



Features

Semi-rigid polyester construction offers increased durability and strength over other RFID tags

Optional subsurface printing protects against extreme solvents, caustics, acids, and abrasion.

Ideal for high wear applications including returnable pallets, containers, utilities and embedding within injected molded products

IP68 Ingress Protection

Average read range 22-24 ft.

Compatible with RFID Tracking Software

Product Print Options

Barcode . Data Matrix . QR Code . RFID . Serial Number . Text

Product Functionality

Abrasion Resistance . Chemical Resistance . Heat Resistance . UV/Outdoor Durability

Popular Applications

Oil & Gas . Supply Chain . Transportation / Logistics . Utilities . Warehouse / Distribution Centers . Manufacturing

Category

Warehouse - RFID . Asset Tracking - RFID . RFID for Plastic Surfaces

Metalcraft's RFID Flex Hard Tags are specifically designed for assets that need a rugged, yet flexible, polymer RFID tag that is more cost effective than traditional hard tags and has a reliable, consistent read range performance.

The RFID Flex Hard Tag is made of high performance, pliable polyester that provides more strength and rigidity than a traditional RFID polyester label but is more formable than a metal or hard plastic tag. The RFID Flex Hard Tag is ideal for returnable pallets, plastic crates, containers, utility poles or for embedding in injected molded products.

Along with a read range of 22-24 ft on most applications, the RFID Flex Hard Tag is versatile and durable enough for almost any returnable container or harsh environment RFID tracking project.

What are the different kinds of hard tags?

Hard tags are physical security devices used to deter theft and protect merchandise in retail stores. There are several types of hard tags available, each with its own characteristics and application:

1. **Standard Hard Tags:** These are the most common type and consist of a plastic or metal housing that encases an electronic component. Standard tags typically attach to merchandise using a pin or lanyard and are removed at the point of sale with a specialized detacher.
2. **Pencil Tags:** Pencil tags are smaller and more discreet than standard tags, resembling the shape of a pencil. They are often used for garments and other merchandise where aesthetics are a concern.
3. **Square Hard Tags:** These tags feature a square-shaped housing and are commonly used for larger items or items with more substantial fabric, such as jackets or handbags.
4. **Mini Hard Tags:** These tags are smaller versions of standard tags and are suitable for smaller items or items with less fabric. They provide a more inconspicuous security solution while still offering effective protection against theft.
5. **Clamshell Hard Tags:** Clamshell tags consist of two halves that snap together around the merchandise, similar to a clamshell. They are often used for items that cannot be pierced with a pin, such as shoes or electronics.
6. **RFID Hard Tags:** These tags incorporate RFID (Radio Frequency Identification) technology, allowing for inventory tracking and management in addition to theft deterrence. These tags can be read remotely using RFID readers, providing real-time visibility

into merchandise movement.

7. Ink Tags: Ink tags contain a vial of ink that ruptures if the tag is forcibly removed, staining the merchandise and rendering it unusable. They serve as an additional deterrent to would-be thieves.
8. Specialty Hard Tags: Specialty tags are designed for specific applications or types of merchandise. For example, there are tags designed for eyewear, jewelry, and other high-value items that require specialized protection.

Overall, the choice of tag depends on factors such as the type of merchandise being protected, aesthetic considerations, and the level of security required. Retailers often use a combination of different types of hard tags to effectively protect their inventory against theft.

What is the difference between a soft tag and a hard tag?

The primary difference between a soft tag and a hard tag lies in their construction and level of security. Soft tags are typically made of flexible materials such as plastic or paper and are attached to merchandise using adhesive or a loop. They are easily removed at the point of sale and are primarily used as a deterrent against theft.

In contrast, hard tags are constructed from rigid materials such as plastic or metal and feature a locking mechanism to secure them to merchandise. Hard tags offer a higher level of security compared to soft tags, as they are more difficult to remove without a specialized detacher. They are commonly used for high-value items or items prone to theft, providing a visible deterrent and helping to protect against shoplifting. Overall, while soft tags

offer convenience and flexibility, hard tags provide greater security and protection for retail merchandise.

Specifications Data

Material	.002" or .003" polyester for subsurface printing, .007" polyester inlay covering, .007" polyester base. Approximate .020" total product thickness.
Serialization	Barcode and human-readable equivalent is produced using the latest high-resolution digital technology available, which provides excellent clarity and easy scanning. Code 39 is the standard symbology with a range of 2.7 to 9.4 CPI.
Label Copy	The label copy may include block type, stylized type, logos or other designs. All copy, block type, stylized type, logos, designs, and bar code are subsurface printed. This unique process provides excellent resistance to environmental factors.
Colors	Standard colors include black, red, yellow, green or blue. Custom spot colors are also available at no additional charge. Due to contrast needed for the bar code scanner, all bar codes are black.
Standard Adhesive	High performance adhesive
Frequency Range	860-960 MHz
Sizes	Various sizes available
Packaging	Shipped in "work-out- of" cartons for convenient application.

Chemical Testing

Test of label structure and printed image as well as readability of inlay.

Chemical Test Data

Immersion Time	2 Hrs	24Hrs	48 Hrs
DI Water	no effect	no effect	no effect
Salt Water	no effect	no effect	no effect
Bathroom Cleaner	no effect	no effect	no effect
Glass Cleaner	no effect	no effect	no effect
Isopropanol	no effect	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag
Brake Fluid	no effect	no effect	no effect
Acetone	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag/Tag Delaminated	Adhesive Ooze Around Perimeter of Tag/Tag Delaminated/Inlay no read
Diesel Fuel	no effect	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag
Nitric Acid	no effect	no effect	no effect
Hydrochloric acid	no effect	no effect	no effect
Sodium Hydroxide	no effect	no effect	no effect
Skydrol	no effect	Adhesive Ooze Around Perimeter of Tag	Adhesive Ooze Around Perimeter of Tag

Destructive Testing

Pressure Washer Test: Labels were applied to a polypropylene test panel and allowed to wet out for 24 hrs. High pressure washing consisting of spraying room temperature water for 30 seconds. Spray was directed at the edges of the label to force delamination. No delamination occurred, no other defects were observed and the inlay read after exposure.

Destructive Test Data

Temperature Testing

High Temperature Test: All samples were applied to glass test panels and subject to 10 minutes of cumulative exposure to 150°F, 200°F, 250°F, and 300°F. The results were taken immediately after removal from the oven. No adhesion loss to substrate, warping, or delamination was observed, and all inlays read post-exposure. Low Temperature Test: All samples were applied to polypropylene and subject to -1.3°F for 24 hours. The results were taken immediately after removal from the freezer. No adhesion loss to the polypropylene was observed, and all inlays read correctly.

Temperature Test Data

Read Range Testing

Read Range Test Data

Barcode Readability Testing

Barcode Readability Test Data

Abrasion Testing

Samples were tested on the Taber 5130 abrader with CS-10 wheels with a wheel load of 500g each (1000g total). All samples survived 20,000 revolutions.

Abrasion Test Data

Label Adhesion Testing

Label Adhesion Test Data

Pull Testing

Pull Test Data
