

**CHAPTER 181. HOLD-DOWN AND TIEDOWN DEVICES FOR  
JUNKED VEHICLES AND VEHICLE HULKS**

- Sec.  
181.1. Scope.  
181.2. Definitions.  
181.3. General requirements.  
181.4. Basic protection components.  
181.5. Securement systems.  
181.6. Blocking and bracing.  
181.7. Front-end structure.  
181.8. Cargo.  
181.9. General requirements for securement.  
181.10. Noncomplying vehicles.

**Authority**

The provisions of this Chapter 181 issued under the Vehicle Code, 75 Pa.C.S. § 4903(d), unless otherwise noted.

**Source**

The provisions of this Chapter 181 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205, unless otherwise noted.

**§ 181.1. Scope.**

The requirements of this chapter shall be the responsibility of the carrier and shall be applicable to the transportation of metal products of the following types—junked vehicles or vehicle hulks.

**Source**

The provisions of this § 181.1 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

**§ 181.2. Definitions.**

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

*Junked vehicle*—A vehicle that has been issued a certificate of junk or that is not lawfully registered and remains inoperative or incapable of being driven and that is valueless except for junk.

*Tier of junked vehicles or vehicle hulks*—A stack of one or more than one junked vehicle or vehicle hulk. The tier shall consist of a junked vehicle or vehicle hulk if only one junked vehicle or vehicle hulk is carried with no other junked vehicle or vehicle hulk placed directly above it. A tier shall also consist of a series of junked vehicles or vehicle hulks placed directly one on top of the other.

*Vehicle hulk*—That part of a vehicle that remains after the vital parts as motor, transmission, axles or frame have been removed. It shall be a vehicle

which has primarily only the body and sometimes the frame remaining and which may or may not have been crushed, compressed or compacted.

**Source**

The provisions of this § 181.2 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

**§ 181.3. General requirements.**

A truck, truck tractor, semitrailer and full trailer, shall, when transporting junked vehicles or vehicle hulks, be loaded and equipped to prevent the shifting or falling of the cargo in the manner prescribed by the provisions of this chapter.

**Source**

The provisions of this § 181.3 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

**§ 181.4. Basic protection components.**

A cargo carrying vehicle or combination of vehicles shall be equipped with devices providing protection against shifting or falling cargo that meet the requirements of either paragraph (1) or (2).

(1) *Option A.* The vehicle shall have sides, sideboards or stakes, and a rear endgate, endboard or stakes. Those devices shall be strong enough and high enough to assure that cargo will not shift upon, or fall from, the vehicle. Those devices shall have no aperture large enough to permit cargo in contact with one or more of the devices to pass through it.

(2) *Option B.* The vehicle or combination of vehicles shall have at least two tiedown assemblies for each tier of junked vehicles or vehicle hulks and the assemblies shall meet the requirements of § 181.5 (relating to securement systems) for each tier of junked vehicles or vehicle hulks. In addition, the vehicle or combination of vehicles shall have as many additional tiedown assemblies meeting the requirements of § 181.5 as are necessary to secure cargo being transported either by direct contact between the cargo and the tiedown assemblies or by dunnage which is in contact with the cargo and is secured by tiedown assemblies. Tiedown assemblies or dunnage in contact with sufficient exterior, including topmost, pieces of the cargo and securely holding each interior or lower piece will comply with this requirement.

**Source**

The provisions of this § 181.4 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

**Cross References**

This section cited in 67 Pa. Code § 181.6 (relating to blocking and bracing).

**§ 181.5. Securement systems.**

(a) *General requirements.* This section applies to tiedown assemblies, including chains, cables, steel straps, other securement devices, and attachment or fas-

tening devices used in conjunction therewith, which are used to secure cargo to motor vehicles in transit. Devices which are used to secure cargo to a motor vehicle in transit under this chapter shall conform with the requirements of this section.

(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. Chain used as a component of a tiedown assembly shall conform with the requirements of the August 1961 edition to the Welded Chain Specifications of the National Association of Chain Manufacturers, 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 St., Chicago, IL 60601. 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, U. S. 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 that tiedown assembly in subsection (b).

(d) *Attachment to the vehicle.* 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.

(e) *Winches or other fastenings.* The anchorages 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.

(f) *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 the provisions of this section.

(g) *Tiedown limitations.* Limitations on tiedowns shall be as follows:

- (1) No chain may be used if any link is:
  - (i) Worn or gouged through over 10% of its thickness.
  - (ii) Cracked to an extent.
  - (iii) Bent, twisted, stretched or collapsed.

(iv) If a replacement or connecting link is not as strong in tension as the minimum required by subsection (b).

(2) For load binders the hook of the binder shall not be spread or distorted. The attaching pin may not be bent, worn over 10% of its thickness, or inadequately secured to the hook. The binder parts may not be bent, repaired by welding or so worn or distorted as not to enable the chain to be tensioned properly or to retain tension when in the secured position.

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

(4) Load securing devices, such as winches, shall be secured to the vehicles and may not give evidence of deterioration as by cracking of welds or distortion, wear or cracking of bolts. Ratchets shall be so designed and maintained as to hold the cable drum securely.

(5) For tiedown assemblies and other securing devices, natural or man made fibers, such as nylon or hemp rope, may not be used.

#### Source

The provisions of this § 181.5 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

#### Cross References

This section cited in 67 Pa. Code § 181.4 (relating to basic protection components).

### § 181.6. Blocking and bracing.

Requirements for blocking and bracing shall be as follows:

(1) When a vehicle or combination of vehicles carries cargo that is not firmly braced against a front-end structure that conforms with the provisions of § 181.7 (relating to front-end structure), the cargo shall be secured so that, when the vehicle decelerates at a rate of 20 feet per second, the cargo will remain on the vehicle and will not penetrate the front-end structure of the vehicle.

(2) The cargo shall be secured so that the cargo will remain on the vehicle and will not fall off the rear-end structure of the vehicle.

(3) When a vehicle or combination of vehicles carries cargo that may shift sideways in transit, the cargo shall either be securely blocked or braced against the sides, sideboards or stakes of the vehicle or be secured by devices that conform with the provisions of § 181.4(2) (relating to basic protection components).

#### Source

The provisions of this § 181.6 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

### § 181.7. Front-end structure.

(a) *General requirements.* General requirements for front-end structures shall be as follows:

(1) Except as provided in subsection (g), every cargo carrying motor vehicle shall be equipped with a headerboard or similar device of sufficient strength to prevent load shifting and penetration or crushing of the compartment of the driver.

(2) On and after the effective dates specified in subsection (h), every cargo carrying motor vehicle must have a front-end structure that conforms with the provisions of this section.

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

(c) *Height and width.* The front-end structure shall extend either to a height of 4 feet above the floor of the vehicle or to a height at which it blocks forward movement of any item of cargo being carried on the vehicle, whichever is lower. 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 any item of cargo being transported on the vehicle, whichever is narrower.

(d) *Strength.* The front-end structure and the manner in which it is attached shall be capable of at least withstanding the horizontal forward static load specified in either paragraph (1) or (2).

(1) For a front-end structure less than 6 feet in height, a horizontal forward static load equal to 1/2 of the weight of the cargo being transported on the vehicle uniformly distributed over the entire portion of the front-end structure that is within 4 feet above the floor of the vehicle or that is at or below a height above the floor of the vehicle at which it blocks forward movement of any item of the cargo of the vehicle, whichever is less.

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

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

(f) *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 cargo at least equal to, a front-end structure which conforms with those requirements.

(g) *Exemptions.* The following motor vehicles shall be exempt from the requirements of this section:

(1) A pole trailer or semitrailer being towed by a truck tractor 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 equipped with a front-end structure that conforms with the requirements of this section for a front-end structure.

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

(4) The requirements of subsections (d) and (e) may not apply to a motor vehicle manufactured before October 1, 1975.

(h) *Effective dates.* The vehicles which are not exempted by subsection (g) shall conform with the requirements of this section as follows:

| <i>If the vehicle was manufactured:</i> | <i>It must conform to the rules in subsection:</i> | <i>On and after:</i>  |
|---|--|---|
| Before June 1, 1975                     | (a), (b) and (f)                                   | October 1, 1975 or the date it was manufactured whichever is later. |
| Before June 1, 1975                     | (c)  | January 1, 1976.  |
| On or after June 1, 1975                | (a) through (f) inclusive                          | The date it was manufactured.                                       |

Subsections (d) and (e) does not apply to a motor vehicle that was manufactured before October 1, 1975.

#### Source

The provisions of this § 181.7 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

#### Cross References

This section cited in 67 Pa. Code § 181.6 (relating to blocking and bracing).

### § 181.8. Cargo.

In this chapter, cargo shall include any junked vehicles or vehicle hulks.

#### Source

The provisions of this § 181.8 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

### § 181.9. 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 and shall be nominal 4 by 4 inch cross-section or more. The term “nominal” as used in this subsection to describe timber means commercially dressed sizes.

**Source**

The provisions of this § 181.9 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

**§ 181.10. Noncomplying vehicles.**

A vehicle or combination of vehicles which transports junked vehicles or vehicle hulks and which fails to comply with the provisions of this chapter may not be permitted to travel upon roadways or sections of roadways in this Commonwealth. A vehicle or combination of vehicles in violation of this chapter may not travel upon the roadways or sections of roadways in this Commonwealth until the vehicle or combination of vehicles and its cargo is brought into conformance with the provisions of this chapter.

**Source**

The provisions of this § 181.10 adopted January 20, 1978, effective January 21, 1978, 8 Pa.B. 205.

[Next page is 183-1.]

181-8

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