

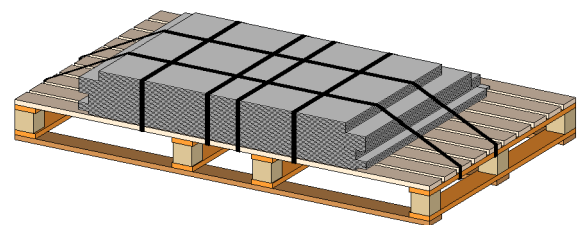
DRAFT FOR COMMENT

LOAD RESTRAINT GUIDELINE AFL Sheet Packs

1. This guideline applies to:

- Sheet packs generated on the Automotive Finishing Line:
 - Banded securely to wooden pallets
 - Centralised longitudinally on the pallets
 - Stacked flush to one edge of the pallets

The friction factor for this product within the pack is taken as $\mu=0.25$, and that between wooden pallet and trailer deck is taken as $\mu=0.45$.



Maximum stack weight: 1.5 tonnes

2. Essential requirements

- Sheet material must be secured to the pallets with at least **6 steel bands**, tensioned to at least **175 daN**.
- All restraints must be web lashings compliant with EN 12195-2, minimum lashing capacity LC 2000 daN.
- Edge protection **MUST** be used on **every contact point between the straps and the sheets** or any other sharp edges.
- Anti-slip matting must be used on all loads originating in mainland Europe to meet local enforcement requirements.

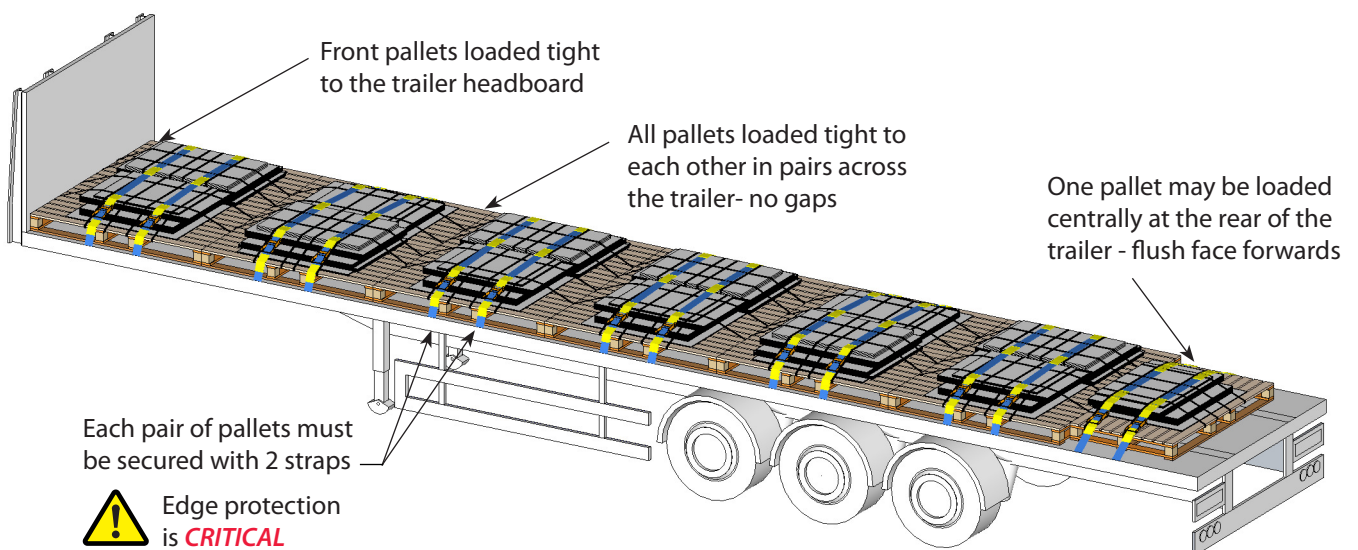
LC 2000 daN minimum webbing straps: up to 14 may be required.



Edge protection: as required.



3. Overview of restraint system



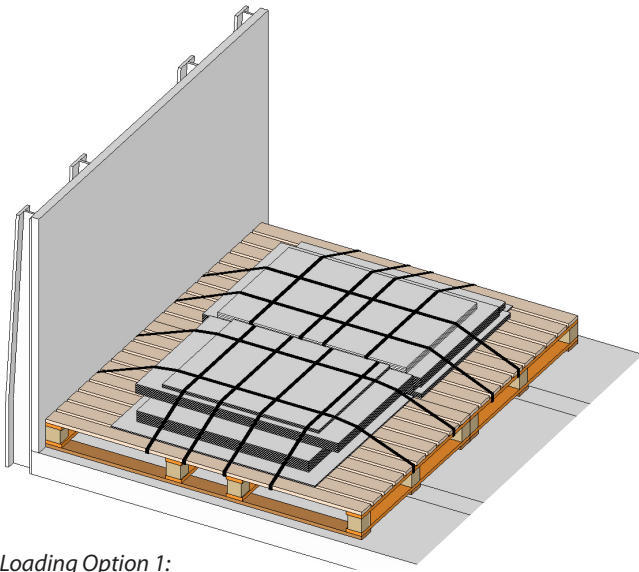
This Load Restraint Guideline has been designed and tested to meet the forces for road transport as stated in EN 12195-1:2010 and VDI 2700.

4. Load configuration

There are two acceptable options for loading the pallets in pairs across the trailer:

1. Flush faces of the sheet stacks at the centre of the trailer;
2. Flush faces of the sheet stacks at the outside of the trailer.

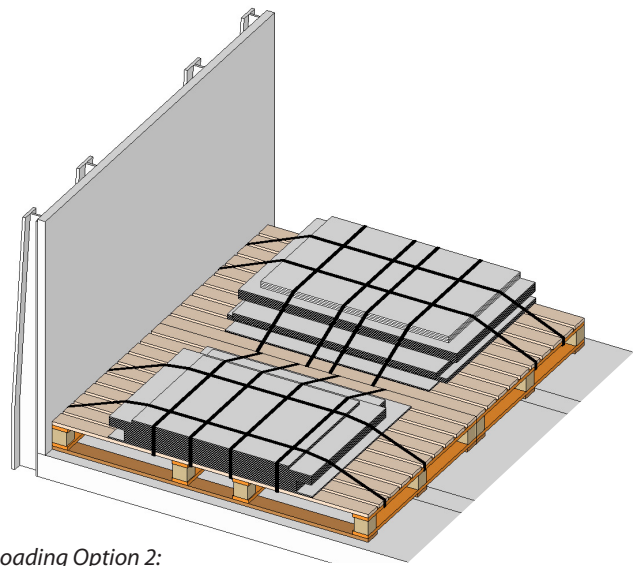
Note: The main disadvantage of Option 2 is that the stack of sheets may move towards the centre of the trailer as the load restraint straps are tightened. The degree of movement will depend on the tension in the steel banding and the shape of the stack. If the movement is significant the lateral steel bands may become loose and they will need to be replaced.



Loading Option 1:

Flush faces of the sheet stacks at the centre of the trailer

PREFERRED OPTION



Loading Option 2:

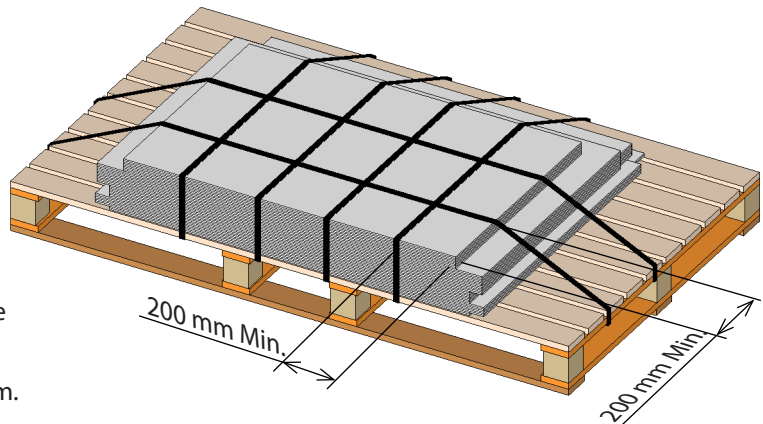
Flush faces of the sheet stacks at the outside of the trailer

The choice of loading option should be determined in conjunction with each customer and will depend on:

- the size of the forklift / pallet lifter used for off-loading;
- the position of the centre of gravity of the sheet stack across the width of the pallet - this will vary depending on the operating parameters of the AFL.

5. Stack banding requirements

- ✓ Minimum of 6 steel bands per pack.
- ✓ Fit 2 longitudinal bands and 4 lateral bands.
- ✓ Fit bands near pallet cross members where possible.
- ✓ Fit bands at least 200 mm from sheet edges.
- ✓ Steel bands must be a minimum of 19 mm wide and 0.58 mm thick.
- ✓ Bands should be tensioned to 175 daN minimum.



Care has been taken to ensure that the contents of this publication are accurate, but Tata Steel Europe Limited and its subsidiaries do not accept responsibility or liability for errors or information that is found to be misleading.