



Kansas LTAP Fact Sheet

A Service of The University of Kansas Transportation Center for Road & Bridge Agencies

Shift Gears, Not Loads: Secure Your Loads

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Federal Motor Carrier Safety Administration

Secure any articulating components of equipment you are transporting.



Improperly secured cargo loads can shift and fall off vehicles, sometimes leading to disastrous results. In 2009 in St. Louis, two binders failed that were securing a bulldozer on a flatbed truck, sending the machinery into an oncoming vehicle and ending two women's lives. The driver was found accountable for two counts of involuntary manslaughter due to an inadequate securement of the bulldozer. The loss of life in St. Louis was a result of the driver's lack of education and negligence. A similar incident happened about four years ago near Lawrence, KS, when a backhoe part fell off a truck on Kansas Highway 10 and killed a woman in the vehicle behind.

Public works departments routinely move cargo such as aggregate, sand, pipe, small vehicles, heavy equipment, signs, etc. This article seeks to inform readers about cargo securement regulations at the state and federal levels, what they cover in general, why they are important to your agency, and where to go for more information and training.

Kansas regulation

Kansas law requires proper securement of loads on all vehicles. See sidebar on next page on K.S.A. 8-1906 and how it pertains to your vehicles.

The state regulation requires load securement, but it does not provide information on how to attain it. What methods can you use to secure a load? How do you know if you have used the right equipment? How do you know if you have used enough tie-downs for your load? For answers to these questions, start by referring to the cargo securement regulations and guidance set out by the Federal Motor Carrier Safety Administration (FMCSA).

Federal regulations

FMCSA cargo securement regulations apply to interstate transportation. They contain securement requirements based on deceleration and acceleration thresholds, and specify the number of cargo securement devices to be used, what types to use, and how they should be attached.

Local governments are exempt from FMCSA interstate regulations. However, if your jurisdiction is ever sued for an incident involving improper securement, it's a good bet the attorney for the victim will cite FMCSA's North American Cargo Securement Standard as containing reasonable methods to attain proper securement. If you don't use FMCSA standards, you had better have another justification for your methods that will stand up in court.

Good practices in securement

The following are adapted from the FMCSA Driver Handbook on Cargo Securement. See the Resources section on page 2 for a link to this document.

Do not transport the cargo until it is verified that:

- The vehicle's cargo is properly distributed and adequately secured.
- The vehicle's structure and equipment are secured, including the tailgate, doors, tarps, spare tire, other equipment used in the vehicle's operation, and any cargo securing equipment.
- The cargo or any other object does not:
 - Obscure the driver's view ahead or to the right or left.



K.S.A 8-1906 regulates the securement of loads. Some sections apply to all vehicles and some to vehicles carrying livestock. The sections that apply to your agency are:

- No vehicle shall be driven or moved on any highway unless such vehicle is so constructed or loaded as to prevent any of its load from dropping, sifting, leaking or otherwise escaping therefrom, except that: This section shall not prohibit the necessary spreading of any substance in highway maintenance or construction operations;

—and—

- No person shall operate on any highway any vehicle with any load unless such load and any covering thereon is securely fastened so as to prevent the covering of load from becoming loose, detached or in any manner a hazard to other users of the highway.

The full version of K.S.A. 8-1906 is at http://kansasstatutes.lesterama.org/Chapter_8/Article_19/8-1906.html

- Interfere with the movement of the driver's arms or legs.
- Prevent the driver's free and ready access to accessories required for emergencies. OR
- Prevent the free and ready exit of any person from the vehicle's cab or driver's compartment.

"There is no tarp law in Kansas, but the regulation says that the cargo must stay in the vehicle."

—Mike Hoeme

How well must cargo be secured? Cargo must be secured so that it does not leak, spill, blow off the vehicle, fall from the vehicle, fall through the vehicle, otherwise become dislodged from the vehicle, or shift upon or within the vehicle to such an extent that the vehicle's stability or maneuverability is adversely affected.

What securement devices should I use? Cargo securement devices must be capable of withstanding the forces associated with deceleration, acceleration, backing or lateral movement. Tarps are not required in Kansas, but are often necessary to comply with the regulation that all cargo must stay in the vehicle.

There are many types of tie-downs, including chains of different grades and alloys, that can be used for direct tie-down. An article can also be secured indirectly by increasing the pressure on it with another article or articles. To learn how the working load limit of a tie-down is determined, go to <http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.aspx?reg=393.108>.

Also note: After unloading a load from a low-boy trailer, make sure the trailer is free of mud and other debris and that tie-downs are securely stored.

FMCSA guidance has three conditions a driver should be sure are met before transporting any cargo:

Condition 1: Cargo is fully contained by structures of adequate strength.

- Cargo cannot shift or tip
- Cargo is restrained against horizontal movement by vehicle structure or by other cargo. Horizontal movement includes forward, rearward, and side to side.

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

Condition 3: To prevent shifting or tipping, cargo is immobilized or secured on or within a vehicle by tiedowns along with:

- Blocking
- Friction mats
- Void fillers
- Bracing
- Other cargo
- Combination of these

Make sure the size of chain and number of tie downs are adequate for the aggregate weight, and that the securement devices are being used correctly to achieve the above conditions.

Resources

Visit the websites listed in the Sources below to increase your knowledge of cargo securement practices. Of special note is FMCSA's driver's handbook that contains photographs of proper securement of different types of loads. There are brief sections in the handbook on securing concrete pipe, heavy machinery, logs, and boulders.

Get your people trained

This article just touches the surface of this topic, and even the FMCSA materials mentioned here don't give you all you need to know about securing some of the items you typically transport. Training on cargo securement is a must, and luckily, in Kansas it is readily available.

The Kansas Highway Patrol's Troop I has officers stationed around the state who investigate crashes involving interstate-regulated vehicles carrying loads. They also provide free training on FMCSA regulations, in partnership with the FMCSA. Their training typically involves a classroom presentation and a walk-around using actual vehicles and trailers. Call Captain Chris Turner for more information at (785) 296-7189.

The Kansas Corporation Commission also offers training for free at about seven locations around the state each month. See their calendar of upcoming presentations at http://www.kcc.state.ks.us/trans/safety_meetings.htm. They can also tailor the training to the types of cargo and materials your agency



and contractors typically transport. They will either send a PowerPoint presentation for you to show in-house, or they will come to your agency to give the training in person. Call Mike Hoeme (pronounced Hay-mee), transportation director, at (785) 271-3333 or Gary Davenport, deputy transportation director, at (785) 271-3151. Training on securement “is what we’re here for,” said Hoeme, and they are glad to help your agency learn what to do and how to keep your roads safer from falling debris, or worse. ■

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Sources:

- Driver’s Handbook on Cargo Securement: Guide to the North American Cargo Securement Standard. November 2003. Federal Motor Carrier Safety Administration. <http://www.fmcsa.dot.gov/documents/cargo/cargosecurement-16-04.pdf>
- “Understanding the Federal Motor Carrier Associations Cargo Securement Regulations.” <http://www.fmcsa.dot.gov/documents/cargo/cs-policy.pdf>. N.p., n.d. Web. 26 Feb. 2013.
- Kansas Statutes Annotated 8-1906. http://kansasstatutes.lesterama.org/Chapter_8/Article_19/8-1906.html
- Phone Interview: Mike Hoeme, May 24, 2013.