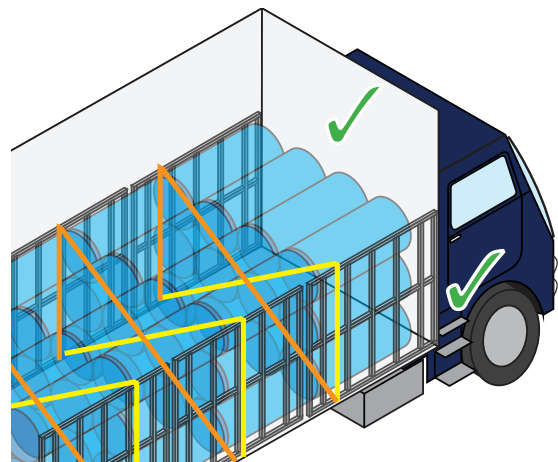


This guideline:

- Covers transportation of CSR Martini products including batts and rolls, palletised panels and bales, transported via road.
- Is the loader and driver guide to the certification E02129-LRC1 to meet the loading performance standards listed in Schedule 7 of the *Heavy Vehicle (Mass, Dimension and Loading) National Regulation* (22 February 2021).

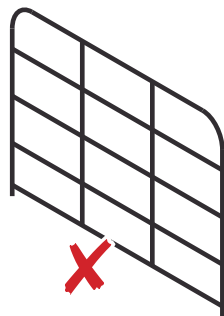
Key Elements

- ✓ Block the load forwards to a rated headboard where possible.
- ✗ Pipe gates are not suitable for blocking forwards.
- ✓ When using rated side gate or curtains for sideways restraint, ensure gates / curtain is rated to the load.
- ✓ When using non-rated side gate for sideways restraint, ensure gates are braced.

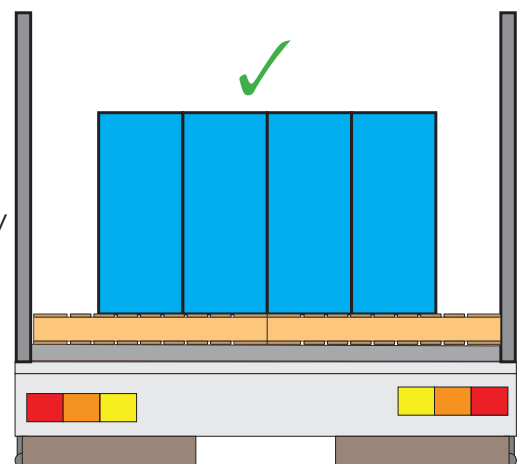


Load is blocked Forwards to headboard and Sideways to braced gates

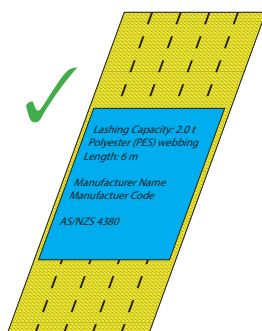
Do not block to pipe gates



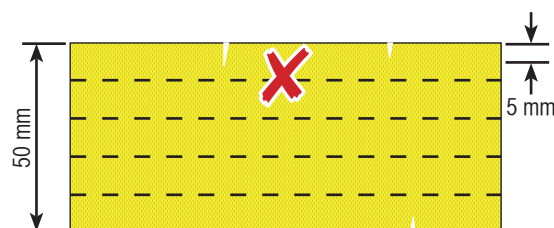
- ✓ Centrally load across the truck / trailer.
- ✓ Lashings must be a minimum 50 mm webbing, fully tensioned with standard ratchets.
- ✗ Do not use lashings with more than 10% wear.
- ✓ Items loaded above gates must be restrained via tie-down.



Centrally load across the truck / trailer



50 mm webbing



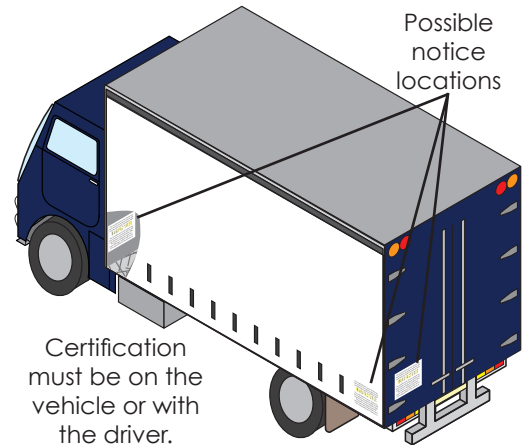
Worn webbing example

Containment - Rated vs Non Rated Curtains

Are all curtains load restraint rated?

No! Curtains are only rated for load restraint if they have a certification on the curtain, vehicle body, or the manufacturer supplies a letter certifying them (normally with truck/trailer serial number).

In all cases, the certification will list what they are rated to hold. In the case of a letter, it must be carried by the driver in the cab of the truck.



Containment - Rated vs Non Rated Gates

Are all gates load restraint rated?

No! Most gates do not have a rating. They typically rely on two or three flat metal tongues to stop the gate from moving/bending.

How to tell if gates are load restraint rated?

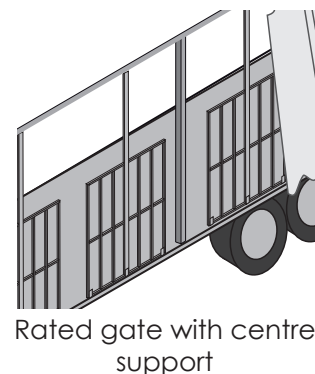
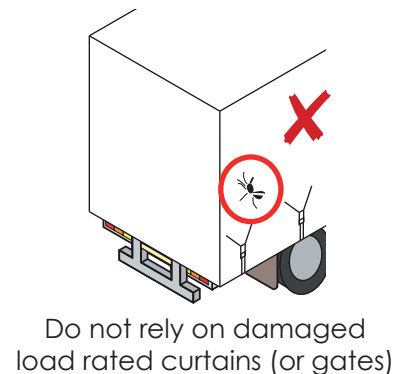
Either:

- The trailer has a certificate explaining the rating; This may be found on the gate or vehicle body.

OR

- The driver must carry and produce a letter of certification from the body vehicle builder explaining the rating and serial number of the body covered.

Such gate systems will typically have a central locking column in the gate or be fixed to a full height vertical post.



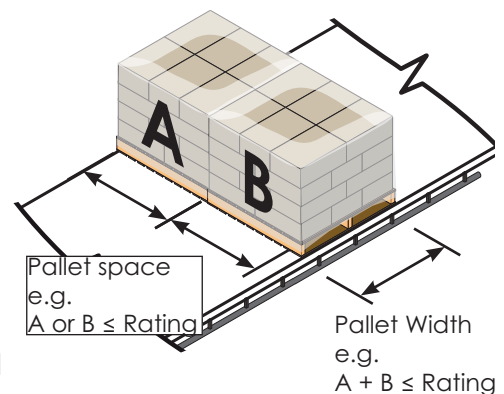
Understanding the rating of curtains or gates

Ratings typically are stated as either:

- Allowable weight per pallet width (So mass of pallet A (1000kg) + pallet B (1000kg) must be less than Rating).

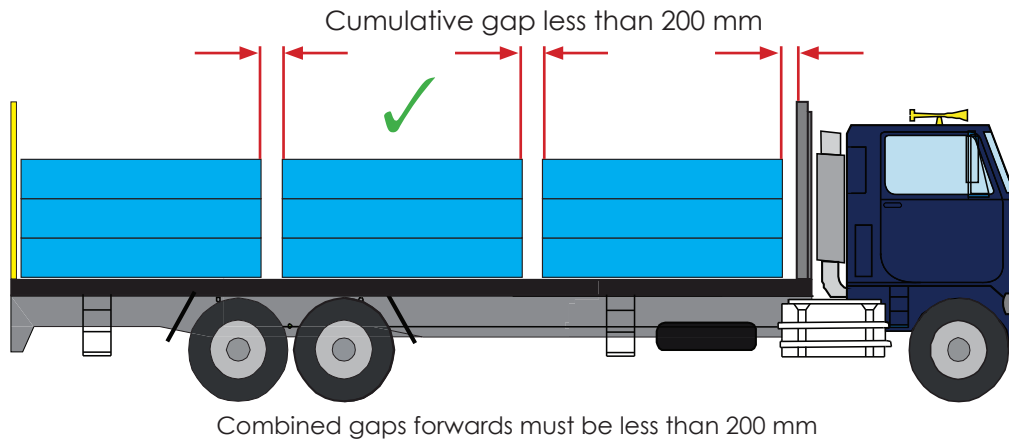
OR

- Allowable weight per pallet space (So each individual mass of both pallet A and B, must be less than Rating)

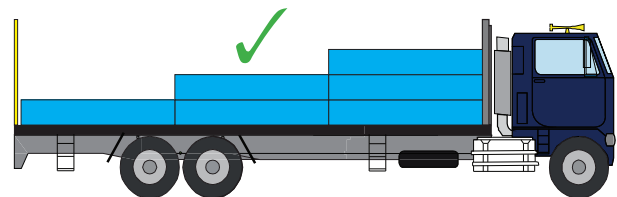
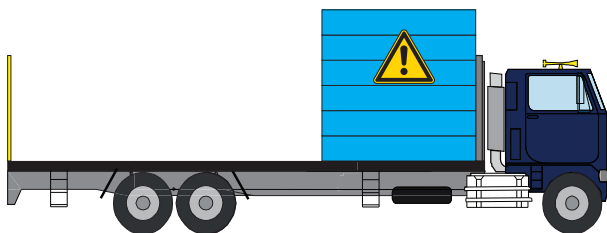


Containment - General Rules

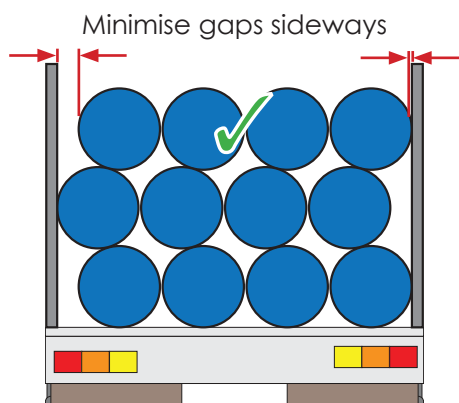
- ✓ Block the load forwards to headboard or other blocked parts of the load.
- ✓ Gaps forwards must be less than 200 mm cumulative to be considered blocked.



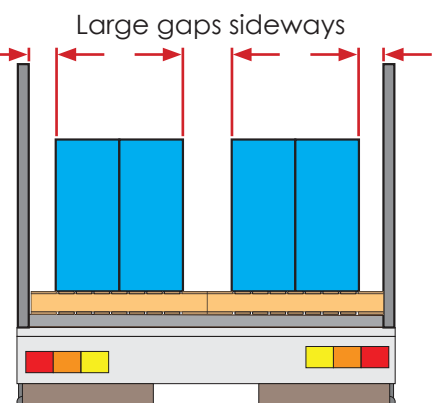
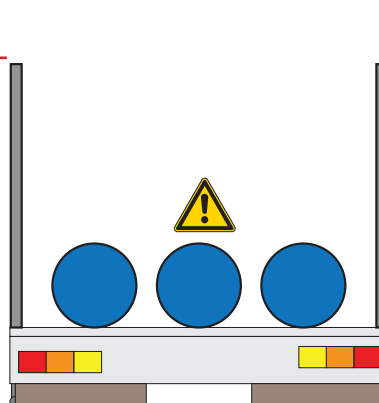
- ⚠ For multi-load drops, rearrange the upper layers to spread the load along the truck / trailer.



- ✓ Block the load sideways to curtains / gates when possible, minimise gaps sideways.
- ✗ Do not block sideways to non rated curtains.



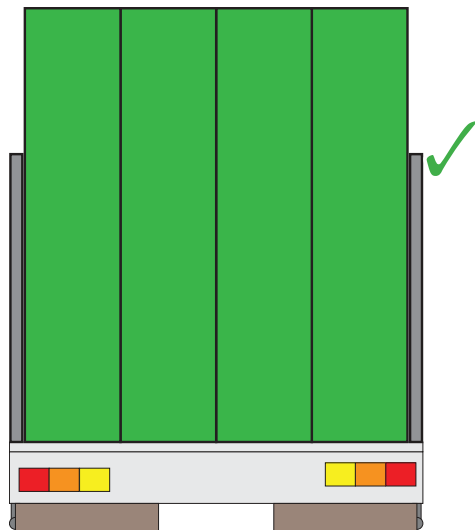
Minimise the gaps between the load and side curtain / gate



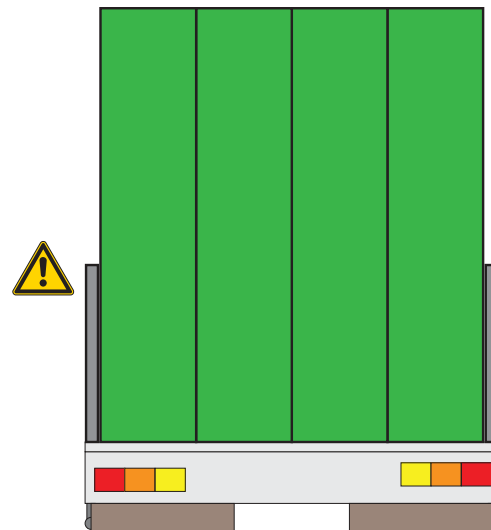
Product loaded on pallet includes the gap between the product and gate / curtain

Containment - Rated Gates

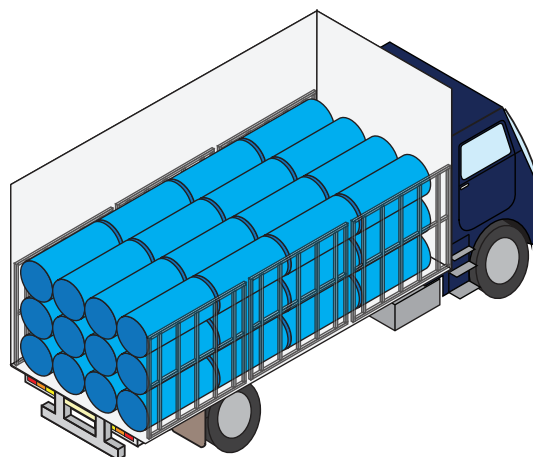
- ✓ The gates must be rated to the load, see Page 2 for gate rating information.
- ✗ Do not exceed gate capacity.
- ⚠ If the load exceeds the gates capacity, the load must be restrained via tie-down.
- ✓ At least half the height of the item must be below the top of the rated gate.
- ✗ Do not load above the rated gate.
- ⚠ If parts of the load are above the gates, that section must be restrained via tie-down.



The load is blocked sideways to rated gates



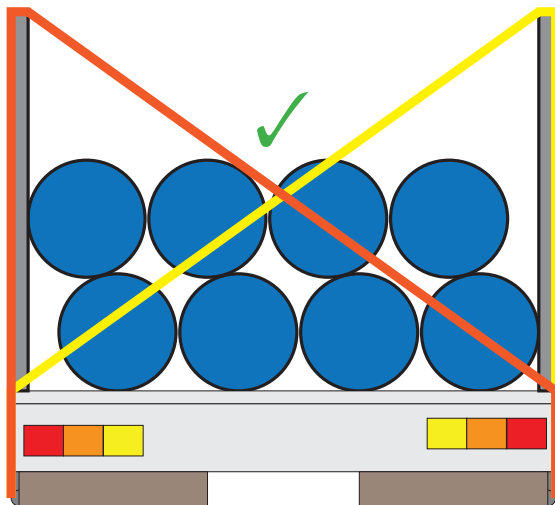
The gate must be at least half the height of the load



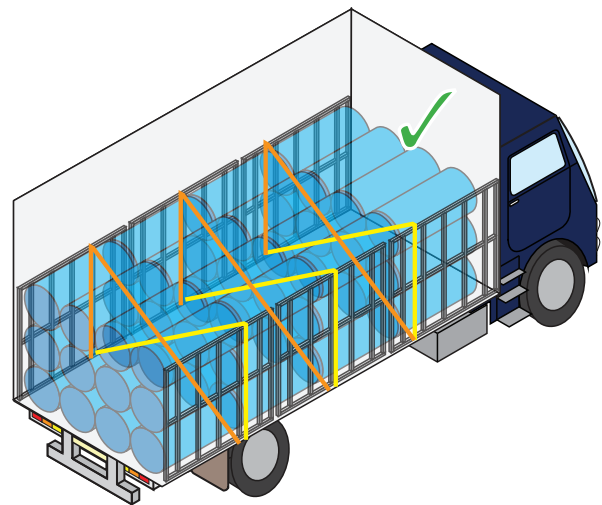
Rated Gate Load Example

Containment - Non Rated Gates

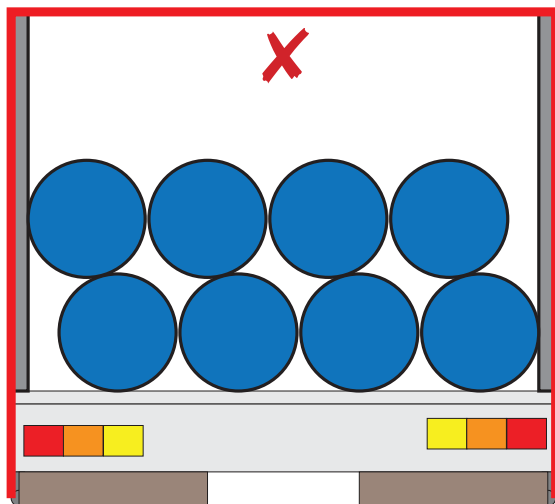
- ✓ At least half the height of the item must be below the top of the gate.
- ✗ Do not load above the gate.
- ⚠ If parts of the load are above the gates, that section must be restrained via tie-down.
- ⚠ Gates must be braced with 50 mm webbing straps, tensioned tight with standard ratchets.
- ✗ Lashings between the top of the gates is NOT bracing.



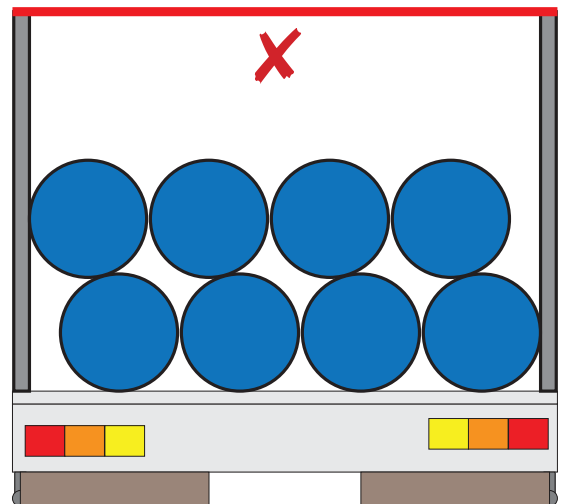
Braced Gate Example



Non-rated Gate Load Example






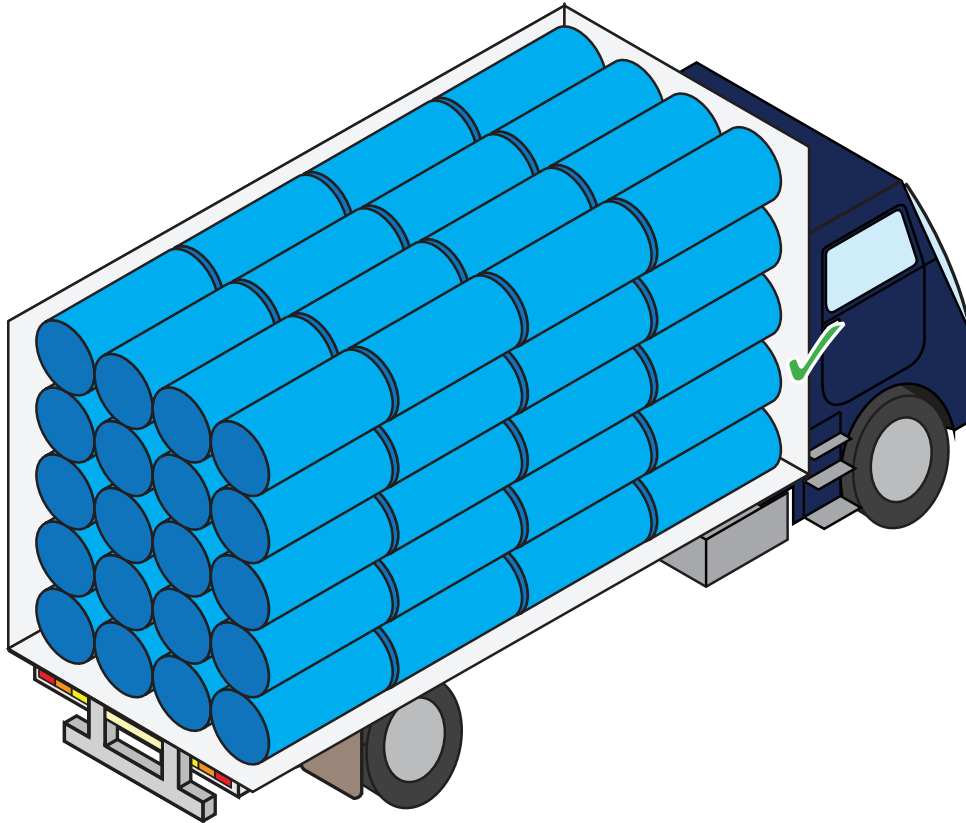
Do not apply strap over both side gates




Do not apply strap between the top of gates

Containment - Rated Curtains





-  The curtains must be rated to the load, see Page 2 for curtain rating information.
-  Do not exceed the curtain capacity.
-  If the load exceeds the curtain capacity, the load must be restrained via tie-down.

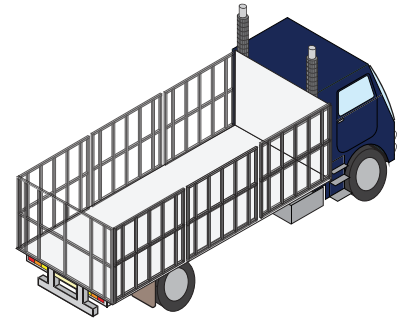


Containment - Non Rated Curtains

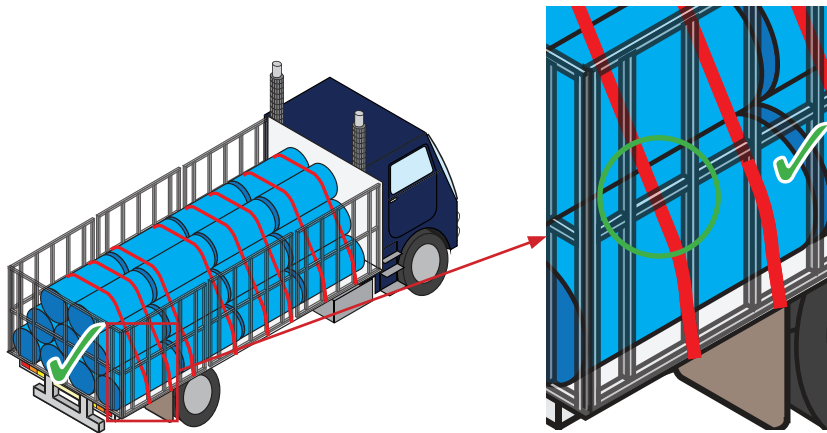
-  Non rated curtains can not be used for load restraint, restrain as per tie-down.

Open Top Loads

-  If the load is transported in open top trucks or trailers, the following requirements are a minimum. Additional requirements might be needed from the relevant section.
-  The load must be loaded and restrained as per tie-down section.
-  Each stack must have a minimum of 2 webbing straps across the load.
-  Straps must go through gates when present.

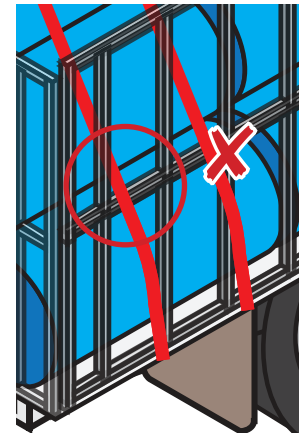


Open top gate truck




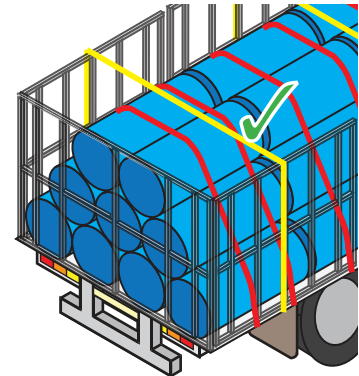
Straps must go through gate

Straps must go through gate




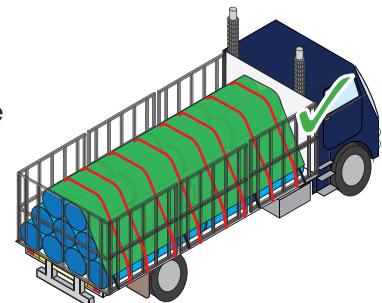
Do not apply tie-down straps around the gates

-  If Gates must be restrained separately to the load. Apply a minimum of one (1) webbing strap over pairs of gates.





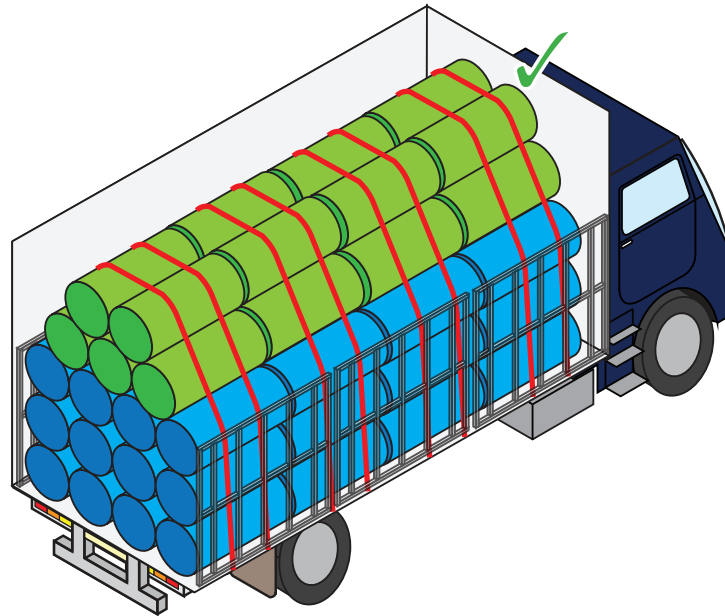
Gates restrained separately to the load

-  The load must be covered with a tarp / net which is suitable for the load.





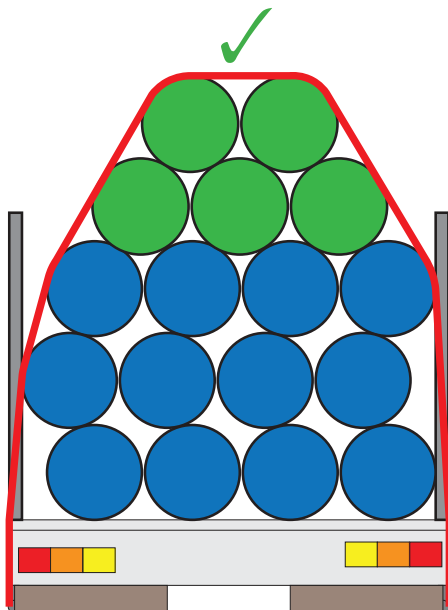
Tie-Down - Loose Rolls

-  Loose rolls loaded above rated gates must be restrained as per this section.
-  Loose rolls loaded above the headboard must be restrained as per unblocked loose rolls.

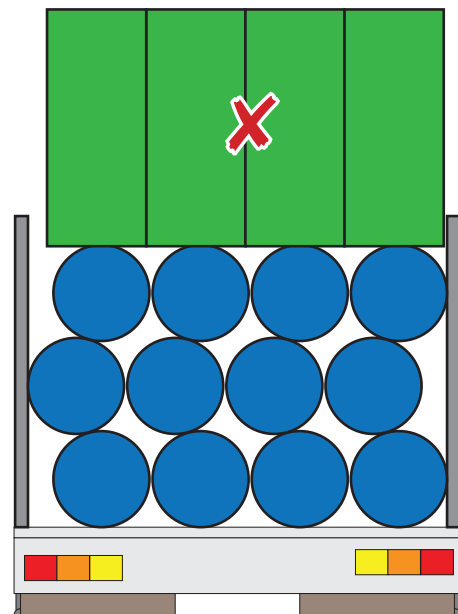


Loose rolls loaded above rated gates must be restrained via tie-down

-  Rolls loaded above the gate must be loaded to allow tie-down restraint.
-  Do not load rolls vertically above gates.

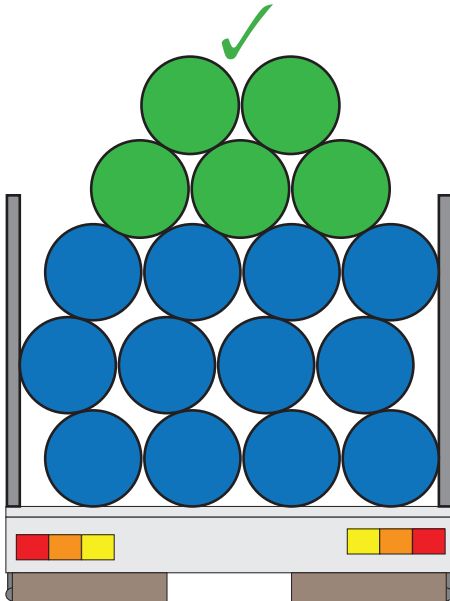


Loose rolls above the gate must be loaded to allow tie-down restraint

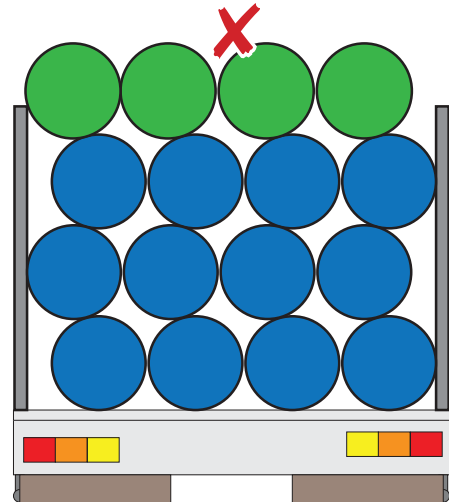


Do not load rolls vertically above gates

- ✓ Rolls must be crowned.
- ✗ Do not load in columns.

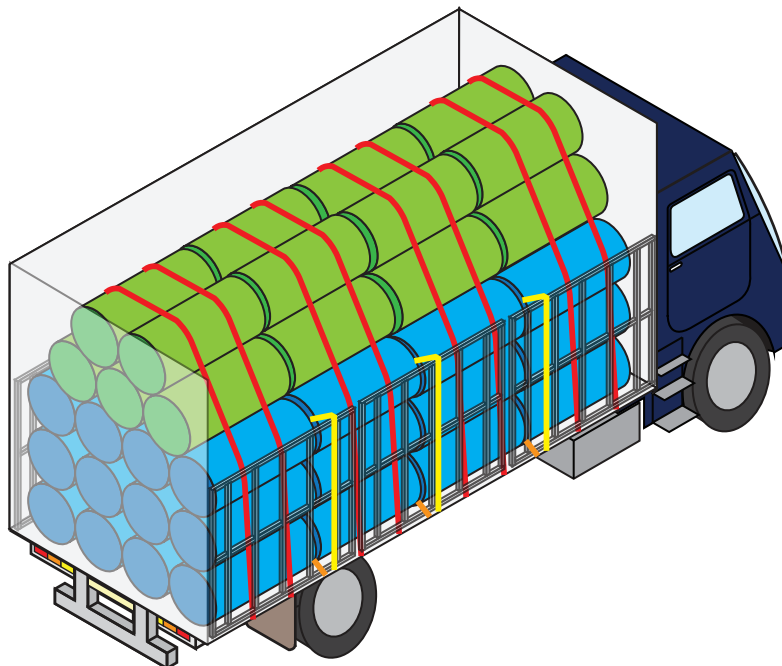


Loose rolls must be crowned with a maximum 2 in the top layer



Do not load in columns above gates

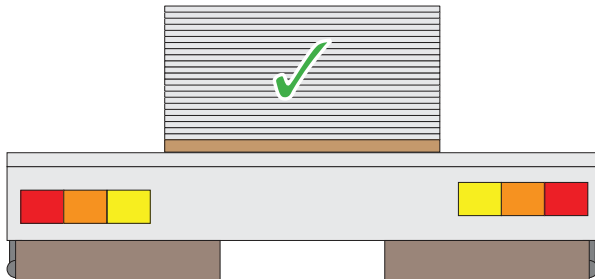
- ✓ Apply 2 × 50 mm webbing lashings, one at each end, to all stacks of rolls.



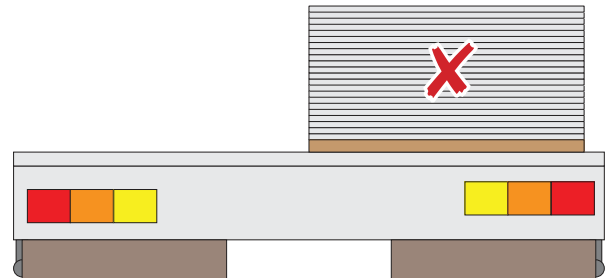
Loose rolls loaded above non-rated gates

Tie-Down - General

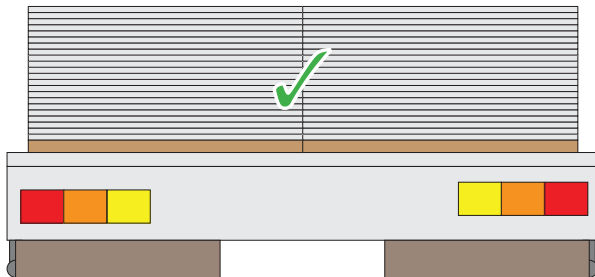
- ✓ Centrally load the item, or group of items, across the truck / trailer.
- ✗ Do not load off centre.
- ✗ Do not leave gaps between two abreast loads.



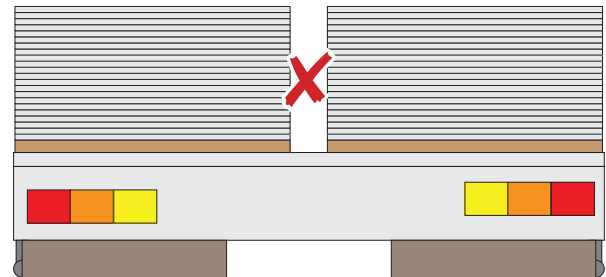
Centrally load the item across the truck / trailer



Do not load off centre

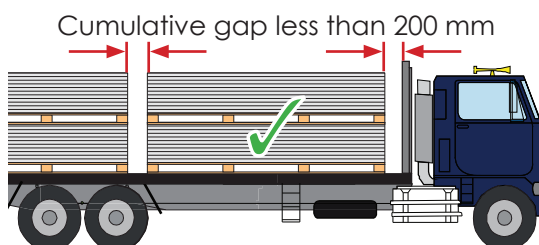


Centrally load two abreast loads across the truck / trailer

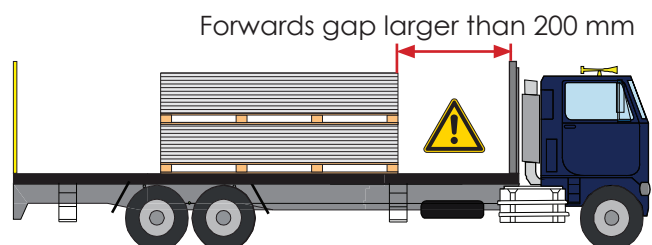


Do not leave gaps between two abreast loads

- ✓ Block the load forwards to rated headboard or other blocked parts of the load, when available.
- ✓ Gaps forwards must be less than 200 mm cumulative to be considered blocked.
- ⚠ If the gaps forwards are greater than 200 mm, the load must be restrained as per unblocked loads.

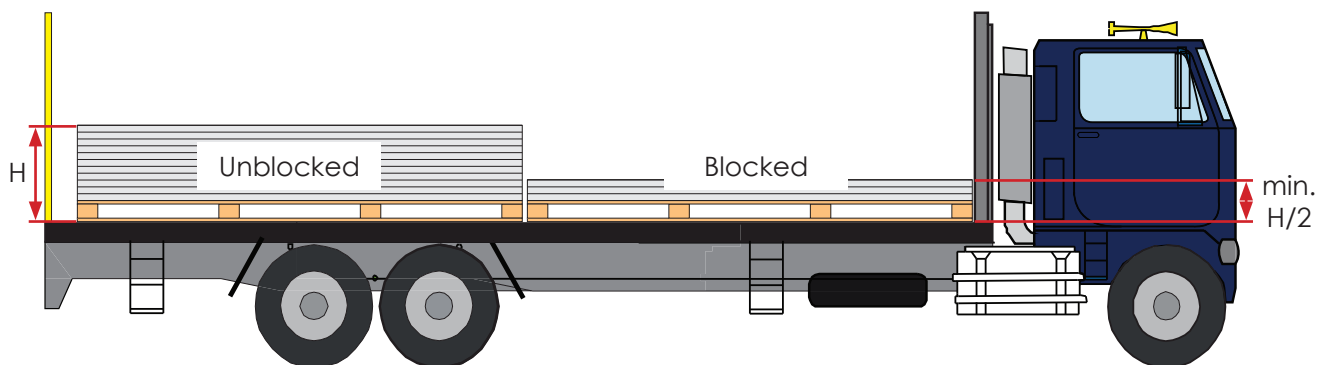
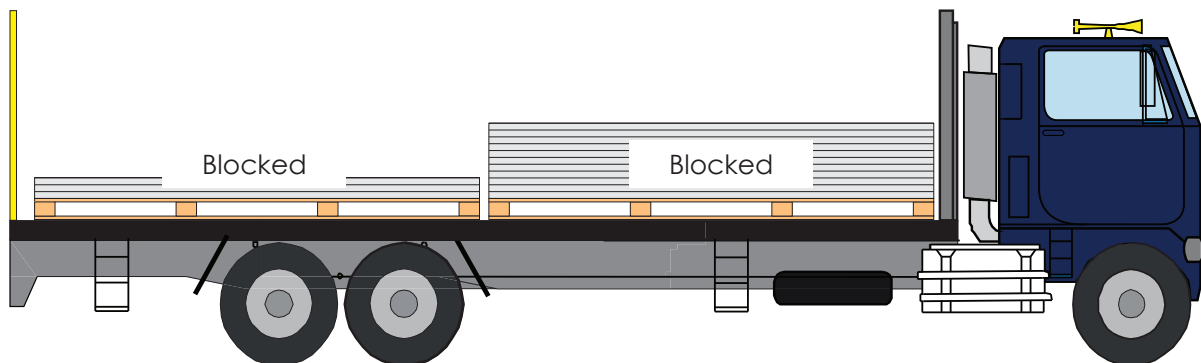


Apply tie-down lashings per blocked tables

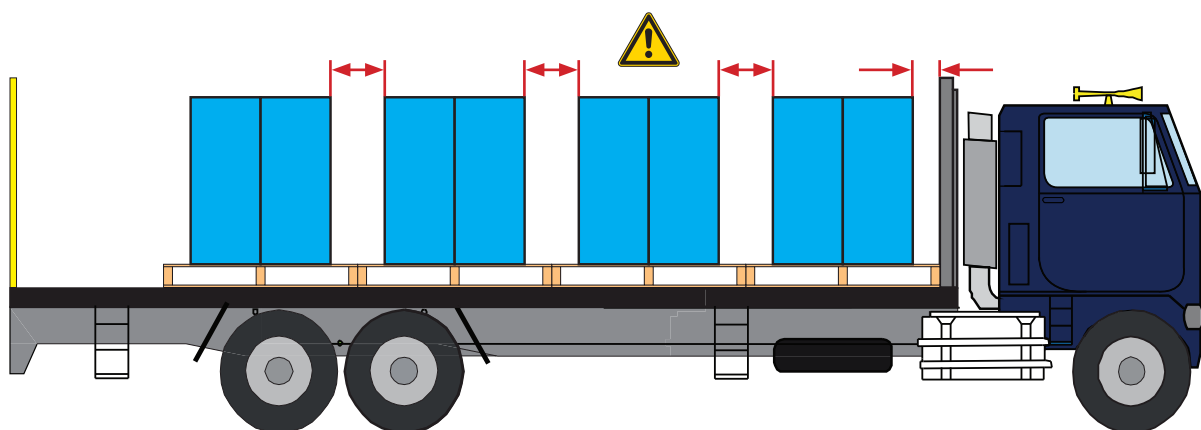


Apply tie-down lashings per unblocked tables

- ✓ The blocking surface (or blocked part of the load) must be at least half the height of the item being blocked.

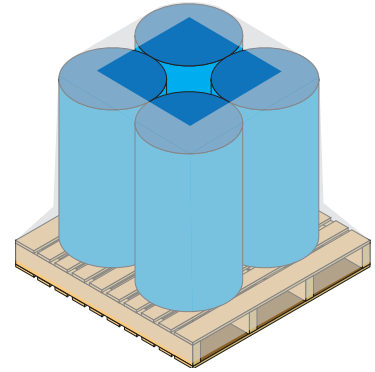


- ⚠ Palletised rolls gaps within the pallet footprint could prevent parts of the load behind to be blocked. Load at the rear where possible.

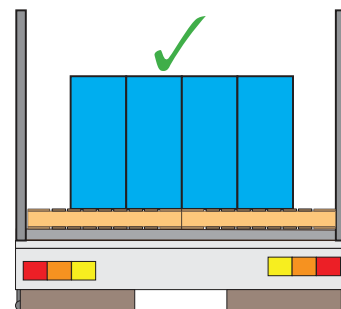
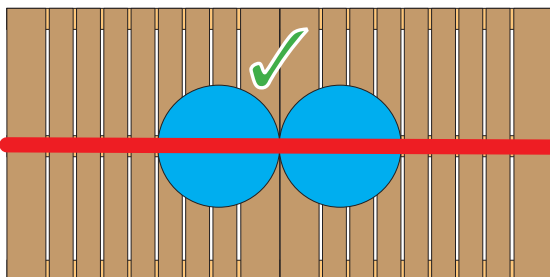
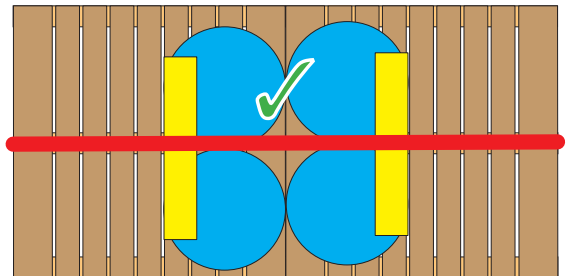
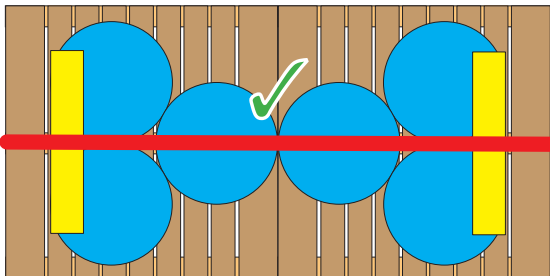
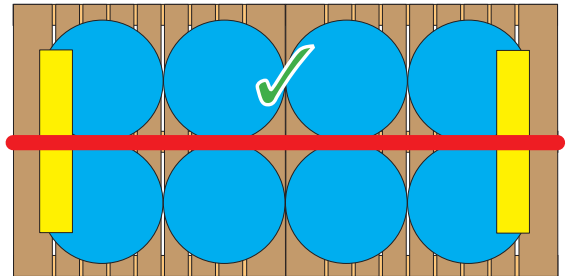
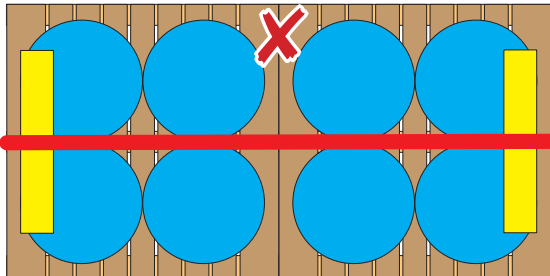


Tie-Down - Palletised Felt Rolls

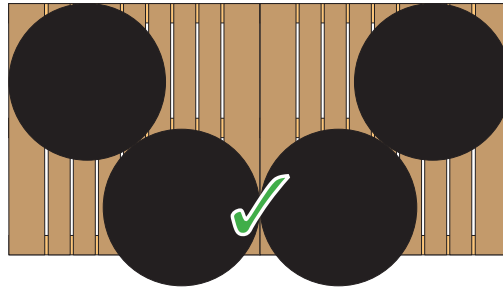
- ✓ Load felt rolls vertically on pallets.
- ✗ Do not load felt rolls horizontally on pallets.
- ✓ Pallets of felt rolls must be stretch wrapped to the pallet (or other suitable packaging methods).



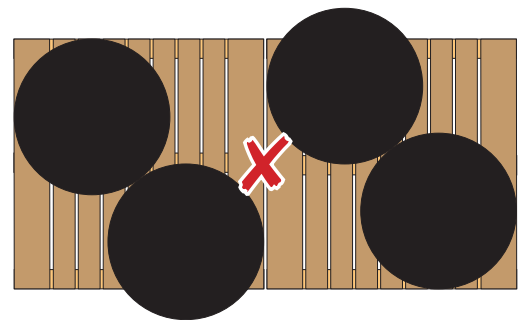
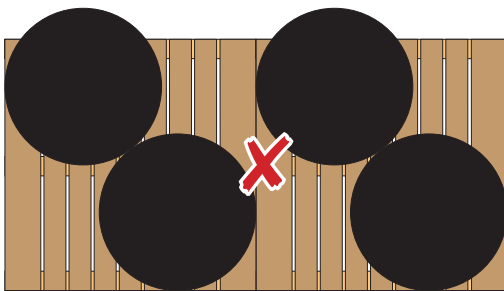
- ✓ When loading two abreast with tie-down, position the felt rolls on the pallet to minimise gap between pallets.
- ✗ Do not leave gaps between felt rolls.



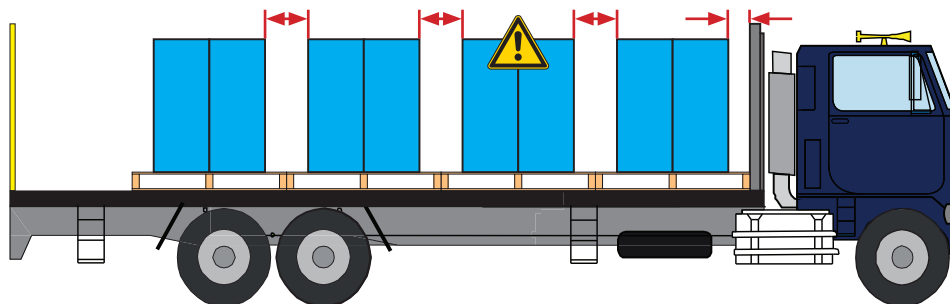
- ✓ Large rolls (where two rolls can not fit on the footprint of the pallet) of pallets must be constructed in a way to eliminate the gaps centrally.



- ✗ Do not leave gaps between felt rolls.



- ⚠ Gaps between rolls and the edge of the pallet must be included in blocking limits.



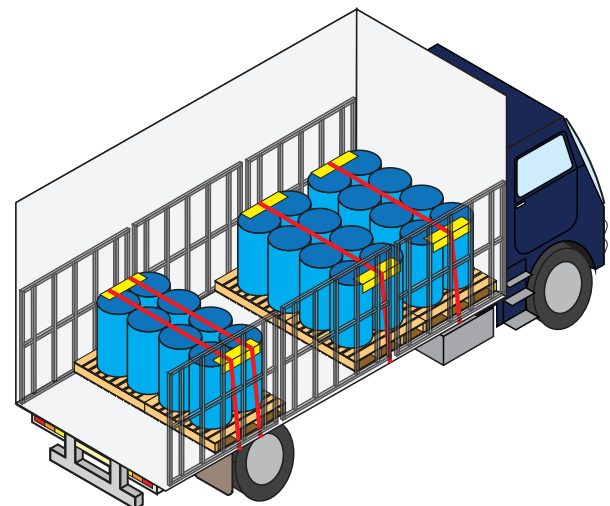
- ✓ Use corner protectors where applicable.

Unblocked

- ✓ Apply a minimum of 2 × 50 mm webbing lashings per pallet row.

Blocked

- ✓ Apply a minimum of 1 × 50 mm webbing lashings per pallet row.



Tie-Down - Panels - Semi's, Soffit, Boxed AND Unboxed Panels

- ✓ Where possible, these should be blocked forwards.
- ✓ Centrally load the panel across the truck / trailer.
- ✗ Do not load off centre.
- ✓ Single high packs ONLY.
- ✗ Do not stack panels.
- ✓ Apply corner protectors between lashings and panels.
- ✓ Apply 50 mm webbing lashings as per Table 1 for unblocked loads and Table 2 for blocked loads.
- ✓ Minimum 2 webbing lashings per panel or two abreast panels.
- ✓ Webbing lashings must be applied at least 300 mm from the edge of the panel.

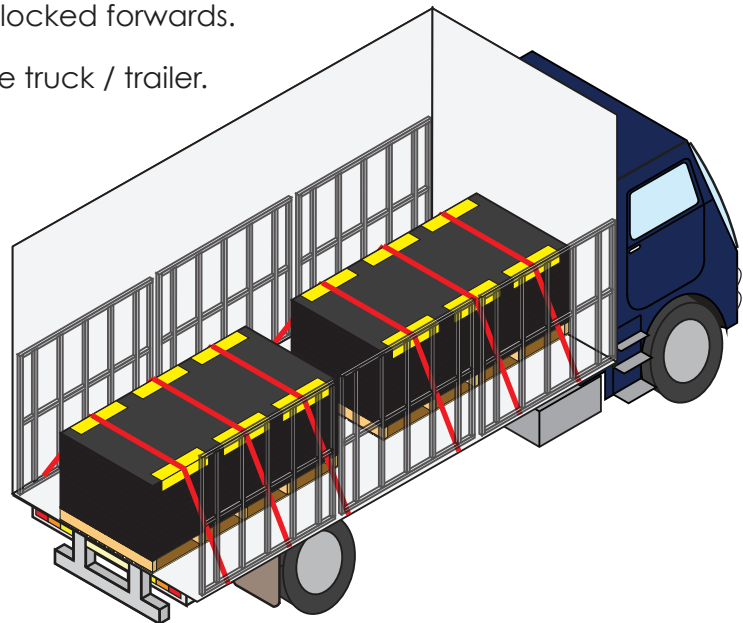


Table 1: Semi's, Soffit, Boxed & Unboxed Panels, Unblocked Load Restraint Table








Number of Lashings	Maximum weight restrained (kg)	Maximum weight restrained (kg)			
	 (75 - 90°)	 (60 - 75°)	 (45 - 60°)	 (30 - 45°)	
	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	
2	160	140	120	80	
3	240	220	180	120	
4	330	290	240	170	
5	410	370	300	210	

Table 2: Semi's, Soffit, Boxed & Unboxed Panels, Blocked Load Restraint Table

Number of Lashings	Maximum weight restrained (kg)	Maximum weight restrained (kg)			
	 (75 - 90°)	 (60 - 75°)	 (45 - 60°)	 (30 - 45°)	
	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	
2	660	590	480	340	

Tie-Down - Panels - Echo Panels

- ✓ Where possible, these should be blocked forwards.
- ✓ Centrally load the panel, or two abreast panels, across the truck / trailer.
- ✗ Do not load off centre.
- ✓ Apply corner protectors between lashings and panels.
- ✓ Apply 50 mm webbing lashings as per Table 3 for unblocked loads and Table 4 for blocked loads.
- ✓ Minimum 2 webbing lashings per panel or two abreast panels.
- ✓ Webbing lashings must be applied at least 300 mm from the edge of the panel.

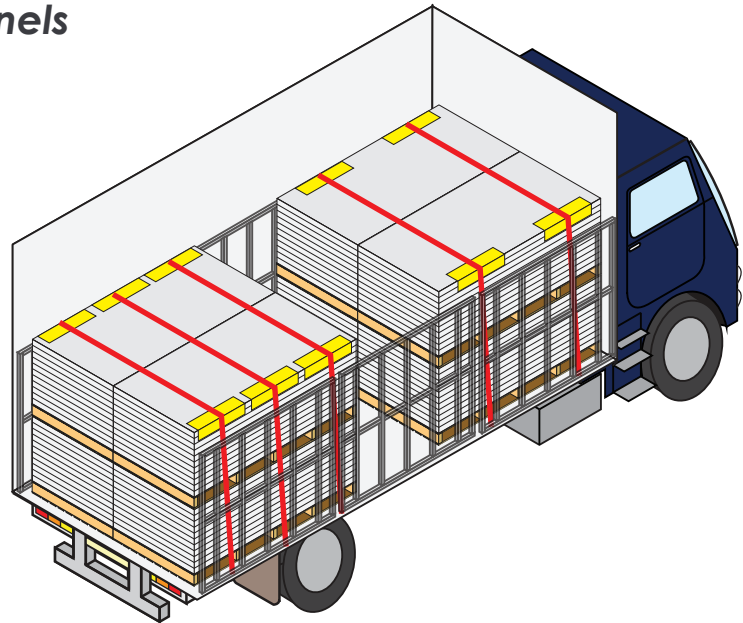


Table 3: Echo Panels, Unblocked Load Restraint Table










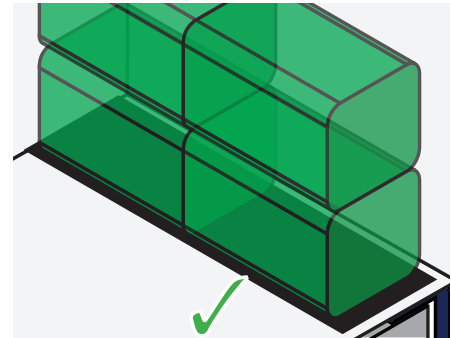
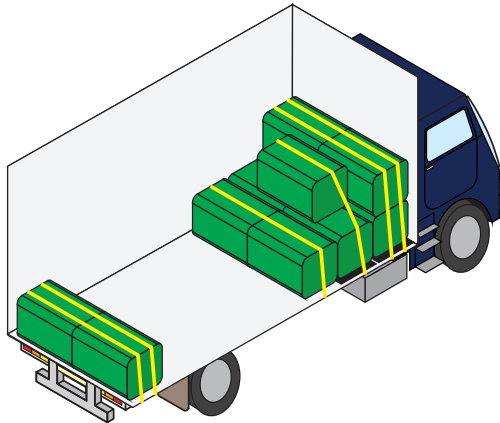
Number of Lashings	Maximum weight restrained (kg)	Maximum weight restrained (kg)			
	 (75 - 90°)	 (60 - 75°)	 (45 - 60°)	 (30 - 45°)	
	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	
2	440	400	320	230	
3	670	600	490	340	
4	890	800	650	460	
5	1120	1000	820	580	
6	1340	1200	980	690	
7	1560	1400	1140	810	

Table 4: Echo Panels, Blocked Load Restraint Table




Number of Lashings	Maximum weight restrained (kg)	Maximum weight restrained (kg)		
	 (75 - 90°)	 (60 - 75°)	 (45 - 60°)	 (30 - 45°)
	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch	Ratchet/Drum winch
2	1790	1600	1310	920
3	2680	2410	1960	1390
4	3580	3210	2620	1850

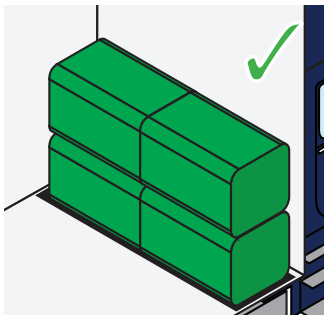
Tie-Down - Bales

 Bales must be less than 300 kg per bale.

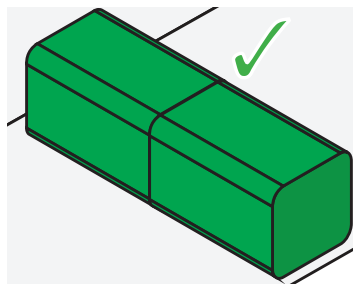


Groups of 3 or 4 bales must be loaded on industrial rubber

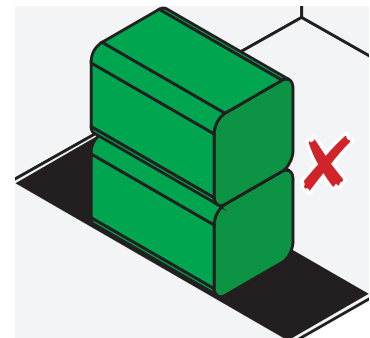
-  Groups of 3 or 4 bales must be loaded on industrial rubber, under the base layer of bales.
-  Groups of 3 or 4 bales must be blocked forwards.
-  Do not load groups of 3 or 4 bales without rubber under the base layer.
-  Do not load single file columns.





Groups of 3 or 4 bales loaded on industrial rubber and blocked forwards

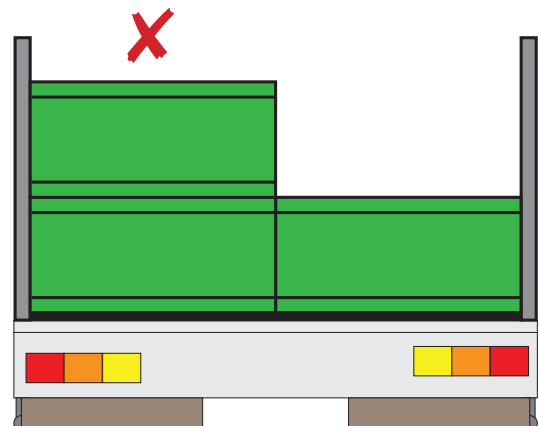
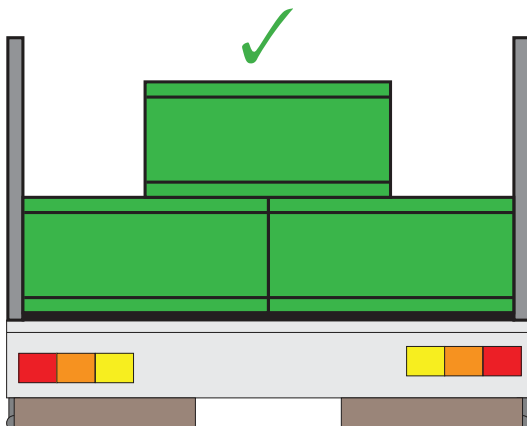


Groups of 2 bales can be loaded directly to the trailer



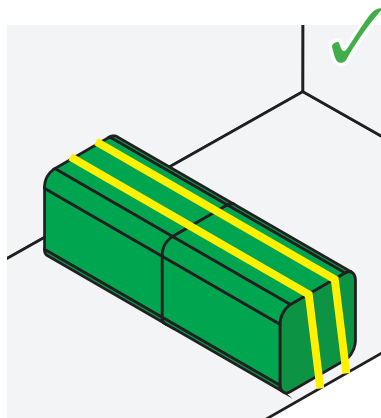
Do not stack single file

-  Centrally load bales across the trailer.
-  Do not load off centre.



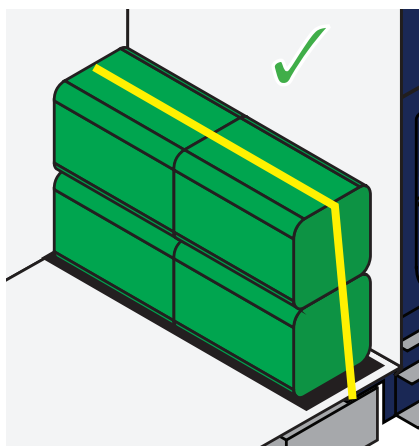
- ✓ Lashings must be 50 mm webbing lashings, fully tensioned with standard ratchets.
- ⚠ Minimum lashing angle for the top bale be at least 30°.

Unblocked

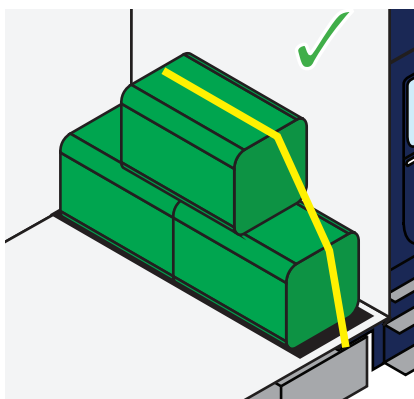


Unblocked
Maximum 2 bales
Two (2) webbing straps

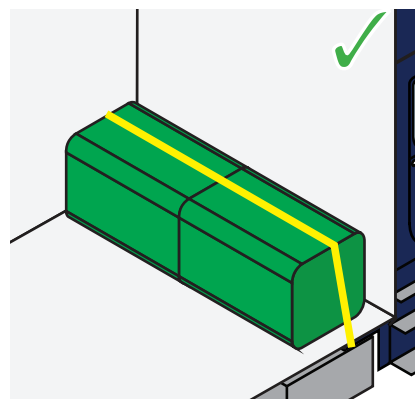
Blocked



Blocked
Maximum 4 bales
One (1) webbing strap



Blocked
Maximum 3 bales
One (1) webbing strap



Blocked
Maximum 2 bales
One (1) webbing strap

This document provides the practical information and key methods for securing the nominated freight type(s) to the relevant certification. Engistics has developed this guideline to comply with the relevant standards and legislation. Additional requirements may be necessary under some conditions outside the nominated application of this guideline and Engistics provides no warranty for circumstances outside the nominated application. The information contained in this guideline is confidential to and remains the property of Engistics Pty Ltd for use by CSR Martini. Any changes to this guideline must be approved by Engistics. Further details are available on the accompanying Certification to this Guideline.