To The Point
Securing Commercial Cargo

An improperly secured load on a vehicle could lead to extensive damage to the cargo. But even more seriously, cargo that falls off a vehicle can cause severe damage to other vehicles and injure people on the roadways.

Regulations

Federal Motor Carrier Safety Administration (FMCSA) regulations on securing cargo apply to commercial motor vehicles, including combination vehicles, that have a gross vehicle weight or combination weight rating of more than 10,001 pounds. This includes all types of cargo except those transported in a tank, hopper, box, or similar device that's part of the vehicle's structure. Local or state regulations may be more stringent than federal regulations, so it's prudent to check with local and state laws on intrastate trips.

Case in Point

A Missouri hauler was driving on Route I-70 with a load of scrap metal. A metal plate fell off the truck and struck the vehicle behind it, instantly killing a 25-year-old woman. The truck driver was arrested and charged with manslaughter, and the company and its driver were ordered to pay $3 million in damages. At the trial, the company's president testified that metal objects had fallen off the company's trucks and damaged other vehicles at least ten times in the past. Yet, the company decided to allow the drivers to decide when and how to secure their loads. Lives were lost, and the company was ruined due to negligence—when it was easily preventable.

Cargo Shifting

Cargo shifts forward when the vehicle decelerates, backward when the vehicle accelerates or contacts an object while in reverse, and sideways when the vehicle makes a turn. A load that's not fully contained, such as on a flatbed trailer, is also subject to the upward forces created traveling over bumps or up a hill. Knowing these shift patterns will help choose the best methods to secure cargo and limit its movement.

The following recommendations can help mitigate this risk:

- Ensure the components of the vehicle— floors, decks, walls, headboards, tie-down anchor points, stakes, bulkheads, and posts—are strong enough to withstand the forces to which the cargo is routinely subjected.
- Check for obvious signs of damage or weakened parts, such as gouges, pits, or cracked welds on the chains.
- Ensure that tie-downs—including steel strapping, synthetic webbing, wire rope, chain, and cordage—are undamaged, can be tightened, and are of the required strength for the load.
- Keep in mind that unique loads—such as metal coils, paper rolls, concrete pipes, logs, lumber, intermodal containers, and roll-on/roll-off containers—have different shifting patterns and specific securing requirements.

The following specific techniques and tools can be applied:

- The number of tie-downs needed will depend on the length and weight of the article itself. For example, one tie-down is needed for items up to 5 feet long and 1,100 pounds in weight.
- Ensure tie-downs are not being abraded or cut by the cargo. If using edge protection, the materials should resist abrasion, cutting, and crushing.
- For some loads, shoring bars and tie-downs might not be adequate. In such cases, use loose packing materials to protect and support the cargo or an inflatable bag to fill the space between the cargo and the vehicle wall.
- If using wood-based material to support cargo, make sure it's seasoned hardwood and free from decay, knots, and splits.
- Use friction mats to keep loads from sliding on smooth metal surfaces in trailer beds.
- For cargo susceptible to rolling, use chocks, wedges, or cradles for support.
- For sensitive or high-value cargo, consider using a combination of these securement techniques.

Learn More & Connect

For more information on protecting your business, contact your local risk engineer, visit the Chubb Risk Consulting Library, or check out www.chubb.com/riskconsulting.

On the Road

Responsible drivers conduct pre-trip inspections of the load and the restraint systems. It is prudent to inspect the vehicle after the first 50 miles of driving. Subsequent inspections should be performed every 150 miles, or whenever the driver changes duty status, or if the vehicle has been driven for 3 hours, whichever comes first. These checks ensure cargo hasn't shifted, restraints haven't become loose, or tie-downs released during transportation. Keeping cargo secured properly reduces the risk of damage and protects the safety of other vehicles and drivers.

Resources

FMCSA: Cargo Securement Rules, www.fmcsa.dot.gov/regulations/cargo-securement/cargo-securement-rules

FMCSA: The Motor Carrier Safety Planner, 5.1.3 Cargo Securement (393.100), csa.fmcsa.dot.gov/safetyplanner/MyFiles/SubSections.aspx?ch=22&sec=64&sub=132