
CATALOG

Fastening solutions

Easily bundle, secure and manage
your cables



First developed to solve the problem of bundling the hundreds of feet of wiring found inside commercial aircrafts, Ty-Rap® cable ties can now be found virtually everywhere – from Nascar racing engines to backyard tool sheds. Self-fastening and extremely durable, the groundbreaking design of the Ty-Rap® cable tie demonstrates how to solve a complex problem with a simple technology.

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Ty-Rap®

Fastening solutions, how it all started

When you choose a Ty-Rap® cable tie, you can count on quality, performance and innovation to make your work easier.

First developed to solve the problem of bundling the hundreds of feet of wiring found inside commercial aircraft, Ty-Rap® cable ties can now be found virtually everywhere - from Nascar racing engines to backyard tool sheds. Self-fastening and basically indestructible, the ground-breaking design of the Ty-Rap® cable tie demonstrates how to solve a complex problem with a simple technology.

The corrosion-proof, non-magnetic stainless steel locking device inside the tie head guarantees the strongest and most durable locking you will ever find on the market. Ty-Rap® can be used in the most adverse conditions: humidity, heat, cold, UV radiation, aggressive chemicals, radiation and other harsh conditions.

Engineered for labour savings and high performance, Ty-Rap® cable ties are commonly used in a variety of applications.

For the cable tie, the proverbial light bulb came on over Logan's head while touring a Boeing aircraft manufacturing facility in 1956. Aircraft wiring was a cumbersome and detailed undertaking, involving thousands of feet of wire organized on sheets of 50-foot long plywood and held in place with knotted, waxcoated, braided nylon cord. Each knot had to be pulled tight by wrapping the cord around one's finger which sometimes cut the operator's fingers until they developed thick calluses or 'hamburger hands'. Logan was convinced there had to be an easier, more forgiving, way to accomplish this critical task. For the next couple of years, Logan experimented with various tools and materials.

On June 24 1958, a patent for the longlasting, easy-to-use Ty-Rap® cable tie was submitted. The rest, as they say, is history.



“My dad didn't have a lot of formal education, but he was the most ingenious person I have ever met”, said Robert Logan, Maurus' son. “He never thought the customary way of doing things was good enough and when he looked at anything he thought about ways to improve it. The invention of the cable tie is an excellent example of how he worked.”
Maurus Logan Ty-Rap® Inventor

Ty-Rap® high performance cable ties

Introduction

First patented in 1957 as a way to bundle wiring in airplanes, the Ty-Rap® cable tie brand remains a benchmark of excellence and innovation in wire management

ABB's broad offering of Ty-Rap® cable ties makes the task of fastening, bundling, clamping and managing wires easier and quicker for industrial applications, construction, communications, utility and OEM professionals, as well as home improvement specialists and do-it-yourself enthusiasts. When strength, aesthetics, reliability and performance are required, knowledgeable professionals turn to Ty-Rap®: the original source for cable ties and accessories.

What gives a Ty-Rap® cable tie its exceptional strength? The corrosion-resistant, non-magnetic stainless steel locking barb in its head grips tightly and allows for a completely adjustable fit. Its raised tail makes it easy to pick up, even with gloved hands. And the easy-grip tail surface makes it easy to pull tight, even in wet or cold conditions.

Engineered for high-performance, Ty-Rap® cable ties are available in standard nylon or in materials that are specially formulated to withstand the most adverse conditions, from UV exposure to extreme cold or heat. They have even been designed to withstand the rigors of space.

Ty-Rap® cable ties: The right choice when performance really matters.

ABB is a leading power and automation technology group, active in more than 100 countries with about 150,000 employees worldwide.

ABB's portfolio includes the following product lines and flagship brands:

- Wire & Cable Management – Ty-Rap® and Ty-Met® cable ties, Shrink-Kon® heat shrink, T&B Cabletray
- Cable Protection Systems – nylon & metallic incl. brands: PMA, Adaptaflex, Kopex, Harnessflex
- Low Power Connection & Control – Furse lightning & surge protection, Elastimold, Joslyn Hi-Voltage
- Emergency lighting – emergency lighting, battery systems incl. VanLien, Kaufel, Emergi-Lite brands
- Hazardous location products – DTS explosion proof light & boxes, Kopex-Ex conduits & fittings



Ty-Rap® Polypropylene **Ty-Rap® ETFE** **Ty-Rap® Detectable** **Ty-Fast® Ag+** **Deltec®** **Ty-Met®** **Ty-Rap®** **Twist Tail** **Ty-Fast®**

Demanding applications						Simplicity & design		
Chemical resistance		Hygiene		Utilities & telecom	Extreme environments	Customization & performance	Convenience	Essential
Chemical processing, Autoclave sterilizing	Nuclear, Power plants, Space industry, Environments with risk of smoke generation	Food and beverage, Cosmetic	Medical, Pharmaceutical	Utilities, Packaging	Marine, Rail, Oil & gas, Industrial	Standard applications	MRO, Electrical, Residential	OEM, General bundling
Polypro	ETFE	Polypro, PA66	PA66	Pom	SS	PA66	PA66	PA66
265N	530N	540N	540N	1100N	8800N	780N	130N	1110N
-40 to 85°C	-60°C to 170°C	-20 to 85°C	-20 to 85°C	-40 to 300°C	-40 to 85°C	-20 to 85°C	-20 to 85°C	-40 to 85°C
-40 to 185°F	-76 to 338°F	-4 to 185°F	-4 to 185°F	-40 to 572°F	-40 to 185°F	-4 to 185°F	-4 to 185°F	-40 to 185°F
360mm	360mm	360mm	360mm	1000m	1m	1140m	360mm	1200mm
14.17"	14.17"	14.17"	14.17"	3280.84ft	3.28ft	3740.16ft	14.17"	47.24"
102mm	100mm	100mm	100mm	4m	400mm	330mm	100mm	380mm
4.02"	3.94"	3.94"	3.94"	13.12ft	15.75"	12.99"	3.94"	14.96"
●●●	●●●●●	●●	●	●●●●●	●●●●●●●	●●●	●●	●●
●	●	●●●	●	●●	●●	●●●●●	●●●	●●●
■	■	■ ■ ■	■	■	■	■ ■ ■ ■ ■ ■ ■ ■	■	■
●●●●	●●●●	●●●●	●●●	●●●	●	●●●●	●●●●●●	●●●
ERG50 ERG120	ERG50 ERG120	ERG50 ERG120	ERG50 ERG120	WT3D	DAS250 CT3	ERG50 ERG120	-	ERG50 ERG120

Environmental considerations

Corrosive environments

Ty-Rap cable ties can endure corrosive marine environments, such as deep-ocean drilling rigs and weather-lashed wind generators.



Environmental considerations

Extreme temperatures

Ty-Rap cable ties can endure extreme temperatures and UV exposure of solar power farms.



Ty-Rap® high performance cable ties

Features and benefits

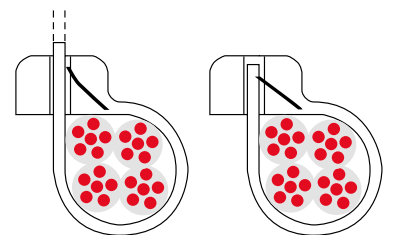
When strength, aesthetics, reliability and performance are required, knowledgeable professionals turn to the original and the best source for cable ties and accessories. Ty-Rap® fastening systems include a full range of cable ties, identification ties, clamps, mounting bases, harnessing aids and installing tools.

Using Ty-Rap® fastening systems for all wiring jobs, large and small, will speed and improve the reliability of harnessing and wire bundling while saving you money.

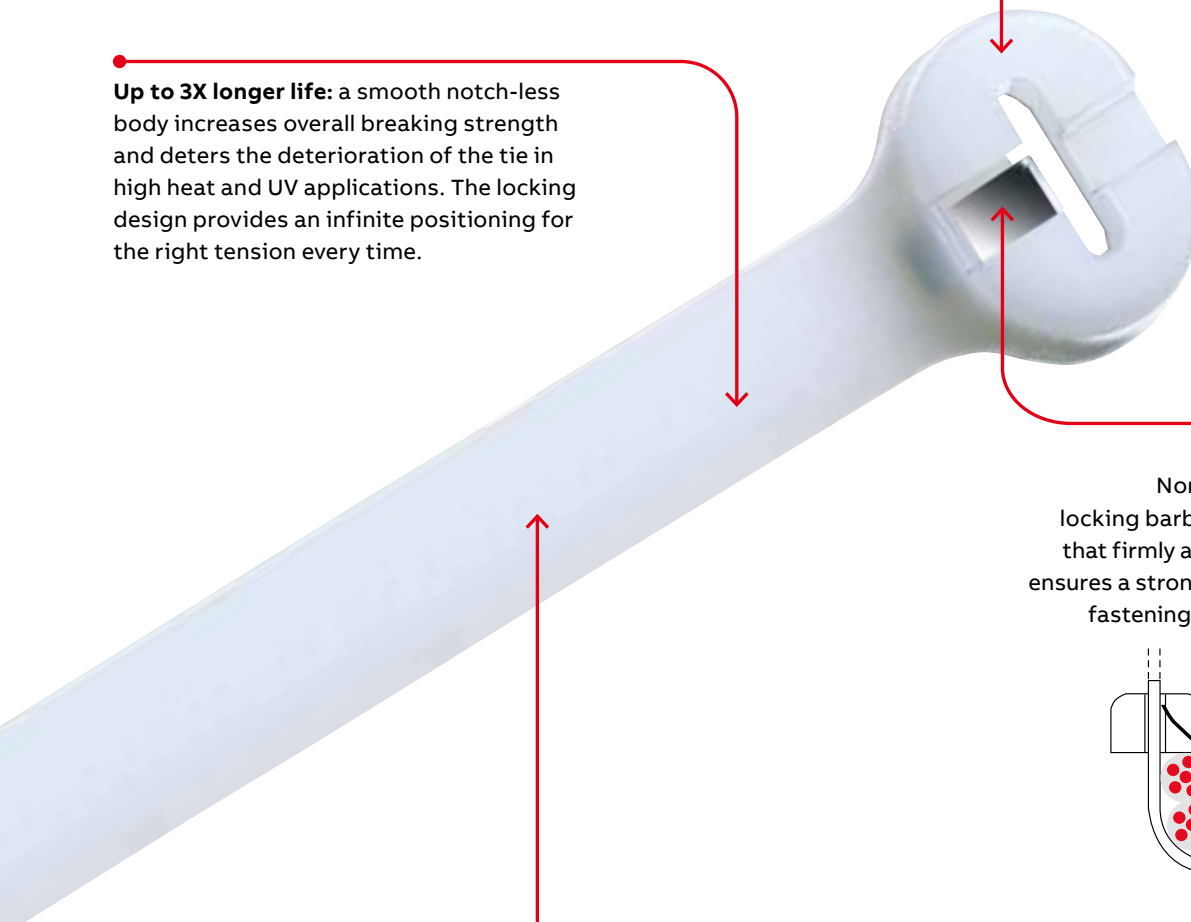
Protects cables. Rounded edges, on the head and the strap, provide a comfortable handling of the ties and prevent sharp edges from damaging the cables. This gradual transition from the strap to the head protects the material against breaking at this most critical point. The edges of the head are also rounded off to offer maximum protection from injury.

Up to 3X longer life: a smooth notch-less body increases overall breaking strength and deters the deterioration of the tie in high heat and UV applications. The locking design provides an infinite positioning for the right tension every time.

“The grip of steel”
Non-magnetic stainless steel locking barb – marine grade type 316 – that firmly anchors inside the tie head, ensures a strong, reliable and long lasting fastening under adverse conditions.



Higher grip, less damage
Ribbed and stippled surface, to prevent the tie from slipping around and along the bundle under vibration conditions and external shock.



Easy handling

Angled tail (turned up) for fast and easy insertion into the locking head and ideally suited to being picked up from a flat work area.

Easy installation

Non-slip tail, for an easy grip and pulling through the head during tensioning.

Extensive range of approvals and certifications:

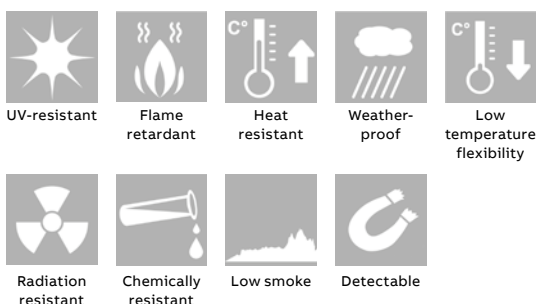
Germanischer Lloyd, Lloyd's Register of Shipping, VG, Mil Specification, American Bureau of Shipping (ABS); CE declaration, compliant to the low voltage directive and EN/IEC 62275 and UL 62275



Wide range of size combinations: several lengths up to 1143mm (45"), in 6 typical widths with a tensile strength up to 780N, to fasten cable bundles with a diameter up to 330mm (12.99").

Dedicated tooling, to ensure that the excess end of the Ty-Rap® tie is automatically cut off and the slight over cut retracts into the head, eliminating the risk of injury from protruding sharp edges.

Most extensive choice of special materials: in addition to Polyamide 6.6 (standard, UV-resistant, heat stabilised, flame retardant, heat stabilised / UV-resistant), Polyamide 4.6 (extra high temperature) and Polyamide 12, the Ty-Rap® ties are available in Polypropylene, Fluoropolymer (ECTFE), Fluoropolymer (ETFE) and the recently introduced Detectable Polyamide 6.6 and Detectable Polypropylene. UL 94 V-0, UL 94 V-2 and UL 94 HB.



Wide choice of colors:

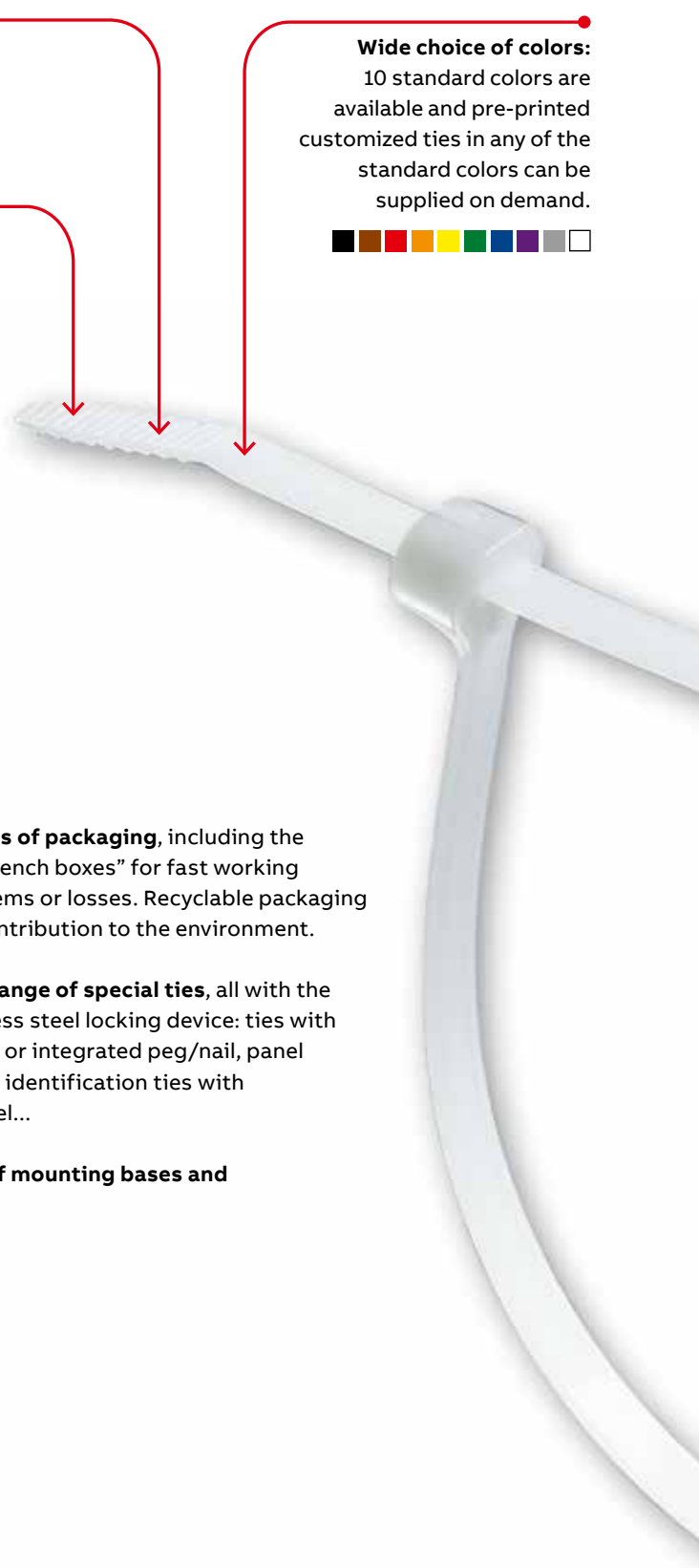
10 standard colors are available and pre-printed customized ties in any of the standard colors can be supplied on demand.



Different types of packaging, including the unique "workbench boxes" for fast working without problems or losses. Recyclable packaging for a better contribution to the environment.

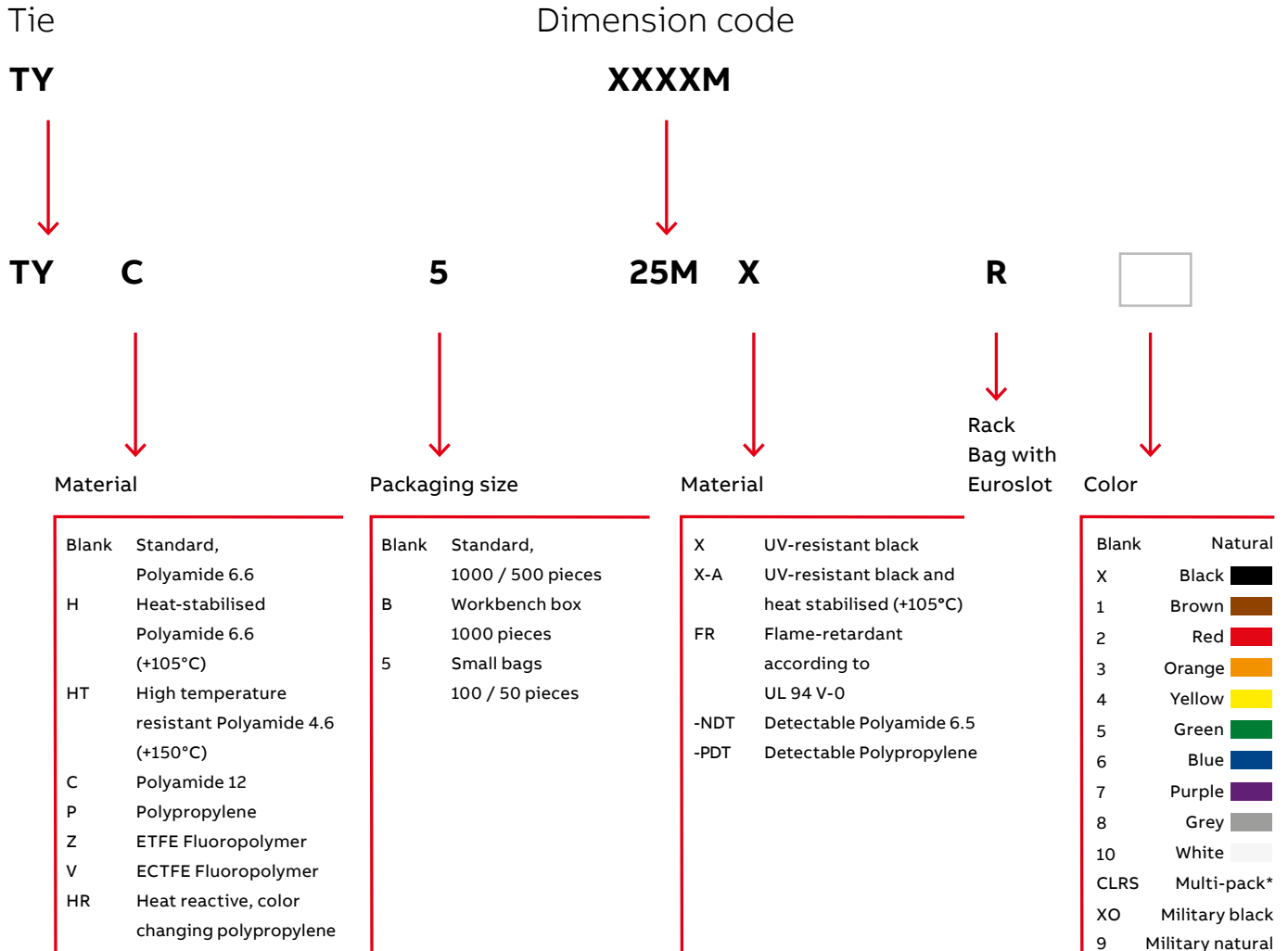
Outstanding range of special ties, all with the famous stainless steel locking device: ties with mounting hole or integrated peg/nail, panel mounting ties, identification ties with integrated label...

Broad range of mounting bases and accessories.



Ty-Rap® high performance cable ties

Ty-Rap® Product code structure



Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Ty-Rap® cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – Natural



Characteristics

- Standard version (Polyamide 6.6), to cover most indoor applications
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications
- Packaging: OEM bulk quantities in recyclable polythene bags
- Also available in small bags with Euroslot (see page 12) and in workbench boxes (see page 15)

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +85°C (-76°F to 185°F)
- Min. Installation Temp.: -20°C (-4°F)
- Color: Natural
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Polyamide 6.6 cable ties – Natural



Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Pack quantity [pieces]	MIL spec.
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]			
TY523M / TY23M	1.5 - 22	0.06 - 0.87	92	3.62	2.3	0.09	1.0	0.04	80	100 / 1000	●
TY5B2315M / TYB2315M	1.5 - 32	0.06 - 1.26	178	7.01	2.3	0.09	1.0	0.04	80	100 / 1000	-
TY5232M / TY232M	1.5 - 51	0.06 - 2.01	203	7.99	2.3	0.09	1.0	0.04	80	100 / 1000	-
TY5234M / TY234M	1.5 - 102	0.06 - 4.02	356	14.02	2.3	0.09	1.0	0.04	80	100 / 1000	-
TY524M / TY24M	2 - 35	0.08 - 1.38	140	5.51	3.6	0.14	1.1	0.04	178	100 / 1000	●
TY5242M / TY242M	2 - 51	0.08 - 2.01	208	8.19	3.6	0.14	1.1	0.04	180	100 / 1000	-
TY526M / TY26M	2 - 76	0.08 - 2.99	284	11.18	3.6	0.14	1.1	0.04	130	100 / 1000	-
TY5244M / TY244M	2 - 102	0.08 - 4.02	368	14.49	3.6	0.14	1.1	0.04	134	100 / 1000	-
TY525M / TY25M	3 - 48	0.12 - 1.89	186	7.32	4.8	0.19	1.1	0.04	220	100 / 1000	●
TY5253M / TY253M	3 - 78	0.12 - 3.07	290	11.42	4.8	0.19	1.3	0.05	220	100 / 1000	●
TY528M / TY28M	3 - 102	0.12 - 4.02	361	14.21	4.8	0.19	1.3	0.05	220	100 / 1000	●
TY5272M / TY272M	6 - 51	0.24 - 2.01	223	8.78	6.9	0.27	1.6	0.06	534	50 / 500	-
TY527M / TY27M	6 - 102	0.24 - 4.02	340	13.39	7.0	0.28	1.6	0.06	540	50 / 500	●
TY5275M / TY275M	6 - 127	0.24 - 5	457	17.99	7.0	0.28	1.6	0.06	540	50 / 500	-
TY5277M / TY277M	6 - 177	0.24 - 6.97	617	24.29	7.0	0.28	1.6	0.06	540	50 / 500	-
TY529M / TY29M	6 - 229	0.24 - 9.02	771	30.35	6.9	0.27	1.5	0.06	540	50 / 500	●
TY53510M / TY3510M	to 254	to 10	889	35	8.2	0.32	1.7	0.07	780	50 / 50	-
TY54513M	to 330	to 12.99	1143	45	8.2	0.32	1.7	0.07	780	50	-

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations.

Tooling



ERG50

For use with 2.3mm to 4.8mm (80N to 220N) Cable ties.
See page 124.



ERG120

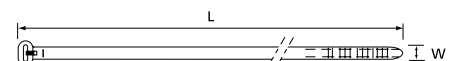
For use with 4.8mm to 7.0mm (220N to 540N) Cable ties.
See page 124.



WT3D

For use with 4.8mm to 8.2mm (220N to 780N) Cable ties.
See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – Colored



Characteristics

- Ty-Rap® cable ties in Polyamide 6.6 are available in 10 different colors
- Several sizes and tensile strengths are normally in stock in standard pack quantities
 - Standard packaging is 100/50 pieces
 - Please contact your Sales Office for product availability and minimum order quantity of bulk packages, special colors, or other cable tie sizes
 - Preprinted cable ties are available in special order. Contact your local sales office for more information

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +85°C (-76°F to 185°F)
- Min. Installation Temp.: -20°C (-4°F)
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free



Polyamide 6.6 cable ties – Colored

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Pack quantity [pieces]	MIL spec.
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]			
TY523M* / TY23M*	1.5 - 22	0.06 - 0.87	92	3.62	2.3	0.09	1.0	0.04	80	100 / 1000	●
TY5232M* / TY232M*	1.5 - 51	0.06 - 2.01	203	7.99	2.3	0.09	1.0	0.04	80	100 / 1000	-
TY5234M* / TY234M*	1.5 - 102	0.06 - 4.02	356	14.02	2.3	0.09	1.0	0.04	80	100 / 1000	-
TY524M* / TY24M*	2 - 35	0.08 - 1.38	140	5.51	3.6	0.14	1.1	0.04	180	100 / 1000	●
TY5242M* / TY242M*	2 - 51	0.08 - 2.01	208	8.19	3.6	0.14	1.1	0.04	180	100 / 1000	-
TY526M* / TY26M*	2 - 76	0.08 - 2.99	284	11.18	3.6	0.14	1.1	0.04	130	100 / 1000	-
TY5244M* / TY244M*	2 - 102	0.08 - 4.02	368	14.49	3.6	0.14	1.1	0.04	134	100 / 1000	-
TY525M* / TY25M*	3 - 48	0.12 - 1.89	186	7.32	4.8	0.19	1.1	0.04	220	100 / 1000	●
TY5253M* / TY253M*	3 - 78	0.12 - 3.07	290	11.42	4.8	0.19	1.3	0.05	220	100 / 1000	●
TY528M* / TY28M*	3 - 102	0.12 - 4.02	361	14.21	4.8	0.19	1.3	0.05	220	100 / 1000	●
TY5271M* / TY271M*	6 - 31	0.24 - 1.22	150	5.91	7.0	0.28	1.6	0.06	540	50 / 500	-
TY5272M* / TY272M*	6 - 51	0.24 - 2.01	223	8.78	6.9	0.27	1.6	0.06	540	50 / 500	-
TY527M* / TY27M*	6 - 102	0.24 - 4.02	340	13.39	7.0	0.28	1.6	0.06	540	50 / 500	●
TY5275M* / TY275M*	6 - 127	0.24 - 5	457	17.99	7.0	0.28	1.6	0.06	540	50 / 500	-
TY5277M* / TY277M*	6 - 177	0.24 - 6.97	617	24.29	7.0	0.28	1.6	0.06	540	50 / 500	-
TY529M* / TY29M*	6 - 229	0.24 - 9.02	771	30.35	6.9	0.27	1.5	0.06	540	50 / 500	●
TY53510M* / TY3510M*	to 254	to 10	889	35	8.2	0.32	1.7	0.07	780	50 / 50	-
TY54513M*	to 330	to 12.99	1143	45	8.2	0.32	1.7	0.07	780	50	-
TY525M-CLRS	3 - 48	0.12 - 1.89	186	7.32	4.8	0.19	1.1	0.04	220	100	-

Description of product code structure: see page 12. Description of materials and properties: see pages 134 to 147

* For cable ties in a specific color, replace * in the product code by the color code (see table below)

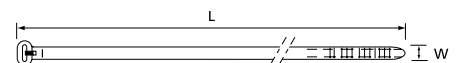
** For smaller quantities, the figure "5" needs to be added to the product code immediately after

"TY" – example: TY523M-2 is the same as TY23M-2 but in bags of 100

Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations.

Supplied in bags of 100 ties containing ten ties of each of the 10 standard colors (TY25M-0 to TY25M-9)

Dimensions



Tooling



ERG50
For use with 2.3mm to 4.8mm (80N to 220N) Cable ties. See page 124.



ERG120
For use with 4.8mm to 7.0mm (220N to 540N) Cable ties. See page 124.



WT3D
For use with 4.8mm to 8.2mm (220N to 780N) Cable ties. See page 124.

Cable tie color code

Color code	Color	Color code	Color
X	UV Black	5	Green
1	Brown	6	Blue
2	Red	7	Purple
3	Orange	8	Grey
4	Yellow	10	White

For example: TY23M-1 defines a brown TY23M cable tie. Contact your Sales Office for product availability.

Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – Workbench boxes



Characteristics

- An attractive packaging option for high volume manual assembly: 1000 pieces in a workbench box - easy to reach, hence timesaving
- This user-friendly packaging allows fast working without problems or losses

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range:
 - 60°C to +85°C (-76°F to 185°F) (natural),
 - 60°C to +105°C (-76°F to 221°F) (black)
- Min. Installation Temp.:
 - 20°C (-4°F) (natural),
 - 30°C (-22°F) (black)
- Color: Natural or UV-resistant black (other colors see page 12)
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free, UV-resistant (black)

Polyamide 6.6 cable ties – Workbench boxes



Product code	Bundle ø from ... to		Color	Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]	MIL spec.
	[mm]	[in]		[mm]	[in]	[mm]	[in]	[mm]	[in]			
TYB23M	1.5 - 22	0.06 - 0.87	natural	92	3.62	2.3	0.09	1.0	0.04	80	1000	●
TYB23MX	1.5 - 22	0.06 - 0.87	UV-resistant black	92	3.62	2.3	0.09	1.0	0.04	80	1000	●
TYB232M	1.5 - 51	0.06 - 2.01	natural	203	7.99	2.3	0.09	1.0	0.04	80	1000	-
TYB232MX	1.5 - 51	0.06 - 2.01	UV-resistant black	203	7.99	2.3	0.09	1.0	0.04	80	1000	-
TYB24M	2 - 35	0.08 - 1.38	natural	140	5.51	3.6	0.14	1.1	0.04	178	1000	●
TYB24MX	2 - 35	0.08 - 1.38	UV-resistant black	140	5.51	3.6	0.14	1.1	0.04	180	1000	●
TYB25M	3 - 48	0.12 - 1.89	natural	186	7.32	4.8	0.19	1.3	0.05	220	1000	●
TYB25MX	3 - 48	0.12 - 1.89	UV-resistant black	186	7.32	4.8	0.19	1.3	0.05	220	1000	●

Description of product code structure: see page 12
 Description of materials and properties: see pages 134 to 147
 For tooling specifications: see pages 124 to 132

Tooling

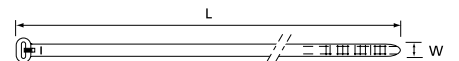


ERG50
 For use with 2.3mm to 4.8mm (80N to 220N) Cable ties. See page 124.



ERG120
 For use with 4.8mm (220N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – Heat stabilised



Characteristics

- Heat stabilised version, for applications up to 105°C (221°F).

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +105°C (-76°F to 221°F)
- Min. Installation Temp.: -30°C (-22°F)
- Color: Natural (may have a greenish tint)
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Polyamide 6.6 cable ties – Heat stabilised



Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYH23M / TYHB23M	1.5 - 22	0.06 - 0.87	92	3.62	2.4	0.09	1.0	0.04	80	1000
YH232M	1.5 - 51	0.06 - 2.01	203	7.99	2.4	0.09	1.0	0.04	80	1000
TYH24M	2 - 35	0.08 - 1.38	140	5.51	3.6	0.14	1.1	0.04	180	1000
TYH242M*	2 - 51	0.08 - 2.01	208	8.19	3.6	0.14	1.1	0.04	180	1000
TYH26M	2 - 76	0.08 - 2.99	284	11.18	3.6	0.14	1.1	0.04	130	1000
TYH25M	3 - 48	0.12 - 1.89	186	7.32	4.7	0.19	1.3	0.05	220	1000
TYH253M*	3 - 76	0.12 - 2.99	290	11.42	4.8	0.19	1.2	0.05	220	1000
TYH28M	3 - 102	0.24 - 4.02	360	14.17	4.8	0.19	1.3	0.05	220	1000
TYH272M*	4.8 - 51	0.19 - 2.01	222	8.74	7.6	0.30	1.6	0.06	540	500
TYH27M	4.8 - 102	0.19 - 4.02	340	13.39	7.0	0.28	1.6	0.06	540	500
TYH29M*	4.8 - 229	0.19 - 9.02	771	30.35	6.9	0.27	1.5	0.06	540	500

* Not UL recognised

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 2.4mm to 4.8mm (80N to 220N) Cable ties. See page 124.



ERG120

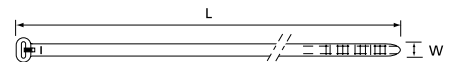
For use with 4.7mm to 7.0mm (220N to 540N) Cable ties. See page 124.



L-500-EU

For use with 6.9mm to 7.6mm (540N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – Heat stabilised + UV-resistant



Characteristics

- Heat stabilised + UV-resistant version, for outdoor applications that also require a resistance to high temperature (+105°C/221°F)
- For OEM and MRO applications like: transportation, lawn (garden/farm), construction equipment, recreational vehicles

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +105°C (-76°F to 221°F)
- Min. Installation Temp.: -40°C (-40°F)
- Color: Black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, heat stabilised, Halogen free, Silicone free



Polyamide 6.6 cable ties – Heat stabilised + UV-resistant

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY23MX-A	4.8 - 22	0.19 - 0.87	92	3.62	2.3	0.09	0.9	0.04	80	1000
TY24MX-A	5.2 - 35	0.20 - 1.38	140	5.51	3.6	0.14	1.1	0.04	133	1000
TY25MX-A	6.2 - 48	0.24 - 1.89	186	7.32	4.8	0.19	1.2	0.05	220	1000
TY27MX-A	8 - 95	0.31 - 3.74	340	13.39	6.9	0.27	1.6	0.06	540	500

Description of product code structure: see page 12
 Description of materials and properties: see pages 134 to 147
 For tooling specifications: see pages 124 to 132

Tooling



ERG50
 For use with 2.3mm (80N) Cable ties. See page 124.



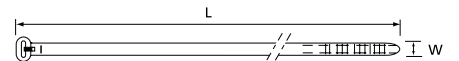
ERG120*
 For use with 2.3mm to 6.9mm (80N to 540N) Cable ties. See page 124.



L-500-EU
 For use with 4.8mm to 6.9mm (220N to 540N) Cable ties. See page 124.

* ERG120 can not be used with TY23MX-A and TY24MX-A

Dimensions



Ty-Rap® heat-reactive cable ties

Changes color to warn you of potentially dangerous high temperatures



ABB introduces the latest innovative addition to its line of Ty-Rap high-performance cable ties — Ty-Rap heat-reactive cable ties. These ties change color from their standard green to translucent when in contact with a high-temperature surface, providing visual indication of overheating equipment or a potential skin burn hazard.

To use Ty-Rap heat-reactive cable ties, simply wrap the tie around the surface of the item you wish to monitor, and then hand tighten or use an installation tool to ensure that the tie has complete contact with the surface (insufficient contact may limit color change indication).

A properly installed Ty-Rap heat-reactive cable tie begins to fade in color when the surface temperature reaches 40°C (104°F), with full transition to translucent (natural nylon color) at 49°C (120°F), indicating that the surface has reached a dangerous temperature for prolonged contact with skin.

Features

- Changes color from green to translucent when in contact with high-temperature surface
- Efficacy of heat-reactive polypropylene material lasts up to 24 months under normal operating conditions
- Offers all the convenience and performance benefits of standard Ty-Rap cable ties, including the Grip of Steel® type 316 stainless steel locking barb
- Available in three lengths and two tensile strengths
- Choose the ERG50 or ERG120 Ty-Rap cable tie application tool for easy installation

Applications

Ty-Rap heat-reactive cable ties are ideal for use where visual indication of a hot surface helps identify an unsafe working environment or malfunctioning equipment. They may be secured around any surface with normal operating temperature below 40°C (104°F), including:

- Piping
- Electrical circuits
- Boiler room surfaces
- Engine compartments
- Kitchen appliances
- Other applications in which hot surfaces may be a concern

Specifications

- Material: Polypropylene
- Operating temperature: -40°C to 80 °C (-40°F to 176°F)
- Heat-activation temperature: 49°C ± 3°C (120°F ± 6°F)
- Standard color: Green
- Heat-transition color: Translucent
- Color transition life: 1,000 hours above heatactivation temperature
- UV resistance: Indoor use only; avoid exposure to UV light
- Tensile strength and installation:
 - 0.19" wide ties: 30 lbs., ERG50 setting 2–5
 - 0.31" wide ties: 60 lbs., ERG120 setting 3–6

Ty-Rap® heat-reactive cable ties

Product code	Length L		Width W		Thickness		Loop tensile strength		Quantity [pieces]	UPC no.
	[mm]	[in]	[mm]	[in]	[mm]	[in]	lbs.	N		
TYHR25M-5	185	7.3	4.8	0.19	???	???	30	133	1000	786210-18178
TYHR27M-5	279	11.0	4.8	0.19	???	???	30	133	1000	786210-18180
TYHR28M-5	356	14.0	7.9	0.31	???	???	60	266	500	786210-18179

WARNING: The Ty-Rap heat-reactive cable tie is a heat indicator only. Use appropriate measuring device to verify actual temperature.
 CAUTION: Replace the Ty-Rap heat-reactive cable tie upon the first occurrence of any of the following conditions: operating temperature range is exceeded, exposure to UV light, visible fading of standard green color or 24 months.

Ty-Rap® high performance cable ties

Polyamide 4.6 cable ties – Extra high temperature



Characteristics

- Extreme continuous temperature rating: -40°C to +150°C (-40°F to 302°F) (in air)
- For high temperature environments in industrial, OEM, MRO and commercial construction applications such as: metal processing, paper mills, lighting, automotive

Technical information

- Material - Moulding: Polyamide 4.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +150°C (-40°F to 302°F)
- Min. Installation Temp.: -18°C (-0.4°F)
- Color: Light green
- Flammability rating: UL 94 V-2
- Other properties: Extra high temperature resistant, Halogen free, Silicon free

Polyamide 4.6 cable ties – Extra high temperature



Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYHT23M	2 - 20	0.08 - 0.79	95	3.74	2.3	0.09	0.91	0.04	80	1000
TYHT24M	2 - 29	0.08 - 1.14	143	5.63	3.6	0.14	1.07	0.42	178	1000
TYHT25M	5 - 45	0.20 - 1.77	192	7.56	4.8	0.19	1.22	0.05	220	1000
TYHT28M	5 - 102	0.20 - 4.02	367	14.45	4.8	0.19	1.27	0.05	220	1000
TYHT27M	5 - 89	0.20 - 3.50	349	13.74	6.9	0.27	1.60	0.02	534	500
TYHT277M	6 - 177	0.24 - 6.97	617	0.24	7.0	0.28	1.60	0.02	540	500

Description of product code structure: see page 12
 Description of materials and properties: see pages 134 to 147
 For tooling specifications: see pages 124 to 132

Tooling



ERG50
 For use with 2.3mm to 4.8mm (80N to 220N) Cable ties. See page 124.



ERG120*
 For use with 2.3mm to 7.0mm (80N to 540N) Cable ties. See page 124.

* ERG120 can not be used with TYHT23M and TYHT24M

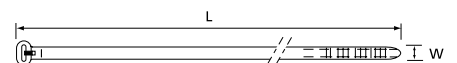


WT199
 For use with 2.3mm to 4.8mm (80N to 220N) Cable ties. See page 124.



L-500-EU
 For use with 6.9mm to 7.0mm (534N to 540N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – Flame retardant



Characteristics

- Flame retardant version. Ideal for use when low flammability and low smoke are necessary such as public transport, tunnels, etc.

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -20°C to +65°C (-4°F to 149°F)
- Min. Installation Temp.: -0°C (32°F)
- Color: White
- Flammability rating: UL 94 V-0
- Other properties: Halogen free, Silicone free



E49405

Polyamide 6.6 cable ties – Flame retardant

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY23MFR	1.5 - 22	0.06 - 0.87	92	3.62	2.4	0.09	1.0	0.04	80	1000
TY232MFR	1.5 - 51	0.06 - 2.01	203	7.99	2.4	0.09	1.0	0.04	80	1000
TY24MFR	2 - 35	0.08 - 1.38	140	5.51	3.6	0.14	1.1	0.04	134	1000
TY25MFR	3 - 48	0.12 - 1.89	186	7.62	4.6	0.18	1.1	0.04	220	1000
TY28MFR	3 - 102	0.12 - 4.02	360	14.17	4.6	0.18	1.1	0.04	177	500
TY27MFR	6 - 95	0.24 - 3.74	335	13.19	7.6	0.30	1.6	0.06	540	500
TY272MFR	4.8- 51	0.19 - 2.01	223	8.78	7.0	0.28	1.6	0.06	540	500

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 4.8mm (220N) Cable ties. See page 124.



ERG120

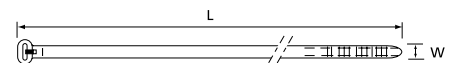
For use with 4.8mm (220N) Cable ties. See page 124.



L-500-EU

For use with 7.0mm to 7.6mm (540N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Fluoropolymer cable ties – ECTFE



Characteristics

- Outstanding characteristic: lower smoke density when burnt
- Recommended for applications where smoke generation is a concern, such as plenum areas

Technical information

- Material - Moulding: Fluoropolymer ECTFE
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +160°C (-76°F to 320°F)
- Min. Installation Temp.: -60°C (-76°F)
- Color: Maroon
- Flammability rating: UL 94 V-0
- Other properties: low smoke

Fluoropolymer cable ties – ECTFE

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYV523M / TYV23M	1.5 - 22	0.06 - 0.87	92	0.36	2.3	0.09	1.15	0.05	80	100 / 1000
TYV525M / TYV25M	3.0 - 48	0.12 - 1.89	186	7.32	4.7	0.19	1.30	0.05	220	100 / 1000

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

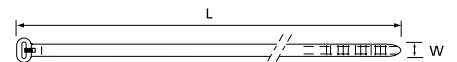
For use with 2.3mm to 4.7mm (80N to 220N) Cable ties. See page 124.



ERG120

For use with 4.7mm (220N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polyamide 6.6 cable ties – UV-resistant black



Characteristics

- UV-resistant version, especially recommended for outdoor applications
- Black version (2% carbon for military specifications)
- Also available in heat stabilised + UV-resistant version (contains 2% carbon according to military application), for outdoor applications that also require a resistance to high temperature (+105°C/221°F). See page 17 (TY...MX-A series)
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications

- Packaging: OEM bulk quantities in recyclable polythene bags
- Also available in small bags with Euroslot (see page 12) and in workbench boxes (see page 15)

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +105°C (-76°F to 221°F)
- Min. Installation Temp.: -30°C (-22°F)
- Color: Black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free, Silicone free

Polyamide 6.6 cable ties – UV-resistant black



Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Pack quantity [pieces]	MIL spec.
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]			
TY23MX	1.5 - 22	0.06 - 0.87	92	3.62	2.3	0.09	1.0	0.04	80	1000	●
TYB2315MX	1.5 - 32	0.06 - 1.26	178	7.01	2.3	0.09	1.0	0.04	80	1000	–
TY232MX	1.5 - 51	0.06 - 2.01	203	7.99	2.3	0.09	1.0	0.04	80	1000	–
TY234MX	1.5 - 102	0.06 - 4.02	356	14.02	2.3	0.09	1.0	0.04	80	1000	–
TY24MX	2 - 35	0.08 - 1.38	140	5.51	3.6	0.14	1.1	0.04	180	1000	●
TY242MX	2 - 51	0.08 - 2.01	208	8.19	3.6	0.14	1.1	0.04	180	1000	–
TY26MX	2 - 76	0.08 - 2.99	284	11.18	3.6	0.14	1.1	0.04	130	1000	–
TY244MX	2 - 102	0.08 - 4.02	368	14.49	3.6	0.14	1.1	0.04	130	1000	–
TY25MX	3 - 48	0.12 - 1.89	186	7.32	4.8	0.19	1.1	0.04	220	1000	●
TY253MX	3 - 78	0.12 - 3.07	290	11.42	4.8	0.19	1.3	0.05	220	1000	●
TY28MX	3 - 102	0.12 - 4.02	361	14.21	4.8	0.19	1.3	0.05	220	1000	●
TY272MX*	6 - 51	0.24 - 2.01	223	8.78	6.9	0.27	1.6	0.06	540	500	–
TY27MX*	6 - 102	0.24 - 4.02	340	13.39	7.0	0.28	1.6	0.06	540	500	●
TY275MX*	6 - 127	0.24 - 5	457	17.99	7.0	0.28	1.6	0.06	540	500	–
TY277MX*	6 - 177	0.24 - 6.97	617	24.29	7.0	0.28	1.6	0.06	540	500	–
TY29MX*	6 - 229	0.24 - 9.02	771	30.35	6.9	0.27	1.5	0.06	540	500	●
TY53510MX	to 254	to 10	889	35	8.2	0.32	1.7	0.07	780	500	–
TY54513MX	to 330	to 12.99	1143	45	8.2	0.32	1.7	0.07	780	500	–

* Min. installation temp : -40°C

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

Some approvals may not be applicable to all product codes.

Contact your Sales Office for approvals limitations.

Tooling



ERG50

For use with 2.3mm to 4.8mm (80N to 220N) Cable ties. See page 124.



ERG120

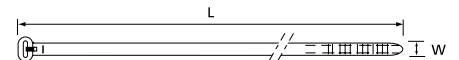
For use with 4.8mm to 7.0mm (220N to 540N) Cable ties. See page 124.



WT3D

For use with 4.8mm to 8.2mm (220N to 780N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polyamide 12 cable ties – UV-resistant



Characteristics

- Polyamide 12 UV-resistant version, remains flexible in cold & dry environments
- Ages better and has a better chemical resistance than Polyamide 6.6

Technical information

- Material - Moulding: Polyamide 12
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free, Silicone free

Polyamide 12 cable ties – UV-resistant

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYC525MX / TYC25MX	3.5 - 45	0.14 - 1.77	186	7.32	4.70	0.19	1.17	0.05	155	100 / 1000
TYC28MX	3.5 - 102	0.14 - 4.02	360	14.17	4.70	0.19	1.20	0.05	155	1000
TYC272MX	6 - 51	0.24 - 2.01	222	8.74	7.60	0.30	1.60	0.06	380	500
TYC527MX / TYC27MX	6 - 89	0.24 - 3.50	343	13.50	7.62	0.30	1.50	0.06	380	50 / 500
TYC29MX	6 - 229	0.24 - 9.02	771	30.35	7.60	0.30	1.60	0.06	380	500

Description of product code structure: see page 12
 Description of materials and properties: see pages 134 to 147
 For tooling specifications: see pages 124 to 132

Tooling



ERG50
 For use with 4.7mm to 7.6mm (155N to 380N) Cable ties. See page 124.

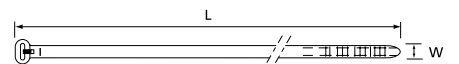


ERG120
 For use with 4.7mm to 7.6mm (155N to 380N) Cable ties. See page 124.



L-500-EU
 For use with 7.6mm to 7.62mm (380N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Polypropylene cable ties – Weatherable



Characteristics

- Polypropylene weatherable version, for increased resistance to chemicals
- Resistant against inorganic acids, polyhydric alcohols, neutral and basic salts

Technical information

- Material - Moulding: Polypropylene
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Black
- Flammability rating: UL 94 HB
- Other properties: UV-resistant, Halogen free, Silicone free

Polypropylene cable ties – Weatherable

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYP23MX	2 - 16	0.08 - 0.63	92	3.62	2.4	0.09	1.0	0.04	50	1000
TYP25MX	3.5 - 45	0.14 - 1.77	186	7.32	4.8	0.19	1.1	0.04	130	1000
TYP28MX	3.5 - 102	0.14 - 4.02	360	14.18	4.8	0.19	1.1	0.04	130	1000
TYP27MX	6 - 90	0.24 - 3.54	340	13.39	7.0	0.28	1.6	0.06	270	500

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 2.4mm to 4.8mm (50N to 130N) Cable ties. See page 124.



ERG120

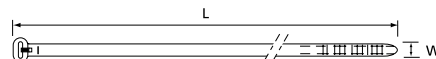
For use with 7mm (270N) Cable ties. See page 124.



L-500-EU

For use with 7mm (270N) Cable ties. See page 124.

Dimensions



Ty-Rap® high performance cable ties

Fluoropolymer cable ties – ETFE



Characteristics

- ETFE Fluoropolymer version, resistant to chemicals and to radiation
- Non-outgassing properties for zero gravity applications
- The best all around plastic material for cable ties
- Typical applications include: nuclear, power plants, space industry, etc.

Technical information

- Material - Moulding: Fluoropolymer ETFE
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -60°C to +170°C (-76°F to 338°F)
- Min. Installation Temp.: -60°C (-76°F)
- Color: Aquamarine
- Flammability rating: UL 94 V-0
- Other properties: Silicone free, inert to most solvents and chemicals, hydrolytically stable, radiation resistant. Non-outgassing properties for zero gravity applications.

Fluoropolymer cable ties – ETFE

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYZ523M* / TYZ23M*	1.5 - 22	0.06 - 0.87	92	3.62	2.3	0.09	1.10	0.04	80	100 / 1000
TYZ525M / TYZ25M	3 - 48	0.12 - 1.89	186	7.32	4.3	0.17	1.66	0.07	220	100 / 1000
TYZ528M / TYZ28M	3 - 102	0.12 - 4.02	360	14.17	4.4	0.17	1.66	0.07	220	100 / 500
TYZ527M** / TYZ27M**	6 - 95	0.24 - 3.74	340	13.39	6.8	0.27	1.85	0.07	540	50 / 100

* Product code TYZ23M and TYZ523M are UL listed (E49405), all other items are UL recognized

** Not on EC Declaration

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 2.3mm to 4.3mm (80N to 220N) Cable ties. See page 124.



ERG120*

For use with 2.3mm 6.8mm (80N to 540N) Cable ties. See page 124.

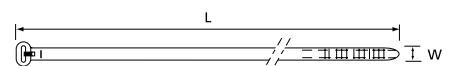


L-500-EU

For use with 6.8mm (540N) Cable ties. See page 124.

*ERG120 not to be used on TYZ23M

Dimensions



Ty-Rap® high performance cable ties

Detectable cable ties



Characteristics

The Ty-Rap® Detectable Cable Ties from ABB incorporate a unique compound (patent pending) that can be detected by X-Ray equipment, metal detectors and visual inspection equipment.

Particularly recommended for applications in food, pharmaceutical and other contamination-sensitive industries using detection systems, where cable tie installation residuals (cut tails) are not allowed in the finished product.

- Detectable by metal detectors set at minimum 1.5mm (0.06") diameter ferrous sphere
- Detectable by X-Ray equipment
- Bright blue color for an easy visual detection
- Help achieve the HACCP EU-Directive
- Available in standard Polyamide 6.6 or in Polypropylene version for liquid-processing applications
- Available in 5 different sizes in convenient small bags with Euroslot: 5 NDT, 4PDT

Technical information

- Material - Moulding: Polyamide 6.6 or Polypropylene
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Bright blue
- Flammability rating: UL 94 V-2 (Polyamide 6.6), UL 94 HB (Polypropylene)
- Other properties: Halogen free, silicone free

Detectable cable ties

Product code	Material	Bundle ø from ... to		Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]		
Detectable Polyamide 6.6									
TY523M-NDT	Polyamide 6.6	2 - 16	0.08 - 0.63	92	3.62	2.4	0.09	80	100
TY524M-NDT	Polyamide 6.6	2 - 29	0.08 - 1.14	140	5.51	3.6	0.14	134	100
TY525M-NDT	Polyamide 6.6	3.5 - 45	0.14 - 1.77	186	7.32	4.8	0.19	180	100
TY5253M-NDT	Polyamide 6.6	3.5 - 76	0.14 - 3	295	11.61	4.7	0.19	220	100
TY528M-NDT	Polyamide 6.6	3.5 - 102	0.14 - 4.02	360	14.17	4.8	0.19	220	100
TY527M-NDT	Polyamide 6.6	6 - 90	0.24 - 3.54	340	13.39	7.0	0.28	540	50
Detectable Polypropylene									
TY523M-PDT	Polypropylene	2 - 16	0.08 - 0.63	92	3.62	2.4	0.09	50	100
TY525M-PDT	Polypropylene	3.5 - 45	0.14 - 1.77	186	7.32	4.8	0.19	130	100
TY5253M-PDT	Polypropylene	3.5 - 76	0.14 - 3	295	11.61	4.7	0.19	220	100
TY528M-PDT	Polypropylene	3.5 - 102	0.14 - 4.02	360	14.17	4.8	0.19	130	100
TY527M-PDT	Polypropylene	6 - 90	0.24 - 3.54	340	13.39	7.0	0.28	270	50

Add -1 to product code for brown cable ties (e.g. TY523M-1-NDT)

Add -9 to product code for gray cable ties (e.g. TY5232M-9-NDT)

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50
For use with 2.4mm to 4.8mm (50N to 220N) Cable ties. See page 124.

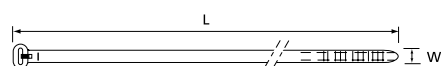


ERG120
For use with 4.8mm 7.0mm (180N to 540N) Cable ties. See page 124.



L-500-EU
For use with 7mm (540N) Cable ties. See page 124.

Dimensions



Ty-Fast®

Ag+™ bacteria-resistant cable ties



Characteristics

A breakthrough safety solution for fastening in bacteria-prone areas. A standard nylon cable tie is a harmless enough object—you install it to bundle and fasten cables, and then you forget about it. By its very design, full of notches and grooves, though, a cable tie makes an attractive home for micro-organisms to collect and reproduce. In most applications, this isn't a concern. However, in hospitals and food processing facilities, where reducing the growth of unhealthy micro-organisms is critical, the presence of heat, moisture and organic material common in these environments can encourage the growth of bacteria, fungus and mold. In response to the needs of customers in healthcare, food processing and preparation, pharmaceuticals, medical device manufacturing and other contamination-sensitive industries, Thomas & Betts introduces the industry's first bacteria resistant cable tie. Ty-Fast® Ag+™ bacteria-resistant cable ties are molded from an FDA-compliant nylon resin blended with an antimicrobial silver ion additive to prevent the growth of bacteria, fungus and mold on their surface. A proven antimicrobial agent, ionized silver has been used in consumer products for years and is effective against a broad spectrum of micro-organisms, preventing their reproduction and spread.



Ty-Fast Ag+ after 24 hours of exposure to bacteria



Standard cable tie after 24 hours of exposure to bacteria

- The industry's first cable tie that inhibits microbial growth
- Protects itself against bacteria, mold and fungus
- Helps to reduce infection rate and spread of bacteria by not hosting microbial growth

- Promotes a clean environment—99.9% effective for bacterial reduction
- Made from FDA-approved resin with EPA-registered antimicrobial
- Offers reliable Ty-Fast cable tie design for easy cable management
- UL recognized, RoHS and FDA compliant
- Patent pending

Applications

- Hospitals and other healthcare facilities
- Pharmaceutical production
- Food and beverage processing (off-line production)
- Medical equipment manufacturing

Technical information

- Material: FDA-compliant fungal-inert nylon 6.6 resin custom-blended with EPA-registered antimicrobial silver ion additive
- Operating temperature: -40°F to 185°F (-40°C to 85°C)
- Flammability rating: UL94V-2
- Certifications/ compliances:
 - Recognized to UL62275 Type 1
 - UL/EN/CSA62275 Type 2/2S rated for AH-2 plenum
 - Independent laboratory tested to ISO22196 (Measurement of Antibacterial Activity on Plastic Surfaces), equivalent to JISZ2802 (Japanese Test for Antimicrobial Activity and Efficacy)
 - Fungal inert to MIL-T-152B standard
 - RoHS compliant

Ag+™ bacteria-resistant cable ties

Product code	Max bundle ø		Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY100-18-ANTI	22	0.86	104.14	4.1	22	0.86	80	100
TY175-50-ANTI	44	1.75	195.58	7.7	44	1.75	220	100
TY400-50-ANTI	102	4.00	363.22	14.3	102	4.00	220	100
TY400-120-ANTI	102	4.00	363.22	14.3	102	4.00	540	100

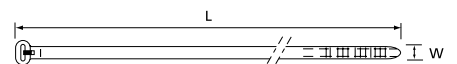
Note: Ty-Fast® Ag+™ bacteria-resistant cable ties provide no antimicrobial inhibitory activity beyond protection of the cable ties themselves. They do not provide protection against specific pathogenic organisms, nor do they prevent growth of bacteria on adjacent or nearby surfaces. The antimicrobial efficacy of the material lasts a minimum of two years from manufacture under normal use conditions.

Tooling



ERG50
For use with 22mm to 102mm (80N to 540N) Cable ties. See page 124.

Dimensions



Cable support system with metallic locking barb

Pre-assembled Deltec® cable ties



Characteristics

- Provides a strong, long-life and cost saving method of securing communication and overhead cables
- Double locking head with corrosion resistant locking barbs in copper alloy
- Proven years of service: designed to last a minimum of 20 years outdoor
- No sharp edges: operator friendly, cable friendly!
- Easy to install, low installation costs
- Extremely robust ties, with high tensile strength (1110N) after fastening
- Available either in pre-cut and pre-assembled lengths, or on reels with separate heads for total flexibility
- Choice of specific spacers and accessories
- Month and year of manufacture stamped into strap material

Technical information

- Material - Strap & head: Toughened weatherable acetal
- Material - Locking barb: Marine grade, corrosion-resistant copper alloy
- Temperature range: -65°C to +90°C (-85°F to 194°F)
- Flammability rating: UL 94 HB
- Color: Black
- Other properties: UV-resistant, Halogen free, superior resistance to moisture and salt environments

Pre-assembled Deltec® cable ties

Product code	Bundle ø from ... to		Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]		
CSS-100	60	2.36	254.0	10	12.7	0.5	1110	50
TYD5135M	90	3.54	342.9	13.5	12.7	0.5	1110	25
CSS-160	110	4.33	406.4	16	12.7	0.5	1110	50
TYD5270M	200	7.87	685.8	27	12.7	0.5	1110	10

For tooling specifications: see pages 124 to 132

Note: the recommended maximum continuous static loading for the Deltec® straps is 90 N per strap.

For best results suggested spacing is 35 to 40cm.

It is the responsibility of the user to determine whether or not their application meets our recommendation.

Tooling



WT3D

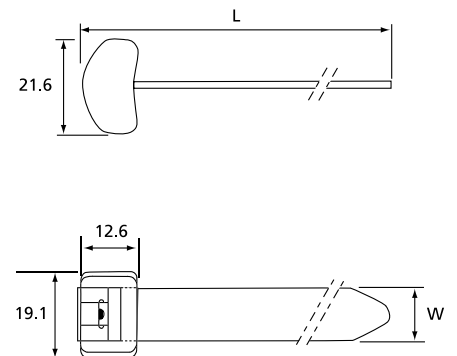
For use with 12.7mm (1110N) Cable ties. See page 124.



L-500-EU

For use with 12.7mm (1110N) Cable ties. See page 124.

Dimensions



Cable support system with metallic locking barb

Strap on reel & double locking heads



Characteristics

- Strap on reel, with separate head
- Total flexibility & no waste: cut at the desired length
- Easy to store: reduced inventory
- User friendly

Technical information

- Material: Toughened weatherable acetal
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Flammability rating: UL 94 HB
- Color: Black
- Other properties: UV-resistant, Halogen free, superior resistance to moisture and salt environments

Strap on reel

Product code	Length per reel L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[m]	[ft]	[mm]	[in]		
TYD-50R	15.2	49.86	12.7	0.5	1110	1
696-41794	304.8	1000	12.7	0.5	1110	1

For tooling specifications: see pages 124 to 132

Note: the recommended maximum continuous static loading for the Deltec® straps is 90 N per strap.

For best results suggested spacing is 35 to 40cm. It is the responsibility of the user to determine whether or not their application meets our recommendation.

Tooling



WT3D

For use with 12.7mm (1110N) Cable ties. See page 124.



L-500-EU

For use with 12.7mm (1110N) Cable ties. See page 124.



Technical information

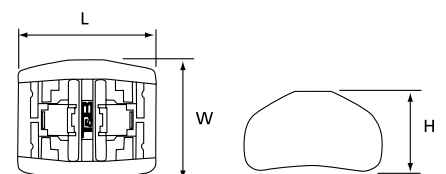
- Material - moulding: Toughened weatherable acetal
- Material - locking barb: Marine grade, corrosion-resistant copper alloy
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Flammability rating: UL 94 HB
- Color: Black
- Other properties: UV-resistant, Halogen free, superior resistance to moisture and salt environments

Double locking heads

Product code	Length L		Width W		Height		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TYD-LH / 696-41795	21.6	0.85	19.1	0.75	12.6	0.50	25 / 1000

To be assembled with Deltec® strap on reel

Dimensions



Cable support system with metallic locking barb

Deltec® Kits



Characteristics

- Convenient kits containing several reels of strap and separate locking heads, to provide all you need to be efficient on the field
- 2 configurations to match your need

Deltec® Kits

Product code	Length per reel		Reels	Locking heads
	[mm]	[in]	Quantity [reels]	Quantity [pieces]
CSS-5K / CSS-10K	15.2	0.60	5	150 / 300

To be assembled with Deltec® strap on reel



Ty-Met™ stainless steel cable ties

Stainless steel cable ties

The Ty-Met™ stainless steel ties are the ultimate solution to install your cables in extreme conditions and hazardous areas, indoor and outdoor, such as the petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments.

The Ty-Met™ stainless steel ties provide a high mechanical strength combined with chemical durability and temperature resistance.

They are available in several different types:

- Ball-lock type: quick and reliable self-locking mechanism
- Ladder type: easy application and strong locking system
- Strap type: either pre-assembled or on reel with separate heads
- Releasable type: can be unfastened for re-use
- Identification system: durable in tough environments and extreme conditions
- Band on reel with separate heads, for a cost saving installation without waste

Ty-Met™ cable ties have international approvals such as UL, Germanischer Lloyd, Lloyd's Register and Det Norske Veritas.

All types are available in 316 grade (marine grade) stainless steel, for extra corrosion resistance

Available in uncoated version (for high temperature applications) or in fully coated version with non-toxic, halogen free coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials.

A range of dedicated hand tools completes the product offering.



Ty-Met™ Stainless steel cable ties

Features and benefits

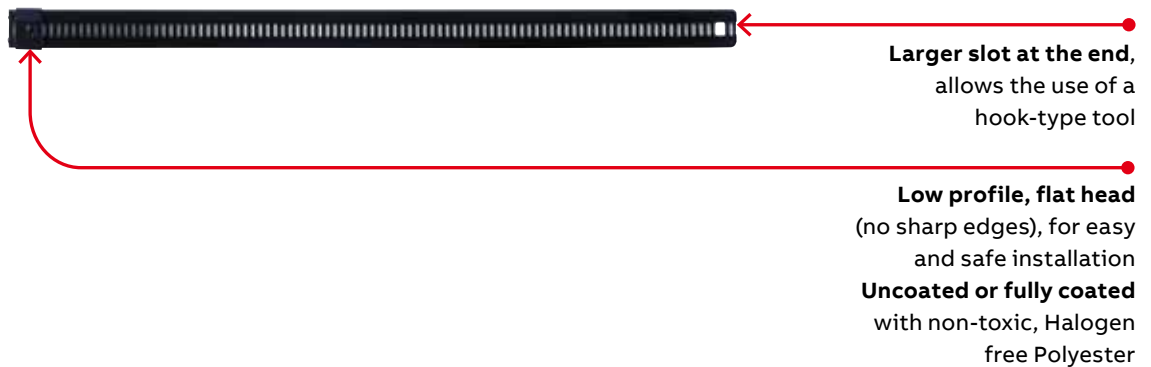
Ball-lock type

Easy application and strong self-locking mechanism (steel ball), with low insertion force



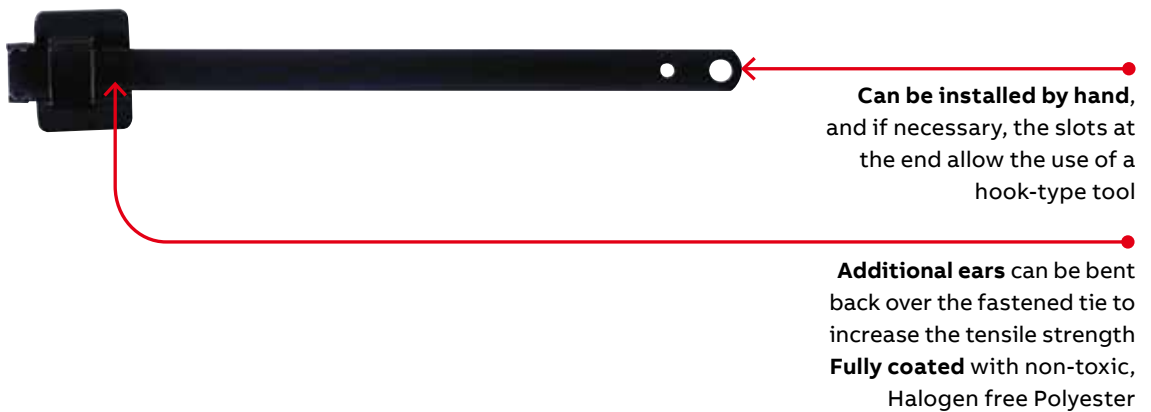
Ladder type

Self-locking mechanism (pawl and ratchet)



Releasable type

The unique buckle design allows the tie to be unfastened for re-use



ID system

Durable identification system for tough environments and extreme conditions, indoor and outdoor



Dedicated carrier strips for 6, 10 or 16 characters
Carrier strips can be secured with Ty-Met™ stainless steel ties

Pre-embossed characters are easy to read, even when covered with dust, paint or dirt
Characters can be mounted on carrier strips or directly onto Ty-Met™ stainless steel ties

Characters and carrier strips are made of corrosion resistant 316 grade stainless steel, for high mechanical and chemical durability

Bands on reel with separate heads

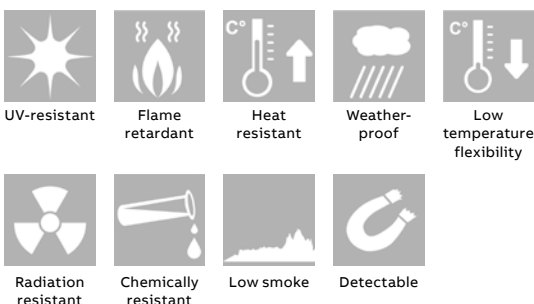
Bands and separate heads are made of corrosion resistant 316 grade stainless steel, for high mechanical and chemical durability



Available in 5 widths up to 19.1mm (0.75"), to suit a wide range of applications
25-metre (82.02ft) reels for a cost saving and customised installation, around all sizes and shapes of objects

Bands are fully covered with non-toxic, halogen free Polypropylene

Dedicated heads are easy to install



Ty-Met™ Stainless steel cable ties

Ball-lock type – Standard widths, uncoated



Characteristics

The ball-lock type stainless steel ties from ABB are self-locking, requiring no time consuming crimping or folding operations.

- Strong self-locking mechanism (stainless steel ball), with low insertion force
- Fast, easy and reliable installation
- Standard widths (4.6mm & 7.9mm/0.18" & 0.31"), suitable for most applications, indoor and outdoor
- Uncoated version, suitable for high temperature environments
- 2 grades of non-magnetic stainless steel: 304 grade for standard applications and 316 grade (marine grade) for extra corrosion resistance

- Applications: installation of cables and pipes in extreme conditions and hazardous areas, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: A. 304 grade non-magnetic stainless steel; B. 316 grade non-magnetic stainless steel
- Temperature range: -40°C to +300°C (-40°F to 572°F)
- Color: Metallic
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant



E49405

Ball-lock type – Standard widths, uncoated

Product code Stainless steel 304	Product code Stainless steel 316	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YLS-4.6-100A	YLS-4.6-100B	20 - 25	0.79 - 0.98	100	3.94	4.6	0.18	0.26	0.01	778	100
YLS-4.6-125A	YLS-4.6-125B	20 - 25	0.79 - 0.98	125	4.92	4.6	0.18	0.26	0.01	778	100
YLS-4.6-150A	YLS-4.6-150B	20 - 35	0.79 - 1.38	150	5.91	4.6	0.18	0.26	0.01	778	100
YLS4.6-200A	YLS4.6-200B	20 - 50	0.79 - 1.97	200	7.87	4.6	0.18	0.26	0.01	778	100
YLS-4.6-300A	YLS-4.6-300B	20 - 83	0.79 - 3.27	300	11.81	4.6	0.18	0.26	0.01	778	100
YLS4.6-360A	YLS4.6-360B	20 - 100	0.79 - 3.94	360	14.17	4.6	0.18	0.26	0.01	778	100
YLS4.6-520A	YLS-4.6-520B	20 - 150	0.79 - 5.91	520	20.74	4.6	0.18	0.26	0.01	778	100
YLS-4.6-680A	YLS-4.6-680B	20 - 200	0.79 - 7.87	680	26.77	4.6	0.18	0.26	0.01	778	100
YLS-4.6-840A	YLS-4.6-840B	20 - 250	0.79 - 9.84	840	33.07	4.6	0.18	0.26	0.01	778	100
YLS-4.6-1000A	YLS-4.6-1000B	20 - 300	0.79 - 11.81	1000	39.37	4.6	0.18	0.26	0.01	778	100
YLS-4.6-1200A	YLS-4.6-1200B	20 - 365	0.79 - 14.37	1200	27.24	4.6	0.18	0.26	0.01	778	100
YLS-4.6-1400A	YLS-4.6-1400B	20 - 425	0.79 - 16.73	1400	55.12	4.6	0.18	0.26	0.01	778	100
YLS-7.9-100A	YLS-7.9-100B	20 - 20	0.79 - 0.79	100	3.94	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-125A	YLS-7.9-125B	20 - 22	0.79 - 0.87	125	4.92	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-150A	YLS-7.9-150B	20 - 35	0.79 - 1.38	150	5.91	7.9	0.31	0.26	0.01	1112	100
YLS7.9-200A	YLS-7.9-200B	20 - 50	0.79 - 1.97	200	7.87	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-300A	YLS-7.9-300B	20 - 83	0.79 - 3.27	300	11.81	7.9	0.31	0.26	0.01	1112	100
YLS7.9-360A	YLS-7.9-360B	20 - 100	0.79 - 3.94	360	14.17	7.9	0.31	0.26	0.01	1112	100
YLS7.9-520A	YLS-7.9-520B	20 - 150	0.79 - 5.91	520	20.74	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-680A	YLS-7.9-680B	20 - 200	0.79 - 7.87	680	26.77	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-840A	YLS-7.9-840B	20 - 250	0.79 - 9.84	840	33.07	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-1000A	YLS-7.9-1000B	20 - 300	0.79 - 11.81	1000	39.37	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-1200A	YLS-7.9-1200B	20 - 365	0.79 - 14.37	1200	27.24	7.9	0.31	0.26	0.01	1112	100
YLS-7.9-1400A	YLS-7.9-1400B	20 - 425	0.79 - 16.73	1400	55.12	7.9	0.31	0.26	0.01	1112	100

* Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations.

Tooling

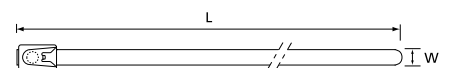


CT3
For use with 4.6mm to 7.9mm (778N to 1112N) Cable ties. See page 125.



CT6
For use with 4.6mm to 7.9mm (778N to 1112N) Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Ball-lock type – Standard widths, fully coated



Characteristics

The ball-lock type stainless steel ties from ABB are self-locking, requiring no time consuming crimping or folding operations.

- Strong self-locking mechanism (stainless steel ball), with low insertion force
- Fast, easy and reliable installation
- Standard widths (4.6mm & 7.9mm/0.18" & 0.31"), suitable for most applications, indoor and outdoor
- Corrosion resistant 316 grade stainless steel (marine grade) for high mechanical and chemical durability
- Fully coated version with non-toxic, halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials.

- Applications: installation of cables and pipes in extreme conditions and hazardous areas, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: 316 grade non-magnetic stainless steel
- Coating: Polyester
- Temperature range: -40°C to +165°C (-40°F to 329°F)
- Color: Black
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant, Halogen free, non toxic



Ball-lock type – Standard widths, fully coated

Product code	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YLS-4.6-100BC	20 - 25	0.79 - 0.98	100	3.94	4.6	0.18	0.36	0.01	778	100
YLS-4.6-125BC	20 - 25	0.79 - 0.98	125	4.92	4.6	0.18	0.36	0.01	778	100
YLS4.6-150BC	20 - 35	0.79 - 1.38	150	5.91	4.6	0.18	0.36	0.01	778	100
YLS-4.6-200BC	20 - 50	0.79 - 1.97	200	7.87	4.6	0.18	0.36	0.01	778	100
YLS-4.6-300BC	20 - 83	0.79 - 3.27	300	11.81	4.6	0.18	0.36	0.01	778	100
YLS-4.6-360BC	20 - 100	0.79 - 3.94	360	14.17	4.6	0.18	0.36	0.01	778	100
YLS-4.6-520BC	20 - 150	0.79 - 5.91	520	20.74	4.6	0.18	0.36	0.01	778	100
YLS-4.6-680BC	20 - 200	0.79 - 7.87	680	26.77	4.6	0.18	0.36	0.01	778	100
YLS-4.6-840BC	20 - 250	0.79 - 9.84	840	33.07	4.6	0.18	0.36	0.01	778	100
YLS-4.6-1000BC	20 - 300	0.79 - 11.81	1000	39.37	4.6	0.18	0.36	0.01	778	100
YLS-4.6-1200BC	20 - 365	0.79 - 14.37	1200	27.24	4.6	0.18	0.36	0.01	778	100
YLS-4.6-1400BC	20 - 425	0.79 - 16.73	1400	55.12	4.6	0.18	0.36	0.01	778	100
YLS-7.9-100BC	20 - 20	0.79 - 0.79	100	3.94	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-125BC	20 - 22	0.79 - 0.87	125	4.92	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-150BC	20 - 35	0.79 - 1.38	150	5.91	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-200BC	20 - 50	0.79 - 1.97	200	7.87	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-300BC	20 - 83	0.79 - 3.27	300	11.81	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-360BC	20 - 100	0.79 - 3.94	360	14.17	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-520BC	20 - 150	0.79 - 5.91	520	20.74	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-680BC	20 - 200	0.79 - 7.87	680	26.77	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-840BC	20 - 250	0.79 - 9.84	840	33.07	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-1000BC	20 - 300	0.79 - 11.81	1000	39.37	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-1200BC	20 - 365	0.79 - 14.37	1200	27.24	7.9	0.31	0.36	0.01	1112	100
YLS-7.9-1400BC	20 - 425	0.79 - 16.73	1400	55.12	7.9	0.31	0.36	0.01	1112	100

* Some approvals may not be applicable to all product codes.
Contact your Sales Office for approvals limitations.

Tooling

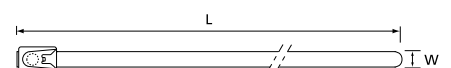


CT3
For use with 4.6mm to 7.9mm (778N to 1112N) Cable ties. See page 125.



CT6
For use with 4.6mm to 7.9mm (778N to 1112N) Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Ball-lock type – Heavy-duty ties, uncoated



Characteristics

The ball-lock type stainless steel ties from ABB are self-locking, requiring no time consuming crimping or folding operations.

- Strong self-locking mechanism (stainless steel ball), with low insertion force
- Fast, easy and reliable installation
- Heavy-duty version (12mm & 16mm (0.47" & 0.63") of width), for extreme applications, indoor and outdoor
- Uncoated version, suitable for high temperature environments
- Corrosion resistant 316 grade stainless steel (marine grade) for high mechanical and chemical durability

- Applications: installation of cables and pipes in extreme conditions and hazardous areas, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: 316 grade non-magnetic stainless steel
- Temperature range: -40°C to +300°C (-40°F to 572°F)
- Color: Metallic
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant



E49405

Ball-lock type – Heavy-duty ties, uncoated

Product code	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YLS-12-200B	25 - 50	0.98 - 1.97	200	7.87	12.0	0.47	0.32	0.01	1117	50
YLS-12-300B	25 - 83	0.98 - 3.15	300	11.81	12.0	0.47	0.32	0.01	1117	50
YLS-12-360B	25 - 100	0.98 - 3.94	360	14.17	12.0	0.47	0.32	0.01	1117	50
YLS-12-440B	25 - 125	0.98 - 4.92	440	17.21	12.0	0.47	0.32	0.01	1117	50
YLS-12-520B	25 - 150	0.98 - 5.91	520	20.47	12.0	0.47	0.32	0.01	1117	50
YLS-12-600B	25 - 175	0.98 - 6.89	600	23.62	12.0	0.47	0.32	0.01	1117	50
YLS-12-680B	25 - 200	0.98 - 7.87	680	26.77	12.0	0.47	0.32	0.01	1117	50
YLS-12-760B	25 - 225	0.98 - 8.86	760	29.92	12.0	0.47	0.32	0.01	1117	50
YLS-12-840B	25 - 250	0.98 - 9.84	840	33.07	12.0	0.47	0.32	0.01	1117	50
YLS-12-1000B	25 - 300	0.98 - 11.81	1000	39.37	12.0	0.47	0.32	0.01	1117	25
YLS-12-1200B	25 - 365	0.98 - 14.37	1200	47.24	12.0	0.47	0.32	0.01	1117	25
YLS-12-1400B	25 - 425	0.98 - 16.73	1400	55.12	12.0	0.47	0.32	0.01	1117	25
YLS-16-200B	40 - 50	1.57 - 1.97	200	7.87	16.0	0.63	0.32	0.01	4005	50
YLS-16-300B	40 - 80	1.57 - 3.15	300	11.81	16.0	0.63	0.32	0.01	4005	50
YLS-16-360B	40 - 100	1.57 - 3.94	360	14.17	16.0	0.63	0.32	0.01	4005	50
YLS-16-440B	40 - 125	1.57 - 4.92	440	17.21	16.0	0.63	0.32	0.01	4005	50
YLS-16-520B	40 - 150	1.57 - 5.91	520	20.47	16.0	0.63	0.32	0.01	4005	50
YLS-16-600B	40 - 185	1.57 - 7.28	600	23.62	16.0	0.63	0.32	0.01	4005	50
YLS-16-680B	40 - 200	1.57 - 7.87	680	26.77	16.0	0.63	0.32	0.01	4005	50
YLS-16-760B	40 - 225	1.57 - 8.86	760	29.92	16.0	0.63	0.32	0.01	4005	50
YLS-16-840B	40 - 250	1.57 - 9.84	840	33.07	16.0	0.63	0.32	0.01	4005	50
YLS-16-1000B	40 - 300	1.57 - 11.81	1000	39.37	16.0	0.63	0.32	0.01	4005	25
YLS-16-1200B	40 - 365	1.57 - 14.37	1200	47.24	16.0	0.63	0.32	0.01	4005	25
YLS-16-1400B	40 - 425	1.57 - 16.73	1400	55.12	16.0	0.63	0.32	0.01	4005	25

* Some approvals may not be applicable to all product codes.
Contact your Sales Office for approvals limitations.

Tooling

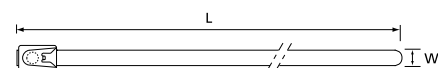


CT3
For use with 12mm
(1117N) Cable ties.
See page 125.



CT7
For use with 12mm to
16mm (1117N to 4005N)
Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Ball-lock type – Heavy-duty ties, fully coated



Characteristics

The ball-lock type stainless steel ties from ABB are self-locking, requiring no time consuming crimping or folding operations.

- Strong self-locking mechanism (stainless steel ball), with low insertion force
- Fast, easy and reliable installation
- Heavy-duty version (12mm & 16mm (0.47" & 0.63") of width), for extreme applications, indoor and outdoor
- Corrosion resistant 316 grade stainless steel (marine grade) for high mechanical and chemical durability
- Fully coated version with non-toxic, halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials

- Applications: installation of cables and pipes in extreme conditions and hazardous areas, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: 316 grade non-magnetic stainless steel
- Coating: Black Polyester
- Temperature range: -40°C to +165°C (-40°F to 329°F)
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant, Halogen free, non toxic

Ball-lock type – Heavy-duty ties, uncoated

Product code	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YLS-12-200BC	25 - 50	0.98 - 1.97	200	7.87	12.0	0.47	0.42	0.02	1335	50
YLS-12-300BC	25 - 83	0.98 - 3.15	300	11.81	12.0	0.47	0.42	0.02	1335	50
YLS-12-360BC	25 - 100	0.98 - 3.94	360	14.17	12.0	0.47	0.42	0.02	1335	50
YLS-12-440BC	25 - 125	0.98 - 4.92	440	17.21	12.0	0.47	0.42	0.02	1335	50
YLS-12-520BC	25 - 150	0.98 - 5.91	520	20.47	12.0	0.47	0.42	0.02	1335	50
YLS-12-600BC	25 - 175	0.98 - 6.89	600	23.62	12.0	0.47	0.42	0.02	1335	50
YLS-12-680BC	25 - 200	0.98 - 7.87	680	26.77	12.0	0.47	0.42	0.02	1335	50
YLS-12-760BC	25 - 225	0.98 - 8.86	760	29.92	12.0	0.47	0.42	0.02	1335	50
YLS-12-840BC	25 - 250	0.98 - 9.84	840	33.07	12.0	0.47	0.42	0.02	1335	50
YLS-12-1000BC	25 - 300	0.98 - 11.81	1000	39.37	12.0	0.47	0.42	0.02	1335	25
YLS-12-1200BC	25 - 365	0.98 - 14.37	1200	47.24	12.0	0.47	0.42	0.02	1335	25
YLS-12-1400BC	25 - 425	0.98 - 16.73	1400	55.12	12.0	0.47	0.42	0.02	1335	25
YLS-16-200BC	40 - 50	1.57 - 1.97	200	7.87	16.0	0.63	0.42	0.02	2002	50
YLS-16-300BC	40 - 80	1.57 - 3.15	300	11.81	16.0	0.63	0.42	0.02	2002	50
YLS-16-360BC	40 - 100	1.57 - 3.94	360	14.17	16.0	0.63	0.42	0.02	2002	50
YLS-16-440BC	40 - 125	1.57 - 4.92	440	17.21	16.0	0.63	0.42	0.02	2002	50
YLS-16-520BC	40 - 150	1.57 - 5.91	520	20.47	16.0	0.63	0.42	0.02	2002	50
YLS-16-600BC	40 - 185	1.57 - 7.28	600	23.62	16.0	0.63	0.42	0.02	2002	50
YLS-16-680BC	40 - 200	1.57 - 7.87	680	26.77	16.0	0.63	0.42	0.02	2002	50
YLS-16-760BC	40 - 225	1.57 - 8.86	760	29.92	16.0	0.63	0.42	0.02	2002	50
YLS-16-840BC	40 - 250	1.57 - 9.84	840	33.07	16.0	0.63	0.42	0.02	2002	50
YLS-16-1000BC	40 - 300	1.57 - 11.81	1000	39.37	16.0	0.63	0.42	0.02	2002	25
YLS-16-1200BC	40 - 365	1.57 - 14.37	1200	47.24	16.0	0.63	0.42	0.02	2002	25
YLS-16-1400BC	40 - 425	1.57 - 16.73	1400	55.12	16.0	0.63	0.42	0.02	2002	25

Tooling

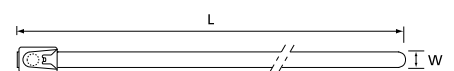


CT3
For use with 12mm
(1117N) Cable ties.
See page 125.



CT7
For use with 12mm to
16mm (1117N to 4005N)
Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Ladder type – Uncoated



Characteristics

The ladder type stainless steel ties from ABB have a flat, low profile head for easy application.

- Strong self-locking mechanism (pawl and ratchet), requires no time consuming crimping or folding operations
- Flat and low profile head (no sharp edge), for easy installation
- Corrosion resistant 316 grade stainless steel for high mechanical and chemical durability
- Uncoated version for high temperature applications
- Increased usable length (slots up to the end of the tail), allows larger bundle diameters with the same tie length
- Larger slot at the end, allows the use of a hook-type tool

- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: 316 grade stainless steel
- Coating: Uncoated
- Temperature range: -40°C to +300°C (-40°F to 572°F)
- Color: Metallic
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant



Ladder type – Uncoated

Product code	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces] Standard
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YLD-7-150-B	20 - 45	0.79 - 1.77	150	5.91	7.0	0.28	0.30	0.01	529	100
YLD-7-225-B	20 - 70	0.79 - 2.76	225	8.86	7.0	0.28	0.30	0.01	529	100
YLD-7-300-B	20 - 95	0.79 - 3.74	300	11.81	7.0	0.28	0.30	0.01	529	100
YLD-7-450-B	20 - 140	0.79 - 5.51	450	17.72	7.0	0.28	0.30	0.01	529	100
YLD-7-610-B	20 - 190	0.79 - 7.48	610	24.02	7.0	0.28	0.30	0.01	529	100
YLD-12-150-B	20 - 43	0.79 - 1.69	150	5.91	12.0	0.47	0.35	0.01	529	100
YLD-12-225-B	20 - 60	0.79 - 2.36	225	8.86	12.0	0.47	0.35	0.01	529	100
YLD-12-300-B	20 - 80	0.79 - 3.15	300	11.81	12.0	0.47	0.35	0.01	529	100
YLD-12-450-B	20 - 135	0.79 - 5.31	450	17.72	12.0	0.47	0.35	0.01	529	100
YLD-12-610-B	20 - 185	0.79 - 7.28	610	24.02	12.0	0.47	0.35	0.01	529	100

* Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations.

Tooling



CT1-TB
For use with 7.0mm to 12.0mm (529N) Cable ties. See page 125.



CT2-TB
For use with 7.0mm to 12.0mm (529N) Cable ties. See page 125.



CT3
For use with 7.0mm to 12.0mm (529N) Cable ties. See page 125.



CT4-TB
For use with 7.0mm to 12.0mm (529N) Cable ties. See page 125.

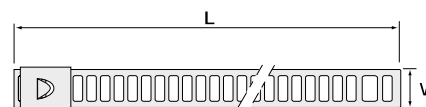


CT5
For use with 7.0mm to 12.0mm (529N) Cable ties. See page 125.



WT35
For use with 7.0mm to 12.0mm (529N) Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Ladder type – Fully coated



Characteristics

The ladder type stainless steel ties from ABB have a flat, low profile head for easy application.

- Strong self-locking mechanism (pawl and ratchet), requires no time consuming crimping or folding operations
- Flat and low profile head (no sharp edge), for easy installation
- Corrosion resistant 316 grade stainless steel for high mechanical and chemical durability
- Fully coated version with non-toxic, Halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials
- Increased usable length (slots up to the end of the tail), allows larger bundle diameters with the same tie length

- Larger slot at the end, allows the use of a hook-type tool
- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: 316 grade stainless steel
- Coating: Polyester
- Temperature range: -60°C to +165°C (-75°F to 329°F)
- Color: Black
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant, Halogen free, non-toxic



Ladder type – Fully coated

Product code	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YLD-7-150-BC	20 - 45	0.79 - 1.77	150	5.91	7.0	0.28	0.41	0.02	778	100
YLD-7-225-BC	20 - 70	0.79 - 2.76	225	8.86	7.0	0.28	0.41	0.02	778	100
YLD-7-300-BC	20 - 95	0.79 - 3.74	300	11.81	7.0	0.28	0.41	0.02	778	100
YLD-7-450-BC	20 - 140	0.79 - 5.51	450	17.72	7.0	0.28	0.41	0.02	778	100
YLD-7-610-BC	20 - 190	0.79 - 7.48	610	24.02	7.0	0.28	0.41	0.02	778	100
YLD-12-150-BC	20 - 43	0.79 - 1.69	150	5.91	12.0	0.47	0.46	0.24	778	100
YLD-12-225-BC	20 - 60	0.79 - 2.36	225	8.86	12.0	0.47	0.46	0.24	778	100
YLD-12-300-BC	20 - 80	0.79 - 3.15	300	11.81	12.0	0.47	0.46	0.24	778	100
YLD-12-450-BC	20 - 135	0.79 - 5.31	450	17.72	12.0	0.47	0.46	0.24	778	100
YLD-12-610-BC	20 - 185	0.79 - 7.28	610	24.02	12.0	0.47	0.46	0.24	778	100

* Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations.

Tooling



CT1-TB
For use with 7.0mm to 12.0mm (778N) Cable ties. See page 125.



CT2-TB
For use with 7.0mm to 12.0mm (778N) Cable ties. See page 125.



CT3
For use with 7.0mm to 12.0mm (778N) Cable ties. See page 125.



CT4-TB
For use with 7.0mm to 12.0mm (778N) Cable ties. See page 125.

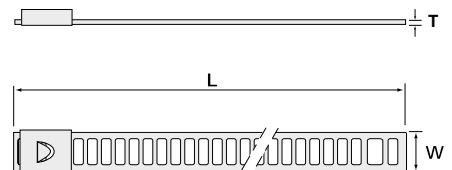


CT5
For use with 7.0mm to 12.0mm (778N) Cable ties. See page 125.



WT35
For use with 7.0mm to 12.0mm (778N) Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Releasable type



Characteristics

The releasable type stainless steel ties from ABB have a unique buckle design that allows the ties to be unfastened for re-use.

- Releasable and re-usable
- Corrosion resistant 316 grade stainless steel for high mechanical and chemical durability
- Fully coated version with non-toxic, Halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials
- Fast, easy and reliable installation - can be installed by hand and if necessary, the slots at the end of the tie allow the use of a hook-type tool
- The additional ears can be bent back over the fastened tie to increase the tensile strength

- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

Technical information

- Material: 316 grade stainless steel
- Coating: Polyester
- Temperature range: -60°C to +165°C (-76°F to 329°F)
- Color: Black
- Flammability rating: Absolutely fireproof
- Other properties: UV-resistant, Halogen free, non-toxic



Releasable type

Product code	Bundle ø from ... to		Length L		Width W		Material thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
YRL-5-150-BC	30 - 36	1.18 - 1.42	150	5.91	5.0	0.20	0.61	0.02	1300	100
YRL-5-230-BC	30 - 60	1.18 - 2.36	230	9.06	5.0	0.20	0.61	0.02	1300	100
YRL-5-330-BC	30 - 95	1.18 - 3.74	330	12.99	5.0	0.20	0.61	0.02	1300	100
YRL-5-450-BC	30 - 130	1.18 - 5.12	450	17.72	5.0	0.20	0.61	0.02	1300	100
YRL-5-650-BC	30 - 190	1.18 - 7.48	650	25.59	5.0	0.20	0.61	0.02	1300	100
YRL-10-150-BC	40 - 40	1.57 - 1.57	150	5.91	10.0	0.39	0.61	0.02	2200	100
YRL-10-230-BC	40 - 60	1.57 - 2.36	230	9.06	10.0	0.39	0.61	0.02	2200	100
YRL-10-330-BC	40 - 95	1.57 - 3.74	330	12.99	10.0	0.39	0.61	0.02	2200	100
YRL-10-450-BC	40 - 130	1.57 - 5.12	450	17.72	10.0	0.39	0.61	0.02	2200	100
YRL-10-650-BC	40 - 190	1.57 - 7.48	650	25.59	10.0	0.39	0.61	0.02	2200	100
YRL-10-750-BC	40 - 230	1.57 - 9.06	750	29.53	10.0	0.39	0.61	0.02	2200	100
YRL-10-900-BC	40 - 275	1.57 - 10.83	900	35.43	10.0	0.39	0.61	0.02	2200	100

* Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations.

Tooling



CT1-TB
For use with 5.0mm to 10.0mm (1300N to 2200N) Cable ties. See page 125.

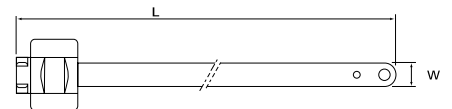
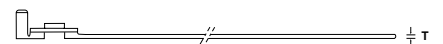


CT2-TB
For use with 5.0mm to 10.0mm (1300N to 2200N) Cable ties. See page 125.



CT4-TB
For use with 5.0mm to 10.0mm (1300N to 2200N) Cable ties. See page 125.

Dimensions



Ty-Met™ Stainless steel cable ties

Stainless steel ID system



Characteristics

A new durable identification system, ideally suitable for tough environments and extreme conditions, indoor and outdoor.

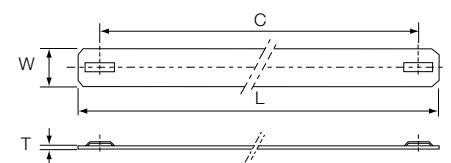
- Sleeves with pre-embossed characters (letters, digits and symbols)
- Pre-embossed characters are raised above the surface of the sleeve, which makes them easy to read even when covered with dust, paint or dirt

- Dedicated strips can carry 6, 10 or 16 sleeves
- Sleeves and strips are made of corrosion resistant 316 grade stainless steel (marine grade), for high mechanical and chemical durability
- The sleeves can be mounted onto the carrier strips (which will be secured by Ty-Met™ stainless steel ties) or directly onto Ty-Met™ stainless steel ties having a width up to 7.9mm (0.31")

Stainless steel ID system - Sleeves with pre-embossed characters, uncoated

Product code	Description	L		W		H		T		Packaging [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
YID-CHAR-A	Letter "A"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-B	Letter "B"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-C	Letter "C"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-D	Letter "D"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-E	Letter "E"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-F	Letter "F"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-G	Letter "G"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-H	Letter "H"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-I	Letter "I"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-J	Letter "J"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-K	Letter "K"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-L	Letter "L"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-M	Letter "M"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-N	Letter "N"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-O	Letter "O"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-P	Letter "P"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-Q	Letter "Q"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-R	Letter "R"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-S	Letter "S"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-T	Letter "T"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-U	Letter "U"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-V	Letter "V"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-W	Letter "W"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-X	Letter "X"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-Y	Letter "Y"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-Z	Letter "Z"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100

Dimensions



Ty-Met™ Stainless steel cable ties

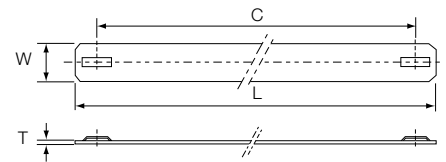
Stainless steel ID system (continued)

Stainless steel ID system - Sleeves with pre-embossed characters, uncoated

Product code	Description	L		W		H		T		Packaging [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
YID-CHAR-1	Digit "1"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-2	Digit "2"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-3	Digit "3"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-4	Digit "4"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-5	Digit "5"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-6	Digit "6" or "9"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-7	Digit "7"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-8	Digit "8"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-BLANK	Blank filler	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-PLUS	Symbol "+"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-MINUS	Symbol "-"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-SLASH	Symbol "/"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-EARTH	Symbol "⊕"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100
YID-CHAR-SINE	Symbol "≈"	9.2	0.36	8	0.31	2.5	0.10	0.25	0.01	100

For digit 9 (nine) use digit 6 (six) upside down, for digit 0 (zero) use letter "O"

Dimensions

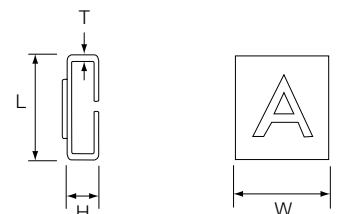


Stainless steel ID system - Carrier strips, uncoated

Product code	Description	L		W		T		C		Packaging [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
YID-STRIP-6	Carrier strip for 6 sleeves	93	3.66	7.9	0.31	0.25	0.01	75	2.95	100
YID-STRIP-10	Carrier strip for 10 sleeves	133	5.24	7.9	0.31	0.25	0.01	115	4.53	100
YID-STRIP-16	Carrier strip for 16 sleeves	188	7.40	7.9	0.31	0.25	0.01	170	6.69	100

Strips can be secured with Ty-Met™ stainless steel ties having a width up to 7.9mm (0.31")

Dimensions



Ty-Met™ Stainless steel cable ties

Bands on reel with separate heads



Characteristics

A new range of stainless steel band on reel with separate heads, for a cost saving installation without waste

- Bands and heads are made of corrosion resistant 316 grade stainless steel, for high mechanical and chemical durability
- Bands are fully covered with a non-toxic, halogen free black Polypropylene sheath, for a superior protection of cables and installer's hands, and for an improved insulation between dissimilar materials

- Cost saving and flexible: the 25-metre (82.02ft) reels allow a customised installation (no waste) around all sizes and shapes of objects
- Dedicated separate heads are easy to install
- Available in 5 widths up to 19.1mm (0.75"), to suit a wide range of applications

Technical information

- Material: 316 grade non-magnetic stainless steel
- Coating: Polypropylene
- Temperature range: -25°C to +90°C (-13°F to 194°F)
- Color: Bands & Heads: metallic; Coating: black
- Other properties: UV-resistant, Halogen free, non-toxic

Bands on reel with separate heads - Bands on reels, fully covered with Polypropylene sheath

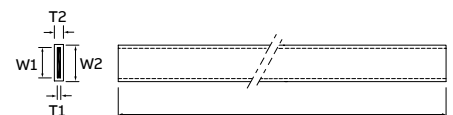
Product code	W1		W2		T1		T2		Length	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[m]	[ft]
YBR-6.4-25BC	6.4	0.25	7.2	0.28	0.48	0.02	1.25	0.05	25	82.02
YBR-9.5-25BC	9.5	0.37	10.3	0.41	0.48	0.02	1.25	0.05	25	82.02
YBR-12.7-25BC	12.7	0.5	13.5	0.53	0.48	0.02	1.25	0.05	25	82.02
YBR-15.9-25BC	15.9	0.63	16.7	0.66	0.48	0.02	1.25	0.05	25	82.02
YBR-19.1-25BC	19.1	0.75	18.9	0.74	0.48	0.02	1.25	0.05	25	82.02

Tooling



CT8
For use with 6.4mm to 19.1mm cable ties. See page 125.

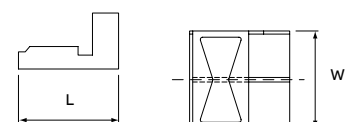
Dimensions



Bands on reel with separate heads - Separate heads, uncoated

Product code	Length L		Width W		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	
YBRH-6.4	9.3	0.37	15.9	0.63	100
YBRH-9.5	12.0	0.72	15.9	0.63	100
YBRH-12.7	16.5	0.45	22.3	0.88	100
YBRH-15.9	19.4	0.76	22.3	0.88	100
YBRH-19.1	21.7	0.85	22.3	0.88	100

Dimensions



Ty-Met™ Stainless steel cable ties

Mounting bases

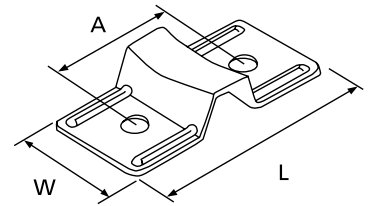
Characteristics

- Mounting bases in corrosion resistant 316 grade stainless steel
- Uncoated, for high temperature applications (-80°C to +300°C/-112°F to 572°F)

Mounting bases

Product code	Length L		Width W		Dimension A		Mounting hole diameter		For stainless steel ties width up to		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TCS25	57.1	2.25	25.4	1	31.8	1.25	6.7 (x2)	0.26 (x2)	8.7	0.34	50

Dimensions



Ty-Met™ Stainless steel cable ties

Selection chart & specifications

Selection chart & specifications

Type	Material	Coating	Series	Shape	Range				Packaging	Quantity	
					Width		Length				
					[mm]	[in]	[mm]	[in]			
Ball-lock type	304 Grade stainless steel	Uncoated	YLS-4.6-...A		4.6	0.18	125 - 1400	4.92 - 55.12	Bag	100 ties per bag	
			YLS-7.9-...A		7.9	0.31	125 - 1400	4.92 - 55.12	Bag	100 ties per bag	
	316 Grade stainless steel	Uncoated	YLS-4.6-...B		4.6	0.18	125 - 1400	4.92 - 55.12	Bag	100 ties per bag	
			YLS-7.9-...B		7.9	0.31	125 - 1400	4.92 - 55.12	Bag	100 ties per bag	
		Polyester	YLS-4.6-...BC		4.6	0.18	125 - 1400	4.92 - 55.12	Bag	100 ties per bag	
			YLS-7.9-...BC		7.9	0.31	125 - 1400	4.92 - 55.12	Bag	100 ties per bag	
	Ball-lock type, heavy-duty	316 Grade stainless steel	Uncoated	YLS-12-...B		12.0	0.47	200 - 1400	7.87 - 55.12	Bag	50 / 25 ties per bag
				YLS-16-...B		16.0	0.63	200 - 1400	7.87 - 55.12	Bag	50 / 25 ties per bag
Polyester			YLS-12-...BC		12.0	0.47	200 - 1400	7.87 - 55.12	Bag	50 / 25 ties per bag	
			YLS-16-...BC		16.0	0.63	200 - 1400	7.87 - 55.12	Bag	50 / 25 ties per bag	
Ladder type	316 Grade stainless steel	Uncoated	YLD-7-...-B		7.0	0.28	150 - 610	5.91 - 24.02	Bag	100 ties per bag	
			YLD-12-...-B		12.0	0.47	150 - 610	5.91 - 24.02	Bag	100 ties per bag	
		Polyester	YLD-7-...-BC		7.0	0.28	150 - 610	5.91 - 24.02	Bag	100 ties per bag	
			YLD-12-...-BC		12.0	0.47	150 - 610	5.91 - 24.02	Bag	100 ties per bag	
Strap type	316 Grade stainless steel	Uncoated	TYS8 to TYS28	Preassembled strap	7.9	0.31	271 - 728	10.67 - 28.66	Bag	50 ties per bag	
			TYS1000	Strap	7.9	0.31	152.4 m	500ft	Reel (1)	304.8m (2x152.4m) 1000ft (2x500ft)	
		TYS5200H	Heads	7.9	0.31			Bag	50 pieces per bag		
Releasable type	316 Grade stainless steel	Polyester	YRL-5-...-BC		5.0	0.20	150 - 650	5.91 - 25.59	Bag	100 ties per bag	
			YRL-10-...-BC		10.0	0.39	150 - 900	5.91 - 35.43	Bag	100 ties per bag	
Identification system	316 Grade stainless steel	Uncoated	YID-CHAR-...	Characters all letters & digits + 6 symbols					Bag	100 pieces per bag	
			YID-STRIP-...	Strips			93 - 188	3.66 - 7.40	Bag	100 pieces per bag	
Bands on reel & separate heads	316 Grade stainless steel	Polypropylene	YBR-...-BC	Bands	6.4 - 9.5 - 12.7 - 15.9 - 19.1	0.25 - 0.37 - 0.5 - 0.63 - 0.75			Reel (1)	25 metres per reel	
		Uncoated	YBRH-...	Heads	6.4 - 9.5 - 12.7 -	0.25 - 0.37 - 0.5			Bag	100 pieces per bag	

Reel (1): Reel in cardboard box

Polyamide 6.6 Twist Tail® cable tie

All plastic cable tie – no tool needed



Characteristics

- New all-plastic cable tie, with unique patent design
- Quick and easy to install, no tools required
- Strong, made of Polyamide 6.6, with 130N minimum tensile strength
- Safe, tail breaks off neat and clean, with no sharp edges
- General purpose applications, indoor and outdoor
- Available in 3 different lengths and 2 colors (white and UV-resistant black)

Technical information

- Material: Polyamide 6.6
- Min. Installation Temp.: 0°C (32°F)
- Max. Installation Temp.: +85°C (185°F)
- Color: White or UV-resistant black
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

All plastic cable tie – no tool needed

Product code	Color	Bundle diameter		Length		Width		Thickness		Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TT-7-30-9-L-EU	white	45	1.77	181	7.13	4.7	0.19	1.4	0.06	50
TT-7-30-0-L-EU	black	45	1.77	181	7.13	4.7	0.19	1.4	0.06	50
TT-11-30-9-L-EU	white	76	0.30	282	11.10	4.7	0.19	1.4	0.06	50
TT-11-30-0-L-EU	black	76	0.30	282	11.10	4.7	0.19	1.4	0.06	50
TT-14-30-9-L-EU	white	102	4.02	358	14.09	4.7	0.19	1.4	0.06	50
TT-14-30-0-L-EU	black	102	4.02	358	14.09	4.7	0.19	1.4	0.06	50

Special ties with steel locking barb

Integrated mounting hole cable ties



Characteristics

- Can be directly mounted onto a support with screws, bolts or rivets
- Mounting and bundling in one maintenance-friendly assembly
- Typical application: cable harness manufacture and pre- and end- mounting of bundles and parts. Maintenance friendly mounting of cables, tubes and parts in all types and sizes of machines and installations - indoor and outdoor

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free

Integrated mounting hole cable ties

Product code	Color	Bundle ø from ... to		Diameter of mounting hole		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY533M / TY33M	natural	2 - 16	0.07 - 0.63	3.0	0.12	102	4.02	2.3	0.09	0.9	0.04	80	100 / 1000
TY533MX / TY33MX	UV-resistant black	2 - 16	0.07 - 0.63	3.0	0.12	102	4.02	2.3	0.09	0.9	0.04	80	100 / 1000
TY534M / TY34M	natural	2 - 29	0.07 - 1.14	4.4	0.17	151	5.94	3.5	0.14	1.0	0.04	180	100 / 1000
TY534MX / TY34MX	UV-resistant black	2 - 29	0.07 - 1.14	4.4	0.17	151	5.94	3.5	0.14	1.0	0.04	180	100 / 1000
TY635M	natural	3.5 - 45	0.14 - 1.77	4.0	0.16	198	7.80	4.7	0.19	1.1	0.04	220	1000
TY635MX	UV-resistant black	3.5 - 45	0.14 - 1.77	4.0	0.16	198	7.80	4.7	0.19	1.1	0.04	220	1000
TY535M / TY35M	natural	3.5 - 45	0.14 - 1.77	5.1	0.20	199	7.83	4.7	0.19	1.1	0.04	220	100 / 1000
TY535MX / TY35MX	UV-resistant black	3.5 - 45	0.14 - 1.77	5.1	0.20	199	7.83	4.7	0.19	1.1	0.04	220	100 / 1000
TY1435M	natural	3.5 - 45	0.14 - 1.77	6.7	0.26	198	7.80	4.7	0.19	1.1	0.04	220	1000
TY537M / TY37M	natural	6 - 90	0.24 - 3.54	6.7	0.26	356	14.02	7.7	0.30	2.0	0.08	540	50 / 500
TY537MX / TY37MX	UV-resistant black	6 - 90	0.24 - 3.54	6.7	0.26	356	14.02	7.7	0.30	2.0	0.08	540	50 / 500
TYF535M / TYF35M	natural	3.5 - 45	0.14 - 1.77	4.0	0.16	186	7.32	4.7	0.19	1.2	0.05	220	100 / 1000

VG approved. VG95387 part 4, type B

Some approvals may not be applicable to all product codes. Contact your Sales Office for approvals limitations

Description of product code structure: see page 12. Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 2.3mm to 4.7mm (80N to 220N) Cable ties. See page 124.



ERG120

For use with 4.7mm to 7.7mm (220N to 540N) Cable ties. See page 124.

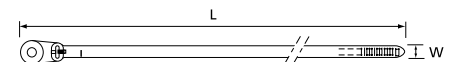


L-500-EU

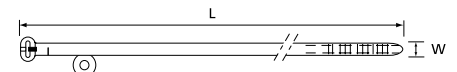
For use with 7.7mm (540N) Cable ties. See page 124.

Dimensions

TY...M, TY...MX



TYF35M, TYF535M



Special ties with steel locking barb

Panel mounting cable ties



Characteristics

- Fastening and clip-mounting in one
- Fast pre- or on-site-assembly for a range of panel thickness up to 4.0mm
- Fast and secure clip-mounting

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free

Panel mounting cable ties

Product code	Color	Bundle ø from ... to		Diameter of mounting hole		Length L		Width W		Thickness		Min. tensile strength [N]	Suitable for board/wall thickness from ... to		Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		[mm]	[in]	
Anchor type															
TY54SM	natural	2 - 32	0.08 - 1.26	4.5 - 5.2	0.18 - 0.20	150	5.91	3.5	0.14	1.0	0.04	130	0.1 - 2.5	0.004 - 0.10	1000
TY54SMX	UV-resistant black	2 - 32	0.08 - 1.26	4.5 - 5.2	0.18 - 0.20	150	5.91	3.5	0.14	1.0	0.04	130	0.1 - 2.5	0.004 - 0.10	1000
TY38M	natural	3.5 - 44	0.14 - 1.73	6.4 - 6.7	0.25 - 0.26	200	7.87	4.7	0.19	1.3	0.05	220	1.0 - 4.0	0.04 - 0.16	1000
TY38MX	UV-resistant black	3.5 - 44	0.14 - 1.73	6.4 - 6.7	0.25 - 0.26	200	7.87	4.7	0.19	1.3	0.05	220	1.0 - 4.0	0.04 - 0.16	1000
Standard type															
696-41836	natural	3.5 - 45	0.14 - 1.77	5.8 - 7.5	0.23 - 0.30	197	7.76	4.8	0.19	1.1	0.04	220	2.2 - 3.7	0.09 - 1.15	1000

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 3.5mm to 4.8mm (130N to 220N) Cable ties. See page 124.

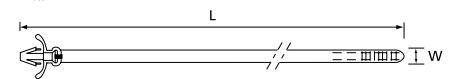


ERG120

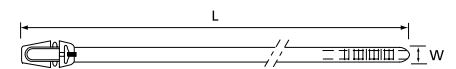
For use with 4.7mm to 4.8mm (220N) Cable ties. See page 124.

Dimensions

TY...



696-...



Special ties with steel locking barb

Blind mounting cable ties



Characteristics

- Suitable for hard-to-reach areas
- Fast hidden mounting on walls and vehicle chassis
- Twist off the locking head
- Pull the tie end through the fastening hole
- Place locking head on tie end
- Pull tight and cut off excess
- In the locked state, the locking head neatly covers the mounting hole

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free

Blind mounting cable ties



Product code	Color	Bundle ø from ... to		Diameter of mounting hole		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYG534M / TYG34M	natural	2 - 32	0.08 - 1.26	6.4 - 7.0	0.25 - 0.28	160	6.30	3.6	0.14	1.1	0.04	180	100 / 1000
TYG534MX / TYG34MX	UV-resistant black	2 - 32	0.08 - 1.26	6.4 - 7.0	0.25 - 0.28	160	6.30	3.6	0.14	1.1	0.04	180	100 / 1000

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

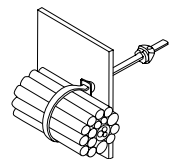
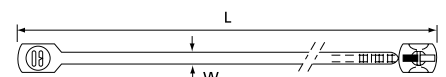
Tooling



ERG50

For use with 3.6mm
(180N) Cable ties.
See page 124.

Dimensions



Special ties

Blind mounting cable ties



Characteristics

- Suitable for hard-to-reach areas
- Fast hidden mounting on walls and vehicle chassis
- Ideal for mounting on vehicle chassis. Can still be released before final tensioning
- In the locked state, the locking head neatly covers the mounting hole

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: UV-resistant black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free, Silicone free

Blind mounting cable ties

Product code	Bundle ø from ... to		Diameter of mounting hole		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY541M / TY41M	5 - 60	0.20 - 2.36	8.1 - 17.3	0.32 - 0.68	244	9.61	5.7	0.22	1.7	0.07	300	50 / 500

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

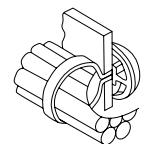
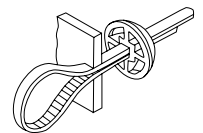
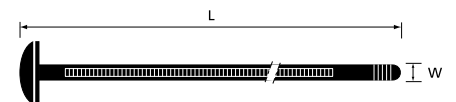
Tooling



ERG120

For use with 5.7mm (300N) Cable ties.
See page 124.

Dimensions



Special ties with steel locking barb

Integrated peg / nail cable ties



Characteristics

- TY545MX, with integrated nail for mounting onto wood or similar materials
- TY544MX, with integrated peg for mounting onto porous concrete or similar materials (masonry)
- Very simple application

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: UV-resistant black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free, Silicone free

Integrated peg / nail cable ties

Product code	Bundle \varnothing from ... to		Diameter of mounting hole		Length L		Width W		Thickness		Min. tensile strength [N]	Mounting hole depth (min)		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		[mm]	[in]	
TY544MX	3.5 - 45	0.14 - 1.77	6.4	0.25	200	7.87	4.6	0.18	1.0	0.04	220	25	0.98	50
TY545MX	4.7 - 38.1	0.19 - 1.5	-	-	200	7.87	4.7	0.19	1.0	0.04	220	-	-	50

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 4.6mm to 4.7mm (220N) Cable ties. See page 124.

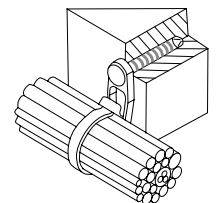
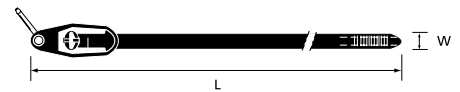
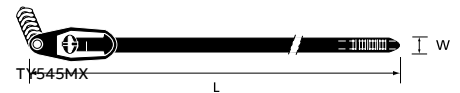


ERG120

For use with 4.7mm to 7.7mm (220N to 540N) Cable ties. See page 124.

Dimensions

TY544MX



Special ties

Releasable cable ties



Characteristics

- For temporary but strong bundling, especially during control box wiring
- Very simple application
- Available in 2 lengths for different applications
- May be re-used many times
- No tooling necessary

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

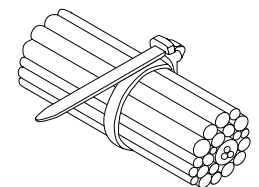
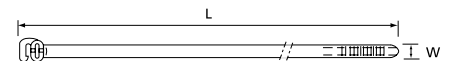
Releasable cable ties

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TYR505	10 - 44	0.39 - 1.73	190	7.48	4.7	0.19	1.19	0.05	220	100
TYR508	10 - 102	0.39 - 4.02	364	14.33	4.7	0.19	1.19	0.05	220	100

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

Dimensions



Pull end of tie through head.
Turn tie end back on itself
and insert into side of clip.
To open, release tie end
from clip and open tie.

Special ties

Releasable lashing ties with incorporated fastener



Characteristics

- For temporary but strong bundling, especially during control box wiring
- Very simple application
- Available in 2 lengths for different applications
- May be re-used many times
- No tooling necessary

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: UV-resistant black
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

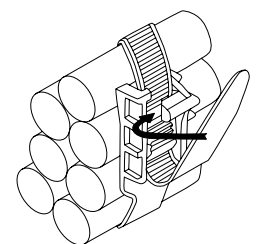
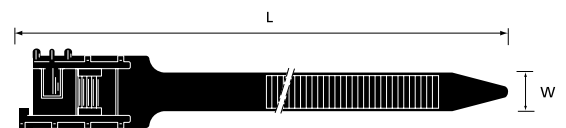
Releasable lashing ties with incorporated fastener

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY5409 / TY409	45 - 121	1.77 - 4.76	483	19.02	12.7	0.5	2.0	0.08	890	25 / 100

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

Dimensions



Introduce the cable tie tail into the lower slot in the head. Tighten the tie and pull it back. Slide in the tie under the catch from the side until it snaps into position.

Special ties

Releasable 2-piece lashing ties, pre-assembled version



Characteristics

- Heavy-duty lashing ties, in cut lengths with pre-assembled heads
- Also available on reel with separate heads (see page 34)
- UV-resistant Polypropylene, ideal for applications where chemical resistance is important (heads in weatherable rigid Polyamide 6.6)
- Extremely robust (670N)
- Easily releasable & reusable
- 2 types of head: type A: no mounting hole, type B: with mounting hole
- Typical applications: Indoor and outdoor fastening of cables, pipes and other parts in industry, shipbuilding, chemical industry etc

Technical information

- Material - Tie: Weatherable Polypropylene
- Material - Head: Polyamide 6.6
- Temperature range:
Head: -40°C to +85°C (-40°F to 185°F)
Tie: -55°C to +110°C (-67°F to 230°F)
- Color: UV-resistant black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free

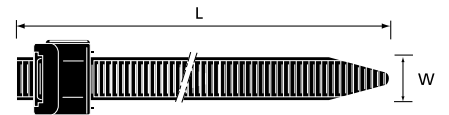
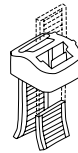
Releasable 2-piece lashing ties, pre-assembled version

Product code	Bundle ø from ... to		Diameter of mounting hole		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TY53418PX	45 - 127	1.77 - 5	6.9	0.27	457	17.99	13.2	0.52	1.9	0.07	670	25
TY5418PX	45 - 127	1.77 - 5	-	-	457	17.99	13.2	0.52	1.8	0.07	670	25
TY5424PX	10 - 178	0.39 - 7.01	-	-	610	24.02	13.2	0.52	1.8	0.07	670	25
TY5442PX	10 - 305	0.39 - 12.01	-	-	1067	42.01	13.2	0.52	1.8	0.07	670	10
TY5460PX	10 - 457	0.39 - 17.99	-	-	1524	60	13.2	0.52	1.8	0.07	670	10

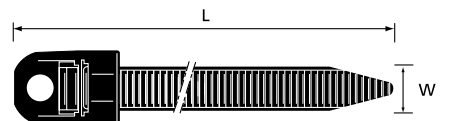
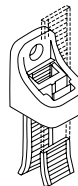
Description of product code structure: see page 12
Description of materials and properties: see pages 134 to 147

Dimensions

TY54XXPX



TY53418PX



Special ties

Releasable 2-piece lashing ties on reel with separate heads



Characteristics

- Heavy-duty lashing ties on reel with separate heads
- Also available in cut lengths with pre-assembled heads (see page 33)
- UV-resistant Polypropylene, ideal for applications where chemical resistance is important (heads in weatherable rigid Polyamide 6.6)
- Extremely robust (670N)
- Easily releasable and reusable
- 2 types of head: type A: no mounting hole, type B: with mounting hole
- Typical applications: Indoor and outdoor fastening of cables, pipes and other parts in industry, shipbuilding, chemical industry etc.
- Product code 696-41563: lashing tie on reel (300m/984.25ft), in weatherable Polypropylene

- Product code 696-41562: separate head, type A (no mounting hole), weatherable Polyamide 6.6 (200 pieces)
- Product code 696-41614: separate head, type B (with mounting hole), weatherable Polyamide 6.6 (200 pieces) Mounting hole: Ø 6.9mm (0.27")
- Product code TY4100PX: kit containing 30m (98.43ft) of lashing tie on reel + 50 separate heads, type A

Technical information

- Material - Tie: Weatherable Polypropylene
- Material - Head: Polyamide 6.6
- Temperature range:
Head: -40°C to +85°C (-40°F to 185°F)
Tie: -55°C to +110°C (-67°F to 230°F)
- Color: UV-resistant black
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free

Releasable 2-piece lashing ties on reel with separate heads

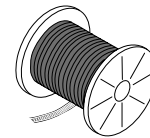
Product code	Lashing tie, dimensions						Separate locking heads		Min. tensile strength of assembly [N]
	Length		Width		Thickness		Quantity [pieces]	Type	
	[mm]	[in]	[mm]	[in]	[mm]	[in]			
696-41563	300	11.81	13.2	0.52	1.8	0.07	-	-	670
696-41562	-	-	-	-	-	-	200	Type A, no mounting hole	670
696-41614	-	-	-	-	-	-	200	Type B, with mounting hole	670
TY4100PX	30	1.18	13.2	0.52	1.8	0.07	50	Type A, no mounting hole	670

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

Dimensions

696-41563



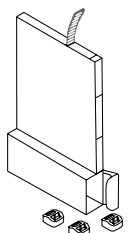
696-41562



696-41614



TY4100PX



696-41563



Special ties with steel locking barb

Cable ties with identification tag



Characteristics

- Identification ties with incorporated label for durable marking and tying
- Label forms onto the bundle for types TY512M, TY51M and protrudes for ties TY532M and TY53M
- Series 51M is MIL (MS-3368-5) approved
- Trouble-free installation
- All edges are rounded to make installation easier
- Available in bulk packaging (500/1000 pieces) or in small packaging (100 pieces)

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Cable ties with identification tag

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Label dimensions		Quantity [pieces]	MIL Spec.
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		[mm]	[in]		
TY551M / TY51M	10 - 16	0.40 - 0.63	92	3.62	2.4	0.09	1.0	0.04	80	25.4 x 7.9	1 x 0.31	100 / 500	●
TY5512M / TY512M	10 - 51	0.40 - 2.01	210	8.27	2.4	0.09	1.0	0.04	80	25.4 x 7.9	1 x 0.31	100 / 1000	-
TY553M / TY53M	2 - 16	0.08 - 0.63	102	4.02	2.4	0.09	1.0	0.04	80	20.6 x 9.3	0.81 x 0.36	100 / 500	-
TY5532M / TY532M	2 - 51	0.08 - 2.01	212	8.35	2.4	0.09	1.0	0.04	80	20.6 x 9.3	0.81 x 0.36	100 / 1000	-

For other materials and colors contact your Sales Office

Description of product code structure: see page 12

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling

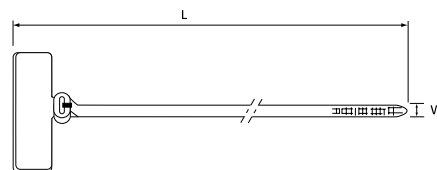


ERG50

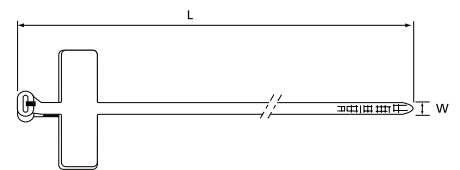
For use with 2.4mm (80N) Cable ties.
See page 124.

Dimensions

TY53M, TY553M, TY532M, TY5532M



TY51M, TY551M, TY512M, TY5512M



Special ties with steel locking barb

Cable ties with identification tag



Characteristics

- Identification ties with incorporated label for durable marking and tying
- Label forms onto the bundle
- 5 different versions, up to 4 straps, in bulk and small packaging
- 4 versions (up to 3 straps) are Mil-specified
- Trouble free installation
- Labelling of bundles up to 102mm (4.02") diameter
- All edges are rounded and surfaces smoothed to make installation easier

Technical information

- Material - Moulding: Polyamide 6.6
- Material - Locking barb: 316 grade stainless steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Approvals: MIL: MS-3368 -1, -2, -3, -4
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Cable ties with identification tag

Product code	Bundle ø from ... to		Length (L)		Width (W)		Thickness		Min. tensile strength [N]	Label dimensions		Quantity [pieces]	MIL spec.
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		[mm]	[in]		
TY548M / TY48M	19 - 102	0.75 - 4.02	360	14.17	4.8	0.19	1.1	0.04	220	13.1 x 57.2	0.52 x 2.25	100 / 1000	●
TY546M / TY46M	9.5 - 45	0.37 - 1.77	184	7.24	4.8	0.19	1.1	0.04	220	13.1 x 27.0	0.52 x 1.06	100 / 1000	●
TY546MD / TY46MD	9.5 - 45	0.37 - 1.77	184	7.24	4.8	0.19	1.1	0.04	220 x 2	29.7 x 27.0	1.17 x 1.06	50 / 500	●
TY546MT / TY46MT	9.5 - 45	0.37 - 1.77	184	7.24	4.8	0.19	1.1	0.04	220 x 3	46.0 x 27.0	1.81 x 1.06	100 / 500	●
TY546MF / TY46MF	9.5 - 45	0.37 - 1.77	184	7.24	4.8	0.19	1.1	0.04	220 x 4	63.1 x 27.0	2.48 x 1.06	50 / 250	-

For other materials and colors contact your Sales Office
 Description of product code structure: see page 12
 Description of materials and properties: see pages 134 to 147
 For tooling specifications: see pages 124 to 132

Tooling



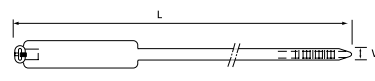
ERG50
 For use with 4.8mm (220N) Cable ties.
 See page 124.



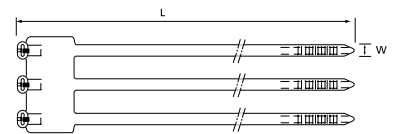
ERG120
 For use with 4.8mm (220N) Cable ties.
 See page 124.

Dimensions

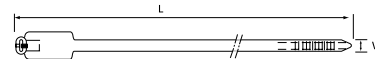
TY48M



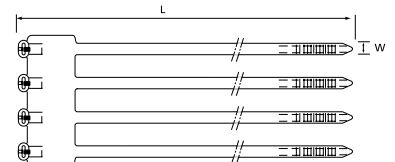
TY46MT



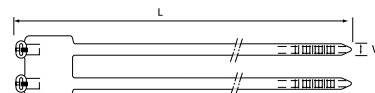
TY46M



TY46MF



TY46MD



Ty-Rap® high performance cable ties

Cable spacers



Characteristics

- Stackable height in 12.7mm (0.5") increments, for any desired spacing and all cable sizes - no need to stock multiple sizes of individual height spacers
- Designed to retain strap on each side and cradle the cable, providing restricted movement of spacer and preventing damage to cable
- Suitable for coaxial cables
- Can be used for parallel routing or for perpendicular cables

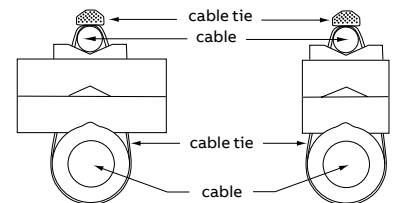
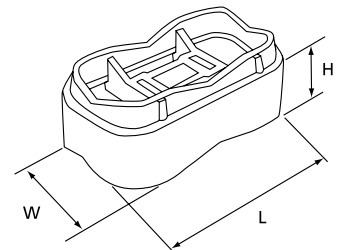
Technical information

- Material: Weather-resistant polypropylene
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Flammability rating: UL 94 HB
- Color: Black
- Other properties: UV-resistant, Halogen free

Cable spacers

Product code	Length L		Width W		Height		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TCP5255 / TCP360	53.3	2.10	30.5	1.20	12.7	0.5	25 / 100

Dimensions



Cable support system with metallic locking barb

Base and hanger



Characteristics

- To secure the cables to all types of surfaces

Technical information

- Material: Zinc plated steel
- Color: Metallic

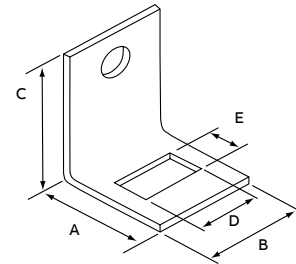
Base and hanger

Product code	Dimensions										Mounting hole diameter		Quantity [pieces]
	A		B		C		D		E		[mm]	[in]	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]			
CSS-B	48.4	1.91	14.3	0.56	7.1	0.28	15.1	0.59	5.6	0.22	6.7 (2x)	0.26 (x2)	50
CSS-H	22.5	0.89	22.2	0.87	29.8	1.17	13.6	0.54	8.3	0.33	6.9	0.27	50

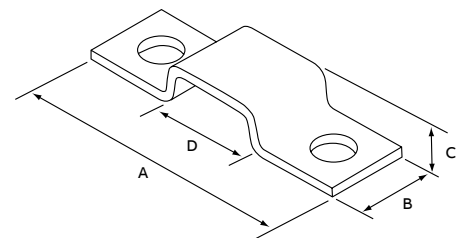
To be assembled with Deltec® strap on reel

Dimensions

CSS-H



CSS-B



All plastic cable ties

Ty-Fast[®], Col-Ty[™] and Ty-Grip[™]

ABB offers a complete range of all plastic cable ties to cover the most demanding applications.

Ty-Fast[®] all plastic ties

The all-plastic cable ties are available in lengths from 112mm to 1214mm (4.41" to 47.80") and widths from 2.4mm to 13.2mm (0.09" x 0.52"), offering a loop tensile strength up to 1120 N. Those cable ties will satisfy bundling requirements up to 381mm (15"). Those cable ties are halogen and silicone free Polyamide 6.6 and are available in 12 different colors.

Ty-Fast[®] cable ties meet shipbuilding classification such as Germanischer Lloyd/ DNV-GL, Lloyd's Register of Shipping, Bureau Veritas but also Mil Specification and QPL. Ty-Fast[®] cable ties have a CE declaration, supported by compliance to the low voltage directive and EN/IEC 62275 and UL 62275.

State-of-the-art robotic and raw material handling equipment assures product and material integrity throughout the manufacturing process. The integrally formed Polyamide pawl combines low insertion and high locking strength.

A rounded, low-profile head makes for less snags, tails have improved two-sided finger grip design that helps the operator grasp and pull ties snug. The Sure Grip tab keeps the tail from popping out while being threaded, then holds it securely for final tightening by hand or tool.

Heavy duty installation ties

Col-Ty[™] - the heavy installation tie - is mainly used for securing and bundling of cables in the utility and construction industries.

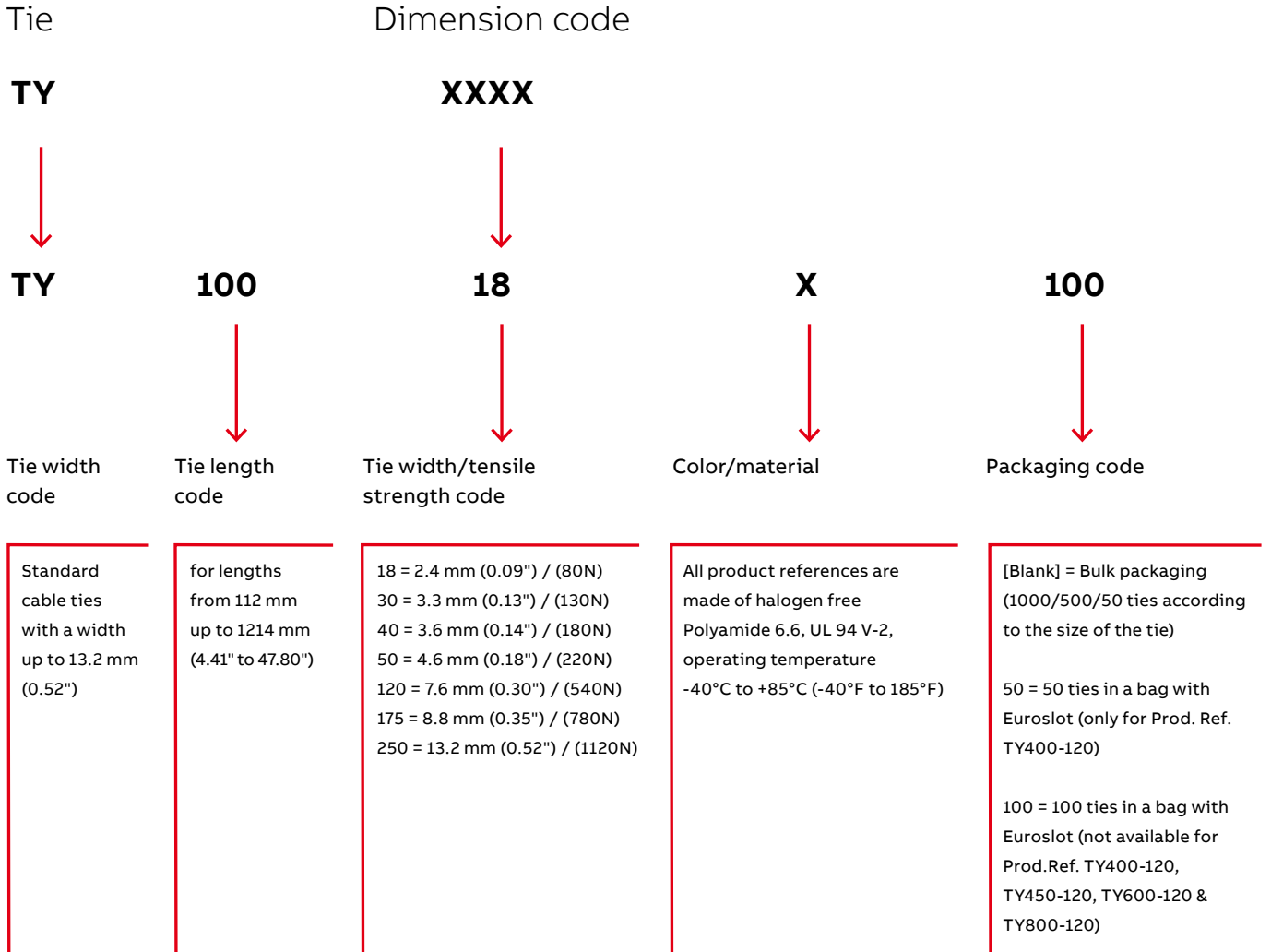
Col-Ty[™] is ideal for hazardous environments, low temperatures and humidity. Col-Ty[™] has a low profile double locking head with serration on the outer side of the tie, which eliminates the risk of damage to the cable.

Hook & loop fasteners

Ty-Grip[™] cable ties are very easy to release and re-use, making them ideal for applications where changes are anticipated or continuous access is required. There is no risk of over-tightening the cables, which makes the Ty-Grip[™] hook & loop fasteners ideal for specific applications in fiber optics, computer network wiring, telecom cables, etc.

All plastic cable ties

Ty-Rap® Product code structure



Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Ty-Rap® cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

All plastic cable ties

Standard cable ties – Jar



Characteristics

- Ty-Fast® cable ties packed in an attractive plastic jar
- Ideal product for the distribution market
- Different dimensions in the same packaging: 112mm x 2.4mm (4.41" x 0.09"), 141mm x 3.6mm (5.55" x 0.14") and 186mm x 4.7mm (7.32" x 0.19")
- Tensile strength from 80N to 220N
- Available in 3 different packaging configurations: 1 in natural cable ties and 2 in black cable ties
- Ideal product when small volumes are needed for various applications

Technical information

- Material: Polyamide 6.6
- Temperature range:
 - 40°C to +85°C (-40°F to 185°F) (natural)
 - 40°C to +105°C (-40°F to 221°F) (black)
- Min. Installation Temp.: -20°C (-4°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black)
Halogen free, Silicone free

Standard cable ties – Jar



Product code	Bundle ø from ... to		Quantity [pieces]	Color	Length L		Width W		Min. tensile strength [N]	Mil spec
	[mm]	[in]			[mm]	[in]	[mm]	[in]		
JTN-500	1.6 - 25	0.06 - 0.98	2 x 100	natural	112	4.41	2.4	0.09	80	-
	1.6 - 32	0.06 - 1.26	1 x 100	natural	141	5.55	3.6	0.14	180	●
	1.6 - 44	0.06 - 1.73	2 x 100	natural	186	7.32	4.6	0.18	220	●
JTB-500	1.6 - 25	0.06 - 0.98	2 x 100	UV-resistant black	112	4.41	2.4	0.09	80	-
	1.6 - 32	0.06 - 1.26	1 x 100	UV-resistant black	141	5.55	3.6	0.14	180	●
	1.6 - 44	0.06 - 1.73	2 x 100	UV-resistant black	186	7.32	4.6	0.18	220	●
JTB1-500	1.6 - 25	0.06 - 0.98	2 x 100	UV-resistant black	112	4.41	2.4	0.09	80	-
	1.6 - 32	0.06 - 1.26	2 x 100	UV-resistant black	141	5.55	3.6	0.14	180	●
	1.6 - 44	0.06 - 1.73	1 x 100	UV-resistant black	186	1.86	4.6	0.18	220	●

Some approvals may not be applicable to all product codes

Contact your Sales Office for approvals limitations

* Operation temperature: -30°C to +85°C (-22°F to 185°F)

Description of Product code structure: see page 63

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

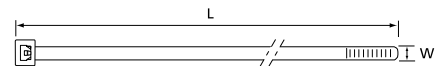
For use with 2.4mm to 4.6mm (80N to 220N) Cable ties. See page 124.



ERG120

For use with 4.6mm (220N) Cable ties. See page 124.

Dimensions



All plastic cable ties

Extra-long cable ties



Characteristics

- Extremely long ties (up to 1214mm/47.80")
- Robust construction (778N), for demanding applications where superior tensile strength is required
- The extra long Ty-Fast® ties are available in natural color for indoor applications and in UV-resistant black for outdoor applications

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free

Extra-long cable ties



Product code	Bundle ø from ... to		Color	Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]		[mm]	[in]	[mm]	[in]		
TY600-175X	7 - 187	0.28 - 7.36	UV-resistant black	631	24.84	9.0	0.35	778	50
TY600-175	7 - 187	0.28 - 7.36	Natural	631	24.84	9.0	0.35	778	50
TY900-175X	7 - 263	0.28 - 10.35	UV-resistant black	916	36.06	8.8	0.35	778	50
TY900-175	7 - 263	0.28 - 10.35	Natural	916	36.06	8.8	0.35	778	50
TY1000-175X	7 - 305	0.28 - 12	UV-resistant black	1041	40.98	8.8	0.35	778	50
TY1000-175	7 - 305	0.28 - 12	Natural	1041	40.98	8.8	0.35	778	50
TY1200-175	38 - 368	1.50 - 14.49	UV-resistant black	1233	48.54	8.6	0.34	778	50
TY1200-175	38 - 368	1.50 - 14.49	Natural	1233	48.54	8.6	0.34	778	50

Some approvals may not be applicable to all product codes

Contact your Sales Office for approvals limitations

Description of Product code structure: see page 63

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



WT3D

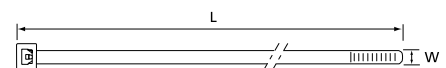
For use with 8.6mm to 9.0mm (778N) Cable ties. See page 124.



L-500-EU

For use with 8.6mm to 9.0mm (778N) Cable ties. See page 124.

Dimensions



All plastic cable ties

Heavy-duty cable ties



Characteristics

- Extremely robust ties (1120N), for demanding applications where extreme tensile strength is required
- Available in natural color for indoor applications and in UV-resistant black for outdoor applications

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free

Heavy-duty cable ties

Product code	Bundle ø from ... to		Color	Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]		[mm]	[in]	[mm]	[in]		
TYL300M	75	2.95	natural	300	11.81	13.2	0.52	1120	50
TYL300MX	75	2.95	UV-resistant black	300	11.81	13.2	0.52	1120	50
TYL546M	140	5.51	natural	546	21.50	13.2	0.52	1120	50
TYL546MX	140	5.51	UV-resistant black	546	21.50	13.2	0.52	1120	50

Description of Product code structure: see page 63

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

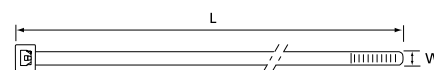
Tooling



L-500-EU

For use with 8.6mm to 9.0mm (778N) Cable ties. See page 124.

Dimensions



All plastic cable ties

UL 94 V-0 flame retardant cable ties



Characteristics

- Similar to our Ty-Rap® range of flame retardant ties, these all-plastic ties are made from low smoke flame retardant Polyamide 6.6 and meet the requirements of UL 94 V-0
- Ideal for use where low flammability and low smoke are necessary such as public transport / buildings, tunnels etc.

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Milky white
- Flammability rating: UL 94 V-0
- Other properties: Limited fire hazard (low smoke), Halogen free, Silicone free

UL 94 V-0 flame retardant cable ties

Product code	Bundle ø from ... to		Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TS1025HF	2 - 22	0.08 - 0.87	100	3.94	2.5	0.10	80	100
TS1435HF	2.5 - 33	0.10 - 1.30	140	5.51	3.6	0.14	180	100
TS2045HF	3 - 50	0.12 - 1.97	200	7.84	4.8	0.19	220	100
TS2845HF	5 - 70	0.20 - 2.76	280	11.02	4.8	0.19	220	100
TS3645HF	5 - 102	0.20 - 4.02	370	14.57	4.8	0.19	220	100
TS3675HF	5 - 102	0.20 - 4.02	370	14.57	7.6	0.30	540	100

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 2.5mm to 4.8mm (80N to 220N) Cable ties. See page 124.



ERG120

For use with 7.6mm (540N) Cable ties. See page 124.



L-500-EU

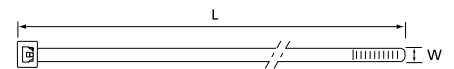
For use with 7.6mm (540N) Cable ties. See page 124.



WT3D

For use with 7.6mm (540N) Cable ties. See page 124.

Dimensions



Special all-plastic cable ties

Integrated mounting hole cable ties



Characteristics

- Cable tie can be directly mounted onto a support with screws, bolts or rivets
- Mounting and bundling in one maintenance-friendly assembly
- Cable harness manufacture and pre- and end-mounting of bundles and parts
- UV-resistant version, especially recommended for outdoor applications

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free



E49405

Integrated mounting hole cable ties

Product code	Bundle ø from ... to		Color	Length L		Width W		Fixing screw size	Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]		[mm]	[in]	[mm]	[in]			
L-5-30MH-0-C*	2 - 32	0.08 - 1.26	UV-resistant black	152	5.98	3.3	0.13	M4	130	100
L-5-30MH-9-C*	2 - 32	0.08 - 1.26	natural	152	5.98	3.3	0.13	M4	130	100
L-7-50MH-0-C	2 - 44	0.08 - 1.73	UV-resistant black	208	8.23	4.7	0.19	M5	220	100
L-7-50MH-9-C	2 - 44	0.08 - 1.73	natural	208	8.23	4.7	0.19	M5	220	100
L-11-50MH-0-C*	2 - 76	0.08 - 2.99	UV-resistant black	314	12.36	4.7	0.19	M5	220	100
L-11-50MH-9-C*	2 - 76	0.08 - 2.99	natural	314	12.36	4.7	0.19	M5	220	100
L-14-50MH-0-C	2 - 102	0.08 - 4.02	UV-resistant black	382	15.04	4.7	0.19	M5	220	100
L-14-50MH-9-C	2 - 102	0.08 - 4.02	natural	382	15.04	4.7	0.19	M5	220	100
L-14-120MH-0-C*	5 - 102	0.08 - 4.02	UV-resistant black	382	15.04	7.6	0.30	M6	540	100
L-14-120MH-9-C*	5 - 102	0.08 - 4.02	natural	382	15.04	7.6	0.30	M6	540	100

* Not UL listed
Description of materials and properties: see pages 134 to 147
For tooling specifications: see pages 124 to 132

Tooling



ERG50
For use with 3.3mm to 4.7mm (130N to 220N) Cable ties. See page 124.



ERG120
For use with 4.7mm to 7.6mm (220N to 540N) Cable ties. See page 124.

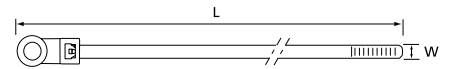


L-500-EU
For use with 7.6mm (540N) Cable ties. See page 124.



WT3D
For use with 7.6mm (540N) Cable ties. See page 124.

Dimensions



Special all-plastic cable ties

Releasable panel mounting cable ties



Characteristics

- Fastening and clip-mounting in one
- Fast pre- or on-site-assembly for a range of panel thickness up to 2.7mm (0.11")
- Fast and secure clip-mounting
- For use in 6.35mm (0.25") mounting hole
- Product codes containing xxx-PMR-xxx are releasable

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free



E49405

Releasable panel mounting cable ties

Product code	Bundle ø from ... to		Color	Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]		[mm]	[in]	[mm]	[in]		
Standard panel mounting ties									
L-5-50PM-0-C*	2 - 25	0.08 - 0.98	UV-resistant black	147	5.79	4.8	0.19	220	100
L-5-50PM-9-D*	2 - 25	0.08 - 0.98	natural	147	5.79	4.8	0.19	220	500
L-7-50PM-0-C	2 - 44	0.08 - 1.73	UV-resistant black	208	8.19	4.8	0.19	220	100
L-7-50PM-9-C	2 - 44	0.08 - 1.73	natural	208	8.19	4.8	0.19	220	100
Releasable panel mounting ties									
TB-4-50PMR-9-C-EU*	2 - 22	0.08 - 0.87	natural	110	4.33	4.8	0.19	220	100
L-5-50PMR-0-C*	2 - 25	0.08 - 0.98	UV-resistant black	147	5.79	4.8	0.19	220	100
L-5-50PMR-9-C*	2 - 25	0.08 - 0.98	natural	147	5.79	4.8	0.19	220	100
L-7-50PMR-9-C*	2 - 44	0.08 - 1.73	natural	208	8.19	4.8	0.19	220	100

* Not UL listed

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG50

For use with 4.8mm (220N) Cable ties.
See page 124.



ERG120

For use with 4.8mm (220N) Cable ties.
See page 124.



L-500-EU

For use with 4.8mm (220N) Cable ties.
See page 124.



WT3D

For use with 4.8mm (220N) Cable ties.
See page 124.



WT1-TB

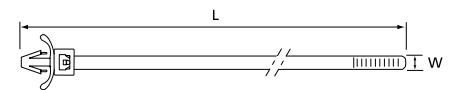
For use with 4.8mm (220N) Cable ties.
See page 124.



WT2-TB

For use with 4.8mm (220N) Cable ties.
See page 124.

Dimensions



Special all-plastic cable ties

Releasable cable ties



Characteristics

- Easy releasable and re-usable. UV-resistant version, especially recommended for outdoor applications

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free



E49405

Releasable cable ties

Product code	Bundle ø from ... to		Color	Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]		[mm]	[in]	[mm]	[in]		
L-5-50R-0-C*	3 - 32	0.12 - 1.26	UV-resistant black	150	5.91	7.5	0.30	220	100
L-8-50R-0-C*	3 - 51	0.12 - 2.01	UV-resistant black	198	7.80	7.5	0.30	220	100
L-8-50R-9-C*	3 - 51	0.12 - 2.01	natural	198	7.80	7.5	0.30	220	100
L-10-50R-0-C	3 - 76	0.12 - 2.99	UV-resistant black	298	11.73	7.5	0.30	220	100
L-10-50R-9-C	3 - 76	0.12 - 2.99	natural	298	11.73	7.5	0.30	220	100

* Not UL listed

Description of materials and properties: see pages 134 to 147

For tooling specifications: see pages 124 to 132

Tooling



ERG120

For use with 7.5mm (220N) Cable ties. See page 124.



L-500-EU

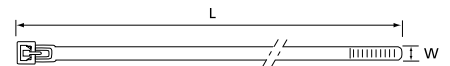
For use with 7.5mm (220N) Cable ties. See page 124.



WT3D

For use with 7.5mm (220N) Cable ties. See page 124.

Dimensions



Special all-plastic cable ties

Cable ties with identification tag



Characteristics

- Identification ties with incorporated label for durable marking and tying
- Simple marking on the roughened writing surface

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Cable ties with identification tag



Product code	Bundle ø max.		Length L		Width W		Label dimensions		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
L-4-18ID-9-C / L-4-18ID-9-M	19	0.75	102	4.02	2.5	0.10	7.9 x 24.7	0.31 x 0.92	80	100 / 1000
L-7-50ID-9-C / L-7-50ID-9-M	44	1.73	200	7.87	4.7	0.19	30 x 13.3	1.18 x 0.52	220	100 / 1000

Description of materials and properties: see pages 134 to 147
For tooling specifications: see pages 124 to 132

Tooling



ERG50
For use with 2.5mm to 4.7mm (80N to 220N) Cable ties. See page 124.

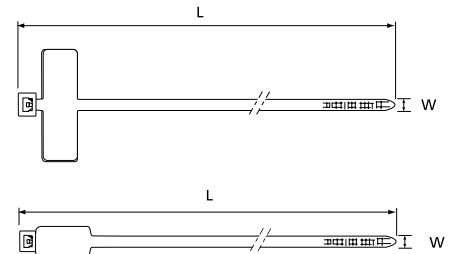


ERG120
For use with 4.7mm (220N) Cable ties. See page 124.



L-500-EU
For use with 4.7mm (220N) Cable ties. See page 124.

Dimensions



Special all-plastic cable ties

Special double-headed ties



Characteristics

- The double-headed ties allow the parallel routing of two bundles of cable with one single tie
- Available in 3 different lengths

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Special double-headed ties

Product code	Bundle diameter				Length L		Width W		Min. tensile strength [N]	Quantity [pieces]
	Loop 1 from ... to		Loop 2 from ... to							
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TB-50RLDH	2.5 - 47	0.10 - 1.86	2.0 - 45	0.08 - 1.77	200	7.87	4.8	0.19	220	1000
TB-12-50RLDH	2.5 - 72	0.10 - 2.83	2.0 - 70	0.08 - 2.76	300	11.81	4.8	0.19	220	1000
TB-15-50RLDH	2.5 - 100	0.10 - 3.94	2.0 - 97	0.08 - 3.82	370	14.57	4.8	0.19	220	1000

Description of materials and properties: see pages 134 to 147
For tooling specifications: see pages 124 to 132

Tooling



ERG50
For use with 4.8mm (220N) Cable ties.
See page 124.

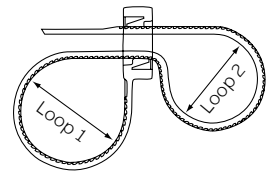
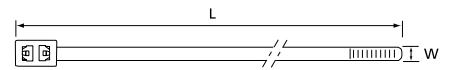


ERG120
For use with 4.8mm (220N) Cable ties.
See page 124.



L-500-EU
For use with 4.8mm (220N) Cable ties.
See page 124.

Dimensions



Special cable ties

Ty-Grip™ hook & loop fasteners



FO series loop ties are ideal for wrapping pre-determined bundle diameters thanks to the convenient slotted head.



FOL series buckle ties provide added strength and stability thanks to the high performance polyamide buckle.

Characteristics

These handy ties are very easy to release and re-use, making them ideal for applications where changes are anticipated or continuous access is required.

- Quick bundling and re-adjustable tension
- No risk of over-tightening the cables, which makes the Ty-Grip™ Hook & Loop fasteners ideal for specific applications in fibre optics, computer network wiring, telecom cables, etc.
- Multiple colors available for identifying specific bundles
- Different sizes available to accommodate varying bundle diameters
- Screw-mount and self-adhesive mounting bases provide multiple mounting options

Technical information FO Series

- Material hook side: Polyamide
- Material loop side: Low density Polyethylene
- Temperature range: -20°C to +104°C (-4°F to 219.2°F)
- Color: Standard color: black
- Flammability rating: UL 94 HB*
- Peel-off strength: 0.8N/cm

Technical information FOL Series

- Material hook side: Polyamide
- Temperature range: -20°C to +93°C (-4°F to 199.4°F)
- Color: Standard color: black - see note after table
- Flammability rating: UL 94 HB
- Peel-off strength: 0.8N/cm

Ty-Grip™ hook & loop fasteners

Product code	Maximum bundle diameter		Length L		Width W		Tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]		
FO Series loop ties								
FO200-40-0	50.8	2	228.6	9	12.7	0.5	180	10
FO200-50-0	50.8	2	228.6	9	19.1	0.75	220	10
FO350-40-0	88.9	3.5	330.2	13	12.7	0.5	180	10
FO350-50-0	88.9	3.5	330.2	13	19.1	0.75	220	10
FO350-50-0-FR*	88.9	3.5	330.2	13	19.1	0.75	220	10
FOL Series buckle ties								
FOL300-50-0	76.2	3	304.8	12	19.1	0.75	220	10
FOL500-50-0	127.0	5	457.2	10.13	19.1	0.75	220	10

Replace "-0" in the product code by the corresponding color code

* Suffix FR is Flame Retardant version

Special cable ties

Ty-Grip™ hook & loop fasteners



FOS series strip ties are pre-cut which makes bundling easy.



FOR series rolled hook and loop allows customers to conveniently cut pieces to desired lengths, eliminating waste.

Characteristics

These handy ties are very easy to release and re-use, making them ideal for applications where changes are anticipated or continuous access is required.

- Quick bundling and re-adjustable tension
- No risk of over-tightening the cables, which makes the Ty-Grip™ Hook & Loop fasteners ideal for specific applications in fibre optics, computer network wiring, telecom cables, etc.
- Multiple colors available for identifying specific bundles
- Different sizes available to accommodate varying bundle diameters
- Screw-mount and self-adhesive mounting bases provide multiple mounting options

Technical information FOS and FOR Series

- Material hook side: Polyamide
- Material loop side: Low density Polyethylene
- Temperature range: -20°C to +104°C (-4°F to 219.2°F)
- Color: Standard color: black*
- Flammability rating: UL 94 HB
- Peel-off strength: 0.8N/cm

Ty-Grip™ hook & loop fasteners

Product code	Maximum bundle diameter		Length L		Width W		Tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]		
FOS Series strip ties								
FOS150-50-0	38.1	1.5	152.4	6	19.1	0.75	220	10
FOS320-50-0	81.3	3.20	304.8	12	19.1	0.75	220	10
FOS500-50-0	127.0	5	457.2	18	19.1	0.75	220	10
FOR Series rolled strip								
FOR180-50-0		Various	4572.0	180	19.1	0.75	220	1
FOR180-50-0-FR**		Various	4572.0	180	19.1	0.75	220	1

* Standard color: black

Replace "-0" in the product code by the corresponding color code (see table below)

** FOR180-50-0-FR is made of flame retardant material

Contact your Sales Office for Product Availability in the other colors

Col-Ty™ Heavy-duty double headed installation ties

Heavy-duty installation ties



Characteristics

- For securing and bundling of cables in the utility and construction industries
- Low profile double locking head*
- Serrations on the outer side of the tie eliminates the risk of damage to the cable
- Ideal for hazardous environments, low temperatures and humidity

Technical information

- Material: Polyester
- Temperature range: -40°C to +80°C (-40°F to 176°F)
- Color: Black
- Flammability rating: UL 94 HB
- Other properties: UV-resistant

Heavy-duty installation ties

Product code	Bundle ø from ... to		Length L		Width W		Thickness		Min. tensile strength [N]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
CTP-9-180-0-C*	10 - 42	0.39 - 1.65	180	7.07	9	0.35	1.8	0.70	320	100
CTP-9-260-0-C	15 - 62	0.59 - 2.44	260	10.24	9	0.35	2.0	0.79	500	100
CTP-9-360-0-C	25 - 92	0.98 - 3.62	360	10.24	9	0.35	2.0	0.79	500	100
CTP-9-500-0-C	74 - 140	2.91 - 5.51	510	20.08	9	0.35	2.4	0.09	600	100
CTP-9-750-0-C	74 - 220	2.91 - 8.66	760	29.92	9	0.35	2.4	0.09	600	100

* Product code CTP-9-180-0-C has a single locking head
Description of materials and properties: see pages 134 to 147
For tooling specifications: see pages 124 to 132

Tooling



L-300-FR
For use with 9mm
(320N - 600N) Cable
ties. See page 124.



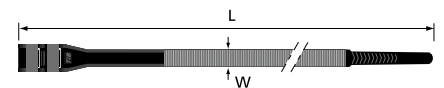
L-500-EU
For use with 9mm
(320N - 600N) Cable
ties. See page 124.



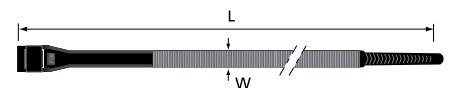
WT3D
For use with 9mm
(320N - 600N) Cable
ties. See page 124.

Dimensions

Double locking head



Single locking head



Col-Ty™ Accessories

Heavy-duty installation ties



Characteristics

- Use 5mm (0.20") screw
- Cradle for ties up to 9mm (0.35") wide

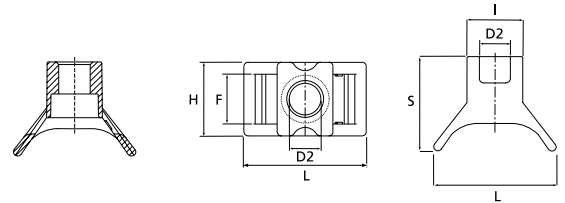
Technical information

- Material: Polyamide 11/12
- Temperature range: -40°C to +80°C (-40°F to 176°F)
- Color: Black
- Flammability rating: UL 94 HB
- Other properties: UV-resistant

Heavy-duty installation ties

Product code	Dimensions												Quantity [pieces]
	L		I		S		H		F		d2		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
CT-3401	22.9	0.90	10.5	0.41	17.6	0.69	13.8	0.54	9.4	0.37	5.9	0.23	100

Dimensions



Col-Ty™ Accessories

Heavy-duty installation ties



Characteristics

- Wall plug suitable for \varnothing 8mm (0.31") hole
- Simply drill hole and hammer the plug in

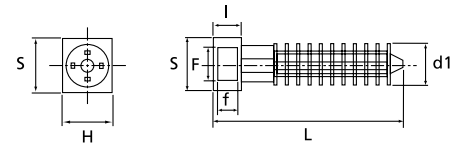
Technical information

- Material: Polyamide 11/12
- Temperature range: -40°C to +80°C (-40°F to 176°F)
- Color: Black
- Flammability rating: UL 94 HB
- Other properties: UV-resistant

Heavy-duty installation ties

Product code	Dimensions														Quantity [pieces]
	L		Ød1		S		H		I		F		f		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
CT-5359	43.1	1.70	9.6	0.38	13.2	0.52	16	0.63	6.3	0.25	9.5	0.37	2.4	0.09	100

Dimensions



Ty-Rap® and Ty-Fast® Accessories

To complement the range of premium cable ties, ABB has also developed an extensive range of mounting bases, cable clamps and other fastening accessories, to provide a professional solution to the most demanding applications in cable management.

A wide range of material is offered, from the classic Polyamide 6.6 to the high performance Fluoropolymer ETFE for applications in tough conditions.

To better suit each kind of applications, these products exist in a wide choice of shape & design, and with different mounting methods, from self-adhesive to glue and / or screw mounting.

In particular, with the new high performance mounting bases (TC345 series), ABB is now offering a mounting base that leads the industry with more features and better performance:

- new design & materials, for increased performance
- special adhesive formulation, specifically for Nylon Mounting bases

Typical applications include wiring in:

- control boxes & machine control devices
- office equipment & home appliances
- military & medical equipment
- lighting & electronic equipment



Mounting bases & accessories

Overview

- 01 Mounting bases
- 02 Cable clamps and accessories

Characteristics

Self-adhesive mounting bases and clamps for screw and rivet mounting

The main difference between a mounting base and a cable clamp is the way the cable bundle can be mounted: while the cable bundle is attached directly to the clamp, the mounting base requires a cable tie to hold the bundle.

ABB offers a wide range of mounting bases and cable clamps, which can be self-adhesive or for screw and rivet mounting.

- Standard material: Polyamide 6.6
- Available in different types / material to suit any application
- Available in a wide range of sizes
- Temperature range:
 - 40°C to 85°C (-40°F to 185°F)
 - (105°C (221°F) for short periods)
- Low profile design
- Easy to install
- Extremely strong and durable adhesive
- When applicable ABB accessories are UL recognised
- Self-adhesive mounting bases allow wire and cable mounting where mounting holes can not be drilled
- Used for the adhesion on a variety of materials and for durable fixing of stamped signs and panels for the electrical industry

Typical surfaces

- Plastic
- Glass
- Wood
- Metal
- Paper
- Painted surfaces
- Ceramics

01

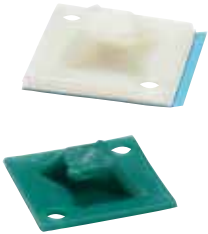


02



Mounting bases

2-way entry



Characteristics

- Can be used in 2-way entry style for cable ties having a width up to 7.6mm (0.30")
- For cable ties having a width up to 4.8mm (0.19"), the mounting bases can be used in 4-way entry style
- Choice of 3 materials: standard Polyamide 6.6 (natural), UV-resistant Polyamide 6.6 (black), Polyamide 6.6 flame retardant and ETFE Fluoropolymer (aquamarine)
- Supplied either on a rubber based (synthetic polymer) closed cell foam adhesive (installation: self-adhesive and/or screw) or without self-adhesive (installation: screw and/or 2-component glue*)

Technical information

TC347, TC347A, TC5347AR, TC347X and TC5347AX

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
(Self-adhesive version: 0°C to +65°C/32°F to -85°F)

- Flammability rating: UL 94 V-2
- Color: (see table)
- Other properties: UV-resistant (black), Halogen free, Silicone free

TC347FR (Flame retardant)

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Flammability rating: UL 94 V-0
- Color: Natural
- Other properties: Halogen free, Silicone free

TCZ347 (Fluoropolymer)

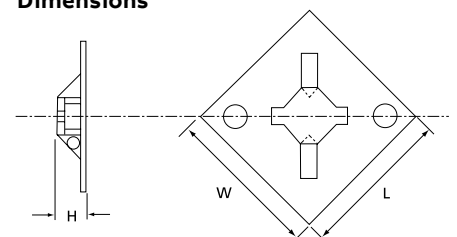
- Material: ETFE Fluoropolymer
- Temperature range: -46°C to +150°C (-50.8°F to 302°F)
- Flammability rating: UL 94 V-0
- Color: Aquamarine
- Other properties: Silicone free, inert to most solvents and chemicals, hydrolytically stable, radiation resistant

2-way entry

Product code	Color	Mounting method	L		W		Dimensions		For tie width up to		Mounting hole diameter		Quantity [pieces]
			[mm]	[in]	[mm]	[in]	H [mm]	[in]	[mm]	[in]	[mm]	[in]	
TC347	natural	screw/glue*	7.8	0.31	28.6	1.13	28.6	1.13	7.6	0.30	4.4 (2x)	0.17 (2x)	1000
TC347X	UV-resistant black	screw/glue*	7.8	0.31	28.6	1.13	28.6	1.13	7.6	0.30	4.4 (2x)	0.17 (2x)	1000
TC347FR	natural/flame retardant	screw/glue*	7.8	0.31	28.6	1.13	28.6	1.13	7.6	0.30	4.4 (2x)	0.17 (2x)	1000
TCZ347	aquamarine	screw/glue*	7.8	0.31	28.6	1.13	28.6	1.13	7.6	0.30	4.4 (2x)	0.17 (2x)	500
TC5347AR / TC347A	natural	self-adhesive/screw	8.5	0.34	29.0	1.14	29.0	1.14	7.6	0.30	4.4 (2x)	0.17 (2x)	100 / 1000
TC5347AX	UV-resistant black	self-adhesive/screw	8.5	0.34	29.0	1.14	29.0	1.14	7.6	0.30	4.4 (2x)	0.17 (2x)	100

* Glue = Product code TC2PA (see page 147 for specifications)

Dimensions



Mounting bases

4-way entry - high performance



Characteristics

- Design & materials, for increased performance
- Low profile shape (height: 5.1mm/0.20"), to save space and reduce the torque forces on the mounting base
- Ramped cable tie entries, for easier insertion of the cable tie
- Longer struts (up to the edges of the base), for better adhesion
- Special adhesive formulation (specifically for Nylon mounting bases) for high pull-off strength
- 2 kinds of self-adhesive material:
 - rubber-based, for immediate adhesion (15 minutes set-up time)
 - acrylic based, to have the possibility of repositioning the mounting base initially (set-up time: 24 to 72 hours)

- Two holes to have the possibility to use additional screws, for even stronger installations when required
- Supplied on two-up lining, for easy removal of the lining

Technical information

- Material - Moulding: Polyamide or UV-resistant Polyamide
- Material - Self-adhesive: Rubber based
- Temperature range: -60°C to +85°C (-76°F to 185°F)
Self-adhesive version: 0°C to +70°C (32°F to 158°F)
- Flammability rating: UL 94 V-2
- Colors: Natural or UV-resistant black (see table)
- Other properties: UV-resistant black, Halogen free, Silicone free



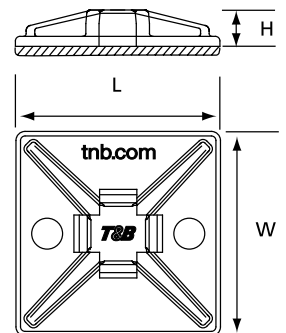
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4-way entry - high performance

Product code	Color	Mounting method	Dimensions						For tie width up to		Mounting hole diameter		Quantity [pieces]
			L		W		H		[mm]	[in]	[mm]	[in]	
			[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TC345	natural	glue*/screws	28.6	1.13	28.6	1.13	5.1	0.20	5.2	0.20	4.0	0.16	1000
TC5345A / TC345A	natural	self-adhesive (rubber based)/screws	28.6	1.13	28.6	1.13	5.1	0.20	5.2	0.20	4.0	0.16	100 / 1000
TC5345AX / TC345AX	UV-resistant black	self-adhesive (rubber based)/screws	28.6	1.13	28.6	1.13	5.1	0.20	5.2	0.20	4.0	0.16	100 / 1000

* Glue = Product code TC2PA (see page 147 for specifications)

Dimensions



Mounting bases

4-way entry



Characteristics

- Supplied either on a rubber based (synthetic polymer) closed cell foam adhesive or without self adhesive (installation: screw and/or 2 component glue*)
- Available in standard Polyamide 6.6 (natural) or UV-resistant Polyamide 6.6 (black)

Technical information

- Material: Polyamide 6.6
- Temperature range:
Glue version: -40°C to +85°C (-40°F to 185°F)
Self-adhesive version: 0°C to +70°C (32°F to 158°F)
- Flammability rating: UL 94 V-2
- Colors: Natural or UV-resistant black (see table)
- Other properties: UV-resistant black, Halogen free, Silicone free



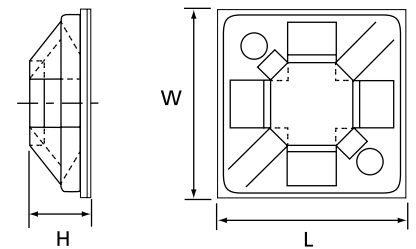
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4-way entry

Product code	Color	Mounting method	Dimensions						For tie width up to		Mounting hole diameter		Quantity [pieces]	
			L		W		H		[mm]	[in]	[mm]	[in]		
			[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
For tie width up to 3.0mm (0.12")														
TC050x050A-C / TC050x050A	natural	self-adhesive	12.7	0.5	12.7	0.5	4.5	0.18	3.0	0.12	-	-	100 / 1000	
TC050x050AX-C / TC050x050AX	UV-resistant black	self-adhesive	12.7	0.5	12.7	0.5	4.5	0.18	3.0	0.12	-	-	100 / 1000	
For tie width up to 3.6mm (0.14")														
TC5344 / TC344	natural	screw/glue*	19.1	0.75	19.1	0.75	4.9	0.19	3.6	0.14	3.0	0.12	100 / 1000	
TC5344AR / TC344A	natural	self-adhesive/screw	19.1	0.75	19.1	0.75	4.9	0.19	3.6	0.14	3.0	0.12	100 / 1000	
TC5344AX / TC344AX	UV-resistant black	self-adhesive/screw	19.1	0.75	19.1	0.75	4.9	0.19	3.6	0.14	3.0	0.12	100 / 1000	

* Glue = Product code TC2PA (see page 147 for specifications)

Dimensions



Mounting bases

4-way entry - for wide cable ties



Characteristics

- Supplied either on a rubber based (synthetic polymer) closed cell foam adhesive or without self adhesive (installation: screw and/or 2 component glue*)
- Available in standard Polyamide 6.6 (natural) or UV-resistant Polyamide 6.6 (black)

Technical information

- Material: Polyamide 6.6
- Temperature range:
Glue version: -40°C to +85°C (-40°F to 185°F)
Self-adhesive version: 0°C to +70°C (32°F to 158°F)
- Flammability rating: UL 94 V-2
- Colors: Natural or UV-resistant black (see table)
- Other properties: UV-resistant black, Halogen free, Silicone free

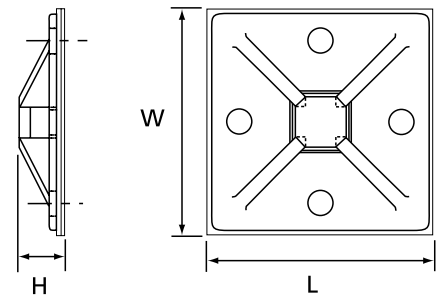
4-way entry - for wide cable ties

Product code	Color	Mounting method	Dimensions						For tie width up to		Mounting hole diameter		Quantity [pieces]
			L		W		H		[mm]	[in]	[mm]	[in]	
			[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
For tie width up to 7.9mm (0.31") (38.1mm x 38.1mm (1.5" x 1.5") base)													
TC150x150L / TC150x150	natural	screw / glue*	38.1	1.5	38.1	1.5	7.4	0.29	7.9	0.31	4.3	0.17	50 / 500
TC150x150A-L / TC150x150A	natural	self-adhesive / screw	38.1	1.5	38.1	1.5	7.4	0.29	7.9	0.31	4.3	0.17	50 / 500
TC150x150AX-L / TC150x150AX	UV-resistant black	self-adhesive / screw	38.1	1.5	38.1	1.5	7.4	0.29	7.9	0.31	4.3	0.17	50 / 500
For tie width up to 7.9mm (0.31") (50.8mm x 50.8mm (2" x 2") base)													
TC200x200L / TC200x200	natural	screw / glue*	50.8	2	50.8	2	7.4	0.29	7.9	0.31	4.3	0.17	50 / 500
TC200x200A-L / TC200x200A	natural	self-adhesive / screw	50.8	2	50.8	2	7.4	0.29	7.9	0.31	4.3	0.17	50 / 500
TC200x200AX	UV-resistant black	self-adhesive / screw	50.8	2	50.8	2	7.4	0.29	7.9	0.31	4.3	0.17	500
For tie width up to 19.1mm (0.75") (50.8mm x 50.8mm (2" x 2") base)													
TC368**	natural	screw / glue*	50.8	2	50.8	2	6.6	0.26	19.1	0.75	4.3	0.17	500
TC368A**	natural	self-adhesive / screw	50.8	2	50.8	2	6.6	0.26	19.1	0.75	4.3	0.17	500

* Glue = Product code TC2PA (see page 147 for specifications)

** Not UL Listed

Dimensions



Mounting bases

Low profile plates



Characteristics

- Low profile
- Easy to use
- Self-adhesive or to be glued with 2-component glue*

Technical information

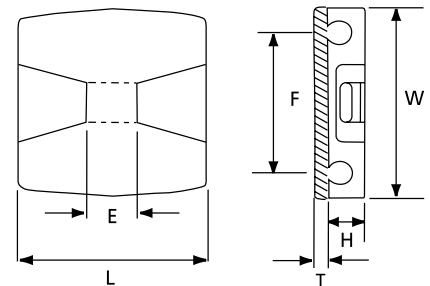
- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
Self-adhesive version: 0°C to +65°C (32°F to 149°F)
- Color: Natural or UV-resistant black (see table)
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free, UV-resistant black

Low profile plates

Product code	Color	Mounting method	Dimensions												Weight [g/100]	Quantity [pieces]		
			H		T		W		L		E		F				For tie width up to	
			[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]
TC817-TB	natural	glue*	4.8	0.19	–	–	11.0	0.43	11.0	0.43	–	–	–	–	4.8	0.19	51	1000
TC342	natural	glue*	5.7	0.22	–	–	29.0	1.41	29.0	1.41	7.5	0.30	21.0	0.83	4.8	0.19	340	1000
TC342X	UV-resistant black	glue*	5.7	0.22	–	–	29.0	1.41	29.0	1.41	7.5	0.30	21.0	0.83	4.8	0.19	340	1000
TC5342A / TC342A	natural	self-adhesive	5.7	0.22	0.8	0.31	29.0	1.41	29.0	1.41	7.5	0.30	21.0	0.83	4.8	0.19	360	100 / 1000
TC342A-X	UV-resistant black	self-adhesive	5.7	0.22	0.8	0.31	29.0	1.41	29.0	1.41	7.5	0.30	21.0	0.83	4.8	0.19	360	1000

* Glue = Product code TC2PA (see page 147 for specifications)

Dimensions



Mounting bases

Self-adhesive mounting cradle



Characteristics

- Accepts cable ties to 7.6mm (0.30") width
- Supplied "two-up" on closed cell foam with synthetic polymer "rubber" based adhesive
- Use M3.5 self-tapping screw for added strength if desired

Technical information

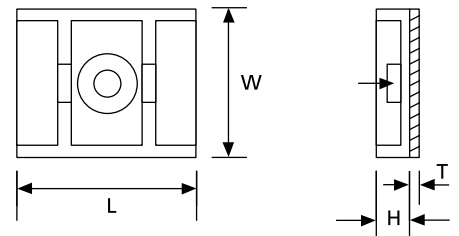
- Material: Polyamide 6.6
- Temperature range: 0°C to +65°C (32°F to 149°F)
- Color: Natural or UV-resistant black (see table)
- Mounting method: Self adhesive and/or screw
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant black, Halogen free, Silicone free

Self-adhesive mounting cradle

Product code	Color	Dimensions								For tie width up to		Quantity [pieces]
		H		T		L		W		[mm]	[in]	
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
MCNY-1250-9-L / MCNY-1250-9-C	natural	7.2	0.28	0.8	0.03	31.7	1.25	25.4	1	7.6	0.30	50 / 100
MCNY-1250-9-D	natural	7.2	0.28	0.8	0.03	31.7	1.25	25.4	1	7.6	0.30	500
MCNY-1250-0-C	UV-resistant black	7.2	0.28	0.8	0.03	31.7	1.25	25.4	1	7.6	0.30	100

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Saddle support



Characteristics

- Tie mounting bases with supporting saddle
- For screw- or rivet-mounting
- The prism-shape of the saddle prevents twisting around the fixture
- High strength through compact design
- Non-conductive, non-corrosive, resistant to fuels, lubricants and most chemicals
- Available in natural nylon, UV-resistant nylon or heat stabilised black version

Technical information

- Material: Polyamide 6.6 or heat stabilised Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 186°F)
- Color: Natural or UV-resistant black (see table)
- Mounting method: Screw
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free, UV-resistant black



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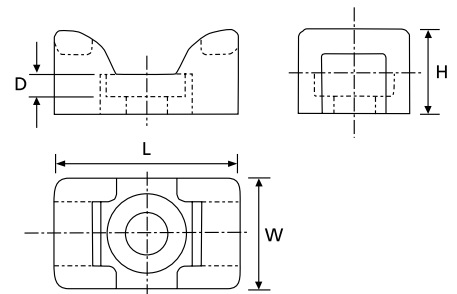
Saddle support

Product code	Color	Dimensions								For tie width up to		Mounting hole diameter		Quantity [pieces]
		H		W		L		D		[mm]	[in]	[mm]	[in]	
TC5140 / TC140	natural	6.7	0.26	8.7	0.34	14.2	0.56	1.8	0.07	2.4	0.09	3.0	0.12	100 / 500
TC5141 / TC141	natural	7.5	0.30	11.1	0.44	17.0	0.67	2.3	0.09	4.8	0.19	3.8	0.15	100 / 500
TC5142 / TC142	natural	10.7	0.42	14.2	0.56	23.4	0.92	2.9	0.11	7.6	0.30	5.2	0.20	100 / 500
TC5142X* / TC142X*	UV-resistant black / heat stabilised	10.7	0.42	14.2	0.56	23.4	0.92	2.9	0.11	7.6	0.30	5.2	0.20	100 / 500

* Are not UL recognised

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Saddle support



Characteristics

- Tie mounting bases with supporting saddle
- For screw- or rivet-mounting
- The prism-shape of the saddle prevents twisting around the fixture
- High strength through compact design
- Non-conductive, non-corrosive, resistant to fuels, lubricants and most chemicals
- Available in UV-resistant, heat stabilised black version

Technical information

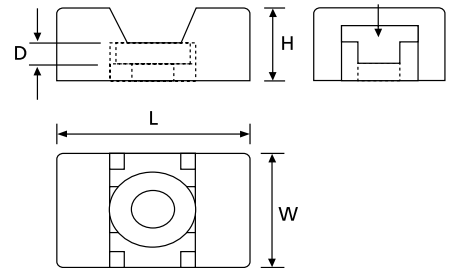
- Material: Polyamide 6.6 or heat stabilised Polyamide 6.6
- Temperature range:
Natural: -40°C to +85°C (-40°F to 185°F),
UV-resistant black: -40°C to +105°C (-40°F to 221°F)
- Color: Natural or UV-resistant black
- Mounting method: Screw or rivet
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free, UV-resistant black

Saddle support

Product code	Color	Dimensions								For tie width up to		Mounting hole diameter		Quantity [pieces]
		H		W		L		D		[mm]	[in]	[mm]	[in]	
SMNY-001-9-D	natural	7.1	0.28	9.8	0.39	15.2	0.60	4.7	0.19	4.8	0.19	4.2	0.17	500
SMNY-001-0-D	UV-resistant black / heat stabilised	7.1	0.28	9.8	0.39	15.2	0.60	4.7	0.19	4.8	0.19	4.2	0.17	500

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Saddle-type mounting base



Characteristics

The saddle-type mounting bases allow 3 possible cable mounting:

- the cables can be attached to a flat surface on which the base is screwed
- the cable bundles can be mounted in parallel
- the cable bundles can be mounted crosswise

Can also be used for the mounting of cylindrical objects having a diameter between 12.7 and 31.8mm (0.5" and 1.25")

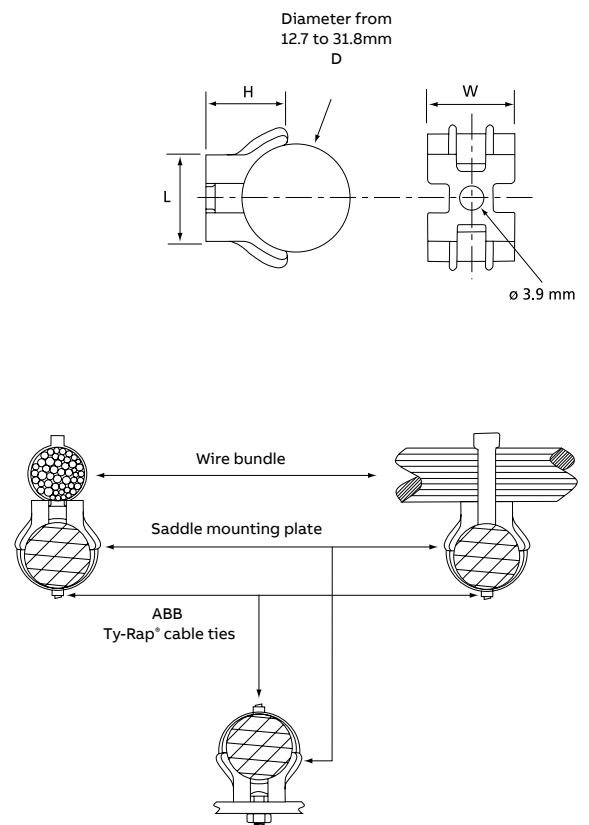
Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: Screw
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Saddle-type mounting base

Product code	Dimensions										Mounting hole diameter		Weight [g/100]	Quantity [pieces]
	H		W		L		D		For tie width up to		[mm]	[in]		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]				
TC92	14.3	0.56	15.1	0.59	15.1	0.59	12.7 - 31.8	0.5 - 1.25	4.8	0.19	3.9	0.15	143	100

Dimensions



Mounting bases

Screw-mounted miniature bases



Characteristics

- Low profile mounting base
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: Fillister-head screw
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free



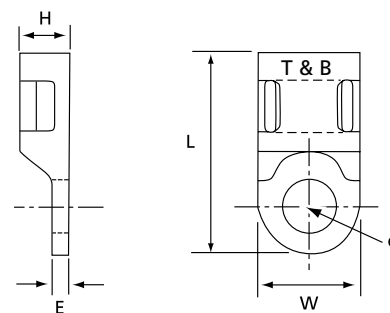
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Screw-mounted miniature bases

Product code	Dimensions						For tie width up to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]		
	H		W		L		D							
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]				
TC814-TB	4.8	0.19	9.5	0.37	19.1	0.75	2.0	0.08	4.8	0.19	3.3	0.13	44	1000
TC112-TB	4.8	0.19	9.5	0.37	19.1	0.75	2.0	0.08	4.8	0.19	4.4	0.17	44	1000
TC812-TB	4.8	0.19	9.5	0.37	19.1	0.75	2.0	0.08	4.8	0.19	5.1	0.20	44	1000

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Screw-mounted miniature bases



Characteristics

- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: Screw or rivet
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free



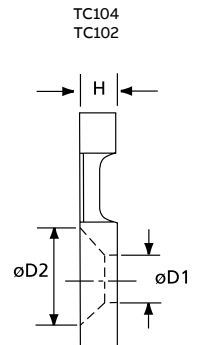
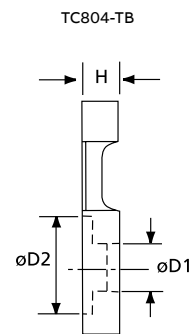
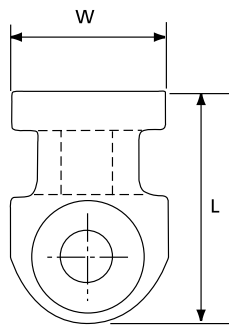
E49405

Screw-mounted miniature bases

Product code	H		W		L		For tie width up to		Mounting hole diameter				Weight [g/100]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	Diameter D1		Diameter D2			
TC804-TB*	2.4	0.09	7.9	0.31	10.2	0.41	2.4	0.09	2.3	0.09	4.7	0.19	11	1000
TC104	2.4	0.09	7.9	0.31	10.3	0.41	2.4	0.09	3.4	0.09	6.5	0.26	11	1000
TC502 / TC102	3.2	0.13	12.7	0.5	19.1	0.75	4.8	0.19	4.4	0.17	8.7	0.34	50	100 / 1000

* UL Recognized

Dimensions



Mounting bases

Screw-mounted - for wide cable ties



Characteristics

- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide
- Secure fixing with 2 fastening holes

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: 2 screws
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free



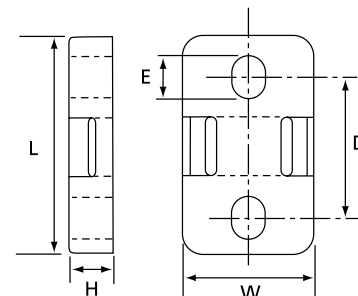
E49405

Screw-mounted - for wide cable ties

Product code	Dimensions										For tie width up to	Mounting hole diameter	Weight [g/100]	Quantity [pieces]		
	H		W		L		D		E							
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]						
TC815-TB	6.4	0.25	19.1	0.75	31.2	1.23	19.9	0.78	6.4	0.25	7.6	0.30	5.3	0.21	278	500

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Screw-mounted - for crosswise fastening



Characteristics

- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide
- Two ties can be fastened crosswise to securely fix cable intersections

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: Screw or rivet
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

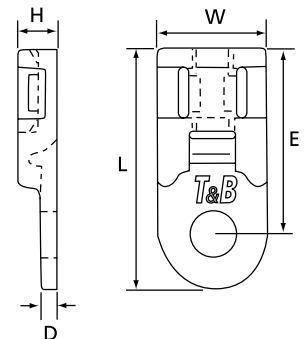


E49405

Screw-mounted - for crosswise fastening

Product code	Dimensions															
	H		W		L		D		E		For tie width up to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TC5828 / TC828-TB	3.8	0.15	10.1	0.40	22.5	0.89	1.5	0.06	17.4	0.68	4.8	0.19	4.3	0.17	46	100 / 1000

Dimensions



Mounting bases

Screw-mounted - for crosswise fastening



E49405

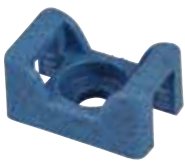
2-way and 4-way entry mounting bases

Product code	Mounting method	Width H		Length D		For tie width up to		Mounting hole (2x diameter)		Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TC5344A-NDT / TC344A-NDT	self-adhesive*/screw	19.1	0.75	19.1	0.75	3.6	0.14	3	0.12	100 / 1000
TC5344A-PDT	self-adhesive*/screw	19.1	0.75	19.1	0.75	3.6	0.14	3	0.12	100
TC5347A-NDT / TC347A-NDT	self-adhesive*/screw	29	1.14	29	1.14	7.6	0.30	4.4	0.17	100 / 1000
TC5347A-PDT	self-adhesive*/screw	29	1.14	29	1.14	7.6	0.30	4.4	0.17	100

* Surface preparation: surface should be cleaned with alcohol-based cleaner before application.

Installation: Surface must be clean and dry prior to application of accessory.

Allow 15-minute setting time for maximum adhesion performance of synthetic rubber adhesive (SRA).



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Saddle support

Product code	Mounting method	Width H		Length D		For tie width up to		Mounting hole diameter		Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
TC5141-NDT / TC141-NDT	screw	11.1	0.44	17	0.67	4.8	0.19	3.8	0.15	100 / 500
TC5141-PDT	screw	11.1	0.44	17	0.67	4.8	0.19	3.8	0.15	100
TC5142-NDT / TC142-NDT	screw	14.2	0.56	23.4	0.92	7.6	0.30	5.2	0.20	100 / 500
TC5142-PDT	screw	14.2	0.56	23.4	0.92	7.6	0.30	5.2	0.20	100

Mounting bases

Screw-mounted - for crosswise fastening



E49405

Screw-mounted miniature bases

Product code	Mounting method	Width H		Length D		For tie width up to		Mounting hole				Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	Diameter D1		Diameter D2		
								[mm]	[in]	[mm]	[in]	
TC5102-NDT / TC102-NDT	screw	12.7	0.5	19.1	0.75	4.8	0.19	4.4	0.17	8.7	0.32	100 / 1000
TC102-PDT	screw	12.7	0.5	19.1	0.75	4.8	0.19	4.4	0.17	8.7	0.32	1000



E49405

Low profile plates

Product code	Mounting method	Width H		Length D		For tie width up to		Quantity [pieces]
		[mm]	[in]	[mm]	[in]	[mm]	[in]	
TC5342A-NDT / TC342A-NDT	self-adhesive*	29	1.14	29	1.14	4.8	0.19	100 / 1000
TC5342A-PDT	self-adhesive*	29	1.14	29	1.14	4.8	0.19	100

* Surface preparation: surface should be cleaned with alcohol-based cleaner before application.

Installation: Surface must be clean and dry prior to application of accessory.

Allow 15-minute setting time for maximum adhesion performance of synthetic rubber adhesive (SRA).

Mounting bases

Screw-mounted - for crosswise fastening



Characteristics

- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide
- Two ties can be fastened crosswise to securely fix cable intersections

Technical information

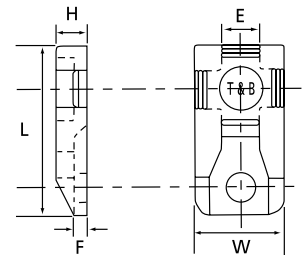
- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: Screw or rivet
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Screw-mounted - for crosswise fastening

Product code	Dimensions								For tie width up to				Mounting hole diameter		Weight [g/100]	Quantity [pieces]
	H		W		L		D		E							
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TC826-TB	5.7	0.22	12.7	0.5	23.8	0.94	5.3	0.21	2.0	0.08	4.8	0.19	4.4	0.17	102	1000

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Screw-mounted supporting bases



Characteristics

- Supporting mounting base with strong hold thanks to 2 mounting holes
- Can be screwed or riveted
- Allows double and/or crosswise (two ties) fixing
- For parallel and through mounting with support
- Suitable for large bundle diameters

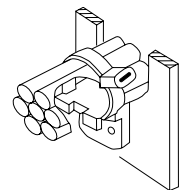
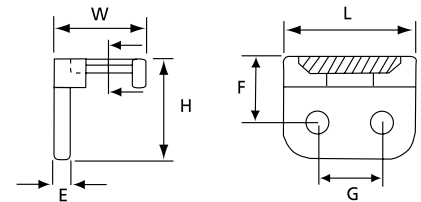
Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: 2 screws or 2 rivets
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Screw-mounted supporting bases

Product code	Dimensions								For tie width up to		Mounting hole diameter (x2)		Weight [g/100]	Quantity [pieces]				
	H		W		L		G								E	F		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]						
TC106	25.4	1	19.1	0.75	25.4	1	12.7	0.5	4.6	0.18	16.5	0.65	7.6	0.30	3.3	0.13	435	200
TC109	11.1	0.44	9.9	0.39	14.3	0.56	7.1	0.28	1.7	0.07	7.0	0.28	4.8	0.19	2.4	0.09	45	1000

Dimensions



Mounting bases

Screw-mounted strips for multiple bundling



Characteristics

- Tie mounting strips for up to 6 bundles simultaneously
- When mounted, the tie is guided through the clamp for fast assembly

Product code TC1101 to TC1117

- Simple and strong flat mounting beams for fixing multiple cables, bundles or components
- Mil. Specified (MS-3339-...-...)
- VG approved (VG 95387, item 2)

Product code TC375 and TC376

- For vertical and double-side mounting

Product code TC101 and TC103

- Elongated fastening hole on one end allows greater flexibility during mounting

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: 2 screws (1 screw for product code. TC376 & TC375)
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free



E49405

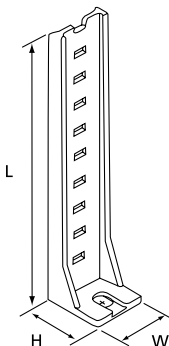
Screw-mounted strips for multiple bundling

Product code	H		W		L		D		E		Max. number of bundles	For tie width up to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]	Mil. Spec.	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		[mm]	[in]	[mm]	[in]				
TC101	3.2	0.13	12.7	0.5	50.0	1.97	35.6	1.40	9.5	0.37	1	0.04	4.8	0.19	5.2	0.20	151	1000	-
TC103	5.1	0.20	15.8	0.62	79.0	3.11	59.6	2.35	18.6	0.73	1	0.04	7.6	0.30	6.9	0.27	505	500	-
TC1101	3.2	0.13	12.7	0.5	44.0	1.73	31.8	1.25	9.5	0.37	1	0.04	4.8	0.19	3.7	0.15	160	100	●
TC1102	3.2	0.13	12.7	0.5	76.0	2.99	31.8	1.25	9.5	0.37	2	0.08	4.8	0.19	3.7	0.15	280	100	●
TC1103	3.2	0.13	12.7	0.5	108.0	4.25	31.8	1.25	9.5	0.37	3	0.12	4.8	0.19	3.7	0.15	400	100	●
TC1104	3.2	0.13	12.7	0.5	140.0	5.51	31.8	1.25	9.5	0.37	4	0.16	4.8	0.19	3.7	0.15	520	100	●
TC1105	3.2	0.13	12.7	0.5	171.0	6.73	31.8	1.25	9.5	0.37	5	0.20	4.8	0.19	3.7	0.15	650	100	●
TC1112	5.2	0.20	15.9	0.63	244.0	9.61	38.1	1.5	14.3	0.56	6	0.24	7.6	0.30	3.7	0.15	1679	100	●
TC1113	5.2	0.20	15.9	0.63	53.3	2.10	38.1	1.5	14.3	0.56	1	0.04	7.6	0.30	3.7	0.15	385	100	●
TC1114	5.2	0.20	15.9	0.63	91.4	3.60	38.1	1.5	14.3	0.56	2	0.08	7.6	0.30	3.7	0.15	658	100	●
TC1115	5.2	0.20	15.9	0.63	130.0	5.12	38.1	1.5	14.3	0.56	3	0.12	7.6	0.30	3.7	0.15	914	100	●
TC1116	5.2	0.20	15.9	0.63	168.0	6.61	38.1	1.5	14.3	0.56	4	0.16	7.6	0.30	3.7	0.15	1190	100	●
TC1117	5.2	0.20	15.9	0.63	206.0	8.11	38.1	1.5	14.3	0.56	5	0.20	7.6	0.30	3.7	0.15	1141	100	●
TC375	19.1	0.75	17.5	0.69	93.0	3.66	-	-	6.4	0.25	5	0.20	4.8	0.19	4.8	0.19	486	100	-
TC376	17.0	0.67	17.5	0.69	44.0	1.73	-	-	6.4	0.25	2	0.08	4.8	0.19	4.8	0.19	253	100	-

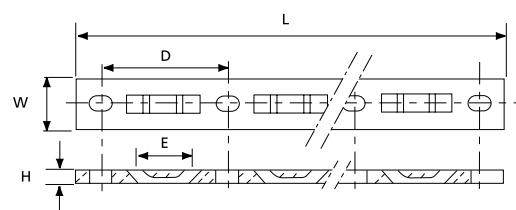
For other colors and quantities please contact your Sales Office

Dimensions

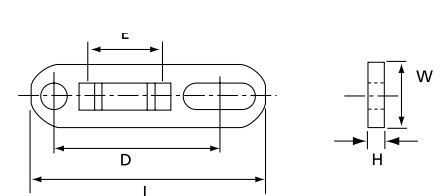
TC375 & TC376



TC1101 ... TC1117



TC101 & TC103



Mounting bases

Weather resistant - Heavy-duty



Characteristics

- Tie mounting base for outdoor installation
- A strong, weatherproof and durable outdoor fastening solution for pipes, hoses, cables, etc.

Product code TC5358 and TC5359

- Built-in plug for mounting into walls
- Easy to install: the plug is simply hammered into a hole
- The lamellar plug ensures high tensile strength and durability

Product code TC5355 to TC5357

- For screw-fastening
- Ergonomically shaped for trouble-free installation

Technical information

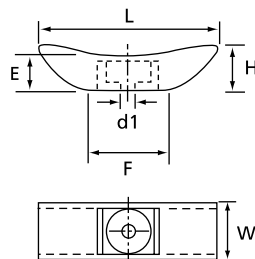
- Material: UV-stabilised Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Black
- Mounting method: Screw (for product code TC5355 to TC5357 only)
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant, Halogen free, Silicone free

Weather resistant - Heavy-duty

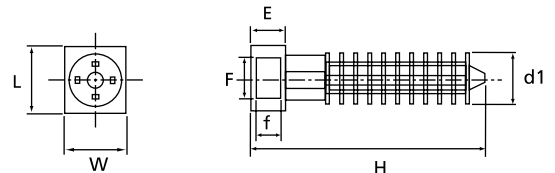
Product code	H		W		L		E		F		Dimensions		For tie width up to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]			
Mounting cradle																			
TC5355	15.9	0.63	19.1	0.75	44.5	1.75	11.1	0.44	28.6	1.13	-	-	12.7	0.5	4.6	0.18	500	25	
TC5356	15.9	0.63	19.1	0.75	44.5	1.75	11.1	0.44	28.6	1.13	-	-	12.7	0.5	5.2	0.20	500	25	
TC5357	15.9	0.63	19.1	0.75	44.5	1.75	11.1	0.44	28.6	1.13	-	-	12.7	0.5	6.7	0.26	500	25	
Wall plug																			
TC5358	31.8	1.25	9.9	0.39	9.9	0.39	7.1	0.28	5.6	0.22	2.3	0.09	4.8	0.19	6.4 (in wall)	0.25 (in wall)	120	100	
TC5359	38.4	1.51	19.1	0.75	19.1	0.75	8.1	0.32	14.0	0.55	3.1	0.12	12.7	0.5	9.5 (in wall)	0.37 (in wall)	320	50	

Dimensions

TC5355-TC5356-TC5357



TC5358-TC5359



Mounting bases

Clip-in mounting bases for blind mounting



Characteristics

- Clip-in tie mounting bases for housings, faceplates etc
- With fastening clip for blind-mounting and two openings for 2.8mm (0.11") or 4.8mm (0.19") ties
- Low profile

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: Clip in
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

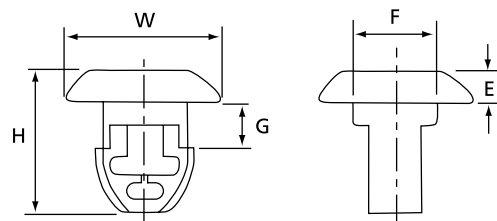


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Clip-in mounting bases for blind mounting

Product code	Dimensions										Panel thickness from...to		For tie width up to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]
	H		W		G		E		F		[mm]	[in]	[mm]	[in]				
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]								
TC121-TB	10.4	0.41	11.2	0.44	3.4	0.13	2.0	0.08	6.1	0.24	0.1 to 3.2	0.003 to 0.13	2.4 or 4.8	0.09 or 0.19	6.3	0.25	31	1000

Dimensions



Mounting bases

Clip-in mounting bases for surface mounting



Characteristics

- Clip-in tie mounting bases for housings, faceplates etc
- With fastening clip for surface mounting
- Low profile

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural (TC823-TB & TC5823), UV-resistant black (TC823X)
- Mounting method: Clip in
- Flammability rating: UL 94 V-2
- Other properties: UV-resistant (black), Halogen free, Silicone free

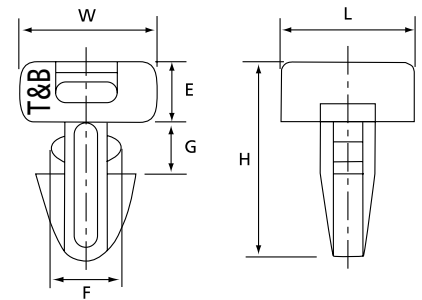
Clip-in mounting bases for surface mounting

Product code	Dimensions												Panel thickness from...to		For tie width up to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]
	H		W		L		G		E		F		[mm]	[in]	[mm]	[in]	[mm]	[in]		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[g/100]	[pieces]
TC5823 / TC823-TB	16.8	0.66	11.1	0.44	11.1	0.44	3.6	0.14	5.1	0.20	5.8	0.23	0.1 to 3.2	0.004 to 0.13	4.8	0.19	6.2 to 6.5	0.24 to 0.26	68	100 / 1000
TC823X*	16.8	0.66	11.1	0.44	11.1	0.44	3.6	0.14	5.1	0.20	5.8	0.23	0.1 to 3.2	0.004 to 0.13	4.8	0.19	6.2 to 6.5	0.24 to 0.26	68	1000

* Are not UL recognised

For other colors and quantities please contact your Sales Office

Dimensions



Mounting bases

Rivet-mounted bases



Characteristics

- Low profile mounting base with integrated rivet
- Easy to install into normal or blind holes: just hammer in the expanding harbour
- Parts are color-coded according to hole diameter to avoid confusion

Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: See table
- Mounting method: Rivet mounted
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

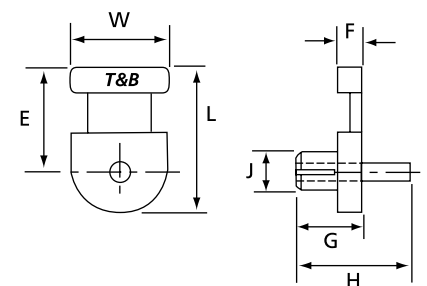


E49405

Rivet-mounted bases

Product code	Color	Dimensions														For tie width up to	Mounting hole diameter	Weight [g/100]	Quantity [pieces]		
		W		L		F		E		G		H		J							
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TC116-TB	Red	12.7	0.5	19.1	0.75	3.2	0.13	13.9	0.55	8.6	0.34	15	0.59	3.9	0.15	4.8	0.19	3.7	0.15	70.5	1000
TC118-TB	Blue	12.7	0.5	19.1	0.75	3.2	0.13	13.9	0.55	8.6	0.34	15	0.59	4.5	0.18	4.8	0.19	4.4	0.17	71.0	1000
TC120	Yellow	12.7	0.5	19.1	0.75	3.2	0.13	13.9	0.55	8.6	0.34	15	0.59	5.2	0.20	4.8	0.19	4.9	0.19	71.5	1000

Dimensions



Mounting bases

Aluminium plates



Characteristics

- Very strong mounting base for gluing or screw mounting or self-adhesive mounting
- Low profile
- Soft material can be perfectly shaped onto any support
- Lightweight
- Does not age under extreme temperatures

Technical information

- Material: Aluminium (3003, ASTM-B-209)
- Temperature range: -100°C to +450°C (212°F to 842°F)
Self-adhesive version: 0°C to +65°C (32°F to 149°F)
- Color: Metallic
- Mounting method: Glue (*) and / or screw or self-adhesive
- Flammability rating: Fire proof
- Other properties: UV-resistant

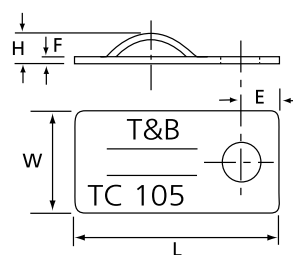
Aluminium plates

Product code	Mounting method	Dimensions										For tie width up to	Mounting hole diameter		Weight [g/100]	Quantity [pieces]	
		H		W		L		E		F			[mm]	[in]			
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TC105AP	self-adhesive / screw	3.8	0.15	13.2	0.52	25.4	1	4.8	0.89	0.8	0.03	4.8	0.89	4.9	0.19	67	1000
TC5105 / TC105	screw	3.8	0.15	13.2	0.52	25.4	1	4.8	0.89	0.8	0.03	4.8	0.89	4.9	0.19	67	100 / 1000
TC824-TB	2-component glue*	3.8	0.15	9.5	0.37	34.9	1.37	-	-	0.8	0.03	4.8	0.89	-	-	69	1000

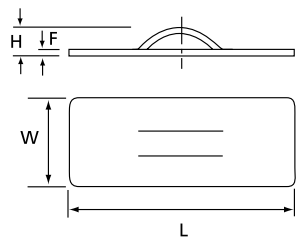
* Glue = Product code TC2PA (see page 147 for specifications)

Dimensions

TC824-TB



TC105 and TC105AP



Cable clamps

Plain edge cable clamps



Characteristics

- 18 diameters and 2 widths with mounting holes for M4 and M5 screws
- Indoor application

Technical information

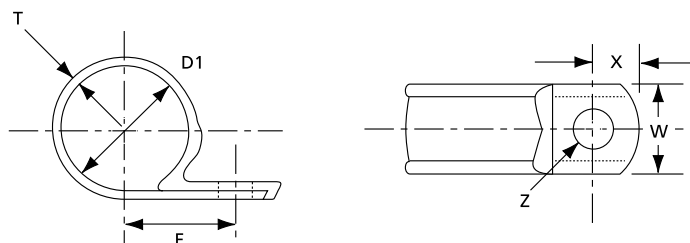
- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Black
- Mounting method: Screw
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Plain edge cable clamps

Product code	D1 closed diameter		Dimensions											Quantity [pieces]
			E		T		W		Z		X			
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
N4NY-002-0-M	3.20	0.13	8.71	0.34	1.27	0.05	9.53	0.38	5.54	0.22	4.30	0.17	1000	
N4NY-003-0-M	4.70	0.19	9.60	0.38	1.27	0.05	9.53	0.38	5.54	0.22	4.30	0.17	1000	
N4NY-004-0-M	6.30	0.25	10.70	0.42	1.27	0.05	9.53	0.38	5.54	0.22	4.30	0.17	1000	
N4NY-005-0-M	7.90	0.31	11.20	0.44	1.27	0.05	9.53	0.38	5.54	0.22	4.30	0.17	1000	
N4NY-006-0-M	9.50	0.37	11.79	0.46	1.27	0.05	9.53	0.38	5.54	0.22	4.30	0.17	1000	
N4NY-008-0-M	12.70	0.5	13.46	0.53	1.27	0.05	9.53	0.38	5.54	0.22	4.30	0.17	1000	
N6NY-004C-0-M	6.35	0.25	11.10	0.44	1.52	0.06	12.71	0.5	5.54	0.22	5.16	0.20	1000	
N6NY-005C-0-M	7.92	0.31	12.24	0.48	1.52	0.06	12.71	0.5	5.54	0.22	5.16	0.20	1000	
N6NY-006C-0-M	9.53	0.37	12.70	0.5	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-008C-0-M	12.70	0.5	14.05	0.55	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-009-0-M	14.27	0.56	15.32	0.60	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-010-0-M	15.88	0.63	15.88	0.63	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-011-0-M	17.48	0.69	16.89	0.66	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-012-0-M	19.05	0.75	17.75	0.70	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-013-0-M	20.62	0.81	19.43	0.76	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-014-0-M	22.23	0.88	20.19	0.79	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	
N6NY-016-0-M	25.40	1	21.00	0.83	1.52	0.06	12.71	0.50	5.54	0.22	5.16	0.20	1000	

Also available in quantities of 100 pieces. For other colors please contact your Sales Office

Dimensions



Cable clamps

Adjustable, ladder style clamps



Characteristics

- Ladder style fastener is easily released and refastened
- Supplied “single-cut” on a rubber based closed cell foam adhesive
- In addition, can also be mounted with a screw, for improved pull-off strength

Technical information

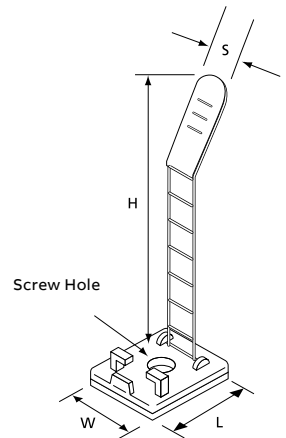
- Material: Polyamide 6.6
- Temperature range: 0°C to +65°C (32°F to 149°F)
- Color: Grey
- Mounting method: Self adhesive and / or screw-mounting
- Flammability rating: UL 94 V-2 (clamp)
- Other properties: Halogen free, Silicone free

Adjustable, ladder style clamps

Product code	Bundle diameter range		H		W		L		Dimensions S		Screw hole diameter		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
ULNY-013-8-C	3 - 12.7	0.12 - 0.5	59.5	2.34	18	0.71	25	0.99	8	0.31	2.79	0.11	100
ULNY-018-8-C	5 - 21.0	0.20 - 0.83	79.4	3.13	21	0.83	30	1.18	12	0.47	2.79	0.11	100
ULNY-023-8-C	7 - 25.0	0.28 - 0.98	85.5	3.37	25	0.98	35	1.38	14	0.55	3.43	0.14	100

For other quantities please contact your Sales Office

Dimensions



Cable clamps

Latching clamps



Characteristics

- Re-usable tie mounting clamps
- For self-adhesive and / or screw- or rivet mounting
- One-piece design with integrated releasable lock
- The inner profile protects sensitive cables, fibre optics etc
- Desired height can be set in 3 or 6 ratchet steps
- The large base surface area and the strong adhesive film guarantee a high adhesive strength
- The self-adhesive film is foam backed (0.8mm/0.03") which allows durable fixing on a variety of materials

Technical information

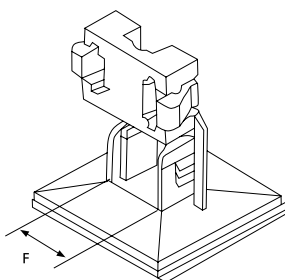
- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
Self-adhesive version: 0°C to +65°C (32°F to 149°F)
- Color: Natural
- Mounting method: Self adhesive or screw-mounting
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Latching clamps

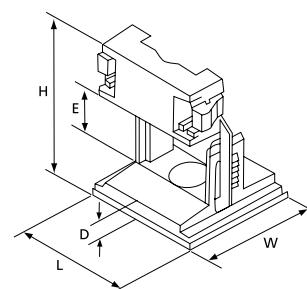
Product code	Mounting method	Dimensions														Weight [g/100]	Quantity [pieces]		
		H				W		L		D		E		F				Mounting hole diameter	
		max. [mm]	[in]	min. [mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	from [mm]	to [in]	to [mm]	to [in]			[mm]	[in]
TC5349A-TB / TC349A-TB	self-adhesive (rubber based) / screw	14.5	0.57	11.5	0.45	25.0	0.98	25.0	0.98	2.7	0.11	6	0.24	6	0.24	-	-	120	100 / 1000
TC349AN	self-adhesive (acrylic based) / screw	14.5	0.57	11.5	0.45	25.0	0.98	25.0	0.98	2.7	0.11	6	0.24	6	0.24	-	-	120	1000
TC5350A-TB / TC350A-TB	self-adhesive (rubber based) / screw	22.0	0.87	18.0	0.71	25.0	0.98	25.0	0.98	4.7	0.19	6	0.24	15	0.59	4.3	0.17	400	100 / 1000
TC350AN	self-adhesive (acrylic based) / screw	22.0	0.87	18.0	0.71	25.0	0.98	25.0	0.98	4.7	0.19	6	0.24	15	0.59	4.3	0.17	400	1000
TC5350 / TC350	screw	21.3	0.84	17.2	0.68	25.0	0.98	25.0	0.98	4.0	0.16	6	0.24	15	0.59	4.3	0.17	380	100 / 1000

Dimensions

TC349A-TB
TC349AN
TC5349A-TB



TC350
TC350AN
TC5350
TC350A-TB
TC5350A-TB



Cable clamps

Re-openable clamps



Characteristics

- Simple installation
- Can be mounted by clipping-in or gluing
- For series production or as a temporary support during wiring installation
- Clip ends are rounded for comfortable re-opening
- Product code TC95 features 2-stage lock

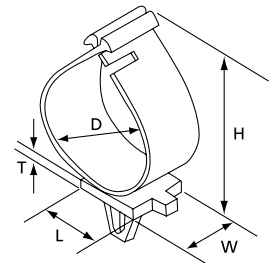
Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (40°F to 185°F)
- Color: Natural
- Mounting method: Clip in
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Re-openable clamps

Product code	Dimensions										For wall thickness from ... to		Mounting hole diameter		Weight [g/100]	Quantity [pieces]
	H		W		L		D		T				[mm]	[in]		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		
TC88	22.6	0.89	12.7	0.5	19.1	0.75	12.7	0.5	2.5	0.10	2.5 - 3.6	0.10 - 0.14	5.7 - 7	0.22 - 0.28	115	100
TC95	40.5	1.59	12.7	0.5	19.1	0.75	25.4	1	2.5	0.10	2.5 - 3.6	0.10 - 0.14	5.7 - 7	0.22 - 0.28	278	100

Dimensions



Cable clamps

Re-openable clamps with springs



Characteristics

- Holding clips with rubberised fabric tape
- The built-in springs hold the cable bundle safely in the desired position
- The upper clip end is rounded for easy addition of cables
- Strong fixing due to two mounting holes, aligned along the axis of the cable bundle

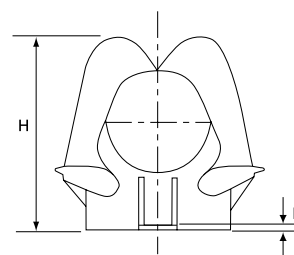
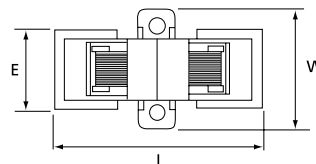
Technical information

- Material – Body: Polyamide 6.6
- Material – Elastic: Rayon & natural rubber
- Material – Spring: Steel
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural
- Mounting method: 2 screws
- Flammability rating: UL 94 V-2 (body)
- Other properties: Halogen free

Re-openable clamps with springs

Product code	Max. bundle diameter		Dimensions								Mounting hole diameter		Weight [g/100]	Quantity [pieces]		
			H		L		W		E		F					
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]				
TC86	19	0.75	46	1.81	44.5	1.75	31.8	1.25	22.2	0.87	2.5	0.10	3.9	0.15	860	25
TC87	32	1.26	58	2.28	62.7	2.47	38.1	1.5	25.4	1	2.5	0.10	3.9	0.15	1950	25

Dimensions



Cable clamps

Self-adhesive press clips

Characteristics

- Available in “full clip” version (PCNY series) or “half clip” version (HCNY series)
- 4 sizes to accommodate bundles up to 12mm (0.47")
- Clips are provided “two-up” on a rubber based closed cell foam adhesive

Technical information

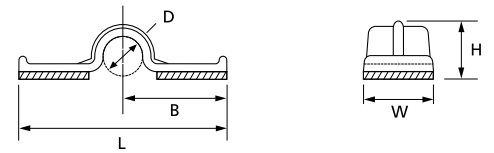
- Material: Polyamide 6.6 (clip)
- Temperature range: 0°C to +65°C (32°F to 149°F)
- Color: Natural
- Mounting method: Self-adhesive
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Self-adhesive press clips

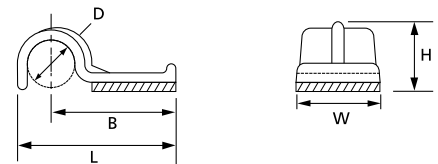
Product code	D		L		B		H		W		Quantity [pieces]
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
Full clip											
PCNY-125-9-D	3.17	0.12	19.30	0.76	9.65	0.38	5.36	0.21	9.52	0.37	500
PCNY-250-9-C / PCNY-250-9-D	6.35	0.25	35.05	1.38	17.52	0.69	8.23	0.32	12.69	0.50	100 / 500
PCNY-375-9-C / PCNY-375-9-D	9.52	0.74	37.32	1.47	18.61	0.73	11.29	0.44	15.87	0.62	100 / 500
PCNY-500-9-C / PCNY-500-9-D	12.69	0.50	40.57	1.60	20.19	0.79	14.85	0.58	19.05	0.75	100 / 500
Half clip											
HCNY-125-9-C / HCNY-125-9-M	3.17	0.12	12.52	0.49	9.65	0.38	4.57	0.18	9.52	0.37	100 / 1000
HCNY-250-9-C / HCNY-250-9-M	6.35	0.25	21.97	0.86	17.52	0.69	8.25	0.32	12.69	0.50	100 / 1000
HCNY-375-9-C / HCNY-375-9-M	9.52	0.74	24.88	0.98	19.05	0.75	10.54	0.41	15.87	0.62	100 / 1000
HCNY-500-9-C / HCNY-500-9-M	12.69	0.50	28.19	1.11	20.83	0.82	14.22	0.56	19.05	0.75	100 / 1000

Dimensions

PCNY



HCNY



Cable clamps

Self-adhesive clips for round cable



Characteristics

- Diverse cable clamps for bundle diameters from 4mm (0.16") to 13.5mm (0.53")
- Clips are provided two-up on a rubber based closed cell foam adhesive
- Flexible centre tongue for removal or addition of cables

Technical information

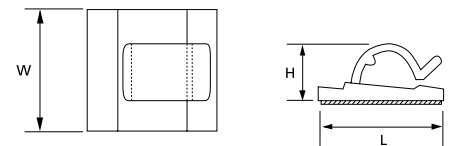
- Material: Polyamide 6.6 (clip)
- Temperature range: 0°C to +65°C (32°F to 149°F)
- Color: Natural or black
- Mounting method: Self-adhesive
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Self-adhesive clips for round cable

Product code	Color	Max. bundle diameter				Dimensions				Quantity [pieces]
		[mm]	[in]	[mm]	[in]	H	W	L		
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	
RANY-160-9-D	natural	4.0	0.16	6.4	0.25	16.0	0.63	14.8	0.58	500
RANY-280-9-D	natural	7.1	0.28	10.4	0.41	25.4	1	25.4	1	500
RANY-280-0-D	black	7.1	0.28	10.4	0.41	25.4	1	25.4	1	500
RANY-530-9-D	natural	13.5	0.53	15.8	0.62	25.4	1	25.4	1	500
RANY-620-9-D	natural	13.5	0.53	14.2	0.56	31.8	1.25	28.5	1.12	500

For other colors and quantities please contact your Sales Office

Dimensions



Cable clamps

Accessories for flat cables



Characteristics

- This system allows the secure and neat fixing of between 1 and 25 ribbon cables
- Clamp height adapts accurately to the desired number of ribbon cables
- Suitable for ribbon cables up to 60 conductors with a pitch of 1.27mm (76.2mm wide) (0.05" pitch/3" wide)
- Can be re-opened for later addition or removal of a cable
- Very strong hold
- All versions can be mounted with countersunk-head screws or rivets
- Some versions have an additional self-adhesive foam, for fast mounting

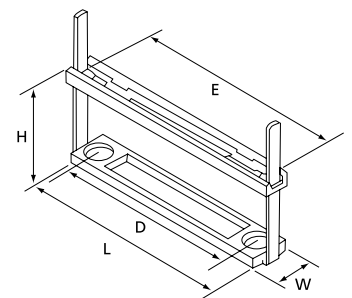
Technical information

- Material: Polyamide 6.6 (clip)
- Temperature range: -40°C to +85°C (-40°F to 185°F)
Self-adhesive version: 0°C to +65°C (32°F to 149°F)
- Color: Natural
- Mounting method: Self-adhesive and / or for screw- or rivet-mounting
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Accessories for flat cables

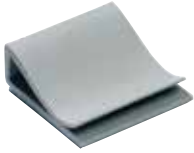
Product code	Mounting method	Dimensions												Adhesive strength on steel/ fastening hole	Weight [g/100]	Quantity [pieces]
		max.		H		W		L		D		E				
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]		Inner width [mm] [in]			
FCC-1	countersunk screws	21.0	0.83	8.0	0.31	12.7	0.5	32.5	1.28	-	-	25.4	1	M4	260	50
FCC-1A	countersunk screws / self-adhesive	21.0	0.83	8.8	0.35	12.7	0.5	32.5	1.28	-	-	25.4	1	76 N/cm	275	50
FCC-2	countersunk screws	36.0	1.42	8.0	0.31	12.7	0.5	57.9	2.28	39.1	1.54	50.8	2	M4	340	50
FCC-2A	countersunk screws / self-adhesive	36.0	1.42	8.8	0.35	12.7	0.5	57.9	2.28	39.1	1.54	50.8	2	76 N/cm	390	50
FCC-3	countersunk screws	36.0	1.42	8.0	0.31	12.7	0.5	83.3	3.28	64.5	2.54	76.2	3	M4	475	50
FCC-3A	countersunk screws / self-adhesive	36.0	1.42	8.8	0.35	12.7	0.5	83.3	3.28	64.5	2.54	76.2	3	76 N/cm	490	50

Dimensions



Accessories for flat cables

PVC cable-clips



Characteristics

- Low profile clip for single or multiple layers of flat ribbon cable
- “Single cut” on a rubber based closed cell foam adhesive

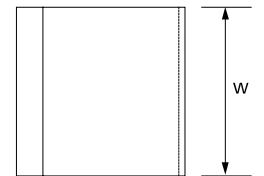
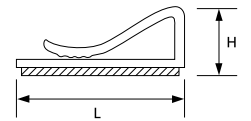
Technical information

- Material: PVC (clip)
- Temperature range: 0°C to +65°C (32°F to 149°F)
- Color: Grey
- Mounting method: Self-adhesive
- Flammability rating: UL 94 V-0 (clip)
- Other properties: UV-resistant

Self-adhesive clips for round cable

Product code	Dimensions						Quantity [pieces]
	H		T		W		
	[mm]	[in]	[mm]	[in]	[mm]	[in]	
FRPV-1000-8-C / FRPV-1000-8-D	5.8	0.23	27	1.06	25.4	1	100 / 500

Dimensions



Accessories for flat cables

Clips with flexible leg



Characteristics

- Low profile clip for single or multiple layers of flat ribbon cable
- Flexible centre leg allows for easy removal and replacement of desired cable
- Non-conductive, non-corrosive, resistant to fuels, lubricants and most chemicals
- FANY supplied "two-up" on a rubber based closed cell foam adhesive
- FSNY type has an additional mounting hole for screw mounting (M4 screw)

Technical information

- Material: Polyamide 6.6 (clip)
- Temperature range: -40°C to +85°C (-40°F to 185°F)
Self-adhesive version: 0°C to +65°C (32°F to 149°F)
- Color: Natural
- Mounting method: Self-adhesive or screw
- Flammability rating: UL 94 V-2 (clip)
- Other properties: Halogen free, Silicone free

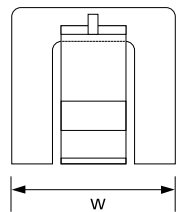
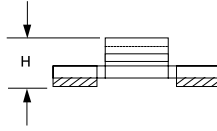
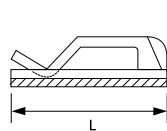
Clips with flexible leg

Product code	Mounting method	Dimensions						Quantity [pieces]
		H		T		W		
		[mm]	[in]	[mm]	[in]	[mm]	[in]	
FSNY-812-9-C	M4 screw	3.17	0.12	30.15	1.19	25.40	1	100
FANY-812-9-C / FANY-812-9-D	self-adhesive	7.14	0.28	25.40	1	25.40	1	100 / 500

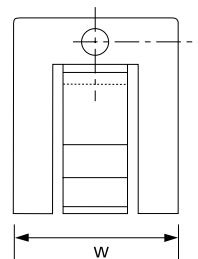
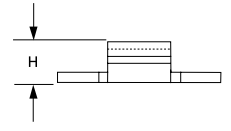
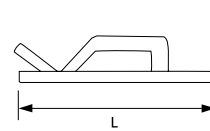
For other colors and quantities please contact your Sales Office

Dimensions

FANY



FSNY



Cable sleeves and spiral wraps

Bind-It®

The Cable Protection Systems (CPS) from ABB captures different products: Wrap-around woven sleeving, braided sleeving, spiral wrap & extruded grommeting

The wrap-around sleeving – better known under the name Bind-It® – is a tough but lightweight sleeve used to bundle and protect wires and cables from abrasion, sharp edges and chafing. Bind-It® is a self-wrapping sleeve that is very quick and easy to install and remove. Bind-It® is also available in a flame retardant version. No heat is necessary to seal the ends of this product. The ends can be secured by using Ty-Rap® cable ties.

The braided sleeving of ABB is used for bundling and protecting cables. The braided sleeving is a closed sleeve available in a flame and a non-flame retardant version. This product is mainly used inside cabinets and enclosures. To stop the end of the sleeving fraying it is necessary to heat seal the ends using a “hotwire” device.

Spiral wrap is mainly used for protection of bundles. This product is available in a natural and UV-resistant version and supplied in a Euroslot bag, ideal for the distribution market.

Finally the extruded grommeting of ABB is used to line panel edges and knock-outs where the chafing of passing wires is a concern. In most applications, grommeting will grip tightly by itself.



Cable sleeves and spiral wraps

Wrap-around woven sleeving



Characteristics

- Offers excellent protection for cable assemblies against abrasion
- No heat is required to seal the ends of this product as with traditional braided sleeving
- With its wrap-around design, it can be installed on assemblies where the wires are already terminated or wires need to be broken-out
- Bind-It® is available in nominal sizes from 5mm to 38mm (0.20" to 1.50")

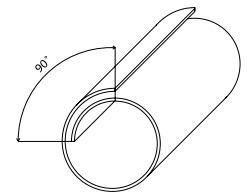
Technical information

- Material: Mono and multifilaments of polyester
- Temperature range: -70°C to +125°C (94°F to 257°F)
- Melt temperature: +255°C (491°F)
- Automotive temperature: T3 class
- Color: Black
- Flammability rating: Self-extinguishing, type B (FMVSS-302 Test method D45 1333)
- Abrasion resistance: PSA D44 1722 : R8
- Dielectric strength: from 1kVAC

Wrap-around woven sleeving

Product code	Nominal size		Length per mini-reel	
	[mm]	[in]	[m]	[ft]
CPS05W-150-EU	5	0.20	150	492.13
CPS08W-100-EU	8	0.31	100	328.08
CPS13W-50-EU	13	0.51	50	164.04
CPS19W-25-EU	19	0.75	25	82.02
CPS25W-25-EU	25	0.98	25	82.02
CPS29W-15-EU	29	1.14	15	49.21
CPS32W-15-EU	32	1.26	15	49.21
CPS38W-15-EU	38	1.50	15	49.21

Dimensions



* Nominal size is determined by wrapping the product around a mandrel of a given size to obtain 90 degrees of overlap (average value).

Cable sleeves and spiral wraps

Wrap-around woven sleeving – flame retardant



Characteristics

- Wrap-around sleeving manufactured from flame-retardant polyester monofilaments and multifilaments
- Designed for mechanical protection and maintenance of wire and cable bundles
- Its construction with 100% covering ratio provides excellent cut-through and abrasion resistance
- No heat is required to seal the ends of this product as with traditional braided sleeving
- With its wrap-around design, it can be installed on assemblies where the wires are already terminated or wires need to be broken-out
- Bind-It® is available in nominal sizes from 5mm to 50mm (0.20" to 1.97")

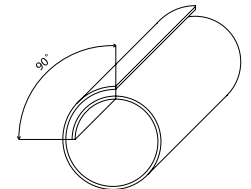
Technical information

- Material: Mono and multifilaments of polyester
- Temperature range: -50°C to +125°C (-58°F to 257°F)
- Melt temperature: +240°C (464°F)
- Automotive temperature: T3 class
- Color: Black
- Fire behaviour: According to EN 45545-2 : HL3
According to NF F 16 101 : I2-F1
- Ignitability test: According to NF-EN-ISO 11925-2
- Abrasion resistance: PSA D44 1722: R8
- Smoke opacity: NFX 10-702-1; 10-702-2: Pass; Smoke index: 12
- Index oxygen: According to EN 45545-2 : 37.5%
- Dielectric strength: from 1kVAC
- Other properties: Halogen free

Wrap-around woven sleeving – flame retardant

Product code	Nominal size		Length per mini-reel	
	[mm]	[in]	[m]	[ft]
CPS05W-150-FR-EU	5	0.20	150	492.13
CPS08W-100-FR-EU	8	0.31	100	328.08
CPS13W-50-FR-EU	13	0.51	50	164.04
CPS19W-25-FR-EU	19	0.75	25	82.02
CPS25W-25-FR-EU	25	0.98	25	82.02
CPS29W-15-FR-EU	29	1.14	15	49.21
CPS32W-15-FR-EU	32	1.26	15	49.21
CPS38W-15-FR-EU	38	1.50	15	49.21
CPS50W-15-FR-EU	50	1.97	15	49.21

Dimensions



* Nominal size is determined by wrapping the product around a mandrel of a given size to obtain 90 degrees of overlap (average value).

Cable sleeves and spiral wraps

Braided sleeving



Characteristics

- Standard color – black or grey
- Non-flame retardant Polyester rated at UL 94 V-2
- Available in nominal diameters from 3 to 50mm to cover bundle diameters of 1 to 66mm, giving flexibility when adding to or removing cables from wire looms
- For use in temperature ranges from -50°C to +150°C
- Good chemical resistance
- Halogen free
- For protecting and bundling cables and wires inside cabinets and enclosures
- To stop the ends of the sleeving fraying it is necessary to heat seal the ends using a “hotwire” device. (Product code WT-HSG)

Technical information

- Material: Polyester
- Temperature range: -50°C to +150°C (-58°F to 302°F)
- Color: Black or grey
- Flammability rating: UL 94 V-2



Braided sleeving

1:2

Product code black	Product code grey	Nominal as supplied		Expandable diameter range		Lengths per mini-reel	
		[mm]	[in]	[mm]	[in]	[m]	[ft]
CPS3B-100	CPS3G-100	3	0.12	1 - 5	0.04 - 0.20	100	328.08
CPS4B-100	CPS4G-100	4	0.16	2 - 7	0.07 - 0.28	100	328.08
CPS5B-100	CPS5G-100	5	0.20	3 - 9	0.12 - 0.35	100	328.08
CPS6B-100	CPS6G-100	6	0.24	4 - 11	0.16 - 0.43	100	328.08
CPS8B-100	CPS8G-100	8	0.31	5 - 12	0.20 - 0.47	100	328.08
CPS10B-100	CPS10G-100	10	0.39	7 - 15	0.28 - 0.59	100	328.08
CPS12B-50	CPS12G-50	12	0.47	8 - 17	0.31 - 0.67	50	164.04
CPS15B-50	CPS15G-50	15	0.59	10 - 20	0.39 - 0.79	50	164.04
CPS20B-25	CPS20G-25	20	0.79	14 - 26	0.55 - 1.02	25	82.02
CPS25B-25	CPS25G-25	25	0.98	18 - 34	0.71 - 1.34	25	82.02
CPS30B-25	CPS30G-25	30	1.18	20 - 40	0.79 - 1.57	25	82.02
CPS40B-25	CPS40G-25	40	1.57	30 - 50	1.18 - 1.97	25	82.02
CPS50B-25	CPS50G-25	50	1.97	40 - 66	1.57 - 2.60	25	82.02

Cable sleeves and spiral wraps

Braided sleeving – flame retardant



Characteristics

- Braided sleeving manufactured from flame-retardant polyester monofilaments
- Flame retardant polyester, conform to UL 94 V-0, mainly used in the railway industry
- Available in diameters from 3 to 50mm (0.12" to 1.97") to cover bundle diameters of 2 to 60mm (0.08" to 2.36")
- Recommended in applications such as public transportation, aircraft industry, telecommunications, underground cables, etc.

Technical information

- Material: Flame retardant polyester monofilaments (PET FR)
- Temperature range: -50°C to +150°C (-58°F to 302°F)
- Melt temperature: +250°C (482°F)
- Color: Black or grey
- Tested according to:
 - NF F 16 101
 - I2-F1
 - EN45545-2 2013
 - HL3
- Other properties: Halogen free

Braided sleeving – flame retardant

1:2

Product code black	Product code grey	Nominal as supplied		Expandable diameter range		Lengths per reel	
		[mm]	[in]	[mm]	[in]	[m]	[ft]
CPS3B-100-CV0	CPS3G-100-CV0	3	0.12	2 - 5	0.07 - 0.20	100	328.08
CPS4B-100-CV0	CPS4G-100-CV0	4	0.16	3 - 7	0.12 - 0.28	100	328.08
CPS5B-100-CV0	CPS5G-100-CV0	5	0.20	4 - 9	0.16 - 0.35	100	328.08
CPS6B-100-CV0	CPS6G-100-CV0	6	0.24	5 - 11	0.20 - 0.43	100	328.08
CPS8B-100-CV0	CPS8G-100-CV0	8	0.31	7 - 13	0.28 - 0.51	100	328.08
CPS10B-50-CV0	CPS10G-50-CV0	10	0.39	9 - 15	0.35 - 0.59	50	164.04
CPS12B-50-CV0	CPS12G-50-CV0	12	0.47	11 - 17	0.43 - 0.67	50	164.04
CPS15B-50-CV0	CPS15G-50-CV0	15	0.59	13 - 20	0.51 - 0.79	50	164.04
CPS20B-50-CV0	CPS20G-50-CV0	20	0.79	18 - 25	0.71 - 0.98	50	164.04
CPS25B-50-CV0	CPS25G-50-CV0	25	0.98	22 - 30	0.87 - 1.18	50	164.04
CPS30B-50-CV0	CPS30G-50-CV0	30	1.18	27 - 40	1.06 - 1.57	50	164.04
CPS40B-50-CV0	CPS40G-50-CV0	40	1.57	35 - 50	1.38 - 1.97	50	164.04
CPS50B-50-CV0	CPS50G-50-CV0	50	1.97	45 - 60	1.77 - 2.36	50	164.04

Cable sleeves and spiral wraps

Spiral wrap



Characteristics

- For protection of bundles from 4mm to 130mm (0.16" to 5.12")
- Install gapped for greater flexibility or butted for maximum abrasion resistance, insulation and rigidity
- Counter-clockwise cut
- Delivered in bags with Euroslot
- Available in natural and UV-resistant black Polyethylene

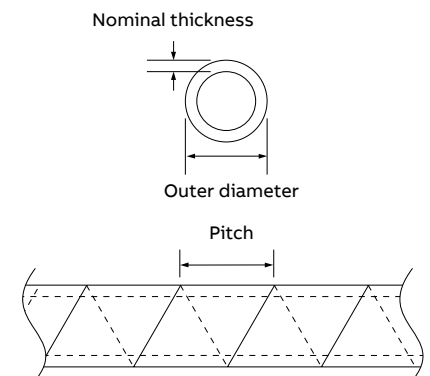
Technical information

- Material: Polyethylene
- Temperature range: -30°C to +80°C (-22°F to 176°F)
- Color: Natural and UV-resistant black
- Flammability rating: UL 94 HB
- Other properties: UV-resistant black, Halogen free, Silicone free

Spiral wrap

Product code	Color	Outer diameter		pitch		Nominal thickness		Min. - max. bundle diameter		Length	
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[m]	[ft]
SRPE-6-9	natural	6.0	0.24	7.0	0.78	0.5	0.02	4 - 50	0.16 - 0.97	10	32.81
SRPE-8-9	natural	8.0	0.31	10.8	0.43	0.5	0.02	6 - 60	0.24 - 25.59	10	32.81
SRPE-10-9	natural	10.0	0.39	11.4	0.44	0.8	0.03	7.5 - 60	0.30 - 25.59	10	32.81
SRPE-12-9	natural	12.0	0.47	13.9	0.55	0.9	0.04	9 - 65	0.35 - 2.56	10	32.81
SRPE-15-9	natural	15.0	0.59	15.0	0.59	1.0	0.04	12 - 70	0.47 - 2.76	10	32.81
SRPE-19-9	natural	19.0	0.75	18.2	0.72	1.3	0.05	15 - 100	0.59 - 3.94	10	32.81
SRPE-24-9	natural	24.0	0.94	19.6	0.77	1.5	0.06	20 - 130	0.79 - 5.12	10	32.81
SRPE-6-0	UV-resistant black	6.0	0.24	7.0	0.28	0.5	0.02	4 - 50	0.16 - 0.97	10	32.81
SRPE-8-0	UV-resistant black	8.0	0.31	10.8	0.43	0.5	0.02	6 - 60	0.24 - 25.59	10	32.81
SRPE-10-0	UV-resistant black	10.0	0.39	11.4	0.44	0.8	0.03	7.5 - 60	0.30 - 25.59	10	32.81
SRPE-12-0	UV-resistant black	12.0	0.47	13.9	0.55	0.9	0.04	9 - 65	0.35 - 2.56	10	32.81
SRPE-15-0	UV-resistant black	15.0	0.59	15.0	0.59	1.0	0.04	12 - 70	0.47 - 2.76	10	32.81
SRPE-19-0	UV-resistant black	19.0	0.75	18.2	0.72	1.3	0.05	15 - 100	0.59 - 3.94	10	32.81
SRPE-24-0	UV-resistant black	24.0	0.94	19.6	0.77	1.5	0.06	20 - 130	0.79 - 5.12	10	32.81

Dimensions



Cable sleeves and spiral wraps

Extruded grommeting



Characteristics

- Used to line panel edges and knock-outs where the chafing of passing wires is a concern
- Available in 8 stock sizes in 30.5m (100.07ft) lengths for panels from 1mm to 6.35mm (0.04" to 0.25")
- In most applications, grommeting will grip tightly by itself, if not, a touch of Epoxy will keep it in place

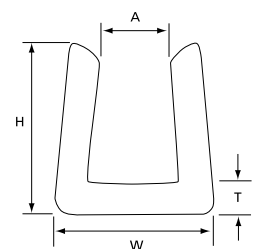
Technical information

- Material: Polyamide 6.6
- Temperature range: -40°C to +85°C (-40°F to 185°F)
- Color: Natural or black
- Flammability rating: UL 94 V-2
- Other properties: Halogen free, Silicone free

Extruded grommeting

Product code	Color	Dimensions									
		Internal width A		Thickness T		H		W		Length per reel	
		[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[m]	[ft]
GRNY-040-9-C	natural	1.01	0.04	1.01	0.04	4.82	0.19	3.17	0.12	30.5	100.07
GRNY-052-9-C	natural	1.32	0.05	1.01	0.04	4.82	0.19	3.17	0.12	30.5	100.07
GRNY-062-9-C	natural	1.57	0.06	1.14	0.04	5.08	0.2	4.32	0.17	30.5	100.07
GRNY-085-9-C	natural	2.15	0.08	1.14	0.04	5.08	0.2	4.32	0.17	30.5	100.07
GRNY-100-9-C	natural	2.54	0.1	1.14	0.04	5.58	0.22	5.33	0.21	30.5	100.07
GRNY-125-9-C	natural	3.17	0.12	1.27	0.05	5.58	0.22	5.23	0.21	30.5	100.07
GRNY-187-9-C	natural	4.74	0.19	1.27	0.05	6.85	0.27	6.98	0.27	30.5	100.07
GRNY-250-9-C	natural	6.35	0.25	1.27	0.05	7.11	0.28	9.39	0.37	30.5	100.07
GRNY-040-0-C	black	1.01	0.04	1.01	0.04	4.82	0.19	3.17	0.12	30.5	100.07
GRNY-052-0-C	black	1.32	0.05	1.01	0.04	4.82	0.19	3.17	0.12	30.5	100.07
GRNY-062-0-C	black	1.57	0.06	1.14	0.04	5.08	0.2	4.32	0.17	30.5	100.07
GRNY-085-0-C	black	2.15	0.08	1.14	0.04	5.08	0.2	4.32	0.17	30.5	100.07
GRNY-100-0-C	black	2.54	0.1	1.14	0.04	5.58	0.22	5.33	0.21	30.5	100.07
GRNY-125-0-C	black	3.17	0.12	1.27	0.05	5.58	0.22	5.23	0.21	30.5	100.07
GRNY-187-0-C	black	4.74	0.19	1.27	0.05	6.85	0.27	6.85	0.27	30.5	100.07
GRNY-250-0-C	black	6.35	0.25	1.27	0.05	7.11	0.28	9.39	0.37	30.5	100.07

Dimensions



Cable tie tooling

Ty-Rap® and Ty-Met™ tooling

ABB offers a comprehensive range of tooling to complement the full range of cable ties. The range includes low-cost tools for maintenance and small batch requirements, as well as robust and ergonomic tools with tension setting and automatic cutting, now also in pneumatic version

In particular, the ERG50 and ERG120 hand tools, as well as the new ERG50P pneumatic tool, provide a superior level of reliability and performance, combined with enhanced ergonomics and comfort of use.

These ergonomic tools, with adjustable tension and automatic cutting, are ideally suited for efficiently installing all kinds of plastic cable ties in industrial (Original Equipment Manufacturers, Maintenance and Repair Organisations, etc) and construction applications.

ERG50, ERG50P & ERG120

Superior reliability and performance

- Developed to meet the market needs for a more rugged and longer lasting tool
- Designed to integrate the greatest number of features in the market

Enhanced ergonomics and comfort of use

- First class design and materials, for maximum convenience
- As a result, the operator is subject to less stress, less fatigue and less risk of trauma due to long term use (such as Carpal Tunnel Syndrome)
- The pneumatic version (ERG50P) provides an even increased comfort of use

Increased efficiency











- Exclusive features for quick set-up and fast installation
- Confidence to achieve a highly professional result, installation after installation



Cable tie tooling

Selection guide

Tooling for plastic ties

	Product code	Features	Tensioning	Cutting	For cable ties
	ERG50	Ergonomic hand tool with superior level of reliability and performance	adjustable	automatic	2.4mm - 4.8mm (0.04" - 0.19")
	ERG120	Ergonomic hand tool with superior level of reliability and performance	adjustable	automatic	4.8mm - 7.6mm (0.19" - 0.30")
	ERG50P	Ergonomic pneumatic tool with superior level of reliability and performance	adjustable	automatic	2.4mm - 4.8mm/ (0.04" - 0.19")
	WT199	Semi-automatic MIL specified hand tool (MIL. Nr. MS-90387-1)	adjustable	automatic	2.4mm - 4.8mm (0.04" - 0.19")
	WT1-TB	Basic tensioning tool, intended for maintenance and small batch use	basic	twist cut	2.4mm - 4.8mm (0.04" - 0.19")
	WT197	Semi-automatic MIL specified hand tool (MIL. Nr. MS-90387-2)	adjustable	automatic	4.8mm - 7.6mm (0.19" - 0.30")
	WT2-TB	Basic tensioning tool, intended for maintenance and small batch use	basic	twist cut	4.8mm - 7.6mm (0.19" - 0.19")
	L300-FR	Rugged construction tool for Col-Ty™ installation ties	basic	manual	Col-Ty™ - 9mm (0.35")
	WT3D	Robust metal body with plastic hand-grips, designed for tensioning and cutting heavy-duty cable ties	basic	twist cut	7.6mm - 12.7mm (0.30" - 0.5")
	L-500-EU	Rugged metallic construction	adjustable	automatic	4.7mm - 13.3mm (0.19" - 0.52")

Cable tie tooling

Selection guide

Tooling for Ty-Met™ stainless steel ties

	Product code	Features	Tensioning	Cutting	For cable ties
	CT1-TB	Tensioning hook provides extra-leverage for tensioning the ties by hand	basic	no cutting	Releasable, ladder type & strap type
	CT2-TB	Basic hand tool	basic	no cutting	Releasable, ladder type & strap type
	WT3S	A robust metallic hand tool with rubber grips	basic	no cutting	Ladder type & strap type
	CT3	Economic tensioning tool	basic	manual	Ladder type, strap type & ball-Lock type. Width up to 12mm (0.47")
	L-600	Tensioning tool	basic	manual (twist cut)	Ball-lock type. Width: 4.6mm & 7.9mm (0.18" & 0.31")
	CT4-TB	Bantam tool, unique 3-way handle can be used in various positions. Especially useful in tight areas with minimal access	basic	manual	Releasable, ladder type & strap type
	CT5	Adjustable tension setting tool with automatic cutting	adjustable	automatic	Ladder type & strap type
	CT6	Adjustable tension setting tool with automatic cutting	adjustable	automatic	Ball-lock type. Width: 4.6mm & 7.9mm (0.18" & 0.31")
	CT7	Tensioning and cutting tool, ratchet type	basic	manual	Ball-lock type. Width: 12mm & 16mm (0.47" & 0.63")
	CT8	Tensioning and cutting tool, ratchet type	basic	manual	Bands on reel (all widths)

Cable tie tooling

Tools for plastic cable ties: ERG50, ERG120 and ERG50P

ERG50



Characteristics

The ergonomic tools from ABB provide a superior level of reliability and performance, combined with enhanced ergonomics and comfort of use. With their adjustable tension and automatic cutting, they are ideally suited for efficiently installing all kinds of plastic cable ties in industrial (Original Equipment Manufacturers, Maintenance and Repair Organisations, etc) and construction applications. They are available in hand tool version (ERG50 and ERG120) and in pneumatic version (ERG50P) for higher volumes of installation without muscle strain.

ERG120



Developed to meet the market needs for a more rugged and longer lasting tool, and to integrate the greatest number of features in the market:

- 360° rotating nose (patented), allows the tool to be used in any position
- Tension adjustment lock, for constant tension setting
- Quick tension-adjustment wheel located towards the front for easy access and fast changes
- Adjustable handle span (for hand tools only) fits large and small hands
- Anti-recoil mechanism (patented) reduces vibration shock
- First class design and materials: ergonomic shape with rounded edges, soft rubber handles, well balanced center of gravity
- Longest stroke length on the market (25.4mm/1"), meaning less tensioning cycles, for time and cost saving
- High / low force setting (patent pending), for a selection between "high force & long stroke" or "low force & short stroke" (for hand tools only)
- The cable tie is cut flush to the head, with no remaining protrusion, and the cut tail remains captive in the tool for a cleaner installation
- Easy access to spare blade nest, always a spare blade at hand (each tool is supplied with a spare blade)

As a result, the operator is subject to less stress, less fatigue and less risk of trauma due to long term use (such as Carpal Tunnel Syndrome)

ERG50P



Technical information

ERG50

- Tool type: Ergonomic hand tool
- Nose color: Black
- For type of cable tie: Plastic ties
- For tie width: 2.4mm - 4.8mm (0.09" - 0.19")
- Features: Adjustable tension setting, automatic cutting, retraction of the strap end after application of Ty-Rap® cable ties
- Weight: 260g
- Dimensions [L x W x H]: 178 x 127 x 38mm (7.01 x 5 x 1.50")
- Replacement blades: Product code ERG50B

ERG120

- Tool type: Ergonomic hand tool
- Nose color: Orange
- For type of cable tie: Plastic ties
- For tie width: 4.8mm - 7.6mm (0.19" - 0.30")
- Features: Adjustable tension setting, automatic cutting, retraction of the strap end after application of Ty-Rap® cable ties
- Weight: 278g
- Dimensions [L x W x H]: 178 x 127 x 38mm (7.01 x 5 x 1.50")
- Replacement blades: Product code ERG120B

ERG50P

- Tool type: Ergonomic pneumatic tool
- Nose color: Black
- For type of cable tie: Plastic ties
- For tie width: 2.4mm - 4.8mm (0.09" - 0.19")
- Features: Adjustable tension setting, automatic cutting, retraction of the strap end after application of Ty-Rap® cable ties, double hangers, supplied with pneumatic hose (2.7 metre/8.86ft)
- Operating air pressure: 6 to 7 bar non-lubricated air
- Weight: 415g (without pneumatic hose)
- Dimensions [L x W x H]: 245 x 155 x 40mm (9.65 x 6.10 x 1.57")
- Replacement blades: Product code ERG50B

ERG50P tool in use



Cable tie tooling

Military certified installation tools



Product code: WT199

Characteristics

- Semi-automatic hand tool
- MIL. Nr. MS-90387-1
- Tension setting to ensure product consistency
- Robust metal construction
- Ideal for industrial mass finishing applications like cable tree assemblies, for example in the military industry

Technical information

- Tool type: Semi-automatic hand tool
- For type of cable tie: Plastic ties
- For tie width: 2.4mm - 4.8mm (0.09" - 0.19")
- Features: Adjustable tension setting, automatic cutting, MIL specified (MS-90387-1)
- Weight: 410g
- Dimensions [L x W x H]: 163 x 134 x 24mm (6.42" x 5.28" x 0.94")



Product code: WT197

Characteristics

- Semi-automatic hand tool
- MIL. Nr. MS-90387-2
- Tension setting to ensure product consistency
- Robust metal construction
- Ideal for industrial mass finishing applications like cable tree assemblies, for example in the military industry

Technical information

- Tool type: Semi-automatic hand tool
- For type of cable tie: Plastic ties
- For tie width: 4.8mm - 7.6mm (0.19" - 0.30")
- Features: Adjustable tension setting, automatic cutting, MIL specified (MS-90387-2)
- Weight: 420g
- Dimensions [L x W x H]: 165 x 135 x 29mm (6.50" x 5.31" x 1.14")

Cable tie tooling

Tools for heavy duty plastic cable ties



Product code: WT3D

Characteristics

- Designed for tensioning and cutting heavy-duty cable ties
- Robust metal body with plastic hand-grips

Technical information

- Tool type: Hand tool for Deltec® ties, Col-Ty™ installation ties and other wide cable ties
- For type of cable tie: Plastic ties
- For tie width: 7.6mm - 12.7mm (0.30" - 0.5")
- Features: Tensioning, manual cutting (by twisting the tool)
- Weight: 225g
- Dimensions [L x W x H]: 178 x 112 x 20mm (7.01" x 4.41" x 0.79")



Product code: L-500-EU

Characteristics

- Rugged metallic construction makes this tool ideal for use with our 4.7mm to 13.3mm (0.19" x 0.52") wide ties
- Set tension adjuster to give desired tie tightness
- Pull trigger and tie is automatically tensioned and cut

Technical information

- Tool type: Hand tool
- Color: Red
- For type of cable tie: Plastic ties
- For tie width: 4.7mm - 13mm (0.19" x 0.51")
- Features: Tensioning, automatic cutting
- Weight: 320g
- Dimensions [L x W x H]: 220 x 90 x 25mm (8.66" x 3.54" x 0.98")



Product code: L300-FR

Characteristics

- Rugged construction makes this tool ideal for Col-Ty™ installation ties
- Pull tie to desired tension and pull trigger to cut excess flush at cable tie head
- Field proven durability

Technical information

- Tool type: Hand tool for Col-Ty™ installation ties
- Color: White
- For type of cable tie: Plastic ties
- Features: Tensioning, manual cutting
- Weight: 330g
- Dimensions [L x W x H]: 195 x 100 x 25mm (7.68" x 3.94" x 0.98")

Cable tie tooling

Tools for plastic cable ties



Product code: WT1-TB

Characteristics

- Twist-and-cut tensiometer tool in plastic, intended for maintenance and small batch use

Technical information

- Tool type: Low-cost hand tool
- Color: Orange
- For type of cable tie: Plastic ties
- For tie width: 2.4mm - 4.8mm (0.09" x 0.19")
- Features: Basic tensioning, twist cut
- Weight: 28.4g
- Dimensions [L x W x H]: 134 x 55 x 27mm (5.28" x 2.17" x 1.06")



Product code: WT2-TB

Characteristics

- Twist-and-cut tensiometer tool in plastic, intended for maintenance and small batch use

Technical information

- Tool type: Low-cost hand tool
- Color: Black
- For type of cable tie: Plastic ties
- For tie width: 4.8mm - 7.6mm (0.19" x 0.30")
- Features: Basic tensioning, twist cut
- Weight: 28.4g
- Dimensions [L x W x H]: 134 x 55 x 27mm (5.28" x 2.17" x 1.06")

Cable tie tooling

Tools for stainless steel ties



Product code: CT1-TB

Characteristics

- Tensioning hook suitable for releasable type, ladder type and strap type stainless steel ties
- Provides extra-leverage for tensioning the ties by hand

Technical information

- Tool type: Hand tool
- For type of cable tie: Releasable type, Ladder type & Strap type stainless steel ties
- Features: Tensioning, no cutting
- Weight: 50g
- Dimensions [L x W x H]: 85 x 106 x 15mm (3.35" x 4.17" x 0.59")



Product code: CT2-TB

Characteristics

- Cable tie tensioner suitable for releasable type, ladder type & strap type ties
- Tensions the ties to their optimum holding power with a simple squeeze: a flick of the wrist and they're locked tight

Technical information

- Tool type: Hand tool
- For type of cable tie: Releasable type, ladder type & strap type stainless steel ties
- For tie width: Up to 12mm (0.47")
- Features: Tensioning, no cutting
- Weight: 300g
- Dimensions [L x W x H]: 195 x 90 x 30mm (7.68" x 3.54" x 1.18")



Product code: WT3S

Characteristics

- A robust metallic hand tool with rubber grips designed for tensioning ladder type & strap type stainless steel ties
- After tensioning, the stainless steel ties can easily be cut with side-cutters

Technical information

- Tool type: Hand tool
- For type of cable tie: Ladder type & strap type stainless steel ties
- For tie width: Up to 12mm (0.47")
- Features: Tensioning, no cutting
- Weight: 225g
- Dimensions [L x W x H]: 178 x 112 x 20mm (7.01" x 4.41" x 0.79")

Cable tie tooling

Tools for stainless steel ties



Product code: CT3

Characteristics

- Cost-effective tensioning tool
- Cut-off by hand-activated lever

Technical information

- Tool type: Hand tool
- For type of cable tie: Ladder type, strap type & ball lock type stainless steel ties, coated and uncoated
- For tie width: Up to 12mm (0.47")
- Features: Tensioning, manual cutting
- Weight: 550g
- Dimensions [L x W x H]: 210 x 155 x 35mm (8.27" x 6.10" x 1.38")



Product code: L-600

Characteristics

- Tensioning tool with twist cut

Technical information

- Tool type: Hand tool
- For type of cable tie: Ball lock type stainless steel ties, coated and uncoated
- For tie width: 4.6 - 7.9mm (0.18" - 0.31")
- Features: Tensioning, manual cutting (by twisting the tool)
- Weight: 600g
- Dimensions [L x W x H]: 200 x 140 x 40mm (7.87" x 5.51" x 1.57")



Product code: CT4-TB

Characteristics

- Bantam tool, suitable for releasable type, ladder type & strap type stainless steel ties
- Unique 3-way handle can be used in various positions. Especially useful in tight areas with minimal access

Technical information

- Tool type: Hand tool
- For type of cable tie: Releasable type, ladder type & strap type stainless steel ties
- Features: Tensioning, manual cutting
- Weight: 1200g
- Dimensions [L x W x H]: 156 x 180 x 80mm (6.14" x 7.09" x 3.15")

Cable tie tooling

Tools for stainless steel ties



Product code: CT5

Characteristics

- Suitable for coated and uncoated ladder type & strap type stainless steel ties
- Adjustable tension settings
- Automatic cutting once desired tension has been reached

Technical information

- Tool type: Tension setting hand tool
- For type of cable tie: Ladder type & strap type stainless steel ties, coated and uncoated
- For tie width: Up to 12mm (0.47")
- Features: Adjustable tension setting, automatic cutting
- Weight: 430g
- Dimensions [L x W x H]: 173 x 158 x 22mm (6.81" x 6.22" x 0.87")



Product code: CT6

Characteristics

- Suitable for coated and uncoated ball-Lock type stainless steel ties
- Adjustable tension settings
- Automatic cutting once desired tension has been reached

Technical information

- Tool type: Tension setting hand tool
- For type of cable tie: Ball-lock type stainless steel ties, coated and uncoated
- For tie width: 4.6 - 7.9mm (0.18" x 0.31")
- Features: Adjustable tension setting, automatic cutting
- Weight: 430g
- Dimensions [L x W x H]: 173 x 158 x 22mm (6.81" x 6.22" x 0.87")



Product code: CT7

Characteristics

- Tensioning and cutting tool, ratchet type
- Suitable for coated and uncoated ball-lock type stainless steel ties, having a width of 12mm and 16mm (0.47" x 0.63")

Technical information

- Tool type: Hand tool, ratchet type
- Weight: 1300g
- Dimensions [L x W x H]: 270 x 170 x 60mm (10.63" x 6.69" x 2.36")



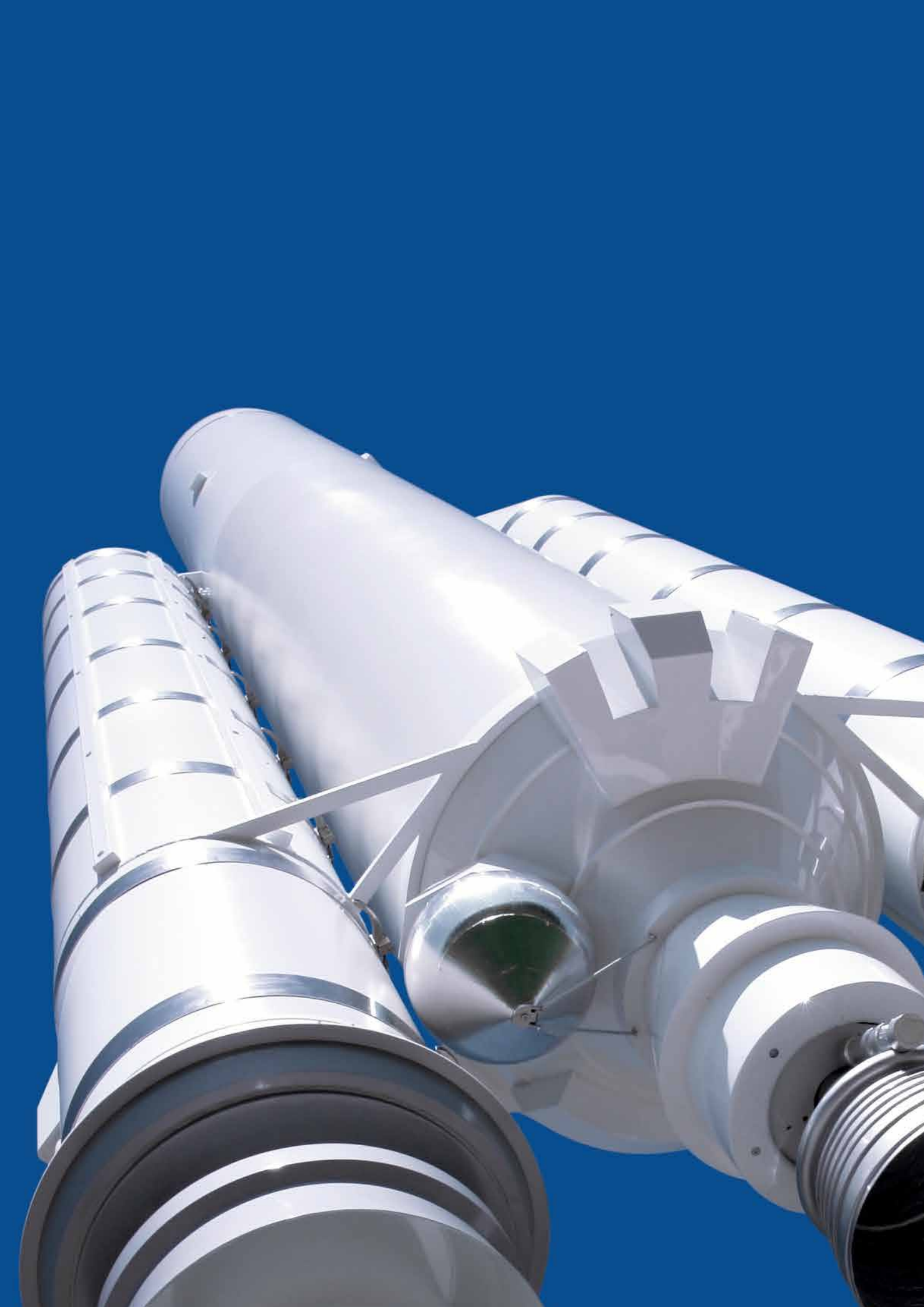
Product code: CT8

Characteristics

- Tensioning and cutting tool, ratchet type
- Suitable for the bands on reel, in all widths
- The long nose leaves an excess of 45mm after the tie is cut, for an easy installation of the band on reel

Technical information

- Tool type: Hand tool, ratchet type
- For type of cable tie: Bands on reel
- For tie width: All widths (up to 19.1mm)
- Weight: 1570g
- Dimensions [L x W x H]: 310 x 200 x 60mm (12.20" x 7.87" x 2.36")



Material specifications

Material selection and specifications

General

There is a number of factors to be considered when choosing the proper materials for a specific environment. It is extremely difficult to provide data on all the possible combinations or conditions that can occur and therefore, it is recommended that this information be used as a guideline and that cable tie samples be tested in the intended application, by the user, to determine suitability.

How to use the table

If your application is in an extremely cold environment, three materials will answer your need: ETFE Fluoropolymer, Polyamide 12 and stainless steel. If you also require high tensile strength, then stainless steel is your best choice. Where high strength is not required, Polyamide 12 might be your choice as it is the less costly.

This information is based on data provided by the manufacturers of the specific materials listed and is provided only as a general guide. No specific recommendation is intended. As each application may vary, testing should be conducted by the user in the intended environment.

Table 1 gives relative performance ratings of the different materials we offer. Chemical resistance is shown in Table 2.

Table 1: Information on cable tie materials

Material code	Polyamide 6.6	Polyamide 6.6 weather resistant*	Polyamide 6.6 heat stabilised	Polyamide 6.6 heat stabilised UV resistant	Polyamide 6.6 flame retardant
	PA6.6	UV PA6.6	HS PA6.6	HSUV PA6.6	FR PA6.6
Ty-Rap® product code	TY...M	TY...MX	TYH...M	TY...MXA	TY...MFR
Ty-Fast® product code	TY...	TY...X	TY...39		TS...HF
Max. operating temperature	85°C	105°C	105°C	105°C	65°C
	185°F	221°F	221°F	221°F	149°F
Min. operating temp.	-60°C	-60°C	-60°C	-60°C	-20°C
	-76°F	-76°F	-76°F	-76°F	-4°F
UL flammability rating	V-2	V-2	V-2	V-2	V-0
Specific density	1.14	1.14	1.14	1.14	1.16
Water absorption (24h/ASTM)	2.5 - 3.1%	2.5 - 3.1%	2.5 - 3.1%	2.5 - 3.1%	3.0 - 3.5%
Colors	Natural**	Black***	Natural****	Black	White
E-module (N/mm ²)	2000	2000	2000	2000	1400
Notch impact strength conform DIN 53453 (KJ/m ²)	2-20	2-20	2-20	2-20	3-25
UV resistant		✓		✓	
Flame retardant					✓
Heat resistant			✓	✓	
Enhanced weatherability				✓	
Flexible at low temperatures					
Radiation resistant					
Chemically resistant					See table 2 (pages 144 - 146)
Halogen free	✓	✓	✓	✓	✓
Silicon free	✓	✓	✓	✓	✓

* 2% carbon for military specifications

** Ty-Fast® ties in standard Polyamide 6.6 are available in natural color and in a wide range of colors

Ty-Rap® ties in standard Polyamide 6.6 are available in natural color only

*** Ty-Fast® ties in weather resistant Polyamide 6.6 are available in black color only (with 2% carbon for military specifications)

Ty-Rap® ties in weather resistant Polyamide 6.6 are available in black color (with 2% carbon for military specifications) and in a wide range of colors (except natural)

****Heat stabilised Polyamide 6.6 may have a greenish tint

Internal testing results

Overall analysis



Storage recommendations

Guidelines



Material specifications

UL flammability ratings

—
Nylon 6.6 = Polyamide
6.6 is Halogen-free
and Silicone-free.

Flammability ratings for selecting cable ties

Note: Flammability ratings of cable tie materials per UL as follows. These tests for flammability of plastic material are intended to serve as a preliminary indication of acceptability with respect to flammability for particular applications.

UL 94 vertical burn test procedures

Test specimens of the material, with dimensions 127 x 12.7mm (5"x 1/2"), with the thickness intended for use in the end product, are tested in both the manufactured condition and in the aged state. The test requires that the specimen be supported in a vertical fixture and a precisely controlled flame applied for a 10 second period. The flame is removed and the duration of flaming is noted. If the flame extinguishes, a second exposure to flame for 10 seconds is applied and duration of flaming is again noted. It is observed and recorded whether or not test specimens drip flaming particles that ignite a cotton swab.

Materials classed 94 V-0:

A material classed 94 V-0 shall:

- A. Not have any specimens that burn with flaming combustion for more than 10 seconds after either application of the test flame
- B. Not have a total flaming combustion time exceeding 50 seconds for the 10 flame applications for each set of five specimens
- C. Not have any specimens that burn with flaming or glowing combustion up to the holding fixture
- D. Not have any specimens that drip flaming particles that ignite the dry absorbent surgical cotton located 304.8mm (12") below the test specimen
- E. Not have any specimens with glowing combustion that persists for more than 30 seconds after the second removal of the test flame

Materials classed 94 V-1:

A material classed 94 V-1 shall:

- A. Not have any specimens that burn with flaming combustion for more than 30 seconds after either application of the test flame
- B. Not have a total flaming combustion time exceeding 250 seconds for the 10 flame applications for each set of five specimens
- C. Not have any specimens that burn with flaming or glowing combustion up to the holding fixture

- D. Not have any specimens that drip flaming particles that ignite the dry absorbent surgical cotton located 304.8mm (12") below the test specimen
- E. Not have any specimens with glowing combustion that persists for more than 60 seconds after the second removal of the test flame.

Materials classed 94 V-2:

A material classed 94 V-2 shall:

- A. Not have any specimens that burn with flaming combustion for more than 30 seconds after either application of the test flame
- B. Not have a total flaming combustion time exceeding 250 seconds for the 10 flame applications for each set of five specimens
- C. Not have any specimens that burn with flaming or glowing combustion up to the holding fixture
- D. Be permitted to have specimens that drip flaming particles that burn only briefly, some of which ignite the dry absorbent surgical cotton placed 304.8mm (12") below the test specimen
- E. Not have any specimens with glowing combustion that persists for more than 60 seconds after the second removal of the test flame

UL 94 horizontal burn (HB) test procedures

The test uses a ½ inch x 5 inches (12.7mm x 127mm) specimen held at one end in a horizontal position with marks at 1 inch (25.4mm) and 5 inches (127mm) from the free end. A flame is applied to the free end for 30 seconds or until the flame front reaches the 1 inch (25.4mm) mark. If combustion continues the duration is timed between the 1 inch (25.4mm) mark and the 5 inch (127mm) mark. If combustion stops before the 5 inch (127mm) mark, the time of combustion and the damaged length between the two marks are recorded. A set of three specimens are tested.

Materials classed 94 HB

A material that is less than 0.118 inch (3mm) in thickness will be classified 94HB if it has a burning rate of less than 3 inches (76.2mm) per minute or stops burning before the 5 inches (127mm) mark. If one specimen from the set of three fails to comply, then a second set of three are tested. All three of this second set must comply. HB rated materials are considered "self-extinguishing". This is the lowest (least flame retardant) UL94 rating.

Material specifications

Adhesive material specifications

Installation instructions for self-adhesive mounting bases

- Mounting surfaces should be cleaned with alcohol based (IPA) cleaner before application
- The self-adhesive mounting bases have a double-sided adhesive tape made of synthetic foam, covered by a protecting foil
- To install the self-adhesive mounting base, remove the protecting foil and press the mounting base onto the cleaned surface
- The thickness of the self-adhesive foam (0.8mm) compensates the irregularities of the application surfaces and allows installations on structured surfaces of cabinet doors, on sheet metal, on machines, etc
- The adhesion is achieved immediately during the installation, which means that later repositioning is not possible

Technical information

- Description: 2 component glue
- Weight: 0.21 kg

Installation instructions for product code: TC2PA (2 component glue)

- Mounting surfaces should be cleaned before application
- The liquid adhesive in the tube is to be spread onto the mounting surface. It can be used on most rough surfaces (like concrete)
- The activator liquid is then spread onto the surface of the mounting base
- Place the surface of the mounting base in contact with the surface where it has to be mounted, position the mounting base correctly and then press firmly
- Repositioning the mounting base remains possible only for a few seconds
- Do not use the mounting base immediately after installation. The Acrylic-based adhesive requires a set-up time that can be influenced by factors such as temperature (allow 24 - 72 hours for maximum performance)
- Temperature of installation needs to be above +20°C (68°F)

Product code: TC2PA

Characteristics

- 2 component glue
- Consists of one tube each of adhesive and activator
- Easy application
- Stable and durable adhesion
- Applicable on all Polyamide and Aluminium mounting bases and cable clamps
- Also applicable on concrete and other porous surfaces
- UV resistant

Adhesive material specifications

Property	Method	Unit of measure	Rubber based (self-adhesive)	Acrylic based (2 compound glue)
Coated sides	–	each	2	2
Foam density	–	Kg/m ³	96.9	96.9
Peel adhesion	PSTC 1	N/cm width	10.9	10
	ASTM D 1000	Average		8.8
Shear adhesion	natural	15.0	15.0	10
	PSTC 7	Hours	100 +	8 +
22°C (71.6°F) occasional wetting		N/m ²	68971	15174
Tensile strength	ASTM D 412	PSI	100	100 +
Tear resistance	ASTM D 624	N/cm	52.6	52.6 +
Elongation at break	–	%	400	200
Service temperature	–	°C/°F Min	-18	-29
	–	°C/°F Max	+66	+79
Flammability	ASTM D 624		Slow burn	Slow burn

Material specifications

Material selection and specifications

Selecting the right material for your applications

ABB offers cable ties and accessories in a wide variety of materials, each suited for specific environments. The purpose of this document, therefore, is to assist in choosing the best material for a particular application.

The effects of weathering, flame, chemicals, extreme temperatures and radiation on the different materials is clearly presented in tabular form. This will facilitate the choice of the best material for the application.

Having determined the most suitable material, one can choose from the wide variety of cable ties, identification ties, mounting bases, lashing ties, etc., offered by ABB.

Polyamide 6.6

- Thermoplastic material used in cable ties for universal applications in the industry
- Excellent resistance to shocks, chemicals, oils and temperature fluctuations
- High surface hardness and a small coefficient of friction
- Flammability rating: UL 94 V-2
- Halogen free and Silicone free
- Indoor applications
- Ty-Fast® ties in standard Polyamide 6.6 are available in natural color and in a wide range of colors
- Ty-Rap® ties in standard Polyamide 6.6 are available in natural color only

Material specifications

Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Polyamide 6.6 cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

Polyamide 6.6, weather resistant

- Similar to Polyamide 6.6, but recommended for outdoor applications
- UV-resistant
- Halogen free and Silicone free
- Ty-Fast® ties in weather resistant Polyamide 6.6 are available in black color only (with 2% carbon for military specifications)
- Ty-Rap® ties in weather resistant Polyamide 6.6 are available in black color (with 2% carbon for military specifications) and in a wide range of colors (except natural)
- Flammability rating: UL 94 V-2



UV-resistant



Weather-proof

Material specifications

Material selection and specifications

Polyamide 6.6, heat stabilised

- Similar to Polyamide 6.6, but increased operating temperatures, up to 105°C (221°F)
- Excellent tensile strength
- High temperature resistance
- Color: natural (may have a greenish tint)
- Flammability rating: UL 94 V-2



Heat resistant

Polyamide 6.6, heat stabilised and UV-resistant

- Similar to Polyamide 6.6, but recommended for outdoor applications and/or high temperature applications, up to 105°C (221°F)
- Combines the features & benefits of Polyamide 6.6, weather resistant and Polyamide 6.6, heat stabilised
- Color: black
- Flammability rating: UL 94 V-2



UV-resistant



Weather-proof



Heat resistant

Polyamide 4.6, extra high temperature (150°C)

- Similar to Polyamide 6.6, but outstanding resistance to high temperatures up to 150°C (221°F)
- Halogen free and silicone free
- Color: light green
- Flammability rating: UL 94 V-2



Heat resistant

Polyamide 6.6, flame retardant

- Excellent flammability rating: UL 94 V-0
- Ideal in areas where human life is at risk
- Color: white



Flame retardant

Polyamide 6.6, detectable

- Similar to Polyamide 6.6, but contains a compound detectable by metal detectors (tested and rated at 1.5mm (0.06") diameter ferrous sphere setting) and X-ray equipment
- Color: bright blue, also contributes to visual detection
- Especially recommend for the food industry, and for any other contamination sensitive industry using detection equipment
- Halogen free and silicone free
- Flammability rating: UL 94 V-2



Detectable

Polyamide 12, weather resistant

- Extremely flexible, also at low temperatures
- Ages better than Polyamide 6.6
- UV-resistant and weatherproof
- Better chemical resistance than Polyamide 6.6
- Color: black
- Flammability rating: UL 94 V-2



UV-resistant



Weather-proof



Low temperature flexibility



Chemically resistant

Material specifications

Material selection and specifications

Polypropylene, weather resistant

- Resistant against inorganic acids, polyhydric alcohols, neutral and basic salts
- Resists a number of other chemicals
- UV resistant
- Lower tensile strength than Polyamide 6.6
- Color: black
- Flammability rating: UL 94 HB



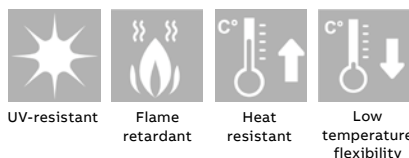
UV-resistant

Weather-proof

Chemically resistant

ETFE Fluoropolymer

- Tensile strength slightly lower than Polyamide 6.6
- ETFE Fluoropolymer is inert to most solvents and chemicals, hydrolytically stable, UV and weather resistant
- Radiation resistant (meets IEEE383) and approved for nuclear plant use
- Non-outgassing properties for zero gravity applications
- Very high temperature resistance
- Flammability rating: UL 94 V-0
- The best all around plastic material for cable ties
- Color: aquamarine

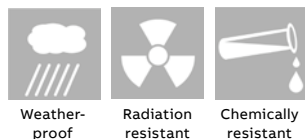


UV-resistant

Flame retardant

Heat resistant

Low temperature flexibility



Weather-proof

Radiation resistant

Chemically resistant

Polypropylene, detectable

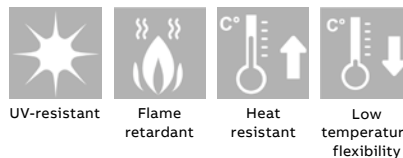
- Similar to standard Polypropylene, but contains a compound detectable by metal detectors (tested and rated at 1.5mm (0.06") diameter ferrous sphere setting) and X-ray equipment
- Color: bright blue, also contributes to visual detection
- Especially recommend for the food industry, and for any other contamination sensitive industry using detection equipment
- Halogen free and silicone free
- Flammability rating: UL 94 HB



Detectable

ECTFE Fluoropolymer

- Similar to ETFE Fluoropolymer in performance
- Outstanding characteristic: lower smoke density when burnt
- Recommended for applications where smoke generation is a concern, such as plenum areas
- Color: maroon
- Flammability rating: UL 94 V-0

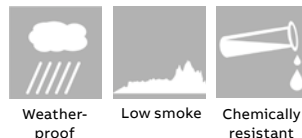


UV-resistant

Flame retardant

Heat resistant

Low temperature flexibility



Weather-proof

Low smoke

Chemically resistant

Material specifications

Material selection and specifications

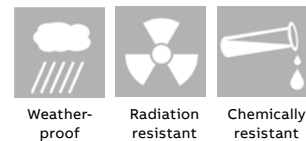
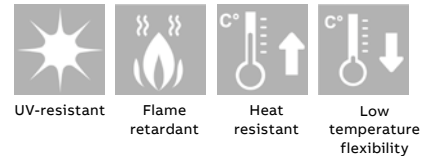
Toughened weatherable acetal

- Excellent resistance to a wide variety of solvents, esters, oils, greases, gasoline and other petroleum hydrocarbons
- Resistant to weak acids and bases
- Excellent resistance to UV (weatherable acetal)
- Limited self-extinguishing properties
- Color: black
- Flammability rating: UL 94 HB



302/304 Stainless Steel, 316 Stainless Steel

- Superior corrosion resistance
- Excellent tensile strengths at extreme temperatures
- High resistance to chemicals, acids and radiation
- 316 grade has a better resistance to saltwater corrosion and can be supplied with a halogen free coating
- Extensively used in offshore, rail and petrochemical industries



Heat Reactive Polypropylene

- Material: Polypropylene
- Heat Activation Temperature: 49°C (+/- 3°C) (120.2°F (+/- 3°F))
- Standard Color: Green
- Heat transition color: Translucent (Natural)
- Tensile Strength: 4.8mm (0.19") – 30lb / 7.9mm (0.31") – 60lb
- Operating temperature: -40°C to 80°C (-40°F to 176°F)
- Color transition life: 1000 hours above heat activation temperature
- UV Resistance: Indoor use only, avoid exposure to UV light
- Installation: 4.8mm (0.19") – ERG50 setting 2 to 5, 7.9mm (0.31") – ERG120 setting 3 to 6
- Warning: Product is a heat indicator only. Use appropriate measuring device to verify temperature.
- Applications: Where visual indication of a hot surface helps identify an unsafe working environment or malfunctioning equipment. May be secured around any surface where normal operation is below 40°C (104°F), such as: piping, electrical circuits, boiler room surfaces, engine compartments, kitchen appliances and anywhere hot surfaces may be a concern.

Material specifications

Material selection and specifications

Table 2: Resistance of available materials to various chemicals at 21°C

Reagents	Concentration	HS PA6.6	TV	DEL	PA6.6	UV PA6.6	FR PA6.6	UV PA12	PP	UVPP	TZ	SS
Arsenic Acid	40%	-	-	-	-	-	-	-	E	E	-	E
Acetaldehyde	50%	S	-	-	S	S	S	-	-	-	-	-
Acetone	100%	E	E	F	E	E	E	E	E	E	E	E
Aluminum Hydroxide	AQ	-	E	-	-	-	-	-	E	E	E	E
Ammonia	All	-	E	-	-	-	-	E	E	E	E	15.0
Ammonium Carbonate	5%	S	E	-	S	S	S	E	E	E	E	E
Ammonium Hydroxide	10%	E	E	F	E	E	E	-	E	E	E	E
Ammonium Nitrate	-	-	E	-	-	-	-	E	E	E	E	E
Ammonium Sulfate	10%	-	E	-	-	-	-	S	S	S	S	S
Barium Carbonate	All	-	E	-	-	-	-	E	E	E	E	E
Barium Chloride	5%	NR	-	-	NR	NR	NR	E	E	E	E	E
Barium Sulfate	10%	E	-	-	E	E	E	E	E	E	E	E
Barium Sulfide	10%	S	-	-	S	S	S	E	E	E	E	E
Benzene	100%	E	E	F	E	E	E	E	S	S	E	E
Benzoic Acid	100%	NR	E	-	NR	NR	NR	E	E	E	E	E
Butyric Acid	50%	NR	E	-	NR	NR	NR	-	E	E	E	E
Calcium Carbonate	AQ	-	E	-	-	-	-	-	E	E	E	E
Calcium Hydroxide	20%	-	F	E	-	-	-	-	E	E	E	E
Calcium Hydrochlorite	2	NR	-	-	NR	NR	NR	-	F	F	F	F
Calcium Sulfate	2%	-	E	-	-	-	-	-	E	E	E	E
Carbon Tetrachloride	100%	E	E	E	E	E	E	E	F	F	E	E
Chlorine (WET)	-	NR	-	-	NR	NR	NR	-	F	F	F	F
Chlorine (DRY)	-	NR	-	-	NR	NR	NR	-	NR	NR	F	F
Chloroacetic Acid	30%	NR	-	-	NR	NR	NR	-	-	-	F	F
Chloroform	100%	-	E	-	-	-	-	F	F	F	E	E
Chromic Acid	50%	NR	S	-	NR	NR	NR	-	F	F	F	F
Citric Acid	50%	S	E	E	S	S	S	E	E	E	E	E
Copper Cyanide	10%	-	E	-	-	-	-	-	E	E	E	E
Copper Nitrate	50%	-	E	-	-	-	-	-	E	E	E	E
Cider	-	-	E	-	-	-	-	-	E	E	E	E
Dichloroethane	100%	-	E	-	-	-	-	-	-	-	E	E
Diethyl Ether	100%	-	E	S	-	-	-	E	E	E	E	E
Ethyl Alcohol	100%	S	E	-	S	S	S	E	E	E	E	E
Ethyl Chloride	100%	-	S	E	-	-	-	F	F	F	E	E
Ethylene Glycol	100%	E	E	S	E	E	E	-	E	E	E	E
Ferric Hydroxide	All	-	E	-	-	-	-	-	E	E	E	E
Ferric Nitrate	10%	-	E	-	-	-	-	-	E	E	E	E
Ferrous Sulfate	10%	-	E	-	-	-	-	-	E	E	E	E
Fuel Oil	100%	-	E	-	-	-	-	E	-	-	E	E

Ratings

E = Excellent

S = Satisfactory

F = Fair

NR = Not Recommended

(AQ = Aqueous)

Material specifications

Material selection and specifications

Table 2: Resistance of available materials to various chemicals at 21°C

Reagents	Concentration	HS PA6.6	TV	DEL	PA6.6	UV PA6.6	FR PA6.6	UV PA12	PP	UVPP	TZ	SS
Furfural	100%	-	E	-	-	-	-	-	F	F	E	E
Gallic Acid	AQ	-	E	-	-	-	-	-	-	-	E	E
Gasoline	100%	E	E	-	E	E	E	-	S	S	E	E
Glycerine	100%	-	E	-	-	-	-	E	E	E	-	E
Hydrocyanic Acid	All	-	E	-	-	-	-	-	E	E	E	E
Hydrogen Peroxide	30%	NR	E	F	NR	NR	NR	S	E	E	E	E
Hydrogen Sulfide	Dry	NR	E	-	NR	NR	NR	E	E	E	E	E
Iodoform	100%	-	E	-	-	-	-	-	-	-	E	E
Isopropyl Alcohol	100%	S	E	-	S	S	S	E	E	E	E	E
Jet Fuel	100%	E	E	-	E	E	E	-	S	S	E	E
Lactic Acid	10%	E	E	-	E	E	E	S	E	E	E	E
Lanolin	10%	E	E	-	E	E	E	E	E	E	E	E
Lead Acetate	5%	-	E	-	-	-	-	-	E	E	E	E
Linseed Oil	10%	E	E	E	E	E	E	E	E	E	E	E
Magnesium Carbonate	All	-	E	-	-	-	-	E	E	E	E	E
Magnesium Chloride	10%	F	-	-	F	F	F	F	F	F	F	F
Magnesium Nitrate	All	-	E	-	-	-	-	E	E	E	E	E
Malic Acid	AQ	-	E	-	-	-	-	-	E	E	E	E
Mercury	100%	-	E	-	-	-	-	E	E	E	E	E
Methyl Alcohol	100%	S	E	-	S	S	S	E	E	E	E	E
Methyl Chloride	100%	-	S	-	-	-	-	-	S	S	E	E
MethylEthyl Ketone	100%	-	E	F	-	-	-	E	E	E	E	E
Naptha	100%	-	E	-	-	-	-	-	E	E	E	E
Nitric Acid	30%	NR	E	NR	NR	NR	NR	-	E	E	E	E
Nitric Acid	30-70%	NR	S	NR	NR	NR	NR	-	F	F	S	E
Nitrous Acid	5%	-	E	-	-	-	-	-	F	F	E	E
Oieic Acid	100%	-	E	S	-	-	-	-	E	E	E	E
Oxalic Acid	10%	-	E	-	-	-	-	S	E	E	E	E
Paraffin	100%	E	E	-	E	E	E	E	E	E	E	E
PetroleumEther	100%	-	E	-	-	-	-	E	F	F	E	E
Phenol	90%	NR	E	NR	NR	NR	NR	-	E	E	E	E
Phosphoric Acid	10%	NR	E	-	NR	NR	NR	-	E	E	E	E
Picric Acid	1%	-	E	-	-	-	-	-	E	E	E	E
Potassium Bromide	AQ	-	-	-	-	-	-	-	S	S	S	S
Potassium Carbonate	1%	-	E	-	-	-	-	E	E	E	E	E
Potassium Chlorate	AQ	-	E	-	-	-	-	S	E	E	E	E
Potassium Dichromate	40%	NR	E	-	NR	NR	NR	F	E	E	E	E
Potassium Ferrocyanide	25%	-	E	-	-	-	-	-	E	E	E	E
Potassium Hydroxide	5%	S	E	-	S	S	S	-	E	E	E	E

Ratings

E = Excellent

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(AQ = Aqueous)

Material specifications

Material selection and specifications

Table 2: Resistance of available materials to various chemicals at 21°C

Reagents	Concentration	HS PA6.6	TV	DEL	PA6.6	UV PA6.6	FR PA6.6	UV PA12	PP	UVPP	TZ	SS
Potassium Iodide	All	-	E	-	-	-	-	E	E	E	E	E
Potassium Nitrate	50%	F	E	-	F	F	F	E	E	E	E	E
Potassium Permanganate	5%	NR	E	S	NR	NR	NR	NR	E	E	E	E
Potassium Sulfate	5%	-	E	-	-	-	-	E	E	E	E	E
Potassium Sulfide	AQ	-	E	-	-	-	-	-	E	E	E	E
Propyl Alcohol	100%	E	E	-	E	E	E	-	E	E	E	E
Silver Nitrate	10%	-	E	-	-	-	-	E	E	E	E	E
Sodium Acetate	60%	E	E	-	E	E	E	-	E	E	E	E
Sodium Bicarbonate	All	E	E	-	E	E	E	E	E	E	E	E
Sodium Bisulfate	10%	-	E	E	-	-	-	E	E	E	E	E
Sodium Borate	All	-	E	-	-	-	-	-	E	E	E	E
Sodium Carbonate	5%	E	E	S	E	E	E	E	E	E	E	E
Sodium Chlorate	25%	-	E	E	-	-	-	S	E	E	E	E
Sodium Chloride	2%	E	E	S	E	E	E	E	E	E	E	E
Sodium Fluoride	5%	-	-	-	-	-	-	-	F	F	F	F
Sodium Hydroxide	10%	E	E	S	E	E	E	E	E	E	E	E
Sodium Hyposulfite	AQ	-	E	-	-	-	-	-	-	-	E	E
Sodium Nitrate	5%	E	E	-	E	E	E	E	E	E	E	E
Sodium Nitrite	AQ	-	E	-	-	-	-	S	E	E	E	E
Sodium Perchlorate	10%	-	E	-	-	-	-	-	-	-	E	E
Sodium Phosphate	5%	-	E	-	-	-	-	E	E	E	E	E
Sodium Sulfate	5%	S	E	-	S	E	E	E	E	E	E	E
Sodium Thiosulfate	5%	-	-	S	-	-	-	S	S	S	S	S
Stearic Acid	100%	-	E	-	-	-	-	F	E	E	E	E
Sulfur	100%	-	E	-	-	-	-	E	E	E	E	E
Sulfur Dioxide	All	NR	E	-	NR	NR	NR	E	E	E	E	E
Sulfuric Acid	Conc.	NR	E	NR	NR	NR	NR	-	S	S	E	E
Sulfuric Acid	5%	NR	F	F	NR	NR	NR	F	F	F	F	F
Tannic Acid	10%	-	E	-	-	-	-	-	E	E	E	E
Tartaric Acid	50%	-	E	E	-	-	-	E	E	E	E	E
Tetrahydrofuran	100%	-	F	E	-	-	-	S	F	F	E	E
Toluene	100%	E	E	F	E	E	E	E	F	F	E	F
Xylene	100%	E	-	E	E	E	E	F	F	E	E	E
Zinc Chloride	70%	F	E	NR	F	F	F	E	E	E	E	E
Zinc Nitrate	AQ	-	E	-	-	-	-	E	E	E	E	E
Zinc Sulfate	AQ	-	E	-	-	-	-	E	E	E	E	E

Ratings

E = Excellent

S = Satisfactory

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NR = Not Recommended

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Material specifications

Unit conversion factors

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Unit conversion factors

Unit	x	Constant	=	Unit	Unit	x	Constant	=	Unit
BTU		778.0		foot-pound (ft x lb)	gallons		0.13368		cubic foot (ft ³)
BTU		1054.8		Joules	gallons		231.0		cubic inch (in ³)
BTU		0.293		Watt-hours (W x h)	gallons		3785.332		cubic centimetres (cm ³)
centimetres (cm)		0.032808		feet (ft)	grams (g)		15.432		grains
centimetres (cm)		0.3937		inches (in)	gram/centimetre ³ (gm/cm ³)		0.0361275		pounds/in ³ (lb/in ³)
centimetres (cm)		0.00001		kilometres (km)	horsepower (hp)		33000.0		ft x lb/min
centimetres (cm)		0.010		metres (m)	horsepower (hp)		550.0		ft x lb/sec
centimetres (cm)		10.0		millimetres (mm)	horsepower (hp)		745.7		Watts (W)
circular mils		0.00064516		circular millimetres	inch (in)		0.027178		yards (yd)
circular mils		0.0000007854		inches ² (in ²)	inch (in)		0.083333		feet (ft)
circular mils		0.000506671		square millimetres (mm ²)	inch (in)		0.00002540		kilometre (km)
circular mils		0.7854		mils ²	inch (in)		0.025400		metre (m)
cubic centimetre (cm ³)		0.000035314		cubic foot (ft ³)	inch (in)		2.54000514		centimetre (cm)
cubic centimetre (cm ³)		0.061023		cubic inch (in ³)	inch (in)		25.4000514		millimetre (mm)
cubic centimetre (cm ³)		0.000001		cubic metre (m ³)	inch (in)		1000.0		mils
cubic centimetre (cm ³)		0.0026417		gallons	Joules		0.000948		BTU
cubic foot (ft ³)		17280.		cubic inch (in ³)	Joules		107		ergs
cubic foot (ft ³)		28317.016		cubic centimetre (cm ³)	liters (l)		61.0250		cubic inch (in ³)
cubic inch (in ³)		0.00057870		cubic feet (ft ³)	metres (m)		1.093611		yard (yd)
cubic inch (in ³)		0.000016387		cubic metre (m ³)	metres (m)		3.2808333		feet (ft)
cubic inch (in ³)		16.387162		cubic centimetre (cm ³)	metres (m)		39.37		inch (in)
cubic metre (m ³)		1000000.0		centimetre (cm)	metres (m)		100.0		centimetre (cm)
cubic metre (m ³)		35.314456		cubic foot (ft ³)	miles		1760.0		yards (yd)
cubic metre (m ³)		264.17		gallons	miles		5280.0		feet (ft)
foot (ft)		0.00018939		miles	miles		1.6093		kilometre (km)
foot (ft)		0.33333		yards (yd)	millimetres (mm)		0.0032808		feet (ft)
foot (ft)		12		inches (in)	millimetres (mm)		0.03937		inch (in)
foot (ft)		0.00030480		kilometres (km)	millimetres (mm)		0.001		metres (m)
foot (ft)		0.30480		metres (m)	millimetres (mm)		0.01		centimetres (cm)
foot (ft)		30.480		centimetres (cm)	millimetres (mm)		39.3701		mils
foot (ft)		304.80		millimetres (mm)	millimetres (mm)		1000.0		microns (µm)
foot/pound (ft/lb)		0.00067197		metres/grams (m/g)	Watts (W)		44.25		ft x lb/minute
foot-pound (ft x lb)		0.001285		BTU	Watts (W)		0.737562		ft x lb/sec
foot-pound (ft x lb)		1.356		Joules (J)	Watts (W)		0.001341		horsepower (hp)
foot/pound (ft/lb)		0.1383		kilogram/metre (kg/m)	Watt-hours (W x h)		3.41266		BTU
gallons (US)		3.785332		litres (l)					

Appendix

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696-41562	7TAG009550R0012	34	CPS40B-50-CV0	7TCG054800R0077	127	FCC-1A	7TCG009630R0013	117
696-41563	7TAG009550R0013	34	CPS40G-25	7TCG054800R0079	126	FCC-2	7TCG009630R0014	117
696-41614	7TAG009910R0018	34	CPS40G-50-CV0	7TCG054800R0080	127	FCC-2A	7TCG009630R0015	117
696-41794	7TAA159090R0000	38	CPS4B-100	7TCG054800R0081	126	FCC-3	7TCG009630R0016	117
696-41795	7TAA159090R0001	39	CPS4B-100-CV0	7TCG054800R0082	127	FCC-3A	7TCG009630R0017	117
696-41836	7TAG009530R0003	27	CPS4G-100	7TCG054800R0084	126	FO200-40-0	7TAG009630R0018	58
CPS05W-150-EU	7TCG054800R0001	124	CPS4G-100-CV0	7TCG054800R0085	127	FO200-50-0	7TAG009630R0026	58
CPS05W-150-FR-EU	7TCG054800R0003	125	CPS50B-25	7TCG054800R0086	126	FO350-40-0	7TAG009630R0031	58
CPS08W-100-EU	7TCG054800R0005	124	CPS50B-50-CV0	7TCG054800R0087	127	FO350-50-0	7TAG009630R0033	58
CPS08W-100-FR-EU	7TCG054800R0007	125	CPS50G-25	7TCG054800R0089	126	FO350-50-0-FR	7TAG009000R0104	58
CPS10B-100	7TCG054800R0008	126	CPS50G-50-CV0	7TCG054800R0110	127	FOL300-50-0	7TAG009630R0036	58
CPS10B-50-CV0	7TCG054800R0010	127	CPS50W-15-FR-EU		125	FOL500-50-0	7TAG009630R0040	58
CPS10G-100	7TCG054800R0012	126	CPS5B-100	7TCG054800R0092	126	FOR180-50-0	7TAG009630R0041	59
CPS10G-50-CV0	7TCG054800R0013	127	CPS5B-100-CV0	7TCG054800R0093	127	FOR180-50-0-FR	7TAG009370R0000	59
CPS12B-50	7TCG054800R0015	126	CPS5G-100	7TCG054800R0096	126	FOS150-50-0	7TAG009630R0046	59
CPS12B-50-CV0	7TCG054800R0016	127	CPS5G-100-CV0	7TCG054800R0109	127	FOS320-50-0	7TAG009630R0048	59
CPS12G-50	7TCG054800R0018	126	CPS6B-100	7TCG054800R0097	126	FOS500-50-0	7TAG009630R0050	59
CPS12G-50-CV0	7TCG054800R0112	127	CPS6B-100-CV0	7TCG054800R0098	127	FRPV-1000-8-C	7TAG009970R0028	118
CPS13W-50-EU	7TCG054800R0020	124	CPS6G-100	7TCG054800R0101	126	FRPV-1000-8-D	7TAG009970R0029	118
CPS13W-50-FR-EU	7TCG054800R0022	125	CPS6G-100-CV0	7TCG054800R0102	127	FSNY-812-9-C	7TAG009970R0030	119
CPS15B-50	7TCG054800R0025	126	CPS8B-100	7TCG054800R0103	126	GRNY-040-0-C	7TAG009750R0017	129
CPS15B-50-CV0	7TCG054800R0026	127	CPS8B-100-CV0	7TCG054800R0104	127	GRNY-040-9-C	7TAG009750R0018	129
CPS15G-50	7TCG054800R0028	126	CPS8G-100	7TCG054800R0107	126	GRNY-052-0-C	7TAG009750R0019	129
CPS15G-50-CV0	7TCG054800R0029	127	CPS8G-100-CV0	7TCG054800R0111	127	GRNY-052-9-C	7TAG009750R0021	129
CPS19W-25-EU	7TCG054800R0031	124	CSS-100	7TAA159110R0000	37	GRNY-062-0-C	7TAG009750R0022	129
CPS19W-25-FR-EU	7TCG054800R0033	125	CSS-10K	7TAA159130R0001	39	GRNY-062-9-C	7TAG009750R0023	129
CPS20B-25	7TCG054800R0035	126	CSS-160	7TAA159170R0000	37	GRNY-085-0-C	7TAG009750R0024	129
CPS20B-50-CV0	7TCG054800R0036	127	CSS-5K	7TAA159120R0000	39	GRNY-085-9-C	7TAG009750R0026	129
CPS20G-25	7TCG054800R0038	126	CSS-B	7TAA159220R0000	41	GRNY-100-0-C	7TAG009750R0027	129
CPS20G-50-CV0	7TCG054800R0039	127	CSS-H	7TAA159180R0000	41	GRNY-100-9-C	7TAG009750R0028	129
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CPS25G-50-CV0	7TCG054800R0046	127	CT2-TB	7TCA131140R0005	135, 140	GRNY-187-9-C	7TAG009750R0033	129
CPS25W-25-EU	7TCG054800R0048	124	CT3	7TCA131990R0206	135, 141	GRNY-250-0-C	7TAG009750R0034	129
CPS25W-25-FR-EU	7TCG054800R0050	125	CT4-TB	7TCA131140R0007	135, 141	GRNY-250-9-C	7TAG009750R0035	129
CPS29W-15-EU	7TCG054800R0051	124	CT5	7TCA131140R0008	135, 142	HCNY-125-9-M	7TAG009970R0044	115
CPS29W-15-FR-EU	7TCG054800R0065	125	CT6	7TCA131990R0211	135, 142	HCNY-250-9-C	7TAG009970R0045	115
CPS30B-25	7TCG054800R0058	126	CT7	7TCA131140R0009	135, 143	HCNY-250-9-M	7TAG009970R0046	115
CPS30B-50-CV0	7TCG054800R0059	127	CT8	7TCA131140R0010	135, 143	HCNY-375-9-C	7TAG054980R0536	115
CPS30G-25	7TCG054800R0061	126	CTP-9-180-0-C	7TCG009910R0048	61	HCNY-375-9-M	7TAG009970R0047	115
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YID-CHAR-D	7TCG009470R0079	80	YLS-12-1200BC	7TCG009420R0035	75	YLS-4.6-1200A	7TCG009420R0086	72
YID-CHAR-E	7TCG009470R0080	80	YLS-12-1400B	7TCG009420R0036	74	YLS-4.6-1200B	7TCG009420R0087	72
YID-CHAR-EARTH	7TCG009470R0081	80	YLS-12-1400BC	7TCG009420R0037	75	YLS-4.6-1200BC	7TCG009420R0088	73
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YID-CHAR-G	7TCG009470R0083	80	YLS-12-200BC	7TCG009420R0039	75	YLS-4.6-125B	7TCG009410R0014	72
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YID-CHAR-J	7TCG009470R0086	80	YLS-12-360B	7TCG009420R0042	74	YLS-4.6-1400B	7TCG009420R0091	72
YID-CHAR-K	7TCG009470R0087	80	YLS-12-360BC	7TCG009420R0043	75	YLS-4.6-1400BC	7TCG009420R0092	73
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YID-CHAR-N	7TCG009470R0091	80	YLS-12-520BC	7TCG009420R0047	75	YLS4.6-200A	7TCG009410R0035	72
YID-CHAR-O	7TCG009470R0092	80	YLS-12-600B	7TCG009420R0048	74	YLS4.6-200B	7TCG009410R0036	72
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