



## Risk Control

# Load Securement

Failing to properly secure cargo can be costly and dangerous. What happens when a load becomes unsecured? Consider the consequences of injury to yourself, other motorists, other workers and the potential downtime as a result of improperly securing a load.

Load securement starts with thorough pre-trip planning and inspections. Things to remember:

- Do you have the right equipment for the job?
- Trailer Condition? Decking, anchor points, tires, brakes?
- Review your route. Height or weight restrictions?

**ALWAYS** remember to wear your seatbelt while loading and unloading equipment.

### Inspect Your Chains, Binders & Straps.

- Look for damage and excessive wear — (elongation, gouges, nicks, holes, tears, cuts, knots)
- Look for embossed label on chains and manufacturers label on straps when selecting tie downs.

### Understanding Load Limits and Calculations: FMCSR 393.5

**Working Load Limit** — (WLL) Maximum load that may be applied to a component of a cargo securement system during normal service — assigned by the manufacturer or component. This is the maximum weight value that can be applied towards the ALL for an individual component of the securement system (chain, binder or strap — always lowest value of any components).

**Aggregate Load Limit** — (ALL) The **summation** of the WLL's or restraining capacity of all devices used to secure an article on a vehicle. This is the combined securement value of the individual components used.

ALL of the tie downs used must be at least half the weight of the cargo. ex. 15,000 lb. load requires an **ALL** of at least 7,500 lbs.

**ALL** is the sum of indirect WLL + WLL/2

**Direct Tie Down** — anchor point on vehicle to anchor point on cargo. (Use 50 percent of WLL)

**Indirect Tie Down** — anchor point on the vehicle, through, over or around the cargo, then to an anchor point on the **OTHER** side of the vehicle. (Use total WLL for indirect tie downs)

### How Many Tie Downs Do I Need?

The number of tie downs needed for cargo or equipment depends on the location of the cargo on the trailer, the weight and the size.

**One Tie Down** — 5 feet or less in length and less than 1,100 lbs.

**Two Tie Downs** — Between 5 and 10 feet (regardless of weight) 5 feet or less and more than 1,110 lbs.

For cargo that exceeds 10 feet in length, one tie down is needed for each additional 10 feet.

If the article is **NOT** blocked or positioned to prevent movement in the forward direction, two tie downs are required in the first 10 feet, and one additional tie down for each additional 10 feet.



**Heavy Equipment, Machines and Vehicles: FMCSR 393.130**

393.130 applies to heavy vehicles and machinery which operate on wheels or tracks which individually weight 10,000 lbs. or more.

- Restrain equipment against lateral, forward, rearward and vertical movement.
- **Use a minimum of four tie downs with a minimum WLL of 5,000 lbs. per tie down.**
- Secure tie downs as close to the front and rear of the equipment or on mounting points designed for that purpose.
- Accessory equipment must be completely lowered and secured to the vehicle deck.
- Restrain articulating vehicles which prevents articulation.
- Do not place chains over Power Take Offs or hydraulic cylinders.
- Inspect before leaving, within the first 50 miles, when duty-status changes and every three hours or 150 miles (whichever occurs first).

To learn more about how CNA's Risk Control services can help you manage your risks and increase efficiencies please visit [cna.com/riskcontrol](https://cna.com/riskcontrol).