Since this dump truck has a full load of paper, debris and garbage, use a cover. Without one, parts of this load will probably blow out of the box.

Remove any debris from the ledges outside the box and tailgate before you start your trip. Close the tailgate tightly against the box so the load can’t escape through cracks.

Front-end structures

A cab shield (cab protector, bulkhead) is not considered a front-end structure or part of a cargo securement system under Standard 10.

The Standard defines a front-end structure as a vertical barrier across the front of a deck that prevents cargo from moving forward. Division 5 of Part 1 of the Standard sets out requirements for front-end structures used as part of the cargo securement system.

Strength — Front-end structures less than 1.83 m in height must be able to withstand a static load of at least 50 per cent of the total cargo weight uniformly distributed over the front-end structure. If it’s 1.83 m or taller, then the structure must be able to withstand a static force equal to 40 per cent of the total cargo weight.

Height — To protect the vehicle operator, the Standard requires a front-end structure that’s no shorter than 122 cm above the deck, or the height at which the front-end structure prevents the cargo from moving forward.

Width — The front-end structure must be no narrower than the width of the vehicle, or the width at which the front-end structure prevents the cargo from moving forward.

Penetration resistance — A front-end structure must be able to resist penetration by an article of cargo when the vehicle decelerates at a rate of 6.1 m/s². A front-end structure must not have any openings or gaps that would allow an article of cargo to pass through.
Load projections

Loads that project beyond your vehicle can cause problems. Projections take up additional road space and may intrude on other traffic lanes and space beside the roadway, especially when you’re turning your vehicle. Allow yourself extra room when you transport cargo that has projections.

You must follow the standard limits for load projections unless you have a permit that allows you to extend your limit.

**Front** — Loads can’t extend more than three meters beyond the center of the front axle.

**Sides** — Loads can’t be more than 2.6 m wide.

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**Fast fact**

TAC is the Transportation Association of Canada. To determine whether your vehicle is a TAC vehicle, refer to the Commercial Transport Regulations. TAC vehicles must meet different standards from non-TAC vehicles.

**Fast fact**

Front load projections on trailers can’t extend more than a two metre radius beyond the articulation point for TAC vehicles or 2.25 m for non-TAC vehicles.

Here are two examples of acceptable front load projections. In the top illustration, the load extends a maximum of one metre beyond the front bumper. The bottom illustrations show two views of the same load. This load extends a maximum of a two metre radius measured from the kingpin (TAC vehicle).

Since the load on this vehicle exceeds the legal width requirements, you’ll need an oversize permit. See *Oversize and overload permits* later in this chapter.
You could be carrying a variety of cargo types in your work as a commercial vehicle driver. The Standard outlines general cargo securement requirements that apply to all types of cargo. There are also specific requirements for different types of commodities (cargo) that you might carry. Unless otherwise specified in the Standard, the general and the specific requirements both apply.

The information given here is only a summary and doesn’t include all the types of cargo. Refer to Standard 10.

Standard 10 provides the requirements pertaining to Log Configuration, as well as those for:

- shortwood loaded crosswise
- one stack of shortwood loaded crosswise
- two stacks of shortwood loaded crosswise
- long vehicles carrying shortwood loaded crosswise
- shortwood loaded lengthwise
- longwood loaded lengthwise
- pole trailers.

Inspecting log loads — Before a vehicle transporting logs enters a highway from a private road, the driver must inspect the vehicle, the logs and the securing devices to ensure compliance with the Standard. If required, the driver must make adjustments and add more securing devices. Standard 10 also provides that short logs loaded crosswise must be secured with a device that maintains tension at all times and automatically takes up slack in the tiedown as the logs settle.

Division 2 of the Standard outlines requirements for dressed lumber.
Building products

Bundles of lumber, drywall, plywood and similarly shaped building products must be secured in accordance with the requirements set out in Division 2 of Part 2 of the Standard.

Side-by-side bundles must either be placed in direct contact with one another, or prevented from shifting towards each other by dunnage or blocking.

You can secure bundles in two or more layers using a variety of methods:

1. If blocked from lateral movement by stakes on the sides of the vehicle, or by blocking or high friction devices between tiers, secure bundles by tiedowns laid over the top layer, with a minimum of two tiedowns for bundles longer than 1.52 m. Proper securement of bundles on a vehicle equipped with stakes is shown below.

2. If the bundles are placed directly on top of one another, or on spacers of adequate size and orientation, secure by a combination of:
   - tiedowns over the top layer,
   - tiedowns over the second layer, or at 1.85 m above the trailer deck, whichever is greater, and
   - tiedowns for other multiple layers not over 1.85 m above the trailer.

For example:
If there are two tiers of bundles, each over 1.85 m in height, secure each tier by tiedowns in accordance with the general cargo securement requirements.

If there are three tiers of bundles and the bottom two tiers exceed 1.85 m in height, secure all tiers independently in accordance with the general cargo securement requirements.

If there are three tiers of bundles and only the topmost tier exceeds 1.85 m in height, then secure the bottom two tiers together and secure the top tier independently. This arrangement of bundles is shown below.
3. Secure bundles by tiedowns over each layer, with at least two tiedowns on each top bundle longer than 1.52 m, as shown below.

**Metal coils**

The Standard outlines specific requirements for transporting coils of rolled sheet metal where the shipment of coils weighs 2,268 kg or more.

Coils transported with eyes vertical must be prevented from tipping forward, rearward and sideways. Use blocking, bracing, friction mats or tiedowns to prevent forward and rearward movement of vertical coils. Secure coils transported with eyes crosswise or lengthwise against rolling as well as against forward and rearward movement.

Detailed requirements for securement of the various possible configurations of metal coils can be found in Division 3 of Part 2 of the Standard.

**Paper rolls**

Secure shipments of paper rolls weighing 2,268 kg or more in accordance with Division 4 of Part 2 of the Standard.

For rolls loaded in sided vehicles, use blocking, bracing, friction mats or tiedowns to prevent sliding, tipping or rolling. For stacks of rolls, use additional securement to prevent significant movement by upper layers. For rolls loaded on flatbed or curtain-sided vehicles, use additional tiedowns. Transporters of paper rolls should refer to the Standard for detailed securement requirements.

**Concrete pipe**

Securement of concrete pipe loaded crosswise on a flatbed vehicle is governed by Division 5 of Part 2 of the Standard. The general cargo securement requirements apply to concrete pipe transported in sided vehicles or loaded with eyes vertical or lengthwise.
Group together pipes of different sizes within one load and secure separately. Immobilize the front and rear pipes in a single or bottom layer by blocking, wedges, vehicle structure or other equivalent means. Use tiedowns through the front and end pipes in order to firmly hold inner pipes in place. As shown above, place tiedowns both lengthwise and crosswise over groups of small pipe that aren’t individually secured by tiedowns.

Large pipes require additional tiedowns through individual pipes. Detailed securement requirements are outlined in the Standard.

**Intermodal containers**

Division 6 of Part 2 of the Standard outlines securement requirements for intermodal containers. Secure cargo within the containers in accordance with the general cargo securement requirements or the commodity specific requirements.

Secure intermodal containers loaded on a container chassis vehicle to the container chassis with integral locking devices. These devices must ensure the cargo doesn’t move more than the maximum set out in the Standard. While chain isn’t an integral locking device, you can use it as an interim measure if the integral locking device is damaged or missing.

Secure intermodal containers transported on other types of vehicles to the vehicle by:

- chains, wire ropes or integral locking devices that are fixed to all the lower corners, and/or
- crossed chains that are fixed to all the upper corners

with an aggregate working load limit of 50 per cent of the weight of the container. Securement points don’t need to be on the exact corners of the container.
Vehicles as cargo

In accordance with Division 7 of Part 2 of the Standard, vehicles with a GVW of less than 4,500 kg must be secured at both the front and rear with a minimum of two tiedowns. A winch may be used as a front tiedown. The general requirements for numbers of tiedowns don’t apply. Heavy vehicles that weigh more than 4,500 kg must be restrained by a minimum of four tiedowns, each with a working load limit of at least 2,268 kg. Additional tiedowns may be required so that the aggregate working load limit of all tiedowns is at least 50 per cent of the cargo weight. Accessory equipment on heavy vehicles, such as hydraulic shovels, must be completely lowered and secured to the vehicle.

Stacked, flattened or crushed vehicles must be secured using containment walls, tiedowns, or a combination of these two methods. Tiedowns must have a working load limit of at least 2,268 kg and must not be synthetic webbing. Vehicles transporting flattened or crushed vehicles must have equipment that prevents loose parts falling from the load.

Roll-on/roll-off and hook-lift containers

Generally, roll-on/roll-off and hook-lift containers are carried on specially designed vehicles that are equipped with an integral securement system. Where a container is being transported on a vehicle without a functioning or compatible integral securement system, Division 8 of Part 2 of the Standard specifies a number of securement requirements.

Where a front stop or lifting device is missing, damaged or incompatible with the securing devices on a container, the container must be secured to the vehicle using manually installed tiedowns that provide the same level of securement as the component they replace.

If the vehicle doesn’t have an integral securement system, the container must be:

- blocked against forward movement by the lifting device, stops or another restraint mechanism, such as a chain
- secured to the front of the vehicle by the lifting device, or another securing device, to prevent sideways and vertical movement
- secured to the rear of the vehicle using:
  - a tiedown attached to the vehicle chassis and the container (this tiedown may be attached to one rail)
  - two tiedowns installed lengthwise, each securing one side of the container to one of the vehicle’s side rails
  - two hooks, or
  - equivalent mechanisms.

The same device may be used for securing the container to the front and rear of the vehicle.
Boulders
Secure boulders that weigh more than 5,000 kg, or have a volume greater than two cubic metres, as outlined in Division 9 of Part 2 of the Standard when transported on a flatbed vehicle or a vehicle that isn’t specifically designed for transporting boulders.

Place a boulder with its flattest or largest side on the deck and support by at least two pieces of hardwood blocking or in a crib. Use at least two chains to secure the boulder to the vehicle. Non-cubic-shaped boulders with unstable bases require additional tiedowns.

Livestock
Livestock can be difficult to transport because the animals may move around in the trailer. This movement can make turns difficult, cause a collision and injury to the livestock. When you have less than a full load, use false bulkheads to keep livestock bunched together.

Reduce your speed on curves because animals — even when bunched — sometimes lean which can shift your vehicle’s centre of gravity and cause a rollover.

Hanging meat
Meat suspended in a truck or trailer can sway. This type of load has a high centre of gravity, which increases the chances of your vehicle rolling over. Secure suspended items, so they can’t shift or sway. Reduce your speed on sharp curves and take extra care on off-ramps and on-ramps.

Liquid or dry bulk tank loads
Liquid or dry bulk tank loads often have a high centre of gravity. This always increases the danger of a rollover. These loads will shift. If they aren’t baffled, they’ll surge forward, backward and side to side. Reduce your speed on curves and sharp turns and be especially careful on stops and starts.

Transporting dangerous goods
Dangerous goods present a serious potential hazard to people who handle them, the public and the environment. People who have anything to do with dangerous goods have significant legal responsibilities and must be properly trained and appropriately certified.

When transporting these goods, you must ensure all shipping documents are complete, correct and readily available in the cab. These documents must accompany the dangerous goods shipment.

Report immediately any incident related to your dangerous goods cargo, like spills, leaks, fires, explosions or damaged containers to the nearest police agency or the Yukon spills line. Your rapid action may help prevent an incident from becoming serious.
There are nine classes of dangerous goods: explosives, gases, flammable liquids, flammable solids, oxidizing substances and organic peroxides, poisonous substances and infectious substances, radioactive materials, corrosive substances and miscellaneous products or substances.

These are examples of some of the dangerous goods placards that may appear on the sides and both ends of transport trucks.

The sign on the left designates roads where vehicles transporting dangerous goods may travel. The one on the right designates roads where these vehicles can’t.

For sources of more information on dangerous goods, see chapter 12, for more information.
Vehicle and load dimensions

The *Highways Act* sets limits for commercial vehicle lengths, widths, heights and weights.

Obey all Highways and Public Works signs that limit the dimensions or weight of allowable loads, regardless of the licence or permit you carry. These signs are posted along highways to help you avoid damaging your vehicle, its load, the road or other highway users. Temporary additional weight restrictions can be posted at certain times of the year.

These signs all indicate that you need to make sure your vehicle has enough clearance.

This sign warns that the road narrows ahead.

The sign indicates that there is a one-lane bridge ahead, so you may have to yield to oncoming traffic on the bridge.

These signs indicate the height of an overhead structure such as a bridge or overpass. The diamond-shaped sign warns of low clearance ahead, and the rectangular sign may be mounted on the structure. Make sure your commercial vehicle has clearance, or else choose a different route.

These signs indicate truck routes.

Commercial vehicles are allowed to travel on this road.

Commercial vehicles aren’t permitted on this road.

Commercial vehicles aren’t permitted in this lane.
driving commercial vehicles

Height

Know the height of your vehicle and its load at all times. Highway signs posted before underpasses and tunnels give the height of their overhead clearances. In some areas, overhead check bars and warning devices are installed so you can test whether your vehicle is within the limits.

The maximum allowable height for a commercial vehicle is 4.15 m unless the driver has an oversize load permit.

Width

Knowing the width of your vehicle is as important as knowing its other dimensions.

These items may extend up to 10 cm beyond the sides of a vehicle without being considered in that vehicle’s overall width:

- anti-splash and spray devices
- devices to secure loads
- ladders
- dangerous goods placards
- glad hands and air connectors
- electrical or hydraulic connectors
- clearance lights.

Vehicles transporting loose hay, straw or fodder can be loaded to a maximum of 3.1 m overall width.

Side mirrors must always extend beyond your load, even when it’s oversize, so you can see behind your vehicle.

Be particularly careful when you’re driving an oversize vehicle on narrow bridges and in canyons, gorges and road-construction areas.

Winter driving conditions can add to the hazards of driving wide vehicles, particularly in the mountainous areas of the territory. When winter weather affects driving conditions, the first rule of safety is reduce speed.

Fast Fact

Side-view mirrors may extend up to 20 cm beyond the side of the vehicle. If they extend more than 20 cm, they are considered in the overall width of the vehicle.
Length
Always be aware of your vehicle’s length and the length of your load. You need to be particularly cautious while negotiating turns on narrow roads and in alleys.

Remember to leave enough clearance so you can avoid striking objects such as poles, parked cars and buildings. Anywhere that has limited clearance is a potential hazard.

Weight
Commercial vehicles are licensed according to their gross vehicle weight (GVW). You must know the weight of your vehicle and its load to ensure your vehicle doesn’t exceed load limits.

Several terms are used to define a vehicle’s weight. These include:

- **GVW** (gross vehicle weight) is the combined weight of the vehicle and its load.
- **GVWR** (gross vehicle weight rating) is a manufacturer’s rating which defines the weight of a vehicle and the maximum load it should carry.
- **Licensed GVW** is the combined weight of the vehicle and the maximum load it’s licensed to carry or tow. The minimum licensed GVW of most commercial vehicles is 1.5 times the net weight of the vehicle.

The CVSA Regulations contain more detailed information about the dimension requirements for different vehicle combinations. If you are unsure of the CVSA regulations contact any Yukon weigh scales or online at www.hpw.gov.yk.ca.

Oversize and overload permits
If your load can’t be reduced and it’s larger or heavier than regulations allow, you may be able to purchase an oversize permit.

You can purchase permits for overwidth, overweight, overlength, or overheight loads. If you plan to travel on the highway, you can apply by calling the Yukon Weigh Scales.

These permits are issued according to Highway Regulations.

When you apply for a permit you must provide:

- registration and insurance papers for both the tow vehicle and the trailer(s)
- specifics on the load you’ll be carrying
- details about your planned route and destination
- a time when you plan to move your oversized load.
If you’re applying for an overload permit, you’ll also have to identify the amount of weight that will be on each axle of your vehicle.

When you receive a permit, you’ll also be given a list of requirements you must fulfill including some or all of the following:

• pilot car(s)
• flags
• signs
• lights
• time of day you may travel
• days of the week you may travel
• the route you must use.

Overload permits

Overloading your vehicle can make steering, braking and controlling your speed more difficult. Use extra caution when driving overloaded vehicles. Be prepared to drive slowly on upgrades and be careful not to lose control of your speed when going down hills.

A vehicle or combination of vehicles is overloaded whenever:

• the vehicle and its load exceed the GVW allowed under the Highway Regulations, or
• the vehicle(s) and its load weigh more than its licensed GVW, or
• the vehicle and its load exceed the maximum allowable weight on any single or group of axles.

Overload permits are issued only when loads can’t be reduced or when a vehicle isn’t licensed up to its allowable weight.

Oversize permits

If your vehicle’s wider, longer or higher than regulations allow, you must have an oversize permit before operating on any highway. This applies whether your vehicle is loaded or not. Permits for loaded vehicles are only given when the load can’t be reduced.

Permits are not normally given for loads or vehicles that are wider than 4.4 m.

The extremities of all oversize vehicles or loads must be marked with red flags that are at least 30 cm by 30 cm. For night travel, lights are required on the extremities — amber to the front and red to the rear.

Pilot cars

As a condition of an oversize or overload permit, a pilot car may be required.

A pilot car warns other drivers about the larger-than-normal vehicle they’re about to encounter.

Your permit may require more than one pilot car depending on your route and the load.
Signs
You must display the appropriate signs whenever you transport an oversize load.

![Wide Load](image)
This warns that the vehicle being driven is carrying a wide load.

![Long Load](image)
This warns that the vehicle being driven is carrying a long load.

![Oversize Load](image)
This warns that the vehicle being driven is carrying an oversize load.

When required, a D (for over dimension) sign must be carried by a pilot car.

**Fast fact**
Pilot car sign regulations are detailed in Highway Regulations.

**Fast fact**
An inspector or police officer may be a commercial transport inspector, motor vehicle inspector, constable or a special constable.

Distance from oversize vehicle
A pilot car must travel between 100 and 500 m either behind or in front of the oversize vehicle it’s escorting.

Reporting to weigh scales
Fixed location and portable weigh scales are found throughout Yukon. If you drive a commercial vehicle with a licensed gross vehicle weight of more than 5,500 kg, you must report to a scale whenever a sign, a police officer or an authorized person directs you to do so. Your vehicle will be weighed and inspected at the scale.

An inspector or police officer may ask you to park your vehicle and bring your papers into an office. If this happens, take in all registration and permit papers for your vehicles as well as your log book and trip inspection report.
Fixed weigh scales

Weigh scales are permanently located throughout Yukon. Highway signs direct drivers to their locations. Drive your vehicle onto the scales when you enter the scale yard. The scale will measure the weight on your axles or axle groups. A peace officer will check your tires and measure your vehicle and its load. Follow the directions on the light board.

![Highway signs that direct you to pull into a weigh scale.](image)

Portable weigh scales

Inspectors with portable weigh scales travel throughout Yukon. They may be found on any public road. You may encounter a portable weigh scale in two different ways:

- It may be temporarily set up on the side of a road and you’ll be signalled to stop.
- A vehicle with flashing lights may direct you to pull over to the side of the road — at that time the inspector in the vehicle may set up a scale.
Review questions

1. What can cause your trailer to jackknife when you’re backing up?

2. What actions should you take if your trailer whips or swerves?

3. When a coupling device (other than a fifth wheel) is used to join vehicles in combination, is an additional coupling device such as a chain or cable required?

4. Except for a pole trailer, what’s the maximum length permitted for a drawbar or coupling device between vehicles?

5. When coupling a tractor to a semi-trailer, should the air lines be connected to the trailer before or after connecting the kingpin to the fifth wheel?

6. How do you check that the fifth wheel jaws have locked to the trailer pin?

7. To uncouple a tractor from a semi-trailer, are the air lines unhooked before or after separating the fifth wheel from the trailer pin?

8. Why’s it necessary to block the wheels of a trailer that will be left for any length of time?

9. What’s a converter dolly and when’s it used?

10. For which type of trailer connection are safety chains or cables required — a fifth wheel connection or pintle hitch connection?

11. What’s the location of a single-unit truck’s central weight distribution point?

12. What could result from placing too much weight over any one set of wheels or over any one axle?

13. Should the majority of the weight of a load on a single-unit truck be placed directly behind the cab, slightly ahead of the rear axle or slightly behind the rear axle?

14. Should the majority of the weight of a load on a semi-trailer be placed directly over the fifth wheel, at the midway point of the trailer or directly over the trailer axle?

15. What are the two methods or categories of securing cargo for transporting?

16. What’s dunnage and why’s it used?

17. What’s the rough guide for spacing tiedowns to secure your load?

18. Why must you compare the weight of your load to the strength of your tiedowns?

19. What types of loads must be covered with a tarp?

20. What’s the safe working load of a tiedown?

21. What’s a tiedown assembly?
22. What’s a load binder and why’s it used?
23. Why must you protect tiedowns from rubbing against your load?
24. What are the dangers in transporting livestock?
25. What are two types of loads that have a high centre of gravity which, if not adequately secured to prevent movement or swaying, can increase the chances of your vehicle rolling over?
26. Why’s it important for you to know the height and width of the vehicle you’re operating?
27. Why’s it necessary to know the gross vehicle weight (GVW) of the vehicle you’re operating?
28. What factors determine the maximum allowable GVW for which the vehicle may be licensed?
29. Do load limit signs at the approach to bridges and structures apply to all vehicles?
30. Are you allowed to display Wide Load signs on your vehicle when a wide load isn’t actually being transported?
31. What’s the maximum legal width of a vehicle that’ll be operated on a highway?
32. What’s the maximum length a load may project to the rear?
33. What’s required before oversize or overweight loads may be transported?
34. What are the conditions for obtaining a permit to transport overweight or oversize loads?
35. Are all commercial vehicles required to report to weigh scales?