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National Safety Code (NSC) Standard 10 – Cargo Securement

(General Compliance & Best Practice Guidelines)



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pylônes et antennes

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This document provides an overview of Canadian Council of Motor Transport Administrators (CCMTA) cargo securement regulations, as provided under National Safety Code for Motor Carriers (NSC) Standard 10. These general compliance guidelines are designed to instruct workers and companies in the transmission tower industry, and focus only on NSC regulations that are likely to affect crews in this industry.

NSC standards apply to all vehicles used for commercial activity that surpass the gross vehicle weight (GVW) threshold specified by the province(s) in which a vehicle is operated. This includes personal vehicles, such as pickup trucks, when used for commercial activities, including transporting persons or materials to or from a job site.

For more information about GVW thresholds in each province, please refer to Table 1 on page 14 of this document.

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Part 1 – Applications and Objectives

Cargo carried by a motor vehicle must be secured to prevent against leaks, spills, dislodging, and falling from the vehicle as detailed in this summary.

- The **cargo securement system** must be able to withstand separately the following forces:
 - 0.8 g deceleration forwards;
 - 0.5 g deceleration backwards;
 - 0.5 g acceleration in either lateral direction.
- The cargo securement system must provide a downward force equal to at least 20% of cargo weight. Each component of the system must stay within its Working Load Limit (WLL).

Part 2 – General Provisions and Requirements

All cargo securement devices must conform to the following requirements:

- Vehicle structures, tie-down/anchor points, mounting points, etc., must be able to withstand the forces apparent in each situation, as detailed in Part 1, and be in proper working condition when being used.
- A cab shield is not part of a cargo securement system.
- The securement method used should be applicable to the cargo being transported and be utilized as per the manufacturer's instructions.
- **Tie-downs** must be designed and maintained to ensure operability by the driver of the vehicle, and secured so as to not come loose during transit. **Edge protection** is required as necessary to protect against abrasion or cutting.
- The **WLL of a tie-down** is the lowest limit of any of its components, or the limit of the anchor point it's attached to.
- Associated Dunnage, Blocks, Bracing, etc., must be strong enough to withstand splitting or crushing from forces created by cargo.
- **Unmarked components** shall be considered to have a WLL as described in the NSC standard. See Tables 2.1-2.6 in this document for NSC WLL's of various types of unmarked components.
 - *Editor's note: Please review provincial unmarked components standards, which vary from province to province.*
- Cargo placed side by side, secured with transverse tie-downs, must be in direct contact with each other or be prevented from shifting together/around while in transit. Cargo that can roll must be secured with some form of blocking to prevent rolling.
- The **aggregate WLL** of any securement system must be at least one half times the weight of the cargo. The aggregate WLL is the sum of:
 - ½ the WLL of each associated connector; and
 - ½ the WLL for each end section of a tie-down that is attached to an anchor point.
- When cargo is not blocked to prevent movement in the forward direction, it must be secured by:
 - One tie-down for cargo up to 1.52 m long and up to 500 kg.
 - Two tie-downs for cargo up to 1.52 m long and exceeding 500 kg.
 - Two tie-downs for cargo longer than 1.52 m but less than 3.05 m regardless of weight.
 - Two tie-downs for cargo longer than 3.05 m, and one every additional 3.05 m after the last tie-down.
- When cargo is blocked to prevent forward movement, only one tie-down for every 3.05 m is required.



- **Special loads** (machinery or fabricated structural items) may need to be supported in a different manner than specified due to their design, shape, or weight.
- A driver may not operate a motor vehicle carrying cargo unless:
 - The cargo is properly distributed and secured;
 - The vehicles' tailgate, doors, tarps, spare tires, and other equipment are secured; and
 - The driver's view/movement is in no way obscured/obstructed by the cargo on the vehicle.
- The driver must **inspect the cargo** and cargo securement system **within the first 80 km** after the start of a trip and make adjustments as necessary. The driver must continue to check condition of cargo and securement system in various intervals throughout course of trip. Reexamination is necessary whenever:
 - The driver changes his/her duty status; or
 - The vehicle has driven for three hours or 240 km, whichever occurs first.
- Cargo inspection does not apply to drivers of sealed motor vehicles that are instructed not to open/inspect cargo or to loads that make inspection impracticable.

Part 3 – Specific Securement Requirements

Logs

Editor's note: This section has been included due to the tower industry's use of slender cylindrical members.

- The following are **exceptions** to the outlined rules for the transportation of logs:
 - Logs unitized by banding or other means may be transported as detailed in the general cargo securement rules section of Part 2.
 - Loads consisting of no more than four processed logs may be transported as detailed in the general cargo securement rules section of Part 2.
 - Firewood, stumps, log debris, etc. must be transported within a vehicle or in a container.
- Logs are to be transported on a vehicle designed for carrying such a load, including being equipped with blocks and/or other applicable means to cradle the logs and prevent rolling. All components of the securement system must be designed to withstand all operational forces without failure.
- **Tie-downs** must be used in combination with stabilization techniques to help secure load. Any tie-down must have a WLL not less than 1,800 kg. All tie-downs must be tightened at initial loading and checked/adjusted as necessary.
- Any load of logs must be solidly packed, with the outer bottom logs in firm contact with blocks, bunks, stakes, etc. (touching at least two).
- In no case can the ends of the **lowest logs in a load** be extending more than 1/3 the log's total length off the end of the vehicle.
- When only **one stack of shortwood** is loaded crosswise, it must be secured with at least two tie-downs, from the front to rear of the load.
- If **two stacks of shortwood** are loaded side-by-side, they must be loaded so that:
 - There is no space between stacks;
 - Each stack has two tie-downs as detailed in previous note;
 - The outside end of each stack is raised at least 1 inch within 4 inches of the end of the logs or side of vehicle;
 - The highest log is no more than 2.44 m (8 feet) above the deck; and
 - At least one tie-down is used lengthwise across each stack.



- A **vehicle more than 10 m** in length must be equipped with center stakes, or equivalent, to divide it into equal sections. Where a vehicle is so divided, each tie-down must secure the highest log on each side of the center stake and fastened below these logs.
- Every structure or stake must be anchored to resist any upward forces that it could be subjected to.
- A **vehicle built after January 1, 2009** must tension each tie-down with a device that maintains a tension not less than 900 kg at all times, and automatically takes up slack in the tie-down as the logs settle.
- Each stack of shortwood loaded lengthwise on a **frame vehicle or flatbed** must be secured with at least two tie-downs.
- If all logs in a stack less than 3.05 m (10 feet) long are blocked in the front by a headboard capable of restraining the load, and blocked in the rear by another stack or the vehicle structure, the stack may be secured by at least one tie-down. If only one is used, it must be positioned at the mid-point of the stack.
- Each stack of **longwood** loaded lengthwise on a frame vehicle or flatbed must be secured with at least two tie-downs. The aggregate WLL for all tie-downs securing a log stack must be no less than 1/6 the stack's weight.

Dressed Lumber

The following rules apply to the transportation of bundles of dressed lumber, packaged lumber, plywood, gypsum board, and other building materials of similar shape. Any of the above items that are not bundled or packaged should be treated as loose items and transported as such.

- Bundles must be placed side-by-side in direct contact with each other, or otherwise secured to prevent shifting.
- Bundles carried on one tier must be secured in accordance with the outlined general provisions in this summary.
- **Bundles carried in more than one tier** must be either:
 - Blocked against lateral movement with stakes and secured with tie-downs;
 - Restrained from lateral movement by blocking and secured by tie-downs; or
 - Placed directly on top of other bundles or on spacers. The spacers must provide equal support to all pieces in the bottom row of the bundle. The stack of bundles must then be secured by tie-downs over the second tier of bundles, or 1.83 m (6 feet) above the trailer deck, whichever is greater. Minimum two tie-downs over each top bundle longer than 1.52 m (5 feet).

Metal Coils

Editor's note: This section has been included due to the tower industry's use of cable reels and guy wires.

The following rules apply to the transportation of **one or more metal coils** which, individually or together, weigh 2,267.96 kg (5,000 lbs.) or more. Shipments of coil less than 2,267.96 kg (5,000 lbs.) can be transported in accordance with the provisions in Part 2.

- Each coil must be secured by tie-downs to prevent tipping of the coils. The restraint system must include:
 - At least one tie-down attached diagonally from the left side of the vehicle to the right, from the front-most coil to the rearmost coil, and one tie-down diagonally opposite the first.



- At least one tie-down attached transversely over the eye of the coil.
 - Blocking, bracing, friction mats, or tie-downs to prevent longitudinal movement in the forward direction.
- When coils are **grouped and loaded side-by-side** in a transverse/longitudinal row, each row must be secured as follows:
 - At least one tie-down against the front row of coils to resist forward motion, and wherever else practical, making an angle of no more than 45 degrees off the floor of the vehicle.
 - At least one tie-down against the rear row of coils to resist backwards motion, following the same 45-degree rule.
 - At least one tie-down over the top of each coil to resist vertical motion. These tie-downs must be placed as close to the eye of the coil as possible and positioned to prevent slippage or potential unfastening during transit.
 - Additional tie-downs, blocking, or bracing as required to help prevent shifting or tipping of the load in any direction.
- When transporting a single coil crosswise on a flatbed vehicle, sided vehicle, or intermodal container, the coil must be secured as follows:
 - With chocks, wedges, or any other means to prevent the coil from rolling. These means must support the coil off the deck, and not be capable of loosening or unfastening during transit. If any of these are used, they must be held in place by coil bunks or equivalent to prevent them from coming loose. **The use of nailed blocking or cleats as the sole means of securing timbers, chocks or wedges is prohibited.**
 - At least one tie-down through the eye of the coil, restricting forward motion, and wherever else practical, making an angle of no more than 45 degrees off the floor of the vehicle.
 - At least one tie-down through the eye of the coil to resist backwards motion, following the same 45-degree rule.
- **Attaching tie-downs diagonally through the eye of a coil is prohibited.**
- When transporting a single coil lengthwise on a flatbed vehicle, sided vehicle, or intermodal container, the coil must be secured in a similar fashion to crosswise, with a few variances:
 - Tie-downs may be attached diagonally or straight through the eye of the coil, mounting to either the right/left sides of the vehicle in a crosswise fashion or one tie-down per side, from side to eye to side.
 - At least one tie-down is needed transversely over the top of the coil.
 - Blocking or friction mats to prevent forward movement.
- Each transverse row of coils (with roughly equal outside diameters) must be secured with:
 - Chocks, wedges, or any other means to prevent the coil from rolling. These means must support the coil off the deck, and not be capable of loosening or unfastening during transit. If any of these are used, they must be held in place by coil bunks or equivalent to prevent them from coming loose. **The use of nailed blocking or cleats as the sole means of securing timbers, chocks or wedges is prohibited.**
 - At least one tie-down over the top of each coil or transverse row, near the forward-most part of the coil.
 - At least one tie-down over the top of each coil or transverse row, near the rearmost part of the coil.
 - Blocking or friction mats to prevent forward movement.



- When metal coils are transported in a vehicle with sides or intermodal containers, but there are no anchor points, the load must be secured in a manner to prevent any shifting or tipping.

Concrete Pipe

Editor's note: This section has been included due to the tower industry's use of large cylindrical members, such as monopoles.

The following rules apply to the transportation of **concrete pipe on a platform trailer or vehicle**. Pipe bundled tightly together into a single unit, and pipe loaded into a sided vehicle or container must be secured as per the provisions of Part 2.

- The **aggregate WLL** of all tie-downs on any group of pipe must be more than half the total weight of the group of pipe. A tie-down through a pipe in an upper layer is considered to secure all pipe beneath which that tie-down causes pressure.
- **Blocking** can be one or more pieces placed symmetrically about the center of the pipe. Two pieces are required at the outside corner points, and one piece must extend at least half the distance from the center to end of each pipe. All blocking must be securely positioned so as to not come loose during transit. Minimum nominal dimension for timber blocking is 4 x 6 inches.
- With loads of **different sized diameter pipe**, groups of same sized pipe must be formed and separately secured.
- The **bottom tier of a load** must cover the full length of the available space. The **upper tier pipe** must be placed in the wells formed by the lower tier pipe. Each new layer cannot begin until the former layer is complete.
- **Bell pipe** must be loaded on at least two longitudinal spacers so that the pipe clears the deck. In a tier, the bells of each pipe must alternate on opposing sides of the vehicle. The ends of consecutive pipe must be staggered, if possible.
- When securing pipe with an inside diameter of up to 114.3 cm (45 inches), the front and rear of the pipe must be immobilized by blocking, wedges, etc. and must be held firmly in contact with adjacent pipe by at least one tie-down through the front and one through the rear of each pipe.
- If each pipe is not individually secured by tie-downs, there are two options available:
 - one ½-inch diameter chain or wire rope, or two 3/8-inch diameter chain, placed longitudinally over the pipes; or
 - one transverse tie-down for every 3.05 m (10 feet) of load length.
- If the first or last pipe in the top layer isn't in the first/last well, they must have an additional tie-down running inwards at an angle no more than 45 degrees to the horizontal.
- When securing **pipe with an inside diameter greater than 114.3 cm** (45 inches) the same rules apply, except for these variances:
 - Each pipe must be secured with a tie-down through the center of the pipe. At least one through the front half of pipe in the load, and one through the back half.
 - *Editor's note: This does not apply to monopoles.*
- **Ice** must be removed from all pipe before loading.



Intermodal Containers

Editor's note: This section also applies to the tower industry's use of shelters.

The following rules apply to the transportation of intermodal containers. **Cargo contained within an intermodal container** must be secured as per the provisions of Part 2.

- When transporting containers on a **container chassis vehicle**, each container must be secured to the vehicle with securement devices or integral locking devices that cannot become unintentionally detached. The securement methods must keep the container stable and upright, with a tolerance of movement no more than ½ inch in any direction. The front and rear must be secured independently.
- All corners must rest on the vehicle or be supported by structures capable of bearing the weight. Said structure must also be independently secured to the vehicle.
- Each container must be secured with chain, wire rope, integral devices fixed to the lower corners, crossed chains fixed to the upper corners, and independent securement at the front and rear.
 - *Editor's note: Shelters would not necessarily be chained to the upper corners, but those that have the capability should be chained as required. **Check with shelter manufacturer for tie-down requirements.***
- **Empty intermodal containers** do not need all lower corners resting on the vehicle provided:
 - It is evenly balanced and stable before adding tie-downs;
 - The overhang over the vehicle does not exceed 1.52 m (5 feet) on the front or rear;
 - It doesn't impair the vehicle's maneuverability; and
 - It is secured against any and all lateral movement.

Automobiles, Light Trucks & Vans

The following rules apply to the transportation of automobiles, light trucks, and vans which individually weigh 4,535.92 kg (10,000 lbs.) or less. *Editor's note: These rules also apply to off-road vehicles.*

- All vehicles shall be restrained at both the front and rear in lateral, forward, rearward, and vertical directions with two tie-downs minimum.
- **Tie-downs** shall use mounting points on the vehicles specifically designed for transportation.
- Tie-downs that fit around the wheel must resist lateral, longitudinal, and vertical movement.
- **Edge protectors** are not required for synthetic webbing at points where webbing comes in contact with the tires.

Heavy Vehicles, Equipment & Machinery

The following rules apply to the transportation of heavy vehicles, equipment, and machinery which individually weigh 4,535.92 kg (10,000 lbs.) or more.

- **Accessory equipment** like hydraulic shovels must be completely lowered and secured to the vehicle. Articulated vehicles shall be restrained to resist movement.
- Vehicles with **crawler tracks or wheels** shall be restrained against movement in all directions using at least four tie-downs, each with a WLL of 2,267.96 kg (5,000lbs.). Each of the tie-downs shall be affixed at the front and rear of the vehicle, or mounting points on the vehicle that have been specifically designed for that purpose.



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Roll-on/Roll-off Containers

Editor's note: Parties that use third-party transports are responsible for ensuring that these methods are followed while under the direction of their company.

- Each roll-on/roll-off container and hook lift container carried on a vehicle **not equipped with an Integral Securement System** must be:
 - Blocked against forward movement,
 - Secured to the front of the vehicle by the lifting device or other restraint against lateral/vertical movement.
 - Secured to the rear with:
 - one tie-down attached to both the vehicle and container chassis,
 - two tie-downs installed lengthwise on each side, from the container corner to the vehicle's side rails,
- The securing mechanisms must be installed no further than 1.98 m (6.5 feet) from the rear of the container, with a WLL of at least 2,267.96 kg (5,000lbs.).



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Appendix 1 – National Safety Code (NSC) Required Weight by Province (2016)

NATIONAL SAFETY CODE (NSC) – REQUIRED WEIGHT BY PROVINCE (2016)	
Province	Weight Limit
British Columbia	5,000kg
Alberta - Provincial*	11,794kg
Alberta - Federal/Inter-provincial**	4,500kg
Saskatchewan	5,000kg
Manitoba	4,500kg
Ontario	4,500kg
Quebec	4,500kg
New Brunswick	4,500kg
Nova Scotia	4,500kg
Prince Edward Island	4,500kg
Newfoundland and Labrador	4,500kg
Northwest Territories	4,500kg
Yukon	4,500kg
Nunavut	4,500kg
<p>* Refers to only driving within the province</p> <p>** Refers to driving between other provinces or territories and AB</p> <p>Prepared by the Structure, Tower & Antenna Council (STAC)</p>	



Appendix 2 – Default Working Load Limits for Unmarked Tie-downs

Table 2.1 – Chain

Size	Working Load Limit
7 mm (1/4 in)	590 kg (1,300 lb.)
8 mm (5/16 in)	860 kg (1,900 lb.)
10 mm (3/8 in)	1,200 kg (2,650 lb.)
11 mm (7/16 in)	1,590 kg (3,500 lb.)
13 mm (1/2 in)	2,040 kg (4,500 lb.)
16 mm (5/8 in)	3,130 kg (6,900 lb.)
Chain Mark	PC
Examples	3 30

Table 2.2 – Synthetic Webbing

Width	WLL
45 mm (1-3/4 in)	790 kg (1,750 lb.)
50 mm (2 in)	910 kg (2,000 lb.)
75 mm (3 in)	1,360 kg (3,000 lb.)
100 mm (4 in)	1,810 kg (4,000 lb.)

Table 2.3 – Wire Rope (6 x 37, Fiber Core)

Diameter	WLL
7 mm (1/4 in)	640 kg (1,400 lb.)
8 mm (5/16 in)	950 kg (2,100 lb.)
10 mm (3/8 in)	1,360 kg (3,000 lb.)
11 mm (7/16 in)	1,860 kg (4,100 lb.)
13 mm (1/2 in)	2,400 kg (5,300 lb.)
16 mm (5/8 in)	3,770 kg (8,300 lb.)
20 mm (3/4 in)	4,940 kg (10,900 lb.)
22 mm (7/8 in)	7,300 kg (16,100 lb.)
25 mm (1 in)	9,480 kg (20,900 lb.)



Table 2.4 – Manila Rope

Diameter	WLL
10 mm (3/8 in)	90 kg (205 lb.)
11 mm (7/16 in)	120 kg (265 lb.)
13 mm (1/2 in)	150 kg (315 lb.)
16 mm (5/8 in)	210 kg (465 lb.)
20 mm (3/4 in)	290 kg (640 lb.)
25 mm (1 in)	480 kg (1,050 lb.)

Table 2.5 – Synthetic Fiber Rope

Diameter	WLL
10 mm (3/8 in)	185 kg (410 lb.)
11 mm (7/16 in)	240 kg (530 lb.)
13 mm (1/2 in)	285 kg (630 lb.)
16 mm (5/8 in)	420 kg (930 lb.)
20 mm (3/4 in)	580 kg (1,280 lb.)
25 mm (1 in)	950 kg (2,100 lb.)

Table 2.6 – Steel Strapping

Width-thickness inch	WLL
1-1/4 x 0.029	540 kg (1,190 lb.)
1-1/4 x 0.031	540 kg (1,190 lb.)
1-1/4 x 0.035	540 kg (1,190 lb.)
1-1/4 x 0.044	770 kg (1,690 lb.)
1-1/4 x 0.050	770 kg (1,690 lb.)
1-1/4 x 0.057	870 kg (1,925 lb.)
2 x 0.044	1,200 kg (2,650 lb.)
2 x 0.050	1,200 kg (2,650 lb.)



Glossary of Terms

Aggregate Working Load Limit	The summation of the working load limits or restraining capacity of all devices used to secure an article on a vehicle.
Anchor Point	Part of the structure, fitting or attachment on a vehicle or cargo to which a tiedown is attached.
Banding	A strip of material that may be used to unitize articles and is tensioned and clamped or crimped back upon itself. (<i>same as "Strapping"</i>)
Bell Pipe Concrete	Pipe whose flanged end is of larger diameter than its barrel
Binder	A device used to tension a tiedown or combination of tiedowns.
Blocking	A structure, device or another substantial article placed against or around an article to prevent horizontal movement of the article.
Bracing	A structure, device or another substantial article placed against an
Bundle	A group of articles of that has been unitized for securement as a single article.
Bunk	A horizontal bolster fitted with a stake at each end that together support and contains a stack of logs, and is installed transversely across a vehicle.
Cab shield	A vertical barrier placed directly behind the cab of a tractor to protect the cab in the event cargo should shift forward.
Cargo	All articles or material carried by a vehicle, including those used in operation of the vehicle.
Chock	A tapered or wedge-shaped piece used to secure round articles against rolling.
Cleat	A short piece of material, usually wood, nailed to the deck to reinforce blocking.
Coil bunk	A device that keeps timbers supporting a metal coil in place.
Contained	Cargo is contained if it fills a sided vehicle, and every article is in contact with or sufficiently close to a wall or other articles so that it cannot shift or tip if those other articles are also unable to shift or tip.
Container Chassis Vehicle	A vehicle especially built and fitted with locking devices for the transport of intermodal containers.



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Cradle	A device or structure that holds a circular article to prevent it from rolling.
Crosswise	<i>Same as "Lateral".</i>
Deck	The load carrying area of a truck, trailer or intermodal container.
Dunnage	All loose materials used to support and protect cargo.
Edge Protector	A device placed on the exposed edge of an article to distribute tiedown forces over a larger area of cargo than the tiedown itself, to protect the tie-down and/or cargo from damage, and to allow the tiedown to slide freely when being tensioned.
Eye (of a cylindrical object)	The hole through the centre of the article.
Flatbed vehicle	A vehicle with a deck but no permanent sides.
Frame vehicle	A vehicle with skeletal structure fitted with one or more bunk units for transporting logs. A bunk unit consists of a front bunk and a rear bunk that together cradle logs. The bunks are welded, gusseted or otherwise firmly fastened to the vehicle's main beams, and are an integral part of the vehicle.
Friction mat	A device placed between the deck of a vehicle and cargo, or between articles of cargo, intended to provide greater friction than exists naturally between these surfaces.
G	The acceleration due to gravity, 9.823 m/sec ² (32.2 ft/sec ²).
Gross Vehicle Weight Rating	The maximum laden weight of a motor vehicle as specified by the "Manufacturer".
Headboard	A vertical barrier across the front of the deck of a vehicle to prevent forward movement of cargo.
Hook-lift Container	A specialized container, primarily used to contain and transport materials in the waste, recycling, construction/demolition and scrap industries which are used in conjunction with specialized vehicles, in which the container is loaded and unloaded onto a tilt frame body by an articulating hook-arm.
Integral Locking Device	A device which is purposely designed and used to restrain an article of cargo on a vehicle by connecting and locking attachment point(s) on the article to anchor point(s) on the vehicle.



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Integral Securement System	A feature of roll-on/roll-off containers and hook-lift containers and their related transport vehicles in which compatible front and rear hold down devices are mated to provide securement of the complete vehicle and its cargo.
Intermodal Container	A reusable, transportable enclosure that is especially designed with integral locking devices that secure it to a container chassis trailer to facilitate the efficient and bulk shipping and transfer of goods by, or between various modes of transport, such as highway, rail, sea and air.
Lateral	Sideways, transverse, crosswise or across a vehicle.
Lengthwise	<i>Same as "Longitudinal."</i>
Logs	Include all natural wood that retains the original shape of the bole of the tree, whether raw, partially or fully processed. Raw logs include all tree species that have been harvested, with bark, and may have been trimmed or cut to some length. Partially processed logs have been fully or partially debarked, or further reduced in length. Fully processed logs include utility poles, treated poles, and log cabin building components.
Longitudinal	Lengthwise or along the length of a vehicle.
Longwood	All logs that are not shortwood, so are over 4.9 m (16 feet) long. Such logs are usually described as long logs or treelength.
Restrained	An article that is not contained but is prevented from tipping or shifting.
Secured	Means that cargo is contained or restrained.
Shift	A change in the longitudinal or lateral position or orientation of an Article
Shortwood	All logs typically up to 4.9 m (16 feet) long. Such logs are often described as cut-up logs, cut-to-length logs, bolts or pulpwood. Shortwood may be loaded lengthwise or crosswise, though that loaded crosswise is usually no more than 2.6 m (102 inches) long.
Sided Vehicle	A vehicle whose cargo compartment is enclosed on all four sides by walls of sufficient strength to contain cargo, where the walls may include latched openings for loading and unloading, and includes vans and dump bodies, and includes a sided intermodal container carried by a vehicle.
Spacer	Material placed beneath an article, or between tiers of articles, to facilitate loading and unloading.



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Stack	A single column of articles placed one above another.
Stake	A member mounted close to vertical on a vehicle frame or as part of a bunk that serves to immobilize cargo placed against it. (<i>Same as "Standard"</i>)
Standard	A member mounted close to vertical on a vehicle frame or as part of a bunk that serves to immobilize cargo placed against it. (<i>Same as "Stake"</i>)
Tarpaulin (tarp)	A waterproof sheet used to cover cargo.
Tiedown	A combination of securing devices which form an assembly that attaches cargo to, or restrains cargo on, a vehicle or trailer, and is attached to anchor point(s).
Tier	One layer of articles that are stacked one upon another.
Tip	An article falls over.
Track	A set of plates on a tractor wheel that provide mobility for a tracked vehicle.
Transverse	(<i>Same as "Lateral"</i>)
Unitized load	A number of articles grouped together with sufficient structural integrity that they can be handled, transported and secured as a single article.
Vehicle	A truck, a truck tractor, a trailer or a semitrailer individually or in combination.
Wedge	A tapered piece of material, thick at one end and thin at the other.
Well	The depression formed between two cylindrical articles when they are laid with their eyes horizontal and parallel against each other.
Working load limit (WLL)	The maximum load that may be applied to a component of a cargo securement system during normal service, usually assigned by the manufacturer of the component.



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