

LOAD RESTRAINT GUIDELINE

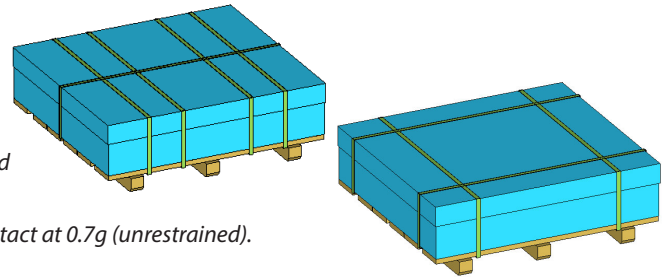
Tinplate sheet packs

1. This guideline applies to:

- Tinplate sheet packs securely banded to wooden pallets.

The friction factor for this product on a timber deck is $\mu=0.5$ determined as per EN 12195-1:2010 Annex B.1.2.

Shape stability of the packaging has been tested to 0.4g and remains intact at 0.7g (unrestrained).



2. Equipment requirements

- All restraints must be web lashings compliant with EN 12195-2, minimum lashing capacity LC 2000 daN.
- Edge protection **MUST** be used on all **front cross-over straps** and on other straps exposed to sharp edges of packaging or steel banding.
- Anti-slip matting must be used on all loads originating in mainland Europe and all export loads from the UK.

LC 2000 daN minimum webbing straps: up to 16 may be required.



Edge protection: as required.

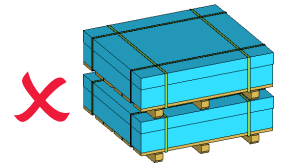


Anti-slip matting: applied to all mainland Europe loads.

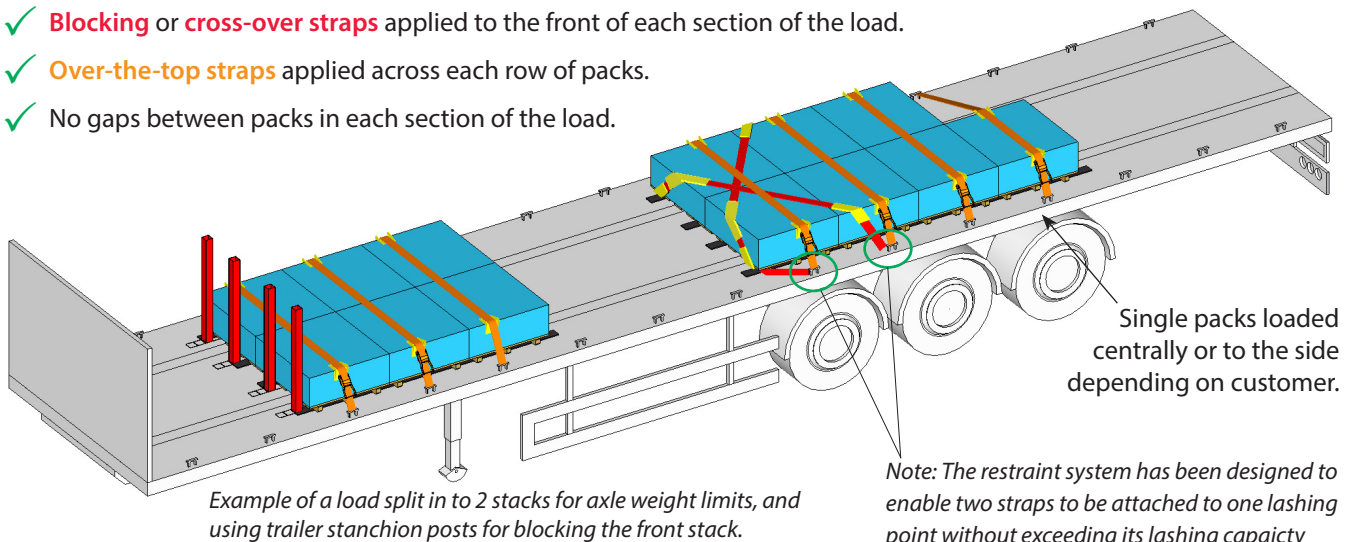


3. Overview of restraint system

- ✓ Loaded on **anti-slip matting** for all mainland Europe loads.
- ✓ Load spread down the length of the trailer to meet axle weight limits.
- ✓ **Blocking** or **cross-over straps** applied to the front of each section of the load.
- ✓ **Over-the-top straps** applied across each row of packs.
- ✓ No gaps between packs in each section of the load.



NO NOT double stack.



Example of a load split in to 2 stacks for axle weight limits, and using trailer stanchion posts for blocking the front stack.

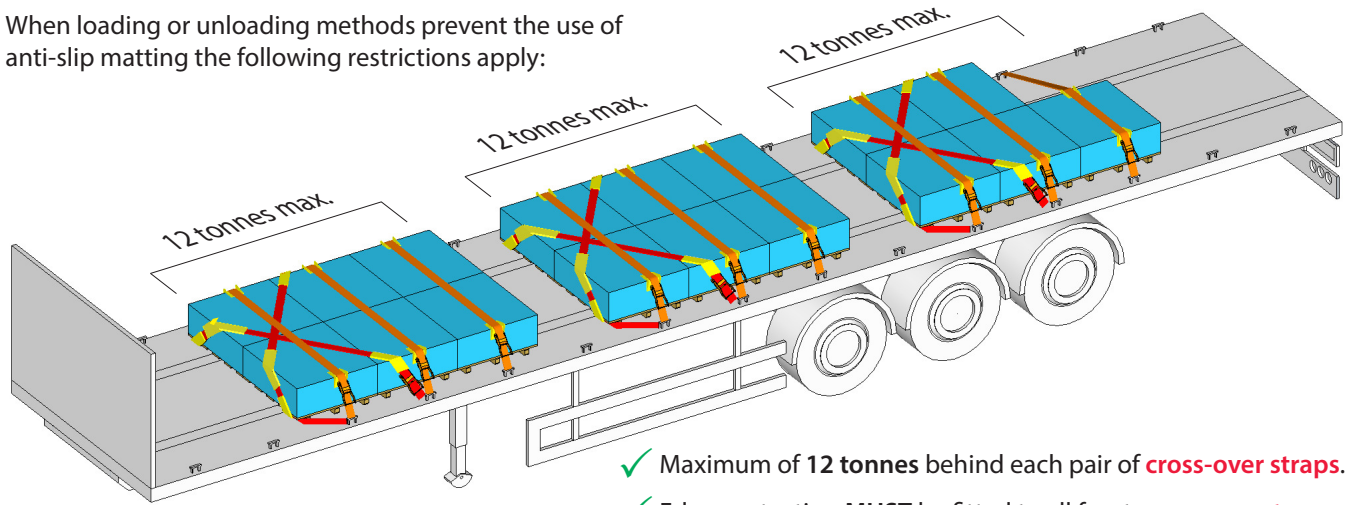
This guideline has been designed and tested to meet the forces for road, rail and sea transport as stated in EN 12195-1:2010 and VDI 2700.

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4. Without anti-slip matting - UK domestic loads only

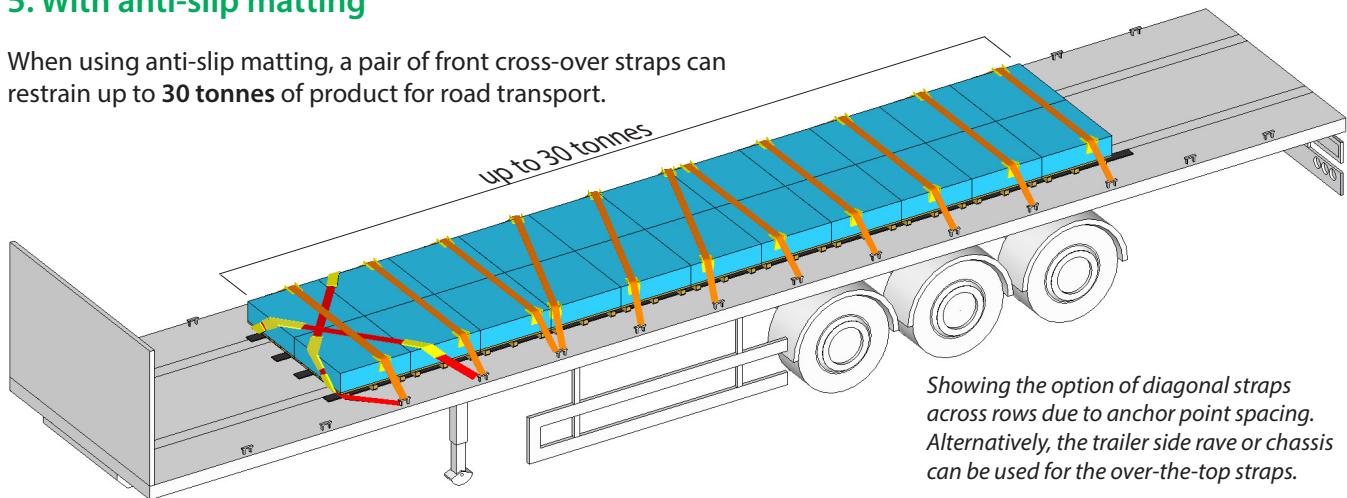
When loading or unloading methods prevent the use of anti-slip matting the following restrictions apply:



- ✓ Maximum of 12 tonnes behind each pair of **cross-over straps**.
- ✓ Edge protection **MUST** be fitted to all front **cross-over straps**.
- ✓ Minimum 1 **over-the-top** strap applied to each row.

5. With anti-slip matting

When using anti-slip matting, a pair of front cross-over straps can restrain up to 30 tonnes of product for road transport.

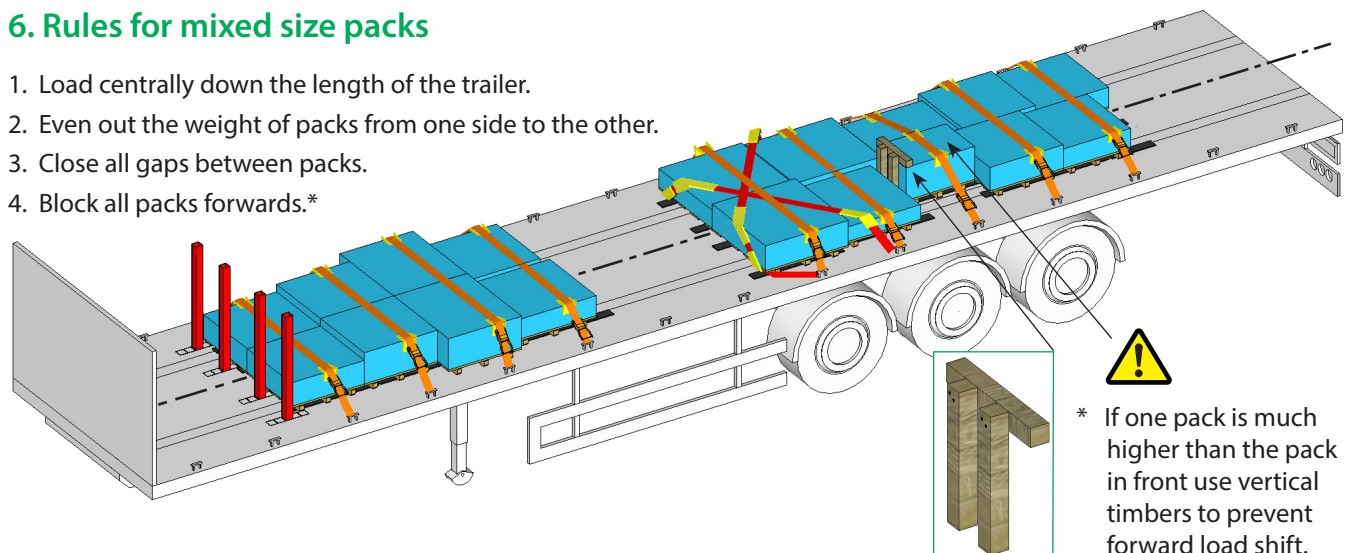


Showing the option of diagonal straps across rows due to anchor point spacing. Alternatively, the trailer side rave or chassis can be used for the over-the-top straps.

Note: Attaching two straps to one anchor point will not overload the anchor point as the over-the-top straps will only be tensioned to the standard tension force of 350 daN.

6. Rules for mixed size packs

1. Load centrally down the length of the trailer.
2. Even out the weight of packs from one side to the other.
3. Close all gaps between packs.
4. Block all packs forwards.*



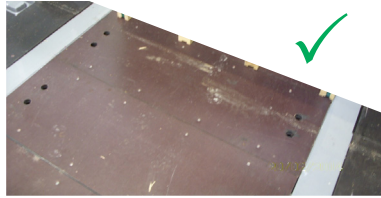
* If one pack is much higher than the pack in front use vertical timbers to prevent forward load shift.

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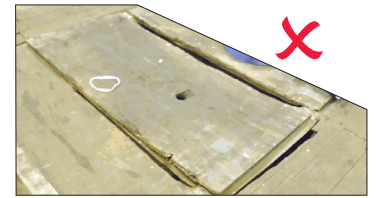
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7. Use of well trailers and well-posts for blocking

Well trailers may be used for tinplate sheet packs if the well-boards are in good condition:



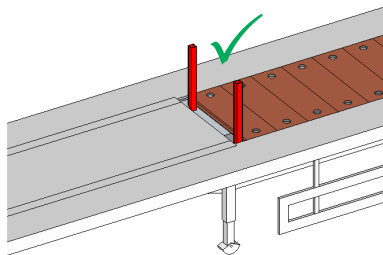
Acceptable well-board condition.



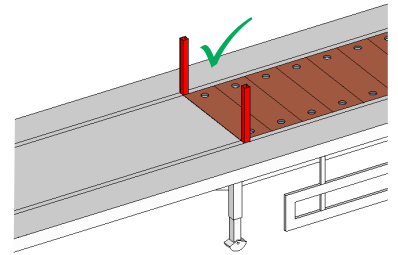
Unacceptable well-board condition.

Well-boards must be placed tight against the well posts, or tight against the front of the well to prevent them from sliding forward.

The steel packs must also be placed tight against the well posts with no gaps in the load.



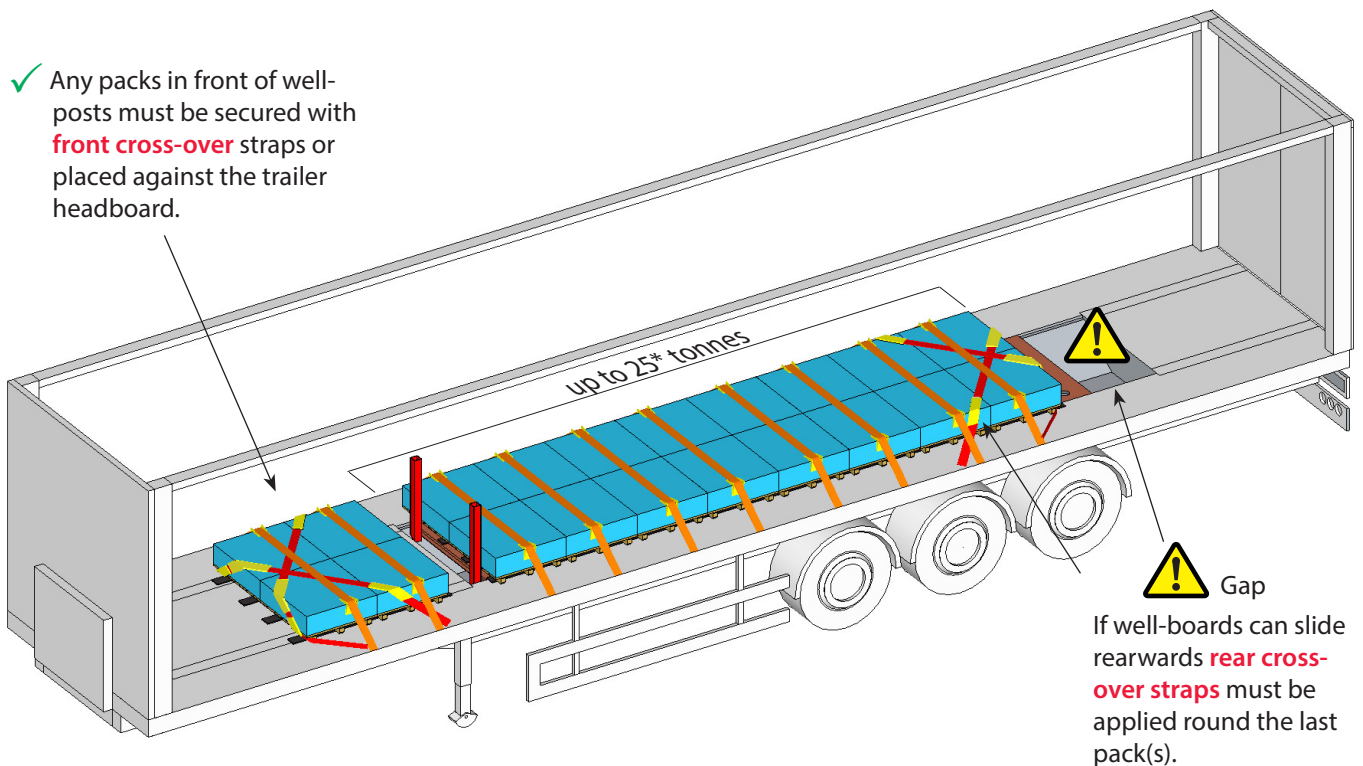
Well-board tight against posts.



Well-board tight against front of well.

Upto 25* tonnes can be blocked behind the well posts, or part of the load may be loaded in front to provide better weight distribution:

- ✓ Any packs in front of well-posts must be secured with **front cross-over** straps or placed against the trailer headboard.



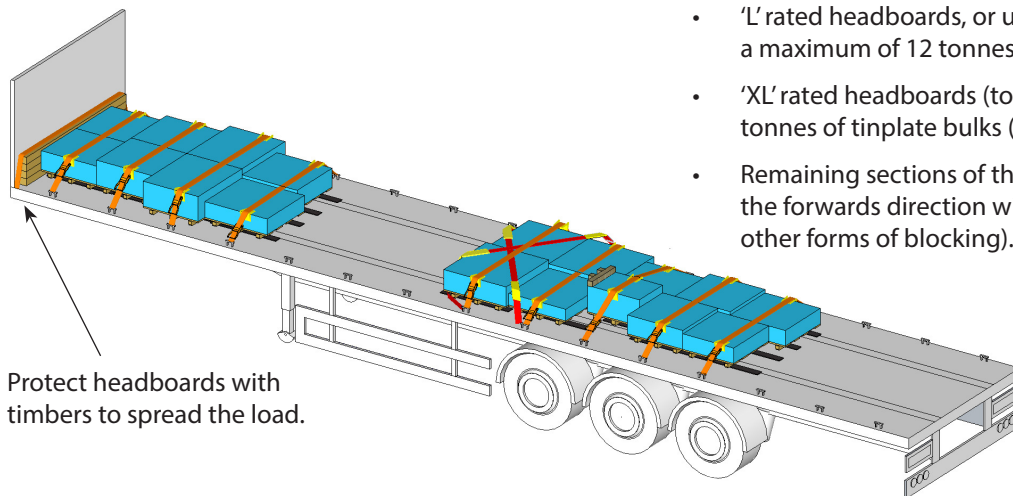
Example of a full payload split in front of well-posts and blocked tight against the well-posts.

* Assumes standard well posts i.e. 80 x 80 x 4 mm wall thickness in S355 steel. If S275 grade steel is used, limit the blocked mass to 20 tonnes.

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8. Loading to trailer headboards

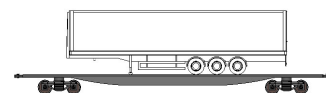


Trailer headboards can be used to block part of the load.

- 'L' rated headboards, or unrated headboards can block a maximum of 12 tonnes of tinplate bulks.
- 'XL' rated headboards (to EN12642) can block up to 30 tonnes of tinplate bulks (subject to axle weight limits).
- Remaining sections of the load must be restrained in the forwards direction with **front cross-over straps** (or other forms of blocking). All other rules apply.

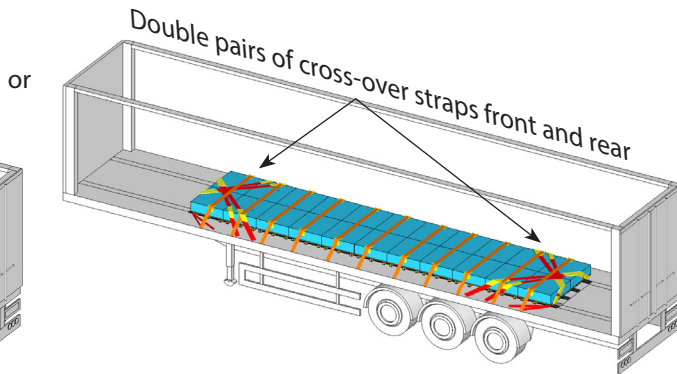
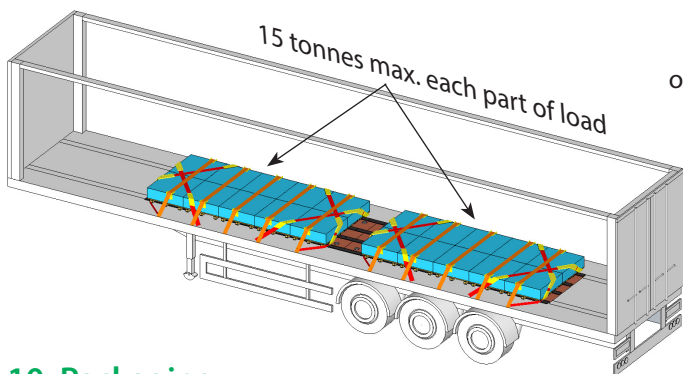
Protect headboards with timbers to spread the load.

9. Intermodal rail loads



Due to higher forces forwards and rearwards on rail wagons the following must rules be applied for intermodal loads:

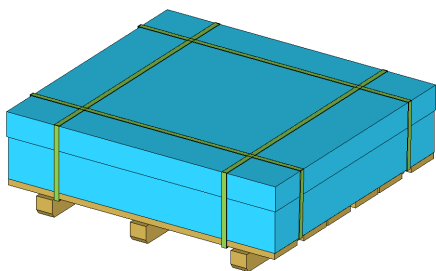
- Split the load into 2 parts (15 tonnes max each) with **cross-over straps** (or similar blocking) **front and rear**, or
- Load as a single block load and apply **double pairs of cross-over straps front and rear**.
- All other rules apply and loads must be loaded on anti-slip matting



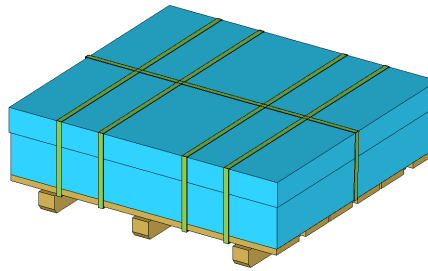
10. Packaging

Tinplate sheet packs are supplied in a variety of packaging types but all packs must be banded with a minimum of 4 plastic bands. Note: IJmuiden specify a minimum of 5 plastic bands.

4 plastic bands provide shape stability to 0.4g without movement within the pack and holds the pack intact at 0.7g without load restraint straps applied (assuming standard pre-tension of 175 daN and steel sheet corner packaging).



Trostre minimum banding: 4



IJmuiden minimum banding: 5

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