<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>1.0 Health and Safety</td>
<td>4 - 5</td>
</tr>
<tr>
<td>2.0 Receipt Standards</td>
<td>6 - 19</td>
</tr>
<tr>
<td>3.0 Handling Standards</td>
<td>20 - 29</td>
</tr>
<tr>
<td>4.0 Storage standards</td>
<td>30 - 44</td>
</tr>
<tr>
<td>5.0 Transhipment Facility Standards</td>
<td>45 - 46</td>
</tr>
<tr>
<td>6.0 Direct Despatch Standards</td>
<td>47 - 51</td>
</tr>
<tr>
<td>7.0 Vessel Despatch Standards</td>
<td>52 - 66</td>
</tr>
<tr>
<td><strong>Appendix:</strong> Tata Steel Strip Products Railhead and Warehouse Classification Standards</td>
<td>67 - 76</td>
</tr>
<tr>
<td>Document Control</td>
<td>77 - 78</td>
</tr>
</tbody>
</table>
Global Ports & Warehousing Standards

Introduction

The use of external storage facilities have a direct bearing on the quality of the finished products delivered to our customers and the perception of Tata Steel. Therefore Tata Steel requires its partners to uphold the quality and presentation of its products.

This document aims to provide guidelines on receipt, handling, storage, inspection and despatch of Tata Steel material from approved storage facilities. The standards have evolved over several years drawing on the experience of Tata people and their suppliers.

Please be aware that the standards reflect our minimum expectation. We can always improve and we welcome your support in building on this guidance to achieve optimum product quality for our customers.

Mike Nightingale
Head of Logistics Operations TSE
1.0 HEALTH AND SAFETY
1.1 Health and Safety
Overview

The safety and health of all the people who work in and with the Tata Steel Group is our number one priority. We strive for zero harm not just on our own sites’ but across all of our logistics supply chains. The role and support of our service providers is key to achieving this.

Tata Steel Europe has a number of safety guidance documents and safety standards for all logistics and steel related activities. Please contact your local Tata Steel contact for any support.

We are committed to working with you to achieve excellence in health and safety
2.1 Receipt Standards

Visual Inspection

On receipt, all material must be checked to ensure they contain a Tata Steel Odette label:

All material must be visually inspected against the receipt standards on section 4.2

Any material that fails to comply with the following criteria must be quarantined in line with section 6.5
2.2 Receipt Standards
Hot Rolled Coils

Non-Export Banding
As per customer standard (can be minimum of one radial and one circumferential). If in doubt please contact your Tata Steel quality contact.

End Width
Should be full width **within 1m** of tail end and be securely banded to the coil.
Coils should be placed with the tail-end trapped and lower than half way up the coil.

Export Movement Banding
Five radial and three circumferential bands.

Maximum length 1m
2.2 Receipt Standards
Hot Rolled Coils

Telescoping & Stagger
Strip UK material should be 50mm maximum
Strip IJmuiden material should be 20mm maximum
2.2 Receipt Standards
Hot Rolled Coils – Spring Back

Spring Back Coils

All spring back coils are labelled: SPRING BACK

Material is highly tensioned, care must be taken when handling this material.

In the above example the 4H indicates that the coil must have 4 radial bands and the 8B that the coil must have 8 circumferential bands applied.

Coil that have less than the required bands must be blocked and the Tata Steel quality contact informed.

During handling operations, where possible avoid standing in line with the coil winding direction.
2.2 Receipt Standards
Hot Rolled Coils

Oval Bore

No visible oval bore should be evident

Any ovalised coil with a bore difference (height vs width) of 30mm should be quarantined immediately and communicated to the agreed Tata Steel quality contact as soon as possible.

Any ovalised material should be single stacked, quarantined and held in the local stock management system.

Wall Edge Damage

No visible edge wall damage should be evident.
2.2 Receipt Standards
Hot Rolled Coils

Folds
No folds should be evident within a coil
Any coils with folds should be quarantined and communicated to the agreed Tata Steel quality contact as soon as possible

Labelling
All strip material must have at least two labels. Specific label requirements will be agreed in advance with the facility
Any coils with no labels should be quarantined and communicated to the agreed Tata Steel quality contact as soon as possible
2.3 Receipt Standards
Unwrapped & Wrapped CR Coils

Telescoping
UK material - Telescoping should be less than 10 mm
IJmuiden material - Telescoping should be less than 5 mm
Tata Steel Colours Material
Telescoping should be less than 5 mm

Stagger
Stagger should be less than 5 mm
2.4 Receipt Standards
Packed Coils

All packed material should be free of rips and tears. Packing damage can be repaired using material specified by Tata Steel.

Any UK material located at a UK facility showing packing damage of greater than 15cm x 15cm should be quarantined immediately. Less than this dimension and the packing should be repaired. The appropriate quality contact should be immediately notified with a photo(s) of the damage. The material will be assessed and appropriate action advised.

Any IJmuiden material showing packing damage should be photographed and the packaging repaired within 24 hours of damage being noted. The information should be passed across to the appropriate Tata Steel quality contact as soon as possible.

Any coils with actual product damage should be quarantined, photographed and communicated to the agreed Tata Steel quality contact as soon as possible. The material will be assessed and appropriate action advised.
2.5 Receipt Standards

Slab

All slabs upon receipt in the supply chain must have at least one ID clearly legible on the material.

Any export slab movements may require additional labelling. If in any doubt over the suitability of material, please contact the Tata Steel quality contact.

Any slab that cannot be identified must be quarantined and the Tata Steel quality contact immediately notified.
2.6 Receipt Standards
Sheet

All sheet packs must have at least one label attached.

Material should be banded to the level agreed in the facility SLA.

There should be no sign of damage to the material.

Any material with no label should be quarantined and the Tata Steel quality contact immediately notified.

Any bands lost at the point of receipt must be replaced.
2.7 Receipt Standards
Pallet Coils (ETTS)

Material Condition

Pallet coils should be securely attached to the pallet. There should be no signs of movement from original storage position on pallet

There should be no signs of material damage to the coil

The material should be fully packed

All bands must be intact. Any broken bands must be replaced

Any coils showing evidence of damage or non conformance from the outlined receipt standard should be quarantined and highlighted to your Tata Steel quality contact as soon as possible

Pallet locking pins / lugs must be suitably engaged to ensure the slope of the pin / lug in the pallet is not visible.
2.8 Receipt Standards
Tinplate Sheet Packs

**Material Condition**

Must be stacked on to horizontally aligned dunnage

Must be fully packed and undamaged

Must be labelled on the outside

Any material showing evidence of damage or non conformance from the outlined receipt standard should be quarantined and highlighted to your Tata Steel quality contact as soon as possible
2.9 Receipt Standards
Documentation

The observations based on visual inspection **must be recorded**, either electronically in the supplier warehouse system or via a manual method as well as on the Proof of Delivery / CMR documentation where applicable.

All damages must be recorded, regardless of severity upon receipt.

If in doubt contact your Tata Steel quality contact.

Any damages exceeding the tolerances outlined in this document should result in the material being quarantined and the appropriate Tata Steel quality contact (as outlined in the SLA) informed to discuss how to action material.
3.0 Handling Standards
3.1 Handling Standards
General Handling Guidelines

Tata Steel products should not be rolled or pushed.

Tata Steel products must be handled with appropriate handling equipment as described in this section.

The operation should be designed to keep handling to a minimum.

Suitable and safe handling equipment must:

- Be certified and well maintained
- Not cause damage to products
- Only be operated by competent and certified personnel
- Be operated within the equipments stated safe working load specifications
### 3.2 Handling Standards

#### Handling Equipment Suitability Matrix

<table>
<thead>
<tr>
<th>Handling Equipment</th>
<th>Coil</th>
<th>Palletised Coils (ETTS)</th>
<th>Tinplate Sheet Packs</th>
<th>Heavy Gauge Sheet</th>
<th>Slab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crane: Wire braided Sling / Nylon Sling*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Crane: Grabs / Clamps / Tongs / C Hooks</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Crane: Chains</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>FLT: Flat Blades</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>FLT: Pole</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>FLT: Grabs / Clamps/ Tongs / C Hooks</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Magnet</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Scissor Grabs</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Do not use Nylon Slings on non-prime or Hot Rolled material*
3.3 Handling Standards
Use of Cranes: Coil

- Grabs / Clamps / Tongs
- C Hook
- Chains
- Magnet
- Wire Braided Sling
- Nylon Sling
3.4 Handling Standards
Use of Forklift Trucks: Coil

Pole
Should be chamfered on the face and would be advised to have a rubber bumper protection at the mast end
Should always enter the bore at a 90 degree angle to the coil face
Should be of compatible diameter to suit the size and weight and bore diameter of the coil
The operator should have good visibility of the pole entering the coil bore

Grabs & Clamps
Forklift trucks must be fitted with clamps of suitable length to avoid damage to adjacent coils
Should be of compatible diameter to suit the size and weight of the coil
The operator should have good visibility of the grabs clamping the coil

Flat Fork Blades
Prohibited for use with coil movements
3.4 Handling Standards
Use of Forklift Trucks: Coil

If not driven in or out correctly, the coil ram can easily damage the core or the side wall of the coil. Improper handling also increases the risk of bands breaking and damage to the inner laps of the material.

When driving a coil ram in or out, it is vital that it is placed at the right height and in line with the core of the coil. Failure to do so will result in material damage.

![Diagram showing correct and incorrect methods of handling coils with forklift trucks.](image-url)
3.4 Handling Standards
Use of Forklift Trucks: Coil

Damage may occur when driving too fast either backwards or forwards.

The coil must be lifted at a sufficient height during transport and the coil ram should lean slightly backwards.

Coils must be positioned with enough space in between the coils to prevent the risk coils will touch each other.

The length of the coil ram must be adjusted.

If the coil ram is too long, the ram may protrude through the bore and strike the coil behind it, leading to damage.

Avoid all contact between the coil and the apron of the truck.
3.4 Handling Standards
Use of Forklift Trucks: Coil

When the coil is placed in the warehouse, the coil ram must be in horizontal position to avoid damage to the outer laps.

All coils must be placed in to storage using a method outlined in section four of this standard.

Floors must be level and in good condition to prevent the coil sliding off the coil ram while driving.
3.5 Handling Standards
Use of Cranes & FLTs: Palletised Coils / Sheet Pack

Slings

Flat Blade Forks
3.6 Handling Standards
Use of Forklift Trucks: Palletised Coils

Pole

Flat Forks
3.7 Handling Standards
Use of Cranes: Sheet

Sheet Handling Cranes

Clamps must be suitable for the length of sheet being moved
3.8 Handling Standards
Use of Forklift Trucks: Sheet

Flat Forks

Forklift trucks must have sufficient capacity to handle sheets

Forklift trucks must be equipped with flat forks of sufficient thickness, length and have adequately spaced blades

Material must be spaced with adequate levels of timber dunnage
3.9 Handling Standards
Use of Cranes & FLT: Slab

Flat Forks

Slabs being moved by flat forks must be separated by dunnage of sufficient thickness

Mechanical Scissor Grab

Magnet Clamp

Chains

Reach Stacker
4.0 Storage Standards
4.1 Storage Standards
General Storage Guidelines

Handling should be kept to a minimum to avoid damage

Location accuracy must be maintained at all times from the time of receipt by updating the movements of the coils on the Tata Steel Strip Products external material stock system or unique warehouse stocking system.

All cargo must be treated as weather sensitive unless instructed otherwise by Tata Steel.

Where hot rolled and export wrapped coils are stored in the same warehouse, the material must be segregated where reasonably practicable. Where this is not possible, hot rolled coil must not be stacked on top of packed material due to the increased risk of packing damage.
4.2 Storage Standards
Condensation

There is the potential for condensation to settle on material should certain climate conditions arise.

Should you note condensation forming on Tata Steel material, please contact your Tata Steel quality representative as soon as possible in order to receive further guidance.

Before any material is loaded for onward movement it is expected that the material will be dried.

Note: for unwrapped cold rolled & galvanised material, product should be ‘dabbed’ dry as wiping will contaminate surface condition of material.
4.3 Storage Standards
Coil Storage: Racking

Removable shoes
All stillages must be adequately lined to protect the product.
All stillages and channels must be free of debris

Fixed cradles
All stillages must be adequately lined to protect the product.
All stillages must be free of debris

Chocks
All coils must be sat on either dunnage or rubber sheeting in combination with the use of chocks.
Coils must be chocked from both sides (see section 4.2 for further guidance)
4.4 Storage Standards
Coil Storage: Chocks

Dimension
The wedge should be of suitable dimension to bear the weight of the material
Where possible, use hardwood or rubber wedges.

Condition
All chocks shall be free from inclusions and splits

Position
The 90° angle of the wedge must always face the coil to avoid splitting
4.5 Storage Standards
Coil Storage: Chocking Standards

End of Rows
End coils must have a minimum of three chocks at the end of the row

Within the Rows
Within a row, each coil must have a minimum of two chocks on both sides of the coil

Space created within rows where double stacking has occurred must be treated as end coils

Chocks must be placed parallel to each other on both sides of the coil in order to provide adequate support to the coil
4.6 Storage Standards
Coil Storage: Sheeting & Dunnage

Placement
No part of a coil should be in contact with the warehouse floor.

Rubber Sheeting
Should be at least 20mm in thickness

Wooden Sheeting
Only plywood sheeting is accepted.
Should be at least 20mm in thickness.

Wooden Dunnage
Should be at least 20mm in thickness & 120mm in width. No part of the coil should be in contact with the warehouse floor.
It is essential that all dunnage is dry
4.7 Storage Standards

Coil Storage: Rubbers, Segregation & Weights

Rubber Strips

Rubber strips of sufficient thickness and width (10mm x 150mm) must be placed between coils when double stacking on non-export packed, non-HRC material. Lamiflex as part of the packing is deemed a suitable alternative.

Coil Segregation

Only Durbar (Checker Plate) can be stacked on top of Durbar (Checker Plate)

Hot Rolled coils must not be stacked upon packed, Cold Reduced or Galvanised material

Cold Reduced / Galvanised products can only be stacked on Hot Rolled material if rubber strips are used

Coil Weights

Heavier coils must not be placed on top of lighter weight coils
4.8 Storage Standards
Coil Storage: Double Stacking

Storage of coils should be limited to a maximum of two tiers in height
Top coils must not be suspended
Top coils must have surface contact with both of the base coils
Top coils must be lighter than base coils
A gap must be left between coils in the same row
**Do not top stack coils below 690mm in width**
**Do not stack coils on ends of rows**
4.9 Storage Standards
Coil Storage: Full Finish Storage Standards

Full Finish

This is a soft grade of material which is more susceptible to damage

The material should only be single or top stacked

When top stacking, rubber matting should be placed between the Full Finish and base coil

Identification of a Full Finish coil is by the yellow label with black text

FF Material should only ever be top stowed in a vessel

FF Material must never be used as a locking coil or have the locking coil placed on a FF coil in a vessel
4.10 Storage Standards
Sheet Storage: Stacking Standards

Storage

Sheets should be stacked on vertically aligned timber bearers
Base bearers should span the width of the base sheet pack
All bearers should be hard wood and uniformly placed to avoid sagging.
Where volumes suffice, products should be segregated by size / width & to reduce material handling
Where possible stacks should have labels on one end, to help manage storage of material
Stacks should be adequately and evenly spaced to allow handling equipment to lift them
Stacking height should be restricted to a maximum of 1.7 m regardless of bundle sizes
Heavier stacks should never be placed on lighter stacks
Stacks should always be stacked largest to smallest upwards
Do not mix product type – i.e. do not stack pickled and oiled with dry material due to contamination risk.
4.11 Storage Standards
Slab Storage: Stacking & Timber

Stacking of Slabs

Stacking height should be limited to a maximum of six slabs

All bearers must be at least 100mm thick and be able to support a full stack

Where possible slabs of differing widths and lengths should be stored separately

Timber

Each slab should be suitably separated by means of timber

Timber spacing must be maintained between each slab to allow forklift trucks to lift them

Timbers should be laid at least one meter from both ends of the slab

Timbers may be omitted if magnets or scissor lifts are used to handle slabs
4.12 Storage Standards
Palletised Coils Storage (ETTS)

Stacking

Pallet coils must be stacked **no more than three high**

Sufficient gap must be left between stacks to enable easy access of material

(300mm minimum on each side)

Top stacked coils should never overhang coils underneath

Heavier coils should never be stacked on top of lighter coils

Any material damage must be communicated to your Tata Steel quality contact and the material quarantined immediately
4.13 Storage Standards
Sheet Bulks Storage

Stacking

Large bundles should never be stacked on top of small bundles
Timber bearers should be placed vertically in line
Sufficient space should be provided between bundles for damage free handling (minimum of 30 cm on each side)
Stacking height is restricted to a maximum of six bundles
4.14 Storage Standards
Quarantine Standards

Quarantine Process

All facilities must provide a clearly identified quarantine area.

All material in the quarantine area must be held in the Tata Steel material management system and on the warehouse / port system to prevent despatch to the customer.

All material must be suitably labelled advising the respective issues for being quarantined.

Tata Steel must be notified of all quarantined material as per the Service Level Agreement.

If damage is due to the fault of the external facility, the incident must be investigated and corrective actions closed out.

Once quarantine material has been released, the quarantine form and other relevant documents should be removed from the material and retained by the facility for 12 months.
5.0 Transhipment Facility Standards
5.1 Transhipment Facility Standards

A transhipment facility is used to transfer material between different modes of transport. All facilities must be approved by Tata Steel to transship material before they can proceed to do so.

**Transhipment Guideline**

- Handling must be kept to a minimum
- The facility suitable for the product type in line with the Tata Steel Warehouse Standards
- All handling and storage standards as outlined in this document must be adhered to at all times
- Transport to the facility must be completed in accordance to the relevant TSE standards documents:
  - The method of transport used to transport the material to and from the transhipment facility must be able to protect the TSE material from any potential water ingress.
  - The full load restraint must be applied to all loads to and from the facility unless a partial load restraint risk assessment has been completed and signed off by Tata Steel.
6.0 Direct Despatch Standards
6.1 Direct Despatch Standards
Despatching Material: All Material Pre-despatch Inspection

Quality Check
Tata Steel is reliant on the warehouse to provide a final quality check prior to presenting the material to the customer. It is vital that material is free of dust and dirt and free of defect / damage before release to the final customer

All material should be inspected for damage and non conformances regarding packing, labelling, etc. prior to despatch

The coil width and label information should be checked by Tata Steel to ensure the coil matches the dimensions upon delivery note/label.

Where appropriate, material must be despatched according to the customer specific requirements outlined in the SLA

Any issues should be highlighted to your Tata Steel quality contact as soon as possible
6.2 Direct Despatch Standards
Despatching Material: Decanning Process

Preparing coils for decanning

The decanning operation is a customer specific activity that will be discussed between Tata Steel and the external facility prior to commencing

1. Identify coils that require decanning

2. Refer to delivery point specific guidelines contained in the individual storage facility SLA (where applicable)

3. Sufficient space must be available for safe removal of packaging

4. Material must be safely placed during the decanning process

5. Ensure there is a risk assessment and safe working procedure for the decanning process

6. Visually inspect material against customer specific standards – all non confirming material should be quarantined in accordance with section 4.11

7. Load and secure the product as per the Tata Steel Load Restraint Guidelines.
6.3 Direct Despatch Standards
Despatching Material: Proof of Loading

Upon arrival the lorry driver should give the delivery note to the warehouse employee.

The warehouse / port employee should briefly check that the trailer is dry, clear of debris and has no protruding objects that could damage the material.

Warehouse employee should check for the following:

1. Tata Steel coil identity on the material label is same as the coil number on the delivery note

2. Warehouse operative and lorry driver must sign the delivery note to confirm that the load satisfies all the above requirements. The driver may comment in the condition of the load.
6.4 Direct Despatch Standards
Road Despatches: Load Restraint Guidelines

The method of Load Restraint used for all Tata Steel products must be compliant with the forces specified in EN 12195.

The chain of responsibility for a safe load does not start and finish with the driver. The consigner, loader, haulier, driver and receiver all have a part to play.

Tata Steel will provide the Load Restraint Guidelines that fulfil this requirement and these standards must be applied.

Drivers may be audited when on external sites.
7.0 Vessel Despatch Standards
7.1 Vessel Despatch Standards
General Guidance

Care must be taken to ensure product is not knocked against vessel / hatch combing during loading

Personnel must never be stood under a suspended load

The equipment basket must be kept away from loading activities

Tata Steel appointed surveyors can be in the vessel hold during vessel loading / discharge

Care must be taken to ensure no material is stowed against any protruding items in the ship’s hold.
7.2 Vessel Despatch Standards
Delivery to Vessel

Tallying
Tallies must be maintained against material leaving the warehouse and material being loaded into the vessel.

Wet Weather Working
All material must be treated as weather sensitive unless otherwise stated.
Material should not be moved from the warehouse to the quay, or stored on the quay during precipitation.
All coils should be able to be covered either by waterproof sheets to ground level or moved under cover within three minutes.
Vessel hatches should be closed immediately in the event of rain. Any coils affected by precipitation should be dried immediately.

Steel Coils
If coils are placed on the quay side before loading / after discharge they should be landed on even ground on adequate dunnage or suitable rubber sheeting and adequately. A local risk assessment should be conducted on requirement to chock the material.

Do not load steel products that are damaged, wet, incorrectly packed, or incorrectly labeled. Any damages should be reported to the Tata Steel quality contact and quarantined immediately.
7.3 Vessel Despatch Standards
Loading & Discharge: Coils

Lifting Coils

A spreader bar is seen as best practice to ensure no damage is caused to the outer winding or edges of the material.

Dual coil lifts (simultaneous lifting of two coils) must be lifted from the tank top or quayside only and from coils that are positioned in contact with one another prior to the lift.

No more than two coils should be moved in one lift.

Cranes with flat braided slings, polypropylene / nylon covered or webbing slings can be used for lifting. Spreader bar are recommended to reduce strop damage.
7.4 Vessel Despatch Standards
Stowing Cargo: Coil

At least two parallel lines of 120mm x 20mm dunnage should be laid on the vessel’s tank top in an athwart ship direction.

Tiers or rows should be made up of material for the same destination where possible.

Where possible HRC and packed material should be stowed separately, however, separating material by destination should always be prioritised.

When loading coils into the shaped areas of a vessel’s hold, the wings must be made up with timber to avoid coils twisting out of the fore and aft axis.

Heavy weight coils should never be over stowed on top of lighter coils.

If required by the Ship Masters, appropriate parallel lengths of vertical dunnage (gates) can be laid against the side of the hold by the appointed Ship Wrights.

Coil rows should leave a minimum gap of 30cm unless otherwise agreed.

Should be loaded in complete athwart ship rows with the coil axis in a fore and aft direction.

As far as possible, rows should be made up with coils of similar weights and dimensions. The difference in coil widths should ideally not exceed 200mm.
7.5 Vessel Despatch Standards
Stowing Cargo: Coil

Stowage of coils in non box vessel holds

A minimum of two rows of dunnage and wedges (chocks) should be used between the coils and the tank top.

Dunnage should be used between end coil and the hopper tank.

Chocks should be placed between the end coil and hopper tank

Adequate vertical lashing should be used to ‘lock up’ the other coils or rows
7.5 Vessel Despatch Standards
Stowing Cargo: Coil

General coil stowage configurations for non-box holds

First and last row
Stacking height of one

Inner rows
Stacking height of 1
Stacking height of 2
Stacking height of 3
7.5 Vessel Despatch Standards
Stowing Cargo: Coil

General coil stowage configurations for box-type holds

All cargo should be lashed with tested, certified steel bands

If coils are to be placed 3-high, the bottom tier doesn’t have to be lashed to the second tier. Only the top two layers need lashing.

Where the side wing of the vessel can lead to material damage, dunnage must be placed, or material must be stowed around the protrusions.

First and last row
Stacking height of 1

Inner rows
Stacking height of 1
7.5 Vessel Despatch Standards
Stowing Cargo: Coil

General coil stowage configurations for box-type holds

Inner rows
Stacking height of 2

Stacking height of 3
**7.6 Vessel Despatch Standards**

**Lashing Cargo: Coil**

Only complete rows of coils are to be loaded, utilising at least one locking coil.

Locking coils should be compatible in size with other coils in the row.

Locking coils should always be lashed through the eye of the immediate adjacent coil below.

The locking coil should be placed at the correct height in relation to the other coils in the row to obtain maximum effect.

**Lower limit:** the bottom centre of the locking coil should clearly be above the top of the centre of the coils below.

**Upper limit:** the bottom of the centre of the locking coil must not be higher than the top of the coil below.
7.7 Vessel Despatch Standards
Loading & Discharge: Pallet / Sheet Steel

Palletised Coil

Flying forks (pallet arms) or suitable webbing slings can be used

Forklift trucks used for stowage purposes must be equipped with flat forks and suitably spaced blades

Platforms can be used to handle palletised coils

Palletised coils should not be stacked on top of platforms

Packed sheets

The use of crow bars, pincer bars, chains or cables in direct contact with material is strictly prohibited

Sheets must be spaced with timbers of suitable dimensions as to avoid pallet arms catching material

Packed sheet bulks can be stacked up to a maximum of three high on platforms
7.8 Vessel Despatch Standards
Stowing Cargo: Sheet Packs

Stacking height of pallets should be limited to a maximum of six

Pallets must be stacked in a strict vertical line

Gaps in stow must be adequately tommed off.
7.9 Vessel Despatch Standards
Lashing Cargo: Palletised Coils (ETTS): Hopper Type Holds

All coils should be placed eye to the sky (ETTS)

Lashing of palletised coils in Hopper type vessels should be lashed as shown on the diagram.
7.10 Vessel Despatch Standards

Lashing Cargo: Palletised Coils (ETTS): Box Type Holds

Lashing of palletised coils in Box type vessels should be lashed as shown on the diagram.

For any further guidance or support, please contact your Tata Steel quality contact.

Small groups of ETTS should only be stowed against coil rows if dunnage is placed in-between the products.
7.11 Vessel Despatch Standards
Stowing Cargo: Slab

Tiers must be tommed (timbered) and secured with dunnage

Dunnage must be in a vertical line though the stack and 50cm from the end of the slab

Dunnage must be 10cm x 10cm x 50cm and made of hardwood.

The top surface of any stow (including broken stow) and loose tiers must be secured to Ships Master’s satisfaction

Material must not be in contact with the ship’s sides

Subsequent tiers should employ the pyramid effect to minimise dunnage used

Develop a level surface by timbering

Place timbers between material to leave a minimum of 100mm gap for discharge

There should be three lines of dunnage between slabs

There should be six lines of dunnage between the tanktop and first slab
Warehouse Classification Standards
Tata Steel Europe Strip Logistics
External storage facilities have a direct bearing on the quality of the finished products delivered to our Customers and the perception of Tata Steel. Therefore Tata Steel requires its partners to uphold the quality and presentation of its products.

This document aims to outline the minimal service provisions that are required from approved storage facilities to hold Tata Steel materials.

Tata Steel rates its storage facilities into four categories based on quality. Therefore the first section of each chapter outlines the minimum requirements of the respective classification to qualify as a Tata Steel approved storage facility. The subsequent section of each chapter establishes the Tata Steel product categories that are suitable for storage in each warehouse classification.

Tata Steel Warehouse Classification Standards should be used in conjunction with the Tata Steel Global Ports and Warehousing Standards.

While extensive measures have been taken to provide guidelines, they should be treated as minimum quality standards and do not indemnify the storage facilities from taking additional measures to ensure the quality of Tata Steel products and its individual customer requirements.
The table opposite, shows the types of finished product and the pack types that Tata Steel will use to protect material.

<table>
<thead>
<tr>
<th>Category</th>
<th>Product</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Galvanized Export Organic Coated Tinplate Cold Reduced oiled</td>
<td>Export</td>
</tr>
<tr>
<td>B</td>
<td>Galvanized Multimodal Organic Coated Tinplate Cold Reduced oiled</td>
<td>Multimodal</td>
</tr>
<tr>
<td>C</td>
<td>Galvanized Unpacked Organic Coated Cold Reduced oiled</td>
<td>Unpacked</td>
</tr>
<tr>
<td>D</td>
<td>Hot Rolled Pickled and Oiled Hot Rolled Pickled Dry</td>
<td>Unpacked</td>
</tr>
<tr>
<td>E</td>
<td>Hot Rolled Pickled and Oiled Hot Rolled Pickled Dry</td>
<td>Packed</td>
</tr>
<tr>
<td>F</td>
<td>Hot Rolled Dry</td>
<td>Plain Banded</td>
</tr>
<tr>
<td>G</td>
<td>Hot rolled Wet</td>
<td>Plain Banded</td>
</tr>
<tr>
<td>H</td>
<td>Slab</td>
<td>No Packing</td>
</tr>
</tbody>
</table>
Warehouse Classification
Warehouse Category 5

A good, robust drainage system for the floor.

Level floor suitable for storage of relevant Tata Steel products.

Good protection to separate product and incoming and outgoing traffic.

The distance between vehicle and stocked product should be greater than 1 metre.

Maintenance of good house keeping standards to ensure clean

Suitable for Storage of G & H Products

Guarantee Period: Max. 6 Months
Warehouse Classification

Warehouse Category 4

All criteria associated to Category 5 plus:

A watertight roof

Floors in good condition made of concrete or similar material, suitable for storage of relevant Tata Steel products

Suitable for Storage of A, G & H Products

Guarantee Period: Max. 2 Months
Warehouse Classification
Warehouse Category 3

All criteria associated to Category 4 plus:

**Site Condition & Layout**
- Sound and water tight walls, roofs and doors
- Level, solid floor, suitable for storage of heavy steel products
- Adequate water drainage-system on both roofs and floors
- Adequate protection from incoming and outgoing vehicles to ensure product quality e.g. collision; contact with water.

**Site maintenance**
- Designated pedestrian access and walkways
- Robust and effective disposal of packaging materials

**Handling Service Provision**
- Well maintained, appropriate handling equipment

**Storage service provision**
- Stillages or chocks must be used for every bottom stacked coil, coil stillages must be secured.

Suitable for storage of A, E, F, G products

Guarantee Period: 3 Months
Warehouse Classification
Warehouse Category 2

All criteria associated to Category 3 plus:

Operating doors in good condition and of good quality which are only opened during loading- and/or discharging activities

Provide the following service provisions on request
- Provision of de-canning,
- Re-banding and inspection facility

Doors to be kept closed when not in use
Facilities available to apply banding

Suitable for storage of A, B, D, E, F, G & H products

Guarantee period: 3 months with the exception of D & E products: 7 days
Warehouse Classification
Warehouse Category 1

All criteria that apply to a class 2 warehouse plus:

Climate control

- Installation of relative air humidity monitoring system at strategic points in the warehouse
- Maintenance register to record relative air humidity at strategic points in the warehouse *(at least one reading per 24hrs)*
- Readings to be regularly reported to TSE.

Equipped with stocking system to locate individual coils

Facilities to unpack, inspect and remove laps from material.

Suitable for storage of A, B, C, D, E, F, G & H products

Guarantee period: 3 months
Warehouse Classification
General Warehouse Standard Requirements

Quarantine area for storage of damaged/blocked material

Stock control system

Qualified and trained staff (auditable system)

Regular and registered inventory reports

Appropriate insurance coverage as discussed with relevant TSE contact.

Appropriate & documented Risk Assessments and Safe Working Procedures for all activities undertaken on behalf of TSE.
Warehouse Classification

Reference

\( T_{\text{inside}} \) always \( >= 15 \, ^\circ\text{C} \) in combination with a relative humidity \( <80\% \)

RH (Relative Humidity) < 80%. If RH >80% than use heating to decrease RH to <80%. Any breech must be reported to Tata Steel.

\( \Delta T_{\text{inside}}; T_{\text{outside}} \) \( >= 10 \, ^\circ\text{C} \) (summer) or \( >= 5 \, ^\circ\text{C} \) (winter).

Roof insulation is necessary in temperature controlled facilities.

It is recommended to equip warehouse doors with an industrial air curtain or an air lock in temperature controlled warehousing.

Engines should not be left running in any facility
Document Control
**Document Control**

**Document Master Location:** Tata Steel Strip Products Supply Chain Business Management System Database

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