



MBT-Series Frequently Asked Questions

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1. What are stainless steel cable ties used for?

Stainless steel cable ties are used in a variety of industrial and commercial applications where **strength**, **durability**, and **resistance to harsh environments** are required.

They are able to withstand **high temperatures**, **UV**, **extreme weather** conditions, and **exposure to chemicals** and other industrial pollutants, making them universally suitable for demanding industrial applications, like:

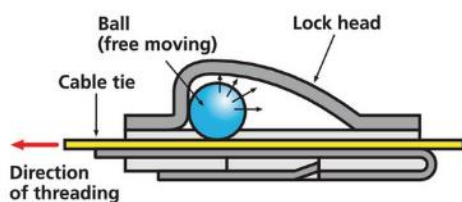
- **Marine applications:** Stainless steel cable ties are resistant to corrosion, making them ideal for use on boats, ships, and offshore oil rigs.
- **Outdoor installations:** Stainless steel cable ties resist UV aging and weathering, making them reliable for securing wiring and identification marker plates in outdoor settings like traffic signs and signals or telecommunications equipment.
- **Food and pharmaceuticals:** Stainless steel cable ties are durable, non-toxic, withstand heat sterilisation processes and aggressive cleaning chemicals. They can support HACCP quality assurance processes.
- **Heavy-duty applications:** Stainless steel cable ties are strong and suitable for securing cables and tubing on trays and racks in heavy-duty vehicles, aerospace and railway applications and also for securing pipe insulation jackets in high temperature applications or for aerial support of power cables.
- **Other applications:** For example securing cables, wiring and pipes in road vehicles, aerospace, and railroad industries as well as in construction and mining.

2. Are there different types of locking mechanisms available for metal ties?

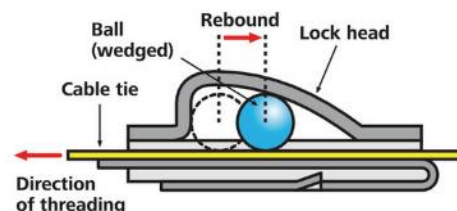
There are **five methods for closing a metal** band so that it securely holds cables, wires, conduits, hoses and pipes and prevents them from getting loose. Locking methods include **buckling**, **clamping**, **crimping**, **screwing** and **welding**. The best option for a specific application will depend on factors such as the size and weight of the items being secured, the environment in which the cable ties will be used, and the level of security required. Metal ball-lock cable ties utilise the clamping method.

3. What is special about the MBT metal ball-locking mechanism?

The ball-locking mechanism uses a small ball bearing in the head of the cable tie that wedges in place once it is pulled tight.



1. Initial position, ball bearing moves freely



2. Ball rebounds and wedges band in place

The clamping method is more secure than buckling or ratcheting self-locking mechanisms under heavy load and allows the band to be smooth. **Securing the band permanently requires fewer steps or less specialised tools** than buckling, crimping, key-locking or welding methods.

4. How do I install MBT cable ties?

Like any other non-releasable cable tie, simply loop the tie manually around the bundle, with the head on the outside then insert the tail of the band into the head and pull it through to tighten. **The insertion or thread force is low compared with the design of comparable ties from other manufacturers.** Even though the edges of the band are rounded and smooth, we recommend wearing appropriate protective gloves.

5. Are special tools required to install MBT cable ties?

We recommend using a manual cable tie application tool like the HDT16 to tension MBT ties firmly and ensure that they are cut flush and precisely without leaving any sharp tail protrusions. For applications that require a specific tension force, we recommend the MK9SST manual cable tie gun or the MK9PSST pneumatic cable tie tool for stainless steel bands up to 16 mm width.



[HDT16](#)



[MK9SST](#)



[MK9PSST](#)

6. What mounting options are available?

Screw-fixing mounts made from 316 grade steel are available for MBT cable ties. They measure 23.0 mm by 10.2 mm and are available with 4.2 mm, 5.3 mm and 6.3 mm hole diameters for screwing or riveting in place.



[SSPC](#)

7. What is the difference between SS304 and SS316?

Both grade 304 and grade 316 steel can be labelled as "stainless steel". The main difference between SS304 and SS316 is the composition of the steel. **SS304 is made up of 18% chromium and 8% nickel** (18/8 steel), while **SS316 contains 18% chromium, 10% nickel, and 2% molybdenum**. The molybdenum in SS316 adds to its corrosion resistance, making it more resistant to pitting and crevice corrosion in certain environments. V2A and V4A are terms used in Germany to refer to 304 and 316 steel, respectively. Another difference between the two steels is their mechanical properties. While SS304 has a minimum tensile strength of 515 N/mm² and a minimum yield strength of 205 N/mm², SS316 has a minimum tensile strength of 515 N/mm² and a minimum yield strength of 215 N/mm².

Due to the additional corrosion resistance and mechanical strength, **SS316 is typically used in more harsh and demanding environments**, such as in chemical processing, coastal and offshore oil and gas operations, and marine applications. SS304, on the other hand, is typically used in less demanding applications, such as in the food and beverage industry, and in non-corrosive environments.

8. Which stainless steel ties perform best in harsh environments?

Polyester coating or polyolefin protective channels can prevent contact corrosion between dissimilar metals, for instance aluminium or zinc, but this does reduce its maximum operating temperature range.

Material	Loop tensile strength	High temperatures	UV resistance	Salt corrosion	Contact corrosion	Chemical resistance	Flammability
SS304	excellent	excellent	excellent	good	limited	excellent	none
SS316	excellent	excellent	excellent	excellent	limited	excellent	none
SS316 coated in polyester	excellent	limited	good	good	none	good	UL94V-2

9. What is the tensile strength of MBT cable ties?

Depending on the size of the tie (width of the steel band and single or double ball-lock) **loop tensile strength ranges 540 and 2,700 N** (equivalent to approx. 275 kgf).

Higher tensile strength up to 7,000 N is achieved with a double wrap MBT stainless steel cable tie.

[Click here to discover double wrap MBT ties on the HellermannTyton website](#)

*Please note: HellermannTyton's metal ball ties fully **withstand the maximum force of short circuits in low and medium voltage cables in trefoil formation**, according to results of laboratory tests conducted using the parameters outlined in the IEC 61914:2009 cable cleat standard.*

10. What is the temperature rating of MBT cable ties?

Stainless steel 304 and 316 tie **operating temperature range is -80 °C to +538 °C**.

Coated stainless steel ties have a smaller temperature range (-50 °C to +150 °C) on account of the polyester.

11. What are the dimensions of the MBT cable ties?

Four different widths, 4.6 mm, 7.9 mm, 12.3 mm and 16.0 mm, are available in a **wide variety of lengths**.

The maximum **bundle diameters range from as low as 25.0 mm up to 254.0 mm**.

[Click here to compare sizes on the HellermannTyton website](#)



12. Are MBT cable ties resistant to outdoor weathering?

Yes. Both grade 304 and grade 316 steel remain mechanically robust under the effects of ultraviolet radiation, wind force, fluctuating temperatures, precipitation and ice. **SS316 is more corrosion-resistant in tough outdoor environments**. To reduce the risk of contact corrosion, we recommend using the **polyester-coated MBT** or adding the **LFPC Protective Channel** made from polyolefin (PO) when installing on dissimilar metals and smooth surfaces.



LFPC

13. Can MBT cable ties be used in marine or other harsh environments?

Yes. SS316 contains 18% chromium, 10% nickel, and 2% molybdenum. **The molybdenum in SS316 adds to its corrosion resistance**, making it more resistant to pitting and crevice corrosion in certain environments.

14. Are MBT cable ties resistant to chemical exposure?

Yes. Chemical resistance is excellent, **including acids**.

15. What is the packaging and quantity of MBT cable ties?

The smallest sizes are available in packs of 100, the majority in quantities of 50 and the largest in packs of 25.

16. Are there options for custom labelling or branding on MBT cable ties?

Yes, individual identification can be laser beam etched onto MBT ties. Please contact your local HellermannTyton sales office for information on printing service options. **MBT ties up to 7.9 mm width are also ideal for fastening M-BOSS stainless steel marker plates**, which can be pre-ordered to your specification or created by yourself inhouse on demand using the M-BOSS Compact Printer.

[Click here to download the M-BOSS Compact Printing System brochure](#)

17. What standards do the MBT ties comply with?

MBT Cable Ties meet the requirements for metallic, non-metallic and composite cable ties and their associated fixing devices as a means used for managing or securing the wiring systems in electrical installations specified in of the **IEC 62275** and **IEC 60092** applicable to electrical installations for use in ships.

Some of the MBT ties made from SS316 also have the following maritime industry approvals:



American Bureau of Shipping



Bureau Veritas (France)



DNV (Norway)

18. Where are MBT cable ties manufactured?

HellermannTyton MBT cable ties for the European region are **manufactured in the United Kingdom from stainless steel produced in Europe**.