

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

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

Introduction

First patented in 1958 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 cable ties, Shrink-Kon® heat shrink, T&B Cabletray
- Cable Protection Systems – nylon & metalli 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 high performance cable ties

Features and benefits

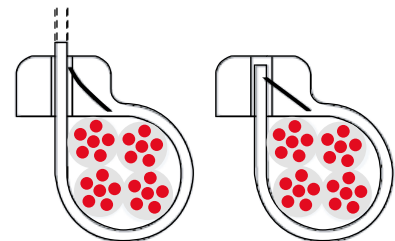
When strength, aesthetics, reliability and performance are required, knowledgeable professionals turn to the original and the best source for cable ties and accessories. Ty-Rap fastening systems include a full range of cable ties, identification ties, clamps, mounting bases, harnessing aids and installing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



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 (45in.), in 6 typical widths with a tensile strength up to 780N, to fasten cable bundles with a diameter up to 330mm (12.99in.).

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.

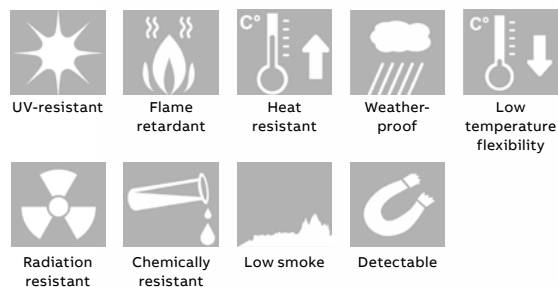
Wide choice of colours:

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



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

Type classifications explained

The Ty-Rap Advantage

- Ty-Rap cable ties identified in this catalogue as TYPE 21S are certified to meet the requirements of TYPE 21S.
- TYPE 21S is a 2015 CEC requirement that stipulates that «cable ties is a type specifically approved for the purpose» can be used as a method of supporting for:
 - Cable (clauses 12-510, 12-706)
 - Flexible metal conduit (clause 12-1010)
 - Liquidtight flexible conduit (clause 12-1308)
 - Electrical nonmetallic tubing (clause 12-1504)

- Ty-Rap product line includes a wide range of AH-2 plenum-rated cable ties.
- AH-2 is a 2015 CEC rating for air-handling spaces (drop ceilings, raised floors, etc.)

Note: Please check with your local inspection authority if TYPE 21S has been approved for use in your jurisdiction as a support method. Adoption of the CEC 2015 differs by province.

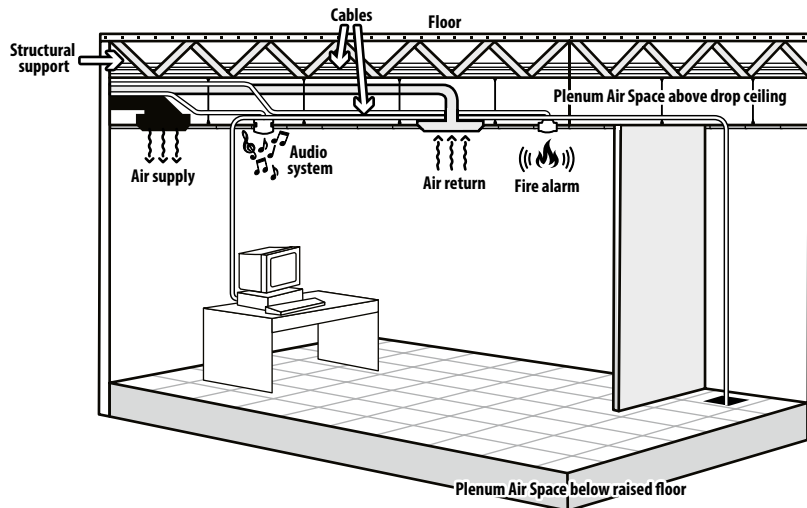
Plenum ratings:

- If a cable tie is identified as suitable for use in air-handling spaces, the following plenum rating is declared, AH-1 or AH-2.

Short code for air handling spaces.

New Short-Form Coding (proposed)

New Short-Form Coding (proposed)	Product Type	Standard Label Marking
AH-1	Metallic cable ties and fixing devices	“Suitable for use in Air-Handling Spaces (plenums)” in accordance with Section 300.22 (B), (C), and (D) of the National Electrical Code, and Rules 12-010 (3), (4), and (5), and 12-020 of the Canadian Electrical Code, Part I or an equivalent wording..
AH-2	Nonmetallic or composite cable ties and fixing devices	“Suitable for use in Air-Handling Spaces (plenums)” in accordance with Section 300.22 (C), and (D) of the National Electrical Code, and Rules 12-010 (3), (4), and (5), and 12-020 of the Canadian Electrical Code, Part I or an equivalent wording.



Ty-Rap high performance cable ties

Type classifications explained

The new Canadian CSA 62275 standard, cable ties for electrical installations replaces standard CSA C22.2 No.18.5 (Positioning Devices). The new standard was adopted on June 1, 2014.

It is based on the international standard IEC 62275 (Cable Management Systems-Cable Ties for Electrical Installations). It is harmonized with U.S standard UL 62275 and Mexican standard NMX-623-ANCE Products conforming to the new

standard will be identified by new “TYPE” classifications and “Standard performance ratings”.

The “Type” classification in the latest standard is based on the demonstrated ability of the product to retain its mechanical performance both before and after exposure to various application conditions.



21S

Nonmetallic, composite and all Cable tie fixing devices

Type 21S cable ties pass the same tests as Type 2 but must also have additional qualifications for suitability to support flexible conduit and cables for building construction in accordance to national installation codes.

● ● TY25M, TY25M-2, TY25XM, TY28M, TY28M-2, TY28MX



21

Nonmetallic, composite and all Cable tie fixing devices


Type 21 cable ties pass the same tests as Type 2 but are made from a UL recognized material. In addition, they pass pre-qualifications to long-term performance characteristics of nonmetallic molding materials.

● ●



1

Nonmetallic and composite Cable tie

Retains at least 50% of declared loop tensile strength after all test conditions. Equivalent to , the component recognition mark for UL.

●



11

Nonmetallic and composite Cable tie

Type 11 cable ties pass the same tests as Type 1 but are made from a UL recognized material. In addition, they pass pre-qualifications to long-term performance characteristics of nonmetallic molding materials.



2

Metallic, nonmetallic, composite and all cable tie fixing devices

Retains at least 100% of declared loop tensile strength after all test conditions.



2S

Metallic, nonmetallic, composite and all cable tie fixing devices

Type 2S cable ties pass the same tests as Type 2 but must also have additional qualifications for suitability to support flexible conduit and cables for building construction in accordance to national installation codes. The key here is that metallic can only be 2S, but composite can be 2S or 21S.



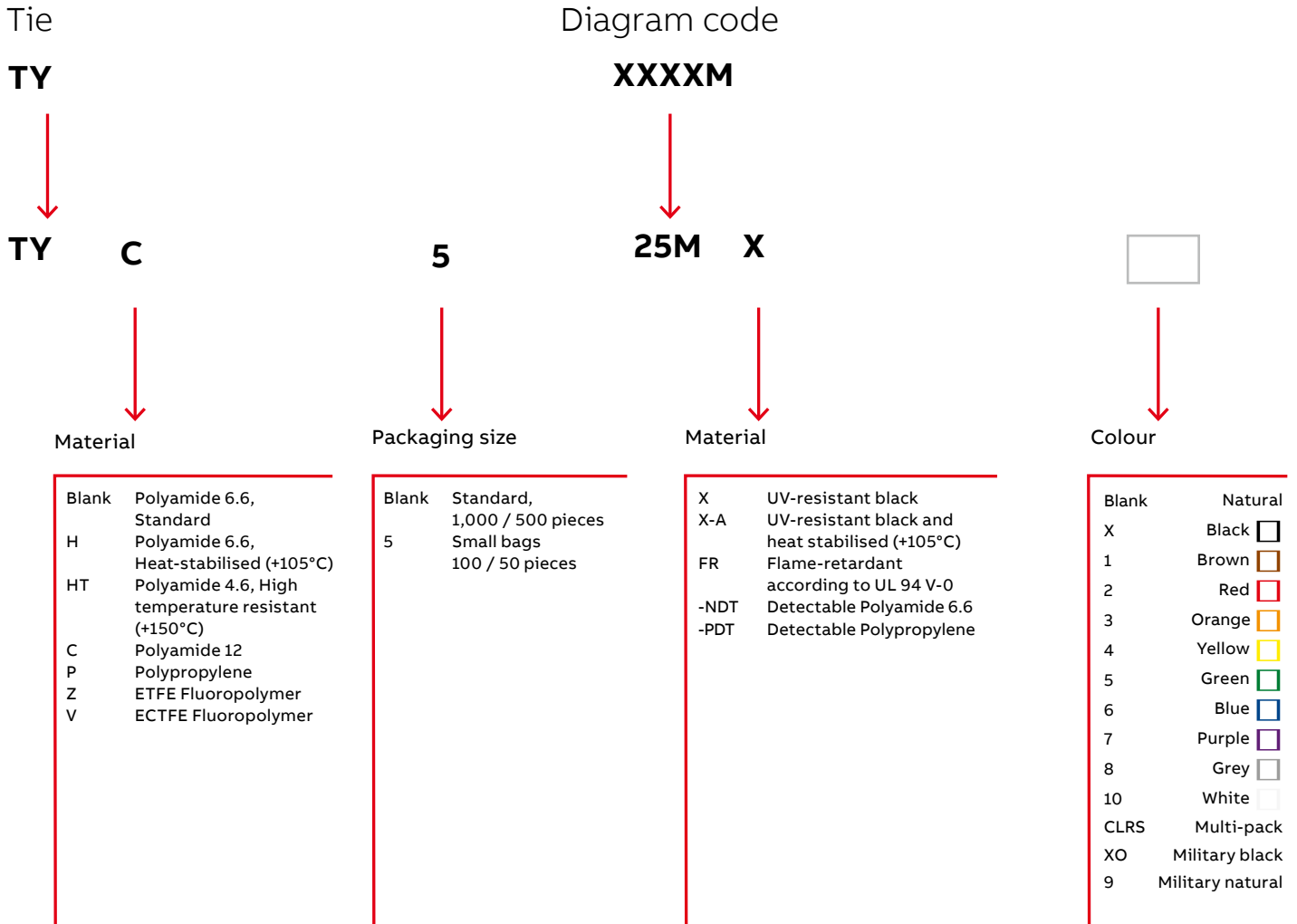
The new CSA 62275 standard for cable ties and accessories defines the terms and performance in each performance rating category:

Performance Rating Categories:

- Mechanical (Minimum loop tensile strength is a reference mechanical characteristic of a cable tie with its locking mechanism engaged.)
- Thermal - indicating minimum and maximum operating temperature for application and minimum temperature for installation

- Fire effects - reflecting degree of resistance to flammability
- Environmental - reflecting resistance of nonmetallic or composite materials to UV light and of metallic cable ties and accessories (or those containing metal) to corrosion

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

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
60 lb (267 N)	120 lb (540 N)	120 lb (540 N)	120 lb (540 N)	1,100N	8,800N	50 lb (222 N)	130N	1,110N
-40 to +85°C	-45°C to +150°C	-40 to +85°C	-60 to +85°C	-40 to +300°C	-40 to +85°C	-60 to +85°C	-20 to +85°C	-40 to +85°C
-40 to +185°F	-49 to +302°F	-40 to +185°F	-76 to +185°F	-40 to +572°F	-40 to +185°F	-76 to +185°F	-4 to +185°F	-40 to +185°F
360mm	360mm	360mm	370mm	1,000m	1m	360mm	360mm	1,200mm
14.17in	14.17in	14.17in	14.6in	3 280.84ft	3.28ft	14.17in	14.17in	47.24in
102mm	102mm	102mm	102mm	4m	400mm	102mm	100mm	380mm
4.02in	4.02in	4.02in	4.02in	13.12ft	15.75in	4.02in	3.94in	14.96in
•••	•••••	•••	•	•••••	•••••	•	•••	•••
•	•	•••	•	••	••	••	•••	•••
□	□	□	□	□	□	□	□	□
••••	••••	••••	••••	••••	•	••••••••••••••		••••
ERG50 ERG120	ERG50 ERG120	ERG50 ERG120	ERG50 ERG120	WT3D	DAS250 CT3	ERG50 ERG120	-	ERG50 ERG120