently to metal and wood

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, halogen-free, UV-resistant) with Mastic resin coating

Operating temperature:

- from approx. -35 °C to +110 °C

Shrinkage temperature:

- approx. +120 °C

Characteristics:

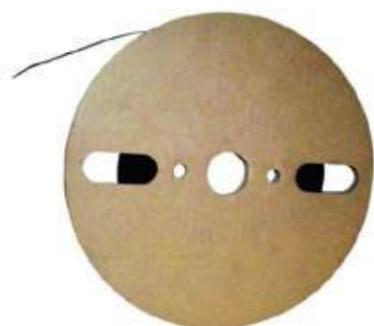
- Good fire protection properties: tested according to ASTM D
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Excellent corrosion protection through special butyl mastic adhesive
- Longitudinal shrinkage: 10% max.
- Pole length: 1.22 m
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 14.5 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
33	8	2.5	1 1/4	■ black	1 pc.	13320
40	12	2.5	1 37/64	■ black	1 pc.	13321
55	16	2.7	2 11/64	■ black	1 pc.	13322
75	22	3.0	2 61/64	■ black	1 pc.	13323
95	25	3.0	3 47/64	■ black	1 pc.	13324
115	34	3.2	4 17/32	■ black	1 pc.	13325
140	42	3.3	5 33/64	■ black	1 pc.	13326
160	50	3.3	6 19/64	■ black	1 pc.	13327
180	58	3.3	7 3/32	■ black	1 pc.	13333
200	65	3.3	7 7/8	■ black	1 pc.	13328
235	65	3.7	9 1/4	■ black	1 pc.	13329
265	75	3.8	10 7/16	■ black	1 pc.	13330
300	85	3.8	11 13/16	■ black	1 pc.	13331
350	100	4.2	13 25/32	■ black	1 pc.	13332

3:1 POLYOLEFIN

FLAT-ROLLED SHRINK TUBING

WITHOUT INNER ADHESIVE, ON A ROLL, BLACK



- The premium shrink tubing for all Applications
- Ideal to process with a hot air gun or using a shrink tunnel
- UL certified
- Highly flexible
- Flat design, ideal for printing

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free)

Operating temperature:

- from approx. -55 °C to +125 °C

Shrinkage temperature:

- +90 °C min.

Characteristics:

- Good fire protection properties: flame retardant
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 5% max.
- Dielectric strength: approx. 20 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
3.2	1.7	0.6	1/8	black	30 m	13143
4.8	1.6	0.6	3/16	black	30 m	13144
6.4	2.11	0.6	1/4	black	30 m	13145
9.5	3.17	0.8	3/8	black	30 m	13146
12.7	4.22	0.8	1/2	black	30 m	13147
19	6.4	0.9	3/4	black	30 m	13148
25.4	8.47	1.0	1	black	30 m	13149
3.2	1	0.6	1/8	yellow	30 m	13157
4.8	1.6	0.6	3/16	yellow	30 m	13158
6.4	2.11	0.7	1/4	yellow	30 m	13159
9.5	3.17	0.8	3/8	yellow	30 m	13160
12.7	4.22	0.8	1/2	yellow	30 m	13161
19	6.4	0.9	3/4	yellow	30 m	13162
25.4	8.47	1.0	1	yellow	30 m	13163
3.2	1.07	0.6	1/8	white	30 m	13150
4.8	1.6	0.6	3/16	white	30 m	13151
6.4	2.11	0.7	1/4	white	30 m	13152
9.5	3.17	0.8	3/8	white	30 m	13153
12.7	4.22	0.8	1/2	white	30 m	13154
19	6.4	0.9	3/4	white	30 m	13155
25.4	8.47	1.0	1	white	30 m	13156

4:1 POLYOLEFIN HEAT SHRINK TUBING THIN-WALLED WITH ADHESIVE INSIDE, ON A ROLL, BLACK



- » Particularly suitable for objects with large diameter differences.
- » The inner adhesive bonding is particularly effective on plastic, rubber, neoprene, steel and polyethylene.
- » Shrinkage creates a watertight seal

Material:

- Radiation-crosslinked polyolefin

Operating temperature:

- -55 °C to +110 °C

Shrink temperature:

- from +110 °C

Characteristics:

- Good fire protection properties: Coating self-extinguishing (except transparent), burning behavior passed FMVSS 302.
- Good chemical resistance: resistant to all common liquids and solvents. Good resistance to water absorption.
- Meets common industrial and automotive specifications.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 18% max.
- Dielectric strength approx. 22 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]
- Elongation at break: approx. 400%



BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
8	2	1.2	5/16	150 m	14033
12	3	1.4	15/32	100 m	99913
16	4	1.7	5/8	50 m	99914
24	6	2	15/16	25 m	99200
32	8	2.4	1 17/64	25 m	99112

4:1 POLYOLEFIN
HEAT SHRINK
TUBING THIN-WALLED
WITH INTERNAL ADHESIVE, AS A ROD



Meets common industry and automotive specifications



- » Particularly suitable for objects with large diameter differences.
- » The inner adhesive bonding is particularly effective on plastic, rubber, neoprene, steel and polyethylene.
- » Shrinkage creates a watertight seal

Material:

- Radiation-crosslinked polyolefin

Operating temperature:

- -55 °C to +110 °C

Shrink temperature:

- from +110 °C

Characteristics:

- Good fire protection properties: Coating self-extinguishing (except transparent / instead meets FMVSS 302)
- Good chemical resistance: resistant to all common liquids and solvents. Good resistance to water absorption.
- Meets common industrial and automotive specifications.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 18% max.
- Dielectric strength approx. 22 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]
- Elongation at break: approx. 400%
- Pole length: 1.22 m

BLACK

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
4	1	1	5 3/2	10 pieces	14001
8	2	1.2	21/64	10 pieces	14002
12	3	1.4	1/2	5 pcs.	14003
16	4	1.7	5/8	5 pcs.	14004
24	6	2.1	1	5 pcs.	14005
32	8	2.4	1 1/4	5 pcs.	14006
52	13	2.4	2 3/64	5 pcs.	14007

TRANSPARENT

Diameter before shrinkage [mm]	Diameter after shrinkage [mm]	Wall thickness after shrinkage [mm]	Diameter in inches before shrinkage [mm]	Contents	Item No.
4	1	1	5 3/2	10 pieces	14008
8	2	1.2	21/64	10 pieces	14009
12	3	1.4	1/2	5 pcs.	14010
16	4	1.7	5/8	5 pcs.	14011
24	6	2.1	1	5 pcs.	14012
32	8	2.4	1 1/4	5 pcs.	14013
52	13	2.4	2 3/64	5 pcs.	14014

4:1 POLYOLEFIN THIN-WALLED SHRINK TUBING WITHOUT INNER ADHESIVE, AS A ROD, BLACK



- Highly flexible
- UV-resistant
- self-extinguishing

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, UV-stabilized)

Operating temperature:

- from approx. -55 °C to +135 °C

Shrinkage temperature:

- +100 °C

Characteristics:

- Good fire protection properties: flame retardant and self-extinguishing according to UL 224 VW-1
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Pole length: 1.22 m
- Dielectric strength: approx. 24 kV/mm
- Tensile strength: approx. 20 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
19.1	4.6	1.7	3/4	black	1 pc.	13304
25.4	7	1.7	1	black	1 pc.	13305
38.1	9.5	1.7	1 1/2	black	1 pc.	13306
50.8	14	1.7	2	black	1 pc.	13307
76.2	21.3	1.7	3	black	1 pc.	13308
102	26.7	1.7	4 1/64	black	1 pc.	13309

5:1 POLYOLEFIN THICK-WALLED SHRINK TUBING WITH INTERNAL ADHESIVE, ON A ROLL, TRANSPARENT



- Particularly suitable for objects with large Diameter differences
- Interior adhesive adheres particularly to plastic, Rubber, neoprene, steel and polyethylene
- Shrinkage closes watertight

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free)

Operating temperature:

- from approx. -55 °C to +125 °C

Shrinkage temperature:

- approx. +120 °C

Characteristics:

- Melting point of adhesive: approx. +92 °C
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Pole length (item 14034): 1.22 m
- Dielectric strength approx. 20 kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
6.4	1.2	1.5	1/4	transparent	100 m	14030
8	1.5	2.1	5/16	transparent	100 m	14031
11.8	2.1	2.5	15/32	transparent	1 pc.	14034

6:1 POLYOLEFIN THICK-WALLED SHRINK TUBING WITH INTERNAL ADHESIVE, AS A ROD, BLACK



- For sealing, insulation and mechanical Protection of cables and wires
- Particularly suitable for objects with large Diameter differences
- Interior adhesive adheres particularly to plastic, Rubber, neoprene, steel and polyethylene
- Shrinkage seals watertight and serves the Filling gaps, for example in cable harnesses

Material:

- Radiation-crosslinked polyolefin (cadmium-free, lead-free, silicone-free)

Operating temperature:

- from approx. -55 °C to +110 °C

Shrinkage temperature:

- +120 °C min.

Characteristics:

- Very good fire protection properties: Coat self-extinguishing according to UL94 V-0 (except transparent / meets FMVSS 302 instead), meets common Industrial and automotive OEM specifications
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 18% max.
- Pole length: 1.22 m
- Dielectric strength approx. 22 kV/mm
- Tensile strength: approx. 15 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
19	3.2	3.2	3/4	■ black	1 pc.	14015
33	5.5	3.4	19/64	■ black	1 pc.	14023
44.4	7.4	3.6	1 3/4	■ black	1 pc.	14017
50.8	8.3	4.3	2	■ black	25 pcs.	14018
69.8	11.7	4.8	2 3/4	■ black	1 pc.	14019
88.9	17.1	4.3	3 1/2	■ black	1 pc.	14020
119.4	22.9	4.8	4 3/4	■ black	1 pc.	14021
235	40	4.7	9 1/4	■ black	1 pc.	14024

SPECIAL MATERIAL VITRON TUBE 2:1, ON A ROLL, BLACK



- Protective products with particularly high Abrasion properties, puncture-resistant
- High thermal resilience
- For extreme applications in military technology, shipbuilding, for renewable energies, in the Automotive and aerospace industries

Material:

- Cross-linked Viton (cadmium-free, lead-free)

Operating temperature:

- from approx. -55 °C to +220 °C

Shrinkage temperature:

- approx. +160 °C

Characteristics:

- Very good fire protection properties: flame-resistant and self-extinguishing according to ASTM
- Very good chemical resistance: especially resistant to corrosive liquids at high temperatures, as well as against all conventional Liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength approx. 16 kV/mm
- Tensile strength: approx. 18 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
3.2	1.6	0.8	1/8	black	50 m	15031
4.8	2.4	0.9	3/16	black	50 m	15032
6.4	3.2	0.9	1/4	black	50 m	15033
9.5	4.8	1.0	3/8	black	50 m	15034
12.7	6.4	1.2	1/2	black	30 m	15035
19	9.5	1.4	3/4	black	30 m	15036
25.4	12.7	1.8	1	black	30 m	15037
38	19	2.4	1 1/2	black	15 m	15038
50.8	25.4	2.8	2	black	15 m	15039

SPECIAL MATERIAL PTFE HOSE 2:1, ON A ROLL, TRANSPARENT



- For particularly high ambient temperatures
- High mechanical strength
- High tracking resistance

Material:

- PTFE (polytetrafluoroethylene/ anti-adhesive)

Operating temperature:

- from approx. -65 °C to +260 °C

Shrinkage temperature:

- approx. +327 °C (Please note the special Requirements of PTFE shrink tubing for of processing.)

Characteristics:

- Excellent fire protection properties: non-combustible, approved according to UL224
- Very good chemical resistance: resistant against all conventional liquids and solvent
- Non-corrosive, even with copper
- Longitudinal shrinkage: approx. 5% max.
- Dielectric strength approx. 40 kV/mm
- Tensile strength: approx. 29 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
0.97	0.46	0.2	1/32	transparent	100 m	15104

SPECIAL MATERIAL PTFE HOSE 2:1, AS A ROD, TRANSPARENT



- For particularly high ambient temperatures
- High mechanical strength
- High tracking resistance

Material:

- PTFE (polytetrafluoroethylene/ anti-adhesive)

Operating temperature:

- from approx. -65 °C to +260 °C

Shrinkage temperature:

- approx. +327 °C (Please note the special Requirements of PTFE shrink tubing for of processing.)

Characteristics:

- Excellent fire protection properties: non-combustible, approved according to UL224
- Very good chemical resistance: resistant against all conventional liquids and solvent
- Non-corrosive, even with copper
- Longitudinal shrinkage: approx. 5% max.
- Pole length: 1.22 m
- Dielectric strength approx. 40 kV/mm
- Tensile strength: approx. 29 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.27	0.64	0.3	1 1/4	transparent	10 pcs.	15054
7.67	4.4	0.4	19/64	transparent	1 pc.	15063
9.4	5.45	0.4	3/8	transparent	10 pcs.	15064

SPECIAL MATERIAL PTFE HOSE 4:1, ON A ROLL, TRANSPARENT



- For particularly high ambient temperatures
- High mechanical strength
- High tracking resistance

Material:

- PTFE (polytetrafluoroethylene/ anti-adhesive)

Operating temperature:

- from approx. -65 °C to +260 °C

Shrinkage temperature:

- approx. +327 °C (Please note the special Requirements of PTFE shrink tubing for of processing.)

Characteristics:

- Excellent fire protection properties: non-combustible, approved according to UL224
- Very good chemical resistance: resistant against all conventional liquids and solvent
- Non-corrosive, even with copper
- Longitudinal shrinkage: approx. 5% max.
- Dielectric strength approx. 40 kV/mm
- Tensile strength: approx. 29 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
2	0.5	0.2	5/64	transparent	250 m	15100
3.2	0.8	0.3	1/8	transparent	100 m	15101
9.5	2.4	0.3	3/8	transparent	50 m	15102
25.4	7	0.4	1	transparent	50 m	15105

SPECIAL MATERIAL PTFE HOSE 4:1, AS A ROD, TRANSPARENT



- For particularly high ambient temperatures
- High mechanical strength
- High tracking resistance

Material:

- PTFE (polytetrafluoroethylene/ anti-adhesive)

Operating temperature:

- from approx. -65 °C to +260 °C

Shrinkage temperature:

- approx. +327 °C (Please note the special Requirements of PTFE shrink tubing for of processing.)

Characteristics:

- Excellent fire protection properties: non-combustible, approved according to UL224
- Very good chemical resistance: resistant against all conventional liquids and solvent
- Non-corrosive, even with copper
- Longitudinal shrinkage: approx. 5% max.
- Pole length: 1.22 m
- Dielectric strength approx. 40 kV/mm
- Tensile strength: approx. 29 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.98	0.64	0.2	5/64	transparent	1 pc.	15040
2.36	0.8	0.3	3/32	transparent	25 pcs.	15041
3.18	0.94	0.3	1/8	transparent	1 pc.	15042
4.76	1.27	0.3	3/16	transparent	25 pcs.	15043
6.35	1.6	0.3	1/4	transparent	1 pc.	15044
9.25	2.44	0.3	3/8	transparent	1 pc.	15045
12.7	3.66	0.4	1/2	transparent	1 pc.	15046
15.88	4.52	0.4	5/8	transparent	1 pc.	15047
19	4.8	0.4	3/4	transparent	10 pcs.	15048
25.4	7.06	0.4	1	transparent	10 pcs.	15049
31.75	8.82	0.4	1 1/2	transparent	1 pc.	15050

SPECIAL MATERIAL KYNAR HOSE 2:1, ON A ROLL, TRANSPARENT



- With particularly high abrasion properties, puncture-proof
- Special chemical resistance
- Extreme flame resistance
- Good resistance to aging

Material:

- Kynar (polyvinylidene fluoride PVDF / lead-free, cadmium-free, additive-free)

Operating temperature:

- from approx. -55 °C to +175 °C

Shrinkage temperature:

- +175 °C min.

Characteristics:

- Excellent fire protection properties: self-extinguishing, flame-retardant, low Smoke development according to UL224 VW-1
- Excellent chemical resistance: resistant against all conventional liquids, against Chemicals, solvents, acids, alcohols, chlorinated solvents, mineral bases and aromatic hydrocarbons. Even at high Temperatures remain the chemical properties stable.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 6% max.
- Dielectric strength approx. 31.5 kV/mm
- Tensile strength: approx. 37 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
25.4	12.7	0.2	1	transparent	50 m	15020

SPECIAL MATERIAL KYNAR HOSE 2:1, AS A ROD, TRANSPARENT



- With particularly high abrasion properties, puncture-proof
- Special chemical resistance
- Extreme flame resistance
- Good resistance to aging

Material:

- Kynar (polyvinylidene fluoride PVDF / lead-free, cadmium-free, additive-free)

Operating temperature:

- from approx. -55 °C to +175 °C

Shrinkage temperature:

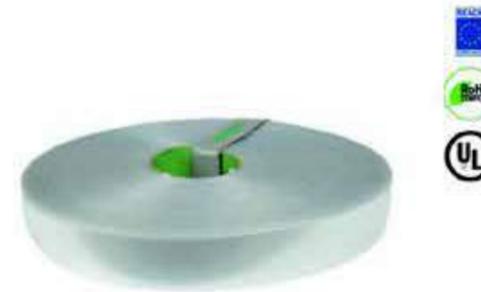
- +175 °C min.

Characteristics:

- Excellent fire protection properties: self-extinguishing, flame-retardant, low Smoke development according to UL224 VW-1
- Excellent chemical resistance: resistant against all conventional liquids, against Chemicals, solvents, acids, alcohols, chlorinated solvents, mineral bases and aromatic hydrocarbons. Even at high Temperatures remain the chemical properties stable.
- Non-corrosive, even with copper
- Longitudinal shrinkage: 6% max.
- Pole length: 1.22 m
- Dielectric strength approx. 31.5 kV/mm
- Tensile strength: approx. 37 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
1.6	0.8	0.2	1/16	transparent	25 pcs.	15110
2.4	1.2	0.2	3/32	transparent	25 pcs.	15111
3.2	1.6	0.2	1/8	transparent	25 pcs.	15112
4.8	2.4	0.2	3/16	transparent	25 pcs.	15115
6.4	3.2	0.2	1/4	transparent	1 pc.	15116
9.5	4.8	0.2	3/8	transparent	10 pcs.	15117
12.7	6.4	0.2	1/2	transparent	10 pcs.	15118
19	9.5	0.2	3/4	transparent	10 pcs.	15119
25.4	12.7	0.2	1	transparent	10 pcs.	15120

SPECIAL MATERIAL PET ULTRA-THIN 2:1, ON A ROLL, TRANSPARENT & BLACK



- Extremely thin-walled
- Ideal as a wrapping/labeling for rechargeable batteries, batteries, coil windings, capacitors, etc.
- Shatter protection for fluorescent lamps in the Food processing / industry (transparent execution)

Material:

- PET (ultra-thin)

Operating temperature

- approx. -40 °C to +130 °C
- Melting point from +200 °C

Shrinkage temperature:

- approx. +100 °C

Characteristics:

- Very good fire protection properties: low Smoke development, no toxic gases
- Shrinkage rate: approx. 48% (2:1)
- Longitudinal shrinkage: approx. 8% max.
- Tensile strength: approx. 100 to 300 N/m
- Dielectric strength: approx. 10 kV/mm
- Surface resistance: >109 Ohm

Ø before shrinkage [mm]	Ø after shrinkage [mm]	Wall thickness according to Shrinkage [mm]	Color	Contents	Item number
10	5	0.1	black	200 m	92132
18	9	0.1	black	200 m	92133
30	15	0.1	black	100 m	92134
10	5	0.1	transparent	200 m	92135
18	9	0.1	transparent	200 m	92136
30	15	0.1	transparent	200 m	92137

SPECIAL MATERIAL ULTRA-THIN RIGID PVC 2:1, HALOGEN-FREE, ON ROLL, BLACK



- Extremely thin-walled
- Ideal as a wrapping/labeling for rechargeable batteries, batteries, coil windings, capacitors, etc.
- Shatter protection for fluorescent lamps in the Food processing / industry (transparent execution)

Material:

- Hard PVC (halogen-free, particularly thin-walled)

Operating temperature:

- up to approx. +105 °C

Shrinkage temperature:

- approx. +100 °C

Characteristics:

- Good fire protection properties: flame retardant according to UL224, halogen-free
- Very good chemical resistance: resistant against all common liquids and certain acids/corrosion-proof
- Longitudinal shrinkage: approx. 5% max.
- Dielectric strength: approx. kV/mm
- Tensile strength: approx. 10.4 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
23	13	0.1	7/8	black	200 m	12503
40	20	0.1	1 3/4	black	50 m	12500
60	30	0.1	2 1/2	black	50 m	12501
76	38	0.1	3	black	50 m	12502

SPECIAL MATERIAL ELASTOMER HOSE 2:1, ON A ROLL, BLACK



- High resistance to mechanical influences such as abrasion and puncture
- Long-term resistance to diesel, Hydraulic fluids and chemicals
- In the aerospace and defense sectors Applications very well usable

Material:

- Cross-linked elastomer (cadmium-free, lead-free)

Operating temperature:

- from approx. -75 °C to +150 °C

Shrinkage temperature:

- +150 °C max.

Characteristics:

- Very good fire protection properties: flame-resistant and self-extinguishing according to UL224
- Very good chemical resistance: especially fuel-resistant/ resistant to diesel, hydraulic fluids and chemicals, as well as all conventional liquids and solvents
- Longitudinal shrinkage: approx. 10% max.
- Non-corrosive, even with copper
- Dielectric strength approx. 22 kV/mm
- Tensile strength: approx. 20 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
3.2	1.6	0.8	1/8	black	50 m	15021
4.8	2.4	0.9	3/16	black	50 m	15022
6.4	3.2	1.0	1/4	black	50 m	15023
9.5	4.8	1.1	3/8	black	50 m	15024
12.7	6.4	1.3	1/2	black	30 m	15025
19	9.5	1.5	3/4	black	30 m	15026
25.4	12.7	1.9	1	black	30 m	15027
38	19	1.9	1 1/2	black	15 m	15028
51	25.4	3.1	2	black	50 m	15029
76	38	3.3	3	black	25 m	15030

SHRINK-MOLDED PARTS REPAIR CUFFS

WITH LOCKING RAIL 4:1, HALOGEN-FREE, WITH INTERNAL ADHESIVE



- Reliable sealing against moisture
- Simple, quick and clean installation
- The hose can be shortened
- Stainless steel channel provides a durable Locking system

Material:

- Cross-linked, thick-walled polyolefin with internal adhesive and stainless steel locking rail (cadmium-free, lead-free, halogen-free, UV-stabilized)

Operating temperature:

- from approx. -40 °C to +65 °C

Shrinkage temperature:

- +110 °C min.

Characteristics:

- Very good fire protection properties: the halogen-free material has a flame-retardant effect
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 12 kV/mm
- Tensile strength: approx. 15.5 MPa [=N/mm²]



Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Length [mm]	Color	Contents	Item number
36	10	3.2	500	black	1 pc.	16266
36	10	3.2	1000	black	1 pc.	16267
55	13	3.4	500	black	1 pc.	16268
55	13	3.4	1000	black	1 pc.	16269
85	22	3.6	500	black	1 pc.	16270
85	22	3.6	1000	black	1 pc.	16271
108	27	4.7	500	black	1 pc.	16272
108	27	4.7	1000	black	1 pc.	16273
136	30	4.7	500	black	1 pc.	16274
136	30	4.7	1000	black	1 pc.	16275
180	50	4.7	500	black	1 pc.	16276
180	50	4.7	1000	black	1 pc.	16277

SHRINK-MOLDED PARTS REPAIR CUFFS

WITH LOCKING RAIL 5:1, WITH INTERNAL ADHESIVE



- Reliable sealing against moisture
- Simple, quick and clean installation
- The hose can be shortened
- Stainless steel channel provides a durable Locking system

Material:

- Polyolefin with internal adhesive and stainless steel locking rail (cadmium-free, lead-free)

Operating temperature:

- from approx. -35 °C to +100 °C

Shrinkage temperature:

- +120 °C min.

Characteristics:

- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Longitudinal shrinkage: 10% max.
- Dielectric strength: approx. 12 kV/mm
- Tensile strength: approx. 15.5 MPa [=N/mm²]



Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Length [mm]	Color	Contents	Item number
43	8	2.3	1000	black	1 pc.	16250
75	15	2.3	1000	black	1 pc.	16251
137	34	2.3	1000	black	1 pc.	16253
160	48	2.3	1000	black	1 pc.	16254
198	55	2.3	750	black	1 pc.	16258
200	48	2.3	1000	black	1 pc.	16255
240	65	2.9	1000	black	1 pc.	16256

SHRINK-MOLDED PARTS END CAPS HALOGEN-FREE



- Reliable sealing against moisture
- UV-stabilized material
- Excellent mechanical strength
- Excellent impact and vibration resistance
- Also for poles and pipes made of wood, plastic or Suitable for metal

Material:

- Radiation-crosslinked, thick-walled polyolefin (cadmium-free, lead-free, silicone-free, halogen-free, UV-stabilized)

Operating temperature:

- from approx. -30 °C to +85 °C

Shrinkage temperature:

- approx. +120 °C

Characteristics:

- Very good fire protection properties: the halogen-free material has a flame-retardant effect
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Dielectric strength: approx. 10 kV/mm
- Tensile strength: approx. 14 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
12	4	2.3	15/32	■ black	100 pcs.	16025
15	4.5	2.0	19/32	■ black	1 pc.	16026
21.55	7	3.2	27/32	■ black	100 pcs.	16020
25	9	2.7	63/64	■ black	100 pcs.	16027
36	15	2.8	1 27/64	■ black	100 pcs.	16021
55	25	3.4	2 11/64	■ black	50 pcs.	16022
75	32	3.2	2 61/64	■ black	25 pcs.	16023
100	45	3.6	4	■ black	10 pcs.	16024

SHRINK-MOLDED PARTS DIVIDER CAPS 2 FINGERS HALOGEN-FREE



- Reliable sealing against moisture
- UV-stabilized material
- Excellent mechanical strength
- Quick and easy to install

Material:

- Radiation-crosslinked, medium-walled polyolefin (cadmium-free, lead-free, silicone-free, halogen-free, UV-stabilized)

Operating temperature:

- from approx. -30 °C to +85 °C

Shrinkage temperature:

- +120 °C

Characteristics:

- Very good fire protection properties: the halogen-free material has a flame-retardant effect
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Dielectric strength: approx. 10 kV/mm
- Tensile strength: approx. 10.5 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
28	9.2	4.1	1 7/64	■ black	20 pcs.	16146

SHRINK-MOLDED PARTS DIVIDER CAPS 3 FINGERS HALOGEN-FREE



- Reliable sealing against moisture
- UV-stabilized material
- Excellent mechanical strength
- Quick and easy to install

Material:

- Radiation-crosslinked, medium-walled polyolefin (cadmium-free, lead-free, silicone-free, halogen-free, UV-stabilized)

Operating temperature:

- from approx. -30 °C to +85 °C

Shrinkage temperature:

- +120 °C

Characteristics:

- Very good fire protection properties: the halogen-free material has a flame-retardant effect
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Dielectric strength: approx. 10 kV/mm
- Tensile strength: approx. 10.5 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
63	22	3.5	2 1/2	■ black	5 pcs.	16148
100	28	3.5	4	■ black	5 pcs.	16149
115	45	2.5	4 1/2	■ black	5 pcs.	16147

SHRINK-MOLDED PARTS 4-FINGER DIVIDING CAPS HALOGEN-FREE



- Reliable sealing against moisture
- UV-stabilized material
- Excellent mechanical strength
- Quick and easy to install
- Also available with 5 and 6 fingers on request

Material:

- Radiation-crosslinked, medium-walled polyolefin (cadmium-free, lead-free, silicone-free, halogen-free, UV-stabilized)

Operating temperature:

- from approx. -30 °C to +85 °C

Shrinkage temperature:

- +120 °C

Characteristics:

- Very good fire protection properties: the halogen-free material has a flame-retardant effect
- Good chemical resistance: resistant to all conventional liquids and solvents
- Non-corrosive, even with copper
- Dielectric strength: approx. 10 kV/mm
- Tensile strength: approx. 10.5 MPa [=N/mm²]

Ø before shrinkage [mm]	Ø after Shrinkage [mm]	Wall thickness after shrinkage [mm]	Ø in inches before shrink	Color	Contents	Item number
80	25	2.0	3 5/32	■ black	5 pcs.	16152
100	31	2.5	4	■ black	5 pcs.	16150



CORRUGATED PIPE

With our wide range of standard and specialty corrugated conduits for industrial cable protection and photovoltaics, we offer solutions for virtually every application. We work closely with long-standing partners while remaining manufacturer-independent. Thanks to our warehousing and retrieval service, you benefit from high availability and predictable supply – even in dynamic market phases.



CORRUGATED PIPE INDUSTRY STANDARD FROM PA 6

- » The standard corrugated pipe in the technical field
- » Excellent heat resistance and cold impact resistance at extreme sub-zero temperatures.
- » High abrasion resistance and very good dynamic load capacity
- » Halogen-free, therefore flame-retardant and non-flame-spreading.

Material:

- PA 6 (Polyamide 6)

Operating temperature:

- -45 °C to +120 °C (briefly up to +150 °C)
- Melting point: from approx. +220 °C

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL 94 V-2 / FMVSS 302
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis
- Tensile strength (modulus of elasticity): 1200 - 2000 N/mm²
- Elongation at break: approx. 200%

CORRUGATED PIPE INDUSTRY STANDARD SLOTTED, BLACK



Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item No.
4.5	4.5	7.1	0.1	7	100 m	31133
6	6.1	8.7	0.1	11	50 m	31135
7.5	6.6	10	0.1	11	50 m	31136
8.5	8.4	11.5	0.2	13	50 m	31137
10	9.8	12.8	0.2	15	50 m	31138
11	10.5	13.6	0.2	15	50 m	31140
13	12.7	16	0.3	20	50 m	31141
16	14.5	18.9	0.2	15	50 m	31143
17	16.6	21.1	0.3	30	50 m	31144
19	19.2	24.2	0.3	33	50 m	31145
22	21.2	25.5	0.3	35	50 m	31146
23	23.1	28.4	0.3	40	50 m	31147
26	25.7	31.2	0.3	45	50 m	31148
29	28.9	34.5	0.3	50	25 m	31149
37	34	42.2	0.4	65	25 m	31151
50	45.6	53.8	0.4	90	25 m	31152
75	76.7	85.2	0.4	150	25 m	31154

CORRUGATED PIPE INDUSTRY STANDARD UNSLOTTED, BLACK



Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item No.
4.5	4.5	7.1	0.1	7	100 m	31109
6	6.1	8.7	0.1	10	50 m	31111
7.5	6.6	10	0.1	11	50 m	31112
8.5	8.4	11.5	0.2	13	50 m	31113
10	9.8	12.8	0.2	15	50 m	31114
12	12.3	15.7	0.3	20	50 m	31116
13	12.7	16	0.3	20	50 m	31117
14	14.2	18.5	0.3	25	50 m	31118
17	16.6	21.1	0.3	30	50 m	31120
19	19.2	24.2	0.3	33	50 m	31121
22	21.2	25.5	0.3	35	50 m	31122
23	23.1	28.4	0.3	40	50 m	31123
26	25.7	31.2	0.3	45	50 m	31124
29	28.9	34.5	0.3	50	25 m	31125
37	43	42.2	0.4	65	25 m	31127
50	45.6	53.8	0.4	90	25 m	31128
65	62.7	73.5	0.4	150	25 m	31129
75	76.7	85.2	0.4	150	25 m	31130



CORRUGATED PIPE INDUSTRY STANDARD

MADE OF PA 6, DIVIDED INTO TWO PARTS



- » The standard corrugated pipe in the technical field
- » Excellent heat resistance and cold impact resistance at extreme sub-zero temperatures.
- » High abrasion resistance and very good dynamic load capacity
- » Halogen-free, therefore flame-retardant and non-flame-spreading.
- » Resealable

Material:

- PA 6 (Polyamide 6)

Operating temperature:

- -45 °C to +120 °C (briefly up to +150 °C)
- Melting point: from approx. +220 °C

Characteristics:

- Excellent fire protection properties: self-extinguishing according to UL 94 V-2 / FMVSS 302
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis
- Tensile strength (modulus of elasticity): 1200 - 2000 N/mm²
- Elongation at break: approx. 200%

BLACK

Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius	Contents	Item No.
6	6.3	10	0.1	30	50 m	31097
10	8.8	13.5	0.1	55	50 m	31098
11	11	16.1	0.1	60	50 m	31099
14	13.2	18.7	0.2	75	50 m	31100
16	16	21.5	0.2	90	50 m	31101
20	20.2	25.7	0.3	105	50 m	31102
23	23.9	31.3	0.3	125	50 m	31103
29	27.3	35.5	0.3	140	25 m	31104
37	32.5	43.2	0.3	170	25 m	31105
45	43.1	54.2	0.35	170	25 m	31106
70	67	79.8	0.35	200	10 m	31107
100	87.5	102.5	0.35	200	10 m	31431



FIRE PROTECTION PIPE MADE OF PP

- » Excellent fire protection properties
- » Extremely temperature resistant
- » Ideally suited for use in electrical, automotive or industrial applications

Material:

- PP (polypropylene, fire-resistant modified)

Operating temperature:

- -40 °C to +135 °C (briefly up to +150 °C)
- Melting point: 160 °C to +170 °C

Characteristics:

- Excellent fire protection properties: self-extinguishing according to FMVSS 302 / UL 94 V-2
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis
- Elongation at break: 300%
- Tensile strength (modulus of elasticity): 1200 N/mm²
- UV and weather resistant for approximately 5 years

FIRE PROTECTION PIPE SLOTTED, BLACK



Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item No.
4.5	4.8	7.1	0.15	10	100 m	33075
6	6	8.6	0.15	8	100 m	33028
7.5	6.9	9.9	0.15	10	50 m	33029
8.5	8.5	11.4	0.15	15	50 m	33030
10	10.1	12.6	0.15	15	50 m	33031
12	12	15.6	0.15	20	50 m	33033
13	12.9	15.8	0.15	20	50 m	33034
14	14.5	18.4	0.15	25	50 m	33035
17	16.8	21	0.2	30	50 m	33037
19	19.4	24	0.2	30	50 m	33038
23	23.7	28	0.2	45	50 m	33040
50	45.7	53.2	0.3	120	25 m	33046
37	33.8	41.6	0.2	50	25 m	32090
50	45.7	53.2	0.3	120	25 m	32093
65	63	73.9	0.3	120	25 m	32078
75	76.7	84.8	0.3	120	25 m	32080
100	101	110	0.3	120	25 m	32081

FIRE PROTECTION PIPE UNSLOTTED, BLACK



Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item No.
4.5	4.8	7.1	0.15	10	100 m	33004
7.5	6.9	9.9	0.15	10	50 m	33005
8.5	8.5	11.4	0.15	15	50 m	33006
10	10.1	12.6	0.15	15	50 m	33007
12	12	15.6	0.15	20	50 m	33009
13	12.9	15.8	0.15	20	50 m	33010
17	16.8	21	0.2	30	50 m	33013
23	23.7	28	0.2	45	50 m	33016
26	26.1	31	0.2	50	50 m	33017
29	29.3	33.9	0.3	55	25 m	33018
33	33.1	38.2	0.3	60	25 m	33019
37	33.8	41.6	0.3	50	25 m	33020
50	45.7	53.2	0.3	120	25 m	33021
65	63	73.9	0.4	150	25 m	33022

FIRE PROTECTION PIPE

MADE OF PP, TWO-PART



- » **Reloadable**
- » **Primarily suitable for the subsequent mechanical protection of cables.**
- » **Suitable for use in the electrical industry, switchgear, apparatus and shipbuilding**



Material:

- PP (Polypropylene / flame-retardant modified, halogen-free)

Operating temperature:

- -40 °C to +135 °C (briefly up to +150 °C)
- Melting point: 160 °C to +170 °C

Characteristics:

- Excellent fire protection properties: self-extinguishing according to FMVSS 302 / UL 94 V-2
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis
- Elongation at break: 300%
- Tensile strength (modulus of elasticity): 1200 N/mm²
- UV and weather resistant for approximately 5 years

BLACK

Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius	Contents	Item No.
6	6.3	10	0.1	40	50 m	33049
10	8.4	13.4	0.3	70	50 m	33050
11	11	16.1	0.1	80	50 m	33051
14	12.5	18.5	0.3	95	50 m	33052
16	16	21.5	0.15	100	50 m	33053
20	19.2	25.3	0.3	130	50 m	33054
23	23.4	30.8	0.35	155	50 m	33055
29	27.3	35.5	0.25	160	25 m	33056
37	31	41.4	0.4	205	25 m	33057
45	42.7	54	0.3	210	25 m	33058
70	67.5	79.8	0.25	220	10 m	33059
100	87.5	102.5	0.25	220	10 m	33190



UV-STABLE PIPE FROM PP

- » Lightweight and flexible conduit for all outdoor applications
- » UV and weather resistant for at least 20 years
- » Halogen-free, self-extinguishing, with very good chemical resistance
- » Highly flexible, specially designed for outdoor applications

Material:

- PP (Polypropylene UV-stabilized / cadmium-free, halogen-free)

Operating temperature:

- -40 °C to +105 °C (briefly up to +120 °C)

Characteristics:

- UV and weather resistant
- Excellent fire protection properties: self-extinguishing according to FMVSS 302 / UL 94 HB
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis, and most common solvents / conditionally resistant to alkalis
- Elongation at break: 300%
- Tensile strength (modulus of elasticity): 1200 – 2000 N/mm²

UV-STABLE PIPE SLOTTED, BLACK



Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item No.
4.5	4.8	7.1	0.15	10	100 m	32092
7.5	6.9	9.9	0.15	10	50 m	32077
8.5	8.7	11.4	0.15	10	100 m	32094
10	10.1	12.6	0.15	15	50 m	32079
13	12.9	15.8	0.15	15	50 m	32082
14	14.5	18.4	0.15	25	50 m	32083
17	16.8	21	0.2	30	50 m	32085
19	19.4	24	0.2	35	50 m	32086
22	21.8	25.5	0.2	45	50 m	32087
23	23.7	28	0.2	45	50 m	32088
26	26.1	31	0.2	50	50 m	32089
29	29.2	34	0.2	50	25 m	32091
37	33.8	41.6	0.2	50	25 m	32090
50	45.7	53.2	0.3	120	25 m	32093
65	63	73.9	0.3	120	25 m	32078
75	76.7	84.8	0.3	120	25 m	32080
100	101	110	0.3	120	25 m	32081

UV-STABLE PIPE UNSLOTTED, BLACK



Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item No.
4.5	4.8	7.1	0.15	10	100 m	32053
7.5	6.9	9.9	0.15	10	50 m	32054
8.5	8.7	11.4	0.15	10	100 m	32072
10	10.1	12.6	0.15	15	50 m	32055
13	12.9	15.8	0.15	20	50 m	32058
14	14.5	18.4	0.15	25	50 m	32059
17	16.8	21	0.2	30	50 m	32061
19	19.4	24	0.2	35	50 m	32056
22	21.8	25.5	0.2	45	50 m	32057
23	32.7	28	0.2	45	50 m	32064
26	26.1	31	0.2	50	50 m	32065
29	29.2	34	0.2	50	25 m	32066
37	33.8	41.6	0.2	50	25 m	32067
50	45.7	53.2	0.3	120	25 m	32068
65	63	73.9	0.3	120	25 m	32069
75	76.7	84.8	0.3	120	25 m	32070
100	101	110	0.3	120	25 m	32071

UV-STABLE PIPE FROM PP, DIVIDED INTO TWO PARTS



- » Lightweight and flexible conduit for all outdoor applications
- » UV and weather resistant for at least 20 years
- » Halogen-free, self-extinguishing, with very good chemical resistance
- » Highly flexible, specially designed for outdoor applications

Material:

- PP (Polypropylene UV-stabilized / cadmium-free, halogen-free)

Operating temperature:

- -40 °C to +105 °C (briefly up to +120 °C)

Characteristics:

- UV and weather resistant
- Excellent fire protection properties: self-extinguishing according to FMVSS 302 / UL 94 HB
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis, and most common solvents / conditionally resistant to alkalis
- Elongation at break: 300%
- Tensile strength (modulus of elasticity): 1200 - 2000 N/mm²



BLACK

Nominal diameter	Inner diameter [mm]	Outer diameter [mm]	Bending radius	Contents	Item No.
7	6.3	10	20	50 m	32212
10	8.4	13.4	25	50 m	32213
11	11	16	30	50 m	32214
14	12.5	18.5	35	50 m	32215
16	16	21.5	40	50 m	32216
20	19.2	25.3	45	50 m	32217
23	23.4	30.8	50	50 m	32218
29	27.3	35.5	90	25 m	32219
37	31	41.4	110	25 m	32220
45	42.7	54	130	25 m	32221
70	67.5	79.8	190	10 m	32210
100	87.5	102.5	210	10 m	32211

Custom sizes and colors are available upon request.

T-CONNECTOR FOR CORRUGATED PIPE



- » Reliable connection of corrugated pipes
- » 45° branch
- » Easy and secure assembly thanks to snap closure

Material:

- PA 6.6 (Polyamide 6.6 / halogen-free, impact-resistant)

Operating temperature:

- -40 °C to +120 °C (3000 h) / up to 140 °C (500 h)

Characteristics:

- Practical snap closure
- Good fire protection properties: self-extinguishing according to UL 94 HB
- Good chemical resistance: resistant to fuels, mineral oils, greases, alkalis and most common solvents.
- UV-stable for approximately 5 years

BLACK

Nominal diameter	d1 [mm]	d2 [mm]	d3 [mm]	Contents	Item No.
4.5	4.5	4.5	4.5	1 pc.	38001
		4.5	4.5	1 pc.	38002
7.5	7.5	4.5	7.5	1 pc.	38003
		7.5	4.5	1 pc.	38004
		7.5	7.5	1 pc.	38005
8.5	8.5	8.5	8.5	1 pc.	38006
		4.5	4.5	1 pc.	38007
		4.5	7.5	1 pc.	38008
		4.5	10	1 pc.	38009
		7.5	4.5	1 pc.	38010
		7.5	7.5	1 pc.	38011
		7.5	10	1 pc.	38012
		8.5	8.5	1 pc.	38013
		8.5	10	1 pc.	38014
		10	10	1 pc.	38015
10	10	10	7.5	1 pc.	38016
		10	8.5	1 pc.	38017
		10	10	1 pc.	38018
		13	10	1 pc.	38019
		7.5	10	1 pc.	38190
		4.5	7.5	1 pc.	38020
		4.5	10	1 pc.	38021
		4.5	13	1 pc.	38022
		7.5	7.5	1 pc.	38023
		7.5	10	1 pc.	38024
13	13	7.5	13	1 pc.	38025
		8.5	8.5	1 pc.	38026
		8.5	10	1 pc.	38027
		8.5	13	1 pc.	38028
		10	4.5	1 pc.	38029

Nominal diameter	d1 [mm]	d2 [mm]	d3 [mm]	Contents	Item No.
13	13	10	7.5	1 pc.	38030
		10	10	1 pc.	38031
		10	13	1 pc.	38032
		13	10	1 pc.	38033
		13	13	1 pc.	38034
		7.5	13	1 pc.	38035
		7.5	17	1 pc.	38036
		8.5	17	1 pc.	38037
		13	4.5	1 pc.	38038
		13	10	1 pc.	38039
17	17	13	13	1 pc.	38040
		17	10	1 pc.	38041
		17	13	1 pc.	38042
		17	17	1 pc.	38043
		8.5	17	1 pc.	38191
		19	19	1 pc.	38044
		7.5	17	1 pc.	38045
17	17	7.5	22	1 pc.	38046
		26	22	1 pc.	38047
		13	22	1 pc.	38087
		13	17	1 pc.	38088
		8.5	22	1 pc.	38089
		13	22	1 pc.	38098
		10	22	1 pc.	38099
		22	22	1 pc.	38189
		22	17	1 pc.	38192
		10	26	1 pc.	38048
26	26	13	26	1 pc.	38049
		26	26	1 pc.	38086



Y-CONNECTOR FOR CORRUGATED PIPE



- » Reliable connection of corrugated pipes
- » 45° branch
- » Easy and secure assembly thanks to snap closure

Material:

- PA 6.6 (Polyamide 6.6 / halogen-free, impact-resistant)

Operating temperature:

- -40 °C to +120 °C (3000 h) / up to 140 °C (500 h)

Characteristics:

- Practical snap closure
- Good fire protection properties: self-extinguishing according to UL 94 HB
- Good chemical resistance: resistant to fuels, mineral oils, greases, alkalis and most common solvents.
- UV-resistant for approximately 5 years

BLACK

Nominal diameter	d1 [mm]	d2 [mm]	d3 [mm]	Contents	Item No.
4.5	4.5	4.5	4.5	1 pc.	38050
		4.5	4.5	1 pc.	38051
7.5	7.5	4.5	7.5	1 pc.	38052
		7.5	7.5	1 pc.	38053
8.5	8.5	8.5	8.5	1 pc.	38054
		8.5	8.5	1 pc.	38055
10	10	8.5	10	1 pc.	38056
		10	10	1 pc.	38057
		10	10	1 pc.	38058
13	13	7.5	10	1 pc.	38059
		8.5	10	1 pc.	38060
		10	13	1 pc.	38061
		13	13	1 pc.	38062
		10	13	1 pc.	38063
17	17	10	17	1 pc.	38064
		13	10	1 pc.	38065
		13	13	1 pc.	38066
		13	17	1 pc.	38067
		17	10	1 pc.	38068
		8.5	13	1 pc.	38069
		17	17	1 pc.	38070
22	22	7.5	22	1 pc.	38071
		10	17	1 pc.	38072
		10	22	1 pc.	38073
		13	17	1 pc.	38074
		13	22	1 pc.	38075
26	26	17	17	1 pc.	38076
		22	22	1 pc.	38077
		22	17	1 pc.	38078
		10	26	1 pc.	38079



TEXTILE HOSE

Our textile sleeving offers reliable protection for cables and wires against abrasion, heat, and mechanical stress. They are characterized by high flexibility, easy processing, and durable material quality. Whether in automotive engineering, industrial plants, or renewable energy applications – textile sleeving ensures clean cable routing and increases the service life of the installation. Upon request, we also develop customized solutions tailored to your specific requirements.



PET BRAIDED HOSE

MEDIUM ABRASION PROTECTION



- » Robust protection against abrasion and mechanical stress - protects cables and wires from damage even in the presence of vibrations or moving components.
- » Lightweight material & space-saving - reduces weight compared to metal casings, reduces installation space, facilitates assembly & handling.
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

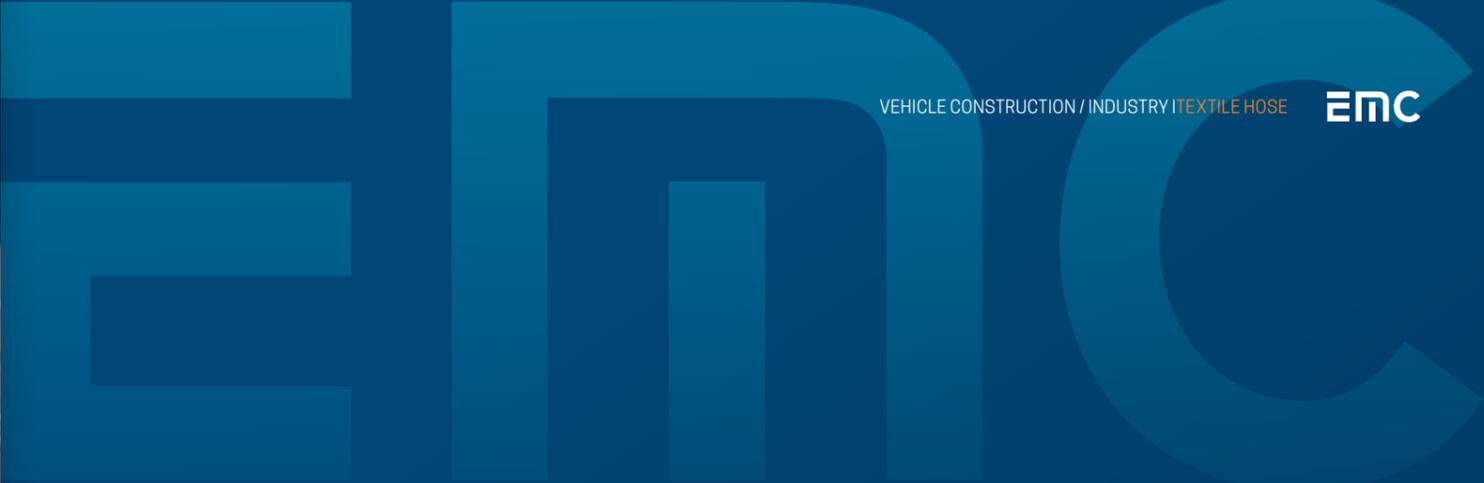
- PET monofilament braid

Operating temperature:

- -40 °C to +150 °C

Characteristics:

- Design: Expandable hose
- Cut: Hot cut
- Very good temperature resistance
- Very good chemical resistance: Resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons.
- Tested according to EN 45 545-2 and ECE-R118



BLACK

Nominal diameter	Inner diameter [mm]	VE [m]	Item No.
6	9	100	43101
7	11	150	43102
10	16	100	43103
12	18	100	43104
14	21	75	43105
16	25	75	43106
18	35	50	43107
20	30	50	43108
25	38	50	43109
30	45	25	43110
40	60	25	43111
50	70	25	43112
60	80	25	43113

ORANGE

Nominal diameter	Inner diameter [mm]	VE [m]	Item No.
6	9	100	43130
7	11	150	43131
10	16	100	43132
12	18	100	43133
14	21	75	43134
16	25	75	43135
18	35	50	43136
20	30	50	43137
25	38	50	43138
30	45	25	43139



PET BRAIDED HOSE

DENSE, HIGH ABRASION RESISTANCE



- » Improved abrasion protection compared to standard PET braided tubing - protects cables and wires from damage even under vibration or moving components.
- » Lightweight material & space-saving - reduces weight compared to metal casings, reduces installation space, facilitates assembly & handling.
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

- PET monofilament braid

Operating temperature:

- -40 °C to +150 °C

Characteristics:

- Design: Expandable hose
- Cut: Hot cut
- Very good temperature resistance
- Very good chemical resistance: Resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons.
- Tested according to EN 45 545-2 and ECE-R118

BLACK

Nominal diameter [mm]	Max. Ø [mm]	VE [m]	Item No.
3	6	150	43201
4	8	200	43202
6	9	100	43203
8	13	150	43204
10	16	100	43205
14	21	50	43206
16	25	50	43207
18	35	50	43208
20	30	50	43209
22	33	50	43210
24	37	50	43211
27	40	50	43212
35	50	25	43213
40	60	25	43214
50	70	25	43215

PET BRAIDED HOSE

DENSE, HIGH ABRASION RESISTANCE, FLAME RETARDANT (VO)



- » UL94 V0 certified for fire protection - meets the highest requirements for flame retardancy and safety
- » Robust protection against abrasion and mechanical stress - protects cables and wires from damage even in the presence of vibrations or moving components.
- » Lightweight material & space-saving - reduces weight compared to metal casings, reduces installation space, facilitates assembly & handling.
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

- UL 94 V0 PET monofilament braid

Operating temperature:

- -40 °C to +150 °C

Characteristics:

- Design: Expandable hose
- Cut: Hot cut
- Very good temperature resistance
- Very good chemical resistance: Resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons.
- Tested according to EN 45 545-2

BLACK/WHITE TRACER

Nominal diameter [mm]	Max. Ø [mm]	VE [m]	Item No.
3	6	150	43301
5	8	150	43302
6	9	150	43303
8	13	100	43304
10	16	100	43305
12	18	100	43306
14	23	50	43307
16	28	75	43308
20	30	50	43309
25	38	50	43310
40	60	25	43311



PA BRAIDED HOSE HIGH ABRASION RESISTANCE



- » High abrasion protection - ideal for applications with high mechanical stress, such as in the engine compartment, chassis or underbody area
- » UV and weather resistant - for safe use even in exposed areas
- » High flexibility & easy handling - adapts effortlessly to cable bundles and complex routing paths

Material:

- PA monofilament braid (polyamide)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Design: Expandable hose
- Cut: Hot cut
- Very good temperature resistance
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis and hydrocarbons
- UV and weather resistant
- Tested according to ECE-R118

BLACK

Nominal diameter	Inner diameter [mm]	VE [m]	Item No.
6	9	200	43401
7	11	100	43402
10	16	100	43403
12	18	100	43404
14	21	75	43405
16	25	75	43406
18	30	50	43407
25	38	50	43408
30	45	25	43409
40	60	25	43410
50	70	25	43411
60	80	25	43412



PA BRAIDED HOSE HIGH-DENSITY, HEAVY-DUTY



- » UL94 V0 certified for fire protection - meets the highest requirements for flame retardancy and safety
- » Robust protection against abrasion and mechanical stress - protects cables and wires from damage even in the presence of vibrations or moving components.
- » Lightweight material & space-saving - reduces weight compared to metal casings, reduces installation space, facilitates assembly & handling.
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

- PA HD (Polyamide Heavy Duty)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Design: Expandable hose
- Cut: Hot cut
- Very good temperature resistance
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis and hydrocarbons
- UV and weather resistant
- Tested according to ECE-R118

BLACK

Nominal diameter [mm]	Max. Ø [mm]	VE [m]	Item No.
4	8	200	43501
5	9	200	43502
8		150	43503
10	16	100	43504
12	18	100	43505
14	21	50	43506
16	25	50	43507
18	30	50	43508
25	38	50	43509
30	45	25	43510
40	60	25	43511
70	90	25	43512



PET BRAIDED HOSE

MEDIUM ABRASION RESISTANCE, COLD CUTTABLE



- » Easy processing without a hot cutter - does not fray
- » Robust protection against abrasion and mechanical stress - protects cables and wires from damage even in the presence of vibrations or moving components.
- » Lightweight material & space-saving - reduces weight compared to metal casings, reduces installation space, facilitates assembly & handling.

Material:

- PET (halogen-free)

Operating temperature:

- Temperature range -55 to +150 °C

Characteristics:

- Design: Expandable hose
- Cut: can be cut cold
- Very good temperature resistance
- Very good chemical resistance: resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons.

BLACK

Nominal diameter [mm]	Max. Ø [mm]	VE [m]	Item No.
4	10	50	43601
6	10	50	43602
8	11	50	43603
10	14	50	43604
12	16	50	43605
14	20	50	43606
16	22	50	43607
20	25	50	43608
25	33	25	43609
30	44	25	43610
35	40	20	43611
40	42	20	43612
45	60	20	43613
50	60	20	43614

PA BRAIDED HOSE

HIGH ABRASION RESISTANCE, COLD CUTTABLE



- » Easy processing without a hot cutter - does not fray
- » UV and weather resistant - for safe use even in exposed areas
- » High flexibility & easy handling - adapts effortlessly to cable bundles and complex routing paths

Material:

- PA monofilament braid (polyamide)

Operating temperature:

- -55 to +125 °C

Characteristics:

- Design: Expandable hose
- Cut: can be cut cold
- Very good temperature resistance
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis and hydrocarbons
- UV and weather resistant

BLACK/WHITE TRACER

Nominal diameter [mm]	Max. Ø [mm]	VE [m]	Item No.
3	6	150	43301
5	8	150	43302
6	9	150	43303
8	13	100	43304
10	16	100	43305
12	18	100	43306
14	23	50	43307
16	28	75	43308
20	30	50	43309
25	38	50	43310
40	60	25	43311



PET BRAIDED HOSE

**HIGH ABRASION RESISTANCE,
SELF-SEALING (WRAP)**



- » Self-closing PET braided hose - easy retrofitting without disassembly, saves assembly time
- » Excellent abrasion protection and noise reduction
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

PET monofilament (knitted) and multifilament (textured)

Operating temperature:

- -40 to +150 °C

Characteristics:

- Design: Expandable hose / self-retracting
- Cutting: Hot cutting / Ultrasonic cutting
- Very good temperature resistance
- Very good chemical resistance: Resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons.

BLACK

Nominal diameter	Inner diameter [mm]	VE [m]	Item No.
5	4-5	350	43701
8	6-8	200	43702
10	9-10	100	43703
13	11-13	100	43704
16	14-16	80	43705
19	17-19	50	43706
25	20-25	25	43707
29	26-29	25	43708
32	30-32	20	43709
38	33-38	20	43710
42	39-42	20	43711

ORANGE

Nominal diameter	Inner diameter [mm]	VE [m]	Item No.
5	4-5	350	43730
8	6-8	200	43731
10	9-10	100	43732
13	11-13	100	43733
16	14-16	80	43734
19	17-19	50	43735
25	20-25	25	43736
29	26-29	25	43737
32	30-32	20	43738
38	33-38	20	43739
42	39-42	20	43740



PET BRAIDED HOSE

HIGH ABRASION RESISTANCE, SELF-SEALING (WRAP), FLAME-RETARDANT



- » Flame-retardant, self-closing PET braided hose
- » Resealable - Easy retrofitting without disassembly, saves assembly time
- » Excellent abrasion protection and noise reduction
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

- Flame-retardant PET monofilament (knitted) and multifilament (textured)

Operating temperature:

- -55 °C to +150 °C

Characteristics:

- Design: Expandable hose / self-retracting
- Cutting: Hot cutting / Ultrasonic cutting
- Excellent temperature resistance / Flame retardant and UL certified
- Very good chemical resistance: Resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons

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Nominal diameter [mm]	Max. Ø [mm]	VE [m]	Item No.
5	4-5	100	43750
8	6-8	75	43751
10	9-10	75	43752
13	11-13	75	43753
16	14-16	50	43754
19	17-19	50	43755
25	20-25	20	43756
29	26-29	15	43757
32	30-32	15	43758
38	33-38	15	43759
42	39-42	15	43760

PA BRAIDED HOSE

HEAVY DUTY, LOCKABLE (HOOK AND LOOP/ZIPPER SYSTEM)



- » High-performance protection for cables and wires - reliably protects against abrasion, vibration and mechanical stress
- » Open winding structure for easy installation and quick retrofitting - cables can also be bundled and protected afterwards.
- » Resistant to oil, fuels and common vehicle fluids - for high operational reliability

Material:

- PA multifilament fabric (polyamide)

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Design: Expandable hose / High-performance hose
- Cut: Hot cut
- Very good temperature resistance
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis and most common solvents / conditionally resistant to alkalis and hydrocarbons
- UV and weather resistant

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Nominal diameter [mm]	VE [m]	Item No.
	45	43801
13	0.25m	43802
	0.50m	43803
	46	43804
16	0.25m	43805
	0.50m	43806
	46	43807
19	0.25m	43808
	0.50m	43809
25	46	43810
32	46	43811
38	46	43812
45	46	43813
51	46	43814



SHRINKABLE BRAIDED SLEEVING

2:1, TEMPERATURE RESISTANT



- » Easy to work with - shrinks quickly and evenly
- » Reliable cable protection - shrinks tightly around cable harnesses and prevents abrasion, vibration and moisture ingress.
- » Secure insulation - reliably protects electrical connections

Material:

- PE monofilament & PET multifilament

Operating temperature:

- -40 °C to +125 °C

Characteristics:

- Version: Heat shrink tubing
- Cut: Cold cut
- Very good temperature resistance
- Very good chemical resistance: Resistant to water, dilute acids, many oils and aliphatic hydrocarbons; limited resistance to strong acids, alkalis, ketones, esters and aromatic hydrocarbons

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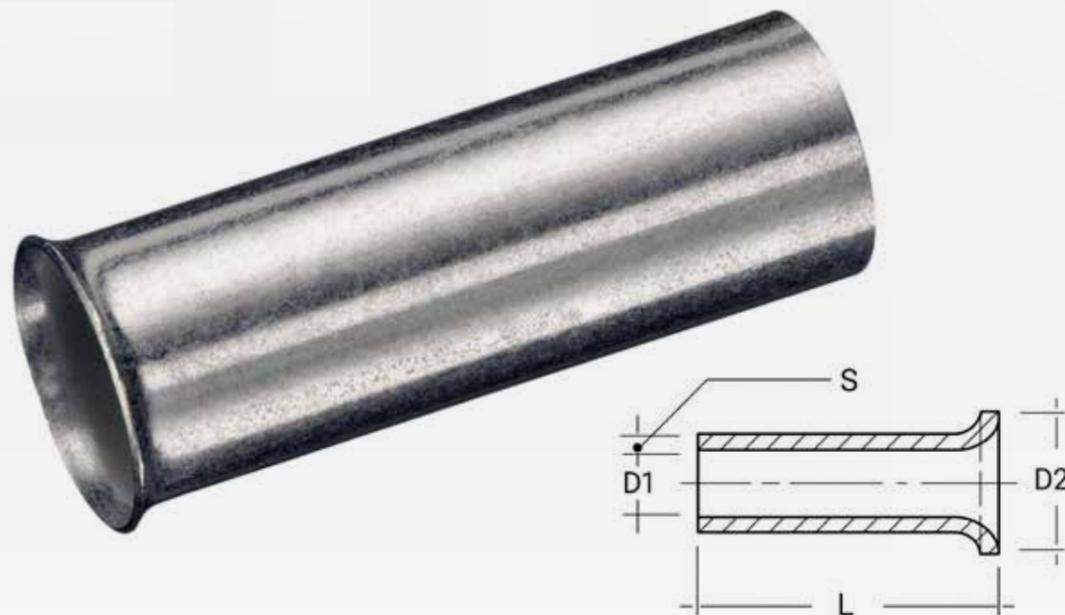
Ø before shrinkage	Ø after shrinkage min.	Ø after shrinkage max.	VE [m]	Item No.
12	6	8	150	43901
20	10	13	90	43902
25	12	16	80	43903
30	15	19	80	43904
34	17	22	70	43905
40	20	26	70	43906
50	25	32	70	43907
60	30	39	60	43908
70	35	45	60	43909
80	40	52	60	43910
90	45	58	60	43911
100	50	65	60	43912
110	55	71	60	43913



CONNECTION TECHNOLOGY

Our connection technology covers the entire spectrum for reliable electrical cable connections: from wire end ferrules and compression cable lugs to butt and crimp connectors. This ensures safe, durable, and standard-compliant connections in automotive and industrial applications.

Our expertise in pressing tools offers particular added value: We provide you with practical advice on selecting the right combination of fastener and tool to ensure the highest quality and process reliability in your application.



UNINSULATED WIRE FERRULES

ACCORDING TO DIN 46228, PART 1 AND SPECIAL DIMENSIONS



- » **Highly conductive:** Made from pure copper (Cu-ETP) for optimal electrical conductivity
- » **Compliant with standards:** Meets DIN EN 13600 - guaranteed tested quality and safety
- » **Reliable connection:** Ensures permanently secure and stable conductor connections.

Material:

- Material: Cu-ETP according to DIN EN 13600

Operating temperature:

- -35 °C to +105 °C

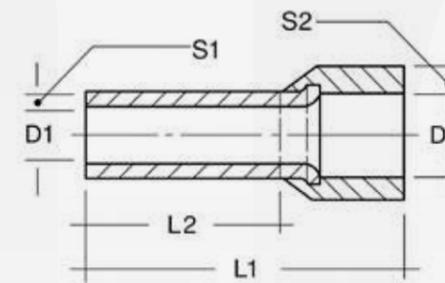
Characteristics:

- Type: Uninsulated
- Surface: Galvanically tin-plated
- Tolerances according to DIN 46228 Part 44

Cross-section [mm²]	Length L [mm]	D1 [mm]	D2 [mm]	S [mm]	Contents	Item No.
0.25	5	0.8	1.7	0.15	1000	52400
	7	0.8	1.7	0.15	1000	52113
0.34	5	0.9	1.8	0.15	1000	52110
	7	0.9	1.8	0.15	1000	52111
0.5	6	1	2.1	0.15	1000	52402
	8	1	2.1	0.15	1000	52403
	10	1	2.1	0.15	1000	52114
0.75	12	1	2.1	0.15	1000	52115
	6	1.2	2.3	0.15	1000	52116
	8	1.2	2.3	0.15	1000	52404
1	10	1.2	2.3	0.15	1000	52117
	12	1.2	2.3	0.15	1000	52118
	15	1.2	2.3	0.15	1000	52119
1.5	6	1.4	2.5	0.15	1000	52405
	7	1.4	2.5	0.15	1000	52121
	8	1.4	2.5	0.15	1000	52406
	10	1.4	2.5	0.15	1000	52123
	12	1.4	2.5	0.15	1000	52124
2.5	15	1.4	2.5	0.15	1000	52125
	6	1.7	2.8	0.15	1000	52408
	7	1.7	2.8	0.15	1000	52127
	8	1.7	2.8	0.15	1000	52409
	10	1.7	2.8	0.15	1000	52407
4	12	1.7	2.8	0.15	1000	52130
	15	1.7	2.8	0.15	1000	52131
	18	1.7	2.8	0.15	1000	52132
	20	1.7	2.8	0.15	1000	52133
	7	2.2	3.4	0.15	1000	52411
8	8	2.2	3.4	0.15	1000	52135
	10	2.2	3.4	0.15	1000	52410
	12	2.2	3.4	0.15	1000	52137
	15	2.2	3.4	0.15	1000	52138
	18	2.2	3.4	0.15	1000	52139
15	20	2.2	3.4	0.15	1000	52140
	9	2.8	4	0.2	1000	52412
	10	2.8	4	0.2	1000	52142
	12	2.8	4	0.2	1000	52143
25	15	2.8	4	0.2	250	52144

Cross-section [mm ²]	Length L [mm]	D1 [mm]	D2 [mm]	S [mm]	Contents	Item No.
4	18	2.8	4	0.2	250	52145
	20	2.8	4	0.2	250	52146
6	10	3.5	4.7	0.2	250	52413
	12	3.5	4.7	0.2	250	52148
	15	3.5	4.7	0.2	250	52414
	18	3.5	4.7	0.2	250	52150
10	20	3.5	4.7	0.2	250	52151
	12	4.5	5.8	0.2	250	52152
	15	4.5	5.8	0.2	250	52153
	18	4.5	5.8	0.2	250	52154
	20	4.5	5.8	0.2	250	52155
16	25	4.5	5.8	0.2	250	52156
	12	5.8	7.5	0.2	250	52157
	15	5.8	7.5	0.2	250	52158
	18	5.8	7.5	0.2	250	52159
	20	5.8	7.5	0.2	250	52160
25	25	5.8	7.5	0.2	250	52161
	32	5.8	7.5	0.2	250	52162
	12	7.3	9.5	0.22	100	52163
	15	7.3	9.5	0.22	100	52164
	18	7.3	9.5	0.22	100	52165
35	25	7.3	9.5	0.22	100	52166
	32	7.3	9.5	0.22	100	52167
	15	8.3	11	0.22	100	52168
	18	8.3	11	0.22	100	52169
	20	8.3	11	0.22	100	52170
50	22	8.3	11	0.22	100	52171
	25	8.3	11	0.22	100	52172
	32	8.3	11	0.22	100	52173
	18	10.3	13	0.3	100	52174
	22	10.3	13	0.3	100	52175
70	25	10.3	13	0.3	100	52176
	32	10.3	13	0.3	100	52177
	25	12.5	15	0.4	100	52178
95	32	12.5	15	0.4	100	52179
	25	14.5	17	0.4	100	52180
	30	14.5	17	0.4	25	52181
	32	14.5	17	0.4	25	52182

Cross-section [mm ²]	Length L [mm]	D1 [mm]	D2 [mm]	S [mm]	Contents	Item No.
120	32	16.5	19	0.5	25	52183
150	32	18.5	21	0.5	25	52184
	38	18.5	21	0.5	25	52185
185	32	20	23.5	0.6	25	52186
	40	20	23.5	0.6	25	52187
240	40	22.8	25.8	0.6	25	52188



INSULATED WIRE FERRULES

COLOR SERIES ACCORDING TO DIN 46228, PART 4



- » For effortless attachment to fine-stranded conductors, prevents damage and fraying.
- » Secure connection - ensures a permanently firm and reliable hold.
- » High-quality workmanship - durable, robust and reliable in daily use

- Material:**
- Material: Cu-ETP according to DIN EN 13600
 - Insulation: Polypropylene
- Operating temperature:**
- -35 °C to +105 °C
- Characteristics:**
- Type: Insulated
 - Surface: Galvanically tin-plated
 - Polyamide insulation tested according to UL94 V2
 - Dimensional tolerances according to DIN 46228 Part 4

Cross-section [mm²]	L2 [mm]	L1 [mm]	D1 [mm]	S1 [mm]	S2 [mm]	D2 [mm]	Insulating paint	Unit [pcs.]	Item No.
0.5	6	12	1	0.15	0.25	2.6	white	100	52001
	8	14	1	0.15	0.25	2.6	white	100	52002
	10	16	1	0.15	0.25	2.6	white	100	52003
0.75	6	12	1.2	0.15	0.25	2.8	gray	100	52201
	8	14	1.2	0.15	0.25	2.8	gray	100	52202
	10	16	1.2	0.15	0.25	2.8	gray	100	52203
	12	18	1.2	0.15	0.25	2.8	gray	100	52204
1	6	12	1.4	0.15	0.25	3	red	100	52015
	8	14	1.4	0.15	0.25	3	red	100	52016
	10	16	1.4	0.15	0.25	3	red	100	52017
	12	18	1.4	0.15	0.25	3	red	100	52018

Cross-section [mm²]	L2 [mm]	L1 [mm]	D1 [mm]	S1 [mm]	S2 [mm]	D2 [mm]	Insulating paint	Unit [pcs.]	Item No.
1.5	6	12	1.7	0.15	0.25	3.5	black	100	52023
	8	14	1.7	0.15	0.25	3.5	black	100	52024
	10	16	1.7	0.15	0.25	3.5	black	100	52025
	12	18	1.7	0.15	0.25	3.5	black	100	52026
	18	24	1.7	0.15	0.25	3.5	black	100	52027
2.5	8	15	2.2	0.15	0.25	4.2	blue	100	52033
	10	17	2.2	0.15	0.25	4.2	blue	100	52034
	12	18	2.2	0.15	0.25	4.2	blue	100	52035
4	18	25	2.2	0.15	0.25	4.2	blue	100	52036
	10	17	2.8	0.2	0.3	4.8	gray	100	52198
	12	20	2.8	0.2	0.3	4.8	gray	100	52199
6	18	26	2.8	0.2	0.3	4.8	gray	100	52200
	12	20	3.5	0.2	0.3	6.3	yellow	100	52040
10	18	26	3.5	0.2	0.3	6.3	yellow	100	52041
	12	22	4.5	0.2	0.4	7.6	red	100	52046
16	18	28	4.5	0.2	0.4	7.6	red	100	52047
	12	24	5.8	0.2	0.4	8.8	blue	100	52050
25	18	28	5.8	0.2	0.4	8.8	blue	100	52051
	16	30	7.3	0.2	0.4	11.2	yellow	50	52056
35	22	36	7.3	0.2	0.4	11.2	yellow	50	52057
	16	30	8.3	0.2	0.4	12.7	red	50	52064
	18	32	8.3	0.2	0.4	12.7	red	50	52065
50	25	39	8.3	0.2	0.4	12.7	red	50	52066
	20	36	10.3	0.3	0.5	15	blue	50	52070
70	25	40	10.3	0.3	0.5	15	blue	50	52071
95	21	37	13.5	0.4	0.6	16	yellow	25	52074
120	25	44	14.7	0.4	0.6	18	red	25	52075
150	27	48	16.7	0.45	0.7	20	blue	25	52076
	32	58	19	0.5	1	23	yellow	25	52077

INSULATED WIRE FERRULES

FOR SHORT-CIRCUIT AND EARTH-FAULT-PROOF CABLES (NSGAFÖU), COLOR SERIES ACCORDING TO DIN 46228, PART 4



- » For effortless attachment to fine-stranded conductors, prevents damage and fraying.
- » Secure connection - ensures a permanently firm and reliable hold.
- » High-quality workmanship - durable, robust and reliable in daily use

Material:

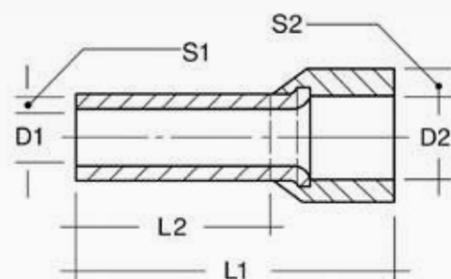
- Material: Cu-ETP according to DIN EN 13600
- Insulation: Polypropylene

Operating temperature:

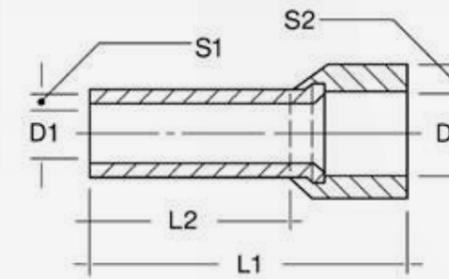
- -35 °C to +105 °C

Characteristics:

- Type: Insulated
- Surface: Galvanically tin-plated
- Enlarged insulation collar
- Suitable for all common short-circuit and earth-fault protected cables up to 3 kV



Cross-section [mm ²]	L2 [mm]	L1 [mm]	D1 [mm]	S1 [mm]	S2 [mm]	D2 [mm]	Insulating paint	Unit [pcs.]	Item No.
1.5	8	17.5	1.8	0.15	0.25	7	black	100	52562
	10	19.5	1.8	0.15	0.25	7	black	100	52564
	10	19.5	1.8	0.15	0.25	7	red	100	52563
2.5	8	17.5	2.3	0.15	0.25	7.9	blue	100	52566
	8	17.5	2.3	0.15	0.25	7.9	gray	100	52565
	12	21.5	2.3	0.15	0.25	7.9	blue	100	52568
	12	21.5	2.3	0.15	0.25	7.9	gray	100	52567
4	10	19.5	2.9	0.2	0.3	7.9	gray	100	52569
	10	19.5	2.9	0.2	0.3	7.9	orange	100	52570
6	12	23	3.6	0.2	0.3	8.7	yellow	100	52572
	12	23	3.6	0.2	0.3	8.7	black	100	52571
10	12	24	4.6	0.2	0.3	10.2	red	100	52573
	12	24	4.6	0.2	0.3	10.2	ivory	100	52574
16	12	25.5	6	0.2	0.3	12.5	blue	100	52575
	12	25.5	6	0.2	0.3	12.5	ivory	100	52576
	12	25.5	6	0.2	0.3	12.5	green	100	52577



INSULATED TWIN WIRE FERRULES

COLOR SERIES ACCORDING TO DIN 46228, PART 4



- » For effortless processing of 2 fine-stranded conductors, prevents damage and fraying.
- » Secure connection - ensures a permanently firm and reliable hold.
- » High-quality workmanship - durable, robust and reliable in daily use

Material:

- Material: Cu-ETP according to DIN EN 13600
- Insulation: Polypropylene

Operating temperature:

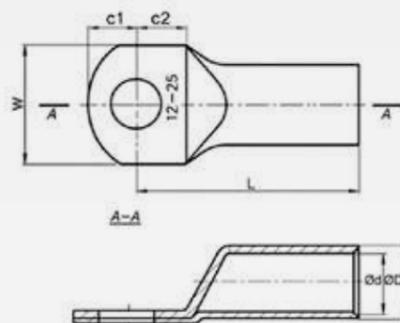
- -35 °C to +105 °C

Characteristics:

- Type: Insulated / Twin
- Surface: Galvanically tin-plated

Cross-section [mm ²]	L2 [mm]	L1 [mm]	D1 [mm]	S1 [mm]	S2 [mm]	D2 [mm]	Insulating paint	Unit [pcs.]	Item No.
2x0.5	8	15	1.5	0.15	0.25	2.5	white	100	52081
2x0.75	8	15	1.8	0.15	0.25	2.8	gray	100	52192
	10	17	1.8	0.15	0.25	2.8	gray	100	52193
2x1	8	15	2	0.15	0.25	3.4	red	100	52087
	10	17	2	0.15	0.25	3.4	red	100	52088
	12	19	2	0.15	0.25	3.4	red	100	52089
	18	25	2	0.15	0.25	3.4	red	100	52090
2x1.5	8	16	2.3	0.15	0.25	3.6	black	100	52095
	12	20	2.3	0.15	0.25	3.6	black	100	52096
	18	26	2.3	0.15	0.25	3.6	black	100	52097
2x2.5	10	18.5	2.9	0.2	0.25	4.2	blue	100	52101
	13	21.5	2.9	0.2	0.25	4.2	blue	100	52102
2x4	12	23	3.8	0.2	0.3	4.9	gray	100	52191
2x6	14	26	4.9	0.2	0.3	5.9	yellow	100	52103
2x10	14	26	6.5	0.2	0.4	7.2	red	100	52205
2x16	14	30	8.3	0.2	0.4	9.6	blue	100	52108

CU TUBULAR CABLE LUGS STANDARD VERSION



- » **Secure connection:** Optimal power transmission through precisely manufactured press areas
- » **Reliable & compliant with standards:** Manufactured according to DIN EN 13600 and common industry standards
- » **Easy installation:** Suitable for all common conductor cross-sections and crimping tools
- » **Versatile applications:** From control cabinet construction to photovoltaics and industrial plants

- Material:**
- Material: Cu-ETP according to DIN EN 13600
- Operating temperature:**
- -35 °C to +105 °C
- Characteristics:**
- Surface: Galvanically tin-plated, other surfaces available on request
 - Also available with a viewing window
 - Also suitable for fine-stranded conductors according to IEC 228. Tubular cable lugs Cu, standard version.
 - Annealed to copper hardness F 20
 - Note: Sector-shaped conductors must be rounded off using special dies.

Cross-section [mm²]	Bolts [mm]	W [mm]	d [mm]	C1 [mm]	C2 [mm]	D [mm]	L [mm]	Unit [pcs.]	Item No.
0.75	3	4.8	1.4	3.2	2.3	6.9	16	100	51020
	4	8	1.4	3.2	4.1	6.9	19.6	100	51021
	5	8	1.4	3.2	4.1	6.9	19.6	100	51022
1.5	4	6.5	1.9	3.3	3.5	6	17	100	51023
	5	7.5	1.9	3.3	3.5	6	18	100	51024
	6	9	1.9	3.3	4.5	6	18.5	100	51025
2.5	4	8	2.3	3.9	3.8	6.9	20.1	100	51026
	5	8	2.3	3.9	3.8	6.9	20.1	100	51027
	6	10.7	2.3	3.9	6.1	6.9	25.2	100	51028
	8	12	2.3	3.9	6.1	6.9	25.2	100	51029
4	4	9	2.7	5	6.2	9	26	100	55010
	5	9	2.7	5	6.2	9	26	100	55011
	6	12	2.7	5	6.2	9	26	100	55012
	8	12	2.7	5	6.2	9	26	100	55013
6	5	10	3.5	6.5	6.8	9	26.5	100	55015
	6	10	3.5	6.5	6.8	9	26.5	100	55016
	8	12	3.5	6.5	6.8	9	26.5	100	55017
10	10	15	3.5	6.5	9.8	9	32.5	100	55018
	5	12	4.5	7	6.8	10	28	100	55020
	6	12	4.5	7	6.8	10	28	100	55021
	8	15	4.5	7	9.8	10	34	100	55022
	10	17	4.5	7	11.8	10	38	100	55023
	12	19	4.5	7	13	10	41	100	55024

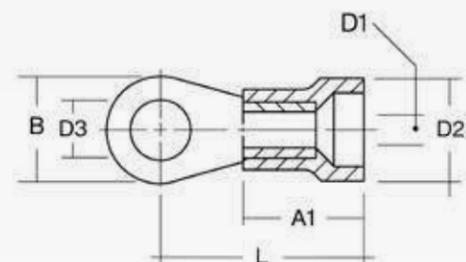
Cross-section [mm²]	Bolts [mm]	W [mm]	d [mm]	C1 [mm]	C2 [mm]	D [mm]	L [mm]	Unit [pcs.]	Item No.
16	5	12	5.5	8.5	6.8	13	31.5	100	55025
	6	12	5.5	8.5	6.8	13	31.5	100	55026
	8	15	5.5	8.5	9.8	13	37.5	100	55027
	10	17	5.5	8.5	11.8	13	41.5	100	55028
	12	19	5.5	8.5	13	13	44	100	55029
25	5	14	7	10	7	15	35.5	50	55030
	6	14	7	10	7	15	35.5	50	55031
	8	16	7	10	9.5	15	40.5	50	55032
	10	18	7	10	11.5	15	44.5	50	55033
	12	19	7	10	13	15	48	50	55034
35	14	21	7	10	14.5	15	52.5	50	55035
	6	17	8.5	12	7	17	39	1	55037
	8	17	8.5	12	9.5	17	44	1	55038
	10	19	8.5	12	11.5	17	48	1	55039
	12	21	8.5	12	13	17	51.5	1	55040
50	14	21	8.5	12	14	17	53.5	1	55041
	16	26	8.5	12	16	17	58	1	55042
	6	20	10	14	9.5	19	47	1	55044
	8	20	10	14	9.5	19	47	1	55045
	10	20	10	14	11.5	19	51	1	55046
	12	23	10	14	13	19	54.5	1	55047
	14	23	10	14	14	19	56.5	1	55048
	16	28	10	14	16	19	62	1	55049

CRIMP CABLE LUG

RING-SHAPED COPPER, INSULATED, DIN 46237, FROM 0.5 TO 6mm²



- » Ring shape, insulated: secure hold and additional contact protection.
- » Compliant with DIN 46237 standards: tested quality and standard compatibility
- » Easy installation: reliably crimp and permanently secure
- » Corrosion-resistant: durable even under demanding conditions



Material:

- Material: Cu-ETP according to DIN EN 13600
- Insulation: PA (polyamide, nylon, halogen-free) or PVC or shrink insulation

Operating temperature:

- -60 °C to +105 °C

Characteristics:

- Surface: electro-tinned
- For strain-relieved connections
- 600 V max.
- Easy Entry allows for easy and quick insertion of the ladder.



Cross-section [mm ²]	Bolt diameter (according to DIN)	Nominal size (according to DIN)	Insulating paint	D1 [mm]	D2 [mm]	D3 [mm]	A1 [mm]	B [mm]	L [mm]	Unit [pcs.]	Insulation PA Art. No.	PVC insulation, item no.	Shrink insulation, item no.
0.5-1	3	3-1	red	1.6	4.1	3.2	11.5	6	16	100	54080	54001	
	3.5		red	1.6	4.1	3.7	11.5	6	16	100		54002	
	4	4-1	red	1.6	4.1	4.3	11.5	8	17	100	54081	54003	54050
	5	5-1	red	1.6	4.1	5.3	11.5	10	18	100	54042	54004	54051
	6		red	1.6	4.1	6.5	11.5	11	20	100	54043	54005	54052
	8		red	1.6	4.1	8.4	11.5	14	22	100	54082	54006	
1.5-2.5	10		red	1.6	4.1	10.5	11.5	18	24	100	54083	54007	
	3	3-2.5	blue	2.3	4.5	3.2	11.5	6	17	100	54084	54008	
	3.5		blue	2.3	4.5	3.7	11.5	6	17	100		54009	
	4	4-2.5	blue	2.3	4.5	4.3	11.5	8	18	100	54085	54010	54055
	5	5-2.5	blue	2.3	4.5	5.3	11.5	10	20	100	54044	54011	54056
	6	6-2.5	blue	2.3	4.5	6.5	11.5	11	22	100	54045	54012	54057
4-6	8	8-2.5	blue	2.3	4.5	8.4	11.5	14	23	100	54046	54013	
	10		blue	2.3	4.5	10.5	11.5	18	25	100	54086	54014	
	4	4-6	yellow	3.6	6.8	4.3	13	8	20	100	54087	54015	
	5	5-6	yellow	3.6	6.8	5.3	13	10	21	100	54088	54016	99120
	6	6-6	yellow	3.6	6.8	6.5	13	11	22	100	54047	54017	54062
	8	8-6	yellow	3.6	6.8	8.4	13	14	25	100	54048	54018	54063
	10	10-6	yellow	3.6	6.8	10.5	13	18	27	100	54089	54019	54064

CRIMP CABLE LUG

FORK-SHAPED COPPER, INSULATED, DIN 46237, FROM 0.5 TO 6mm²



- » Fork shape, insulated: quick and secure assembly without completely loosening the screw
- » Compliant with DIN 46237 standards: tested quality and standard compatibility
- » Easy installation: reliably crimp and permanently secure
- » Corrosion-resistant: durable even under demanding conditions

Material:

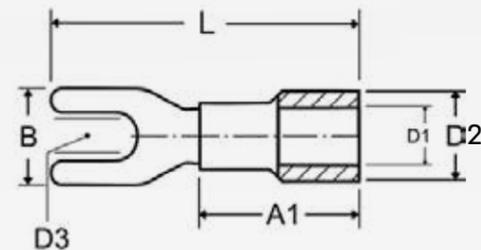
- Material: Cu-ETP according to DIN EN 13600
- PVC insulation or shrink insulation

Operating temperature:

- -60 °C to +105 °C

Characteristics:

- Surface: electro-tinned
- For strain-relieved connections
- 600 V max.
- Easy Entry allows for easy and quick insertion of the ladder.



Cross-section [mm ²]	Bolt diameter (according to DIN)	Nominal size (according to DIN)	Insulating paint	D1 [mm]	D2 [mm]	D3 [mm]	A1 [mm]	B [mm]	L [mm]	Unit [pcs.]	PVC insulation, item no.	Shrink insulation, item no.
0.5-1	3	3-1	red	1.6	4.1	3.2	11.5	5.8	16	100	54021	
	3.5		red	1.6	4.1	3.8	11.5	7	17	100	54022	
	4	4-1	red	1.6	4.1	4.3	11.5	7	17	100	54023	54066
	5	5-1	red	1.6	4.1	5.3	11.5	9.6	18	100	54025	54067
	6		red	1.6	4.1	6.5	11.5	11	20	100	54026	
1.5-2.5	3	3-2.5	blue	2.3	4.5	3.2	11.5	5.9	17	100	54027	
	4	4-2.5	blue	2.3	4.5	4.3	11.5	7	19	100	54028	54068
	5	5-2.5	blue	2.3	4.5	5.3	11.5	10	20	100	54029	54069
	6	6-2.5	blue	2.3	4.5	6.5	11.5	12	23	100	54030	
4-6	4	4-6	yellow	3.6	6.8	4.3	13	9	20	100	54031	54070
	5	5-6	yellow	3.6	6.8	5.3	13	9	21	100	54032	54071
	6	6-6	yellow	3.6	6.8	6.5	13	12.5	22	100	54033	
	8	8-6	yellow	3.6	6.8	8.4	13	15	25	100	54036	



CRIMP CABLE LUG
PEN-SHAPED COPPER, INSULATED,
DIN 46237, FROM 0.5 TO 6mm²



- » Pin-shaped, insulated: ideal for terminals and connectors with a tight fit
- » Compliant with DIN 46237 standards: tested quality and standard compatibility
- » Easy installation: reliably crimp and permanently secure
- » Corrosion-resistant: durable even under demanding conditions

Material:

- Material: Cu-ETP according to DIN EN 13600
- Insulation PA (Polyamide, Nylon, halogen-free)

Operating temperature:

- -60 °C to +105 °C

Characteristics:

- Surface: electroplated with tin; other surfaces available on request
- For strain-relieved connections
- 600 V max.
- Easy Entry allows for easy and quick insertion of the ladder.

Cross-section [mm ²]	Pin length [mm]	Nominal size (according to DIN)	Insulating paint	L1 [mm]	L2 [mm]	D1 [mm]	B [mm]	VE [pcs.]	Item No.
0.5-1	10	1.9	red	22	10	1.6	1.9	100	51098
	12	1.9	red	22	12	1.6	1.9	100	51095
1.5-2.5	10	2.3	blue	22	10	2.3	1.9	100	51096
					12	2.3	1.9	100	51096
4-6	14	2.8	yellow	27	14	3.6	2.8	100	51097



BUTT JOINT ISOLATED



- » Secure cable connections: permanently firm and reliable
- » Insulated version: additional protection against short circuits
- » Easy assembly: quick and easy to process
- » High conductivity thanks to high-quality copper core
- » Reliable strain relief, stable even under vibration.

Material:

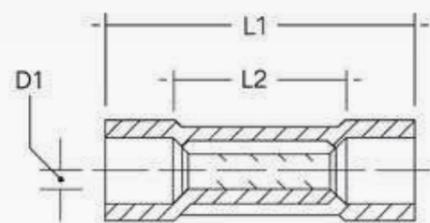
- Material: Cu-ETP according to DIN EN 13600
- Insulation: PA (polyamide, nylon), halogen-free or PVC

Operating temperature:

- -60 °C to +105 °C

Characteristics:

- Surface: electro-tinned
- For strain-relieved connections
- Voltage: max. 600 V
- Easy Entry: facilitates the insertion of the ladder.
- Note: Not suitable for solid ladders



Cross-section [mm ²]	Insulating paint	L1 [mm]	L2 [mm]	D1 [mm]	VE [pcs.]	Insulation PA Item No.	PVC insulation, item no.
0.5-1	red	25	15	1.6	100	51037	51101
1.5-2.5	blue	25	15	2.3	100	51038	51102
4-6	yellow	27	15	3.6	100	51039	51103



BUTT CONNECTORS WITH SHRINK INSULATION



- » Shrink insulation with adhesive: protects against moisture and corrosion
- » High tensile strength: holds reliably even under heavy loads
- » Electrical safety: optimal insulation through heat shrink tubing
- » Simple processing

Material:

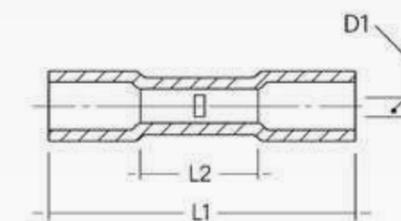
- Material: Cu-ETP according to DIN EN 13600
- Insulation: Heat shrink tubing with integrated hot melt adhesive

Operating temperature:

- -25 °C to +105 °C

Characteristics:

- Surface: electro-tinned
- Shrinkage temperature: approx. +150 °C
- For strain-relieved connections
- Voltage: max. 600 V
- Properties after shrinkage: insulating, abrasion-resistant, strain-relieved and waterproof connection
- Note: Not suitable for solid ladders



Cross-section [mm ²]	Insulating paint	L1 [mm]	L2 [mm]	D1 [mm]	Unit [pcs.]	Item No.
0.2-0.75	transparent	28	15	1.5	100	51118
0.5-1	red	37	15	1.6	100	51119
1.5-2.5	blue	37	15	2.3	100	51120
4-6	yellow	42	15	3.6	50	51121



TOOL

Our tool range covers all important applications related to cable management, connection technology, and cable protection: from crimping pliers and cable tie tools to stripping and dismantling tools and pipe and hose cutters. This enables safe, efficient, and durable processing of our materials.

Under the umbrella of our in-house tool forge, TOOLOVA*, we develop and manufacture electrotechnical hand tools that have proven themselves in practice tens of thousands of times. They combine precision, ergonomics, and an excellent price-performance ratio. With our expertise, we also support you in selecting the optimal tool solution for your application.



CRIMPING TOOL TF

Item No.: 4030001

- » Easy handling thanks to 2-component handles
- » Maximum precision thanks to adjustable pressing pressure
- » Forced locking mechanism with unlocking option guarantees complete crimping.
- » Extremely durable due to robust construction

Version:

- TF crimping tool frame with knurled screw, without crimping inserts

Material:

- Matt chrome-plated tool frame
- 2-component handles

Characteristics:

- Extensive range of crimping inserts
- Adjustable pressing pressure
- With knurled screw for manual replacement of crimping inserts



TF-PLUS CRIMPING TOOL

Item No.: 4030100

- » All-in-one crimping tool
- » With "Easy Change" quick-release locking mechanism
- » One pair of crimping pliers for many applications
- » Preset, optimal hand force
- » Precision manufacturing to industrial quality
- » Safe and ergonomic handling

Version:

- TF PLUS crimping tool frame with quick-release mechanism, without crimping dies

Material:

- Matt chrome-plated tool frame
- 2-component handles

Characteristics:

- Extensive range of crimping inserts
- Extremely robust and reliable
- Forced locking mechanism with unlocking option guarantees complete crimping.
- Adjustable pressing pressure
- With "Easy Change" quick-release locking mechanism for easy replacement of crimp inserts without the need for additional tools.
- Length: 248 mm
- Weight: 550 g



CRIMP INSERTS FOR TF AND TF-PLUS

- » High precision fit
- » Stable and durable
- » The right tool for different applications with the TF crimping pliers

Material:

- Micro-cast steel

Characteristics:

- Maximum stability and wear resistance with optimal handling
- The right application for every use

Application	Cross-section [mm ²]	Press mold	Article number
For wire end ferrules and twin wire end ferrules	0.5-6mm ² , 2x0.5-2x2.5mm ²	Trapezoidal grouting	4070006
	0.5-16mm ² , 2x0.5-2x6mm ²	Trapezoidal grouting	4070075
	16-35mm ² , 2x6-2x16mm ²	Trapezoidal grouting	4070076
	0.25-16mm ² , 2x0.5-2x6mm ²	Special trapezoidal grouting	4070054
	25-50mm ² , 2x10-2x16mm ²	Special trapezoidal grouting	4070055
For insulated cable lugs and connectors	0.5-6 mm ²	Oval pressing	4070014
For insulated connectors with shrink insulation	0.5-6 mm ²	Oval pressing	4070056
For non-insulated cable lugs and connectors	0.5-10 mm ²	Notch pressing	4070010
For non-insulated butt connectors	0.5-6 mm ²	Hexagonal crimping	4070089
For non-insulated flat connectors	0.5-2.5 mm ²	B-Crimp	4070052
For non-insulated flat connectors, plug width 4.8 and 6.3 mm	0.5-6 mm ²	B-Crimp	4070058
For non-insulated, angled, flag-shaped flat connectors	0.5-2.5 mm ²	B-Crimp	4070053
For non-insulated sub-D connectors	AWG 24-30, AWG 18-22 (0.05-0.75 mm ²)	B-Crimp	4070050
	AWG 24-28, AWG 20-22 (0.08-0.5 mm ²)	B-Crimp	4070051
For repair sleeves for fiberglass pull-in tapes 3 mm Ø			4070057
For PV connectors MC3	4-6 mm ²		4070059
For MC4 PV connectors	4-6 mm ²		4070060

TF PLUS CRIMPING TOOL SET FOR VEHICLE CONSTRUCTION

WITH 4 DEPLOYMENTS

Item No.: 4060112F



Crimping tool frame with quick-release mechanism, set with four inserts in a practical case

- » Robust and reliable
- » Forced locking mechanism with unlocking option guarantees complete crimping.
- » Adjustable pressing pressure

Material:

- Matt chrome-plated tool frame
- 2-component handles

Characteristics:

- Length: 248 mm
- Weight: 550 g

Included in the set are:

- 1 crimpool TF PLUS (with quick-release mechanism)
- Transport case

+ 4 interchangeable crimping dies:

- for wire end ferrules with and without collar from 0.5 - 16.0 mm²
- for insulated cable lugs (red, blue, yellow) from 0.5 - 6.0 mm²
- for non-insulated crimp cable lugs from 0.5 - 10.0 mm² DIN 46234
- For flat connectors with open, pre-rolled crimp claw of 0.5 - 2.5 mm² (plug width 6.3 + 4.8 mm)



Other press inserts available



CRIMPING TOOL FOR WIRE END FERRULES

Item No.: 92146

- » Hexagonal press fit for compact connection dimensions
- » Ergonomic handles for fatigue-free work
- » High crimp quality thanks to unlockable locking mechanism

Version:

- Self-adjusting crimping tool for insulated and uninsulated wire ferrules and twin wire ferrules from 0.08 - 16 mm² / 2 x 0.5 - 2 x 6 mm²

Material:

- High-alloy tool steel

Characteristics:

- Length: 210 mm
- Weight: 400 g



CABLE TIE PLIERS FOR PLASTIC CABLE TIES

4.8 - 12mm WIDTH

Item No.: 91652

- » Precise voltage setting for consistent results
- » Cut the protruding cable tie flush.
- » Ergonomic design for comfortable working
- » Robust construction for long service life

execution:

- for plastic cable ties

Material:

- plastic

Characteristics:

- For cable ties: 4.8 - 12 mm width / 2 mm thickness
- Length: 200 mm
- Weight: 360 g

CABLE TIE PLIERS



FOR PLASTIC CABLE TIES
2.4 - 6mm/ 1.5 MM THICKNESS
 Item No.: 91651

- » Precise voltage setting for consistent results
- » Cut the protruding cable tie flush.
- » Ergonomic design for comfortable working
- » Robust construction for long service life

execution:

- Professional, robust cable tie pliers for plastic cable ties from 2.4 to 6 mm wide and 1.5 mm thick

Material:

- plastic

Characteristics:

- Length: 200 mm
- Weight: 310 g



FOR STAINLESS STEEL CABLE TIES
UP TO 7.9mmWIDTH
 Item No.: 4040064

- » Ergonomic tool for tightening and cutting stainless steel cable ties in one operation
- » Clean cut - flush cutting for safe, injury-free edges
- » The continuously adjustable clamping force is displayed via a scale in the handle area.
- » Once the clamping force is reached, the excess is automatically cut off flush.

Version:

- Professional, robust cable tie pliers for stainless steel cable ties up to 7.9 mm wide and up to 0.3 mm thick

Material:

- aluminum alloy

Characteristics:

- Length: 180 mm
- Weight: 555 g



MANUAL CABLE TIE RELEASE PLIERS

Item No.: 92161

- » Durable safety tool
- » Prevents damage to conductor insulation when cutting cable ties.
- » Optimally adapted cutting head with guide

Material:

- High-alloy tool steel

Characteristics:

- Length: 172 mm
- Weight: 142 g



CABLE TIE PLIERS
FOR STAINLESS STEEL CABLE TIES UP TO 12mm WIDTH
 Item No.: 91653

- » Robust professional tool - specially designed for stainless steel cable ties up to 12 mm wide
- » Ergonomic design - comfortable grip for safe and fatigue-free work
- » Precise tension - cable ties are reliably and evenly tensioned.
- » Clean cut - integrated cutting function for flush cutting without sharp edges
- » Easy handling - fast, efficient application even with high quantities
- » Versatile

Version:

- Professional, robust cable tie pliers for stainless steel cable ties up to 12 mm wide

Material:

- Frame metal / Handles plastic

Characteristics:

- For cable ties 4.6 - 12 mm wide / up to 0.3 mm thick
- Length: 178 mm
- Weight: 680 g



CORRUGATED PIPE CUTTER
UP TO 45mm
 Item No.: 91661

- » High-quality corrugated pipe cutter with cross and longitudinal cutting function
- » Cross-sectional function with two four-edged blades
- » Longitudinal cut with robust single blade and integrated pipe support
- » Blades securely embedded in the housing - protects user and tool
- » Blade protected in the housing and adjustable in 4 positions by 90° - for long service life
- » Precise pipe guidance system for perfect cutting position
- » Secure closure by spring pressure

Version:

- Corrugated pipe cutter specifically for 45 mm plastic corrugated protective pipe

Material:

- Magnesium housing AZ91D

Characteristics:

- Dimensions: approx. 133 mm x 81 mm x 22 mm
- For pipes up to 45 mm
- Weight: 155 g



REPLACEMENT BLADES (SET OF 3) FOR CORRUGATED PIPE CUTTERS

Item No.: 91667

- » Original replacement blades - perfectly suited to the corrugated pipe cutter
- » Highest cutting quality and precision
- » Four-edged usable blades - up to 4 times longer service life per blade
- » Quick and easy to change - minimal downtime
- » Securely embedded in the housing - optimal user protection

Version:

- Replacement blades (set of 3) for corrugated pipe cutters, specifically for 45 mm plastic corrugated protective pipes

PIPE SHEARS



FOR PLASTIC PIPES UP TO 26mm

Item No.: 91662

- » Lighter, faster & more precise cut
- » Minimal effort through optimal power transmission
- » Tool-free blade change thanks to the ICS quick-change system
- » Increased safety through automatic blade retraction

execution:

- Pipe shears

Material:

- INOX (stainless steel)
- PTFE non-stick coated cutting blade
- Magnesium die-cast housing

Characteristics:

- ICS quick-change blade system (tool-free)
- Automatic blade retraction
- Weight: 233 g



FOR PLASTIC PIPES UP TO 42mm

Item No.: 91663

- » Lighter, faster and more precise cutting for maximum efficiency
- » Minimal effort through optimal power transmission
- » Progressive, tooth-guided blade feed for clean cuts
- » Tool-free blade quick-change system for fast replacement
- » One-handed quick blade retraction for maximum safety
- » Protected cutting blade inside the scissor body
- » 2-component handle for a secure grip and comfortable working

Version:

- Pipe shears

Material:

- INOX (stainless steel)
- PTFE non-stick coated cutting blade
- Magnesium die-cast housing

Characteristics:

- ICS quick-change blade system (tool-free)
- One-handed quick blade retraction
- The cutting blade is protected inside the scissor body.
- Weight: 412 g



PIPE SHEARS FOR PLASTIC PIPES UP TO 63mm

Item No.: 91664

- » Lighter, faster, more precise cut
- » Minimal effort thanks to optimal power transmission
- » Progressive, tooth-guided blade feed for maximum efficiency
- » Tool-free blade quick-change system
- » One-handed quick blade retraction
- » Protected cutting blade inside the scissor body
- » 2-component handle for a secure, comfortable grip

Version:

- Pipe shears

Material:

- INOX (stainless steel)
- PTFE non-stick coated cutting blade
- Magnesium die-cast housing

Characteristics:

- ICS quick-change blade system (tool-free)
- One-handed quick blade retraction
- The cutting blade is protected inside the scissor body.
- Weight: 605 g

HOSE CUTTER

- » Lighter, faster and more precise cut
- » Minimal effort through optimal power transmission
- » Robust and lightweight



HOSE CUTTER UP TO 22mm

Item No.: 91665

execution:

- Pipe shears

Material:

- INOX (stainless steel)
- PTFE non-stick coated cutting blade
- Magnesium die-cast housing

Characteristics:

- For hoses up to 22 mm
- Weight: 147 g



HOSE CUTTER UP TO 28mm

Item No.: 91666

Version:

- Pipe shears

Material:

- INOX (stainless steel)
- PTFE non-stick coated cutting blade
- Magnesium die-cast housing

Characteristics:

- For hoses up to 28 mm
- Weight: 216 g



MOVING ASSISTANCE FOR SLOTTED CORRUGATED PIPE / CONDUIT

Item No.: 38292

- » Universally applicable - suitable for various pipe diameters and applications
- » Gentle cable protection - prevents damage to the cable sheathing during installation
- » Simple cable entry - facilitates the insertion of cables into slotted corrugated and empty conduits.
- » Time savings during installation - reduces assembly effort and increases productivity

Version:

- Assembly aid for small corrugated pipe

Material:

- PA 6.6 (Polyamide 6.6, halogen-free)

Characteristics:

- For nominal diameters 4.5 - 7



HOT CUTTING HAND TOOL

60 W
Item No.: 91671

- » Handheld device for short-term operation - ideal for small production runs
- » Versatile use: for cutting to length and fusing the ends of synthetic cords, ropes, tapes, belts and fabrics
- » Short heating time of the blades: approx. 6-8 seconds
- » Simple temperature regulation by manual on/off switching

Version:

- Mobile handheld device for textile hoses and fabrics

Characteristics:

- Mains voltage: 230V-50Hz (110V-60Hz)
- Power consumption: 60W
- Intermittent operation: 12 sec./48 sec.
- Protection class II - Double insulated
- Power cord 2m long with Europlug (optionally available with other plug types)
- Weight: 1000 g



CUTTING TIP FOR 60W HANDHELD HOT CUTTING TOOL

Item No.: 91674

- » Suitable for the 60W mobile hot cutter
- » Precise cutting of synthetic fabrics, ropes and tapes
- » Clean, fused cut edges - prevents fraying
- » Easy assembly and quick tip replacement
- » High-quality workmanship

execution:

- High-performance cutting tip for cutting thicker fabrics, cords and ropes up to Ø 15mm



HOT CUTTING HAND TOOL 200 W

Item No.: 91672

- » Powerful, comfortable handheld device with microprocessor-controlled power level
- » Fast heating time thanks to boost function
- » Ideal for small and medium production runs
- » For cutting to length and fusing the ends of synthetic cords, ropes, tapes and straps
- » Suitable for cutting and edge welding of woven and knitted fabrics

execution:

- Mobile handheld device for textile hoses and fabrics with continuously adjustable working temperature

Characteristics:

- Mains voltage: 230V-50Hz (110V-60Hz)
- Power consumption: Max. 200 W
- Intermittent operation: 12 sec./48 sec.
- Protection class II - Double insulated
- Power cord: 3 m long, with contoured central plug
- Weight: 580 g



CUTTING TIP F-2

FOR MOBILE HOT CUTTING HAND TOOL 200 W

Item No.: 91675

- » Suitable for the 200W mobile hot cutter
- » Precise cutting of synthetic fabrics, ropes and tapes
- » Clean, fused cut edges - prevents fraying
- » Easy assembly and quick tip replacement
- » High-quality workmanship

Version:

- Cutting tip for cutting ropes and straps



CUTTING TIP R-50

FOR MOBILE HOT CUTTING HAND TOOL 200 W

Item No.: 91676

- » Suitable for the 200W mobile hot cutter
- » Precise cutting of synthetic fabrics, ropes and tapes
- » Clean, fused cut edges - prevents fraying
- » Easy assembly and quick tip replacement
- » High-quality workmanship

execution:

- High-performance cutting tip for cutting thicker fabrics, cords and ropes up to Ø 35mm



HOT WIRE CUTTER FOR CONTINUOUS OPERATION 230 V

Item No.: 91673

- » Smallest device for continuous operation with fixed cutting edge
- » For quickly and cleanly cutting thin cords, ribbons and braided tubes to length
- » Suitable for welding thin cords and ribbons
- » It is possible to process cords up to 5 mm in diameter into endless cords.
- » Continuously adjustable operating temperature via potentiometer

execution:

- Stationary device for textile hoses and fabrics with continuously adjustable working temperature

Characteristics:

- Working range 70 mm
- Mains voltage: 230 V - 50 Hz
- Power consumption: max. 140 W
- Continuous operation 100% ED
- 2 m long power cord with grounded plug
- Power switch with indicator light
- Protection class: I - Protective earthing
- Dimensions: 155 x 235 x 130 (200) mm
- Weight: 4800 g



CUTTING BELT FOR STATIONARY HOT CUTTER 230 V

Item No.: 91677

- » Suitable for stationary hot cutting machines
- » Precise cutting of synthetic fabrics, ropes and tapes
- » Clean, fused cut edges - prevents fraying
- » Easy assembly and quick tip replacement
- » High-quality workmanship

execution:

- Cutting belt 88 x 4 x 0.5 mm / Working area 70 mm



CABLE STRIPPING TOOL
FOR CABLES WITH A DIAMETER OF 25 MM OR LARGERmm
 Item No.: 91551

- » Safety cable stripping tool
- » No risk of injury
- » No damage to the inner insulation layers caused by the special blades.

Version:

- Universal cable sheath cutter
- To remove all
- Insulation layers of cables with a diameter of 25 mm or more, e.g., lead sheath, rubber, PE, PVC

Characteristics:

- Cutting depth adjustable from 0.5 - 5 mm
- Suitable for longitudinal and circular cuts, replaceable blades
- Length: 15.6 mm
- Weight: 159 g



SELF-ADJUSTING WIRE STRIPPER
 Item No.: 92160

- » High-quality, robust wire stripper
- » At least 10,000 stripping operations
- » Pliers body made of steel
- » V-shaped blades for optimal placement even on difficult insulations
- » Especially suitable for PV cables

Version:

- Automatic / self-adjusting

Material:

- Nylon / Steel

Characteristics:

- Cable cross section: 0.2 - 6.0 mm² (24 - 10 AWG)
- Cutting range: up to 4.0 mm Ø
- Features: Guide scale, wire stripper, length adjustment, cutting device, lock
- Length: 178 mm
- Weight: 147 g



PROFESSIONAL SAFETY KNIFE

INCLUDES 4 BLADES

Item No.: 91681

- » High-quality professional safety knife for precise, safe cutting in crafts and industry.
- » Automatic blade retraction: Minimized risk of injury while working
- » Ergonomic design with non-slip grip for comfortable, fatigue-free cutting.
- » Robust housing made of durable plastic/metal for maximum stability in continuous use
- » Versatile use: suitable for cardboard, foil, strapping tape, leather, rubber and much more.
- » Blade compartment in the handle
- » Tool-free blade change - quick, easy and safe
- » 4 sharp replacement blades included - always within easy reach and quick to change.

Version:

- Safety knife including 4 blades

Material:

- Aluminum casting

Characteristics:

- Length: 175 mm | Weight: 200 g

REPLACEMENT BLADES

- » Original replacement blades - optimally matched to professional safety knives
- » Pack of 10 blades for long usage and fewer reorders.
- » Extremely sharp and precisely ground for clean, effortless cuts
- » High-quality blade steel - break-resistant, robust and durable
- » Securely packaged in a practical dispenser box for easy and safe removal
- » Tool-free blade change - quick and safe to insert into the knife



HOOKS FOR PROFESSIONAL SAFETY KNIVES

10 PIECES

Item No.: 91682

execution:

- Replacement blades for safety knives / hook blades

Characteristics:

- Dimensions: 52x19x0.62 mm 2.85



TRAPEZOIDAL, FOR PROFESSIONAL SAFETY KNIVES

10 PIECES

Item No.: 9168

Version:

- Replacement blades for safety knives / trapezoidal blades

Characteristics:

- Dimensions: 60x19x0.65 mm

MATERIAL LIST FOR CABLE TIES & FASTENING CLIPS

Material	Material abbreviation	Color	Operating temperature	Fire protection	UV-stable	Material properties	Material specifications
Polyamide 6	PA 6	black, natural	-40 °C to +85 °C (briefly up to +105 °C)	UL94 V-2	Yes	Self-extinguishing // Very good tensile strength // Very good chemical resistance	REACH, RoHS
Heat-stabilized polyamide 6.6	PA 6.6 HS	nature	-40 °C to +125 °C (briefly up to +150 °C)	UL94 V-2		Self-extinguishing // Increased temperature resistance // Very good tensile strength // Very good chemical resistance	REACH, RoHS, HF
Polyamide 6.6 UV-stabilized	PA 6.6 UV	black	-40 °C to +85 °C (briefly up to +105 °C)	UL94 V-2	yes / 10 / 15 years	Self-extinguishing // Very good tensile strength // Very good chemical resistance // UV and weather resistant for 10 years	REACH, RoHS, HF
Premium polyamide 6.6 (extra cold and impact resistant)	PA 6.6 HIR (S)	black	-40 °C to +85 °C (briefly up to +110 °C) Installation temperature from -40 °C	UL94 V-2	Yes	Self-extinguishing // Very good tensile strength // Very good chemical resistance // Particularly resistant to cold and impact	REACH, RoHS, HF
Polyamide 46	PA 46	natural (yellowish)	-40 °C to +150 °C (installation temperature -10 °C to +60 °C)	UL94 V-2		Self-extinguishing / low emission of toxic gases and smoke // Very good tensile strength // Very good chemical resistance // Resistant to higher temperatures	REACH, RoHS, HF
Polyamide 12	PA 12	black	-40 °C to +85 °C (briefly up to +105 °C)	UL94 HB	yes / 20+ years	Self-extinguishing // Very good tensile strength // Very good chemical resistance // Very low water absorption (less than 1%) // UV and weather resistant for 20 years	REACH, RoHS, HF
Polypropylene/fire-resistant modified	PP BS	black	-40 °C to +135 °C (briefly up to +150 °C) Melting point: from +160 °C	UL 94 V-2, FMVSS / flame-retardant, low flammability, self-extinguishing, low smoke emission	limited / black version up to 2 years	Flame-retardant, difficult to ignite, self-extinguishing, low smoke emission // Very good chemical resistance (fuels, mineral oil, greases, alkalis, and most common solvents; conditionally resistant to alkalis) // Tensile strength: 500 N // Elongation at break: approx. 300% // Compressive strength at peak: approx. 320 N	REACH, RoHS, UL, HF

MATERIAL TABLE HEAT SHRINK TUBING

Radiation-crosslinked polyolefin	PO	black, blue, green-yellow, other colors	-55 °C to 125 °C	UL 224 (except transparent)	limited / black version up to 2 years	Flame-retardant // difficult to ignite // low smoke emission // good chemical resistance // non-corrosive / also copper	RoHS
Radiation-crosslinked polyolefin/adhesive-coated	PO	black, transparent	-55 °C to 110 °C	FMVSS / Self-extinguishing mantle	limited / black version up to 2 years	Flame retardant // Good chemical resistance // Non-corrosive / also copper	RoHS
Cross-linked elastomer	TPE	black	-75 °C to 150 °C	UL 224 / self-extinguishing	Yes	Self-extinguishing // Particularly fuel-resistant // Resistant to diesel, hydraulic fluids and chemicals as well as all conventional liquids and solvents (also non-corrosive / including copper)	RoHS
Polyvinyl chloride	Rigid PVC	black	-10 to 105 °C	UL 224 / flame retardant	no / only in special versions	Very low hygroscopicity // Very good chemical resistance // Good acid resistance // Corrosion-resistant	RoHS, UL
Polyethylene terephthalate	PET	black, transparent	-40 °C to +125 °C	Minimal smoke development, no toxic gases	Yes / black version approx. 3 years	Excellent fire protection properties (self-extinguishing) // High melting point (>200 °C)	RoHS
Kynar / Polyvinylidene fluoride	PVDF	transparent	approx. -55 °C to 175 °C	UL224 VW-1 / self-extinguishing, low smoke emission	Yes	Excellent fire protection properties // Self-extinguishing, low smoke development // Very good chemical resistance // Does not promote the growth of mold and fungi	RoHS, UL
Polytetrafluoroethylene	PTFE	transparent	-65 °C to 260 °C	UL 224 / non-flammable	Yes	Non-adhesive // Non-flammable // Very good chemical resistance	RoHS
Viton (fluoroelastomer)	Viton	black	-55 °C to 220 °C	ASTM / self-extinguishing	Yes	Self-extinguishing // Very good chemical resistance: Particularly resistant to corrosive liquids at high temperatures as well as to all common liquids and solvents (also non-corrosive / including copper)	RoHS, UL

HF: Halogen-free HRS: High impact resistant

Material	Material abbreviation	Color	Operating temperature	Fire protection	UV-stable	Material properties	Material specifications
Polyamide 6	PA 6	black	-45 °C to 120 °C (briefly up to 150 °C)	UL94 V-2, FMVSS, ASTM / flame-retardant, low flammability, self-extinguishing, low smoke emission	yes / 5 - 10 years	Flame-retardant, difficult to ignite, self-extinguishing, low smoke emission // Resistant to fuels, mineral oil, greases, alkalis, and most common solvents // Conditionally resistant to alkalis // Elongation at break: 50-200% // Peak compressive strength: approx. 320 N	RoHS, UL, HF
Polyamide 6/ for light pressure loads	PA 6 LD	black	-45 °C to 120 °C (briefly up to 150 °C)	UL94 V-2, FMVSS, ASTM / flame-retardant, difficult to ignite, self-extinguishing, low smoke emission	yes / 5 - 10 years	Flame-retardant, difficult to ignite, low smoke emission // Resistant to fuels, mineral oil, greases, alkalis and most common solvents // Conditionally resistant to alkalis // Impact strength (normal temperature): 6 J // Tensile strength: 250 N	RoHS, UL, HF
Polypropylen	PP	black	-40 °C to 135 °C (briefly up to 150 °C)	UL 94 V-2, FMVSS / flame-retardant, low flammability, self-extinguishing, low smoke emission	limited / black version up to 2 years	Flame-retardant, difficult to ignite, self-extinguishing, low smoke emission // Resistant to fuels, mineral oil, greases, alkalis, and most common solvents // Conditionally resistant to alkalis // Elongation at break: approx. 400-600% // Peak compressive strength: approx. 320 N	RoHS, UL, HF
Polypropylene/fire-resistant modified	PP BS	black	-40 °C to 135 °C (briefly up to 150 °C) Melting point: 160 °C to 170 °C	UL 94 V-2, FMVSS / flame-retardant, low flammability, self-extinguishing, low smoke emission	limited / black version up to 2 years	Flame-retardant, difficult to ignite, self-extinguishing, low smoke emission // Very good chemical resistance (fuels, mineral oil, greases, alkalis and most common solvents, conditionally resistant to alkalis) // Tensile strength: 500 N // Elongation at break: approx. 300% // Compressive strength at peak: approx. 320 N	RoHS, UL, HF
Polypropylene/ UV weather-resistant	PP UV	black	-40 °C to 105 °C (briefly up to 120 °C)	UL 94 V-2, FMVSS / flame-retardant, low flammability, self-extinguishing, low smoke emission	Yes / up to 20 years	Flame-retardant, difficult to ignite, self-extinguishing, low smoke emission // UV and weather resistant for up to 20 years // Resistant to fuels, mineral oil, greases, alkalis, and most common solvents // Conditionally resistant to alkalis // Tensile strength: 500 N // Elongation at break: approx. 300% // Compressive strength at peak: approx. 320 N	RoHS, UL, HF
Perfluoroalkoxy	PFA	black	-200 °C to 260 °C Melting point: 300 °C to 310 °C	UL 94 V-0, flame-retardant, self-extinguishing, low smoke emission	Yes	Self-extinguishing // Resistant to almost all media: mineral oils, fuels, greases, alcohols // UV-stable for up to 30 years // Elongation at break: 200% - 400% // Tensile strength: Up to 800 N/mm ²	RoHS, UL
Ethylene-vinyl acetate copolymer / halogen-free	EVA	black	-40 °C to 55 °C (briefly up to 65 °C)	UL 94 HB / self-extinguishing	Yes	Self-extinguishing // Durability: UV-stable for up to 2 years // High heat and aging resistance	RoHS, UL, HF
Polyolefin (flame-retardant modified)	PO	black, grey	-15 °C to 105 °C	Non-flame-spreading, flame-retardant	no / only in special versions	Non-flame propagating // Resistant to alcohols, fats, mineral oils, and fuels // Elongation at break: approx. 250% // Compressive strength: light / 320 N	RoHS
Polyvinyl chloride	PVC	gray	-50 °C to 60 °C	Fire class A1-F / self-extinguishing	no	Virtually no water absorption // Low thermal conductivity // Low impact resistance	RoHS
Low-density polyethylene/ halogen-free	PE LD	black	-40 °C to 70 °C (briefly up to 90 °C)	UL 94 HB (V-2), FMVSS / self-extinguishing, flame retardant	limited / black version up to 2 years	Self-extinguishing // Resistant to acids, alkalis, inorganic salts, water, and fats // Impact resistance: 2 years	RoHS, UL, HF
High-density polyethylene/ halogen-free, high impact resistant	PE HD HRS	black, red	-40 °C to 90 °C (briefly up to 120 °C)	UL 94 HB (V-2), FMVSS / self-extinguishing, flame retardant	limited / black version up to 2 years	Self-extinguishing // Resistant to almost all media: mineral oils, fuels, greases, alcohols // Only attacked by strongly oxidizing, concentrated acids // Tensile strength: approx. 22 MPa // Elongation at break: approx. 100%	RoHS, UL

HF: Halogen-free HRS: High impact resistant

PRODUCT- STANDARDS



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PAHs certificate



Approval for products in the Eurasian Economic Area



Obligation to take back and dispose of electrical and electronic equipment



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