Summary for Farmers of the Load Restraint Guide

Copied From:

LOAD RESTRAINT GUIDE

Guidelines and Performance Standards for the Safe Carriage of Loads on Road Vehicles
SECOND EDITION, 2004

- The most relevant section for farmers of this 'long' guide is Section C, but it is best to familiarise yourself with all of it and select those elements relevant to your individual operations.
- Use safety chains, they should be strong enough to do the job they may be required to perform – refer Load Restraint Guide for advice

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Did you know?

- A load that is restrained so it doesn't shift is required to withstand forces of at least:
  - 80% of its weight in the forward direction;
  - 50% of its weight sideways and rearwards, and
  - an additional 20% of its weight vertically.
- Some industry practices have been tested and the forward restraint found to be only half that required.
- There is often a greater chance of losing a load when braking at low speed than at high speed as it is easier for the brakes to grab at low speed.
- Ropes are extremely ineffective for restraining loads.
- Even though a rope might feel tight, the amount of tension in it is very low.
- The tension in a webbing strap is generally about 5 to 10 times more than a rope.
- Short chains are difficult to tighten properly with a 'dog', because they won't stretch as much as a long chain, to allow the handle to be pulled down. Turnbuckles are better.
- If a load is properly restrained, on a stationary tipping truck or trailer, it will not dislodge, even when the deck is fully tilted.
- Just because a load has been carried in a particular way for many years does not mean it is properly restrained.
- A 'curtain-side' cannot restrain a load properly unless it is part of a certified load restraint system.
- The weight of the load alone cannot provide enough friction to restrain it during normal driving. Additional restraint must be used.
- A heavy load is just as likely to fall off as a light load. The same 'g' forces are acting on both.
- If a load falls off a vehicle travelling at 100 km/h and is hit by a vehicle travelling in the opposite direction at 100 km/h, it has the same impact as the load travelling at 200 km/h and hitting the vehicle when it is stationary.
- Most headboards and loading racks are not strong enough to fully restrain heavy loads.

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SECTION C - RESTRAINING LOADS ON VEHICLES

The following are your responsibilities:

- It is the responsibility of the owner, the driver and the person in charge of loading, to ensure that the vehicle's load restraint structure, attachments and load restraint equipment are suitable for the application and are serviceable and functional.
- It is the responsibility of the person in charge of loading and the driver, to ensure that a load is properly restrained by the vehicle load restraint structure, attachments and load restraint equipment using safe operating procedures.
- It is the responsibility of the person in charge of unloading and the driver, to ensure that load restraint equipment is released and removed using safe operating procedures and that the load is removed safely from the vehicle.

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2.4 Tie-Down Lashing: Pre-Tension

Table C.2 is a guide to the average tension that can be achieved by an 'average' operator. Some operators can achieve two to three times these levels. Different makes or models of equipment can also produce higher or lower tensions. It is important to know what tension you can get with your equipment.

Lashing Size Tensioner Pre-tension

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Lashing	Size	Tensioner	Pre-tension
Rope	10 mm & 12 mm	Single Hitch Double Hitch	50 kg 100 kg
Webbing Strap	25 mm	Hand Ratchet	100 kg
	35 mm	Hand Ratchet	250 kg
	50 mm	Truck Winch	300 kg
	50 mm	Hand Ratchet (push up)	300 kg
	50 mm	Hand Ratchet (pull down)	600 kg
Chain	7 mm & above	Dog Turnbuckle	750 kg 1000 kg

Table C.2 (Also appears as Table F.2 in Section F and in Section K – Tables. Refer to notes on page 260.)

- This summary is intended to be quick reference guide for farmers, not a replacement of the whole Load Restraint Guide.

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Section F – Calculating Restraint Requirements

The following contains specialised information useful to engineers and designers for the design and selection of load restraint systems.

1 PERFORMANCE STANDARDS

Loads must be restrained to prevent unacceptable movement during all expected conditions of operation. The load restraint system must, therefore, satisfy the following requirements:

(i) The load should not become dislodged from the vehicle.
(ii) Any load movement should be limited, such that in all cases where movement occurs, the vehicle's stability and weight distribution cannot be adversely affected and the load cannot become dislodged from the vehicle.

Loads that are permitted to move relative to the vehicle include loads that are effectively contained within the sides or enclosure of the vehicle body such as:

(a) Loads which are restrained from moving horizontally (limited vertical movement is permissible);
(b) Very lightweight objects or loose bulk loads (limited horizontal and vertical movement is permissible);
(c) Bulk liquids (limited liquid movement is permissible);