

# Work Instruction

## Load Restraint Guideline – Palletised Freight

Document Number – ASM-WI-SUP-MAN-05

This document applies to the following site(s):

All Sites	<input checked="" type="checkbox"/>
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### Table of Contents

1.0	Purpose/Scope .....	1
2.0	Actions .....	2
2.1	Key Elements .....	2
2.2	Friction & Packaging.....	2
2.3	Pallet Types.....	3
2.3.1	Timber Pallets Recommended .....	3
2.3.2	Pallet Condition – Wear & Tear.....	4
2.4	Dunnage Requirements and Alignment .....	5
2.5	Load Configuration .....	6
2.5.1	Blocking .....	6
2.5.2	Restraint of Fragile Items .....	7
2.5.3	Over sized Fragile length items.....	7
2.6	Restraining Loads – Webbing Tie-Downs .....	8
2.6.1	Tie-down 50mm Webbing Restraint.....	8
3.0	Review, Consultation and Communication .....	9
4.0	References.....	9
5.0	Definitions .....	9
6.0	Revision History .....	9

### 1.0 Purpose/Scope

This work instruction covers:

- Transportation of palletised freight, up to a maximum 5000kg, via road.
- Loader and driver guide to the certification of E01681-LRC1 to meet the loading performance standards listed in Schedule 7 of the Heavy Vehicle (Mass, Dimension and Loading) National Regulation (22 February 2021).

Out of scope of this work instruction is:

- Freight Packaging Guideline E01681-LRC2
- Stanwell Packaging and Transport Guidelines

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Page: 1 of 9

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## 2.0 Actions

### 2.1 Key Elements



Packaging must be to Stanwell Power standards.



Use minimum 50 mm webbing straps, fully tensioned with standard ratchets.



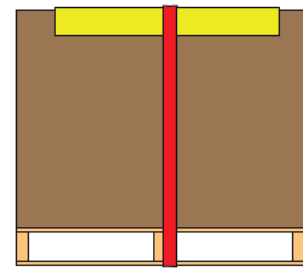
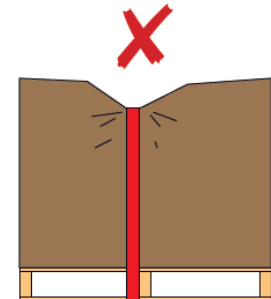
Use rigid corner protectors to spread the load and avoid crushing.



Equipment must be in good working order.



Softwood timber is single use only.



### 2.2 Friction & Packaging



Must have GOOD FRICTION, typical of wooden pallets or dunnage on a steel deck, or better:

- Good friction - timber on steel.
- High friction - anti-slip load matting



Poor friction between pallet and vehicle is unacceptable for tie-downs e.g.:

- Steel on steel.
- Plastic on steel.



Avoid conveyor belt for friction matting as it is slippery when wet.



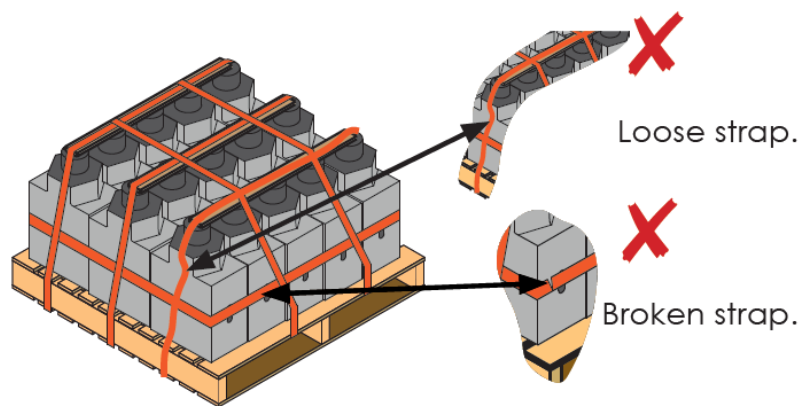
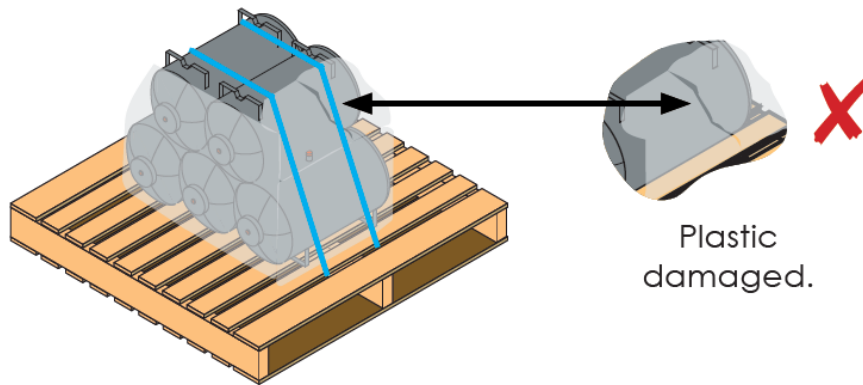
Use friction inserts under steel or plastic load bases.



Assess fragility of the load and use rigid corner protectors to spread the load if it is likely to crush the freight.



Check Table 2 to determine how many lashings are required. Minimum of 2 lashings. items longer than 1.2m.

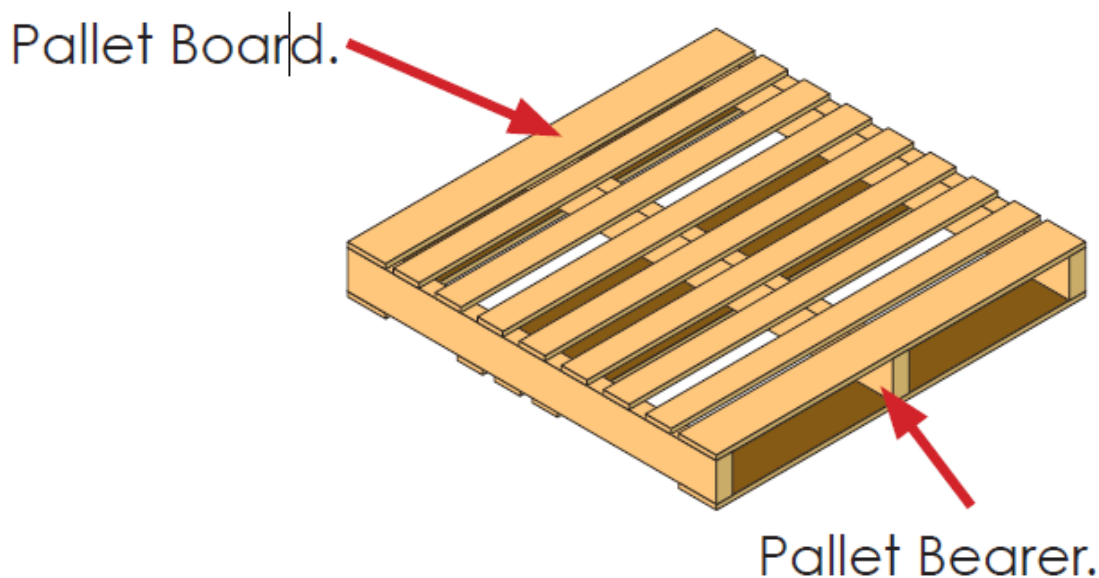


## 2.3 Pallet Types

Australia standard pallets measure approximately 1165mm x 1165mm which can be constructed using timber, steel or plastic.

### 2.3.1 Timber Pallets Recommended

- ✓ All Pallets to meet AS4068-1993
- ✓ Hardwood timber pallets only.
- ✓ 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.



### 2.3.2 Pallet Condition – Wear & Tear



Softwood pallets have a high degree of 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 condtion : freight mass not to exceed 2,000kg unless pallet supplier provides confirmation for heavier loading



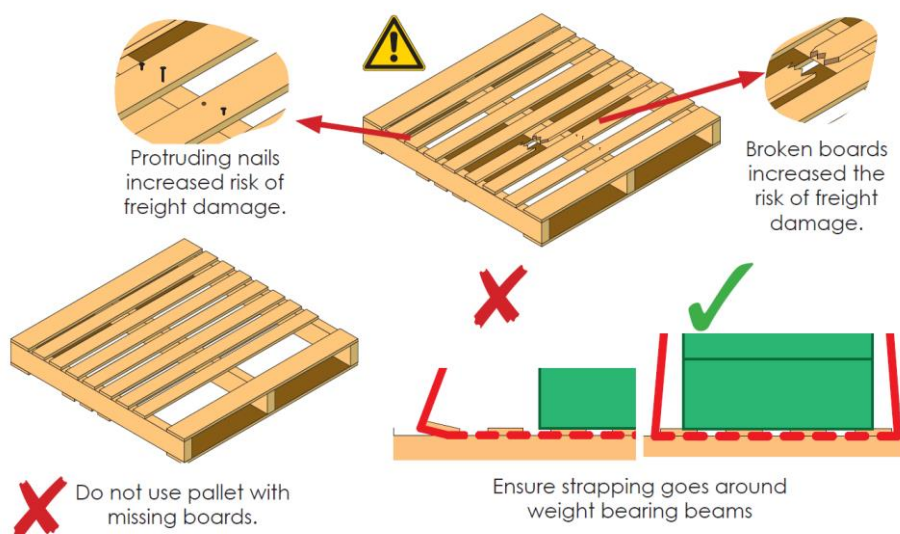
Softwood pallets must be rated to the load.



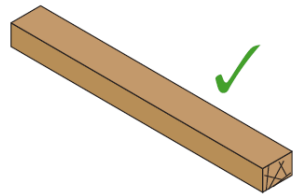
Do not use if broken or missing boards or bearers.



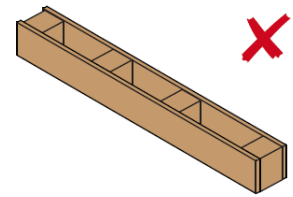
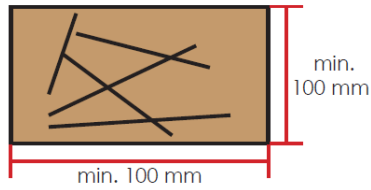
Do not use if nails are protruding



## 2.4 Dunnage Requirements and Alignment



Solid Timber dunnage with a rough sawn surface is acceptable



Do not use fabricated timber dunnage

### Dunnage Configuration



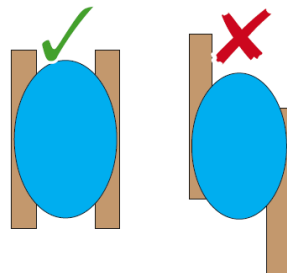
Do not use Rectangular Dunnage on short edge

Do not stack dunnage

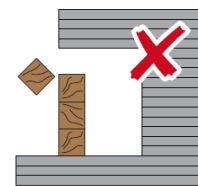
### Dunnage Condition



Dunnage must be in good condition with no broken corners or cracks



Align item evenly across dunnage



Do not stack dunnage to fill larger gaps



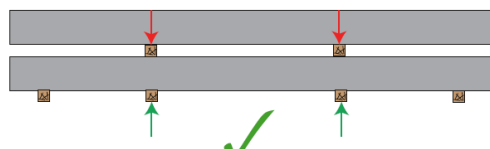
Ensure dunnage is secure with lashings aligned with the dunnage



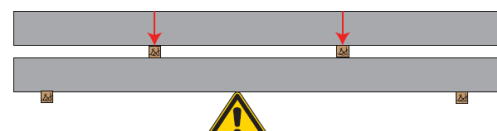
Maximum overhang must be less than 10% of the smallest length panel.



Align dunnage within stacks where practical.



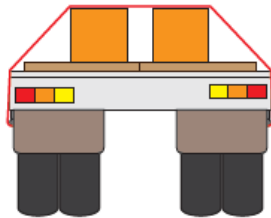
Additional dunnage can be positioned vertically to reduce pack bending from weight above



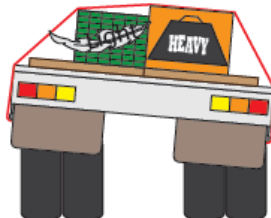
Misaligned dunnage can result in bending/flexing of longer packs

## 2.5 Load Configuration

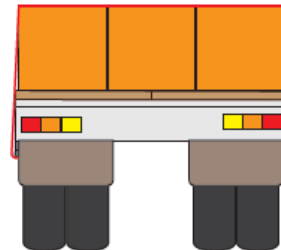
**X** No gaps.



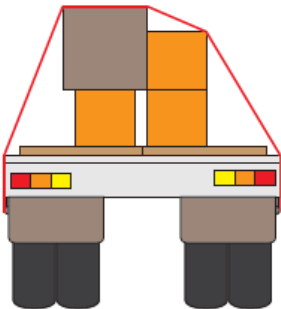
**X** No imbalanced loads.



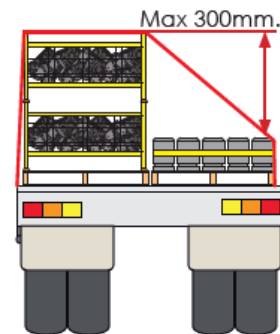
**X** Maximum of two items across deck.



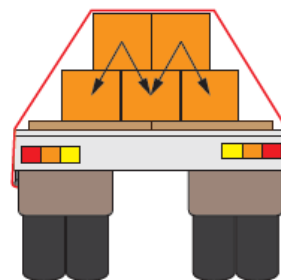
**X** Load is imbalanced, grey box should be positioned at base.



**X** Height difference no greater than 300mm.

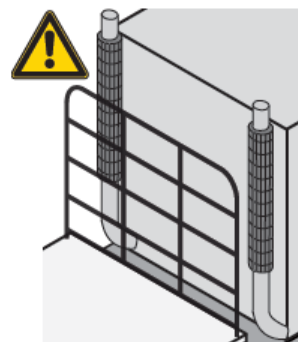
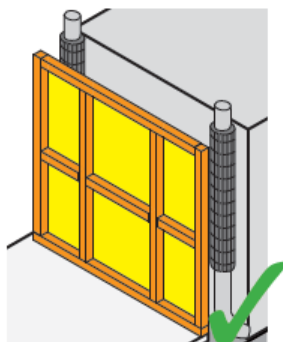


**✓** Pyramid load to clamp all freight.

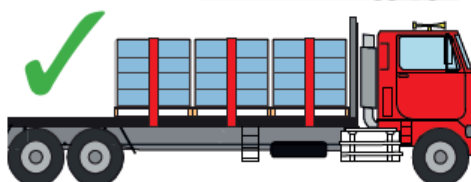


### 2.5.1 Blocking

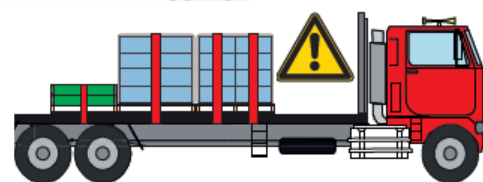
**✓** Headboards must be rated to 30% of the payload to be used for blocking.



**⚠** Pipe gates are not suitable for blocking, restrain as per unblocked loads.

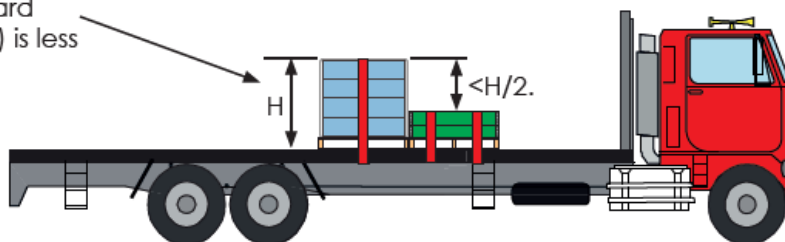


Blocked forward requires less lashings.



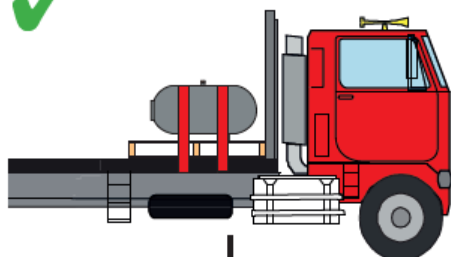
Unblocked forward requires additional lashings.

Rear pallet is considered unblocked if forward pallet (blocking pallet) is less than  $H/2$ .

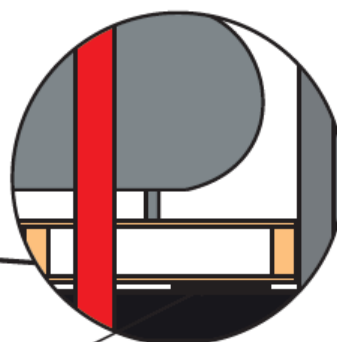
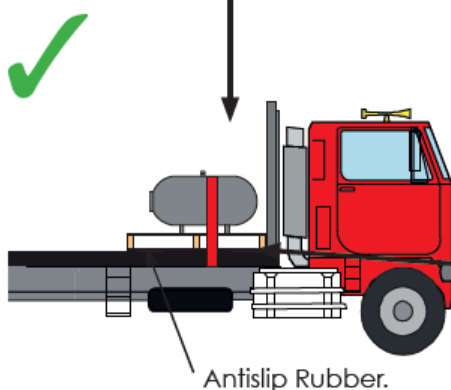
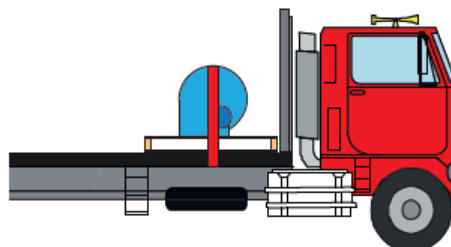


### 2.5.2 Restraint of Fragile Items

✓ Fragile items block to the front. Tanks with valves.

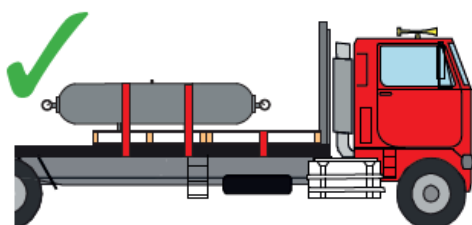


✓ Fragile items block to the front.

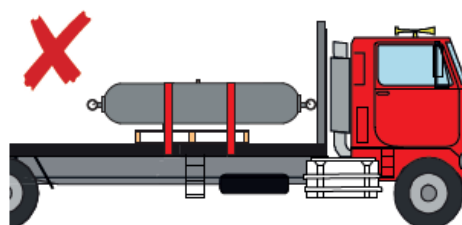


Place on Antislip rubber to reduce lashings, friction coefficient of 0.6.

### 2.5.3 Over sized Fragile length items



Blocked with pallets.

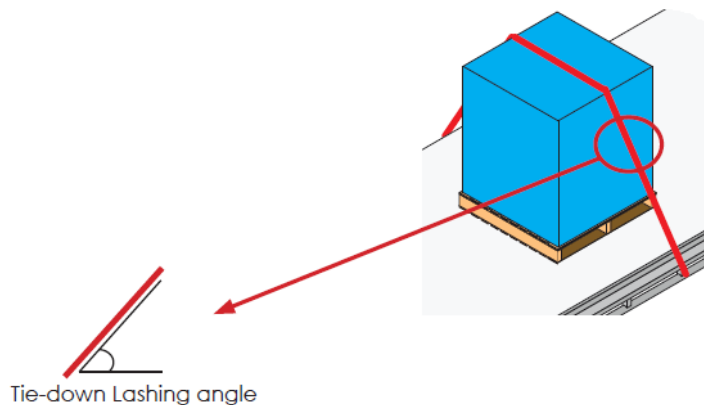


Do not block against fragile surface.

## 2.6 Restraining Loads – Webbing Tie-Downs

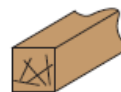
Lashing requirements for clogged and unblocked palletised freight.



- ✓ Use friction inserts under steel or plastic load bases
- ✓ Minimum number of lashing per table below.
- ✓ If the load crushes at full tension then insert rigid corner protectors to spread the load.



### 2.6.1 Tie-down 50mm Webbing Restraint



#### a) Freight item placed on plywood/timber surface



Payload (kg)	Number of Lashings Required Blocked				Number of Lashings Required Unblocked			
	(Tie down angle) 				(Tie down angle) 			
	(75 - 90°)	(60 - 74°)	(45 - 59°)	(30 - 44°)	(75 - 90°)	(60 - 74°)	(45 - 59°)	(30 - 44°)
0 - 1000	1	1	1	1	2	2	3	4
1000 - 1500	1	1	1	2	3	3	4	5
1500 - 2000	1	1	2	2	4	4	5	7
2000 - 2500	2	2	2	3	5	5	6	9
2500 - 5000	3	3	4	5	9	10	N/A	N/A

#### b) Freight item placed on anti-slip rubber surface - Not Conveyor Belt



Payload (kg)	Number of Lashings Required Blocked				Number of Lashings Required Unblocked			
	(Tie down angle) 				(Tie down angle) 			
	(75 - 90°)	(60 - 74°)	(45 - 59°)	(30 - 44°)	(75 - 90°)	(60 - 74°)	(45 - 59°)	(30 - 44°)
0 - 1000	1	1	1	1	2	2	3	4
1000 - 1500	1	1	1	2	3	3	4	5
1500 - 2000	1	1	2	2	4	4	5	7
2000 - 2500	2	2	2	3	5	5	6	9
2500 - 5000	3	3	4	5	9	10	N/A	N/A



### 3.0 Review, Consultation and Communication

**Review:**

This Document is required to be reviewed, as a minimum, every 3 year/s or if Laws or regulations change. The Group Manager Supply Chain Manager is responsible for reviewing the document.

**Consultation:**

Consultation occurs with stakeholders throughout the organisation, as required. The Group Supply Chain Team will implement this guideline, along with any associated processes, work instructions and training guides to the relevant stakeholders.

**Communication/Requirements after Update:**

This guideline will be communicated by email, formally led by the Group Supply Chain Team and also available on the Stanwell Procurement and Supply Intranet page.

### 4.0 References

- Environmental Protection Act 1994 & Regulation 2019
- Health & Safety Act 2011 & Regulation 2011
- Freight Packaging Guideline E01681-LRC2
- Section 7 of Heavy Vehicle National Regulation E01681-LRC1
- AS4068-1993
- ASM-STD-SUP-115 Stanwell Packaging and Transport Guideline

### 5.0 Definitions

Nil

### 6.0 Revision History

Rev. No.	Rev. Date	Revision Description	Author	Endorse/Check	Approved By
0	29.12.2021	Creation of guideline	Engistics (External Provider) & Susan Innes	Kam Mudaliar	Stephanie Duncan