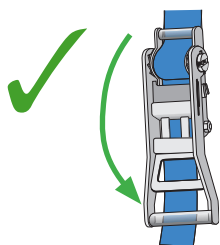


This Guideline:

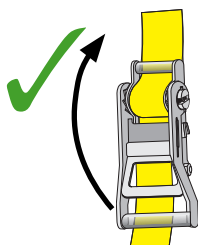
- Covers the transportation of sheet product with a minimum of 15 sheets, palletised cornice product and palletised compounds (bags and buckets) packed to the standards applied by CSR, via Roads in Australia.
- Is the loader and driver guide to the certification E00691-LRC1 to meet the loading performance standards listed in Schedule 7 of the Heavy Vehicle (Mass, Dimension and Loading) National Regulation (22 February 2021).

Load Restraint Equipment and Key Requirements:

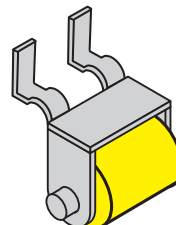
- ✓ For tie-down lashings use a minimum of 50 mm webbing straps fully tensioned using push up ratchet.
- ✓ For **cross over** lashings use a minimum of 50 mm webbing straps anchored behind the load post, fully tensioned using a pull down ratchet.
- ⚠ A lashing is a standard lashing with 300 kg pretension, unless specified otherwise.
- ⚠ Stability of vehicles and product stacks can be impacted by high load heights: check stability requirements.
- ⚠ Drum winches are not suitable for tensioning of Cross over straps
- ⚠ Any single sheet pack must have a minimum of 15 sheets.
- ⚠ The minimum height of freight restrained to be 360 mm.
- ✗ Do not leave items loose on the vehicle. Always secure within a box or crate.
- ✗ Do not use chains.
- ⚠ Steel pallets must have Industrial rubber or rough sawn timber material placed under them to remove the steel on steel low friction surface contact
- ⚠ Dunnage must meet the CSR standard and should be aligned vertically when placed on multiple layers
- ⚠ Throwing webbing is a manual handling risk. Use caution when applying lashings and check the other side of the trailer is clear when throwing lashings.
- ✓ Best practice for loads is to be blocked against a suitably engineered headboard/ surface or use cross over lashings.
- ✓ Refer to the packaging guideline for advice on packaging.



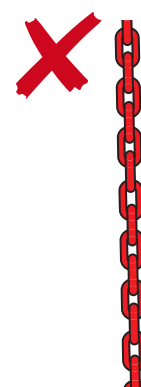
Pull down ratchet



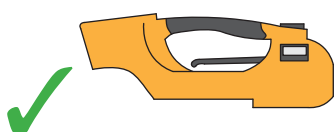
Push up ratchet



Drum winch



Chains



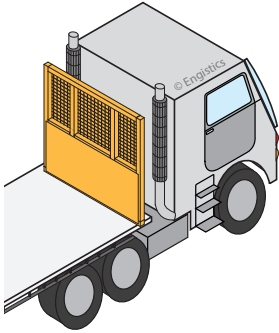
PET Tensioning Device



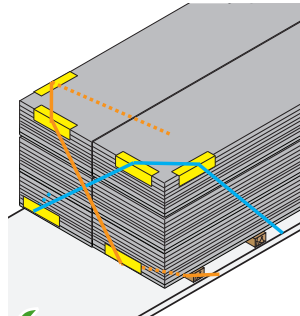
Tie-down lashings

Blocking

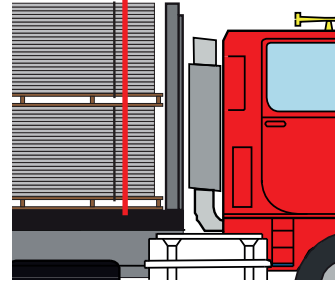
- ✓ Refer to Load restraint principles guideline E00691-LRG2.



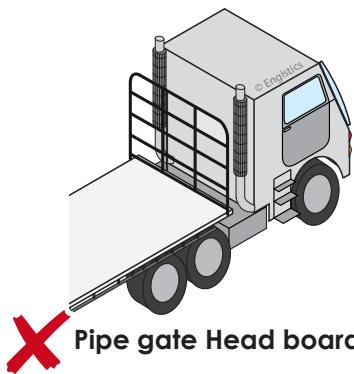
✓ Engineered Headboard



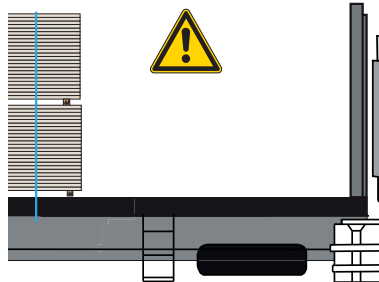
✓ Cross over straps



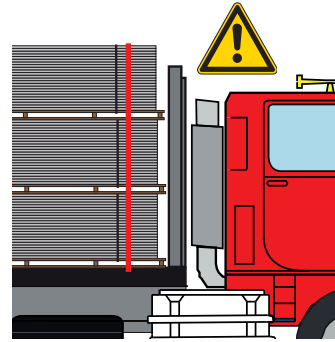
✓ Blocked load



✗ Pipe gate Head board



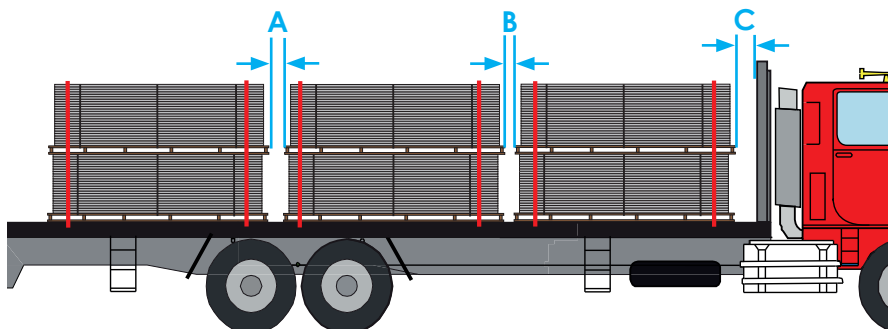
Unblocked



Top pack is Unblocked

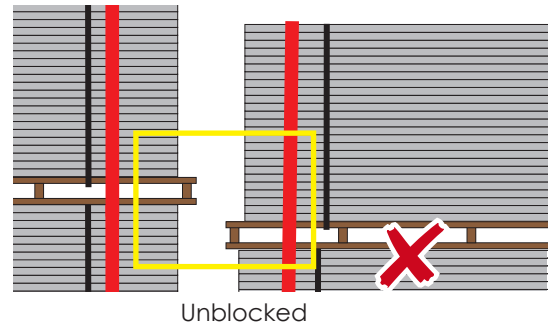
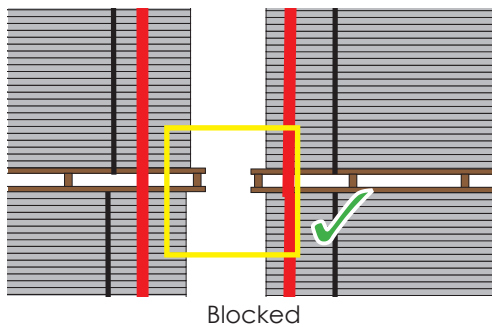
Palletised sheet product

- ✓ When the sheets are unitised to the pallet using PET straps, then the gap between the pallet and blocking surface must be measured as shown below.



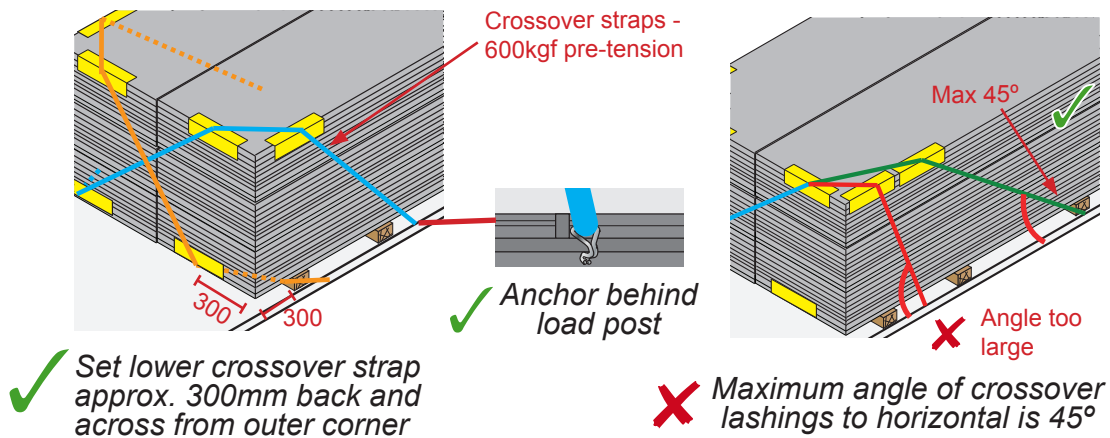
- ✓ Maximum cumulative gap along the load must be less than 200mm.
i.e. $A+B+C = 200\text{mm}$ or less

- ✓ When a palletised stack is blocked against another palletised stack, then the pallets must be aligned to be considered as blocked.

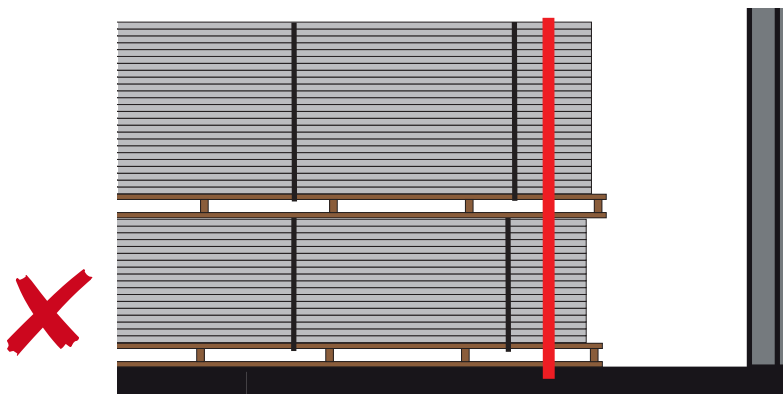


Blocking With Crossover Straps - Bulk sheet products

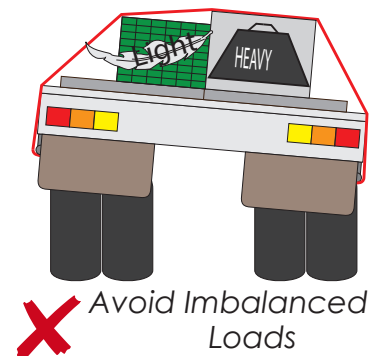
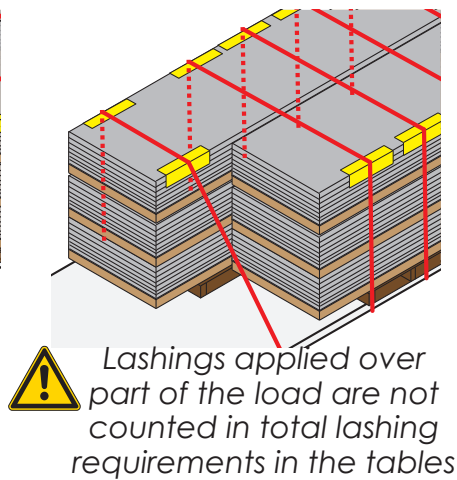
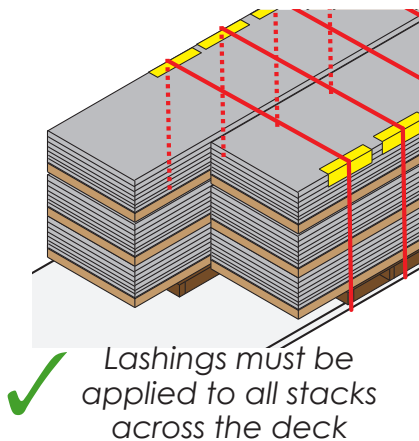
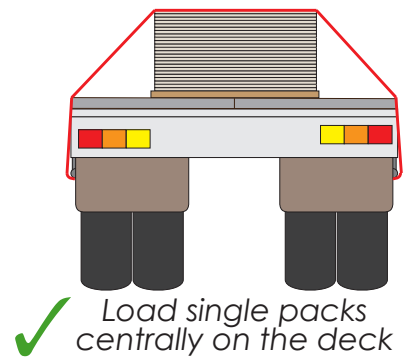
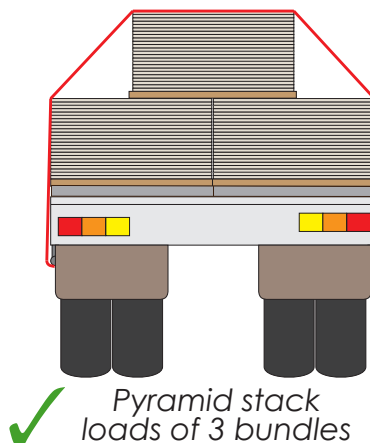
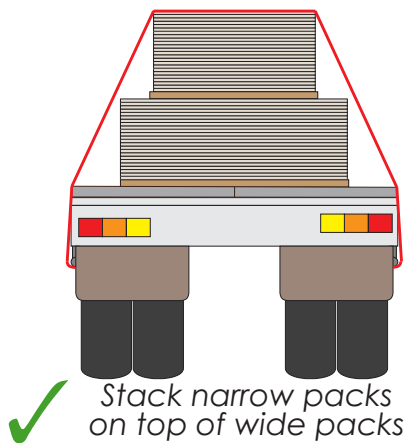
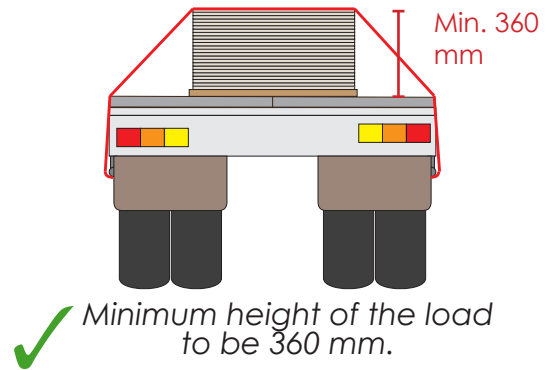
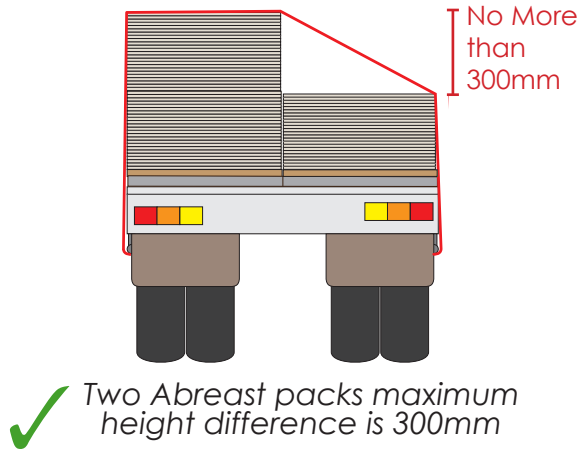
- ✓ When a load cannot be blocked to headboard, cross-over lashings may be used to reduce the total number of tie-down lashings.
- ✓ Refer to the cross over lashings table for number of tie-down lashings required when using cross-over lashings for blocking.
- ✓ Tie-down lashings must be applied first and then the cross over lashings must be applied.
- ⚠ Cross-over lashings must be anchored behind the load-post.
- ✓ Refer to the general principles guideline for more information on cross-over straps.



- ✗ Do not use cross-over straps for palletised sheet product.



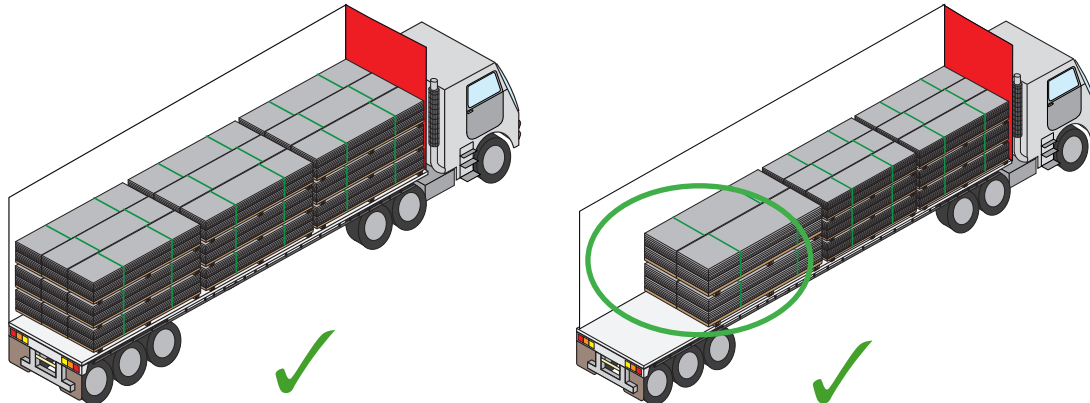
Load Configurations - Sheet Product



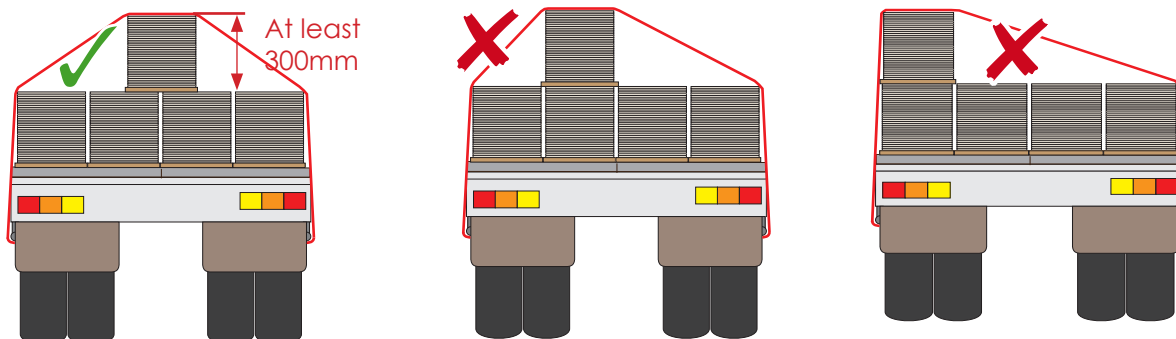
⚠ A lashing is a standard lashing with 300 kg pretension, unless specified otherwise.

Load Configurations - Sheet Product : 3 or more across deck

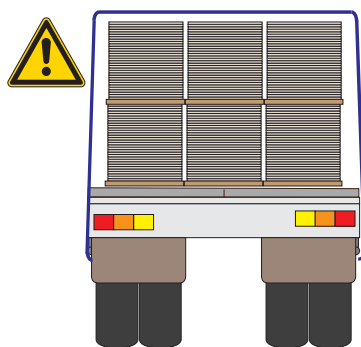
- ✓ All stacks more than 2 Abreast must be blocked to an Engineered Headboard
- ✓ All stacks more than 2 Abreast must be blocked rearward by a Rear wall of a Tautliner or a 2 abreast stack of product.
- ⚠ Maximum height limits apply to multi abreast product stacks.
- ⚠ Top pack of a pyramid stack must be at least 500mm high inclusive of pallet or dunnage.
- ⚠ A lashing is a standard lashing with 300 kg pretension, unless specified otherwise.



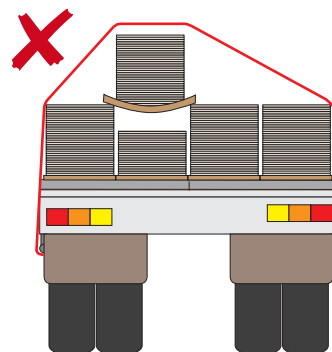
Multi abreast loads with more than 2 abreast must be blocked rearwards by 2 abreast stacks or Tautliner rear wall or cross over lashings must be used.



Center loads for pyramid stacks



3 or more packs across must be blocked front and rear



Do not bridge dunnage or pallets

- ✓ Multi abreast loads can be flat top or pyramid loaded.
- ✓ All stacks must be blocked to Engineered Headboard and lashed per the Tables 1 and 2.
- ✓ Pyramid stacks will require belly lashings and additional lashings over the top pack per table 1

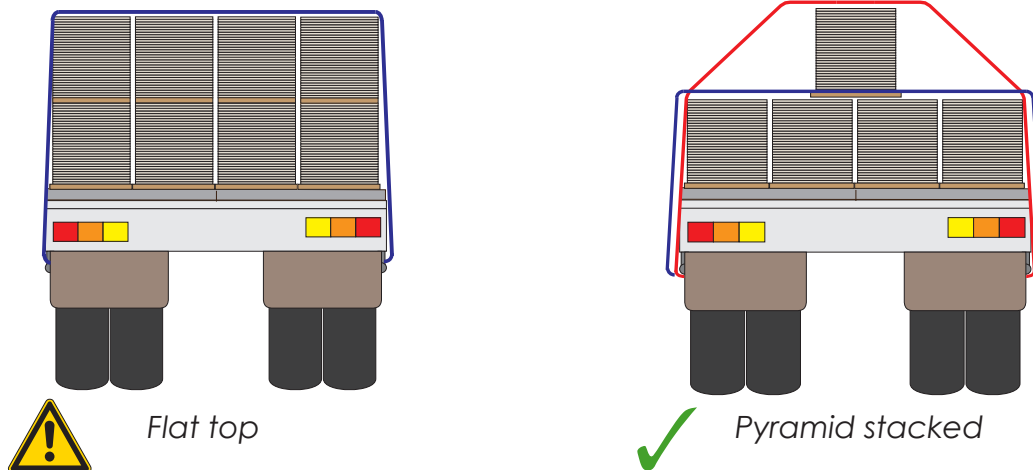


Table 1: Blocked (Headboard): Pyramid stack

Refer to the following table for number of tie-down lashings required when the load is pyramid stacked and blocked to headboard.

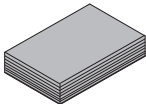
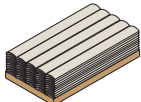
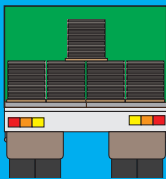
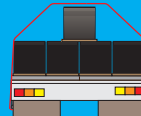
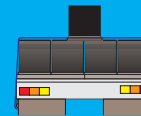
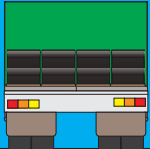
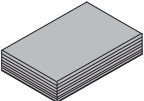
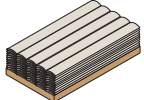
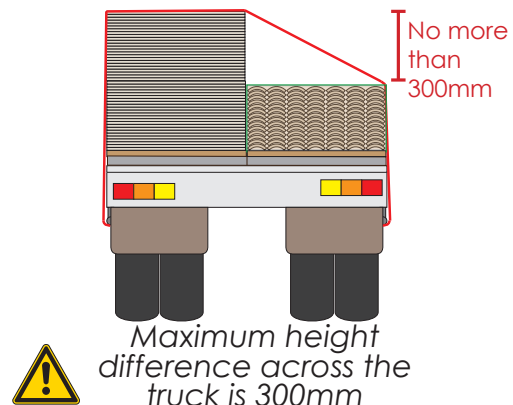
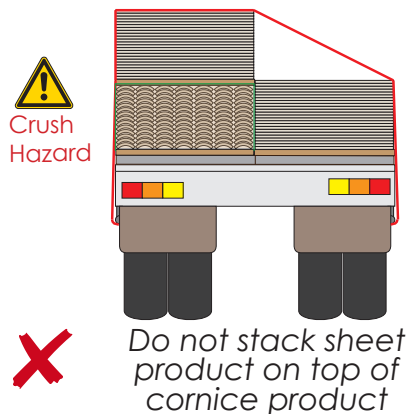
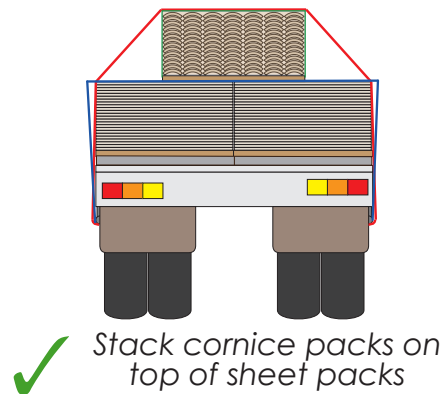
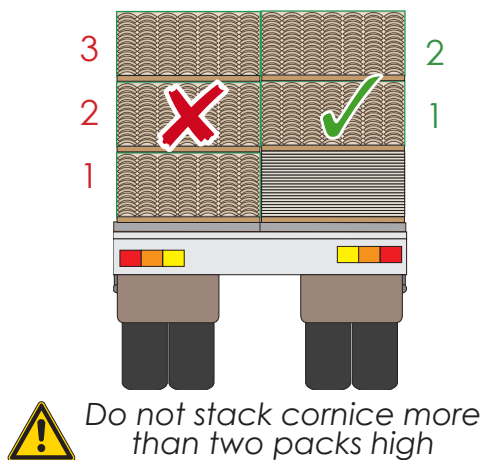
 Sheets	 Cornice	Stack Mass Restrained 	Required Number of Tie Down Lashings per stack on the vehicle				
			Pyramid lashing 		Belly lashing 		Max stack height above deck
			Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	
		0 - 2,000 kg	2	2	2	2	0.9
		2,001 - 4,000 kg	2	2	2	2	1
		4,001 - 6,000 kg	3	2	3	2	1.2
		6001 - 7000 kg	4	2	4	2	1.2
		7,001 - 9,000 kg	5	3	5	3	1.4
		9,001 - 11,000 kg	6	4	6	4	1.5
		11,001 - 13,000 kg	7	4			1.6

Table 2: Blocked (Headboard): Flat top

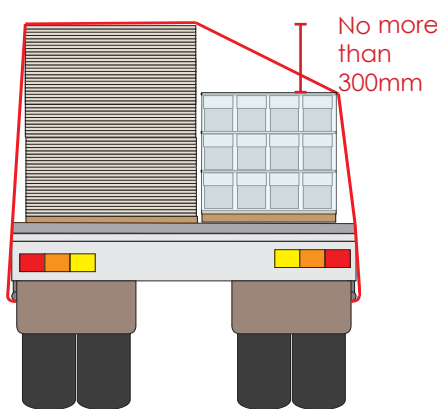
Refer to the following table for number of tie-down lashings required when the load has flat top blocked.

	Stack Mass Restrained 	Required Number of Tie Down Lashings per stack on the vehicle (Lashing Angle)		
		(80 - 90°)		Max stack height above deck
		Push up ratchet / Drum winch	Pull Down Ratchet	
 Sheets	0 - 2,000 kg	2	2	0.9
	2,001 - 4,000 kg	2	2	1
	4,001 - 6,000 kg	3	2	1.2
	6001 - 7000 kg	4	2	1.2
 Cornice	7,001 - 9,000 kg	5	3	1.4
	9,001 - 11,000 kg	6	3	1.5
	11,001 - 13,000 kg	7	4	1.6

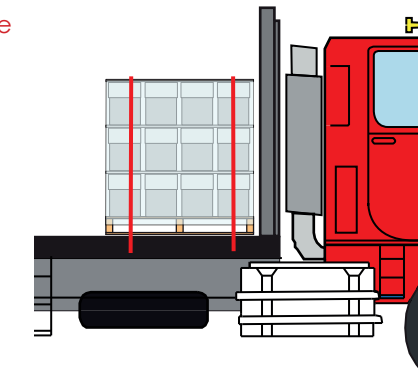
Load Configurations - Palletised Cornice Product



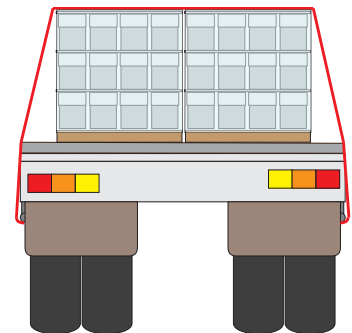
Load Configurations - Palletised Compound Product



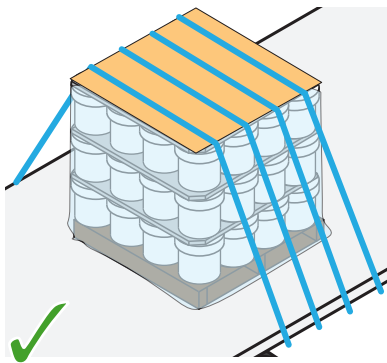
Maximum height difference across the truck is 300mm



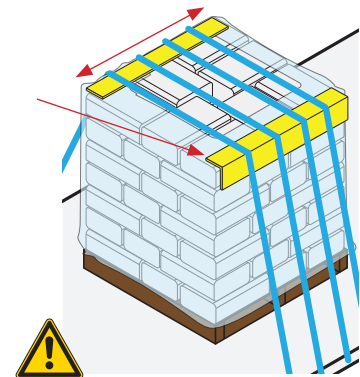
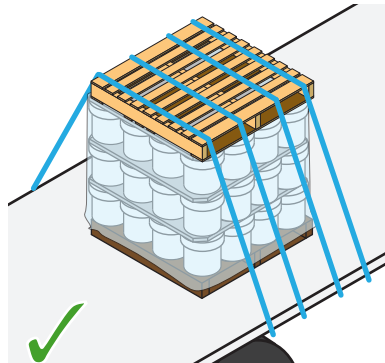
Block compound product wherever possible



Load pallets maximum two abreast

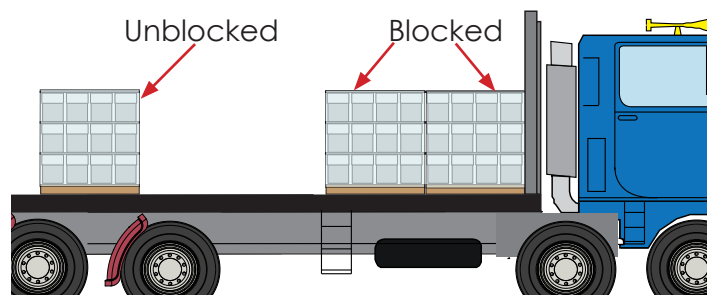


Place pallets / plywood on top of buckets when tying down to prevent damage to product

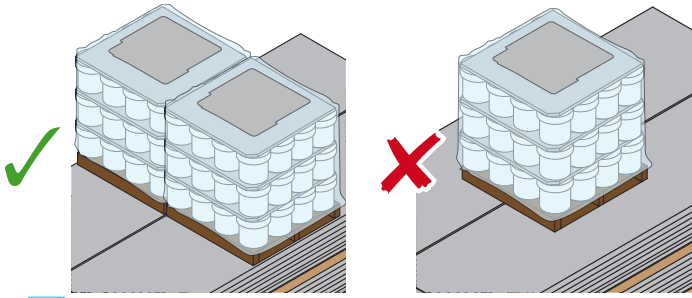


Corner protectors must be full width of the pallet

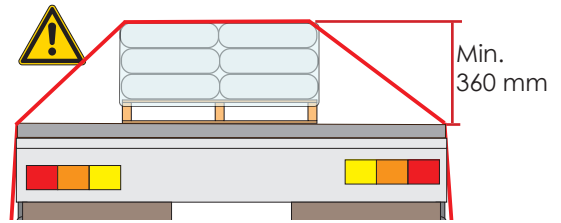
- ✓ Refer to the packaging document for advice on packaging.
- ✓ Minimum height of the load to be 360 mm.
- ✓ Maximum weight of 1 130 kg per pallet.
- ✓ Minimum of 2 lashings for blocked pallet row.
- ✓ Minimum of 4 lashings for unblocked pallet row.
- ⚠ Pallets on other product must be loaded as two abreast.



A lashing is a standard lashing with 300 kg pretension, unless specified otherwise.



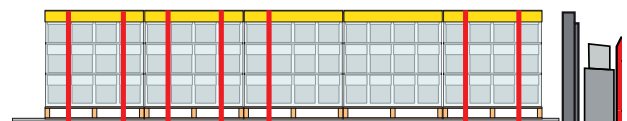
⚠ Pallets on other product must be loaded as two abreast, and separately restrained



Min. height of the load to be 360 mm in order achieve an angle of 30 degrees

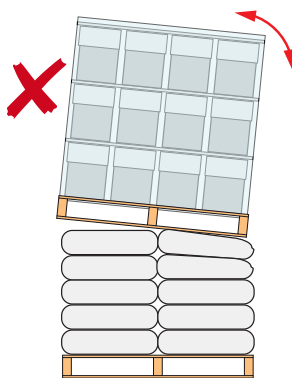


Every palletised product row has Tie-down lashings over it.

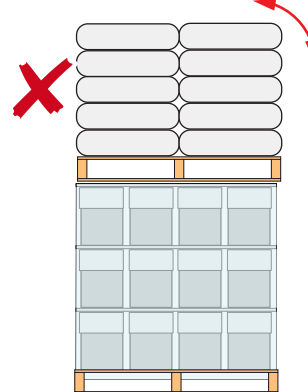


Missing lashings

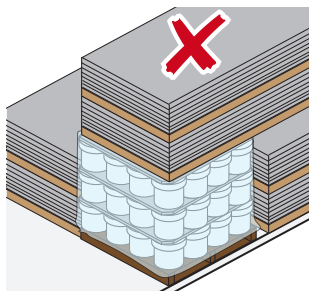
⚠ Do not stack on top of bagged / bucketed compound products.



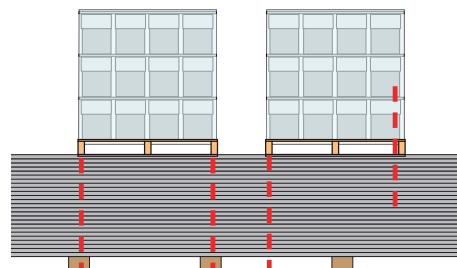
✗ Bucketed product stacked on top of bagged product



✗ Bagged product stacked on top of bucketed product



✗ Do not stack any pallets on top of buckets



⚠ Pallets stacked on loose sheet product - bearers must align with the supporting dunnage

Load Configurations - Rondo

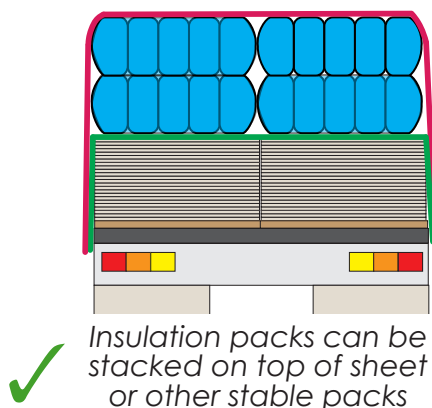
- ✓ Rondo packs must be unitised and restrained adequately.
- ✓ Make sure each pack has clamping.
- ✓ Rondo products may have to be load choked to avoid spearing.
- ✓ It must be restrained independently of other items.
- ✗ Do not load any other item on top of Rondo.

Load Configurations - Insulation

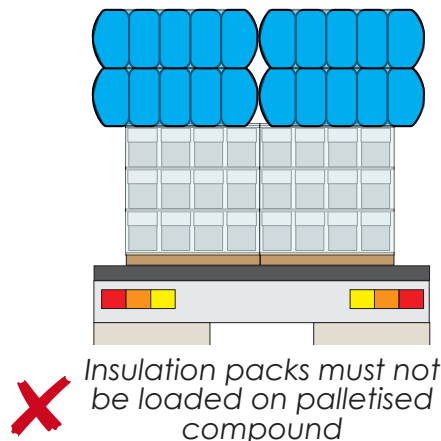
- ✓ Insulation packs be loaded on top of stable pack of sheet or bricks.
- ✓ Insulation must be unitised into a pack.
- ✓ It can be loaded as a maximum of 2 abreast and 2 high.
- ✓ It must be restrained independently.
- ✗ Do not load any other item on top of insulation.
- ✗ Do not load insulation on top of palletised products.
- ✓ Refer to Bradford guideline for more information.



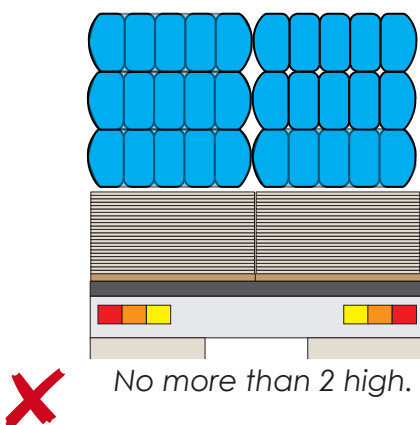
✓ Unitised pack



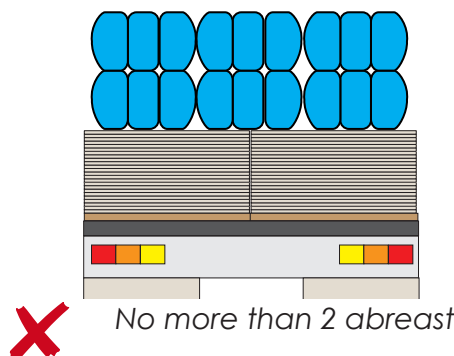
Insulation packs can be stacked on top of sheet or other stable packs



Insulation packs must not be loaded on palletised compound



No more than 2 high.



No more than 2 abreast

⚠ A lashing is a standard lashing with 300 kg pretension, unless specified otherwise.

Table 3 : Unblocked Configuration

Refer to the following table for number of lashings required when the load cannot be blocked using headboard or cross-over lashings.

Stack Mass restrained 	Lashings per stack two Abreast loads 		Lashings per stack single file loads 					
	(81 - 90°)		(61-80°)		(46-60°)		(30-45°)	
	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet
0 - 2,000 kg	4	2	4	3	5	3	7	4
2,001 - 4,000 kg	8	4	8	5	10	6	N/A	8
4,001 - 6,000 kg	11	6	N/A	7	N/A	8		11
6001 - 8000 kg	N/A	8		9		11		N/A
8,001 - 10,000 kg		10		11		v		

Table 4: Blocked Configuration (2 Crossover Straps):

Refer to the following table for number of tie-down lashings required when using cross over straps, 2 cross over lashings are also required which is not included in the table.

Stack Mass restrained 	Lashings per stack two Abreast loads 		Lashings per stack single file loads 					
	(81 - 90°)		(61-80°)		(46-60°)		(30-45°)	
	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet
0 - 2,000 kg	2	2	2	2	2	2	2	2
2,001 - 4,000 kg	3	2	3	2	4	2	2	2
4,001 - 6,000 kg	4	3	5	3	6	4	7	4
6001 - 8000 kg	6	4	7	4	9	5	N/A	8
8,001 - 10,000 kg	9	5	11	6	N/A	7		11
10,001 - 12,000 kg	N/A	7	N/A	8	N/A	N/A	N/A	N/A
12,001 - 14,000 kg		9		10				
14,001 - 15,000kg		10		11				

Table 5: Blocked Configuration (Headboard):

Refer to the following table for number of lashings required when the load is blocked to headboard.

Stack Mass restrained 	Lashings per stack two Abreast loads 		Lashings per stack single file loads 					
	(81 - 90°)		(61-80°)		(46-60°)		(30-45°)	
	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet
0 - 2,000 kg	2	2	2	2	2	2	2	2
2,001 - 4,000 kg	2	2	2	2	3	2	4	2
4,001 - 6,000 kg	3	2	3	2	4	2	5	3
6001 - 8000 kg	4	3	4	2	5	3	7	4
8,001 - 10,000 kg	5	3	5	3	6	3	9	5
10,001 - 12,000 kg	6	3	6	3	N/A			
12,001 - 14,000 kg	7	4	7	4				
14,001-15,000kg	7	4	8	4				

Tie Down Lashing Requirements : Stacks greater than 15t mass

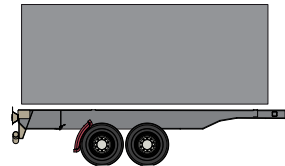
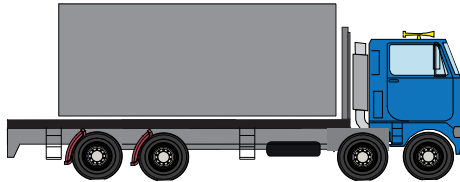
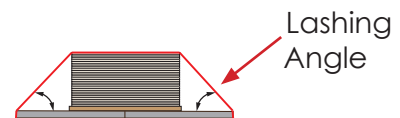


Table 6 : Unblocked Configuration



Refer to the following table for number of lashings required when the load cannot be blocked using headboard or cross-over lashings.

Stack Mass restrained 	Lashings per stack two Abreast loads 		Lashings per stack single file loads 					
	(81 - 90°)		(61-80°)		(46-60°)		(30-45°)	
	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet
15001 - 20000 kg	N/A							

Table 7: Blocked Configuration (Crossover Straps):

Refer to the following table for required number of lashings when using cross over straps, 2 cross over lashings are also required which is not included in the table.

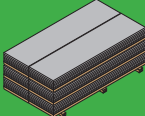






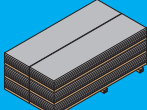






<div>Stack Mass restrained</div> <div></div>	Lashings per stack two Abreast loads		Lashings per stack single file loads					
	<div></div>		<div></div>					
	<div> (81 - 90°)</div>		<div> (61-80°)</div>		<div> (46-60°)</div>		<div> (30-45°)</div>	
	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet
15001 - 16,000 kg	N/A	11	N/A	12	N/A			
16,001 - 17,000 kg		12		13				
17,001 - 18,000 kg		13		14				
18001 - 19000 kg		14		NA				
19001 - 20000 kg		15		NA				

Table 8: Blocked Configuration (Headboard):

Refer to the following table for number of lashings required when the load is blocked to headboard.

<div>Stack Mass restrained</div> <div></div>	Lashings per stack two Abreast loads		Lashings per stack single file loads							
	<div></div>		<div></div>							
	<div> (80 - 90°)</div>		<div> (60-80°)</div>		<div> (45-60°)</div>		<div> (30-45°)</div>			
	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet	Push up ratchet / Drum winch	Pull Down Ratchet		
15001 - 16,000 kg	8	4	8	5	N/A					
16,001 - 17,000 kg	8	5	9	5						
17,001 - 18,000 kg	8	5	9	5						
18001 - 19000 kg	9	5	10	6						
19001 - 20000 kg	9	5	10	6						

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