

SECTION 13 METALLIC PRODUCTS

- 13.1 General Handling Requirements
- 13.2 Coil (Rolled Steel)
- 13.3 Plate & Flat Sheet
- 13.4 Large Castings & Fabricated Units
- 13.5 Wire Coils
- 13.6 Pipe, Tube & Structural Steel

For equivalent guidelines in respect of road transportation see Section 3 of this Manual.

For scrap metal see Section 10 of this Manual.
For loose, light loads and small castings see Section 10.

13.1 GENERAL HANDLING REQUIREMENTS FOR ALL METALLIC PRODUCT

Steel products are often very dense and heavy with smooth surfaces that can easily slide on other steel surfaces such as the wagon deck, other steel products and securing chains. For these reasons the eight general requirements below should be followed unless an exception has been specifically authorised.

DO...

- ✓ Use plenty of wooden dunnage, old tyres, plywood or flat rubber.
- ✓ Distribute the load evenly.
- ✓ Keep the Centre of Gravity (**COG**) as **low** as possible.
- ✓ Use rubber for edge protection when securing all strops and chains. Some products are excepted because their surfaces or edges provide the strops and chains with a good grip. Exceptions include:

Reinforcing rod secured with chains.
Bluescope NZ Steel hollow section steel strapped in at least three places along its length.

DO NOT...

- ✗ **DO NOT** load metal on metal.
- ✗ **DO NOT** place loads at only **one end** or only **one side**.
- ✗ **DO NOT** place bearers and dunnage randomly through the load.
- ✗ **DO NOT** use chains or steel strips directly across metal freight unless an exception has been specifically authorised.

These points are illustrated in Diagram 13.1.

For instructions on handling steel product in GOS containers, contact the KiwiRail Service Co-ordinator, Mission Bush.

DIAGRAM 13.1 HANDLING METALLIC PRODUCTS



CHECKLIST

DO NOT load METAL on METAL

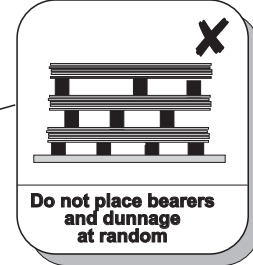
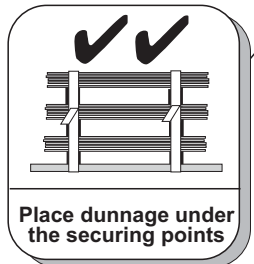
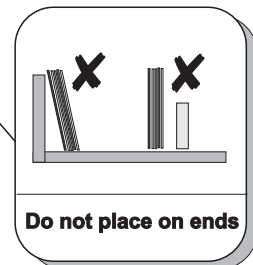
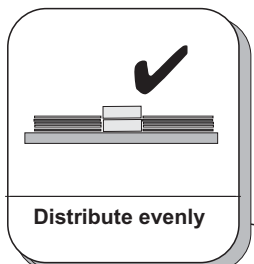
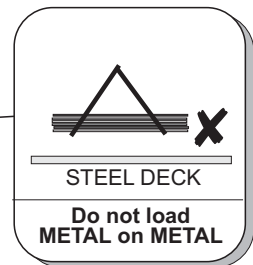
Use plenty of dunnage

DO NOT place "on sides or ends"

Distribute the load evenly

Place dunnage under the securing points

DO NOT place dunnage randomly or unevenly



13.2 COIL (ROLLED) STEEL

OVERALL GUIDELINES

- ➔ Coils may be stowed with the bore vertical or horizontal.
- ➔ Coils must be kept fully covered ('tarped') at all times.
- ➔ When palletised, load using a **forklift**, if available and suitable; otherwise use a crane.
- ➔ All Bluescope NZ Steel product must be covered at all times including delivery.

STOWING WITH BORE HORIZONTAL

See Diagram 13.2

WHEN LOADING...

Small coils can be loaded by either

- ➔ Moving the angle bearers closer together, or
- ➔ Fitting packers on the face of the angle bearers to maintain the minimum deck clearance.

Two coils can be lashed (chained) across the deck.

WHEN LIFTING...

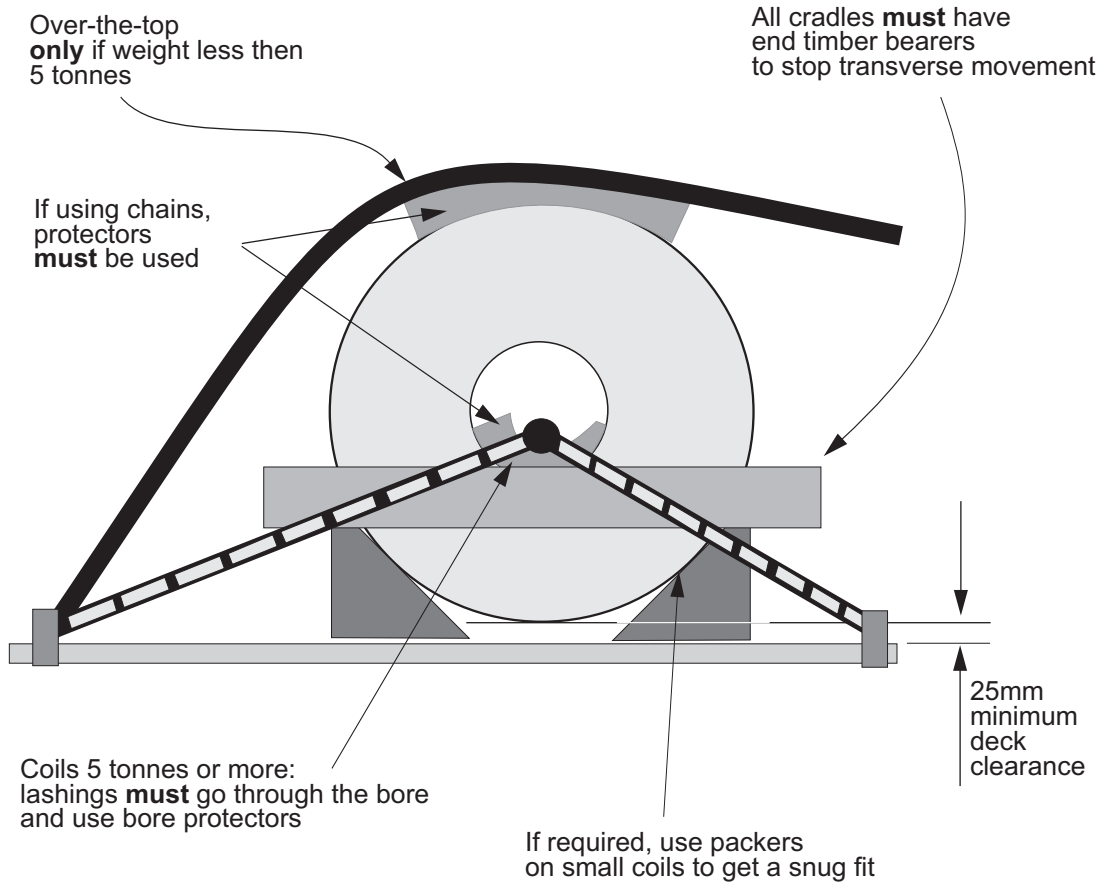
- ✓ If lifting by **crane** use a **lifting bar** through the bore, and use **bore** and **edge protectors**.
- ✓ If lifting by **forklift**, use **both forks** through the bore. If lifting large coils a fork horn should be used.
- ✓ If coils are palletised, **forklift**, is the preferred lifting method where possible.

RULES FOR SECURING...

See Diagram 13.2.

- ➔ Over-the-top lashing may be used **only** when coil weighs less than 5 tonnes except Bluescope NZ Steel traffic in GOS containers which require lashing for all coils.
- ➔ If coil weighs more than 5 tonnes, lashings must be **through the bore** and **edge protectors** and **bore protectors** must be used.
- ➔ All cradles must have end timber bearers to stop transverse movement.
- ➔ All chains must have **surface, edge** and **bore protectors**.
- ➔ Minimum deck clearance is 25 mm.
- ➔ No lashings are required in JF wagons.

DIAGRAM 13.2 STOWING WITH BORE HORIZONTAL



STOWING WITH BORE VERTICAL

See Diagram 13.3.

RULES

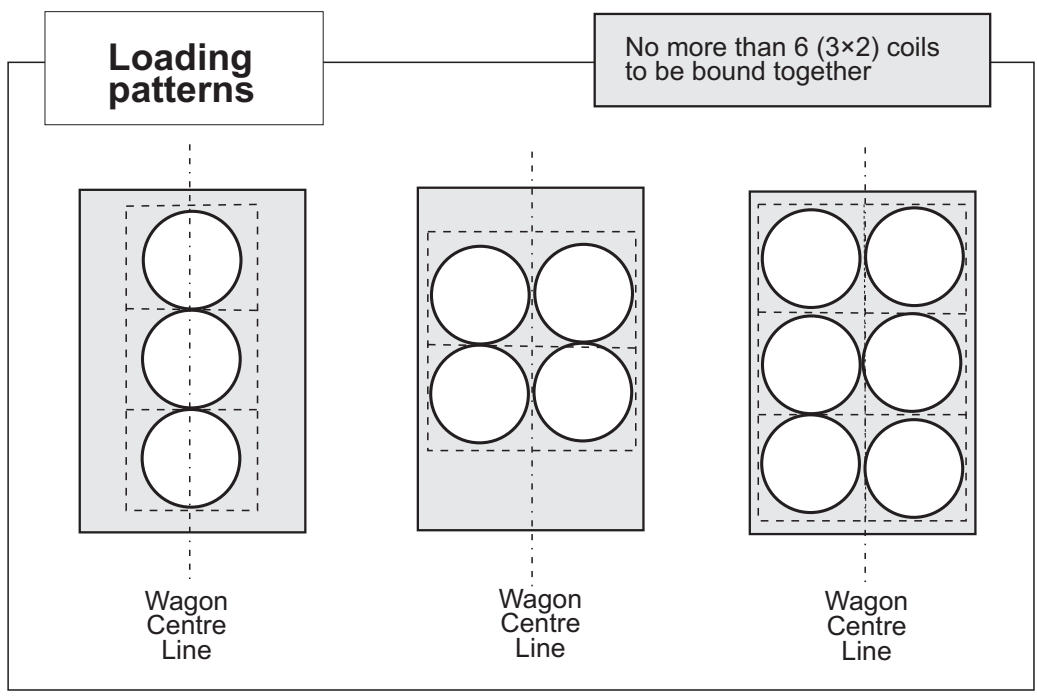
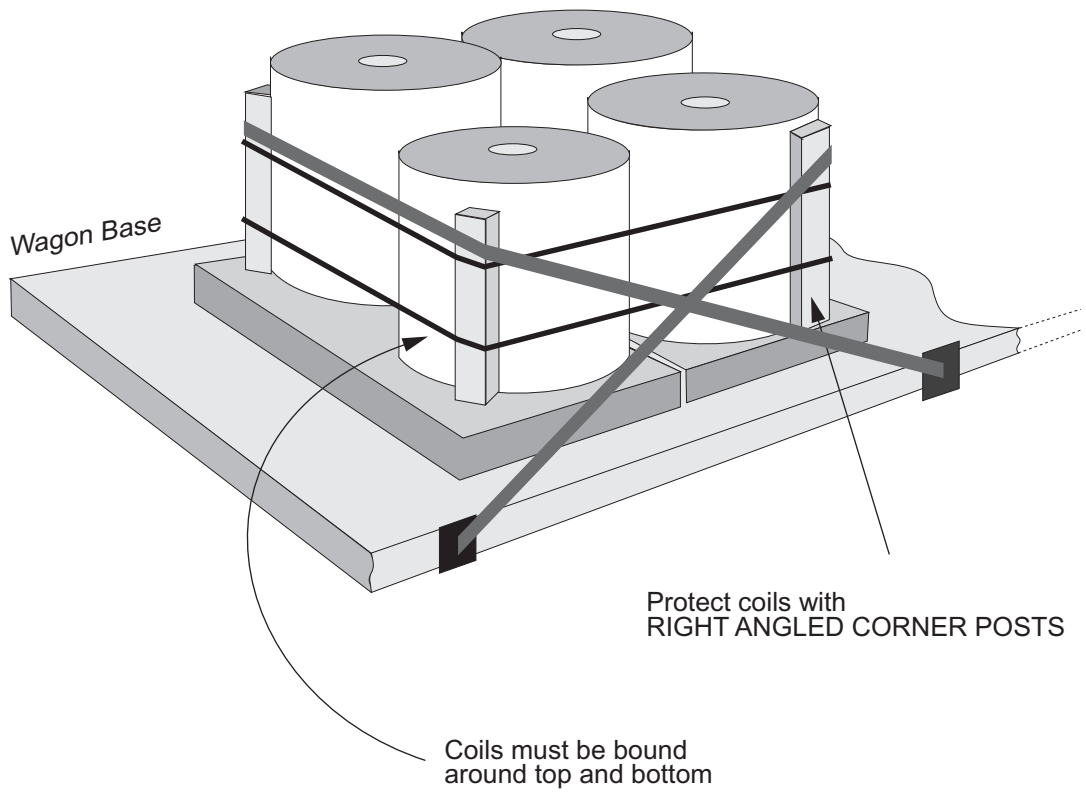
- ➔ **Maximum** of six (i.e., 2 × 3) coils bound together.
- ➔ Multiple pallets **must** be bound around top and bottom coils.
- ➔ Coils **must not** be stacked at all.

LOADING PATTERNS...

- ✓ Up to three pallets: Load all on centre line of wagon.
- ✓ Four pallets: Load in two pairs.
- ✓ Six pallets: Load in three pairs.

- ➔ When three pairs of coils are bound together, the centre pair must be separately lashed to the deck.

DIAGRAM 13.2 STOWING WITH BORE VERTICAL



13.3 PLATE & FLAT SHEET

See Diagram 14.4.

GENERAL GUIDELINES

- ➔ Stack the longest and/or widest at the bottom.
- ➔ Use bearers to pack up to bulkheads and other solid loads.
- ➔ Check weight distribution.
- ➔ For light plate (e.g., HRC) do not stack more than four packs high.
- ➔ Place dunnage between the deck and the bottom pack and between packs.

LOADING MANUALLY

DO...

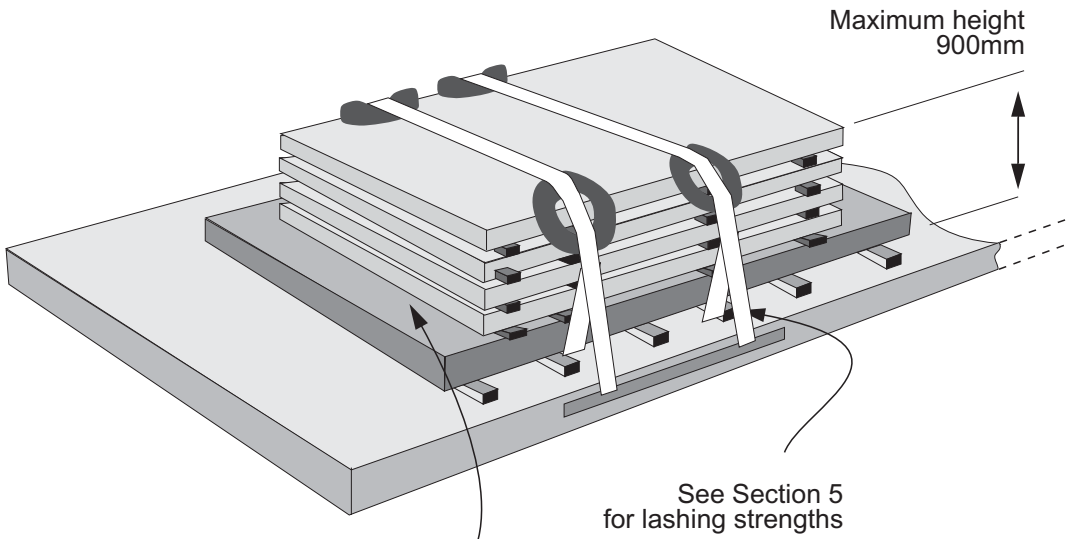
- ✓ Lift only **one plate** at a time.
- ✓ Carry plates **edge up** to prevent bending and distortion.

MECHANISED LOADING

DO...

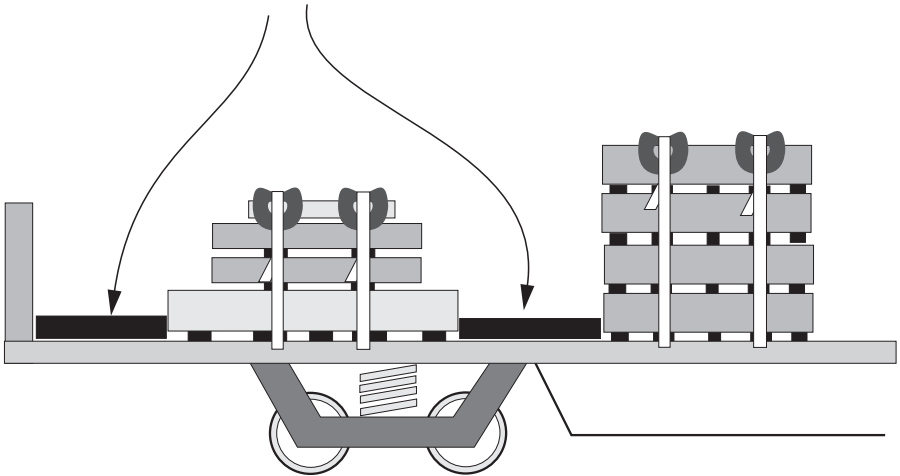
- ✓ Lift packs by **two** points.
- ✓ Use a **lifting frame** if there is any chance of distortion.

DIAGRAM 13.4 PLATE & FLAT SHEET



Stack longest / widest at bottom.
Stack shortest / narrowest to top

Pack up to bulkhead with bearers



13.4 LARGE CASTINGS & FABRICATED UNITS

These loads tend to be either heavy and/or sizeable.

Placement against a bulkhead or headboard is not always possible in the interests of best distribution of weight.

DO...

- ✓ Use additional baulking and lashings.
- ✓ Check for even weight distribution.

ODD SHAPED ITEMS

DO...

- ✓ Check stability. See Diagrams 5.1 and 5.2 of this Manual for guidelines about the effects of Centre of Gravity (COG).
- ✓ If the load appears excessively large by KiwiRail's normal standards, refer to Section 22.

13.5 WIRE COILS

DO...

- ✓ Place load against bulkhead or sidewalls for stability, but be sure to balance the load.
- ✓ Restrain the load from moving sideways or lengthwise.

13.6 PIPE, TUBING, REINFORCING & STRUCTURAL STEELS, LONG RUN ROOFING

DO...

- ✓ Lift steel and packs by **two** points.
- ✓ Use a **lifting frame** if there is any chance that the pipe or steel will bend.

STOWAGE WHERE LOAD LENGTH IS LESS THAN THE DECK

DO...

- ✓ **Stack together** or in the same layers products of **similar** size, weight and/or length.
- ✓ Put **longest** at the **bottom**.
- ✓ Where distribution allows, **stow** bundles **against headboards**.
- ✓ Check that weight distribution is as even as possible.

STOWAGE WHERE LOAD LENGTH IS LONGER THAN THE DECK

Overhang is defined as any extension beyond the load platform. The following **overhang limits** apply:

Longest bundle	Maximum overhang	Maximum width either side of wagon centre line
UP to 20 m	2.0 m	1.00 m
20–23 m	3.5 m	0.90 m
over 23 m	5.0 m	0.75 m

RULES

- ➔ All loads must be at least 200 mm clear of the wagon at the lowest point **except** for reinforcing steel, which is allowed to sag to the deck over the central section.
- ➔ No overhanging load shall be less than 200 mm above the deck of any 'runner' wagon.
- ➔ Maximum height of load shall be 1.5 m above wagon deck.
- ➔ All loads that overhang a wagon or require a runner wagon need a special transit permit. Call your KiwiRail Key Account Executive (KAE), or Customer Service Centre for advice.
- ➔ Loads should be stowed on wooden bolsters.
- ➔ Minimum distance from an overhanging load to adjacent load is **400 m horizontally and 200 mm vertically**.