



Drivers are Responsible for Securing the Load – Safety is First – Requires Boots & Pants



Inspection Requirements (Section 2.3.2)

The driver is responsible for the following cargo securement inspection activities

Driver action required	Pre-Trip	Within first 80 km (50 mi)	When duty status of driver changes	At 3 hour intervals or every 240 km (150 mi), whichever is first
Inspect Cargo and Securing devices	✓	✓	✓	✓
Inform Carrier if Packaging is Not Adequate	✓			
Adjust Cargo and/or Securing devices	As necessary	As necessary	As necessary	As necessary
Add Additional Securing devices	As necessary	As necessary	As necessary	As necessary

Driver inspection checklist:

Pre-Trip

- Make sure that cargo is properly distributed and adequately secured (in other words, according to the Standard).
- Make sure that all securement equipment and vehicle structures are in good working order and used consistent with their capability.
- Stow vehicle equipment.
- Make sure that nothing obscures front and side views or interferes with the ability to drive the vehicle or respond in an emergency.
- Inform carrier if packaging is not adequate. For example:
 - Banding is loose or not symmetrical on package.
 - Banding attachment device(s) are inefficient.
 - Wrapping is broken or ineffective.
 - Pallet are broken.

Periodic inspections during transit

- Inspect cargo and securing devices.
- Adjust cargo or load securement devices as necessary to ensure that cargo cannot shift on or within, or fall from, the commercial motor vehicle.
- As necessary, add more securing devices.

Make Sure Complete a Vehicle Inspection before Leaving the yard and report Any Repairs

Components of a Securement System Securing devices (Section 2.1.3)

What is a securing device?

Any device specifically manufactured to attach or secure cargo to a vehicle or trailer.

>Chain

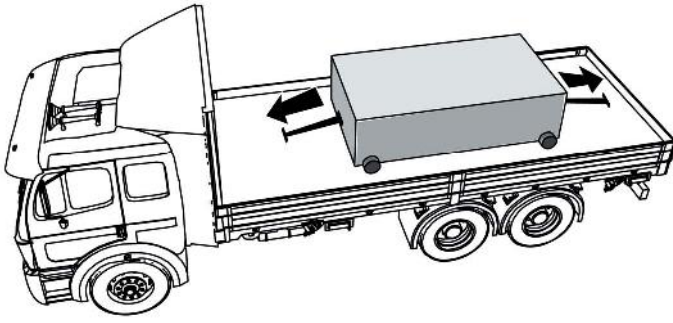
- Wire rope
- Manila rope
- Synthetic rope
- Steel strapping
- Clamps and latches
- Blocking
- Front-end structure
- Grab hooks
- Binders
- Shackles
- Winches
- Stake pockets
- D-rings
- Pocket
- Webbing ratchet
- Bracing
- Friction mat

What is a tie down?

A combination of securing devices that forms an assembly that:

- Attaches cargo to, or restrains cargo on a vehicle.
- Is attached to anchor point(s).

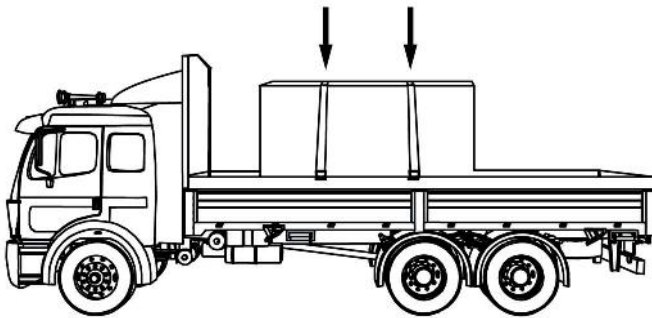
Some tie downs are attached to the cargo and provide direct resistance to restrain the cargo from movement.



Components of a Securement System

securing devices (Section 2.1.3) (continued)

Some tie downs pass over or through the cargo. They create a downward force that increases the effect of friction between the cargo and the deck. This friction restrains the cargo.



Tie down passes over cargo

Components of a Securement System

Securing devices (Section 2.1.3) (continued)

Tie down construction and maintenance

A tie down **must** be designed, constructed, and maintained so that the driver can tighten it (Exception: steel strapping).

All components of a tie down must be in proper working order.

- No knots or obvious damage
- No distress
- No weakened parts
- No weakened sections

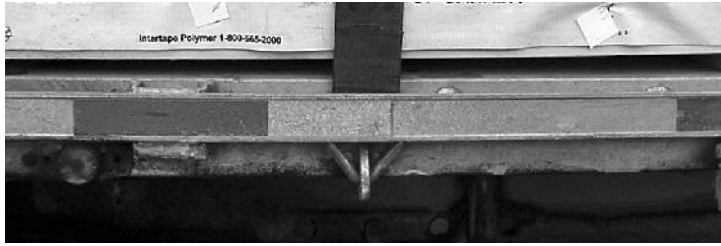
Tie down use

Each tie down must be attached and secured so that it does not become loose or unfastened, open, or release during transit.

All tie downs and other components of a cargo securement system must be located within the rub rails (when present).



This requirement does not apply when the width of the load extends to or beyond the rub rails.



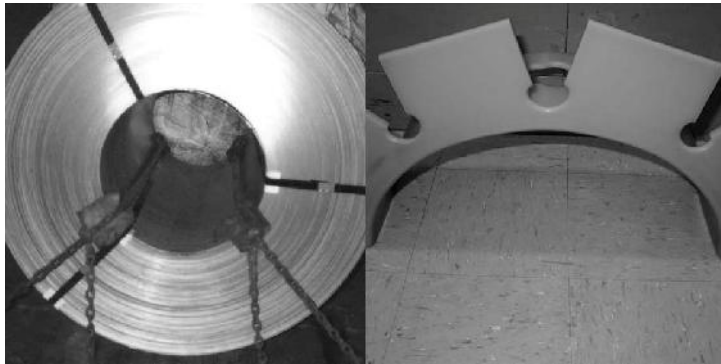
Tie down within rub rail

Components of a Securement System

Securing devices (Section 2.1.3) (continued)

Edge protection

Edge protection must be used if a tie down could be cut or torn when touching an article of cargo. The edge protection itself must also resist crushing, cutting, and abrasion.

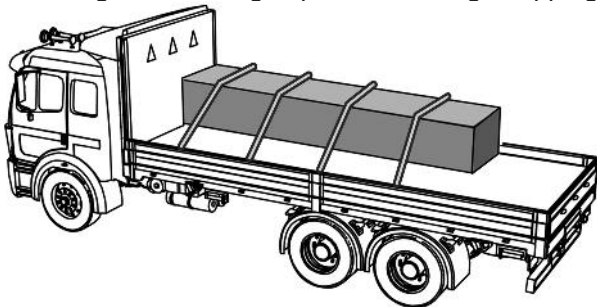


Containing, Immobilizing, and Securing Cargo

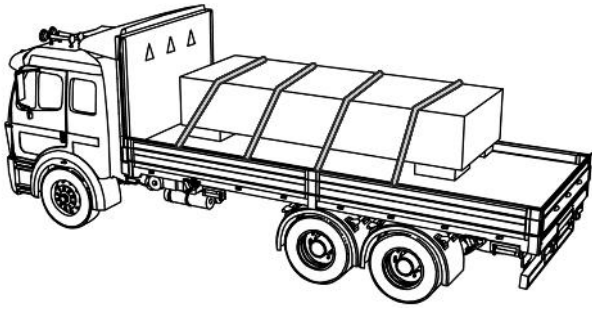
Three ways to transport cargo (Section 2.2.1) (continued)

All types of cargo must meet one of three conditions:

- Condition 2: Cargo is **immobilized by structures** adequate strength or a combination of structure, blocking, and bracing to prevent shifting or tipping.



Immobilized



Immobilized

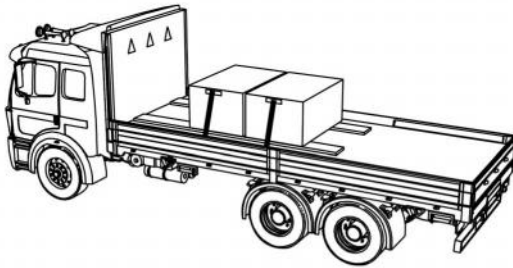
Containing, Immobilizing, and Securing Cargo

Three ways to transport cargo (Section 2.2.1) (continued)

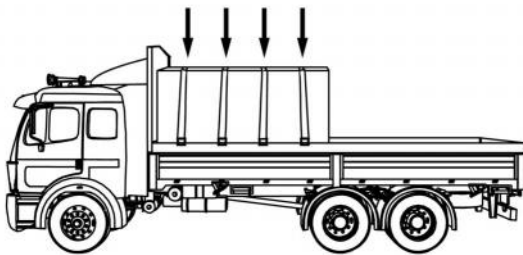
All types of cargo must meet one of three conditions:

- Condition 3: To prevent shifting or tipping, cargo is **immobilized or secured on or within** a vehicle by tie downs along with:
 - Blocking.
 - Bracing.
 - Friction mats.
 - Other cargo.
 - Void fillers.
 - Combination of these.

Secured on a vehicle



Secured on a vehicle



Secured on a vehicle

Containing, Immobilizing, and Securing Cargo

Loading the cargo properly (Section 2.2.2)

For articles of cargo placed beside each other and secured by side-to-side tie downs:

- Either place them in direct contact with each other
- Or prevent them from shifting towards each other in transit by using blocking or filling the space with other cargo.

Containing, Immobilizing, and Securing Cargo

Loading the cargo properly (Section 2.2.2) (continued)

Some articles have a tendency to roll. To prevent rolling, provide more than one point of contact:

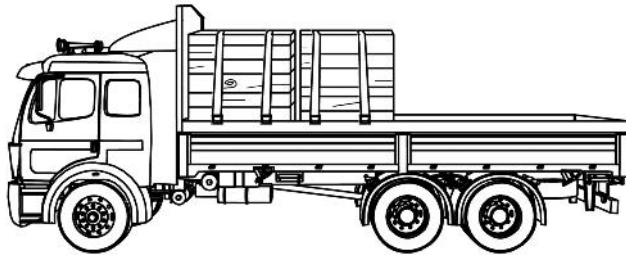
- Lift the cargo off the deck AND/OR
- Place chockes, wedges, a cradle, or other equivalent means that prevent rolling. These **must** be secured to the deck.



The method used to prevent rolling must not become unfastened or loose while the vehicle is in transit.

For articles that have a tendency to tip:

- Prevent tipping or shifting by bracing the cargo.



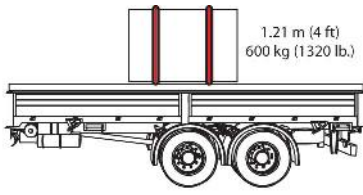
Containing, Immobilizing, and Securing Cargo

Restraining the cargo correctly (Section 2.2.3.1)

How many tie downs are required?

If cargo is **not prevented** from forward movement (for example, by the headboard, bulkhead, other cargo, or tie down attached to the cargo), secure the cargo according to the following requirements:



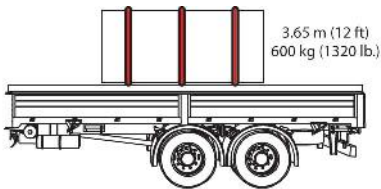


Article Description	Minimum # of Tied owns
More than 1.52 m (5 ft) but 3.02 m (10 ft) or less	2

Containing, Immobilizing, and Securing Cargo

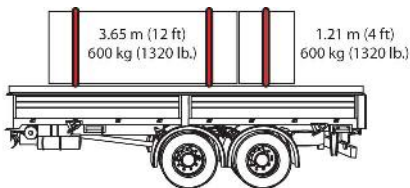
Restraining the cargo correctly (Section 2.2.3.1) (continued)

Article Description	Minimum # of Tie downs
Longer than 3.02 m (10 ft)	2 + 1 tie down for every additional 3.02 m (10 ft), or part thereof



When cargo is prevented from forward movement (for example, by the headboard, bulkhead, other cargo, or tie down), secure the cargo according to the following requirements:

Article Description	Minimum # of Tie downs
All Cargo	1 tie down for every 3.04 m (10 ft), or part thereof



Exceptions to the Minimum Tie down Requirements (Section 2.2.3.2)

A vehicle transporting one or more articles of cargo such as, but not limited to, machinery or fabricated structural items (e.g., steel or concrete beams, crane booms, girders, and trusses, etc.) which, because of their design, size, shape, or weight, must be fastened by special methods.

However, any article of cargo carried on that vehicle must be securely and adequately fastened to the vehicle.

Tie downs attached to the cargo

Tie downs attached to the cargo work by counteracting the forces acting on the cargo.

The angle where the tie down attaches to the vehicle should be shallow, not steep (ideally less than 45°).

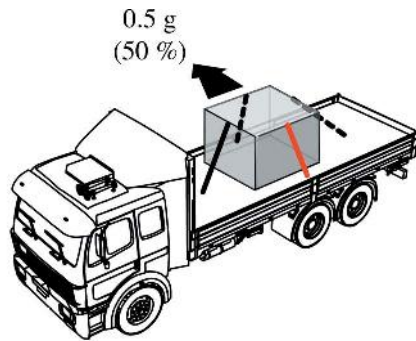
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To counteract forward movement, attach the tie down so it pulls the cargo toward the rear of the vehicle.

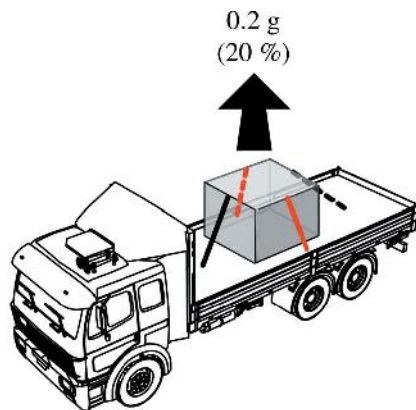
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To counteract rearward movement, attach the tie down so it pulls the cargo toward the front of the vehicle.

Containing, Immobilizing, and Securing Cargo Restraining the cargo correctly (Section 2.2.3.1) (continued)



To counteract movement to one side, attach the tie down so it pulls the cargo toward the opposite side of the vehicle.



To counteract upward movement, attach tie downs to opposing sides of the cargo so they pull the cargo down.

Containing, Immobilizing, and Securing Cargo

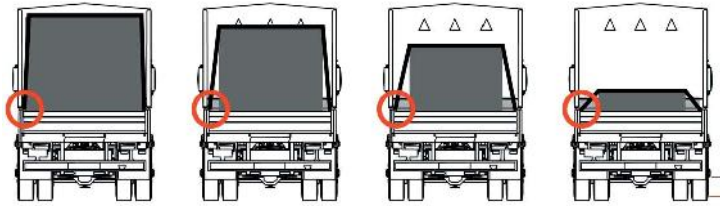
Restraining the cargo correctly (Section 2.2.3.1) (continued)

Tie downs that pass over the cargo

Tie downs that pass over the cargo work by increasing the effective weight of the cargo (make the cargo seem heavier). This increases the pressure of the cargo on the deck and keeps the cargo from shifting.

Tension these tie downs to as high an initial tension as possible.

The steeper the tie down angle, the less shifting (ideally more than 45).



What should you use in low-friction situations?

When there is low friction between the cargo and the deck (for example, with snow, ice, sand, gravel, and oil):

- Use tie downs attached to the cargo.
- Use a means to improve the friction such as friction mats or tie down that pass over the cargo.
- Use blocking and tie downs.

Containing, Immobilizing, and Securing Cargo Using adequate securing devices

What is a Working Load Limit (WLL)?

The Working Load Limit is the maximum load that may be applied to a component of a cargo securement system during normal service.

The WLL is usually assigned by the component manufacturer.



Indicator of Working Load Limit

WLL for tie downs (Section 2.1.6)

The WLL for a tie down is the lowest WLL of any of its parts or the WLL of the anchor points it is attached to, whichever is less. Every device contributes to the WLL of the securement system.

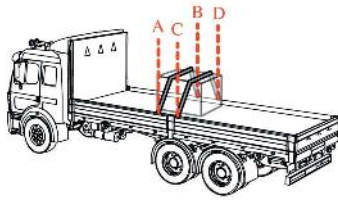
For a synthetic webbing tie down, the WLL is the working load limit of the tie down assembly or the anchor point it is attached to, whichever is less.



The minimum WLL requirement for the securement system is 50%. More ties down capacity should be used if you need to secure an article against any movement.

WLL for blocking systems (Section 2.1.5)

The WLL of all components used to block cargo from forward movement must be 50% (or more) of the weight of the article being blocked.



How much should the Aggregate Working Load Limit be?

The aggregate working load limit of any securement system must be at least 50% of the weight of the cargo being secured.