

LOAD RESTRAINT GUIDELINE

Automotive blanks on wooden pallets

1. This guideline applies to:

- Automotive blank steel sheet packs; **securely banded** to wooden pallets.
- Steel-on-steel friction factor $\mu = 0.31$ tested according to EN 12195-1:2010 Annex B.1.2.

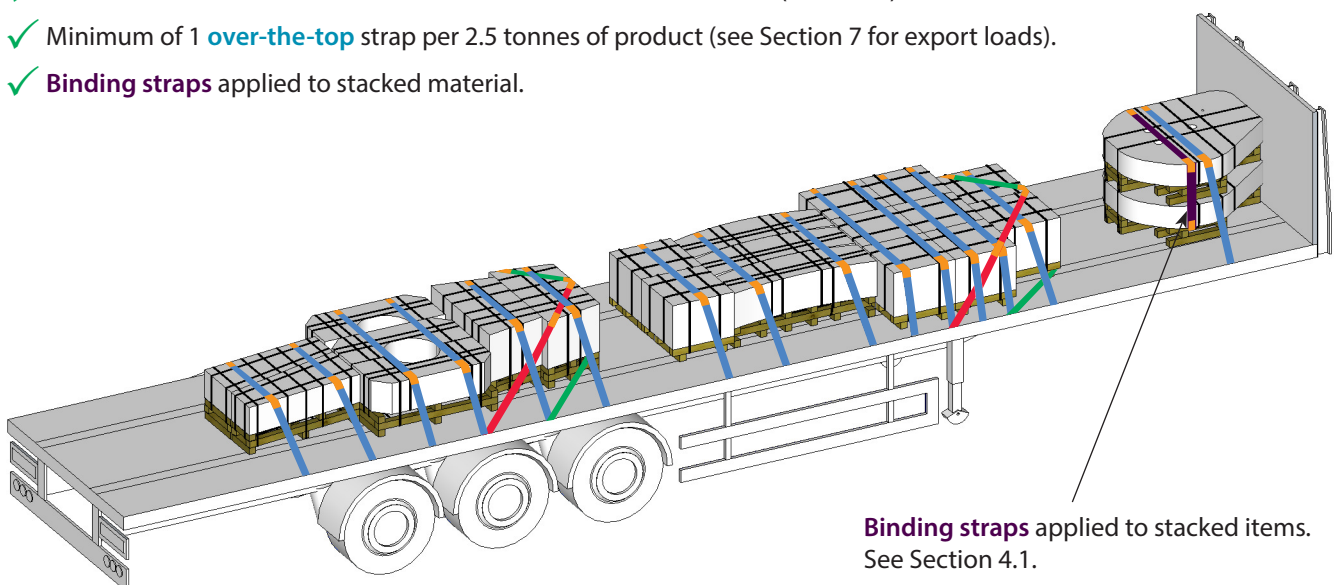
2. Essential requirements

- All webbing straps must be compliant with EN 12195-2, minimum lashing capacity LC 2000 daN.
- Edge protection must be used on all sharp edges, including trailer side raves.
- Automotive blank packs must be banded as per Section 6 on page 4.
- Headboard must be high enough to cover full height of the load.
- Rows of Automotive blanks must be blocked as per Section 5.

3. Overview of restraint system - road transport



- ✓ Each row of Automotive blanks must be blocked in front direction (Section 5).
- ✓ Minimum of 1 **over-the-top** strap per 2.5 tonnes of product (see Section 7 for export loads).
- ✓ **Binding straps** applied to stacked material.



Binding straps applied to stacked items. See Section 4.1.



Note:
Edge protection must be applied to webbing straps in contact with sharp edges including side raves.

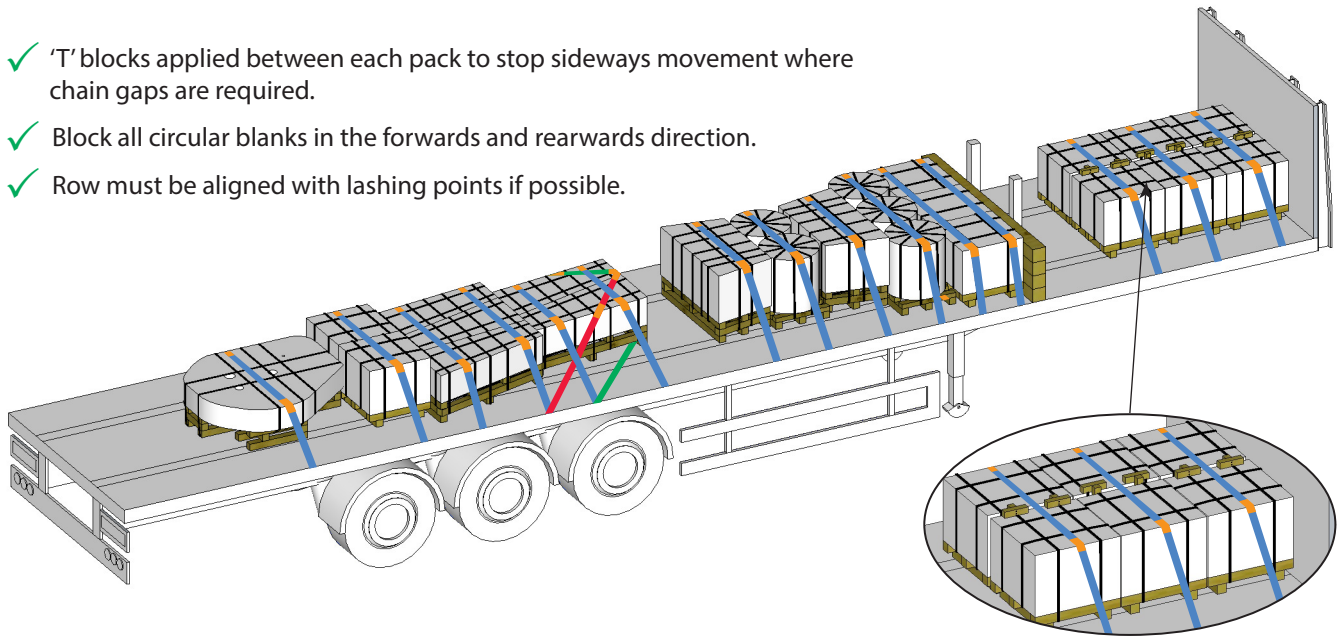
This Load Restraint Guideline has been designed and tested to meet the forces for road and sea transport as stated in EN 12195-1:2010 and VDI 2700.

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4. Load configuration

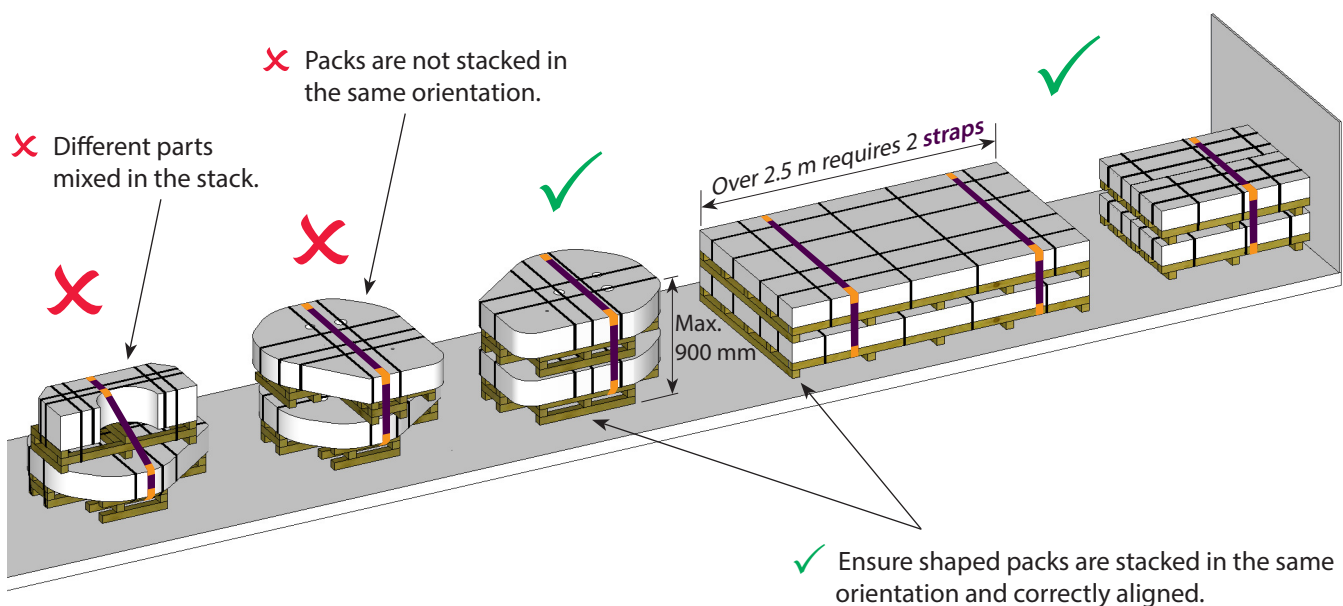
- ✓ 'T' blocks applied between each pack to stop sideways movement where chain gaps are required.
- ✓ Block all circular blanks in the forwards and rearwards direction.
- ✓ Row must be aligned with lashing points if possible.



4.1 Multiple stacked packs

Automotive blanks on wooden pallets can be stacked together:

- Bind the layers together using **straps** to help unitize the load.
- If the length is 2.5 m or less the stacked arrangement requires 1 **binding strap**.
- If the length is more than 2.5 m the stacked arrangement requires 2 **binding straps**.
- The total height of the stacked items must be no more than 900 mm.
- Different shape parts must not be mixed in the stack.



Note: Load restraint straps have been omitted for clarity.

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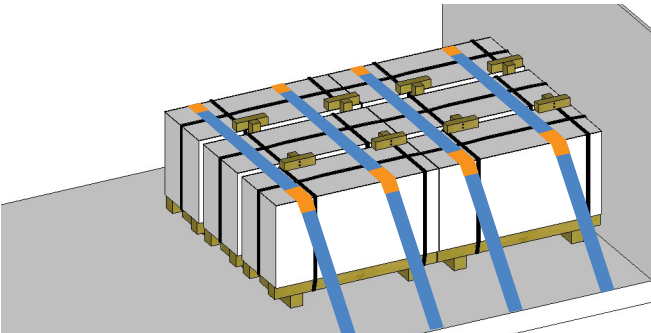
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5. Forward restraint options



Note:
Minimum of 1 **over-the-top** strap per 2.5 tonnes of product.

5.1 Blocking to headboard option



Shown for 3 x 1 tonne packs in a row.

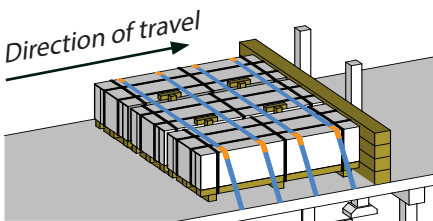
Table 1: Trailer headboard - EN 12642

Trailer type	Permissible payload
Code L or equivalent*	10 t
Code XL or equivalent*	28 t

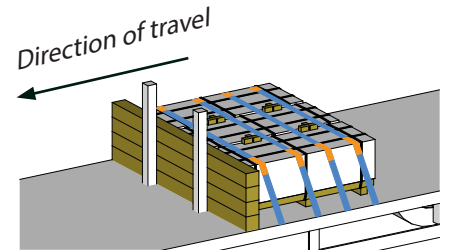
* See Technical Information Sheet TIS-0010

- ✓ Gaps between stacks must be either closed or chocked with timbers.

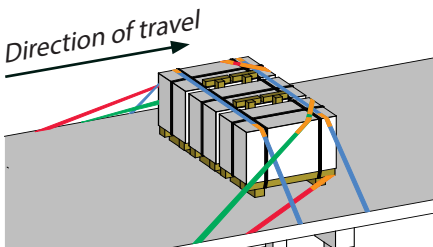
5.2 Stanchion post option



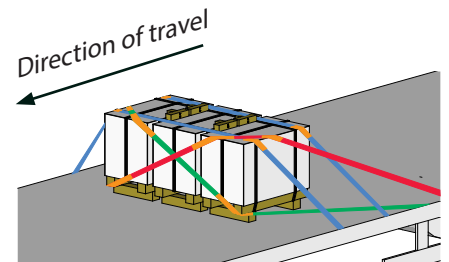
- ✓ Maximum of **10 tonnes** per pair of stanchion posts.
- ✓ Timbers applied between packs and stanchions if necessary.



5.3 Cross-over straps option



- ✓ Maximum of **12 tonnes** per pair of **cross-over** straps.
- ✓ Front of packs aligned with **cross-over** straps.



5.4 'H' frames

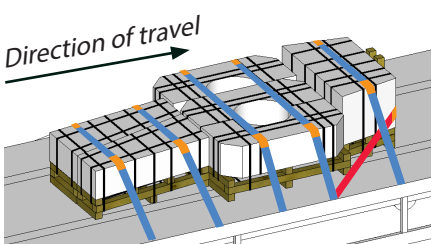
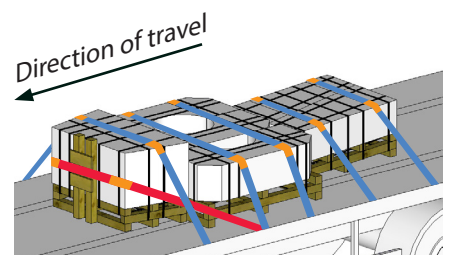


Table 2: Timber 'H' frame

Number of direct straps	Permissible payload
1	6 t
2	12 t

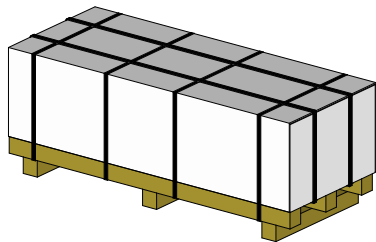


Well boards or euro pallets can be used as an alternative to the timber 'H' frames.

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6. Unitizing the Automotive blanks



A 4 tonne pack

Table 3: Number of packaging bands required

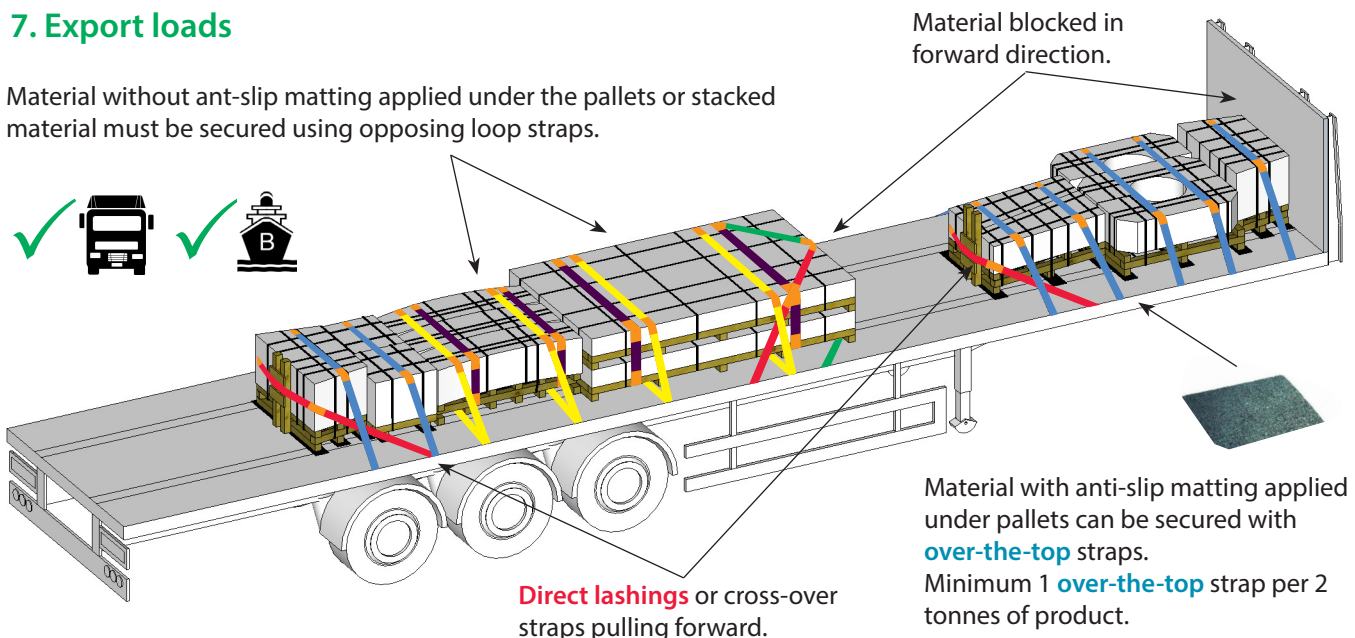
Weight of pack	Number of bands
Up to 1.5 tonnes	2
" 2 tonnes	3
" 2.5 tonnes	4
" 3 tonnes	4
" 3.5 tonnes	5
" 4 tonnes	6
" 5 tonnes	7



Note:
If packs do not have sufficient bands to unitize them, they must be treated as low friction sheet packs and secured as per LRG-0015-SP.

7. Export loads

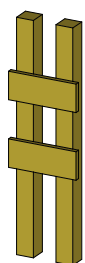
Material without anti-slip matting applied under the pallets or stacked material must be secured using opposing loop straps.



8. Equipment

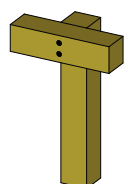
8.1 Timber 'H' frame

- Frame height must cover the height of the stack being restrained.
- Example of 'H' frame is shown opposite - size may vary.
- 'H' frames can be used either way up to allow strap to be positioned close the centre of the stack.



8.2 Timber 'T' block

- Used for chocking gaps between stacks, can be positioned from floor removing the need to access the bed of trailer.
- Minimum timber section 75 x 75 mm, length dependant on the height of material stack.



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