Label & Tagging Solutions for Extreme Environments

Reliable Asset Identification Solutions for a Performance Edge in Steel & Metals Manufacturing

Zebra Solutions for Steel and Metals Manufacturing

In the hot, harsh and dangerous business of metals manufacturing, your equipment and consumables need to be durable, rugged and genuinely long-lasting.

This “heavy” industry is key to the success of many industries such as automotive, construction and beyond. Tracking metals throughout the various production stages is key to the efficiency of modern-day steel mills and foundries.

From the initial smelting phase to alloying and then casting or rolling, metals need to be tracked and identified at each stage of production.

This is an extreme business. Steel products are exposed to extraordinarily high temperatures during manufacturing, and to aggressive acids and abrasives for cleaning purposes.

It’s important that labels or tags used to identify these metals are robust and durable. Equally, the printers used to create them must be rugged. Add in variable outdoor weather conditions in storage or transit and they have a lot to withstand.

Not only are Zebra’s specialist products designed for this demanding environment; they’re tested to withstand the harshest conditions.

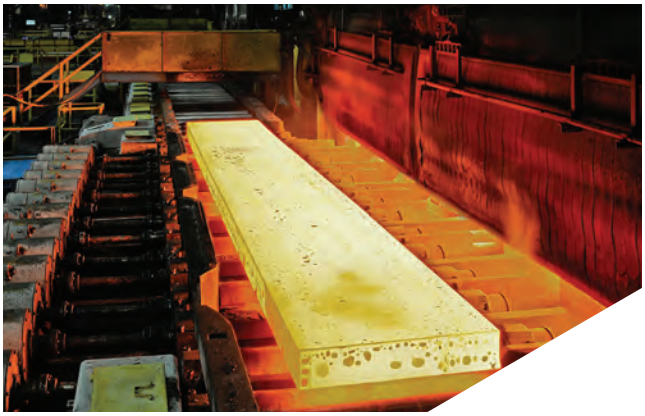
“Finding a solution capable of withstanding the extreme conditions of industrial environments has been very challenging, but we have finally found the right product for our needs.”

Sergio Bassano, Head of Programming, Duferdofin-Nuncor, Italy

Wide Range of Supplies Options

Zebra's extensive range of label and tag products covers a variety of applications, including high-tack adhesives or custom pre-prints. Bespoke labels or tags can also be created for a specifi c application. In addition, Zebra offers a wide choice of stocked ribbons, tested to the same rigorous standards as its label materials, matched with the label and tag range for optimum print performance.

Proven Zebra Solutions for Demanding Applications



High-temperature Manufacture

The hot-rolling process associated with casting or converting semi-cast products such as slabs, blooms or billets to sheet metals requires traceability of these valuable materials at every stage of the process.

Application environment:

- Hot extruded/hot rolled wire, rods, coils, sheets and reinforcing bars
- High temperatures up to 200°C
- Exposure to oils and abrasives

Zebra's label and tag solutions:

Z-Ultimate® 4000T 175 Tag
This gloss-white polyester tag is strong, temperature-resistant and, when printed with Zebra's 4800 or 5095 resin ribbons, provides a proven solution in this application.

Z-Ultimate 3000T White and Silver
These white and silver glossy polyester self-adhesive label materials give excellent temperature- and chemical resistance.

Matched with Zebra's 4800 and 5095 resin ribbons, this solution is chosen by many international steel plants for its reliable performance.

EXP Range for High Temperature applications
Zebra's EXP range of materials includes products suitable for high temperature applications, such as the EXP17754T Polyimide Tag. This tag is designed specifically for the tagging and identification of metal products in extremely high temperatures, resisting up to 300◦ C long term and 600◦ C short term. This tag also offers resistance to harsh chemicals and solvents, and is suitable for outdoor use.

Cold-temperature Manufacture

Prior to rolling and/or shaping, steel products are labelled for traceability throughout the production process. Likewise, second-stage products require item-level visibility.

Although the manufacturing process does not feature extreme temperature conditions, the exposure of materials to dust and dirt is very high. Consequently, labels or tags applied to products need to adhere well and give excellent print quality. They must withstand the conditions of manufacture and remain legible in storage.

Application environment:

- Cold rolled coils, sheets, tubes and wire
- No extremes of temperature but reliable, legible labels are required
- Prolonged label life for staging, storage and transit

Zebra's label and tag solutions:

PolyPro™ 3000T Gloss and
PolyPro™ 3000T Gloss High Tack
These glossy white polypropylene labels resists the dust and oily conditions found in this application. Matched with Zebra's 4800 resin ribbon, it offers a durable, scratch-resistant label at lower temperatures.

3000T High Tack, provides a permanent acrylic adhesive for hard-to-label surfaces.

8000T Ultra Tuff 240 Tag and 8000T Extra Tuff 180 Tag
An adhesive-free solution, where tags are attached to long products and need to be tear-resistant and durable. Print with Zebra's 5095 ribbon for best results.

Extreme Conditions

The cleaning or “pickling” process within steel and metals manufacture requires any surface impurities or oxidisation on rolls, blooms or billets to be removed. This descaling process is achieved by using acid baths or coarse engineering abrasives. Sometimes this requires the onward use of an oil film to protect against future oxidisation.

All of these elements create a hostile environment for printed items such as location- and tracking tags and labels.

When labels or tags are applied prior to the cleaning process, they must be able to withstand the extreme conditions and prolonged exposure to aggressive chemicals.

Printed labels and tags must be legible, resist wear and tear and stay in place. Zebra delivers all this, and more.

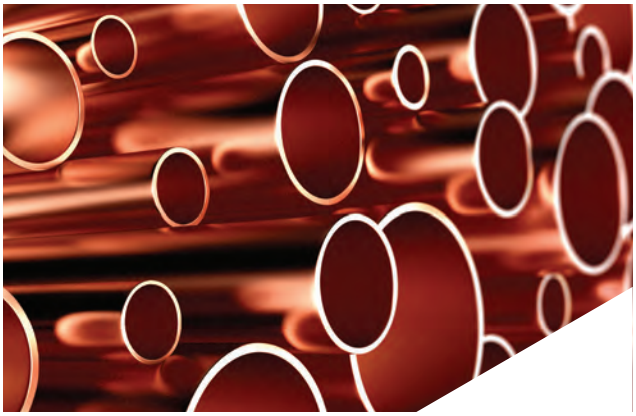
Application environment:

Exposure to:

- Acids
- Oils
- Industrial abrasives

Zebra’s label and tag solutions:

Z-Ultimate 3000T White and Silver;
Z-Ultimate 4000T 175 Tag
These glossy polyester labels and tags, when paired with 5095 resin ribbon, have an additional level of protection against chemicals in these processes. Zebra solutions are used in many such applications, and solutions can be recommended according to specific customer requirements.



Non-ferrous-metal Manufacture

Non-ferrous metals such as aluminium and copper have a very high commercial value and are critical raw materials in the automotive, aerospace and high-tech-manufacturing industries.

Given the level of demand and market value of these metals, traceability through manufacture and the onward supply chain is key. More so when metals such as aluminium have been cast into bespoke component parts for mission-critical production requirements.

Application environment:

- High-grade metal and components
- Exposure to dust, dirt and temperature extremes
- Reliable, legible labels are required

Zebra’s label and tag solutions:

8000T All-Temp
This premium paper label material is used and approved as a reliable yet low-cost labelling solution.

These labels can be printed with Zebra wax or wax-resin ribbons for excellent print quality. Supplied with a wide-temperature-range adhesive, these labels can withstand temperatures down to minus 40°C.

Zebra ZT600, ZT510 and ZT400 Series Printers

Mission-critical printing

Manufacturers require 24/7 on-demand printing to keep production lines running continuously. Zebra delivers unrivalled quality and dependability with its ZT600 range of high-performance printers.

Zebra ZT600, ZT510 and ZT400 Series printers have the capability to operate reliably and consistently in the harsh conditions associated with metals manufacturing. They need to produce printed output on Zebra labels and tags that can withstand such a demanding environment. Use Zebra to help ensure reliability and longevity of your automatic identifi cation (auto-ID) investment.

Summary

Zebra has a proven track record in delivering reliable tags, labels and ribbons that provide continual legibility, adhesion and longevity in these extreme and highly-demanding conditions.

For further information on how Zebra printing solutions can benefit manufacturing environments, please visit **www.zebra.com**

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