Load Restraint

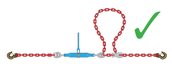
This Poster Applies To:

- Road transport to the performance standards of the NTC Load Restraint Guide (2nd Ed.).
- Light and Heavy Vehicles restrained by Tie-Down and Direct Restraint methods

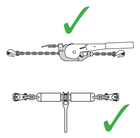
Load Restraint Equipment:

- ✓ 8mm & 10mm transport chain,conforming to AS/NZ 4344 tensioned to a minimum pre-tension of 750kg.f.
- ✓ 50mm webbing, conforming to AS/NZS4380 tensioned to a minimum pre-tension of 300kg.f.
- ✓ Equipment must be in good working order. Inspect the chains for wear.
- ✓ All chain fittings must be in good condition and have at least the same rated capacity as the chains being used.
- ✘ Chains with excessively damaged, worn or bend links must not be used.
- ✘ Over center lever load binders (dogs) are a high risk and are not to be used.
- ✓ Ausbinders, Turnbuckle ratchet, Web-dog binders or similar are a suitable alternative to dogs provided a minimum pre-tension of 750kg.f can be achieved.

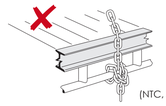
Chains with elongated, worn or bent links must not be used for restraint.



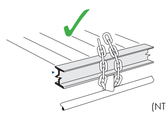
All fittings at least the same rating as the chain



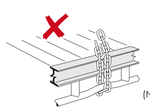
No over-center lever load binders (Dogs)



(NTC, 2004)



(NTC, 2004)



(NTC, 2004)

Mobile Plant:

Applies to:

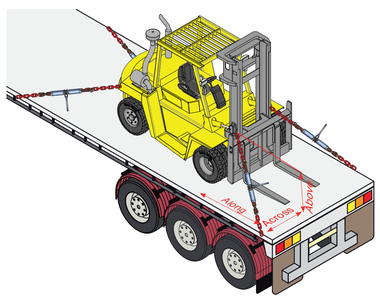
- **Fork Lifts, Front End Loaders, Semi Trailers**

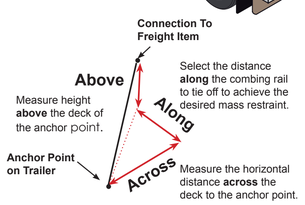
- ✘ Do not mix lashing types i.e. chain and webbing.
- ✓ Four lashings will be required, two angled forwards and two backwards.
- ✓ All lashings to be similar geometry.
- ✓ Apply any brakes provided
- ⚠ Beware of shock forces generated through bouncing. Aim for lower restraint angles of approximately 25°.
- ✘ Over-centre lever load binders are a high risk and are not permitted.
- ✘ No Webbing Straps to be used for direct restraint
- ✓ Webbing ok for accessories (e.g. buckets)
- ✓ Chains for mobile plant restraint
- ✓ All on board equipment must be secured (e.g. booms and buckets)
- ✓ All hydraulic and mechanical equipment must be isolated to prevent inadvertent movement in transit.

Fork Lifts:

Table 1. Direct Restraint Wheeled

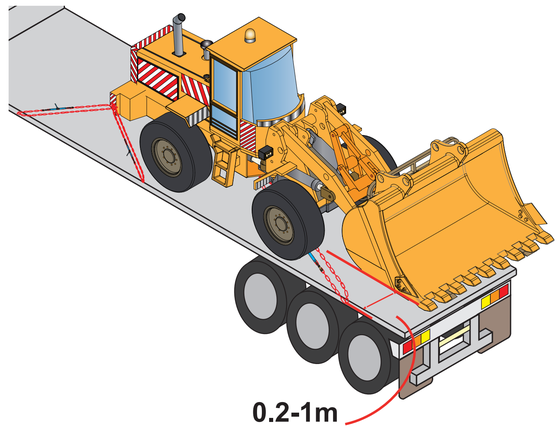
		Anchor Point Across Deck (m)	Location Along Combing Rail for Lashing (m)	Mass per 4 x 8mm Chains
Height of an-		0 to 0.5	0.5 to 1	3000 kg
			1 to 1.5	2200 kg
		0.5 to 1	0.5 to 1	2500 kg
			1 to 1.5	4300 kg
		1 to 1.5	0.5 to 1	2000 kg
			1 to 1.5	3600 kg
Height of an-		0 to 0.5	0.5 to 1	1700 kg
			1 to 0.5	3200 kg
		0.5 to 1	0.5 to 1	1600 kg
			1 to 1.5	3000 kg
		1 to 1.5	0.5 to 1	1400 kg
			1 to 1.5	2700 kg



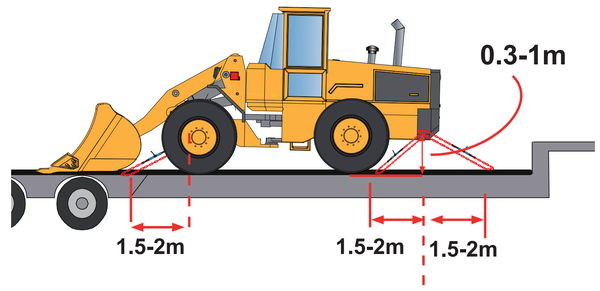


Front End Loaders

4.5 T- 17.5T
Unblocked - 6 x 8mm Chain Combination



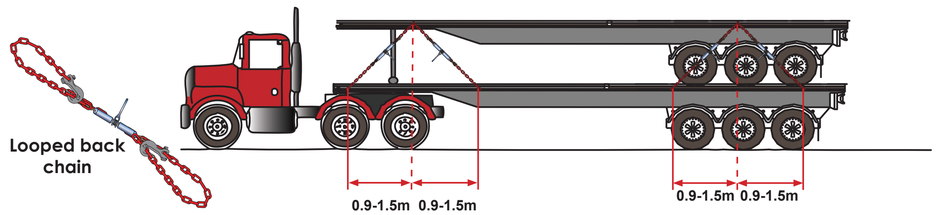
17.5 - 26T
Unblocked - 6 x 10mm Chain Combination



Semi Trailers

TARE: 9 Tonnes

Unblocked - 8 x 8mm Chain Combination



Tie Down:

Table 2. Tie-down 50mm Webbing Restraint

a) Freight on Rough sawn timber surface

Payload (kg)	Number of Lashings Require **BLOCKED** (Lashing angle)			Payload (kg)	Number of Lashings Required **NOT BLOCKED** (Lashing angle)		
	(80 - 90°)	(60 - 80°)	(30 - 60°)		(80 - 90°)	(60 - 80°)	(30 - 60°)
0 - 1200	1	1	1	0 - 500	1	1	2
1200 - 2300	1	2	2	500 - 1000	2	2	4
2300 - 4600	2	3	4	1000 - 1500	3	3	5
4600 - 6900	3	4	6	1500 - 2300	4	5	8

b) Freight on Antislip Load Mat - Not Conveyor Belt or general rubber

Payload (kg)	Number of Lashings Required **BLOCKED** (Lashing angle)			Payload (kg)	Number of Lashings Required **NOT BLOCKED** (Lashing angle)		
	(80 - 90°)	(60 - 80°)	(30 - 60°)		(80 - 90°)	(60 - 80°)	(30 - 60°)
0 - 2500	1	1	2	0 - 1500	1	1	2
2500 - 2950	1	2	2	1500 - 2500	2	2	3
2950 - 5900	2	3	4	2500 - 3500	2	3	4
5900 - 8850	3	4	6	3500 - 5300	3	4	6

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