

TECHNICAL ADVICE DOCUMENT

Llanwern sale plate using chains

1. This Technical Advice Document applies to

- The transportation of scrap sale plate from Llanwern Hot Mill.
- Typical product length of 6 metres.

The lowest friction factor is determined to be $\mu=0.47$.

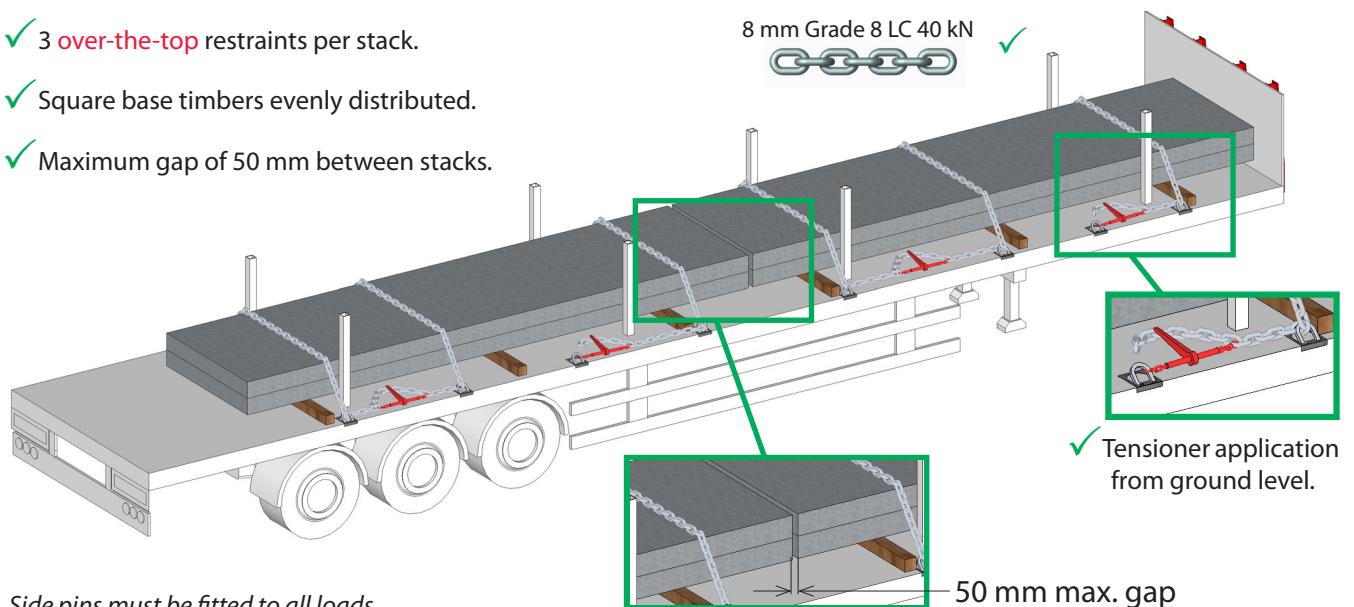
2. Essential requirements

- Product must **NOT** be loaded above the headboard or side post heights.
- The headboard must be rated to 7.5 tonnes or above, or approved by Tata Steel Load Restraint Engineers.
- Loads must be placed on a single layer of timber dunnage with a minimum cross-section of 100 mm x 100 mm.
- Product must be placed centrally across the width of the trailer.
- For axle loading guidance, see Technical Information Sheet TIS-0012 *Axle weights and load distribution*.
- All restraints must be a minimum 8 mm Grade 8, LC 40 kN chains compliant with EN 12195-3.
- If the rear stack is distorted in such a way that there is insufficient blocking in the forward direction, then cross-over restraints must be added
- Minimum lashing point rating of 5 tonnes to allow load securing from ground level.

3. Load configuration and restraint

3.1 Option 1 - Loaded to the headboard

- ✓ Load up to the headboard.
- ✓ 3 **over-the-top** restraints per stack.
- ✓ Square base timbers evenly distributed.
- ✓ Maximum gap of 50 mm between stacks.



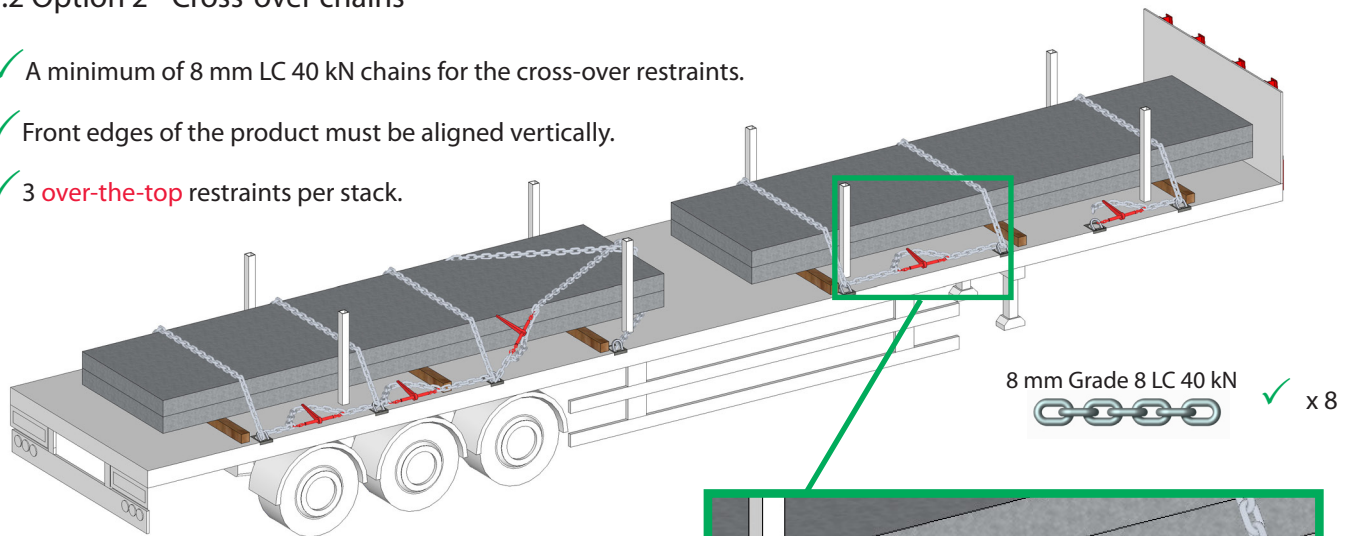
Side pins must be fitted to all loads

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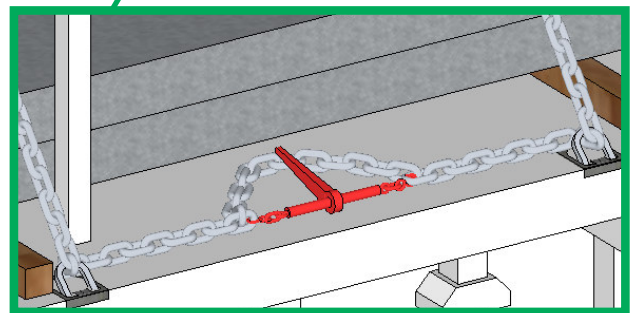
3.2 Option 2 - Cross-over chains

- ✓ A minimum of 8 mm LC 40 kN chains for the cross-over restraints.
- ✓ Front edges of the product must be aligned vertically.
- ✓ 3 **over-the-top** restraints per stack.



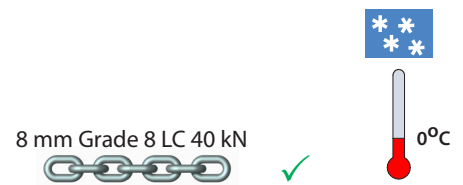
3.3 Lashing method - securing from the ground

- ✓ Lashing point must be rated to 5 tonnes for this option.
- ✓ Tensioners to be applied either in-line, or at 90° to the restraint (as shown).



4. Severe winter weather advisory periods

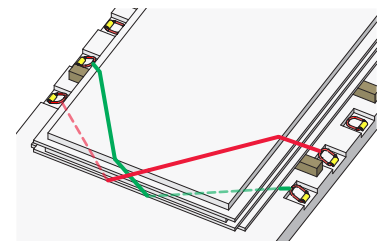
- During severe winter weather periods, additional measures are required.
- ✓ One additional **over-the-top** restraint must be added to each stack.



5. Cross-over application

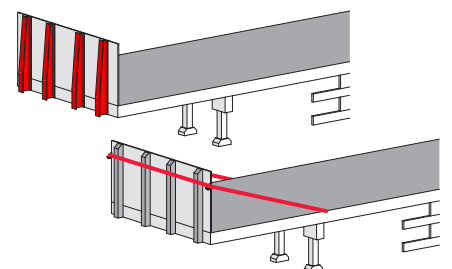
A pair of cross-over chains must be applied to the rear stack if there is excessive distortion in the sale plate.

- 2 cross-over chains are required around the front of the rear stack.
- Rating of lashing points must be a minimum of 5 tonnes.



6. Headboard requirements

- Trailers with headboards rated to 7.5 tonnes or above, or approved by Tata Steel Load Restraint Engineers, or trailers with headboards manufactured to EN 12642 Code XL, can be loaded with product blocked to the trailer headboard to provide forward restraint.
- If the headboard strength cannot be verified, the headboard will require lashing back with a minimum 8 mm Grade 8 LC 40 kN chain (as shown)



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