



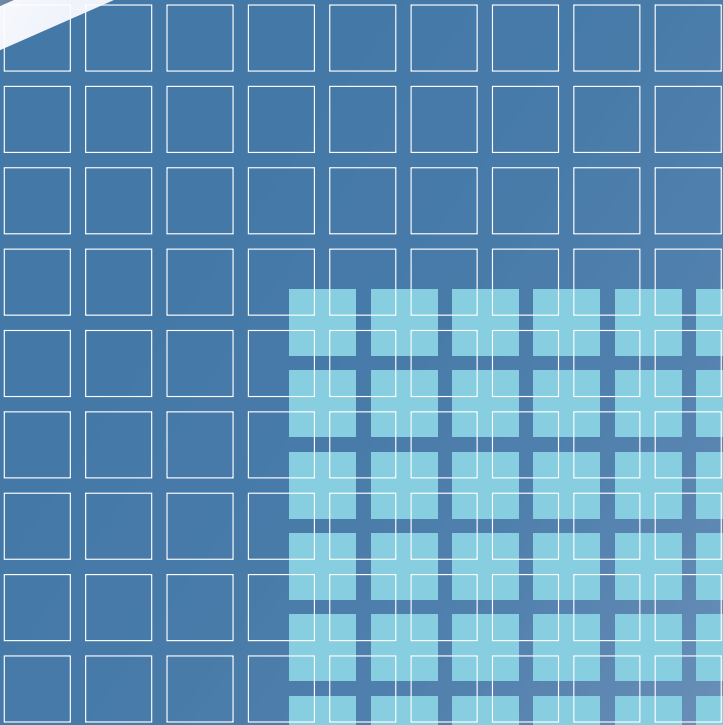
TIN MILL BLACK PLATE



JFE Steel Corporation

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Introduction

JFE Steel Corporation produces tinplate by means of electrolytic tinning lines and tin free steel by electrolytic chromium coating lines. JFE Steel Tin Mill Black Plate (TMBP) coils, produced under strict quality control, are supplied to these production lines.

Black plate, once used primarily as a base metal for tinplate, has recently come to find wider application. Today it is not only used in tinplate and tin free steel, but also in cans, jewelry boxes, lipstick shells and dry battery jackets, which are competitive with tinplate and tin free steel counterparts, as well as in cold rolled coils for such diverse applications as building materials and automotive parts.

In applications where the tin or chromium coating surface characteristics are of little relevance, TMBP is competitive with tinplate and tin free steel for direct painting.

When used for direct painting, light DOS oiling is ordinarily employed on TMBP to protect against rusting.

Characteristics of TMBP

1. High Quality Suited for Production of Tinplate and Tin Free Steel

There are two types of continuous electrolytic tinning processes: The alkaline process and acid process. The acid process is subdivided into the ferrositan and halogen types. JFE Steel, which operates both types of tinning lines, has been shipping large tonnages of TMBP to customers around the world for use in producing tinplate by either the halogen-type or the ferrositan-type electrolytic tinning processes.

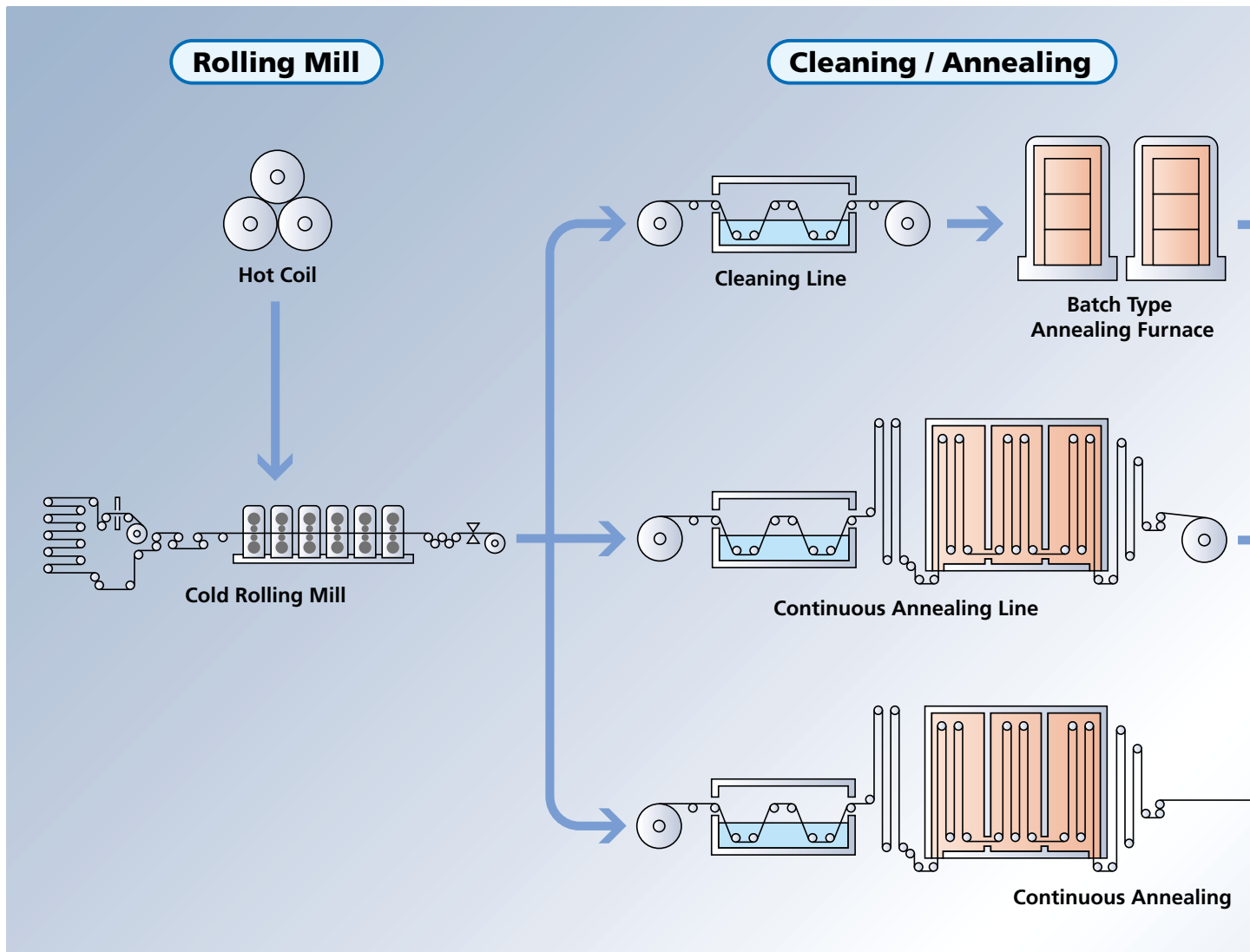
2. Excellent Flatness and Thickness Uniformity

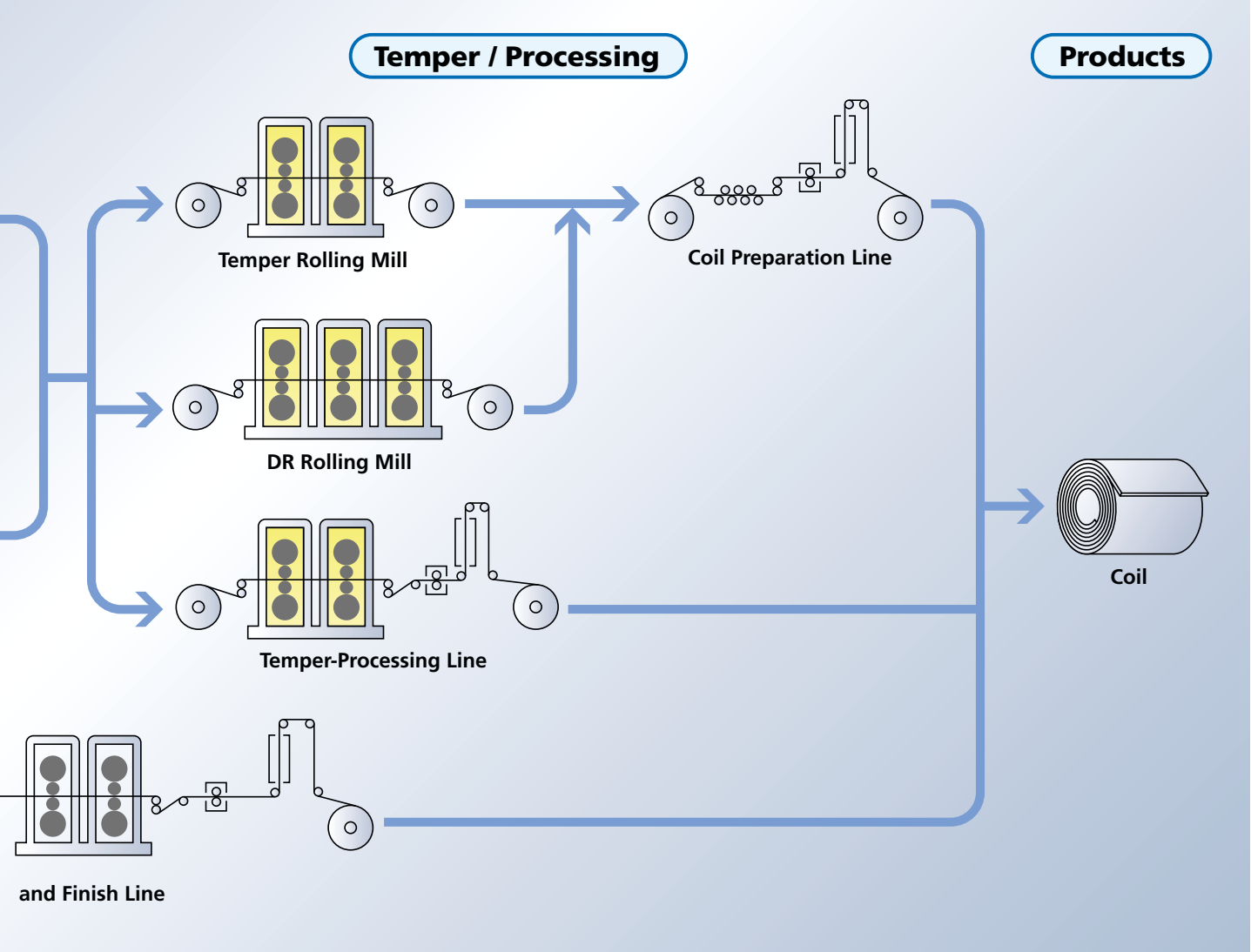
JFE Steel's TMBP is either single-reduced on a five-stand or six-stand mill or double-reduced, after annealing, on a two-stand or three-stand mill, the first unit of its kind installed in Japan. Thus, JFE Steel TMBP features excellent thickness uniformity and flatness.

3. Suitability for a Variety of Uses

- Single-reduced TMBP is available in a wide range of sizes; double-reduced TMBP is also available.
- TMBP is available in a wide variety of surface finishes.
- Various types of base metals are used and available.
- For direct painting usage, please consult us in advance regarding anticorrosive measures that can be applied in such a way that rusting is held at a minimum without impeding direct paintability.

Manufacturing Process





◀ from left — Tandem Cold Mill
Continuous Annealing Line
Temper Mill

Product Availability

Temper

Single cold-Reduced(SR)

Temper Designation	Rockwell Superficial Hardness (HR 30T _{Sm})		
	Thickness (mm)		
	$t \leq 0.210$	$0.210 < t \leq 0.280$	$0.280 < t$
T-1	50 ± 4	49 ± 4	48 ± 4
T-2	54 ± 4	53 ± 4	52 ± 4
T-2.5	56 ± 4	55 ± 4	54 ± 4
T-3	58 ± 4	57 ± 4	56 ± 4
T-3.5	60 ± 4	59 ± 4	58 ± 4
T-4	62 ± 4	61 ± 4	60 ± 4
T-5	66 ± 4	65 ± 4	64 ± 4

Double cold-Reduced(DR)

Temper Designation	Rockwell Superficial Hardness (HR 30T _{Sm})
DR-7.5	71 ± 4
DR-8	72 ± 4
DR-8.5	73 ± 4
DR-9	75 ± 4
DR-9M	76 ± 4
DR-10	79^{+3}_{-4}

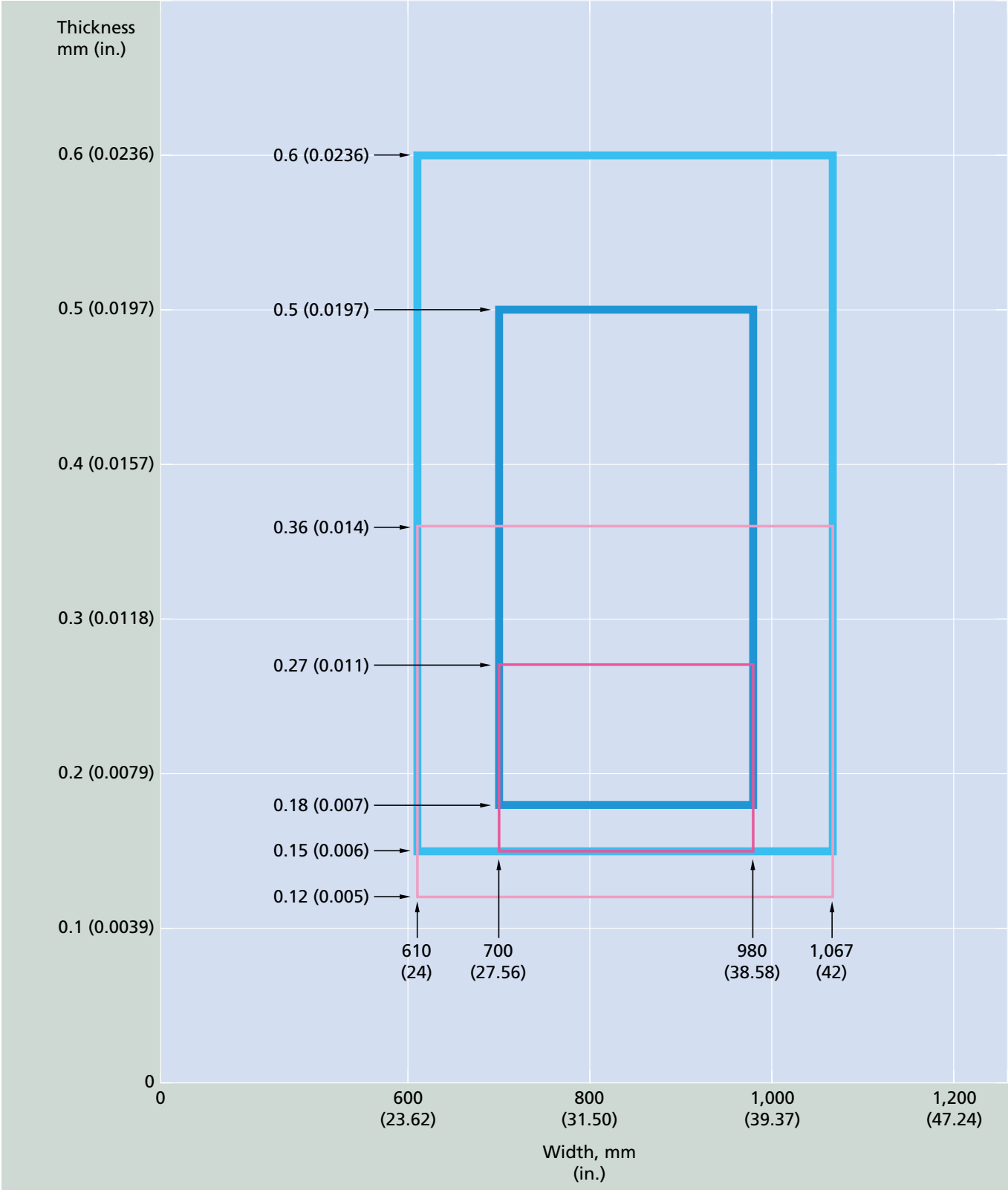
Steel Types

L	Base metal low in metalloids and residual elements, sometimes used for improved corrosion resistance for the inside of food product containers.
MR	Base metal similar in metalloid content to Type L but less restrictive in residual elements, commonly used for most tin-mill products
D	Aluminum-killed base metal, required to minimize severe fluting and stretcher-strain hazards or for severe drawing applications.

Surface Finishes

Bright	Both smooth finish and lustrous smooth finish are available.
Stone	Surface finish with a directional grindstone-pattern.
Matte	Both satin finish and blasted finish are available.

Size Availability



- Nominal Range for T1~T5-CA
- Negotiable Range for T1~T5-CA
- Nominal Range for DR8~10
- Negotiable Range for DR8~10

Coil : mm (in.)
ID : 406 (16), 419(16-1/2), 508 (20)
OD : 2,133 (84) max.

Applications

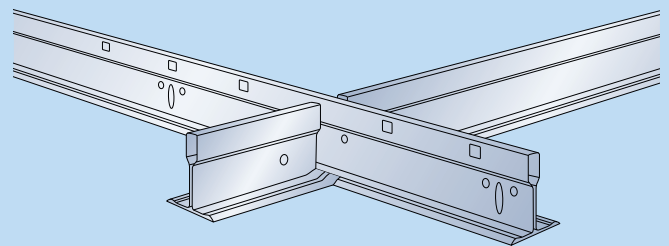
Cable armor



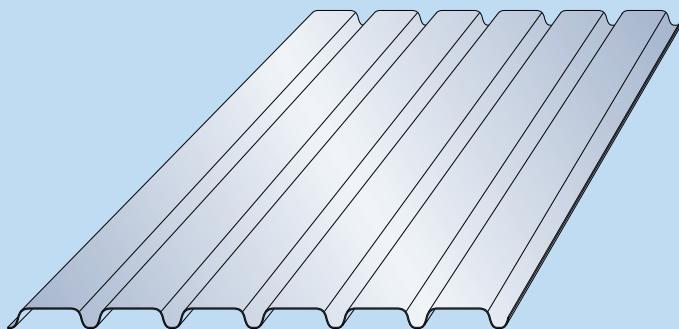
Construction materials



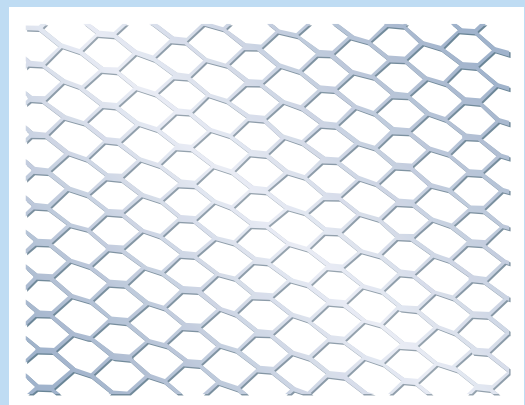
●Shed



●Ceiling suspension



●Deck plate



●Metral lath

Others

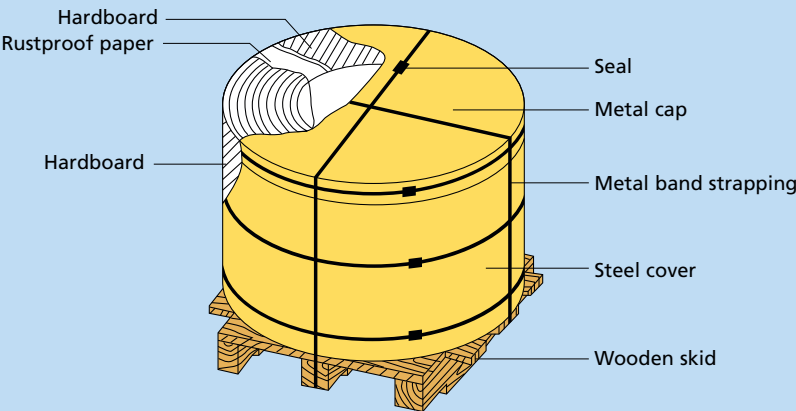
Cans, Jewelry boxes, Lipstick shell, Dry battery jackets, Lighting fixture, Spool, Copper blazed tube.

Packaging and Marking

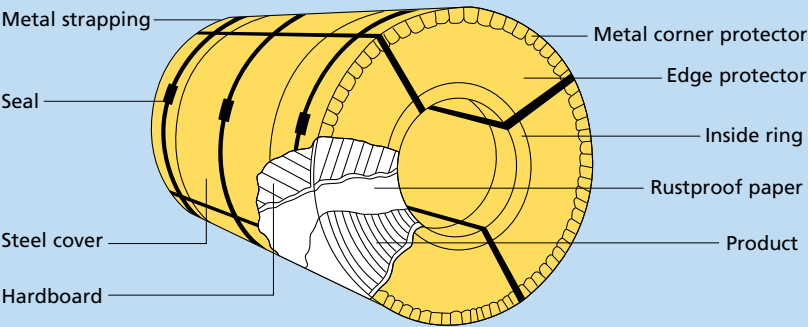
Packaging

JEF Steel TMBP is packed with special care to prevent rust, abrasion and scratching. The following are typical packaging styles.

Coils



Up-end style (Eye vertical)



Down-end style (Eye horizontal)-generally applied

Marking

The location of markings and the items to be marked are determined at the mill's option unless otherwise specified.

Inquiring and Ordering

When inquiring about or ordering JFE Steel TMBP coils, please supply detailed information on the following points to better enable JFE Steel to meet your requirements.

1.	Specification (name and number):
2.	Specification requirements:
	a. Finish-Matte (Dull) or Bright
	b. Oiling
	c. Edge-Cut edge or mill edge
	d. Final usage
	e. Others Coils : Inside diameter Off-gauge Welded portion Max. coil weight Max. outside diameter

Notes : 1) Standard Inspection Procedure

When specifications are JIS or in compliance with JIS, JIS specifications will be applied as a rule. When specifications are ASTM or in compliance with ASTM, ASTM will be applied for inspection. Inspection items will follow the prescriptions of respective standards.

If this procedure creates any inconvenience, kindly advise us in advance, noting any special requirements.

2) Rust Prevention

Rust preventing oils for corrosion protection, degreasing, or for other purposes, are available at JFE Steel. Generally, anti-corrosion rust preventing oils are used. If in the past you have experienced inferior degreasing, kindly consult us in advance of your purchase.

Direct painting without prior degreasing and pickling requires non-oil materials. If this is your requirement, consult us in advance.

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