



BST Metal Detectable Cable Ties | BSTCT*



BST Cable Ties

BST Metal detectable cable ties feature a food safe metal additive, dispersed evenly and completely throughout the entire polyamide 6.6 body of the cable tie. These cable ties have an operating temperature of -25°C to 65°C, and can be used as part of a HACCP process or BRC procedures. These BST cable ties come in a standard colour of blue, making them visually detectable, further reducing

food contamination risks. These cable ties have been specifically manufactured for the food and pharmaceutical processing industries. Even small pieces of these ties can be detected by correctly calibrated and tested in line metal detection systems. BST metal detectable cable ties are ideally suited for the installation of cabling in and around production areas.

BST Cable Tie Advantages

- ✓ Detectable by in-line metal detection systems
- ✓ Bright blue colour for easy visual identification
- ✓ Available in various sizes to suit a variety of applications
- ✓ Strong, durable & highly resistant to corrosion
- ✓ RoHS compliant and Halogen free
- ✓ Floats in different liquids
- ✓ Can be used as part of HACCP and BRC procedures
- ✓ Displays due diligence in the prevention of foreign body contamination

Product and Packaging Information

BSTCT149	Dimensions	3.6 x 150mm	Pack Weight	0.06kg	Tensile Strength	18kg
BSTCT200	Dimensions	4.6 x 200mm	Pack Weight	0.13kg	Tensile Strength	25kg
BSTCT385	Dimensions	4.6 x 385mm	Pack Weight	0.28kg	Tensile Strength	25kg
Colour	Blue		Detectability	Metal Detectable		
Temperature Range	- 25 + 65 °C		Material	Polyamide 6.6		
Pack Size	100		Country Of Origin	Italy		
AntiBacterial	No		Commodity Code	39269097		

Safety Certificates / Approvals

BRC Compliant ISO ISO 9001:2015



Metal Detectability Testing & Results

BST DetectaPens® are made using XDETECT®, an electromagnetically detectable and x-ray visible plastic compound. Within the pen housing is a stainless steel ink cartridge. The metal detectability of this product will vary based on, but not limited to:

- Calibration Levels
- Product Type (E.g. Wet, Dry, Frozen, Liquid)
- Aperture Dimensions
- Orientation

Orientation is a highly influential factor for the metal detectability of a contaminant that is non spherical, i.e. it will be easier to detect the contaminant when passing in one orientation compared to another - this is known as the orientation effect. During testing

of the BST DetectaPen® we used a worst case scenario which is through the geometric centre of the aperture and in the worst case orientation. We used a piece of form and set it up in the machine as the main product (H), in order to pass the contaminant on top. The product (H) has been set up in the IQ4H 100mm aperture height metal detector (image 01 indicates the version of the software used) at 25 m/min belt speed. Please note, the following results are applicable only to the product (H) or similar and that detection performances vary with the main product and packaging type.

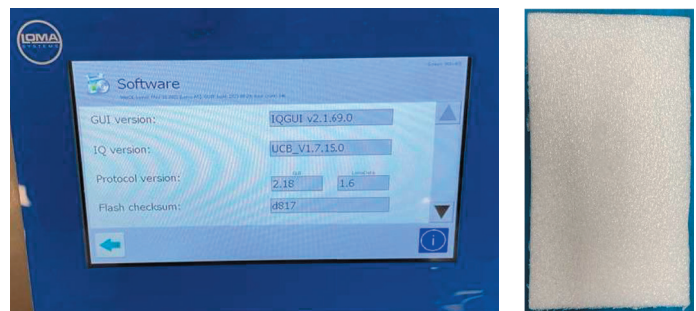


Image 01

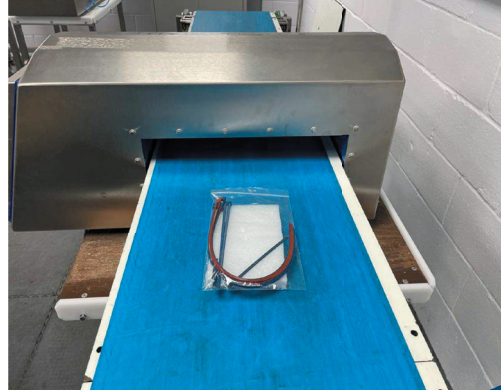
(Product H)

Metal Detectability Testing & Results Cont.

Machine Settings:

Belt Speed	Head Gain Settings	Frequency	Threshold	Phase Angle
25 m/min	I Gain = Low Q Gain = Max RF Gain = Med Head Drive - Max	625kHz	100	121.7

Product passes through the centre of the aperture:



(Length 210mm Width 150mm Height 15mm)



(Product D)

Please refer to the below table for results of the full product sample and the smallest piece detected an signals:

Complete Product	Reject Signals	Samllest Piece Detected	Reject Signals
BST Cable Ties (Product D)	I / Q Saturated (Very Good Reject Signals)	15mm in length and 10mm in width	1000-1100

X-Ray Visibility Testing & Results

In contrast to metal detection, x-ray visibility is determined by material density. For this reason, XDETECT® contains an additional, evenly dispersed, food safe, high density additive.

Based on our experience and testing, positive readings should be consistent both for whole pens and XDETECT® fragments as small as 3mm. X-ray detection performance will be reduced when small fragments are buried in deeper, denser products - detection will depend on product type and density. We highly recommend that all our products be thoroughly tested on your x-ray inspection systems by a trained and certified professional. It may be the case that your equipment needs to be recalibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your x-ray inspection system.

We calibrated and set up the product (G) as the main product, in order to pass the contaminant on the top, to see whether we were able to detect it. The product (G) has been set up in the X5 Mark IV Space Saver machine with the standard lightweight curtains and equipped with a 4.0mm diode detector set to FINE AAT at 25 m/min belt speed. Please see the following page for the machine settings and results.



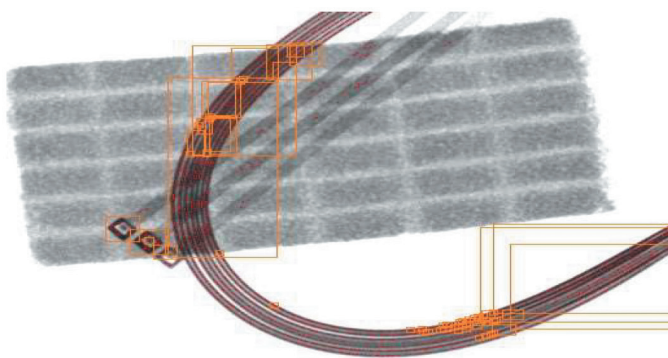
(Product G)

X-Ray Visibility Testing & Results Cont.

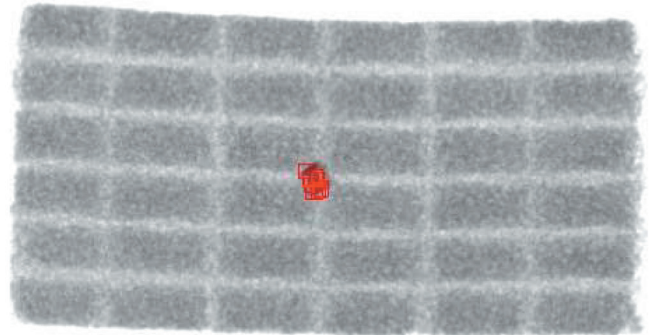
Machine Settings:

Scan Settings	Image Processing	Basic	Explorer
CalKV = 4.0 CalMA = 2.0 RunKV = 40 RunMA = 2.0 Gain = High Sensitivity = High Belt Speed = 25 m/min	Gamma = 80 Lower Range = 10 Upper Range = 90	Auto Learn	Auto Learn

Please refer to the below images for results of the full product sample and the smallest peice detected:



Complete J800 DetectaPen (Product C)
Length 150mm Width 50mm Height 20mm



The smallest piece detected from Product D is 6mm height
which is take from the head of the cable tie

All of the above results are based on our own testing, and is supplied purely for customer convenience. Different detector systems will feature different sensitivity settings, as well as settings for different product types (E.g. Wet, Dry, Frozen, Liquid).

For this reason BST recommend that all our products be thoroughly tested on your metal detection systems by a trained and certified professional. It may be the case that your equipment needs to be re-calibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your metal detection system.

Guidance advice for the storage and usage of PA66 cable ties

Most cable ties are manufactured using Polyamide (PA66) material. This material has many beneficial properties and, with the addition of various additives, the properties of products manufactured with it can be adapted to suit a wide variety of applications.

PA66 material is hygroscopic – depending upon the environment that it is subjected to it will absorb moisture from or release moisture to the atmosphere. The mechanical properties of this material are significantly affected by the amount of moisture it contains – particularly flexibility and tensile strength. Moisture acts as a plasticizer in this material – effectively making it tougher and more pliable.

In order to successfully mould with PA66 it must first be dried. Consequently, immediately after moulding, cable ties are dry and tend to be brittle. They are then packed in sealed plastic bags together with controlled amounts of water. The cable ties absorb the moisture over a period of time this process is known as conditioning, and once conditioned they are tough and pliable. The time taken for cable ties to fully condition depends upon the surrounding temperature (the lower the temperature, the longer the conditioning time) and whether or not the cable ties also contain additives such as colourants, UV inhibitors, impact modifiers and flame retardants – such additives will either lengthen or shorten the conditioning time. As an example, the flame retardants used in V0 cable ties will cause significant acceleration in the moisture absorption and moisture release rates and consequently the storage and installation conditions of V0 cable ties should be carefully monitored and controlled.

Once the cable ties are removed from the plastic bags they will quickly be affected by the surrounding atmosphere. If the atmosphere is dry (low relative humidity) they will release moisture to the atmosphere, becoming dryer and less pliable / more brittle. The rate at which moisture is lost in a dry atmosphere is accelerated if the temperature is hot (above 25 degrees centigrade) or cold (below 10 degrees centigrade).

It is important to note that the plastic bags in which the cable ties are packed will delay the release of moisture, but they are not vapour barriers and will not prevent the loss of moisture in the longer term. If cable ties are stored in very dry conditions they will release moisture even when they are kept in sealed plastic bags.

Dry cable ties will have a tendency to be brittle during installation – this is the time at which they undergo the most extreme stresses. Once they have been applied changes in their mechanical properties resulting from changes in moisture content are not of negative influence to the application of the cable ties.

The information provided in this product specification sheet is based on our experience and knowledge to date and we believe it to be true and reliable. This information is intended as a guide for your use of our products, the use of which is entirely at your own discretion and risk. We, BS Teasdale & Son Ltd, cannot guarantee favourable results and assume no liability in connection with the use of our products. © 2023 BS Teasdale & Son Ltd. All Content, Data & Images are owned by BS Teasdale & Son Ltd and are protected by international copyright law.