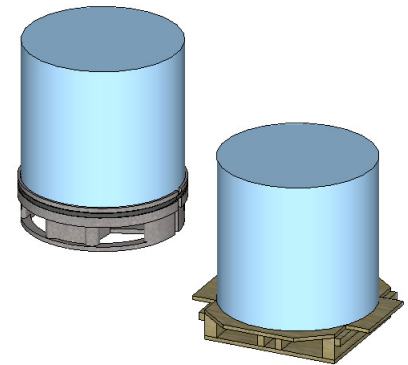


LOAD RESTRAINT GUIDELINE

Coil bore vertical using spring lashings

1. This guideline applies to:

- Coil bore vertical (Eye-To-The-Sky) packaged onto plastic skid pallets.
- Coil bore vertical on specialised wooden pallets with central spigots.

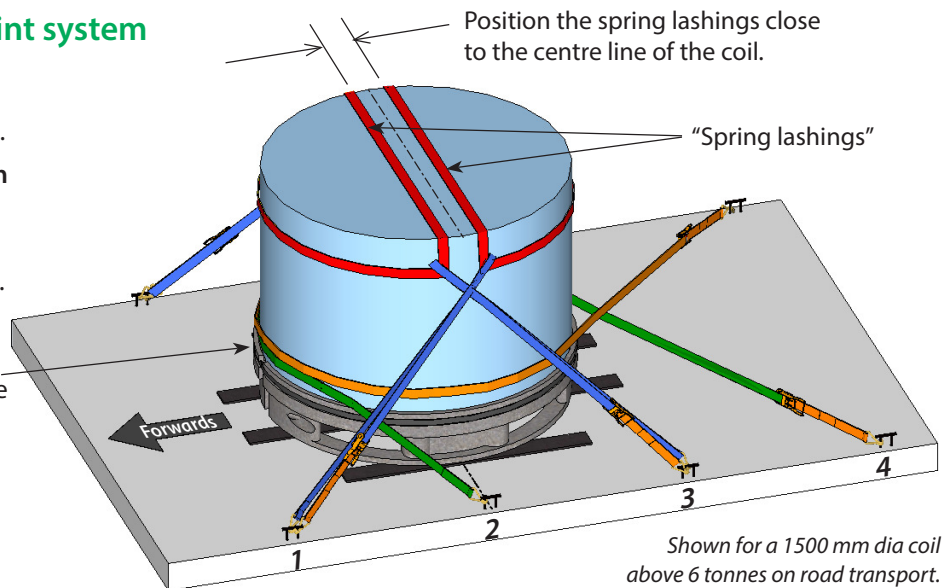


2. Essential requirements

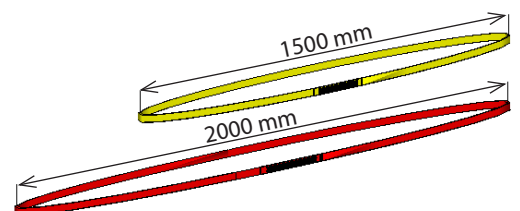
- All restraints must be webbing straps with a minimum rating of LC 2000 daN and be compliant with EN 12195-2.
- Spring lashings to be LC 2500 daN minimum.
- Minimum lashing point rating of 2 tonnes (2000 daN).
- Anti-slip matting must be fitted under the skid pallets.
- Trailer deck must be clean, free from debris and in good condition.
- If well trailers are used, ensure well-boards are in good condition and blocked securely in the forwards direction.

3. Overview of basic restraint system

- **Clean** trailer deck.
- **Anti-slip matting** - see Section 4.
- Position coil centrally **in line with a lashing point** (or just in front).
- Each coil needs a minimum of 4 lashing points per side as shown.
- **2 base straps** (shown in **green** and **orange**) pulling backwards and to the side. Fit ratchets in the rear longer legs.
- **2 spring lashings** (shown here in **red**) each secured with a pair of web lashings and ratchets, or using the sewn on tails and separate ratchets.



Coil diameter	Spring lashing size		
	Circumference	Centres	Colour
Upto 1250 mm	3000 mm	1500 mm	Yellow
Above 1250 mm	4000 mm	2000 mm	Red



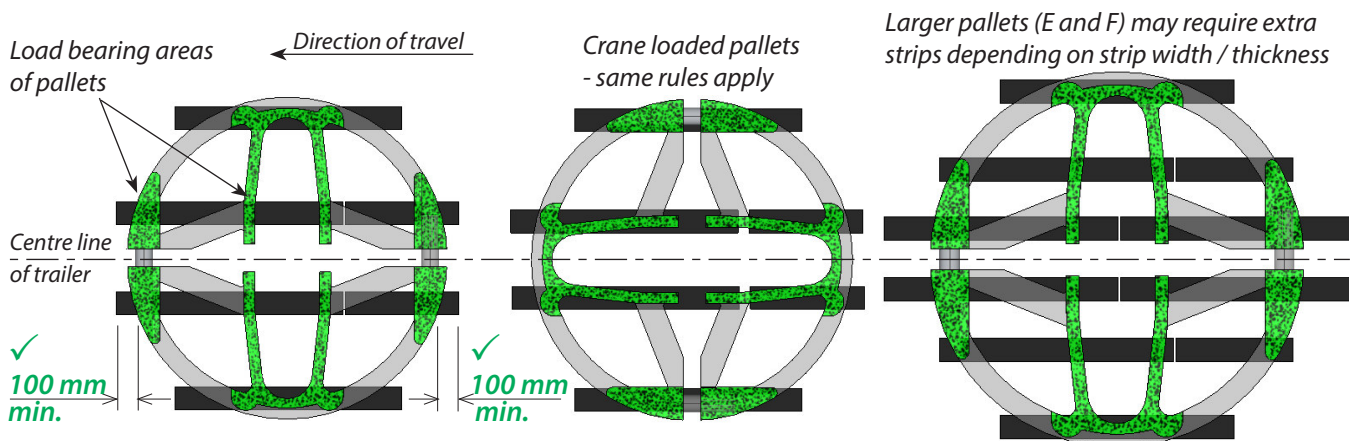
This Guideline has been designed and tested to meet the forces for road, rail and ferry crossings as stated in EN 12195-1:2010 and VDI 2700.

LOAD RESTRAINT GUIDELINE

Coil bore vertical using spring lashings

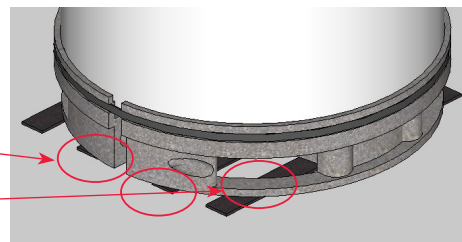
4. Anti-slip matting

- Coils must be placed on anti-slip matting to increase the friction beneath the coil.
- Sufficient matting must be used to **fully separate the pallet from the trailer deck**. Recommend 8 - 10 mm thick strips x 100 mm wide, or full coverage mats 3 - 5 mm thick.
- Anti-slip matting must cover the **load bearing areas** of the skid pallets as shown and extend **100 mm** front and rear.



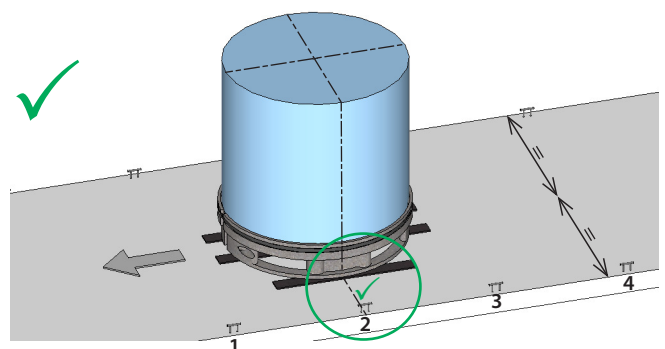
Common anti-slip errors:

- ✗ Not extended 100 mm at the front / rear.
- ✗ Side piece under weak part of skid pallet.



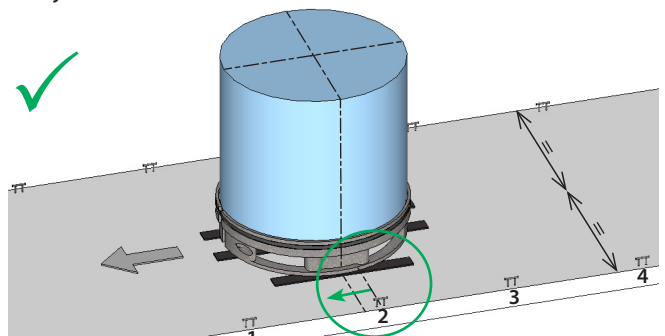
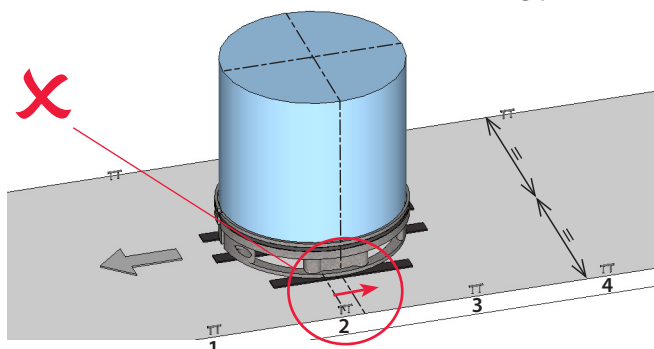
5. Placement of coil

- ✓ Each coil needs 4 lashing points each side.
- ✓ Place anti-slip matting centrally in line with lashing point #2.
- ✓ Load coil on anti-slip matting - centre of coil in line with lashing point #2 or just in front and central across the trailer.



- ✗ Centre of coil **MUST NOT** be behind lashing point #2.

- ✓ Centre of the coil in line with the lashing point #2 or just in front:



LOAD RESTRAINT GUIDELINE

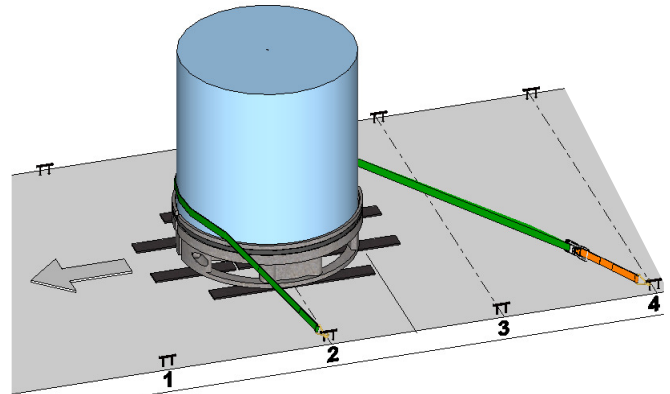
Coil bore vertical using spring lashings

6. Fitting lashings

Note: Base straps are required for all coils over 6 tonnes and for all coils on ferry and/or inter-modal rail routes. (See Section 7 for additional base strap required for inter-modal rail transport).

Step 1: Left hand base strap

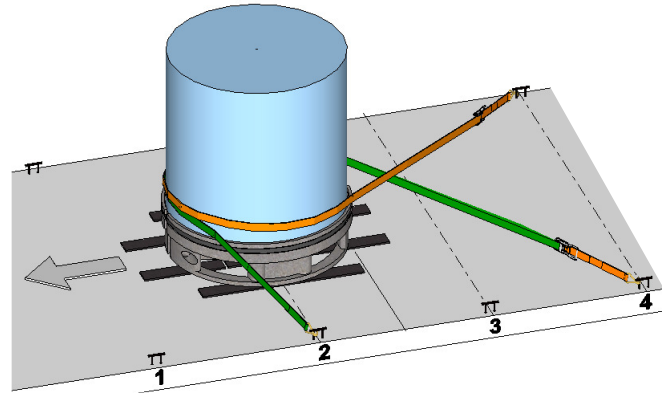
- ✓ Attach hook to lashing point #2 in line with, or slightly behind, the centreline of the coil.
- ✓ Attach ratchet to lashing point #4 as shown.



Lashing point #2 must **not** be in front of centre of the coil.

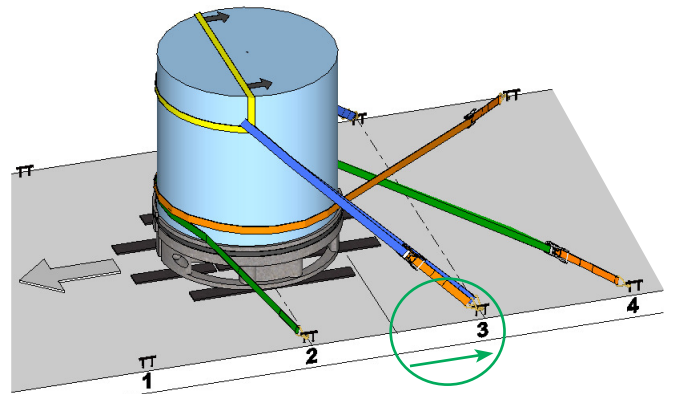
Step 2: Right hand base strap

- ✓ Attach as per left hand base strap.
- ✓ Ensure both straps are low down on the coil near the pallet.



Step 3: Front spring lashing

- ✓ Push top of spring lashing as far as possible towards the centre of the coil.
- ✓ Position the spring lashing squarely on the coil.
- ✓ Attach to lashing point #3 which must be behind the outer diameter of the coil.

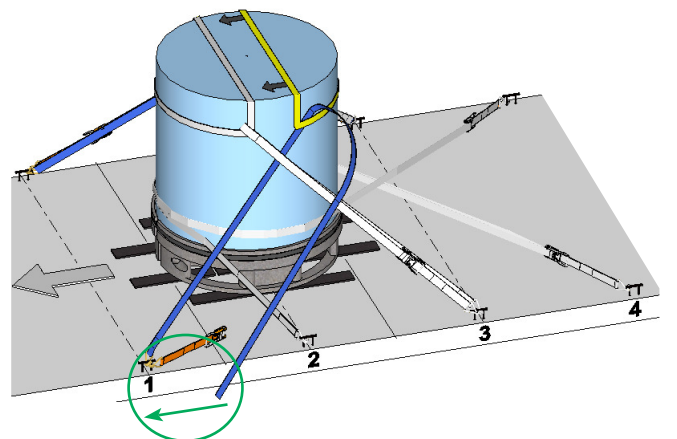


Lashing point #3 must be past the outer diameter of the coil.

Step 4: Rear spring lashing

- ✓ Push top of spring lashing as far as possible towards the centre of the coil.
- ✓ Position the spring lashing squarely on the coil.
- ✓ Attach to lashing point #1 which must be in front of the outer diameter of the coil.

The diagram shows how a looped strap is fitted to a spring lashing.

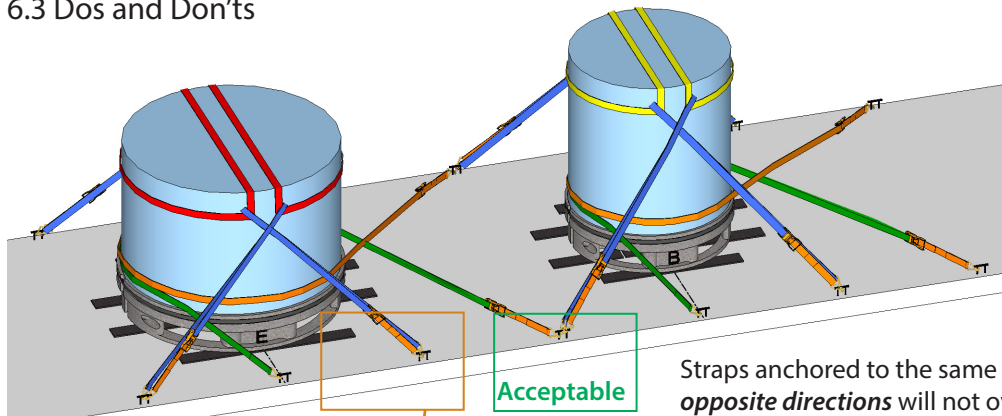


Lashing point #1 must be past the outer diameter of the coil.

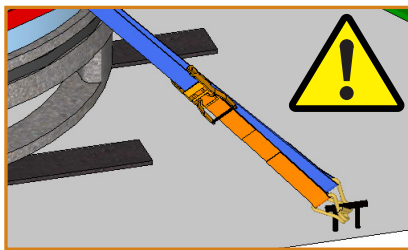
LOAD RESTRAINT GUIDELINE

Coil bore vertical using spring lashings

6.3 Dos and Don'ts

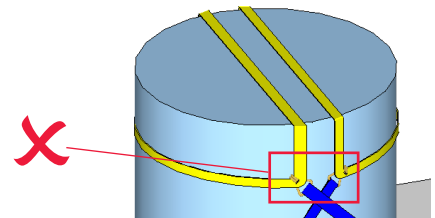


Straps anchored to the same lashing point, **but acting in opposite directions** will not overload the lashing point.



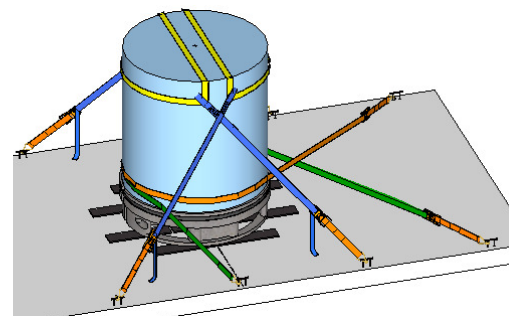
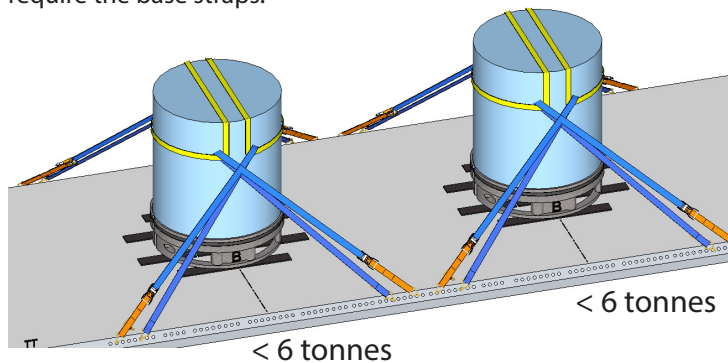
Note: If looped straps are required through the spring lashings it is acceptable to put both legs of the looped strap to the same lashing point. This system has been designed not to over-stress the lashing point.

DO NOT put hooks on spring lashings - they will damage the coil.



Note: If there are multiple lashing points on a trailer it is also acceptable to attach each hook to separate lashing points (see example shown below).

Coils less than 6 tonnes, transported on **road routes only** do not require the base straps.



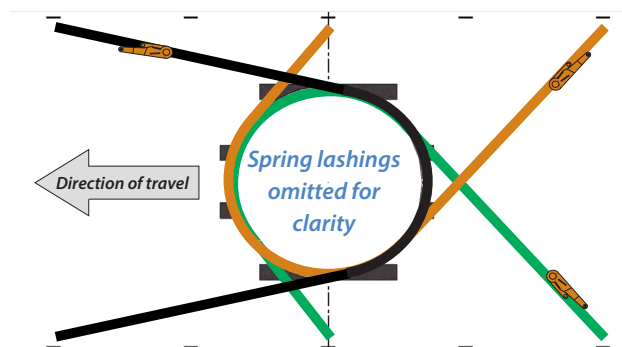
Spring lashings can also be supplied with two 2 to 3 m tails attached. These just require ratchet tensioners to be applied.

7. Rail transport

Add 1 base strap pulling forwards (shown in **black**) for inter-modal rail routes.



This strap ensures the coil is secure if the rail wagon travels in the opposite direction.



The information and guidance contained in this document is intended for use only by Tata Steel UK Limited and its associated and subsidiary companies ("Tata Steel") in relation to its operations. All information and guidance in this document is based on Tata Steel's interpretation of prevailing legislation and best practice. Tata Steel gives no warranty or representation as to the accuracy of the information or for the guidance being for, or suitable for, a specific purpose. The information and guidance does not constitute legal or professional advice. All implied warranties and conditions are excluded, to the maximum extent permitted by law. Use of this document by any third party is at your own risk. Save to the extent that liability cannot be excluded by law, Tata Steel is in no way responsible or liable for any damage or loss whatsoever arising from the use of or reliance on the information and guidance contained in this document.