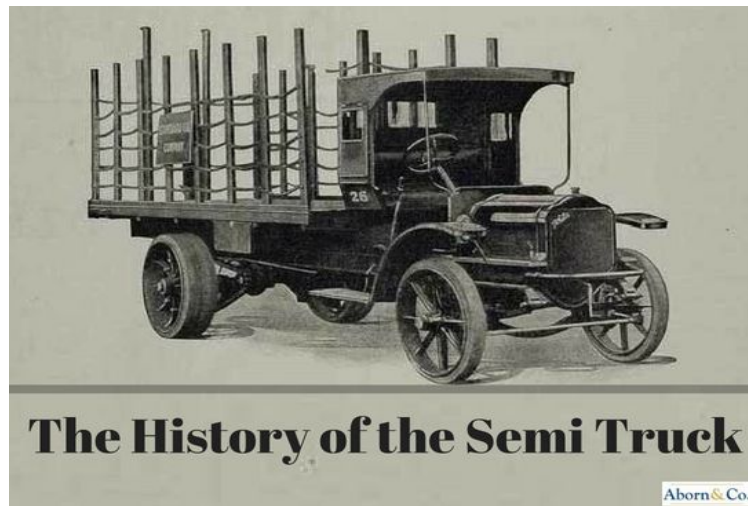


# SEMI TRUCKS

- ❑ In North America, the combination vehicles made up of a powered semi-tractor and one or more semitrailers are known as "semis", "semitrailers",<sup>[15]</sup> "tractor-trailers", "big rigs", "semi-trucks", "eighteen-wheelers" or "semi-tractor-trailers".
- ❑ The tractor unit typically has two or three axles; those built for hauling heavy-duty commercial-construction machinery may have as many as five, some often being lift axles.
- ❑ The most common tractor-cab layout has a forward engine, one steering axle, and two drive axles. The fifth-wheel trailer coupling on most tractor trucks is movable fore and aft, to allow adjustment in the weight distribution over its rear axle(s).
- ❑ Ubiquitous in Europe, but less common in North America since the 1990s, is the cabover engine configuration, where the driver sits next to, or over the engine. With changes in the US to the maximum length of the combined vehicle, the cabover was largely phased out of North American over-the-road (long-haul) service by 2007. Cabovers were difficult to service; for a long time the cab could not be lifted on its hinges to a full 90-degree forward tilt, severely limiting access to the front part of the engine.



**The History of the Semi Truck**

Aborn & Co.

## The History of Semi Trucks

In 1896, Alexander Winton went into the business of “horseless carriages” in Cleveland, Ohio. His company, the Winton Motor Carriage Company of Cleveland, sold their first 22 cars in 1898, and the cars needed to be delivered to their buyers. However, the buyers lived hundreds of miles away from Cleveland.

Winton wanted to be able to deliver his products to the buyers directly, without putting any miles or wear and tear on the vehicles. To solve his dilemma, Winton developed a car hauler his company could use to transport the vehicles. By 1899, the company was manufacturing the hauler for its own use, as well as for other car manufacturers. This is credited as the first appearance of a semi-trailer truck.

<https://medium.com/@abornandco/the-history-of-the-semi-truck-6b6c022e7f91>

# SEMI-TRUCK TYPES

FREIGHTLINER



MACK



WESTERN STAR



KENWORTH



Peterbilt



# TRAILER TYPES

- ❑ There are a wide variety of semi-trailer types available and depending on your load or freight, one will suit your needs better than another. Finding the right trailer for your job will make all the difference in ensuring the success of your project and facilitating the safe arrival of your goods. With this guide you'll learn about the most common semi-trailer types and what each type is used for.
- ❑ Trucking accounts for over 70% of all freight transported in the United States and is the preferred method of shipping most goods. While the truck may be the engine, the trailer carries the load and it's important to select a compatible trailer to do the job at hand.



# FLATBED TRAILERS

## 1. Flatbed Trailers

- ❑ Flatbed trailers offer versatility and as a result are some of the most commonly used trailers. The name stems from the fact that flatbed trailers have a flat deck that is open on all sides and does not have a roof or a box to cover the load. This open layout makes it an easy trailer to load and unload but does not protect cargo from the elements of weather and roads. Flatbed trailers are perfect for shipping wide or large items as the load can be lifted from above with a crane or from the side with a forklift.

Flatbed Trailer Typical Cargo Types:

- ❑ Construction materials
- ❑ Heavy equipment and machinery
- ❑ Oversized or unusually shaped loads
- ❑ Lumber

**Flatbed Trailer Legal Load Specifications:**

- ❑ Flatbed Trailer Maximum Freight Weight: 48,000 lbs.

**Flatbed Trailer Maximum Freight Dimensions:**

- ❑ Maximum Trailer Length: 48 ft. – 53 ft.
- ❑ Maximum Trailer Width: 8.5 ft.
- ❑ Maximum Legal Freight Height: 8.5 ft.



# STEP DECK OR DROP DECK TRAILERS

## 2. Step Deck or Drop Deck Trailers

- ❑ Step deck trailers, also known as drop deck trailers, are similar to flatbed trailers in that they are an open trailer but do have some differences. While flatbed trailers have only one level, step deck trailers have two deck levels that are known as the upper deck and lower deck.
- ❑ The upper deck measures between 10 and 13 feet long and sits above the tractor unit. The lower deck measures between 38 and 40 feet long and sits a mere 3 feet and 3 inches above the ground. This lowered deck affords step deck trailers the ability to haul taller loads.

### Step Deck or Drop Deck Trailer Typical Cargo Types:

- ❑ Tall cargo that exceeds legal height limit on traditional flatbed trailer

### Step Deck or Drop Deck Trailer Legal Load Specifications:

- ❑ Step Deck Trailer Maximum Freight Weight: 48,000 lbs.

### Step Deck Trailer Maximum Freight Dimensions:

- ❑ Maximum Trailer Length: 48 ft. – 53 ft.
- ❑ Maximum Trailer Width: 8.5 ft.
- ❑ Maximum Legal Freight Height: 10 ft.



# LOWBOY TRAILERS

## 3. Lowboy Trailers

- ❑ Lowboy trailers are also known as double drop trailers because they have two drops in deck height that allow for an extremely low deck. The first drop is right after the gooseneck and the second drop is before the wheels. This additional dropdown feature is what makes lowboy trailers ideal for moving taller equipment without needing to obtain height permits.
- ❑ Another advantage to lowboy trailers is that increased weight capacity can be achieved by adding extra axles. If you're looking to haul large equipment such as bulldozers or other construction equipment, a lowboy trailer may be exactly what you're looking for.

### Lowboy Trailer Typical Cargo Types:

- ❑ Bulldozers
- ❑ Excavators
- ❑ Backhoe loaders
- ❑ Heavy machinery
- ❑ Oversized items

### Lowboy Trailer Legal Load Specifications:

- ❑ Lowboy Trailer Maximum Freight Weight: 40,000 lbs. (with two axles) and up to 80,000 lbs. (with extra axles)

### Lowboy Trailer Maximum Freight Dimensions:

- ❑ Maximum Well Length: 24 ft. – 29.6 ft.
- ❑ Maximum Well Height: 18 in. – 24 in.
- ❑ Maximum Trailer Width: 8.5 ft.
- ❑ Maximum Legal Freight Height: 11.5 ft. – 12 ft.
- ❑ Maximum Legal Overall Load Height: 14 ft.



# REEFER TRAILERS

## 4. Reefer Trailers

- ❑ Reefer trailers, also known as refrigerated trailers, are built with insulation and temperature controls. Typically, these trailers use refrigeration to enable the transport of perishable, chilled or frozen products, but they can also protect temperature-sensitive goods from frigid outside weather.

### Reefer Trailer Typical Cargo Types:

- ❑ Produce
- ❑ Meat, poultry, fish, dairy
- ❑ Pharmaceuticals
- ❑ Plants and florals

### Reefer Trailer Legal Load Specifications:

- ❑ Reefer Trailer Maximum Freight Weight: 42,000 lbs. – 45,000 lbs.

### Reefer Trailer Maximum Freight Dimensions:

- ❑ Maximum Trailer Length: 48 ft. – 53 ft.
- ❑ Maximum Trailer Width: 8.2 ft.
- ❑ Maximum Legal Trailer Height: 8 ft.



# 5. Dump Trailers

## 5. Dump Trailers

- ❑ Dump trailers are a type of hauling trailer that use hydraulics to lift the trailer bed up and tilt it to unload heavy hauls with ease and the help of gravity. Although dump trailers are oftentimes confused with dump trucks, dump trailers allow you to customize the trailer size to correspond to your load. Dump trailers are less expensive than dump trucks but still offer the ability to haul heavy payloads safely and efficiently.
- ❑ You'll find dump trailers are available with a frame or frameless. Frameless dump trailers allow for heavier payloads because they're made of aluminum and are lighter weight. Steel frame dump trailers are a great choice for larger hauls, like equipment and large boulders.
- ❑ Another thing to consider when selecting a dump trailer is the style of dumping. It's helpful to compare [end dump vs. side dump vs. bottom dump](#) trailers so you know which one is the right one for your project.

### Dump Trailer Typical Cargo Types:

- ❑ Gravel
- ❑ Sand
- ❑ Stone
- ❑ Fill dirt
- ❑ Trash
- ❑ Branches

### Dump Trailer Legal Load Specifications:

- ❑ Dump Trailer Maximum Freight Weight: Dependent on local regulations

### Dump Trailer Maximum Freight Dimensions:

- ❑ Maximum Trailer Length: 45 feet
- ❑ Maximum Trailer Width: 8.5 ft.
- ❑ Maximum Legal Trailer Height: 13'6"





# DUMP TRAILERS

## End Dump Trailers

- End dump trailers operate the same way most dump trucks do and unload cargo out of the rear of the trailer while the front of the trailer is lifted into the air. Because the load is shifted out of the bed of the trailer by gravity, the front of the box needs to be lifted high enough to encourage this movement to happen. This raised position lends itself to some instability and may be worsened by uneven ground or shifted loads. End dumps are not used to haul liquids because it's difficult to make the rear gate watertight.



## Side Dump Trailers

- Side dump trailers are a newer concept developed to resolve the instability issues of end dump trailers. By tilting the trailer to one side to unload cargo, side dump trailers offer greater stability regardless of even and uneven ground. Side dump trailers allow operators to safely haul and release a variety of materials with a more rapid dump cycle.



## Bottom Dump Trailers

- Bottom dump trailers, also known as belly dump trailers, unload material directly from the bottom of the box. Most models today use a "clam shell" type of dump gate so that the contents can be windrowed, or released in a low ridge, long line instead of a single pile. Bottom dump trailers are not suitable for all types of materials considering fine material and liquid will likely leak out and the axles of the trailer must be able to clear the windrow.



# TANKER TRAILERS

## 6. Tanker Trailers

- ❑ Tanker trailers are typically used to transport liquid and are manufactured from aluminum or stainless steel. Recognized by their unique shape, tanker trailers are cylindrical, and this is for good reason. Tanker trucks are built with a cylinder shape because this takes pressure off the tank itself, provides a lower center of gravity, prevents a liquid surge, and allows for easier extraction and cleaning.

### Tanker Trailer Typical Cargo Types:

- ❑ Asphalt
- ❑ Chemicals
- ❑ Petroleum/Fuel
- ❑ Dry food
- ❑ Beverages

### Tanker Trailer Legal Load Specifications:

- ❑ Tanker Trailer Maximum Gross Weight: 80,000 lbs.

### Tanker Trailer Maximum Freight Dimensions:

- ❑ Maximum Trailer Length: 48 ft. – 53 ft.
- ❑ Maximum Trailer Width: 8.5 ft.
- ❑ Maximum Legal Freight Height: 13.5 ft.



# TANKER TRAILERS

## Asphalt Tankers

- ❑ Asphalt tankers offer superior temperature control along with insulation and at times a heating device. These traits provide the right environment for contents that need to be kept hot.



## Petroleum Tankers

- ❑ Petroleum tankers are usually always made of aluminum and range in size from 5,000 to 10,000 gallons. While some fuel tankers have one single compartment, most current tankers have multiple compartments so different grades of the same product may be loaded at the same time. Large plates with holes called tanker baffles are installed inside petroleum tankers to control fuel surge while in transit.



## Pneumatic Tankers

- ❑ Pneumatic tankers, also called dry bulk tanks, are emptied with a pump and blower using forced air. Product is unloaded beneath the tanker itself with a series of cone-shaped hoppers that are vacuum-sealed and fully enclosed. Pneumatic tankers are ideal for transporting materials such as dry sand, dry food, and chemicals.



## Stainless Tankers

- ❑ Stainless tankers are made of stainless steel and provide the highest level of protection from impurities. Ideal for storing de-mineralized water, highly refined products, corrosive materials, and highly pure materials, these also used as food tankers.



# TIPPER TRAILERS

## 7. Tipper Trailers

- ❑ Tipper trailers do exactly what their name suggests: tip to let gravity empty the load. These trailers use hydraulics to raise and tilt their platform. Perfect for hauling and dumping large debris, tipper trailers work well for bricks, rocks, gravel, and other heavy materials. Available in a wide variety of sizes and capacities, tipper trailers are highly desirable for any garbage removal or construction project.

### Tipper Trailer Typical Cargo Types:

- ❑ Construction debris
- ❑ Agricultural materials
- ❑ Recycling items

### Tipper Trailer Legal Load Specifications:

- ❑ Tipper Trailer Maximum Freight Weight: 42,000 lbs. – 45,000 lbs.

### Tipper Trailer Maximum Freight Dimensions:

- ❑ Maximum Trailer Length: 43 ft. – 58 ft.
- ❑ Maximum Trailer Width: 8.5 ft.
- ❑ Maximum Legal Freight Height: 8 ft.



# DRY VAN TRAILERS

## 8. Dry Van Trailers

- ❑ Dry van trailers, also known as enclosed or box trailers, are fully enclosed and are used for shipping non-perishable goods. Although there is no temperature control, the cargo is protected from the elements of weather and roads. Freight is loaded at the rear of the dry van trailer and a loading dock is commonly used. Some dry van trailers also allow freight to be loaded from the side of the trailer.

### Dry Van Trailer Typical Cargo Types:

- ❑ Non-perishable food and beverages
- ❑ Clothing and household goods
- ❑ Building products
- ❑ LTL shipping

### Dry Van Trailer Legal Load Specifications:

- ❑ Dry Van Trailer Maximum Freight Weight: 42,000 lbs. – 45,000 lbs.

### Dry Van Trailer Maximum Freight Dimensions:

- ❑ Maximum Trailer Length: 48 ft. – 53 ft.
- ❑ Maximum Trailer Width: 8.2 ft.
- ❑ Maximum Legal Freight Height: 8 ft.



# E-TRAC K

## What is an e track rail?

- This horizontal E-Track is an easy way of creating heavy duty tie down points in your trailer to help secure loads. The track can be welded or mounted to any flat surface making it perfect for truck beds, box-mounted sliders, trailers or vans. The track works with ropes, bed nets or tie down straps.

## What is E track rated for?

- Our Standard E Track Load Bar is rated with a breaking strength of 2,000 pounds and our Heavy Duty version is rated with a 3,000-pound breaking strength! If you do not think a standard E Track Load bar would be able to contain what you are hauling you may want to consider adding hoops to your bar!

## What is the difference between vertical and horizontal e track?

### Vertical E-track

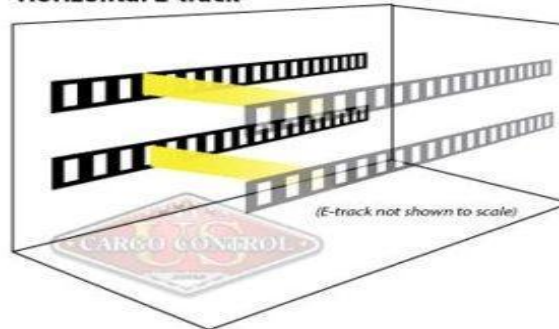
- Vertical e-track has rectangular slots that run parallel with the e-track rail. Vertical e-track is commonly used in van trailers and is an excellent way to provide a support system for shoring beams (or “decking beams”), which creates a second level for cargo. Compared to horizontal e-track, vertical e-track has a narrower profile and permits d-rings to be mounted perpendicular to the floor.

### Horizontal E-track

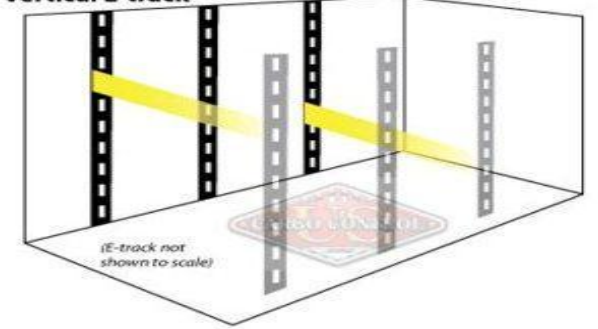
- Horizontal e-track has rectangular slots that run perpendicular (at 90 degree angles) to the track rail, which provides more anchor points per foot.
- Horizontal etrack installed on the walls of a trailer gives you not only anchor points for tie-downs, but also allows you to secure equipment such as spare tires or other objects flat against the wall.



Horizontal E-track



Vertical E-track



# DRY VAN TRAILER MANUFACTURERS

