Good Stow Guide

Peel Ports Steel & Metals Terminals

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Peel Ports
More Than Ports

Contents:

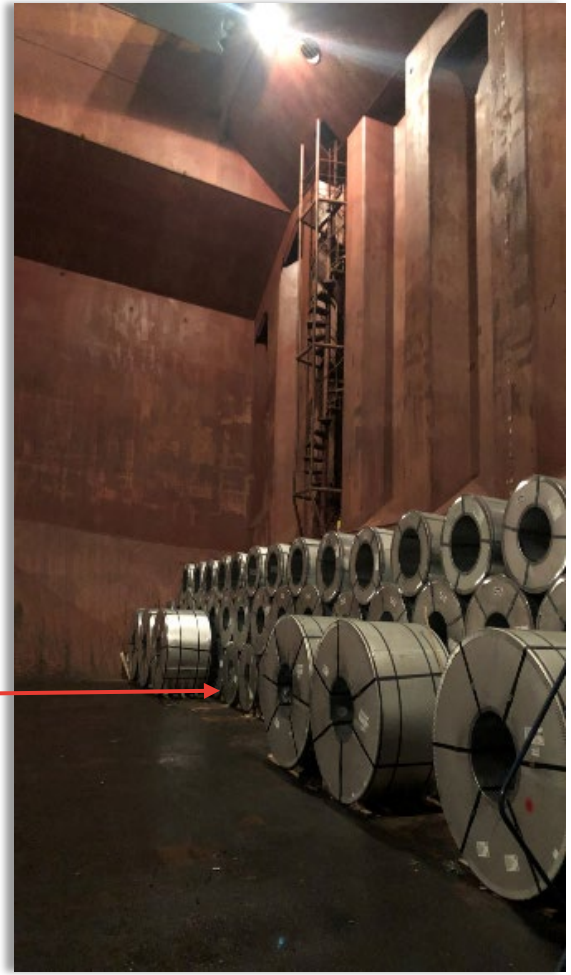
Introduction

The primary objective of these guidelines is to:

- Ensure the safety of all personnel involved in cargo operations at Peel Ports U.K. sites by adhering to safety protocols.
- Promote efficient cargo discharge and quick turnaround to maintain high productivity during operations.
- Avoid any damage to cargo throughout the handling process by following proper procedures.
- Ensure drivers safeguard stevedores and contractors by providing a safe working environment at all times.
- Ensure uniform practices across all Peel Ports U.K. sites to maintain safe and efficient cargo discharge operations.

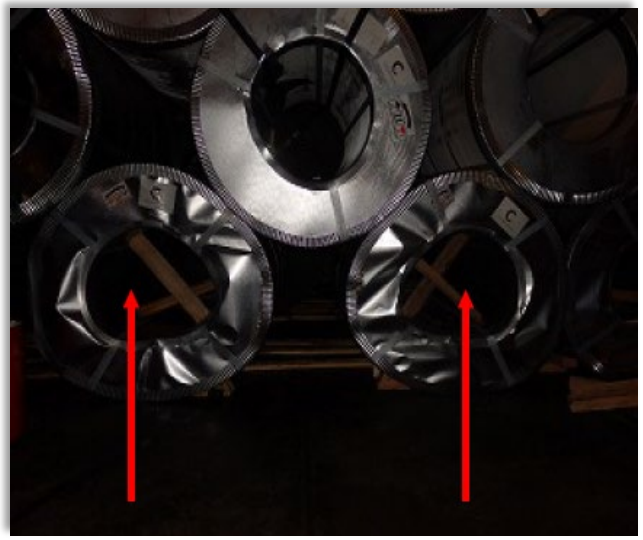
Steel Coil

- BOX HOLD VESSELS – This allows easy access to all coils using the ship's gear and minimizes the need for a coil probe truck. It also prevents coils from being stowed on hopper sides, which are difficult to handle and increase the potential for damage.
- Bottom-tier coils must be chocked on BOTH sides.
- Coils exceeding 14Mt should be stowed clear of overhanging coamings. Stowing heavy coils (over 14Mt) under coamings not only increases health and safety risks but also requires expensive mobile cranes for discharge, raising costs for shipping lines and receivers.
- Maintain a spacing of 15 cm between coil rows.
- Coils over 14Mt **must not** be stored under wings/coamings at any time.
- Avoid mixing coil widths within the same row, if possible.



Steel Coil

- Example of coils stowed hard up to each other restricting/preventing easy access of slings used in discharging operations.
- Ovalised coils because of poor/uneven weight distribution.
- Poor loading can often result in cargo movement resulting in collapsing of stow.



Wire Rod (Coiled)

- BOX HOLD VESSELS -This allows easy access to all coils using ship's gear and minimises requirement for coil probe truck. This also avoids coils being stowed on hopper sides which are difficult to handle and increase potential to damage.
- Bottom tier coils to be chocked BOTH sides
- Spacing of 15cm between coil rows

Compact, rigid WRICs are vital to effect a good stow. With their higher-than-normal stowage factor, WRICs can be stowed on either the tank-top or on the 'tween deck if required. The stowage shall be uniform and compactly arranged to avoid breakdown of the stow and subsequent crushing and/or disintegration of the bundles. Coils shall be handled with care to prevent "nicking", scoring, scratching, localised sharp bends and/or twists to the windings.

WRIC being stowed across the full width of a box- shaped cargo hold.

Wire Rod (Coiled)

Slinging the coils for loading. One nylon belt per coil is used to avoid damage to the cargo.

By using lifting strops attached to beams (spreader), up to six coils at a time may be loaded in this layout.

Wires are passed through the forward face of the coils.

The lashing wires are then passed through the coils towards the adjacent bulkhead.

Wire Rod (Coiled)

Unwound and damaged coils. These shall not have been loaded as they may be rejected by the receivers and will be difficult and dangerous to off-load.

The stow of coils is not tight across the hold due to the unwound coils.

One coil has fallen off the stow and is sitting vertically, and unsecured.

Poorly stowed outer coils in a bulk carrier. Although the tiers are lashed, the outboard coils are leaning forward and will likely collapse on the voyage.

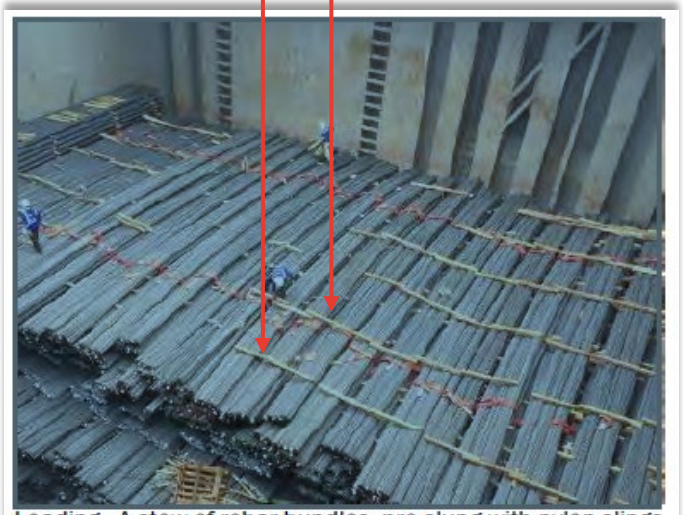
Wire Rod (Coiled)

Summary Checklist:

- Box-shaped vessels (no winged vessels)
- Plywood dunnage, with a minimum thickness of 10mm, shall be used on the tank-top, and wooden planks with approximate dimensions of 15mm x 100mm cross-section shall be used for the bulkheads and, if required, between tiers.
- The height of the stow should be a maximum of three tiers.
- For part hold loading, the cargo shall be loaded against the aft bulkhead.
- The WRICs shall not be overloaded with other cargo.
- For partially stowed cargo, the front rows adjacent to the face are to be pre-slung. This will assist with off-loading in the event of the stow collapsing in transit. (The number of tiers depends on the maximum height that a forklift truck can handle.)
- In the cargo compartments, where possible, safe passage shall be provided directly from the ladders to the top of the cargo stow. Safe access shall also be provided from the tank-top to the top of the cargo stow.

Rebar

- Preference for vessels with box shaped holds.
- It is essential that slings are clearly and correctly labelled and matching EU certification standard.
- Sling eyes to be unobstructed/clearly accessible.
- Dunnage placed between each tier of rebar, preferred at **2.5 metre intervals.**
- We **cannot** lift bundles direct from wire fasteners for obvious health and safety reasons.



Loading. A stow of rebar bundles, pre-slung with nylon slings to assist the discharge operation. Dunnage is also used between the tiers.

Rebar

- Well applied, timber dunnage **(size 2400cm x 13cm x 13cm)** creates even tiering which assists in discharge operations.
- The placement of bundles against the vessel walls must be distance of 53cm
- Each tier to consist of multiples of four bundles, to improve discharge efficiency by maximizing the lifts.

- Lack of / inadequate dunnage results in ill-defined tiering which leads to delays / extra handling during discharge operations.

- Admixing/Combining of sizes in stow to be avoided/minimised where possible.

Rebar

Pre-slung 6m long bundles about to be loaded. Pre-slinging reduces the time needed for discharge operations.

Pre-slinging of two tiers of rebars in preparation for loading.

Pre-slung rebar is fanned out in way of the hopper tanks, but sufficient dunnage is placed on the hopper plating to prevent steel-on-steel contact

section dunnage being laid between layers of rebar. The cargo is not pre-slung.

Rebar

The face of the stow shall be kept as level as possible. No dunnage was used between tiers. The rebars were not pre-slung to assist the off-loading. 1 meter clearance is required between the two stows.

Rebars stowed in an athwartships direction because of the higher tiers. The higher tiers are formed because of the tapered end due to the flaring of the hopper tanks.

Bad mixed stow of 12m long rebars without dunnage and pre-slinging. There is no clearance between the fore and aft stows with athwartships cargo stowed in between.

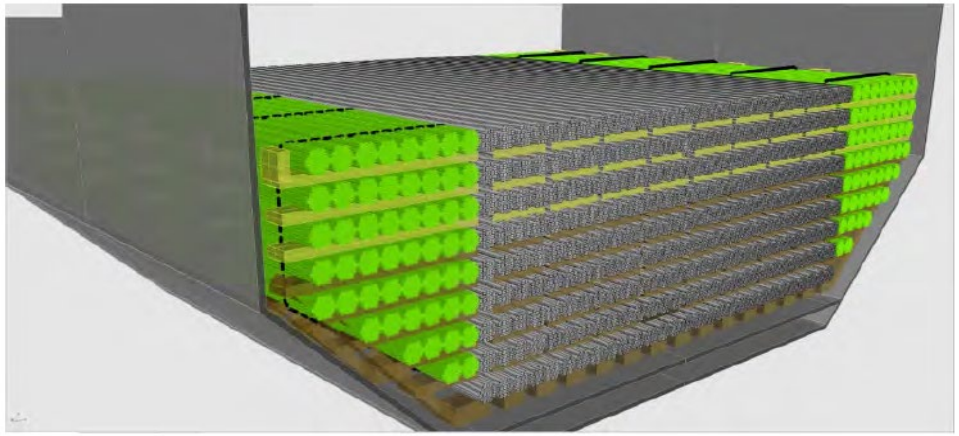
12m long rebars in the under-coaming space of a hopper-type bulk carrier. No dunnage. The stow is not levelled.

Rebar

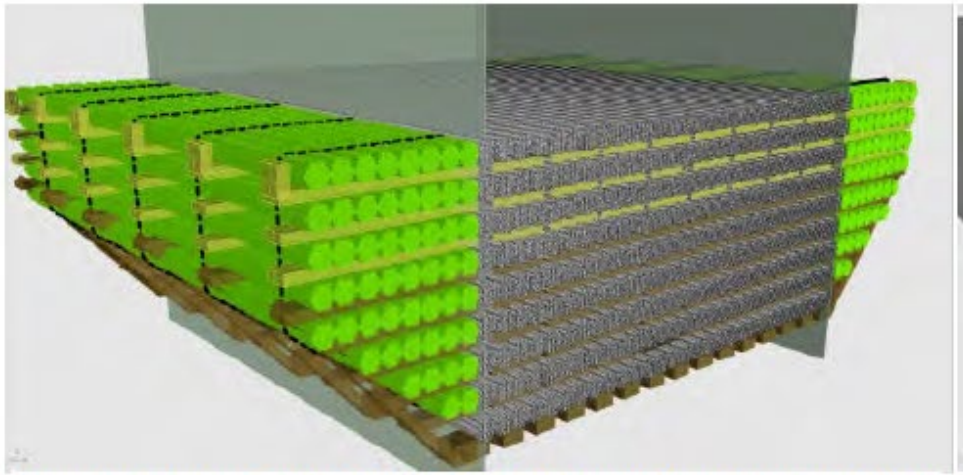
No dunnage to be used in upright position as this obstructs the equipment.

Not enough dunnage on the side of Vessel walls, causing the bundles to be out of equipment's reach.

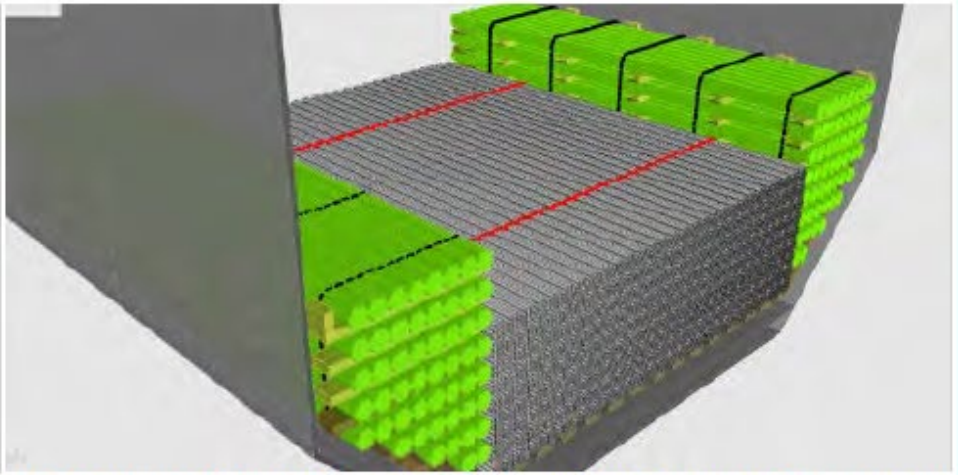
Rebar



	Under-coaming stow
	Open hatch stow
	Soft wood dunnage
	Hardwood dunnage



The under-coaming stow is lashed separately every 2 metres in height to prevent collapse of the stow during cargo handling.



The pre-slung stow under the open hatch is lashed separately and does not require dunnage except for the first tier to avoid contact with the tank top.

Rebar

Summary Checklist:

- Tank-top load limits not to be exceeded. Consideration to be given to the hopper areas, where the load limits may be smaller.
- Tank-top to be prepared with appropriate dunnage to prevent steel-to-steel contact. Lashings to be pre-positioned on the tank-top.
- Maximum distance between rows of timber dunnage to 2.5m intervals
- Dunnage on the tank-top to be hardwood with minimum cross-section 2400cm x 13cm x 13cm.
- Minimum distance between bundles and the vessel walls to be 53cm.
- Dunnage between layers to be laid to assist with slinging at discharging ports.
- Dunnage is required for the under-coaming space areas. If the rebars within the open hatch area are pre-slung, then dunnage is required only at the tank-top and not for the tiers.
- Separate lashing of the under-coaming cargo stow may be required to prevent the stow from collapsing during off-loading of the open hatch stowed cargo of rebars.
- All tiers to be stowed level, the face of the stow to be as straight as possible, with sufficient clearance from the adjacent stow to prevent virtual over stows.
- In the cargo compartments, where possible, safe passage shall be provided directly from the ladders to the top of the cargo stow. In bulk carriers this access shall be provided directly from the Australian ladders. Safe access shall also be provided from the tank-top to the top of the cargo
- stow.

Rebar being discharged with electromagnets at London Medway

- Preference for vessels with box shaped holds
- It is essential that slings are clearly and correctly labelled and matching EU certification standard.
- Sling eyes to be unobstructed/clearly accessible
- Dunnage placed between each tier of rebar, preferred at 2.5 metre intervals

Rebar being discharged with electromagnets at London Medway

- Well applied, timber dunnage **(size 2400cm x 13cm x 13cm)** creates even tiering which assists in discharge operations.
- Lack of / inadequate dunnage results in ill-defined tiering which leads to delays / extra handling during discharge operations.

Admixing/Combining of sizes in stow to be avoided/minimised where possible

Rebar being discharged with electromagnets at London Medway

section dunnage being laid between layers of rebar. The cargo is not pre-slung.

Rebar being discharged with electromagnets at London Medway

The face of the stow shall be kept as level as possible. No dunnage was used between tiers. The rebars were not pre-slung to assist the off-loading. 1 meter clearance is required between the two stows.

Rebars stowed in an athwartships direction because of the higher tiers. The higher tiers are formed because of the tapered end due to the flaring of the hopper tanks.

Bad mixed stow of 12m long rebars without dunnage and pre-slinging. There is no clearance between the fore and

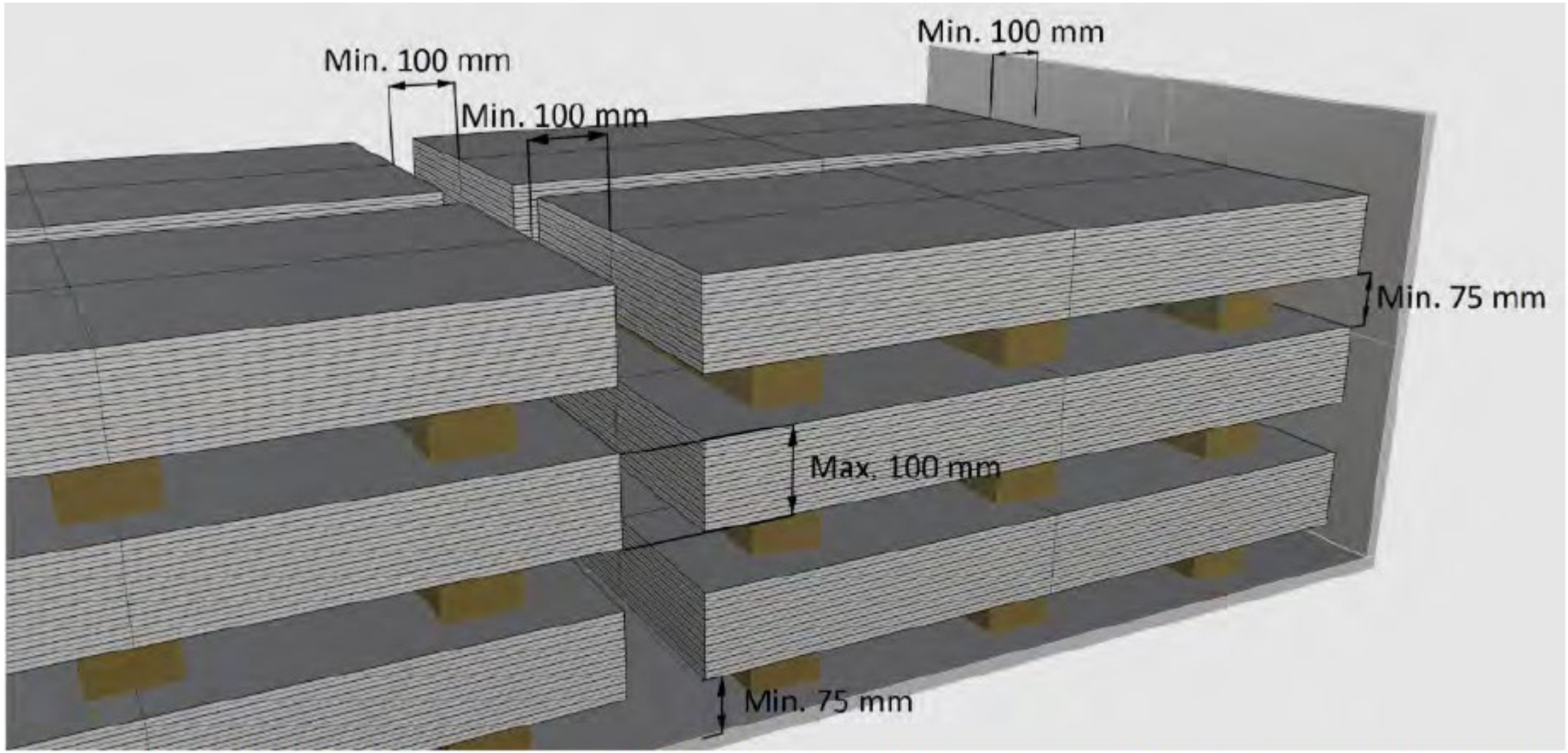
12m long rebars in the under-coaming space of a hopper-type bulk carrier. No dunnage. The stow is not

Steel Plate

- Preference for box-shaped holds.
- Plates should be stacked in neat, flush-edged lifts of approximately 15t.
- Lifts should be stacked, suitably dunnaged, with sufficient spacing at the long edges to allow plate clamp access.
- If the vessel has coamings, smaller plates should always be loaded underneath.

- Long, thin gauge plates under the coamings require two trucks in the hold for tandem lifting, which significantly increases the potential for damage to the plates.

Steel Plate



To allow the stevedores to correctly position the clamps, a minimum distance of 100mm clearance must be left around the steel plates and at least 75mm between tiers. The thickness of the bundle or the number of plates stowed in one tier shall not exceed 110mm.

Steel Plate

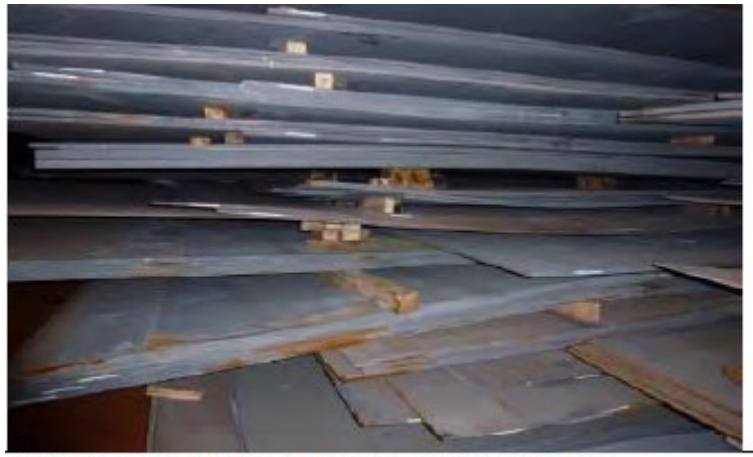
Good stowage and use of dunnage for steel plates.

Good application of dunnage for steel plates. It is acceptable to use short hardwood dunnage pieces instead of long bars.

Stow of steel plates loaded athwartships. Stow prior to the final lashing.

Stow of steel plates in longitudinal and athwartships direction. The upper tiers only are lashed with steel bands.

Steel Plate



Improper stow, alignment and use of dunnage.

Vertical alignment of the dunnage is important. Any loose ends of tiers shall be properly supported underneath.

Missing dunnage at the bulkhead. Incorrect use of dunnage to support tiers.

Correct use of dunnage. The dunnage is additionally secured horizontally. Incorrect use of bulldog grips on the left wire.

Dunnage must be used for securing the existing gaps on the upper tier of plates. Strong solid horizontal compact arrangement shall be made.

Incorrect use of dunnage. The pieces of wood are prone to collapse.

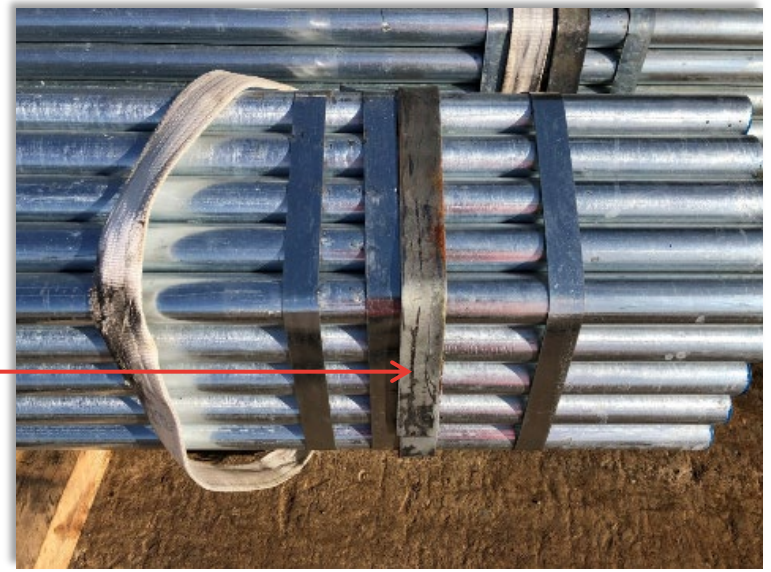
Steel Plate

Summary Checklist:

- Tank-top load limits must not be exceeded. Consideration should be given to the hopper areas, where the load limits may be smaller.
- The tank-top should be prepared with appropriate hardwood dunnage to prevent steel plate bending or buckling. The spacing of the dunnage should be at 2.5-meter intervals. Shorter pieces may also be used.
- Dunnage between tiers should be laid in a vertical line to prevent waviness in the steel plates.
- Lashing wires should be spaced no more than 3 meters apart and positioned on the tank-top in preparation for the final lashing of the stow
- The full stow may be lashed as one block. Alternatively, the last two tiers or the last tier of steel plates should be lashed.
- Separate tiers or bundle heights (between horizontally placed dunnage beams) must not exceed 110mm.
- A minimum clear distance of 100mm is required between the edges of the steel plates and adjacent cargo or bulkheads. This distance must be properly dunnaged.
- All tiers must be stowed level.
- In the cargo compartments, where possible, safe passage should be provided directly from the ladders to the top of the cargo stow. In bulk carriers, this access should be provided directly from the Australian ladders. Safe access should also be provided from the tank-top to the top of the cargo stow

Scaffold

- Endless slings: It is essential that slings are clearly and correctly labeled and meet the matching EU certification standards (see slide 24).
- Preference for vessels with box-shaped holds.
- Welded metal end brackets must be affixed to each end of every bundle.



Scaffold

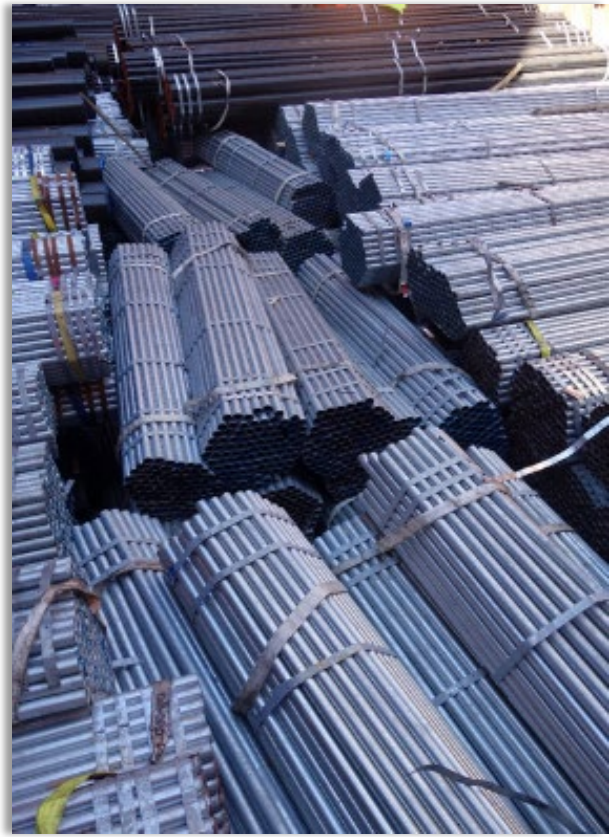
- Examples of failed clips which can result in cargo damage and slower discharge. Failed clips are the result of poor stowage and/or inadequate “crimping” of scaffold bundles before being loaded. This is further reason why welded metal brackets (see slide 16) should be afforded to each and every bundle.

Scaffold

- Height of stow to be restricted both in terms of safe working and avoidance of compression damage to lower tier bundles.

- Examples of poorly stowed bundles resulting in settlement/shifting presenting difficulties at the time of discharge.

- Admixing/Combining of sizes in stow to be avoided/minimised where possible



Scaffold

- Lifting slings must be clearly labelled in English with appropriate (EU) certification and matching labels. Any deviation from these requirements could result in slower discharge (if lifting slings are not used) and additional costs. Please refer here for further guidance:

http://www.hse.gov.uk/work-equipment-machinery/loler.htm

H-Beam

- Preference for box shaped holds.
- Each tier of beams to be adequately dunnaged using 110 x 110mm hardwood timbers, set at 2.5m intervals

- Poor quality, small section dunnage is prone to compression due to over stowing weight which renders it difficult/more time consuming for discharge operations.

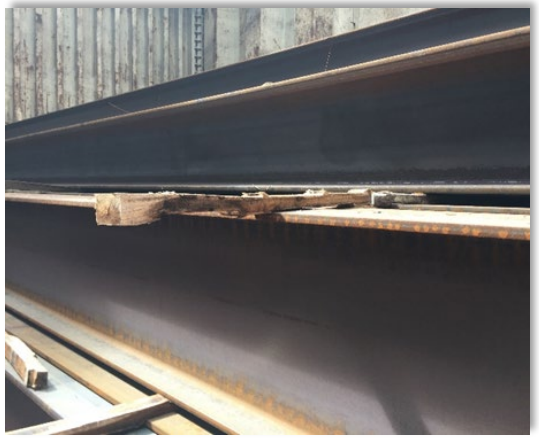
H-Beam

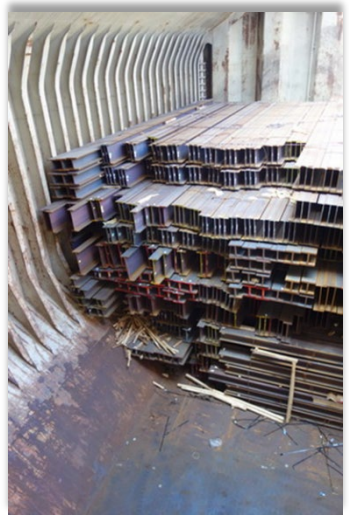
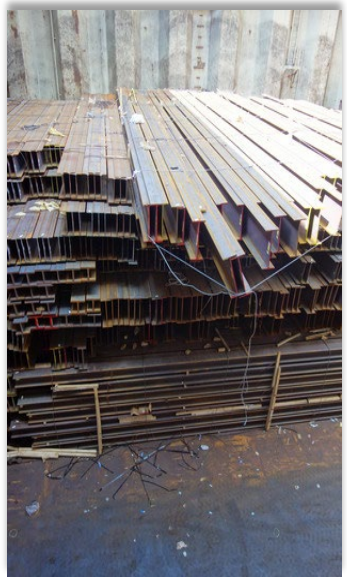
- H-Beam, block stowed against the aft transverse bulkhead to half-hatch, lengths fore to aft approximately 8 metres high. The stow appeared to be well dunnaged. The hold was straight sided in the way of the stow (there were no hopper sides in the lower portion) which led to an even and uniform stow.

H-Beam

Softwood/unsuitable dunnage –
As discharge progressed it was found that the dunnage became progressively more compressed the further down the stow, with lower tier dunnage compressed to 35mm, significantly reducing forklift tine access.

Potential issues when beams loaded to vessel with hopper sides, i.e. slight settlement of wing stowed bundles resulting in slower discharge.



Thank you!

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