



INSTALLATION PRODUCTS FOR THE RAILWAY INDUSTRY

Certified cable management



OUR PRODUCTION

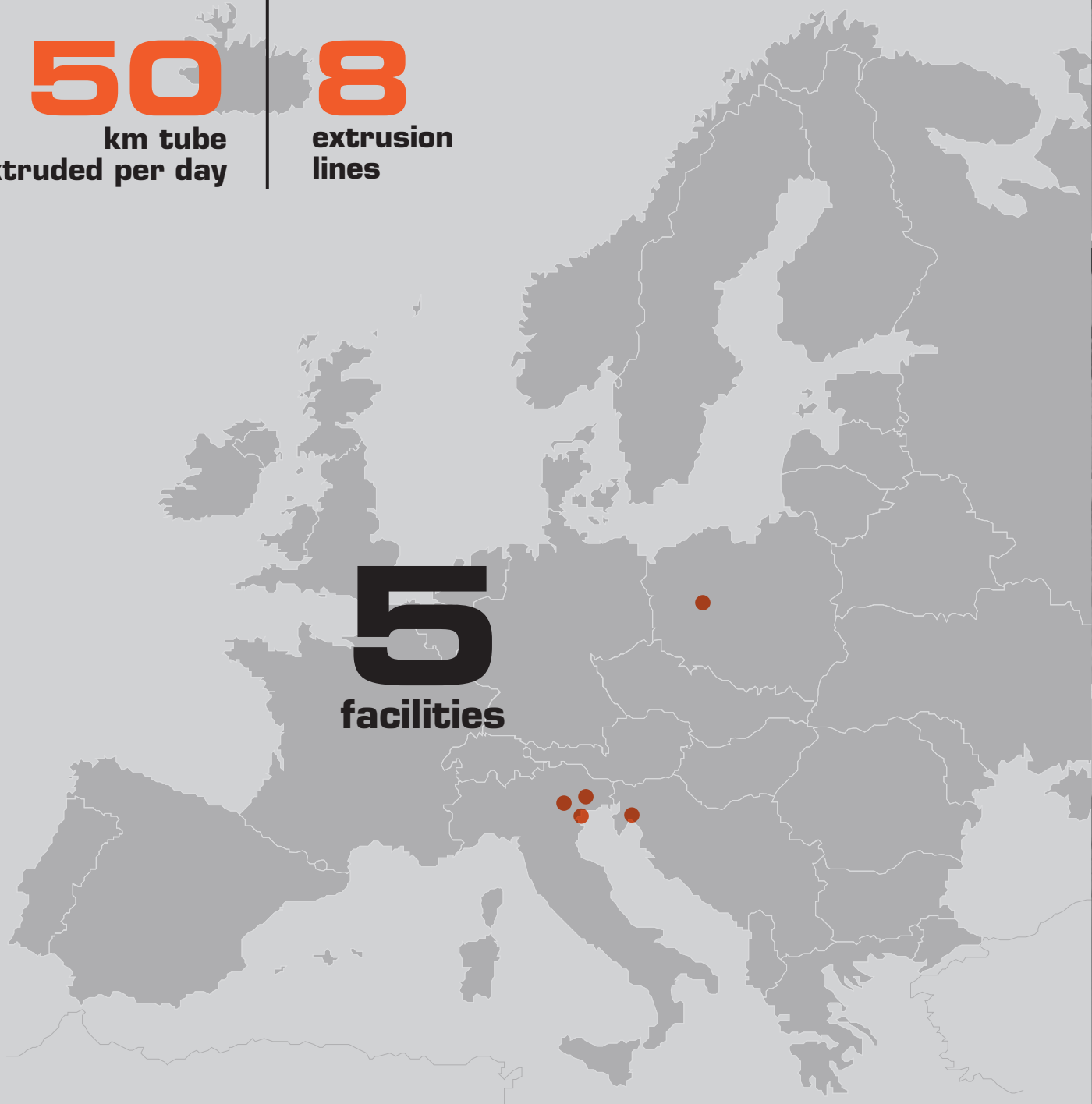
75
injection
moulding machines

14 million
cable ties
produced per day

150
km tube
extruded per day

8
extrusion
lines

5
facilities





ADVANCED FASTENING SOLUTIONS

We **DEVELOP** and **PRODUCE** solutions dedicated to different types of industry, combining our Italian and European **COMPETENCES**.

The only multi-product and multi-solution offer for your profession.

THE STRENGTH OF A **GLOBAL** **GROUP**

Elematic is part of **ITW**, an American **MULTINATIONAL** group with over 100 years of history: the **IDEAL PARTNER** for every professional looking for innovative, differentiating, and high-quality products.



SYSTEM CERTIFICATIONS



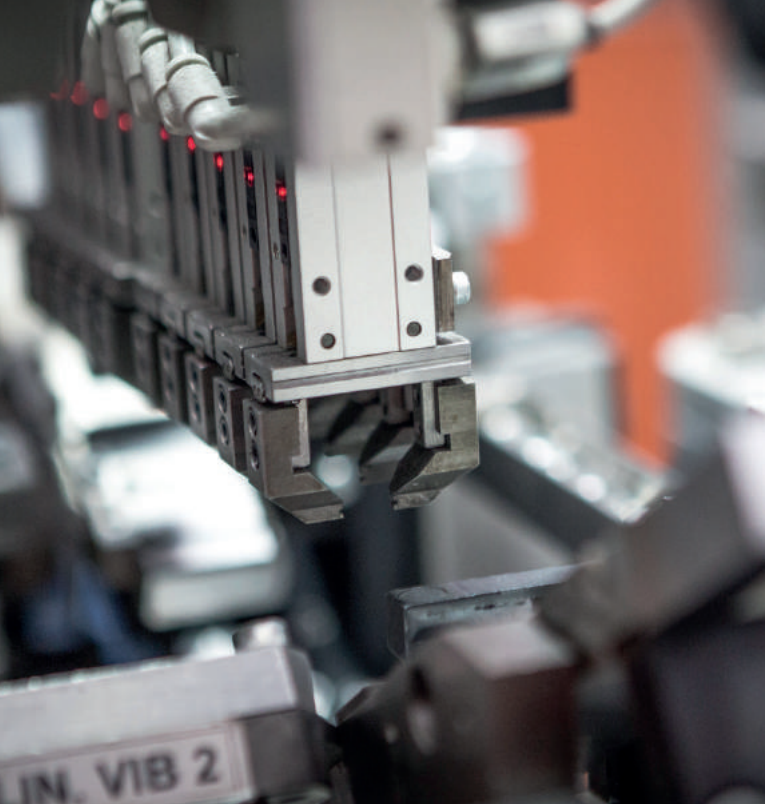
The company is certified **ISO 9001:2015** for the design and manufacturing of cable ties and fixing systems with technopolymers, and trading of cabling and fixing accessories.

The certification guarantees the **quality of the production processes** thanks to the implementation of strict operational procedures and quality controls at all levels.

ENVIRONMENTAL CERTIFICATIONS



Aware of the importance of our impact on the environment, we undertook an environmental certification procedure to reduce our impact on the environment as much as possible. All our Italian sites are certified according to **ISO 14001: 2015** standard for the design and production of cable ties and fixing systems in technopolymers by injection moulding, and trading of cabling and fixing accessories.



WHY CHOOSING



- Elematic products are tested periodically to comply with the latest **safety standards**, always offering the best solutions certified to keep the rolling stock safe;
- Producing our cable ties and heat-shrink tubes with **durable materials** makes them resistant to the toughest weather conditions and widely increases the product longevity;
- Because your time is precious, we developed a **simpler installation process**;
- Our product range gives you the possibility to choose **the right solutions** accordingly to the different operational environments;
- Elematic produces in Europe and **guarantees full traceability**;
- As an Elematic partner, you will save time working with a single company to **satisfy all your needs** for an electrical system compliant with flame, smoke and toxicity requirements.

PRODUCT CERTIFICATIONS AND COMPLIANCE

EN 45545-2

EN 45545-2

Products are tested according to UNI EN 45545-2: Railway applications - Fire protection for railway rolling stock - Part 2: Requirements for the fire behavior of materials and components.



UL LISTED



UL RECOGNIZED

UL

Elematic cable ties are recognised and listed by UL (Underwriters Laboratories Inc.) according to UL 62275 standard - Cable Management Systems - Cable Ties for Electrical Installation.



DNV

DNV certification guarantees that Elematic cable ties comply to the “Det Norske Veritas” and “Ger-manischer Lloyd” standards for cable fixing in naval and offshore constructions, for both internal and external applications.



BUREAU VERITAS

This homologation, according to the IEC standard 60092-IEC 62275, ensures that Elematic cable ties comply to the “Bureau Veritas” standard for cables fixing in shipbuilding.



R.I.NA.

The Italian Naval Register homologation, according to the IEC EN 60092-101 “Electrical Installations in Ship” certifies that Elematic cable ties have been tested for flame propagation in shipbuilding.



CE MARKING

EUROPEAN STANDARD FOR SAFETY PERFORMANCE IN EUROPE IN CASE OF FIRE

EN 45545-2

If you want your passenger train (conventional or high-speed) to travel in Europe, it has to be compliant with the European standard for safety performance in case of fire: **EN 45545-2**. Otherwise, if it is a light rail vehicle or a tram, this standard is not mandatory.

All the risks contained in EN 45545-2 are classified by the **design category** of railway vehicle.

Moreover, the European standard for safety behaviour in case of fire not only indicates the Hazard Level required for each design category but also includes the **operational environment** where the vehicle moves: tunnels, underground or elevated structures.

Only official laboratories are authorized to release these test certifications.

Design category	Standard Vehicles	Automatic vehicles with no emergency trained staff on board	Double-deck vehicles	Vehicles with sleeping quarters
Category 1: Vehicles not designed or equipped to run extensively underground in tunnels or elevated structures	HL1	HL1	HL1	HL2
Category 2: Vehicles designed for underground sections, tunnels and/or elevated structures (< 5Km) with side evacuation and where there are stations or rescue points reachable within 4 minutes	HL2	HL2	HL2	HL2
Category 3: Vehicles designed for underground sections, tunnels and/or elevated structures (> 5Km) with side evacuation and where there are stations or rescue points reachable within 15 minutes	HL2	HL2	HL2	HL3
Category 4: Vehicles designed for underground sections, tunnels and/or elevated structures, without side evacuation available	HL3	HL3	HL3	HL3

Source: TABLE 1- EN 45545-2:2020



RELIABILITY AND SAFETY ON ROLLING STOCK: EN 45545-2

The requirements for the fire behaviour of products used and installed in rolling stock are contained in the **EN 45545-2** standard.

Crucial factors such as oxygen index, smoke density and toxicity levels, for requirement sets **R22**, **R23** and **R24**, and related hazard levels are mentioned in the table 5 of EN 45545-2 standard.

There are three different **Hazard Levels: HL1** (lowest risk), **HL2** (medium risk), **HL3** (highest risk).

Among these, HL3 is therefore the most stringent classification level and, in case of fire, it allows for the most favorable conditions to safeguard the health of passengers.

Categories	Test method	Parameter and unit	HL1	HL2	HL3
R22 (IN16; EL2; EL6A; EL7A; M2)	EN ISO 4589-2	Oxygen content%	28	28	32
	ISO 5659-2: 25 kW/m ²	D _s max (smoke opacity)	600	300	150
	EN 17084 Method 2, 600° C or EN17084 Method 1, 25 kW/m ²	CIT _{NLP} dimensionless (toxicity) or CIT _G dimensionless	1.2	0.9	0.75
R23 (EX12; EL2; EL5; EL6B; EL7B; M3)	EN ISO 4589-2	Oxygen content%	28	28	32
	ISO 5659-2: 25 kW/m ²	D _s max (smoke opacity)	-	600	300
	EN 17084 Method 2, 600° C or EN17084 Method 1, 25 kW/m ²	CIT _{NLP} dimensionless (toxicity) or CIT _G dimensionless	-	1.8	1.5
R24 (EL9)	EN ISO 4589-2	Oxygen content%	28	28	32

Source: TABLE 5- EN 45545-2:2020



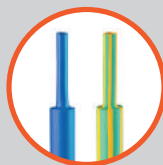
SOLUTIONS FOR THE ROLLING STOCK



CABLE TIES



APPLICATION TOOLS



CABLE PROTECTION
SYSTEM



2-LOCK CABLE TIES



Professional cable ties, in polyamide 6.6, having an innovative double locking system in stainless steel: maximum performance and reliability



Concerning the **BLACK 2-LOCK** cable ties, codes 1303÷1327, according to the standard EN 45545-2:2013 + A1:2015 (Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behaviour of materials and components), **these cable ties comply with the standard in question for hazard levels HL1 - HL2 for set of requirements R22 and R23.**

FEATURES AND BENEFITS

- The special AISI 316 stainless steel locking system, directly incorporated into the head during the injection manufacturing process, allows the highest performances and reliability
- The double tooth mechanism allows a double locking, on both side of ties, for an ultimate tightening of the bundles
- Perfect wiring: the smooth profile without racks offers infinite adjustment along the length of the tie and always a correct tensioning for any bundling diameters
- Resistance and reliability at low operating temperature up to -40°C
- 2-LOCK™ cable ties, in black color, are manufactured of special UV-resistant polyamide, for extreme outdoor applications
- 2-LOCK™ cable ties are packed in an innovative resealable bag: this avoids any dispersion after the first opening, maintaining the superior characteristics of the ties.

APPROVALS AND CERTIFICATIONS



TECHNICAL DATA

Body material	polyamide 6.6
Cage material	stainless steel INOX AISI 316
Halogen	absent
Humidity absorption (50% relative humidity)	2,7%
Working temperature	$-40^{\circ}\text{C} \div +85^{\circ}\text{C}$
Installation temperature	$-40^{\circ}\text{C} \div 60^{\circ}\text{C}$
Flammability rating	UL94 class V2

Resistance external agents:

UV-resistant (2-Lock in black color). Excellent chemical resistance to aromatic solvents, oils, greases, oil-based products. Good chemical resistance to bases. Limited resistance to acids. Does not resist to phenol and chlorinated solvents. Corrosion Resistant (Overmoulded Locking System in A4-AISI 316 stainless Steel)

**2-LOCK™
NATURAL**



Description	Width (mm)	Length (mm)	Ø bundle max (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code
2-LOCK 2,5x100	2,5	100	21	15,30	150	100	1203
2-LOCK 2,5x200	2,5	200	50	15,30	150	100	1207
2-LOCK 3,5x140	3,5	140	35	25,5	250	100	1209
2-LOCK 3,5x200	3,5	200	50	25,5	250	100	1214
2-LOCK 3,5x290	3,5	290	80	25,5	250	100	1210
2-LOCK 4,5x200	4,5	200	50	36,72	360	100	1215
2-LOCK 4,5x250	4,5	250	68	36,72	360	100	1216
2-LOCK 4,5x290	4,5	290	80	36,72	360	100	1217
2-LOCK 4,5x360	4,5	360	101	36,72	360	100	1219
2-LOCK 7,5x220	7,5	220	55	79,56	780	100	1225*
2-LOCK 7,5x360	7,5	360	100	79,56	780	100	1227

*not DNV-GL certified

**2-LOCK™
BLACK - UV-RESISTANT**

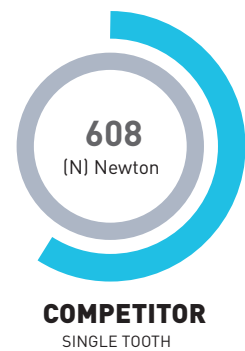
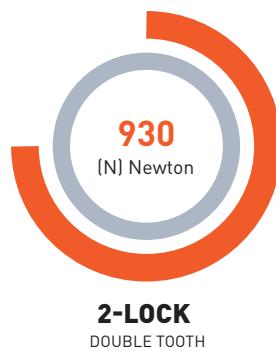


Description	Width (mm)	Length (mm)	Ø bundle max (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code
2-LOCK 2,5x100	2,5	100	21	15,3	150	100	1303
2-LOCK 2,5x200	2,5	200	50	15,3	150	100	1307
2-LOCK 3,5x140	3,5	140	35	25,5	250	100	1309
2-LOCK 3,5x200	3,5	200	50	25,5	250	100	1314
2-LOCK 3,5x290	3,5	290	80	25,5	250	100	1310
2-LOCK 4,5x200	4,5	200	50	36,72	360	100	1315
2-LOCK 4,5x250	4,5	250	68	36,72	360	100	1316
2-LOCK 4,5x290	4,5	290	80	36,72	360	100	1317
2-LOCK 4,5x360	4,5	360	101	36,72	360	100	1319
2-LOCK 7,5x220	7,5	220	55	79,56	780	100	1325
2-LOCK 7,5x360	7,5	360	100	79,56	780	100	1327

COMPARISON BETWEEN 2-LOCK WITH METALLIC DOUBLE TOOTH CABLE TIE AND COMPETITOR'S SINGLE TOOTH CABLE TIES



TENSILE STRENGTH
+ 53%



EASY TO APPLY
+ 47%



SELF-EXTINGUISHING CABLE TIES



Self-extinguishing cable ties, in polyamide V0, for higher fire protection. Halogen and phosphorus free



According to the standard **UNI EN 45545-2:2020** (Railway applications - Fire protection for railway rolling stock - Part 2: Requirements for the fire behaviour of materials and components) Self-extinguishing cable ties comply with the standard in question for hazard **levels HL1 - HL2 for set of requirements R22 and HL1 - HL2 - HL3 for set of requirements R23.**

FEATURES AND BENEFITS

- Manufactured in self-extinguish polyamide with extremely low toxic gas emission in fire situations
- Good flammability behaviour

APPROVALS AND CERTIFICATIONS



EN 45545-2

HALOGEN FREE

TECHNICAL DATA

Material	polyamide 6.6
Halogen	absent
Humidity absorption (50% relative humidity)	2,7%
Working temperature	-40°C ÷ +85°C
Installation temperature	-10°C ÷ 60°C
Flammability rating	UL 94 class V0 - GW 960°C

Resistance external agents:

Excellent chemical resistance to aromatic solvents, oils, greases, oil-based products. Good chemical resistance to bases. Limited resistance to acids. Does not resist to phenol and chlorinated solvents.

SELF-EXTINGUISHING CABLE TIE
WHITE

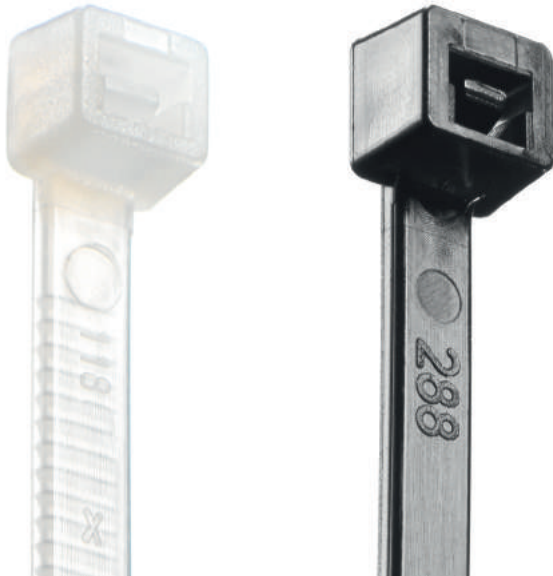


Description	Width (mm)	Length (mm)	Ø bundle (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code
Self-extinguishing cable tie 2,5x98	2,5	98	21	8,16	80	100	5203/C V0E
Self-extinguishing cable tie 3,5x140	3,5	140	32	18,36	180	100	5209/C V0E
Self-extinguishing cable tie 3,5x200	3,5	200	50	18,36	180	100	5214/C V0E
Self-extinguishing cable tie 4,8x200	4,5	200	50	22,44	220	100	5215/C V0E
Self-extinguishing cable tie 4,5x290	4,5	290	78	22,44	220	100	5217 V0E
Self-extinguishing cable tie 7,5x365	7,5	365	100	55,08	540	100	5227 V0E

STANDARD CABLE TIES



Technical cable ties, in polyamide 6.6, for professional application



Concerning the **BLACK STANDARD** ties, codes 53XX, according to the standard: **UNI EN 45545-2: 2020** (Railway applications - Fire protection for railway rolling stock - Part 2: Requirements for the fire behaviour of materials and components), **these cable ties comply with the standard in question for hazard levels HL1 - HL2 for set of requirements R22 and R23.**

FEATURES AND BENEFITS

- Guaranteed quality and performances by numerous approvals according to different international product standard
- Black cable ties, made of polyamide with special additives, have superior UV resistance than the natural colour ties
- Cost effective solution for vehicle wiring harness

APPROVALS AND CERTIFICATIONS



TECHNICAL DATA

Material	polyamide 6.6
Halogen	absent
Humidity absorption (50% relative humidity)	2,7%
Working temperature	-40°C ÷ +85°C
Installation temperature	-10°C ÷ 60°C
Flammability rating	UL94 class V2

Resistance external agents:

Excellent chemical resistance to aromatic solvents, oils, greases, oil-based products. Good chemical resistance to bases. Limited resistance to acids. Does not resist to phenol and chlorinated solvents.

STANDARD CABLE TIE
NATURAL




Description	Width (mm)	Length (mm)	Ø bundle max (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code
Standard cable tie 2,5x98	2,5	98	21	8,16	80	100	5203/CE
Standard cable tie 2,5x98	2,5	98	21	8,16	80	1.000	5203E
Standard cable tie 2,5x98	2,5	98	21	8,16	80	20.000	5203/B2
Standard cable tie 2,5x135	2,5	135	32	8,16	80	100	5205/CE
Standard cable tie 2,5x135	2,5	135	32	8,16	80	1.000	5205E
Standard cable tie 2,6x160	2,6	160	40	8,16	80	100	5206/CE
Standard cable tie 2,6x200	2,6	200	52	8,16	80	100	5207/CE
Standard cable tie 2,6x200	2,6	200	52	8,16	80	1.000	5207E
Standard cable tie 3,5x140	3,5	140	32	18,36	180	100	5209/CE
Standard cable tie 3,5x140	3,5	140	32	18,36	180	1.000	5209E
Standard cable tie 3,5x200	3,5	200	50	18,36	180	100	5214/CE
Standard cable tie 3,5x200	3,5	200	50	18,36	180	1.000	5214E
Standard cable tie 3,5x290	3,5	290	80	18,36	180	100	5210/CE
Standard cable tie 3,5x290	3,5	290	80	18,36	180	500	5210E
Standard cable tie 3,5x370	3,5	365	103	18,36	180	100	5208E
Standard cable tie 4,5x160	4,5	160	40	22,44	220	100	5211/CE
Standard cable tie 4,5x160	4,5	160	40	22,44	220	1.000	5211E
Standard cable tie 4,8x178	4,8	178	45	22,44	220	100	5213/CE
Standard cable tie 4,8x178	4,8	178	45	22,44	220	1.000	5213E
Standard cable tie 4,5x200	4,5	200	50	22,44	220	100	5215/CE
Standard cable tie 4,8x200	4,5	200	50	22,44	220	1.000	5215E
Standard cable tie 4,8x250	4,8	250	68	22,44	220	100	5216/CE
Standard cable tie 4,5x290	4,5	290	78	22,44	220	100	5217E
Standard cable tie 4,5x360	4,5	360	100	22,44	220	100	5219E
Standard cable tie 4,5x390	4,5	390	106	22,44	220	100	5218E
Standard cable tie 4,5x430	4,5	430	115	22,44	220	100	5220E
Standard cable tie 7,8x180	7,8	180	45	55,08	540	100	5223E
Standard cable tie 7,8x240	7,5	240	63	55,08	540	100	5225E
Standard cable tie 7,5x300	7,5	300	80	55,08	540	100	5226E
Standard cable tie 7,5x365	7,5	365	100	55,08	540	100	5227E
Standard cable tie 7,5x450	7,5	450	130	55,08	540	100	5229E
Standard cable tie 7,5x540	7,5	540	158	55,08	540	100	5231E
Standard cable tie 7,5x750	7,5	750	220	55,08	540	100	5233E
Standard cable tie 9,0x780	9	780	233	71,4	700	100	5234E
Standard cable tie 12,5x225	12,5	225	57	110	1.080	50	5235E
Standard cable tie 12,5x500	12,5	500	143	110	1.080	50	5237E
Standard cable tie 12,5x720	12,5	720	213	110	1.080	50	5239E
Standard cable tie 12,5x850	12,5	850	255	110	1.080	50	5241E
Standard cable tie 12,5x1.000	12,5	1.000	302	110	1.080	50	5243E

STANDARD CABLE TIE
BLACK



Description	Width (mm)	Length (mm)	Ø bundle max (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code
Standard cable tie 2,5x98	2,5	98	21	8,16	80	100	5303/CE
Standard cable tie 2,5x98	2,5	98	21	8,16	80	1.000	5303E
Standard cable tie 2,5x98	2,5	98	21	8,16	80	20.000	5303/B2
Standard cable tie 2,5x135	2,5	135	32	8,16	80	100	5305/CE
Standard cable tie 2,5x135	2,5	135	32	8,16	80	1.000	5305E
Standard cable tie 2,6x160	2,6	160	40	8,16	80	100	5306/CE
Standard cable tie 2,6x200	2,6	200	52	8,16	80	100	5307/CE
Standard cable tie 2,6x200	2,6	200	52	8,16	80	1.000	5307E
Standard cable tie 3,5x140	3,5	140	32	18,36	180	100	5309/CE
Standard cable tie 3,5x140	3,5	140	32	18,36	180	1.000	5309E
Standard cable tie 3,5x200	3,5	200	50	18,36	180	100	5314/CE
Standard cable tie 3,5x200	3,5	200	50	18,36	180	1.000	5314E
Standard cable tie 3,5x290	3,5	290	80	18,36	180	100	5310/CE
Standard cable tie 3,5x290	3,5	290	80	18,36	180	500	5310E
Standard cable tie 3,5x370	3,5	365	103	18,36	180	100	5308E
Standard cable tie 4,5x160	4,5	160	40	22,44	220	100	5311/CE
Standard cable tie 4,5x160	4,5	160	40	22,44	220	1.000	5311E
Standard cable tie 4,8x178	4,8	178	45	22,44	220	100	5313/CE
Standard cable tie 4,8x178	4,8	178	45	22,44	220	1.000	5313E
Standard cable tie 4,5x200	4,5	200	50	22,44	220	100	5315/CE
Standard cable tie 4,8x200	4,5	200	50	22,44	220	1.000	5315E
Standard cable tie 4,8x250	4,8	250	68	22,44	220	100	5316/CE
Standard cable tie 4,5x290	4,5	290	78	22,44	220	100	5317E
Standard cable tie 4,5x360	4,5	360	100	22,44	220	100	5319E
Standard cable tie 4,5x390	4,5	390	106	22,44	220	100	5318E
Standard cable tie 4,5x430	4,5	430	115	22,44	220	100	5320E
Standard cable tie 7,8x180	7,8	180	45	55,08	540	100	5323E
Standard cable tie 7,8x240	7,5	240	63	55,08	540	100	5325E
Standard cable tie 7,5x300	7,5	300	80	55,08	540	100	5326E
Standard cable tie 7,5x365	7,5	365	100	55,08	540	100	5327E
Standard cable tie 7,5x450	7,5	450	130	55,08	540	100	5329E
Standard cable tie 7,5x540	7,5	540	158	55,08	540	100	5331E
Standard cable tie 7,5x750	7,5	750	220	55,08	540	100	5333E
Standard cable tie 9,0x780	9	780	233	71,40	700	100	5334E
Standard cable tie 12,5x225	12,5	225	57	110	1.080	50	5335E
Standard cable tie 12,5x500	12,5	500	143	110	1.080	50	5337E
Standard cable tie 12,5x720	12,5	720	213	110	1.080	50	5339E
Standard cable tie 12,5x850	12,5	850	255	110	1.080	50	5341E
Standard cable tie 12,5x1.000	12,5	1.000	302	110	1.080	50	5343E



2-LOCK, high performance cable ties for railway and industrial applications.



2-LOCK

Cable tie engineered with special built-in locking mechanism, made of A4 steel, to offer maximum tensile strength, as well as continuous exposure to sunlight, UV radiation, low temperature and vibrations. Reliability and maximum performance for demanding applications in the railway and shipbuilding industries.

COLSTEEL CABLE TIES



Completely stainless steel cable tie,
with high mechanical strength,
resistant to the fire and corrosion



FEATURES AND BENEFITS

- Quick installation, by manual tightening and tensioning with this specific tool
- The ball locking mechanism and the smooth surface offer a very low insertion effort and an infinitely calibrated closing adjustment along all the length of the tie
- High mechanical strength: for safety and high performance applications, which can be guaranteed, only with a metal tie
- The total-smooth profiles and surfaces avoid any damage to the insulation of the electrical cables to be bundled
- Fire resistant, suitable for very high operating temperatures
- Available in 304 and also in 316 stainless steel grade for the highest corrosion and chemical resistance

APPROVALS AND CERTIFICATIONS



TECHNICAL DATA

Material	stainless steel INOX AISI 304 and 316
Working temperature	-60°C ÷ 530°C
	Not inflammable

Resistance external agents:

Excellent resistance to acids, oils, greases, oil-based products, chemical and oxidizing agents, solvents. High resistance in salt mist atmosphere. Corrosion resistant. UV-resistant

TENSIONING TOOL 5407

Automatic tensioning tool for stainless steel cable ties up to 7,9 mm maximum width



COLSTEEL
AISI 304



Description	Width (mm)	Length (mm)	Ø bundle max (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code	Recommended tool
Colsteel 4,6x127 - AISI 304	4,6	127	25	45,4	445	100	6701	5407
Colsteel 4,6x201 - AISI 304	4,6	201	51	45,4	445	100	6703	5407
Colsteel 4,6x266 - AISI 304	4,6	266	69	45,4	445	100	6706	5407
Colsteel 4,6x362 - AISI 304	4,6	362	102	45,4	445	100	6708	5407
Colsteel 4,6x521 - AISI 304	4,6	521	152	45,4	445	50	6710	5407
Colsteel 4,6x838 - AISI 304	4,6	838	254	45,4	445	50	6712	5407
Colsteel 7,9x201 - AISI 304	7,9	201	51	113,4	1.112	100	6719	5407
Colsteel 7,9x266 - AISI 304	7,9	266	69	113,4	1.112	100	6720	5407
Colsteel 7,9x362 - AISI 304	7,9	362	102	113,4	1.112	100	6722	5407
Colsteel 7,9x521 - AISI 304	7,9	521	152	113,4	1.112	50	6724	5407
Colsteel 7,9x838 - AISI 304	7,9	838	254	113,4	1.112	50	6726	5407
Colsteel 7,9x1.067 - AISI 304	7,9	1.067	304	113,4	1.112	50	6728	5407

COLSTEEL
AISI 316



Description	Width (mm)	Length (mm)	Ø bundle max (mm)	Tensile Strength (kg)	Tensile Strength (N)	Pack (pcs.)	Code	Recommended tool
Colsteel 4,6x201 - AISI 316	4,6	201	51	91,8	445	100	6753	5407
Colsteel 4,6x266 - AISI 316	4,6	266	69	91,8	445	100	6756	5407
Colsteel 4,6x362 - AISI 316	4,6	362	102	91,8	445	100	6758	5407
Colsteel 4,6x521 - AISI 316	4,6	521	152	91,8	445	50	6760	5407
Colsteel 7,9x201 - AISI 316	7,9	201	51	204	1.112	100	6769	5407
Colsteel 7,9x266 - AISI 316	7,9	266	69	204	1.112	100	6770	5407
Colsteel 7,9x362 - AISI 316	7,9	362	102	204	1.112	100	6772	5407



TENSIONING TOOL
5407

Description	Length (mm)	Weight (gr)	Tensile Strength (N)	Pack (pcs.)	Code
Stainless steel tensioning tool for ties 7,9 max	178	560	445	1	5407

Thin wall heat-shrink tube 2:1,
halogen free and low smoke



APPROVALS AND CERTIFICATIONS

Boeing BS 7239 toxic gas generation M7

Railway normative

BS6853 (1999) vehicle category Ia

EN 45545-2 class HL3

LUL 1-085: A3 compliant

FEATURES AND BENEFITS

- Halogen free and excellent flame retardant properties
- Thin flexible tubing in polyolefin
- Ideal for safety sensitive areas

TECHNICAL DATA

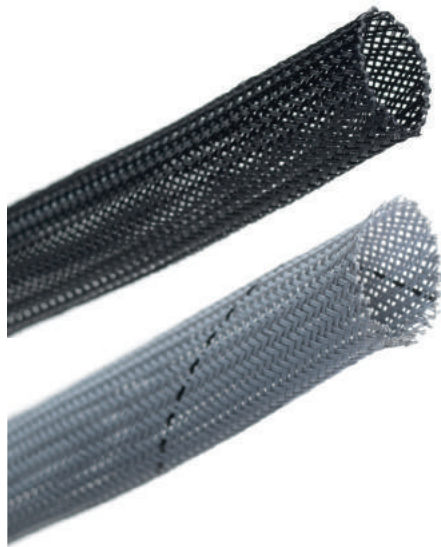
Shrinkage ratio	2:1
Available diameters	Ø 2,4 mm ÷ Ø 50,8mm
Available colours	Black
Halogen	Absent
Working temperature	-55°C to +105°C
Shrinkage temperature	> 90°C
Fire resistance	ASTM D 635-HB
Longitudinal withdrawal	-10% ÷ +5%
Dielectric strength	>20kV/mm

ER100

Description	Ø internal expanded (inch)	Ø internal expanded (mm)	Ø internal recovered (mm)	Wall recovered thickness (mm)	Pack (m)	Code
ER100 2,4/1,2	3/32"	2,4	1,2	0,51	200 m	-
ER100 3,2/1,6	1/8"	3,2	1,6	0,63	200 m	-
ER100 4,8/2,4	3/16"	4,8	2,4	0,63	200 m	-
ER100 6,4/3,2	1/4"	6,4	3,2	0,7	150 m	-
ER100 9,5/4,7	3/8"	9,5	4,8	0,7	150 m	-
ER100 12,7/6,4	1/2"	12,7	6,4	0,7	100 m	-
ER100 19,1/9,5	3/4"	19,1	9,5	0,77	50 m	-
ER100 25,4/12,7	1"	25,4	12,7	0,92	50 m	-
ER100 38,1/19,1	1 1/2 "	38,1	19,1	0,97	25 m	-
ER100 50,8/25,4	2"	50,8	25,4	0,97	25 m	-

BRAIDED SLEEVE

Braided sleeving for mechanical protection of cables and for cable bundling



APPROVALS AND CERTIFICATIONS

For polyester version:
EN 45545-2 class HL3
DIN 5510-2

FEATURES AND BENEFITS

- Easy insertion
- Resistant to abrasion

TECHNICAL DATA

POLYESTER VERSION

Material	Polyester
Thread diameters	0,22 mm
Working temperature	-40°C ÷ +150°C
Available diameters	from Ø 6 to Ø 40 mm
Fire resistance	UL 94 class V2
Halogen	Absent

BRAIDED SLEEVE POLYESTER

Description	Color	Ø bundle Min/Max (mm)	Pack (m)	Code
Polyester braided sleeve 6 - grey	●	6 ÷ 12	100	15501006
Polyester braided sleeve 8 - grey	●	8 ÷ 15	100	15501008
Polyester braided sleeve 10 - grey	●	10 ÷ 18	100	15501010
Polyester braided sleeve 12 - grey	●	12 ÷ 22	50	15501012
Polyester braided sleeve 15 - grey	●	15 ÷ 25	50	15501015
Polyester braided sleeve 18 - grey	●	18 ÷ 28	50	15501018
Polyester braided sleeve 20 - grey	●	20 ÷ 30	50	15501020
Polyester braided sleeve 25 - grey	●	25 ÷ 38	50	15501025
Polyester braided sleeve 30 - grey	●	30 ÷ 49	50	15501030
Polyester braided sleeve 40 - grey	●	40 ÷ 60	50	15501040
Polyester braided sleeve 6 - black	●	6 ÷ 12	100	15502006
Polyester braided sleeve 8 - black	●	8 ÷ 15	100	15502008
Polyester braided sleeve 10 - black	●	10 ÷ 18	100	15502010
Polyester braided sleeve 12 - black	●	12 ÷ 22	50	15502012
Polyester braided sleeve 15 - black	●	15 ÷ 25	50	15502015
Polyester braided sleeve 18 - black	●	18 ÷ 28	50	15502018
Polyester braided sleeve 20 - black	●	20 ÷ 30	50	15502020
Polyester braided sleeve 25 - black	●	25 ÷ 38	50	15502025
Polyester braided sleeve 30 - black	●	30 ÷ 49	50	15502030
Polyester braided sleeve 40 - black	●	40 ÷ 60	50	15502040

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