

**CHAPTER 183. HOLD-DOWN AND TIEDOWN DEVICES FOR
METAL CARGO AND LOGS**

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Authority

The provisions of this Chapter 183 issued under the Vehicle Code, 75 Pa.C.S. § 4903, unless otherwise noted.

Source

The provisions of this Chapter 183 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179, unless otherwise noted.

§ 183.1. Application.

The requirements of this chapter is the responsibility of the carrier and is applicable to the transportation of cargo of the following types:

- (1) Sheet and strip in coils, coated and uncoated and tin mill products in coils, when the weight of either an individual article or group of articles bound together so as to be handled as one article exceeds 5,000 pounds.
- (2) Tin mill products in ingots and pipes, when the weight of either an individual article or group of articles bound together so as to be handled as one article exceeds 2,000 pounds.
- (3) Logs.

Source

The provisions of this § 183.1 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

Cross References

This section cited in 67 Pa. Code § 183.2 (relating to definitions); and 67 Pa. Code § 183.4 (relating to basic protection components).

§ 183.2. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Carrier—A person who or which as owner, lessee or other possessor of one or more vehicles, directs or controls the transportation of metal cargo or logs either for their own account or for hire.

Logs—Portions of trees having a natural shape and a diameter of at least 4 inches.

Metal cargo—Metal products of the type and quantity referred to in § 183.1(1) and (2) (relating to application).

Source

The provisions of this § 183.2 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179; amended March 18, 1988, effective March 19, 1988, 18 Pa.B. 1207. Immediately preceding text appears at serial pages (57010) to (57011).

§ 183.3. General rule.

A vehicle or combination transporting metal cargo or logs shall be loaded and equipped to prevent the shifting or falling of the cargo or logs.

Source

The provisions of this § 183.3 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

§ 183.4. Basic protection components.

(a) *Metal in coils.* A vehicle or combination carrying metal cargo of the type specified in § 183.1(1) (relating to application) shall be equipped with devices providing protection against shifting or falling cargo that meet the following requirements:

(1) *Coils with eye vertical.* Requirements for securing coils with eye vertical shall be as follows:

(i) Except as provided in paragraph (3)(ii) and (iii), a coil loaded with its eye vertical shall be secured as follows: one chain against the coil restricting it against forward motion, one chain against the coil restricting it against rearward motion and one chain over the top of the coil restricting it against vertical motion. The same length of chain may not be used to perform more than one of the above functions. The configuration of chains shall be arranged to effectively restrain side-to-side motion.

(ii) If two or more coils with their eyes vertical are grouped and loaded in a transverse row or rows, they shall be secured by: a chain against the front of the group restricting it against forward motion, a chain against the rear of the group restricting it against rearward motion and one chain over the top of each transverse row restricting vertical motion. The configuration of chains shall be arranged to effectively restrain side-to-side motion.

(iii) If two or more coils with their eyes vertical are grouped in a fore-and-aft direction, they shall be secured by: a chain against the front of the group restricting it against forward motion, a chain against the rear of the

group restricting it against rearward motion and a chain over the top of each coil restricting it against vertical motion. The configuration of chains shall be arranged to effectively restrain side-to-side motion.

(2) *Coils with eye crosswise.* A coil loaded with its eye crosswise shall be secured by: a chain through the eye restricting it against forward motion, a chain through the eye restricting it against rearward motion and timbers of at least nominal 4 by 4 inch cross-section and a length at least 75% of the width of the coil, tightly placed against the front and back of the coil and restrained as to restrict fore-and-aft motion.

(i) If two or more coils are loaded against each other, in the fore-and-aft direction, then only the foremost and rearmost coils need be secured as to prevent relative motion between the coils and the vehicle.

(ii) If more than one coil is loaded against another, a coil shall be secured by at least one chain so positioned as to restrict it against forward motion, except that the chain for the rearmost coil shall restrain it against rearward motion. The configuration of chains shall be arranged to effectively restrain side-to-side motion.

(iii) If two or more coils of approximately the same outside diameter are loaded side-by-side in a transverse row, then each row shall be secured by a chain through their eyes restricting them against forward motion, a chain through their eyes restricting them against rearward motion and timbers of at least nominal 4 by 4 inch cross-section and a length at least 75% of the width of the coil, tightly placed against the front and back of the coils and restrained as to restrict fore-and-aft motion. The configuration of chains shall be arranged to effectively restrain side-to-side motion.

(3) *Coils with eye lengthwise.* Requirements for securing coils with eye lengthwise shall be as follows:

(i) Except as provided in subparagraphs (ii) and (iii), each coil loaded with its eye lengthwise shall be secured by a chain over the top of the coil or two chains through the eye of the coil restricting it against side-to-side motion, and timbers of at least nominal 4 by 4 inch cross-section tightly placed against the sides of the coil and restrained so as to restrict side-to-side motion. If only one chain is used over the top of the coil, timbers of at least nominal 2 by 4 inch cross-section shall be tightly placed against the front and back of the coil and firmly secured to the longitudinal blocking required above so as to restrict any fore-and-aft motion. The configuration of chains shall be arranged to effectively restrain vertical and fore-and-aft motion.

(ii) Two coils of approximately equal outside diameter may be loaded side-by-side if they are secured by a chain through the eye of each coil crossed so as to restrict the coils against side-to-side motion or one chain over the top of both coils; and timbers of at least nominal 4 by 4 inch cross-section tightly placed against the outer side of each of the coils. If only one chain is used over the top of both coils, timbers of at least nominal 2 by 4

inch cross-section shall be tightly placed against the front and back of the coils and firmly secured to the longitudinal blocking required above so as to effectively restrain vertical and fore-and-aft motion.

(iii) If two or more coils are loaded end-to-end in a single longitudinal row or two longitudinal side-by-side rows, of approximately equal outside diameter, they shall be secured by a chain over the top of each coil and transverse row of two coils, by two chains through the eyes of a single lengthwise row or by a chain through the eyes of a row of a side-by-side group, crossed so as to restrain side-to-side motion; and timbers of at least nominal 4 by 4 inch cross-section tightly placed against a side of a single row or the outer sides of a double row and restrained so as to restrict side-to-side motion. If only one chain is used over the top of a coil in a single row or transverse row of two coils in a side-by-side group, timbers of at least nominal 2 by 4 inch cross-section shall be tightly placed against the front and back of the row and firmly secured to the longitudinal blocking required above so as to restrict fore-and-aft motion. The configuration of chains shall be arranged to effectively restrain vertical and fore-and-aft motion.

(b) *Metal in ingots and pipes.* A vehicle or combination carrying metal cargo of the type specified in § 183.1(2) shall be equipped with devices providing protection against shifting or falling cargo that meet the following requirements:

(1) An article or group of articles shall be secured by at least chain or cable over its top for at least each 8 feet of length with no less than two chains on an individual article or combination of articles banded or otherwise secured together and handled as a single unit.

(i) A combination of articles loaded side-by-side across the width of a vehicle shall be considered as a single unit.

(ii) Articles 8 feet or less in length may be mounted in the fore-and-aft direction if they are securely abutted one end to another, and are secured in place by metal angles or if a timber of at least nominal 4 by 4 inch cross-section is placed longitudinally over the articles and the metal angles or timbers are secured by a chain.

(iii) No additional securing devices shall be required for tiered articles than for a single level of articles if a tiered article rests securely on the article on which it is placed.

(2) On pole trailers, there shall be at least two binder chains or cables to secure the load to the forward bolster and two binder chains or cables to secure it to the rear bolster.

(c) *Logs.* Requirements for securing logs shall be as follows:

(1) A load of logs, consisting of one or more stacks of logs, carried on or by a vehicle or combination shall be secured by at least three binders, chains or straps.

(i) A stack of logs containing logs longer than 3 feet carried on or by a vehicle or combination shall be secured by at least three binders, chains or straps.

(ii) A stack of logs not longer than 3 feet carried on or by a vehicle or combination, with one or more additional stacks of logs, shall be secured by at least two binders, chains or straps.

(2) On open-body or stake-body vehicles, there shall be a sufficient number of vertical bars, posts or stakes, at least two on each side, to secure each stack of logs in the event of failure of the binders, chains or straps.

(3) This subsection does not apply to logs carried in a pick-up truck, dump truck or similar vehicle having solid sides and rear, if the logs are not loaded above the sides and rear.

(d) *Special restraining devices.* If a vehicle is constructed with a depression in the floor or other restraining devices affixed thereto, and they perform the functions required above for various types of timber, then such timbers may not be required.

Source

The provisions of this § 183.4 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179; amended May 23, 1980, effective May 24, 1980, 10 Pa.B. 2079; amended March 18, 1988, effective March 19, 1988, 18 Pa.B. 1207. Immediately preceding text appears at serial pages (57011) to (57014).

Cross References

This section cited in 67 Pa. Code § 183.6 (relating to blocking and bracing).

§ 183.5. Securement systems.

(a) *Application of section.* The requirements of this section applies to tiedown assemblies—including chains, cables, steel straps, other securement devices and attachment or fastening devices used in conjunction therewith—which are used to secure metal cargo or logs to vehicles in transit.

(b) *Tiedown assemblies.* The aggregate static breaking strength of the tiedown assemblies used to secure an article against movement in a direction shall be at least 1 1/2 times the weight of that article.

(1) Chain used as a component of a tiedown assembly shall conform with the requirements of the August 1961 edition of the National Association of Chain Manufacturers' *Welded Chain Specifications*, as amended, applicable to all types of chain. Copies of these specifications may be secured by writing to the National Association of Chain Manufacturers, 111 West Washington Street, Chicago, Illinois 60601.

(2) Steel strapping used as a component of a tiedown assembly shall conform with the requirements of Federal Specification No. QQ-S-781 (1973). Copies of these specifications may be secured from the Superintendent of Documents, United States Government Printing Office, Washington, D.C.

20402. Steel strapping that is one inch wide or wider shall have at least two pairs of crimps in each seal and, when end-over-end lap joints are formed, shall be sealed with at least two seals.

(c) *Load binders and hardware.* The strength of load binders and hardware that are part of, or used in conjunction with, a tiedown assembly shall be equal to or greater than the minimum strength specified for the tiedown assembly in subsection (b).

(d) *Attachment to vehicles.* Tiedown assemblies shall be attached to vehicles as follows:

(1) The hook, bolt, weld or other connector by which a tiedown assembly is attached to a vehicle, and the mounting place and means of mounting the connector, shall be at least as strong as the tiedown assembly when that connector is loaded in a direction in which the tiedown assembly may load or place a stress on it.

(2) The anchorage of a winch or other fastening device mounted on a vehicle and used in conjunction with a tiedown assembly shall have a combined tensile strength equal to or greater than the strength of the tiedown assembly.

(e) *Adjustability.* A tiedown assembly and its associated connectors and attachment devices shall be designed, constructed and maintained so that the driver of an in-transit vehicle can tighten them. However, the provisions of this subsection does not apply to a securement system in which the tiedown assembly consists of steel strapping or to a tiedown assembly which is not required by this section.

(f) *Limitations.* Limitations on tiedown assemblies shall be as follows:

(1) No chain may be used if a link is or has been:

- (i) Worn or gouged through over 10% of its thickness.
- (ii) Cracked to any extent.
- (iii) Bent, twisted, stretched or collapsed.

(iv) Replaced by a link not as strong in tension as the minimum required in subsection (b).

(2) On load binders:

- (i) The hook of the binder may not be spread or distorted.
- (ii) The attaching pin may not be bent, worn over 10% of its thickness or inadequately secured to the hook.
- (iii) The binder parts may not be bent, repaired by welding or so worn or distorted as to prevent the chain from being tensioned properly or retaining tension when in the secured position.

(3) Cables may not be worn, frayed or have over 10% of their strands broken at any point.

Source

The provisions of this § 183.5 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

§ 183.6. Blocking and bracing.

(a) *Forward movement.* When a vehicle or combination carries metal cargo or logs that are not firmly braced against a front-end structure that conforms with the requirements of § 183.7 (relating to front-end structure), the metal cargo or logs shall be secured so that when the vehicle decelerates at a rate of 20 feet per second the cargo or logs remain on the vehicle and do not penetrate the front-end structure of the vehicle.

(b) *Movement to rear.* Metal cargo and logs shall be secured so that they remain on the vehicle or combination and do not fall off the rear-end of the vehicle.

(c) *Sideways movement.* When a vehicle or combination carries metal cargo or logs that may shift sideways in transit, the cargo or logs shall be securely blocked or braced against the sides, sideboards or stakes of the vehicle; or be secured by devices that conform with the requirements of § 183.4(c) (relating to basic protection components).

Source

The provisions of this § 183.6 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

§ 183.7. Front-end structure.

(a) *General rule.* Except as provided in subsection (h), a vehicle or combination carrying metal cargo or logs shall be equipped with a front-end structure or similar device of sufficient strength to prevent load shifting, and penetration or crushing of the compartment of the driver.

(b) *Location.* The front-end structure shall be located between the metal cargo or logs of the vehicle and the driver of the vehicle.

(c) *Height.* A front-end structure shall extend to the height of the passenger compartment of the vehicle or to a height at which it blocks forward movement of any metal cargo or logs being carried on the vehicle, whichever is less.

(d) *Width.* The front-end structure shall have a width which is at least equal to the width of the vehicle or which blocks forward movement of an item of cargo being transported on the vehicle, whichever is less.

(e) *Strength.* A front-end structure and the manner in which it is attached shall be capable of withstanding at least the horizontal forward static load indicated below:

- (1) A front-end structure less than 6 feet in height: a horizontal forward static load equal to 1/2 of the weight of the metal cargo or logs being transported on the vehicle uniformly distributed over the entire portion of the front-

end structure that is at or below the height of the passenger compartment or a height above the floor of the vehicle at which it blocks forward movement of an item of the metal cargo or logs of the vehicle, whichever is less.

(2) A front-end structure 6 feet in height or higher: a horizontal forward static load equal to .4 of the weight of the metal cargo or logs being transported on the vehicle uniformly distributed over the entire front-end structure.

(f) *Penetration resistance.* The front-end structure shall be designed, constructed and maintained so that it is capable of resisting penetration by an item of metal cargo or logs that contacts it when the vehicle decelerates at a rate of 20 feet per second. The front-end structure may have no aperture large enough to permit an item of cargo or log in contact with the structure to pass through it.

(g) *Substitute devices.* The requirements of this section may be met by the use of devices performing the same functions as a front-end structure, if the devices are at least as strong as and provide protection against shifting metal cargo or logs at least equal to a front-end structure which conforms with these requirements.

(h) *Exemptions.* The requirements of this section does not apply to the following vehicles:

(1) A trailer being towed by a vehicle that is equipped with a front-end structure that conforms with the requirements of this section.

(2) A full trailer being towed by a vehicle that is loaded in such a manner that the metal cargo on the towing vehicle conforms with the requirements of this section for a front-end structure.

(3) The requirements of subsections (e) and (f) does not apply to a vehicle manufactured before October 1, 1975.

Source

The provisions of this § 183.7 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

Cross References

This section cited in 67 Pa. Code § 183.6 (relating to blocking and bracing).

§ 183.8. General requirements for securement.

(a) *Tightening.* Tiedown assemblies shall be tightened by the driver before the vehicle leaves the loading area.

(b) *Examination.* Loads shall be examined by the driver and load-securing devices shall, if necessary, be tightened or repositioned, within 10 miles after leaving the loading area and at approximately 100 mile intervals thereafter while in transit.

(c) *Timber.* Timber used for blocking shall be of sound lumber in commercially dressed sizes, generally designated by the dimension indicated.

(d) *Additional securement.* Regardless of the other requirements of this chapter, a method of securement which does not restrain the load from moving during

transportation may not be permitted and additional restraining devices shall be used to secure the load properly.

Source

The provisions of this § 183.8 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

§ 183.9. Noncomplying vehicles.

A vehicle or combination in violation of any of the requirements of this chapter may not travel upon a highway in this Commonwealth until the vehicle or combination and its metal cargo or logs are brought into conformance with the requirements of this chapter.

Source

The provisions of this § 183.9 adopted September 14, 1979, effective September 15, 1979, 9 Pa.B. 3179.

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