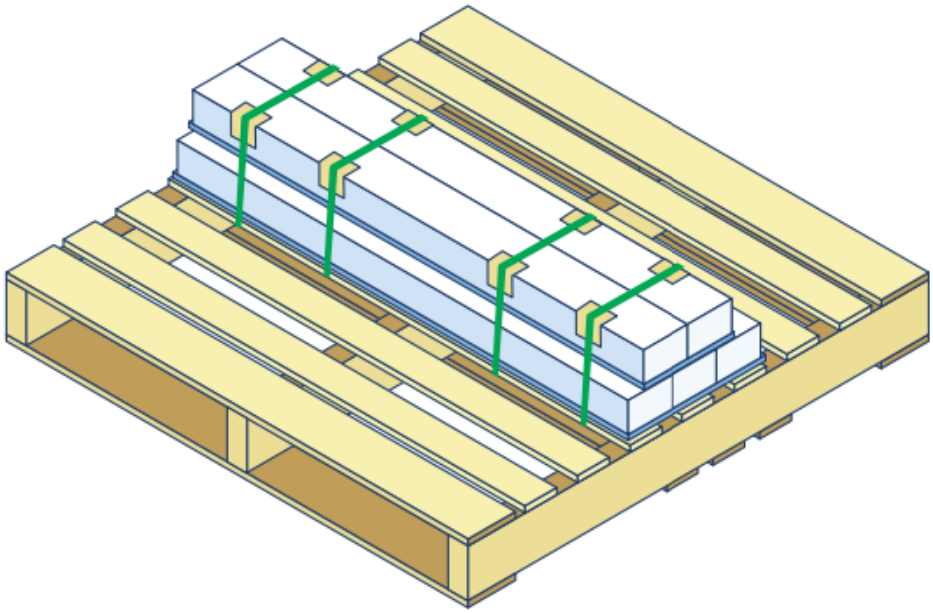
adaptalift GROUP

Appendix 5

Adaptalift Packaging Guideline



This guideline:

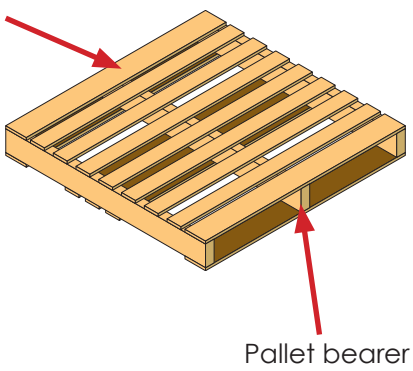
- Applies to various material handling equipment and spare parts packaged by Adaptalift and their supply chain partners for transport via road in Australia.
- Is the loader and driver guide to the certification E01711-LRC5 to be used in conjunction with a compliant load restraint system to meet the loading *Performance Standards* contained within the *Heavy Vehicle (Mass, Dimension and Loading) National Regulation* (22 February 2021).

Contents

Freight on Timber Pallets

Timber Pallets Requirements

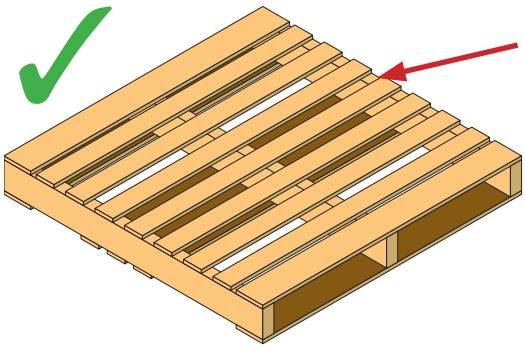
Pallets are usually manufactured in Hardwood timbers but can also be made using Pine timbers. All pallets to meet AS4068-1993, Flat pallets for materials handling.



- ✓ All pallets to meet AS4068-1993
- ✓ Do not use pallet with broken, damaged or missing boards.
- ✓ Do not use pallet with broken or missing bearers.
- ✓ Pallets constructed using batten screws are considerably stronger and more durable compared to being nail fixed. Refer to pallet supplier for loading capacities.

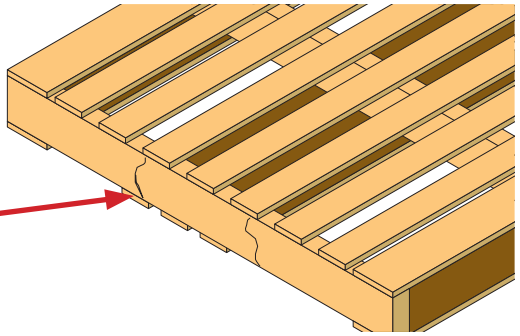
Pallet Condition - Wear and Tear

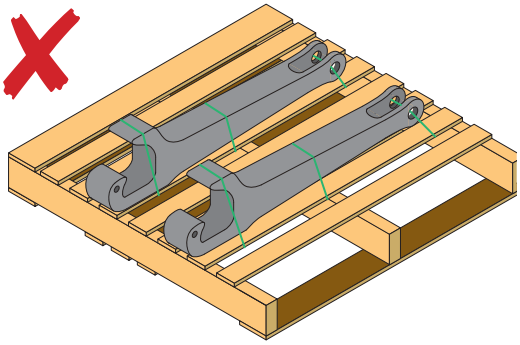
- ✓ Prior to loading pallet with freight, visually inspect and check the pallet is suitable for require freight task.
- ✓ Pallets in good or fair condition: freight mass not to exceed 2,000 kg unless pallet supplier provides confirmation for heavier loading.



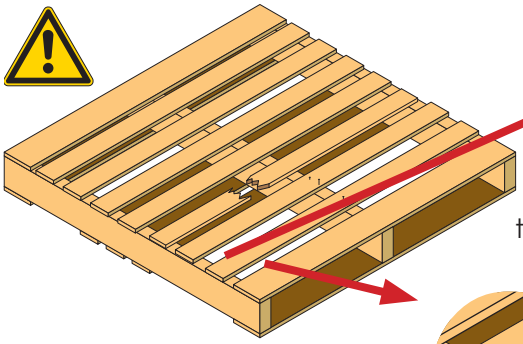
No broken or missing boards and bearers

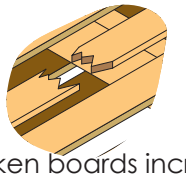
Do not use if bearer is broken



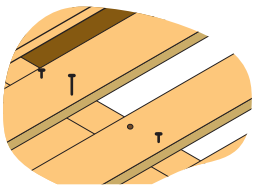


Do not use pallet with missing boards.





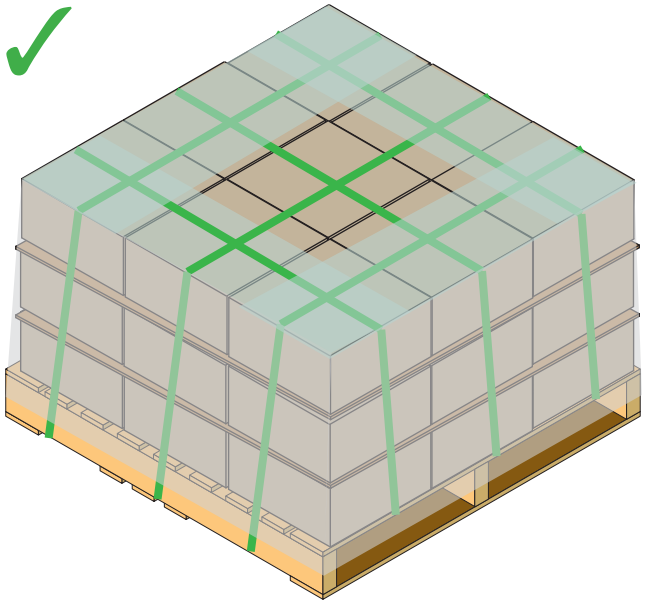
Broken boards increased the risk of freight damage.



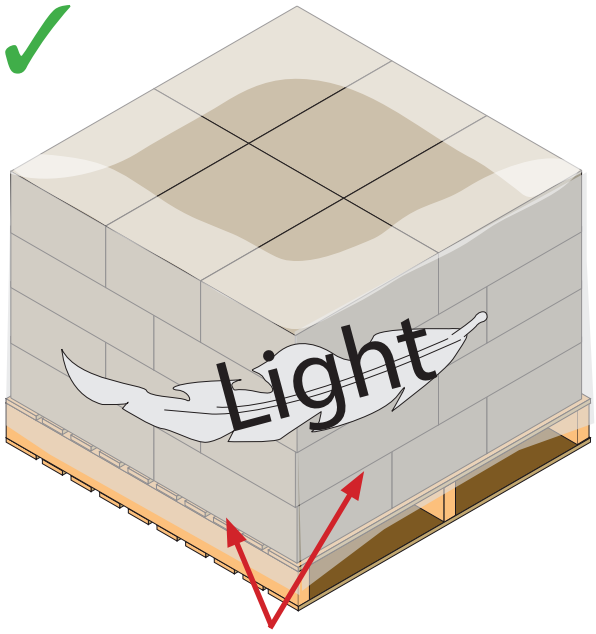
Protruding nails increased risk of freight damage.

Stretch Wrapping

- ✓ Stretch wrap can unitise medium friction light freight with a combined mass of 200kg or less, i.e. cartons or similar light packaged items.
- ✓ In all other cases stretch wrap is to be used for weather protection only.



Stretch wrap used for weather protection with PET providing the unitisation.

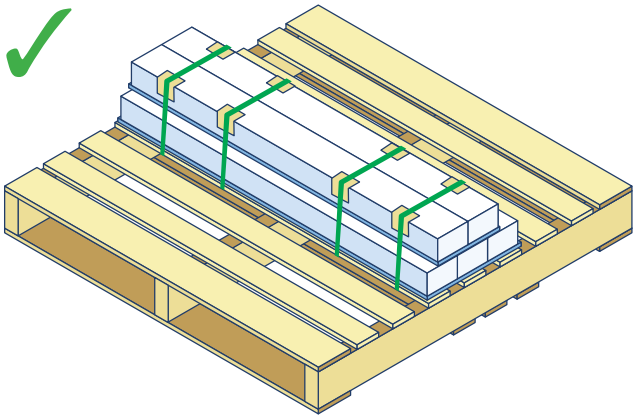


Medium friction, i.e., cardboard on timber/ steel/raw cardboard, metal on timber/raw cardboard/soft rubber, timber on timber, etc.

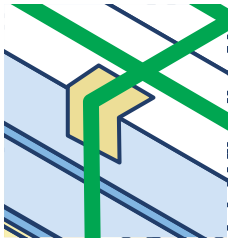
PET Strapping Requirements

- ☑ Freight greater than 200kg or not unitised by stretch wrap requires packaging strapping.
- ☑ Packaging strapping must be PET and tensioned and sealed using a battery operated tensioning device.

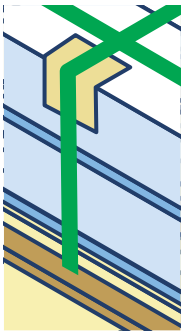
PET Tensioning Device
(battery operated)



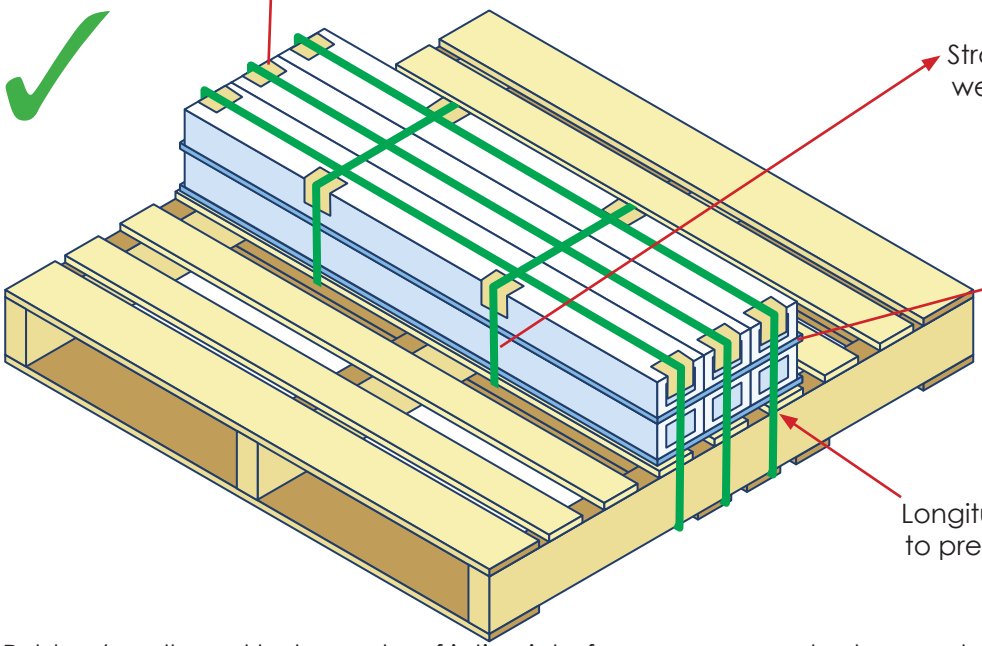
If longitudinal PET strapping is not used pyramid stacking is required.



Corner protectors used.



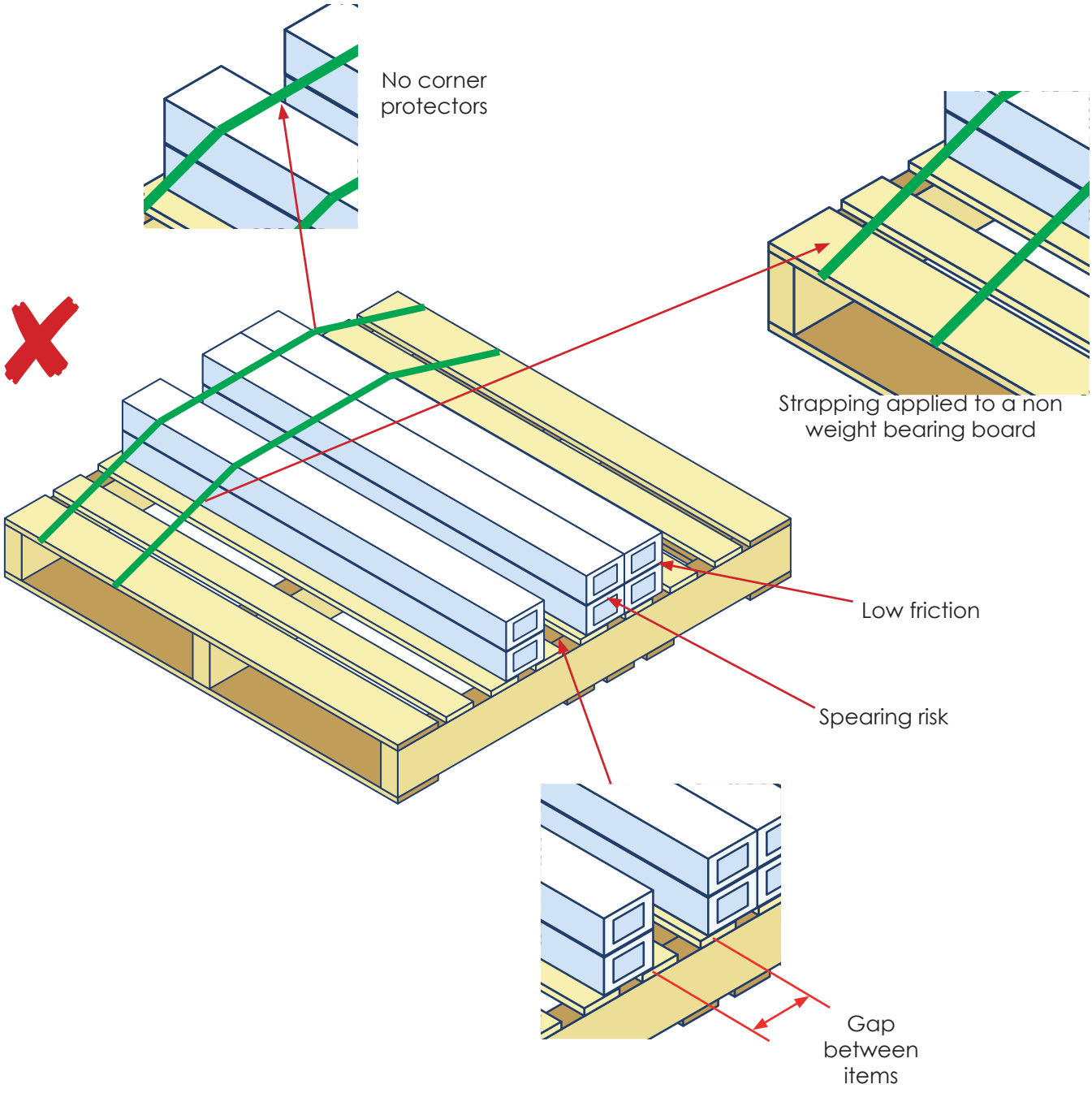
Strapping applied to a weight bearing board

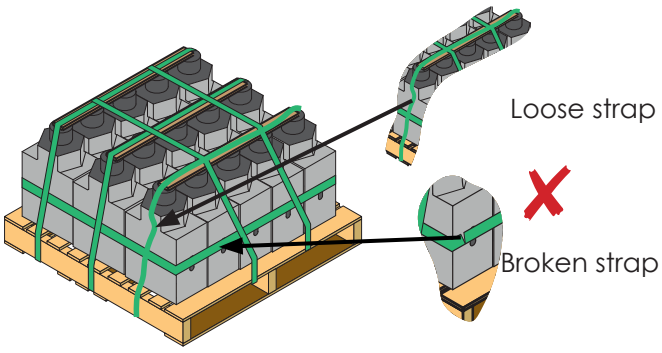


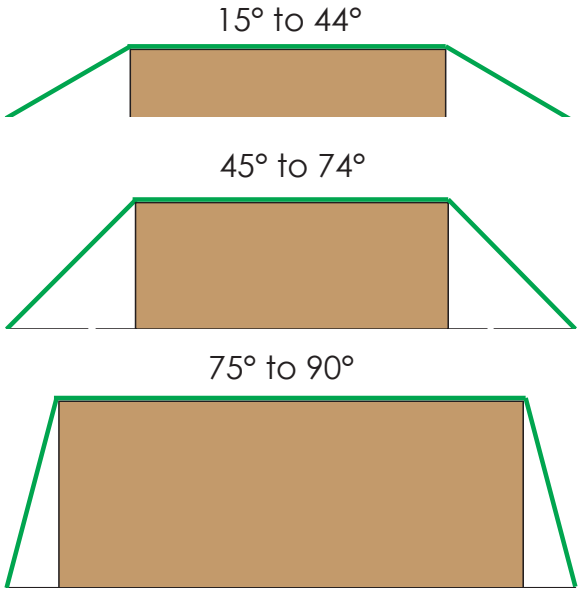
Cardboard inserts between low friction surface interfaces.

Longitudinal strapping to prevent 'spearing'.

Rubber/cardboard between low friction interfaces, corner protectors used, no gaps and strapping applied to weight bearing boards







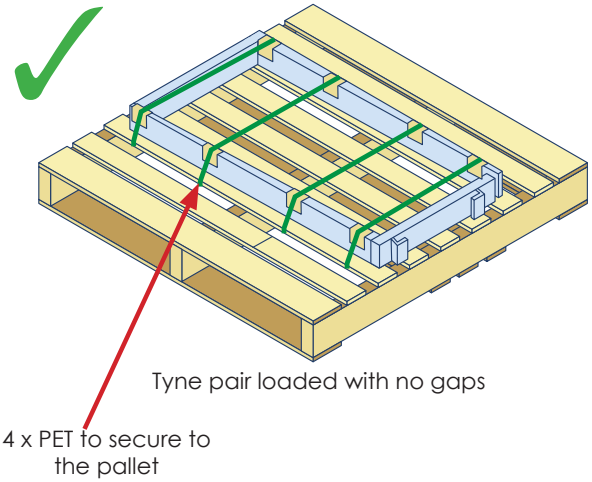
Strapping angles

PET strapping requirements for freight with medium friction:

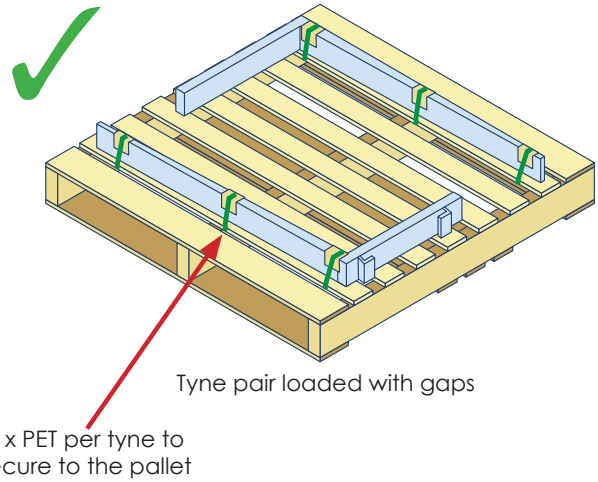
Mass (kg)	Strapping Angle	No. of PET Straps Required
0-150	15° to 44°	2
	45° to 74°	2
	75° to 90°	2
151 - 400	15° to 44°	6
	45° to 74°	2
	75° to 90°	2
401-550	15° to 44°	8
	45° to 74°	3
	75° to 90°	2
551 - 800	15° to 44°	-
	45° to 74°	4
	75° to 90°	4
801-1000	15° to 44°	-
	45° to 74°	5
	75° to 90°	4
1001 - 1600	15° to 44°	-
	45° to 74°	8
	75° to 90°	6

Forklift Tynes

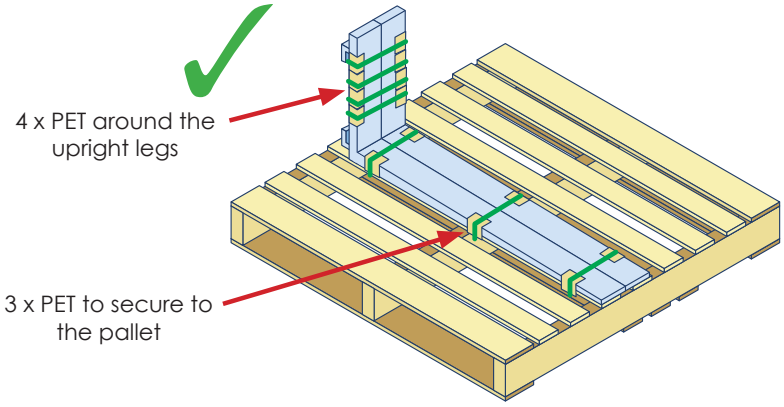
- ☑ Forklift tynes up to 300kg per tyne can be transported laying down on timber pallets and are to be secured using PET strapping, as shown below.
- ☑ Tynes up to 100kg per tyne can be transported in the upright position, as shown below.
- ☑ Protect PET straps from tyne edges using cardboard corners or similar.



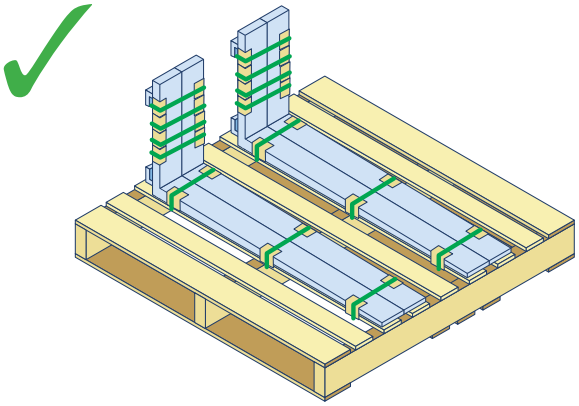
Tyne pair loaded with no gaps



Tyne pair loaded with gaps



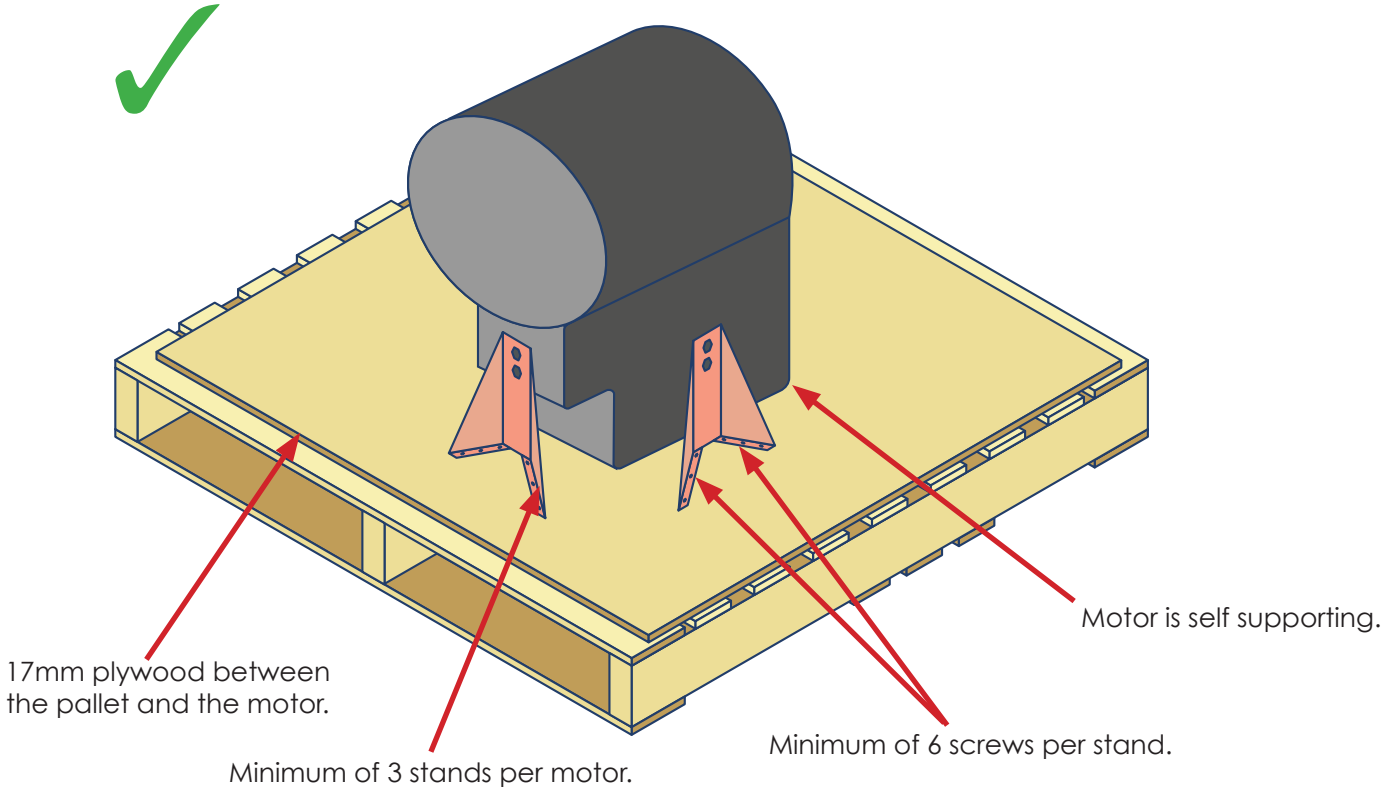
Tynes in the upright position, max 200kg for a pair

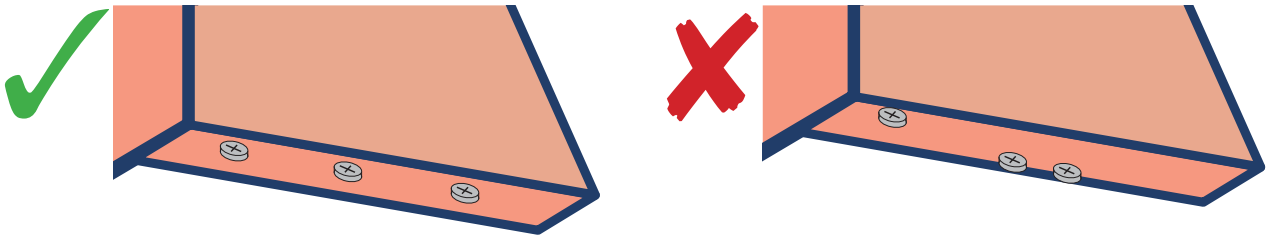


Multiple pairs of forklift tynes can be loaded on a single pallet provided the pallet capacity isn't exceeded

Drive Motors

- ✓ Motors up to 1200kg are to be secured to pallets using screws with a minimum size of M6 or 13g..
- ✓ Ensure bolts securing motors to stands and screws securing the stands to the pallet are fully tensioned.
- ✓ Screws securing the motor to the pallet should be approximately 30mm in length.
- ✓ Plywood between the pallet and motor should be approximately 17mm in thickness and in good condition.
- ✓ Centre motor on pallet.
- ✓ Maximum 1 motor per pallet.



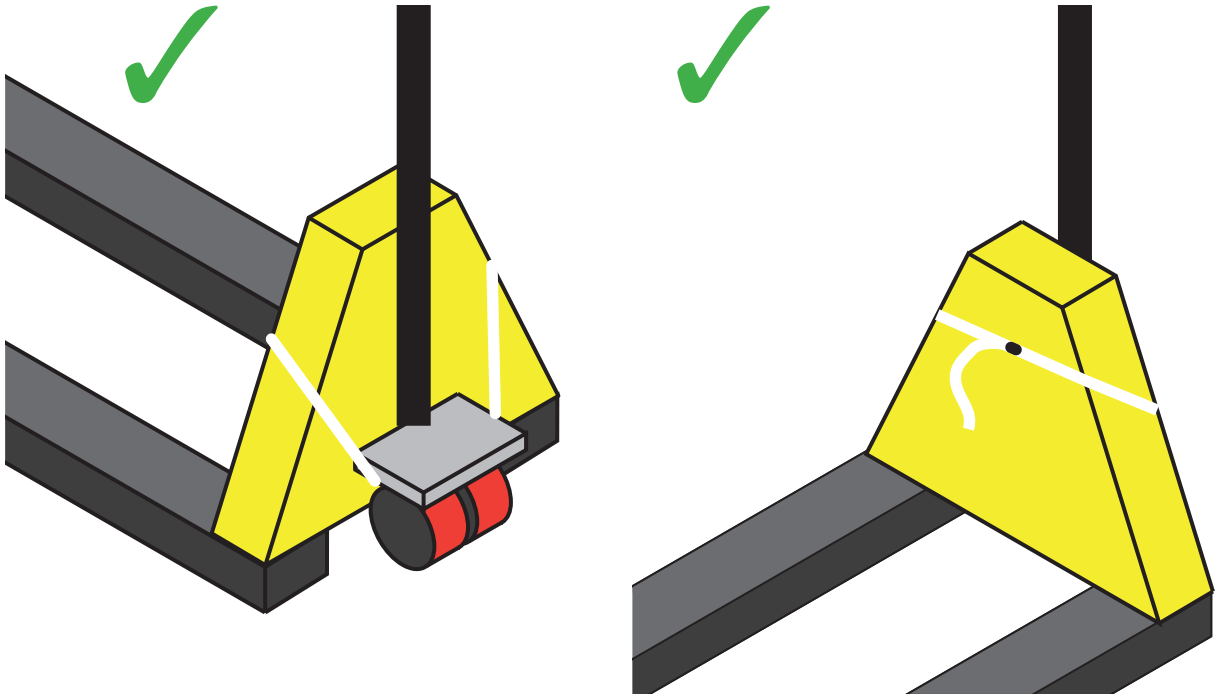


Ensure screws are evenly spaced on the stand base plate.

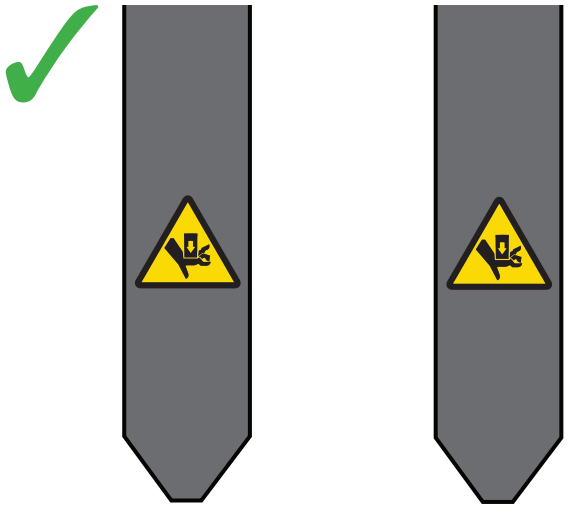
Pallet Jacks

⚠ Pallet jacks are a pinch point risk.

✓ Ensure load rollers are locked out using PET strapping prior to lifting the pallet jack.



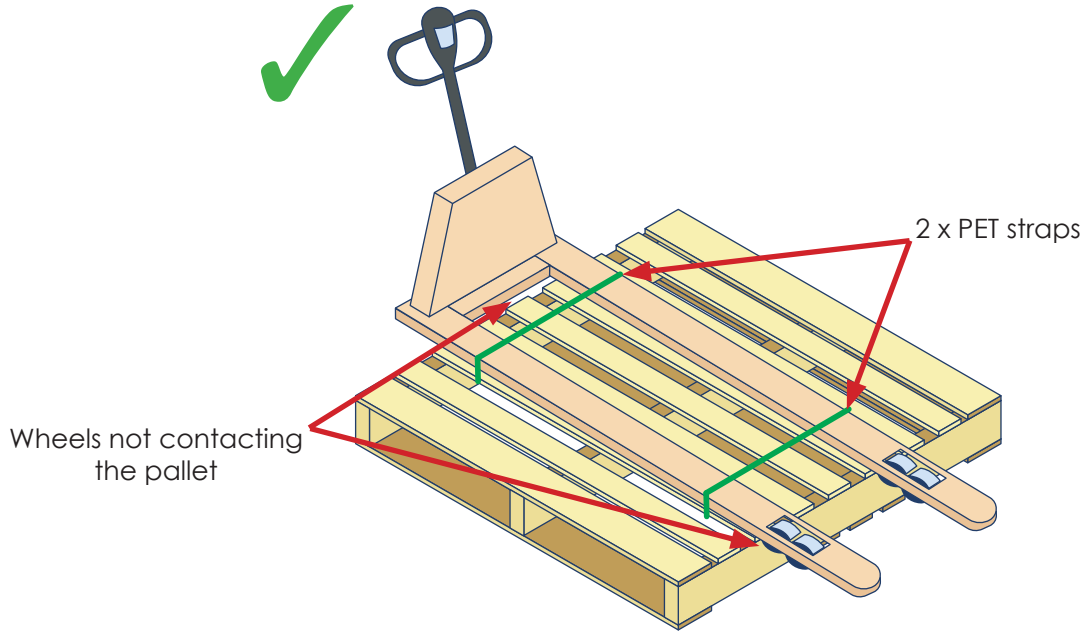
Ensure pallet jack load wheels are secured with a PET strap prior to lifting.

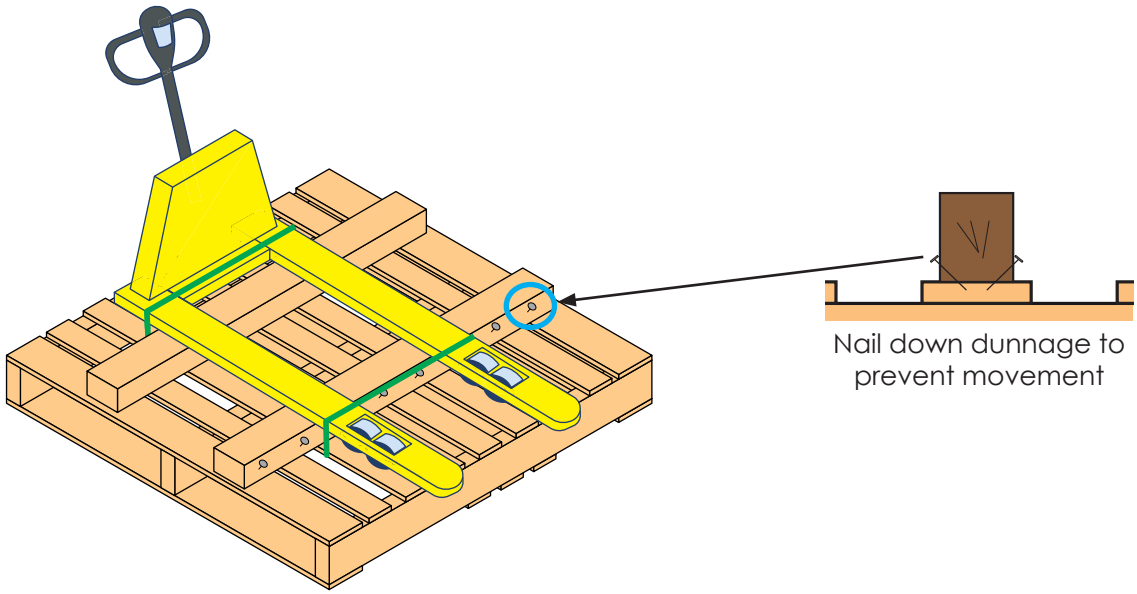


Pinch point decals to be fitted prior to transport.

Use hand protection when handling pallet jacks.

☑ Pallet jacks up to 200kg must be transported on timber pallets with their wheels lifted off the pallet.

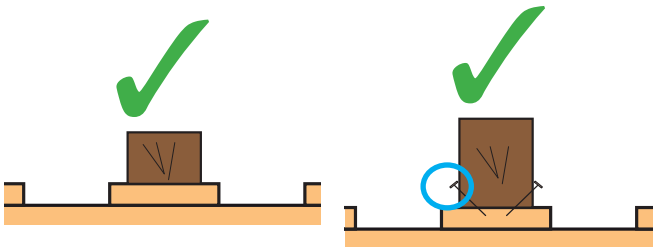




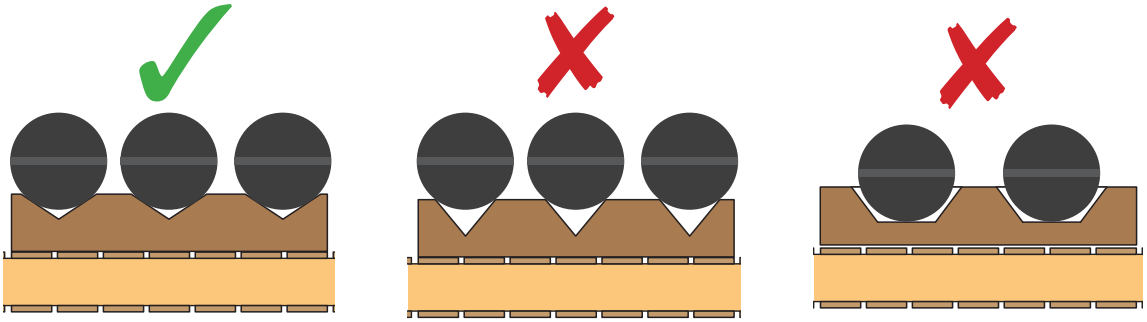
If the pallet jack's wheels do not clear the pallet use timber dunnage to raise them.

Hydraulic Cylinders

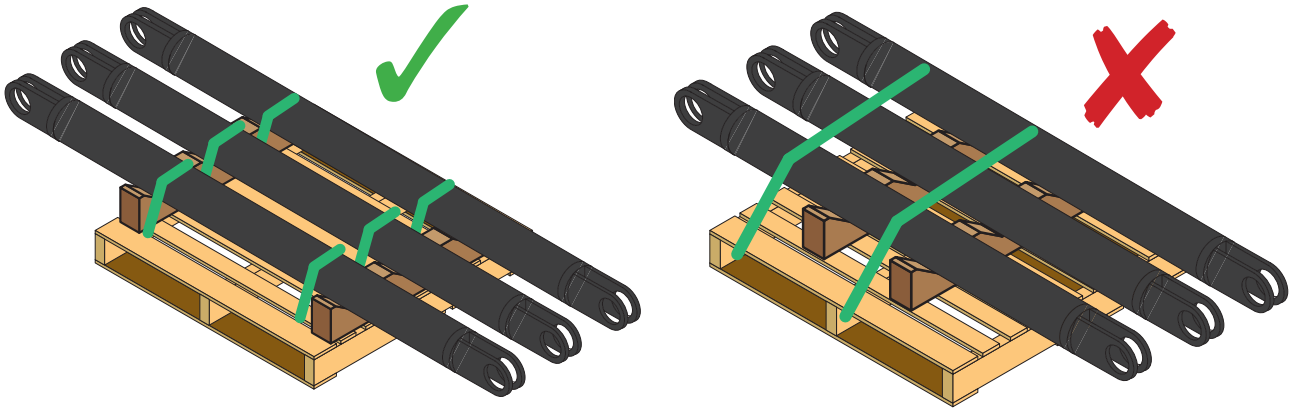
- ✓ Use cradles, chocks or scalloped timber to prevent cylinders from rolling.
- ⚠ Cylinders must be locked out for transport so they cannot extend. Cylinders which cannot be locked out must be stopped from extending by strapping or other means.



Timber chocks/scallops/cradles must either be square or secured to the pallet with nails.



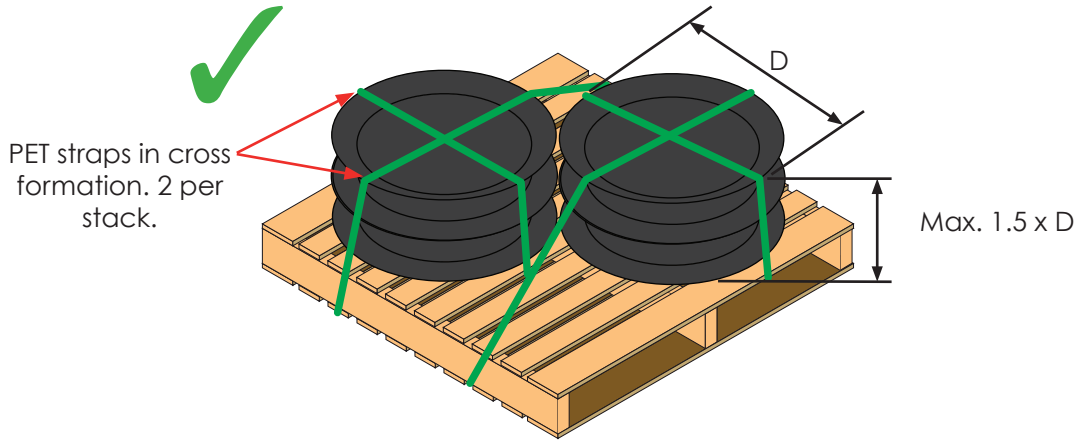
Cylinder must be supported by the chock/cradle/scalloped timber



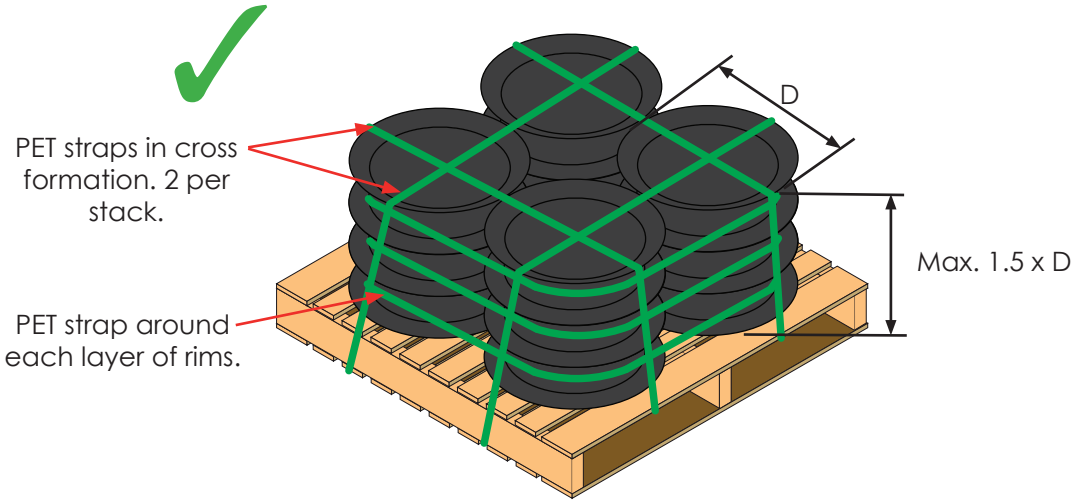
Each cylinder needs to be strapped individually. 2 PET straps are sufficient to restrain cylinders up to 550kg, provided a 75° lashing angle is achieved.

Rims

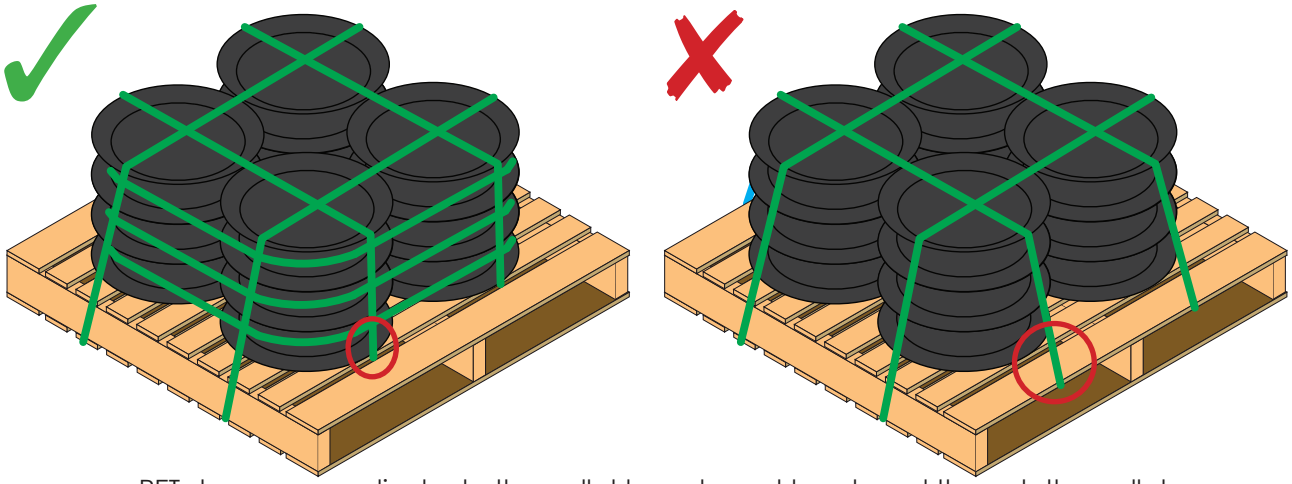
- ☑ Rim stack height on the pallet to be limited to 1.5 times the rim diameter.
- ☑ Rims to be loaded and restrained as per the below:



Rims that fit two diagonally on the footprint of the pallet.



Four rims on the footprint of the pallet.

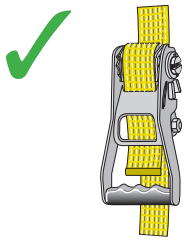


PET straps perpendicular to the pallet boards must be placed through the pallet board supported by the rims.

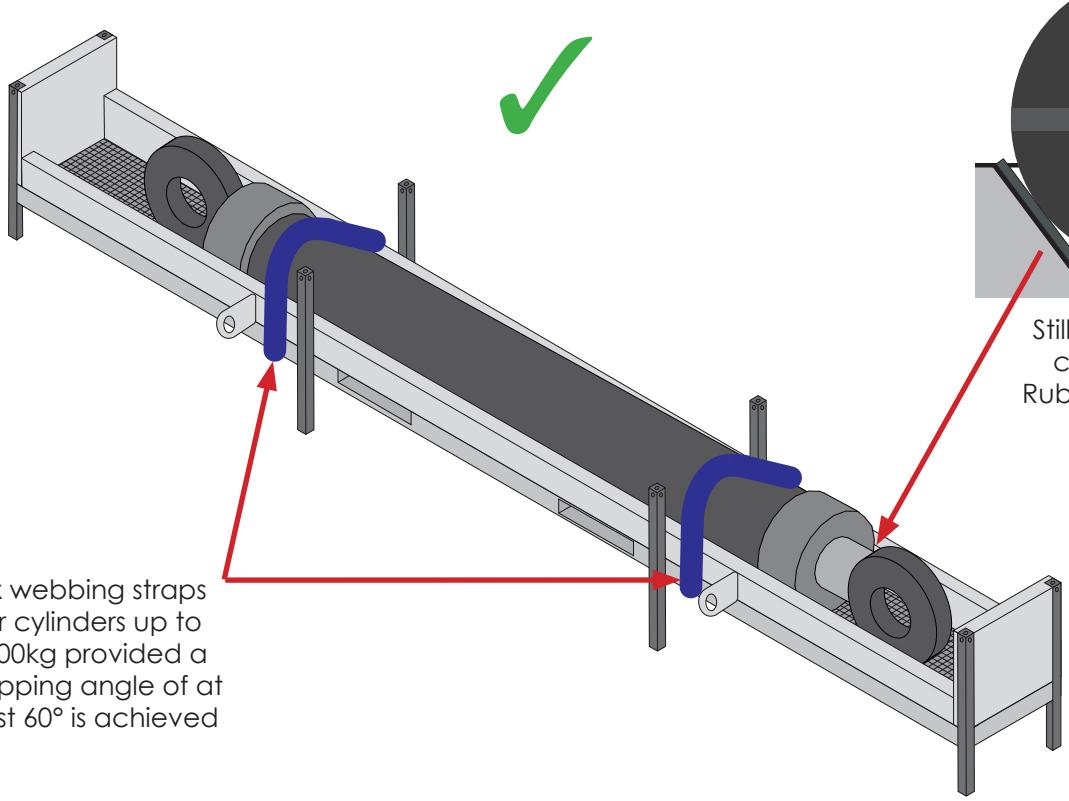
Stillages

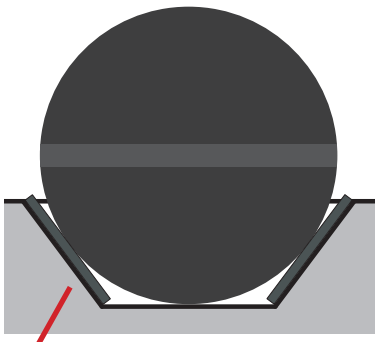
Hydraulic Cylinders

- ✓ Cylinders must be prevented from rolling in the stillage.
- ✓ Secure the cylinder to the stillage using webbing straps. Straps must be a minimum of 50mm in width and tensioned tight using a ratchet.
- ✓ Ensure there is rubber where the cylinder contacts the stillage to prevent steel on steel contact.
- ✓ Stillages must have a working load limit (WLL or SWL) which is not to be exceeded.
- ⚠ Cylinders must be locked out for transport so they cannot extend. Cylinders which cannot be locked out must be stopped from extending by strapping or other means.



50mm webbing with ratchet



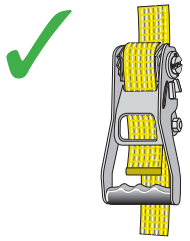


Stillage chocks prevent cylinder from rolling. Rubber prevents steel on steel contact.

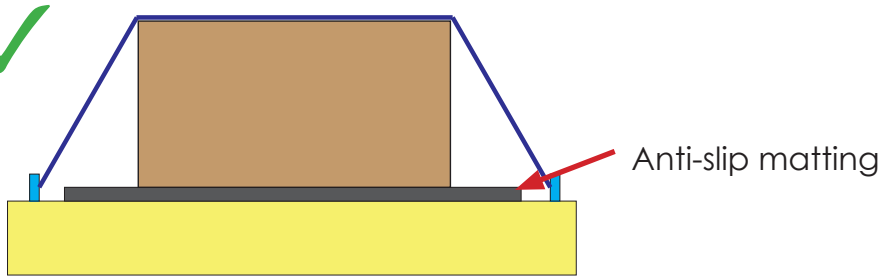
2 x webbing straps for cylinders up to 1000kg provided a strapping angle of at least 60° is achieved

Daywalk 2t Steel Pallets

- ✓ Anti-slip matting must be placed between the pallet and the freight.
- ✓ Secure the freight to the pallet using webbing straps attached to the lashing points.
- ✓ Webbing straps must be a minimum of 50mm in width and tensioned tight using a ratchet.



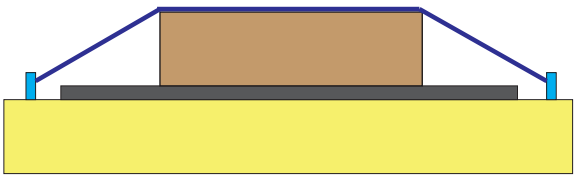
50mm webbing with ratchet



Number of straps required for a 15° to 44° lashing angle:

Mass (kg)	No. of Webbing Straps Required
0-300	2
301 - 450	3
451-600	4

15° to 44°



Number of straps required for a 45° to 59° lashing angle:

Mass (kg)	No. of Webbing Straps Required
0-800	2
801 - 1200	3
1201-1600	4

45° to 59°

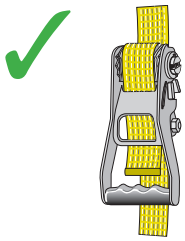
Number of straps required for a 60° to 90° lashing angle:

Mass (kg)	No. of Webbing Straps Required
0-1000	2
1001 - 1500	3
1501-2000	4

60° to 90°

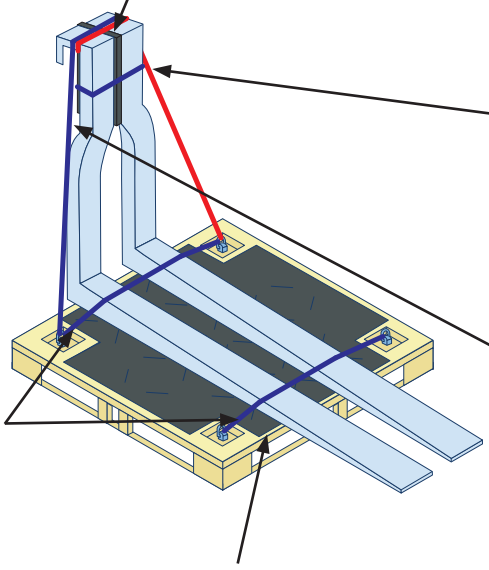
600kg Forklift Tynes with Dogleg

- ✓ Tynes with a dogleg up to 600kg per tyne must be loaded on 2t Daywalk steel pallets.
- ✓ Secure the tynes to pallet using webbing straps. Straps must be a minimum of 50mm in width and tensioned tight using a ratchet.
- ⚠ Toppling and pinch point risks must be managed during loading. Rubber to be secured to the tynes prior to loading and personnel should be clear of the fall zone.
- ⚠ Secure tynes with base lashings before applying the upper lashings.



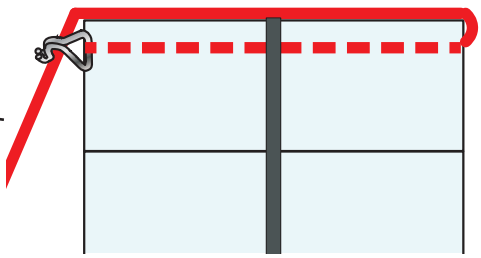
50mm webbing with ratchet

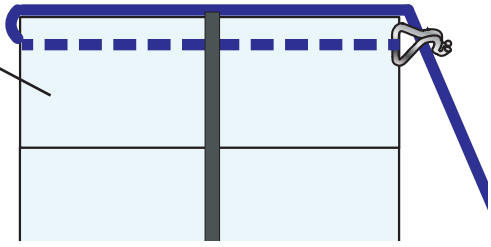
Soft rubber to be placed between the tynes.



2 straps over the top of the tynes.

Anti-slip matting must be placed between the pallet and the tynes.



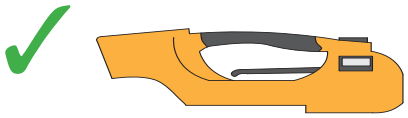


2 webbing straps in an opposed loop configuration are required. The straps must be wrapped around the tyne hooks with one end secured to the lashing point on the pallet and the other end hooked back onto the webbing strap.

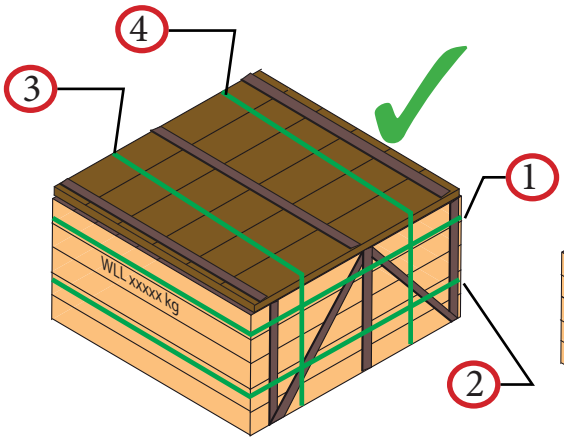
Timber Boxes

Prior to loading with freight, visually inspect and check that the box is suitable for the freight task. The box must be in good condtion and not have any damaged, broken or missing boards.

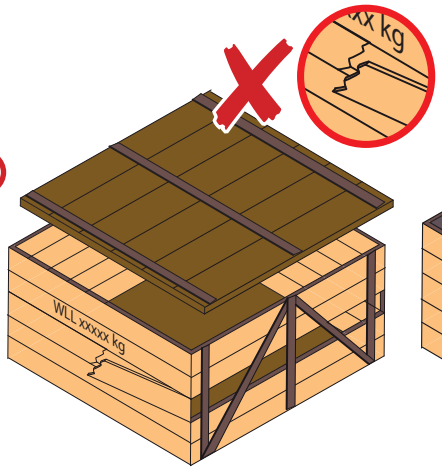
- ✓ Boxes must be made of 12mm structural plywood of grade F8 or higher.
- ✓ Timber boxes containing loads less than 200 kg do not require a rated working load limit (WLL or SWL).
- ✓ Timber boxes must be secured with four PET straps. Two vertical straps and two horizontal straps are required. Minimum strap size of 19mm.
- ✓ Packaging strapping must be PET and tensioned using a battery operated tensioning device.
- ✓ A lid must be used when transporting loose items.
- ✓ Size box to minimise gaps and free space within the box.
- ✓ Block gaps between the box and the containing walls.
- ✓ Load boxes evenly to distribute the load.
- ✗ Don't use damaged or broken boxes in poor condition.



PET Tensioning Device (battery operated)

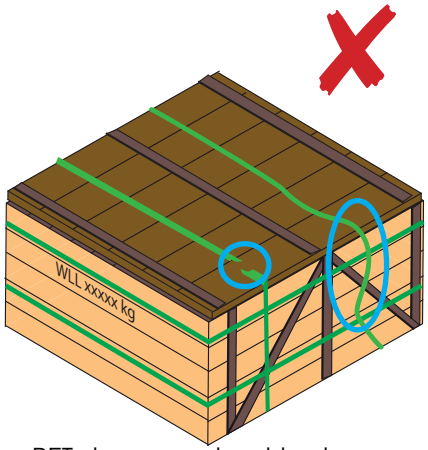


Box in good condition. Minimum 4 straps per box.

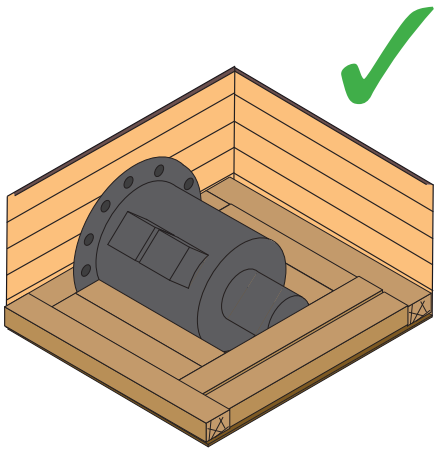


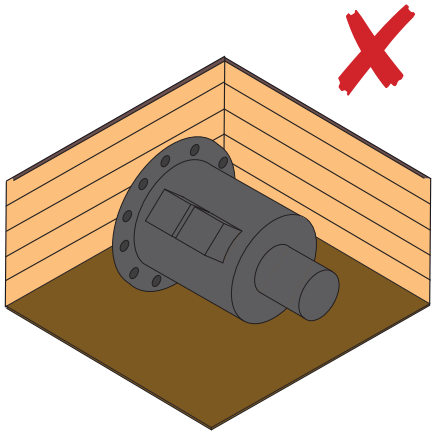
Box damaged/poor condition.

Box is overfilled and without lid and PET strapping.

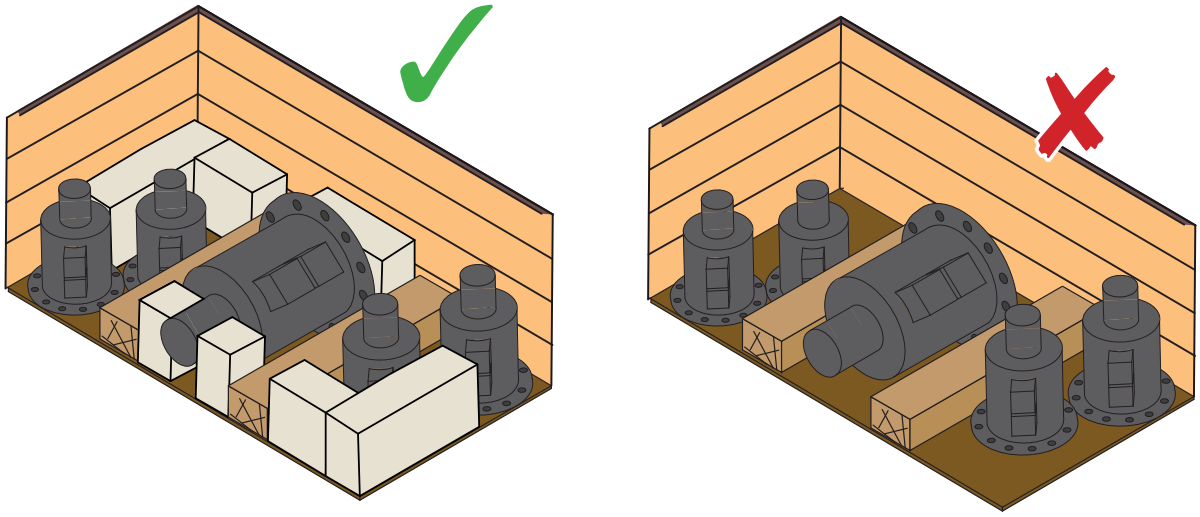


PET straps must not be loose or broken.

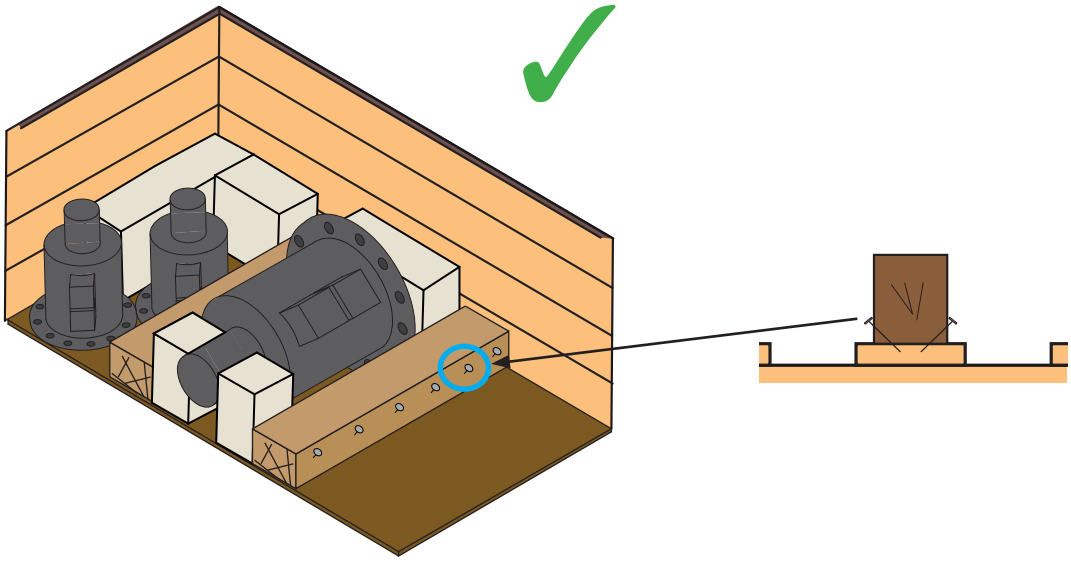




Gaps between the freight can be blocked using timber or polystyrene.



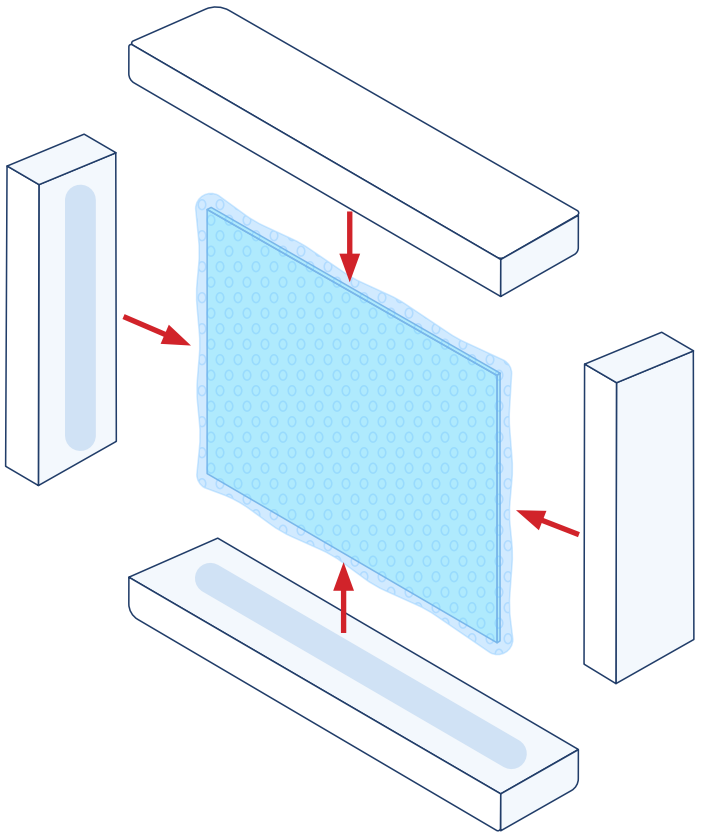
Gaps within the load must not exceed 30mm.



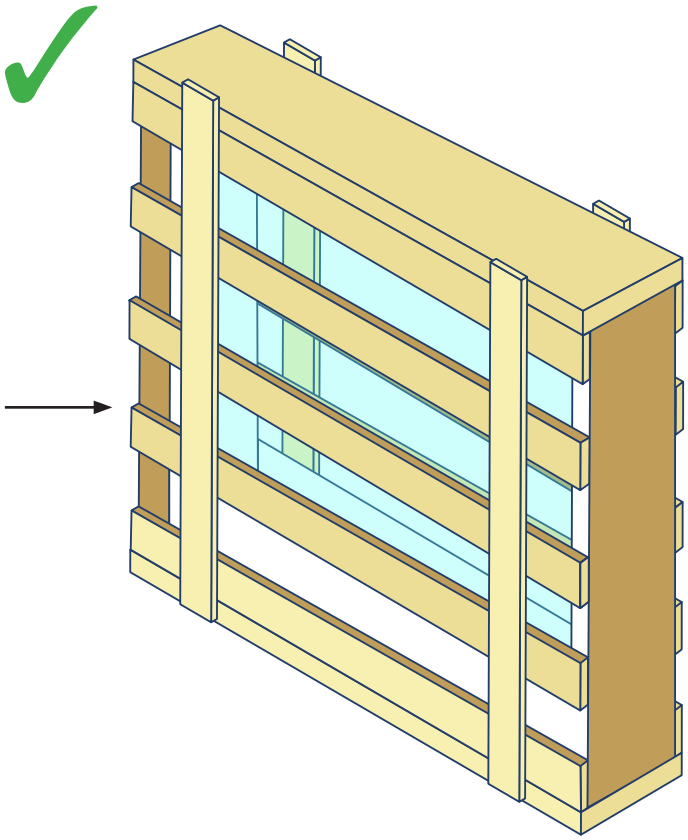
Nail down dunnage to prevent movement

Wind Shields

☑ Wind shields up to 100kg must be transported in timber boxes with polystyrene and/or bubble wrap.



Protect windshields using polystyrene and/or bubble wrap



Place protected windshields inside the crate, ensure there are no gaps.