

# LOAD RESTRAINT GUIDELINE

## Wide coil in well

600 mm minimum sheet width

2000 mm maximum diameter

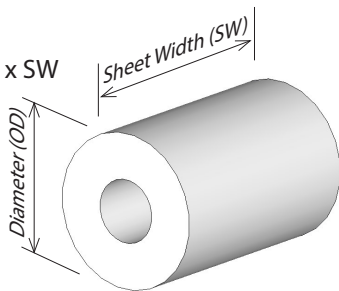
Sheet width > diameter/2.5

### 1. This guideline applies to:

- All **wide** coils, loaded bore horizontal in a well trailer.
- Coils are classed as **stable** or **topple sensitive** based on the ratio of outside diameter (OD) to sheet width (SW).

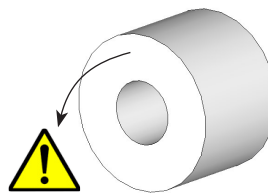
#### Stable

$OD < 1.4 \times SW$



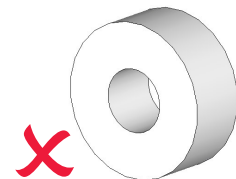
#### Topple sensitive

$OD > 1.4 \times SW$



#### Narrow coil

$OD > 2.5 \times SW$



Note:  
Narrow coils  
are **not** covered  
by this Load  
Restraint  
Guideline.

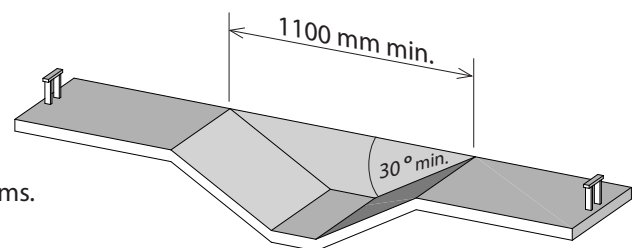
- The following coils are classed as **low friction**:
  - Coils that have been wrapped in plastic film or paper.
  - Coils that have been pickled and oiled, galvanised, painted or coated.
  - Cold rolled coils.

### 2. Essential requirements

- All webbing straps must have a minimum lashing capacity of 2000 daN (unless otherwise stated) and must be compliant with EN 12195-2.
- All lashing points must have a minimum working load limit of 2000 daN (unless otherwise stated).
- Edge protection must be used on all unprotected sharp corners.
- Well posts must be in good condition and have a minimum moment capacity of 14.6 kNm. The following section sizes in S355 steel are acceptable: 80 x 80 x 5; 90 x 90 x 4; 100 x 60 x 5; 100 x 100 x 3.6; 110 x 60 x 4; 120 x 60 x 3.2.  
**Note: Rectangular posts must be used in the strongest orientation to prevent bending.**
- Coils originating in mainland Europe shall be placed on anti-slip matting.

### 3. Pre-loading considerations

- ✓ Well width must be a minimum of 1100 mm.
- ✓ Well angle must be a minimum of 30 degrees.
- ✓ Coil well must be dry and clear of debris and other loose items.
- ✓ Coil must be clear of well base by a minimum of 20 mm.
- ✓ Well boards used for blocking must comply with the Technical Information Sheet for well boards - document reference *TIS-0006 Well boards for well trailers*.



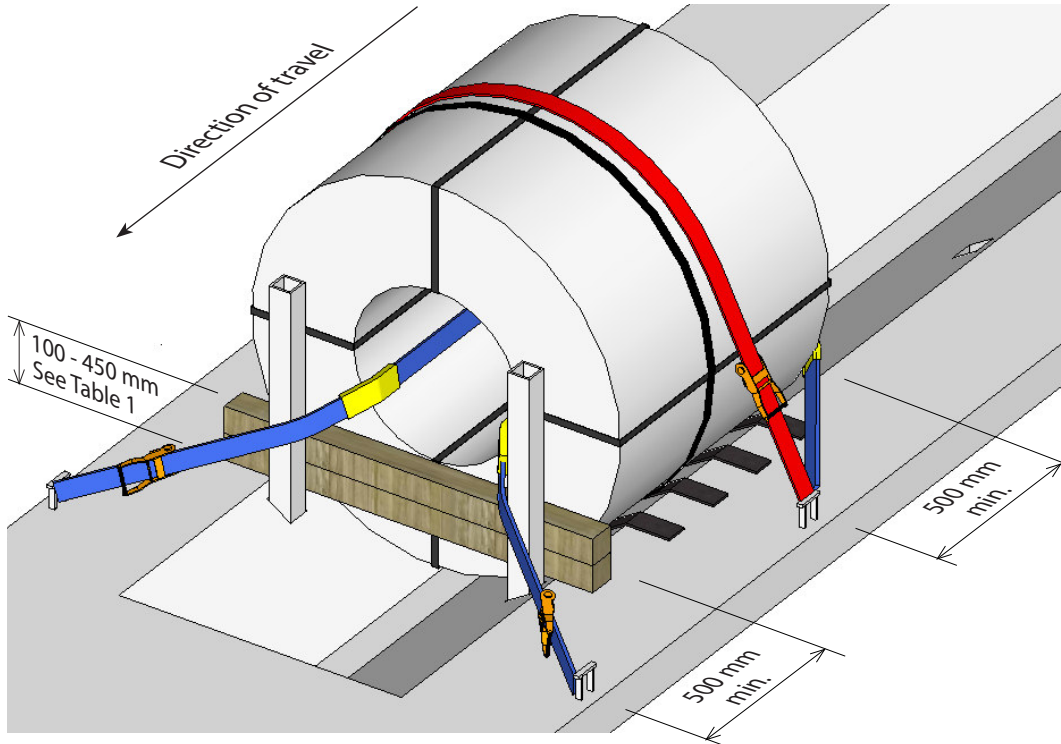
This Load Restraint Guideline is designed and tested to meet the forces for road transport as specified in EN 12195-1:2010 and VDI 2700.

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### 4. Restraint systems with well posts

#### 4.1 General restraint system



- ✓ Stable coils
- ✓ Topple sensitive

**Table 1:**  
Minimum blocking height (mm)

Coil Outside Diameter	Minimum blocking height
1400	100
1500	150
1600	190
1700	230
1800	270
1900	300
2000	340
Max height	450

Anti-slip matting shown for coils originating in mainland Europe.

#### Weight limits:

- Valid for **hot rolled coils** (not pickled and oiled) up to **30 tonnes**.
- Valid for **low friction coils** up to **24 tonnes**.
- **Low friction coils above 24 tonnes** must be restrained with **2500 daN bore straps**, anchored a minimum of 1000 mm from the front and rear faces of the coil and attached to 2500 daN lashing points. Alternatively, an additional pair of 2000 daN **bore straps** may be fitted, provided they are attached to different anchor points.

#### General requirements:

- ✓ Timber dunnage stacked between the coil and well posts - minimum recommended timber size 100 x 100 mm (nom).
- ✓ Metal / alloy well posts (e.g. aluminium or steel) may be used as horizontal blocking. Apply anti-slip matting or equivalent between the horizontal faces of the metal / alloy posts or secure horizontal posts using over-the-top strap.
- ✓ The **minimum** blocking height to prevent the coil from toppling is shown in Table 1. The **maximum** blocking height is 450 mm to prevent the posts from bending.
- ✓ Maximum gap of 20 mm between coil face and blocking.
- ✓ Well boards may also be used in the upright position as a form of blocking between the vertical well posts and coil providing they do not exceed 450 mm - see TIS-0006.
- ✓ Dunnage must extend beyond outer edges of the trailer well and well posts.
- ✓ **1 strap** over-the-top.
- ✓ **2 straps** through the bore pulling forward with the ratchets positioned as shown above.\*
- ✓ **Bore straps** to be anchored a minimum of 500 mm from front and rear faces of coil.

Note: \*For alternative rearward restraint method see TAD-0100 Wide coil in the well using Hampshire frame.  
Coefficient of static friction between as-rolled coil and anti-slip matting is taken to be 0.6.  
Coefficient of static friction between as-rolled coil and wood / rubber lined well is taken to be 0.4.  
Testing the worst-case low-friction coil confirmed a coefficient of static friction of 0.3.

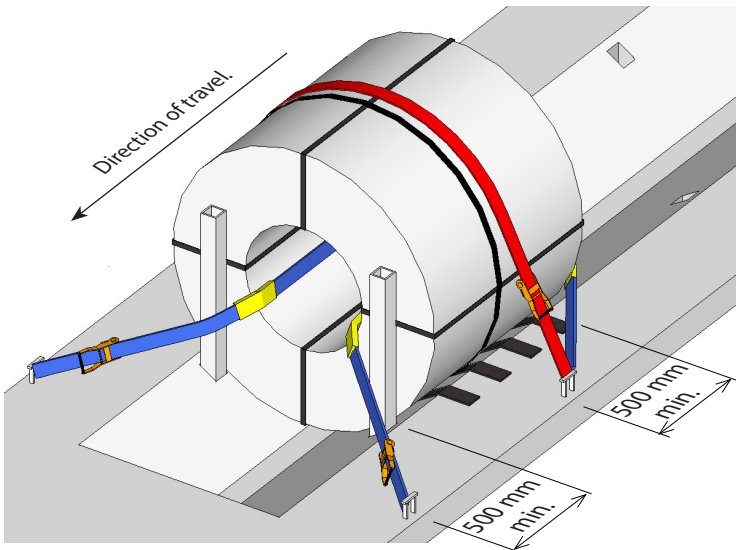
# LOAD RESTRAINT GUIDELINE

## Wide coil in well

### 4.2 Option for stable coils, and for topple sensitive coils up to 10 tonnes

✓ Stable coils

! Topple sensitive  
10 tonnes max



- ✓ Place coil directly against well posts. Maximum gap of 20 mm.
- ✓ Coil diameter must extend beyond the outer edges of the well post. (If not, use Section 4.1 or Section 5 as appropriate).
- ✓ 1 strap over-the-top.
- ✓ 2 straps through the bore pulling forward with the ratchets positioned as shown.
- ✓ Bore straps must be anchored a minimum of 500 mm from front and rear faces of coil.

Anti-slip matting shown for coils originating in mainland Europe.

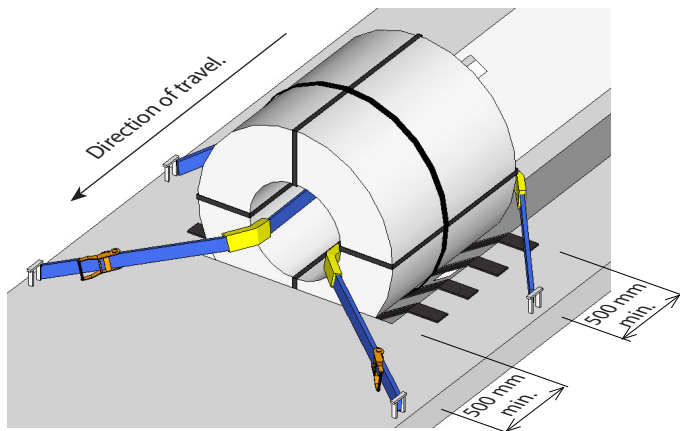
For topple-sensitive coils above 10 tonnes use Section 4.1. Weight limits for stable coils are as stated in Section 4.1.

## 5. Options for stable coils up to 10 tonnes maximum

### 5.1 Blocked against front of trailer well

✓ Stable coils  
10 tonnes max

✗ Topple sensitive



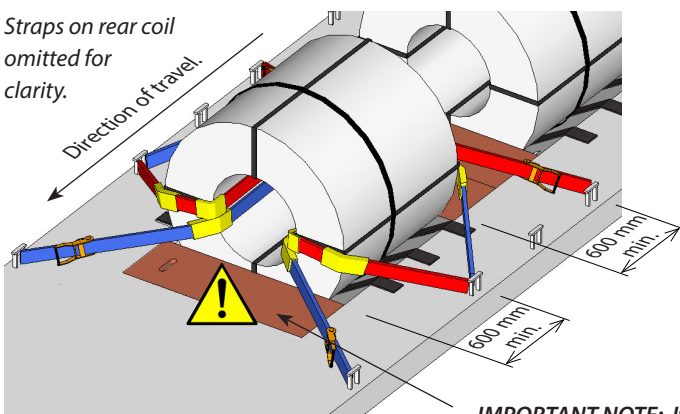
Anti-slip matting shown for coils originating in mainland Europe.

- ✓ The front coil must be positioned against the front of the well. **Do not** rely on a well board against the front lip of the well unless additional bore straps are fitted as shown in Section 5.2.
- ✓ 2 straps through the bore pulling forward with the ratchets positioned as shown.
- ✓ Bore straps must be anchored a minimum of 500 mm from front and rear faces of coil.

**Note:** Axle weight limits may restrict the size of coil that can be placed against the front of the trailer well.

### 5.2 Blocked against well boards

Straps on rear coil omitted for clarity.



To space coils out sufficiently for either axle weights or to provide a sufficient gap between coils for crane tongs, it is sometimes necessary to block the front coil against a well board, or fit more than one well board between coils. In such cases, the following must be applied to prevent the well boards from flipping out:

- ✓ 2 straps through the bore pulling rearward with the ratchets positioned as shown.
- ✓ These straps must be anchored a minimum of 600 mm from front and rear faces of coil.
- ✓ 2 straps through the bore pulling forward with the ratchets positioned as shown.

**IMPORTANT NOTE:** If a well board is used against the front lip of the well, or more than 1 well board is used between coils, the coils **must have 4 bore straps** fitted as shown.

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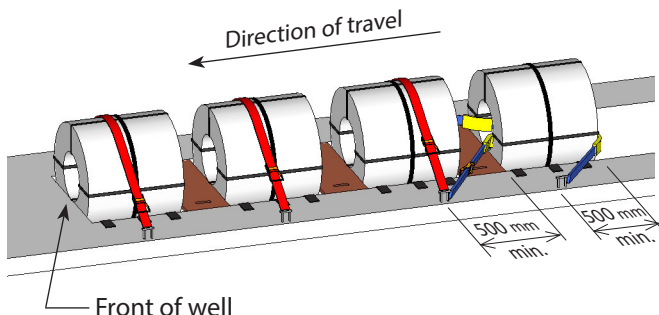
## Wide coil in well

### 6. Multiple coil loads - (stable coils only up to 10 tonnes each)

✓ Stable coils  
10 tonnes max

✗ Topple sensitive

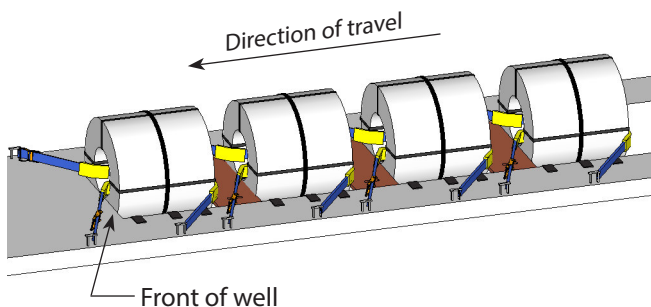
#### 6.1 Option with over-the-top straps



Anti-slip matting shown for coils originating in mainland Europe.

- ✓ Front coil placed against front of well or well posts.
- ✓ No more than ONE well board to be placed in the well between coils as blocking (or see Section 5.2).
- ✓ NO GAPS in the load.
- ✓ 1 strap over-the-top of each coil (not required for the rear coil with bore straps).
- ✓ 2 straps through the bore of the rear coil pulling forwards.
- ✓ Rear straps must be anchored a minimum of 500 mm from the faces of the coil.

#### 6.2 Option with bore straps



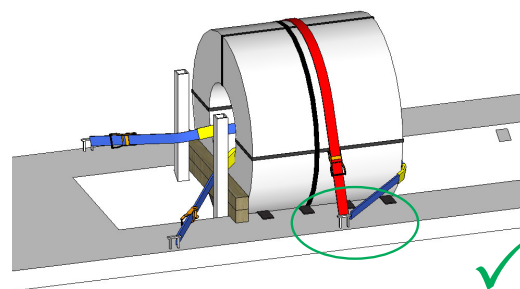
Anti-slip matting shown for coils originating in mainland Europe.

- ✓ Front coil placed against front of well or well posts.
- ✓ No more than ONE well board to be placed in the well between coils as blocking. NO GAPS.
- ✓ 2 straps through the bore of each coil, pulling forwards.

## 7. Other loading considerations

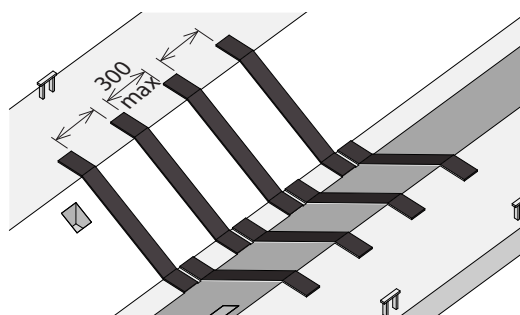
### 7.1 Lashing points

- ✓ Maximum of 2 straps per lashing point and the lashings must be pulling in different directions.
- ✓ Straps for rearward restraint may be applied to the same lashing point as the over-the-top straps.



### 7.2 Anti-slip matting

- ✓ Minimum thickness 8 mm.
- ✓ Maximum of 300 mm space between each strip.
- ✓ Anti-slip matting must extend beyond the coil well so that it remains visible once the coil is placed in the well.
- ✗ Conveyor belt is NOT a form of anti-slip matting.



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