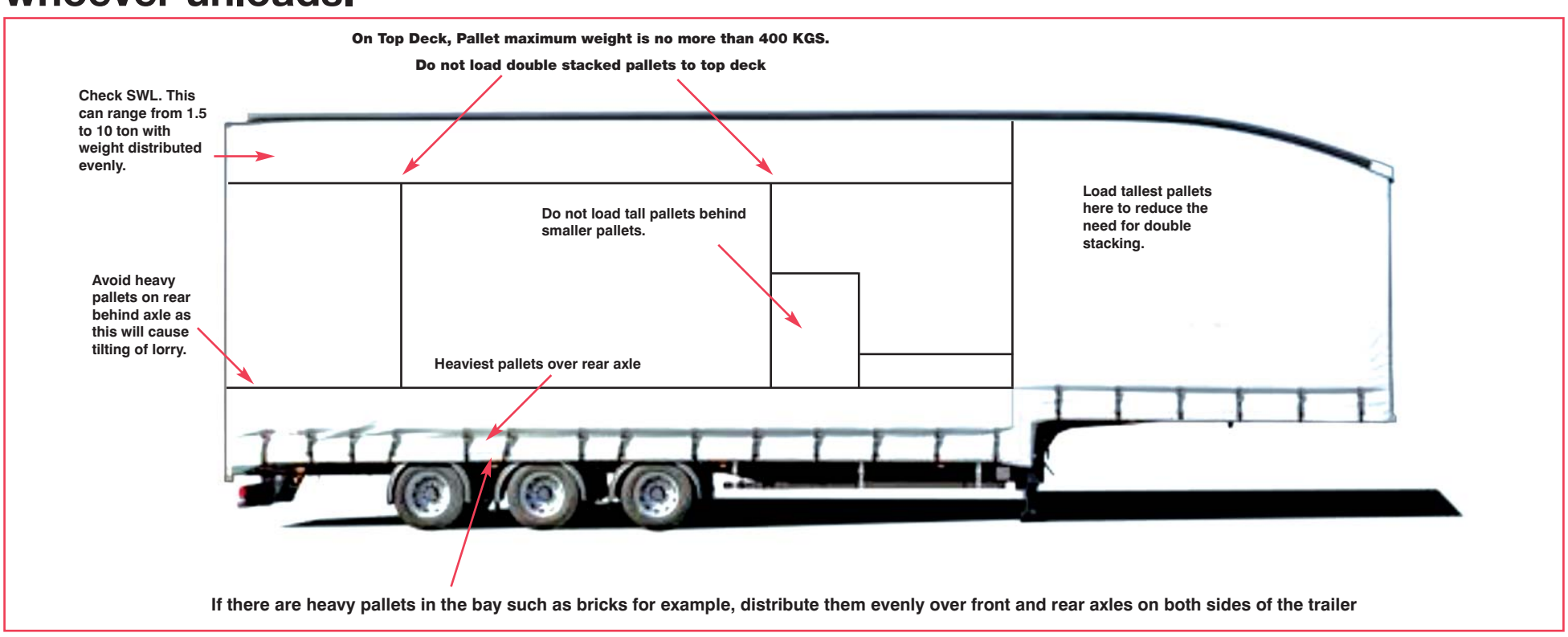
LOADING A DOUBLE DECK TRAILER SAFELY

The Association of Pallet Networks

Anyone involved in vehicle loading is legally responsible for ensuring its safety, from the moment a pallet is loaded to the moment the vehicle is emptied. That includes forklift drivers, HGV drivers, fleet operators and anyone else involved. Safe loading protects drivers,road users, the public and whoever unloads.



DO's

- ✔ Put heavier items and stacks on the main deck or swan neck. Secure them as if on a single-decker.
- ✔ Always load lightweight pallets between the front axle and the back axle of the trailer.
- ✔ Load heavier pallets over the front and rear trailer axles.
- ✔ Make sure all pallets are suitably secured.
- ✔ If forklift truck drivers have any doubt about weight or suitability of a pallet TELL YOUR SUPERVISOR.
- ✔ Weight must always be evenly distributed across the trailer, so the vehicle remains stable.
- ✔ Loading straps or curtains must always be accessible when loading.
- ✔ THINK PYRAMID - heaviest/biggest on the bottom, smallest/lightest on top.
- ✔ Only load pallets no more than 400 kgs on top deck.

And DON'Ts

- ✗ Never double stack pallets on the top deck.
- ✗ Don't rely on internal nets or roof-mounted buckle straps to secure items or stacks weighing more than 400kg.
- ✗ Don't load anything you think is unsafe or unsuitable.
- ✗ Never try to remove a collapsed pallet from the top deck - TELL YOUR SUPERVISOR.
- ✗ Never put hazardous materials on the top deck including: Pallets with poorly wrapped or unsecured freight on them | Batteries | Gas cylinders | Pallets weighing more than 400 kgs | Pallets with uneven distribution of weight | Live loads ie IBCs/liquid tanks.
- ✗ Do not load pallets with poorly wrapped or unsecured freight on them at any time

Securing loads on HGVs and goods vehicles

Updated:9 December 2024

About the code of practice
Who the code of practice is for, what it sets out to do, and how it's worded.

About this code of practice
When you transport goods in a heavy goods vehicle (HGV), trailer, van or car, you need to make sure they are loaded, transported and unloaded safely.

This code of practice gives you guidance to help you with your responsibilities to:

- decide the right way to transport goods safely
- load and unload vehicles safely

Who the code of practice is for

It's for:

- vehicle operators (whether you hold an operator licence or not)
- drivers
- companies loading vehicles ('consignors')

What the code of practice is for

Although this code of practice is not a legal document, the guidance can help you to comply with the law on:

- transporting loads safely
- safe loading and unloading

There could be another way you could secure the load that is also acceptable. It's your responsibility to assess the risks of your own operation and follow the law.

The code of practice is not used as a guide to enforcement action

If Driver and Vehicle Standards Agency (DVSA) examiners and the police find an insecure load, they will use the categorisation of vehicle defects to decide what action to take. They will not use this code of practice as a guide to enforcement action.

Terms used in this guide

In this guide, a vehicle can also mean a trailer or any vehicle combination.

Following this guidance is only compulsory where it says you “must” or “must not” do something, but we strongly recommend that you follow all the guidance.

1. Responsibility for load security

Why load security is important, what operators, drivers and consignors must do when loading and transporting goods, and how load security is enforced.

Why safe loading and load securing matters,

All loads carried on vehicles must be secure regardless of:

- what vehicle they’re on
- the size or type of the load
- the length of the journey

This protects:

- the people involved in loading, unloading and driving the vehicle
- other road users and pedestrians

An example of a load secured correctly using lashing straps attached to the trailer chassis rave.

The problems unsecured loads can cause

Unsecured loads can:

- affect the handling of the vehicle
- increase the braking distance
- increase the risk of a rollover

Items falling from the vehicle during the journey could:

- hit vehicles or pedestrians
- cause an obstruction in the road that causes other drivers to have to swerve or brake
- cause lane or full road closures

Even small, light items can kill someone if they fall from a vehicle travelling at speed.

Overview of load securing responsibilities,

Everyone involved in loading a vehicle or managing a transport operation is responsible for making sure the load is:

- safely loaded
- secure during transport
- safely unloaded

Operators, drivers and companies sending goods (‘consignors’) must:

- secure all loads carried on vehicles
- make sure loads are transported, loaded and unloaded safely

Load securing roles and responsibilities

You need to know:

- what operators, consignors and drivers are responsible for
- what the law says about load security
- assessing and managing risks during loading and unloading
- the benefits of using a load plan

Risk assessments,

Employers and self-employed people must:

- assess the risks to both their own employees and anyone else who could be hurt by their work activities
- take appropriate steps to control those risks
- give drivers and loaders the information, training, and equipment they need to do their jobs safely
- do everything ‘reasonably practicable’ to protect people from harm

Doing this will help keep your employees and the public safe and reduce the risk of damage to your loads and vehicles.

If you do not follow this guide, you must be able to show that you have achieved an equivalent level of safety.

The Health and Safety Executive (HSE) has more advice on finding the right guidance for your business and on what the law says about managing health and safety in your business.

What reasonably practicable means

This means balancing the level of risk against the measures needed to control the real risk in terms of money, time, or trouble.

The burden of proof is on the employer to show there was nothing else they could reasonably do.

Carrying out a risk assessment

When you carry out a risk assessment, you must:

- identify what could cause injury or illness in your business
- decide how likely it is that someone could be harmed and how seriously
- take action to eliminate the hazard, or if this isn't possible, control the risk

A risk assessment alone isn't enough to manage risk. Managing health and safety is an ongoing process, not a one-off task. It's not enough to just control the risks in your business – you must make sure that they stay controlled.

What to include in your risk assessment

Your assessment should include risks relating to:

- the nature of the journey – length, type of roads, traffic and other potential obstacles such as low bridges
- the type of load – weight, size, shape
- the type of security used – if it's not in line with this guidance, consider how you're minimising the risks
- other issues such as the weather and the experience of the people loading and unloading the vehicle
- working at height
- manual handling
- trailer coupling and uncoupling
- separating pedestrians from vehicles

If your route and type of load stay the same, you can use the same risk assessment for all these journeys.

Recording the findings of your risk assessment

If you employ more than 5 people, you must record the significant findings of the risk assessment in writing. You must include:

- the hazards
- who might be harmed and how
- the risk controls

Check the Health and Safety Executive's guidance on how to carry out a risk assessment and download a risk assessment template.

Operator responsibilities,

If you're a vehicle operator, you must manage risk in your business.

You must make sure vehicles are:

- suitable for the intended purpose
- safe to drive (roadworthy)
- driven by people who are qualified, trained and competent

If your drivers secure loads, you must provide them with:

- training
- equipment
- instructions

You must support drivers who raise concerns about the way goods are loaded or secured. You must not pressure them to take out a vehicle if they think it's unsafe.

The Traffic Commissioners for Great Britain can take action against your operator licence if you do not have the systems or processes in place to transport loads safely and securely.

Driver responsibilities,
You can get an unlimited fine, be banned from driving and get penalty points on your driving licence for using a vehicle in a dangerous condition.

If you load vehicles

If you're a driver who loads vehicles, you must make sure any equipment you use is:

- in a usable condition
- strong enough to prevent the load from moving
- appropriate for the type of load it is securing

If you do not load vehicles

If you can, you should check that the load is secure before you set off. You can ask for a copy of the load plan from the load consignor (the person or company putting the load on the vehicle) if one is available.

Report concerns about loading or load securing to your employer or load consignor. You should not proceed with a load if you have any doubts about its security.

During the journey

You should check load restraints regularly during the journey. This is particularly important:

- when using lashing straps and chains – these may lose tension over time
- when transporting loads that are likely to settle – for example, sand or aggregate
- after any harsh braking or having to swerve to avoid something

Consignor responsibilities,

The load consignor is the person or company who puts the load onto the vehicle.

The load consignor's legal duties and responsibilities do not finish when a vehicle leaves the site. They must:

- make sure that the load is in a suitable condition for transport and packaged in a way that means it can be secured to the vehicle
- make sure the load is stable before it's loaded onto a vehicle
- load the vehicle safely
- make sure that the load is safe throughout the journey, especially during multi-drop deliveries
- communicate with any third-party operator to manage safety in the transport operation

If on-site loaders secure loads, you must provide:

- training
- equipment
- instructions

If the driver is not involved in loading the vehicle, you must:

- find them a safe place to wait
- make them aware of how the load has been loaded and secured

You may find a load plan helpful so everyone knows how the load has been loaded.

What to include in the load plan

The load plan could include:

- the weight of the load
- where the load has been placed on the load bed, if the vehicle is a closed body
- how the load has been secured
- any special instructions for unloading
- precautions to take when unloading
- a photo of the secured load, including a date and time taken

Agree a system with the vehicle operator to keep the load secure

You must agree on a system with the operator to make sure the load is secure throughout its journey.

Load securing and the law,
Load securing is covered by both road traffic and workplace safety legislation and regulations.

Make sure you understand any legislation that applies to your business.

The Road Traffic Act 1988 (as amended), section 40A - Using vehicle in dangerous condition etc.

Road Vehicles (Construction and Use) Regulations 1986, section 100 - Maintenance and use of vehicle so as not to be a danger etc.

The Health and Safety at Work etc. Act 1974, section 2 - General duties of employers to their employees

The Management of Health and Safety at Work Regulations 1999

Lifting Operations and Lifting Equipment Regulations 1998

Provision and Use of Work Equipment Regulations 1998

Work at Height Regulations 2005

Dangerous goods legislation

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG09)

Agreement concerning the International Carriage of Dangerous Goods by Road

Ionising Radiations Regulations 2017 (IRR17)

Control of Asbestos Regulations 2012

Guidance on health and safety at work

You can read guidance on the Health and Safety Executive website about:

- lifting equipment at work
- making the best use of lifting and handling aids
- manual handling at work
- preventing slips and trips at work
- providing and using work equipment safely
- working at height
- workplace transport safety - an overview
- workplace transport safety - employer's guide

How load securing rules are enforced,
If you're driving any vehicle on a public road, you may be stopped by the police. Commercial vehicles may also be stopped by the Driver and Vehicle Standards Agency (DVSA).

This short video explains:

- what DVSA examiners look for
- what a load securing system needs to do
- the benefits of using a load plan
- what happens if the examiner decides the vehicle is not safe to continue its journey

What police officers and DVSA examiners look for

When assessing if a load is secure, examiners will look at whether:

- any part of the load could slide, topple or bounce in any direction
- the load could make the vehicle unstable
- the load could affect the handling of the vehicle
- any part of the load could fall off during transit or during the unloading process
- the load security equipment is in poor condition or not appropriate for the load
- any part of the load or the way in which it is secured could present an immediate danger to road users during transit

What happens if the load is not secure

If the police officer or DVSA examiner finds an insecure load, they will use the categorisation of vehicle defects to decide what action to take.

Depending on the circumstances, driving with an insecure load can be classed as careless or dangerous driving. It could result in a custodial sentence, particularly in the most serious cases where someone is killed or injured. This applies to:

- the driver
- consignors
- the vehicle operator
- company directors or partners in the business

Defects that put people at immediate risk

If the police officer or DVSA examiner finds defects that put you or others in immediate danger, they can issue an immediate prohibition. This means:

- you will not be able to continue the journey until the vehicle is made safe
- you may be given a fixed penalty notice or traffic offence report – this could be a fine or points on your driving licence

If the defects cannot be fixed within a reasonable time period (usually one hour after the prohibition was issued), the officer or examiner may immobilise your vehicle.

In more serious cases, DVSA or the police may decide to prosecute. The Traffic Commissioners can also take direct actions against commercial drivers and operators who fail to meet the required standards.

Minor defects

The officer or examiner will advise what you need to do about any minor defects they find. You will usually be able to fix these at the roadside before continuing your journey.

2. Load securing: the basics

How to decide on a load securing system, what to check before loading a vehicle, and how to stabilise a load.

What a load securing system is,
A load securing system is the method you use to secure the load.

Depending on the type of load and vehicle, the load securing system can consist of:

- the structure of the vehicle
- physical barriers to movement such as coil wells, internal bulkheads, stanchions, pins and chocks
- lashings
- friction matting, a high-friction floor or surface

Choosing a load securing system

There is no single solution that will work for every load and vehicle combination. Drivers and vehicle operators should choose the most suitable securing system for their load and vehicle.

It's important to think about how the load securing system will work in practice and whether there are other risks like working at height.

Operators and consignors can make sure that the securing system is working effectively by:

- assessing the risks
- monitoring and evaluating different securing solutions

British (BS EN) Standards

You can use load securing technical standards published by the British Standards Institution (BSI) to help you decide on a load securing system.

The standards are not legal requirements under road traffic law, but they are used as recognised reference standards. This means:

- you can use them as a reference when deciding on a suitable securing system
- regulators will refer to them when deciding whether a load securing system is suitable

If you choose to buy equipment constructed to a BS EN standard, you can be sure of how strong it is and whether it's suitable for its intended purpose.

You can buy copies of the British Standards from the British Standards Institution. The most important British Standards for load securing purposes are:

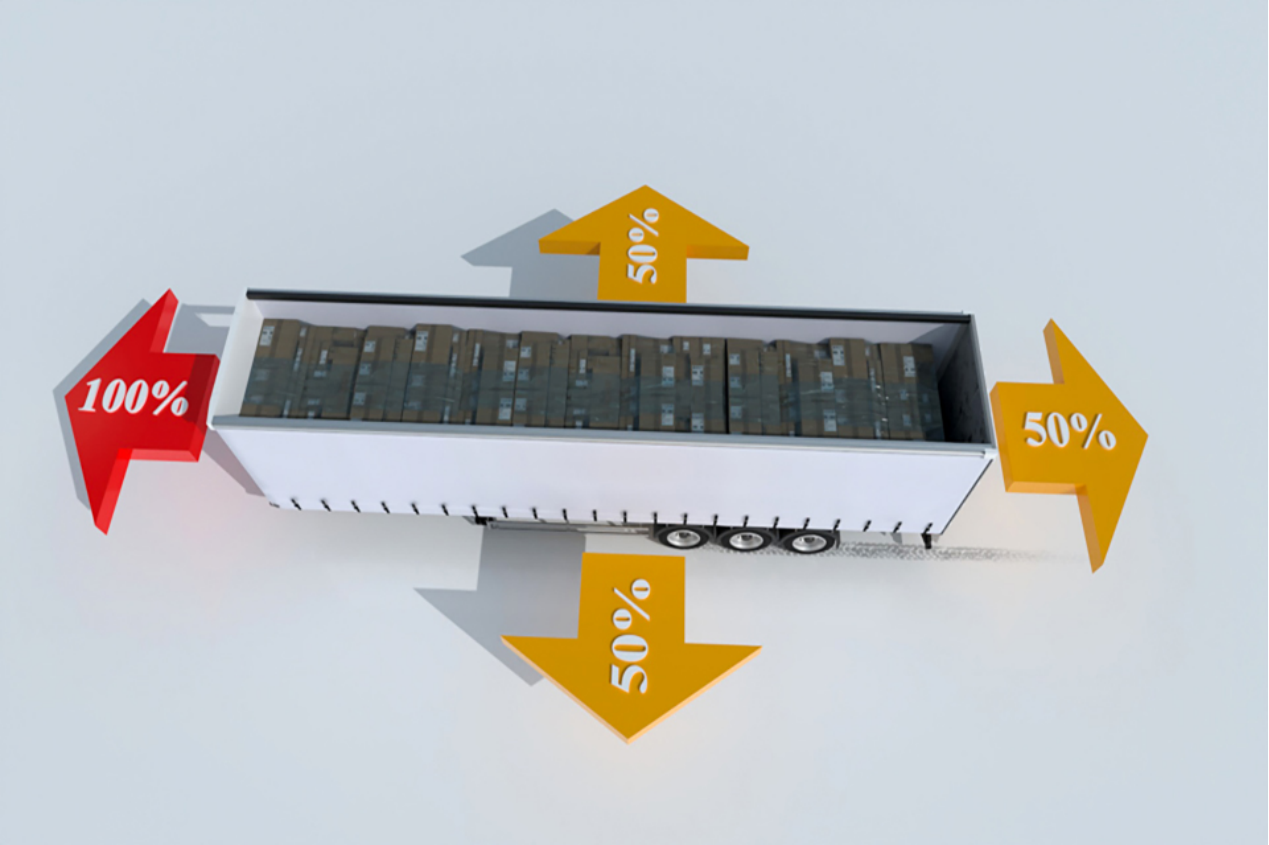
Standard	Title
BS EN 12195-1:2010	Load restraining on road vehicles. Safety - calculation of securing forces
BS EN 12195-2:2001	Load restraint assemblies on road vehicles. Safety - web lashing made from man-made fibres
BS EN 12195-3:2001	Load restraint assemblies on road vehicles. Safety - lashing chains
BS EN 12640:2019	Intermodal loading units and commercial vehicles. Lashing points for cargo securing. Minimum requirements and testing
BS EN 12641-1:2019	Intermodal loading units and commercial vehicles. Tarpaulins - minimum requirements

Standard	Title
BS EN 12641-2:2019	Intermodal loading units and commercial vehicles. Tarpaulins - minimum requirements for curtainsiders
BS EN 12642:2016	Securing of cargo on road vehicles. Body structure of commercial vehicles. Minimum requirements
BS 7121-4:2010	Code of practice for safe use of cranes - lorry loaders

BS 5759:1987 (Specification for webbing load restraint assemblies for use in surface transport) has been withdrawn. If you have webbing ratchet straps made to this standard, you should replace them with straps made to the current standard, BS EN 12195-2:2001.

What a load securing system needs to do,
The load securing system you use must be able to withstand forces equivalent to:

- the entire weight of the load in the forward direction
- half the weight of the load to the sides
- half the weight of the load to the rear



The forces required to prevent a load from moving under normal driving conditions.

This is the minimum requirement for normal driving on the road. It applies to all vehicles and all loads regardless of size or weight.

A load secured to this standard should be able to withstand foreseeable emergency manoeuvres like:

- an emergency stop
- swerving to avoid an obstruction on the road

Friction

You cannot rely on the weight of a load alone to keep it in place once the vehicle is moving. Even if the load is very heavy and cannot be moved by hand when the vehicle is stationary, it might still move during the journey.

This is because the friction between most loads and the standard load beds of most vehicles and trailers is generally low.

You should use enough lashings to prevent load movement under normal driving conditions. You can get advice about using lashings from manufacturers, suppliers, and trade associations.

If you decide to do the calculation yourself, you must use the following as the coefficient of friction:

- the specific coefficient of friction for that load and vehicle combination, if testing has been done to work it out
- the certified coefficient of friction for a high-friction surface used between the load and load bed
- 0.2 in all other cases

If there is a serious load shift, enforcement agencies will refer to BS EN 12195 1: 2010 Load restraining on road vehicles Safety Part 1: Calculation of securing forces when deciding if you have used enough lashings.

You do not need to know the coefficient of friction or test the coefficient of friction for every load or vehicle combination unless your securing system explicitly relies on a specific value.

Coefficient of friction explained

The ‘coefficient of friction’ is a way to measure how easy it is for 2 surfaces to slide against each other.

The lower the coefficient of friction, the easier it is for the objects to slide against each other. For example, a load will be more likely to move on a wet or icy load bed.

Covering your load

Covering a load should only be used to contain a product.

Using a cover can stop items from bouncing out of a vehicle or loose loads, such as sand, from being blown from a vehicle.

The cover you choose must be suitable for the load type. Depending on your load this could be a:

- tarpaulin
- sheeting
- net

Using a cover does not provide sufficient restraint and must only be used with other load securing measures such as lashings.

Additional load security

There may be circumstances where extra load security is needed.

Very large or tall loads

You may need to use additional lashings or a similar securing method for very large or tall loads, especially if you're carrying them on a vehicle that does not have a headboard.

Travelling by sea

If the journey is partly by sea, you may need to use additional securing methods to comply with maritime regulations.

Weather

Weather can affect the security of your load. You should think about using additional securing in:

- snow or ice
- wet weather
- strong winds

What to check before loading a vehicle,

Before you load a vehicle, you should check its:

- load platform
- bodywork
- anchorage points
- twist locks (where fitted)

Make sure that they're appropriate for the load and that they're in good condition.

Check that the load will not exceed the vehicle's maximum permitted axle and gross weight limits.

If a part of the load is going to be picked up or removed during the journey, you should consider how it will affect:

- gross weight
- individual axle weights
- securing and stability of the load

Removing part of the load will reduce the gross vehicle weight, but the change in weight distribution may overload individual axles. This is also known as the diminishing load effect. It may also affect the security of the load – find out more about positive fit.

How to stabilise the load,

You must make sure that the load is stable on the vehicle before securing it for transport.

Unstable loads may move during the journey or fall from the vehicle once the lashings are removed for unloading.

It may be necessary to transport some loads in a:

- transport frame
- box
- stillage
- cage

Where to put the load

You should:

- put the load near to the vehicle's centre line and keep its centre of gravity as low as possible – this helps to keep the load and the vehicle stable
- spread the load to give an even weight distribution over the whole floor area
- put lighter items near the sides of the vehicle
- distribute the weight of small but heavy loads across the vehicle platform using load spreading devices (for example pallets or large wooden boards)
- secure the heaviest items on the lower deck or swan-neck for multi-deck trailers
- make sure all wheeled loads, such as plant equipment, are entirely supported by the load bed
- arrange the load so that it does not obstruct the driver's field of vision, including the rear view through the driving mirrors

Stacking items

When stacking items, you should:

- put larger and heavier items at the bottom of the stack
- put heavier items nearer to the centre line of the vehicle
- make sure lower items in the stack are strong enough to support the others when the vehicle is braking, cornering, or accelerating

Watch a video on load security good practice,

This short video shows some of the basics of load securing, including:

- what a load securing system must do
- some methods of load securing
- how to secure stacked loads
- what a load plan is

3. What to do if a load becomes unstable during a journey

How to safely decide whether you can continue your journey or take other action.

If the load shifts during the journey,

If you become aware that part of your load has shifted but is still on the vehicle, you must:

- slow down
- avoid heavy braking and steering
- look for a safe place to stop and resecure the load if it's safe to do so

You must not continue the journey until the load is secure.

If the load comes off the vehicle or is dangerously unstable

Follow these steps if all or part of the load comes off the vehicle or is dangerously unstable, and is any of the following:

- obstructing traffic or likely to obstruct it
- in a dangerous position
- likely to put people in danger while being recovered

1. Stop in a safe place as soon as possible.
2. Call 999 and report it to the police.
3. Wait until the emergency services or highway authorities arrive.

Do not try to retrieve any part of the load from the road if you're on a dual carriageway, motorway, or any other road where you might be in danger.

If the load is unstable when you arrive at your destination

Your vehicle should be quarantined on site until a plan for safe unloading has been made if:

- you become aware that the load has shifted when you arrive
- the load shift becomes apparent while the vehicle is being unloaded

The receiving site should work with the operator to make sure that the vehicle can be unloaded safely. It is not acceptable to take a vehicle with a known unstable load (a "shot load") back onto the public highway.

You must not continue the rest of the journey until any remaining load is secure or safely unloaded.

Checking the load,

Open vehicles

It's usually easy to see if the load has shifted on an open vehicle.

Do not:

- walk under a load that's leaning to one side of an open vehicle
- release any lashings over the load until you're sure that it's stable or you've taken steps to stop it falling

Closed vehicles

On a closed vehicle, such as a curtainsider or box van, you should check the load from the rear doors. Check from the side if you think the load might be leaning against the rear doors.

Rearranging the load,

Before you start to reload or rearrange a shifted load, you need to:

- think about any possible risks such as working at height and manual handling
- put suitable controls in place

Drivers must not be put at additional risk to correct a shifted load. Working at height in particular puts drivers at serious risk.

Extend any stabiliser legs that are fitted when you rearrange a shifted load.

An exclusion zone must be put in place around the vehicle.

Any lifting operation must be:

- properly planned by a competent person
- carried out by trained personnel using suitable lifting equipment

If the vehicle is on the road or hard shoulder

Contact the police or highway authority if the vehicle is in a live lane or on a hard shoulder. They can then help you.

4. Ways to secure a load in an HGV or goods vehicle

Equipment and methods you can use to secure a load in a goods vehicle and how to use it safely.

The equipment and methods in this section are listed in alphabetical order.

Attachment points,

You can attach load securing equipment to:

- the vehicle chassis
- the side raves
- dedicated anchorage points

Any attachment point must be strong enough to withstand the expected loads.

Side raves

A side rave is the steel edging of a vehicle load bed.

You can use side raves to attach securing equipment to the vehicle.

Check that the raves are compatible with the type of securing equipment you're using.

Visually check the raves regularly for signs of:

- damage

- distortion
- corrosion

Arrange for the raves to be repaired as soon as possible if you notice any damage.

The raves may not be strong enough to use if they’re in poor condition.

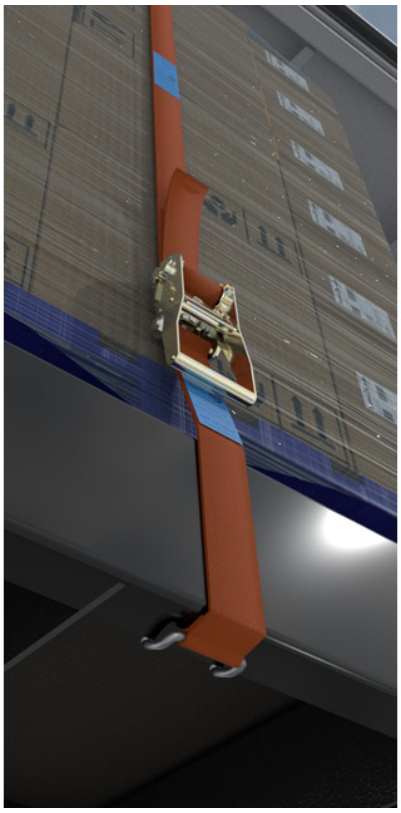
Anchorage points

Check that:

- the anchorage points are compatible with the type of securing equipment you’re using
- there’s as little movement as possible in the anchorage point – restraints will not work as well if the anchorage point can move
- there are no signs of damage or distortion

You must not:

- attach more than one lashing to an anchorage point
- thread a lashing through an anchorage point and hook it back onto itself


Examples of acceptable anchorage points.

Sheeting hooks

You should only use sheeting hooks to tie a sheet over the load to:

- cover loose loads
- protect the load from the weather

You must not use sheeting hooks or rope hooks as an anchor for straps or chains, even if they're attached to side raves. They're not designed for load securing.

An example of rope hooks.

Buckle straps and internal nets,
You can use buckle straps (hanging black straps) and internal nets on roof rails to contain loads on standard curtainsiders.


Left: example of black buckle straps hanging from the side of the vehicle roof.Right: example of black buckle straps hanging from a central track.

The individual load items or stacks being secured can weigh up to a maximum of 400kg. You must not use buckle straps and internal nets to secure items or stacks weighing over 400kg.

If the load does not fill the load bed, you should either:

- secure the last row using a ratchet strap, with the load blocked to fill the gap
- use buckle straps or an internal net to form a rear bulkhead

You can use buckle straps and internal nets as a secondary securing method in case the main securing method fails. They're generally not as strong as other securing methods and may not be suitable for all loads.

Bungee securing systems and kites,
You can use bungee securing systems and kites to secure fragile or crushable loads that might be damaged by lashing straps.

Bungee securing systems

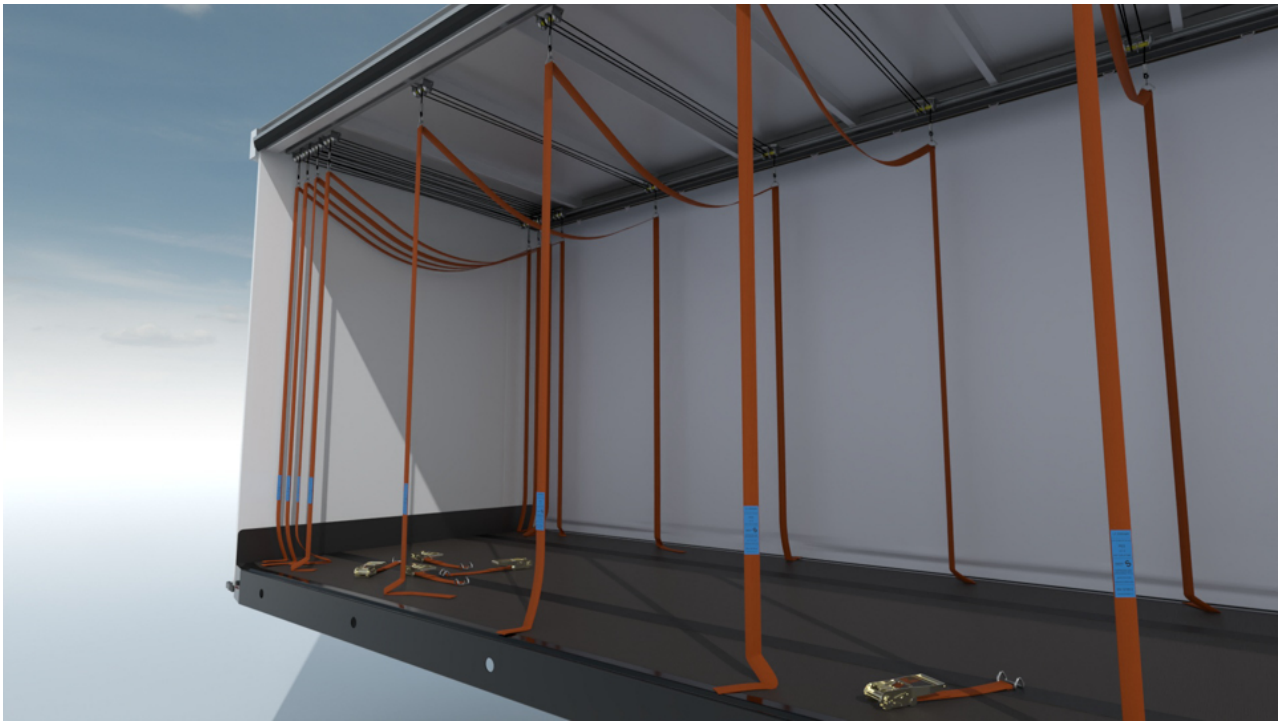
Bungee securing systems consist of ratchet straps, nets, or sheets that are:

- held into the roof of the vehicle

- brought down over the load
- secured in the same way as a normal ratchet strap

The straps should be manufactured to BS EN 12195-2.

Although the system might be held into the roof when it's not in use, its strength does not rely on the roof structure.



An example of normal lashing straps suspended by a bungee system.

Kites

You can suspend kites vertically to reduce the effect of gaps in a load. This will stop the load moving up and down the length of the vehicle.

When deciding whether to use kites you should make sure they're strong enough for the forces likely to be exerted on them.

An example of a kite providing security at the rear of a load.

Chains,

Chains may be more suitable than lashing straps for some loads, as chains are usually much stronger and less vulnerable to damage.

You should:

- check the condition of the chains before using them and visually inspect them for damage on a regular basis
- store chains in a compartment or a box with a lid when they're not being used – this protects them from environmental damage and stops them sliding or bouncing off the load bed

When you use chains to secure heavy equipment like engineering plant and machinery, you must:

- use at least 4 chains when securing it with direct lashing
- attach each chain to different points on both the equipment and the vehicle
- attach the chains to suitable attachment points to secure the load properly

Chains are only as strong as the weakest component in the restraint system. You must not:

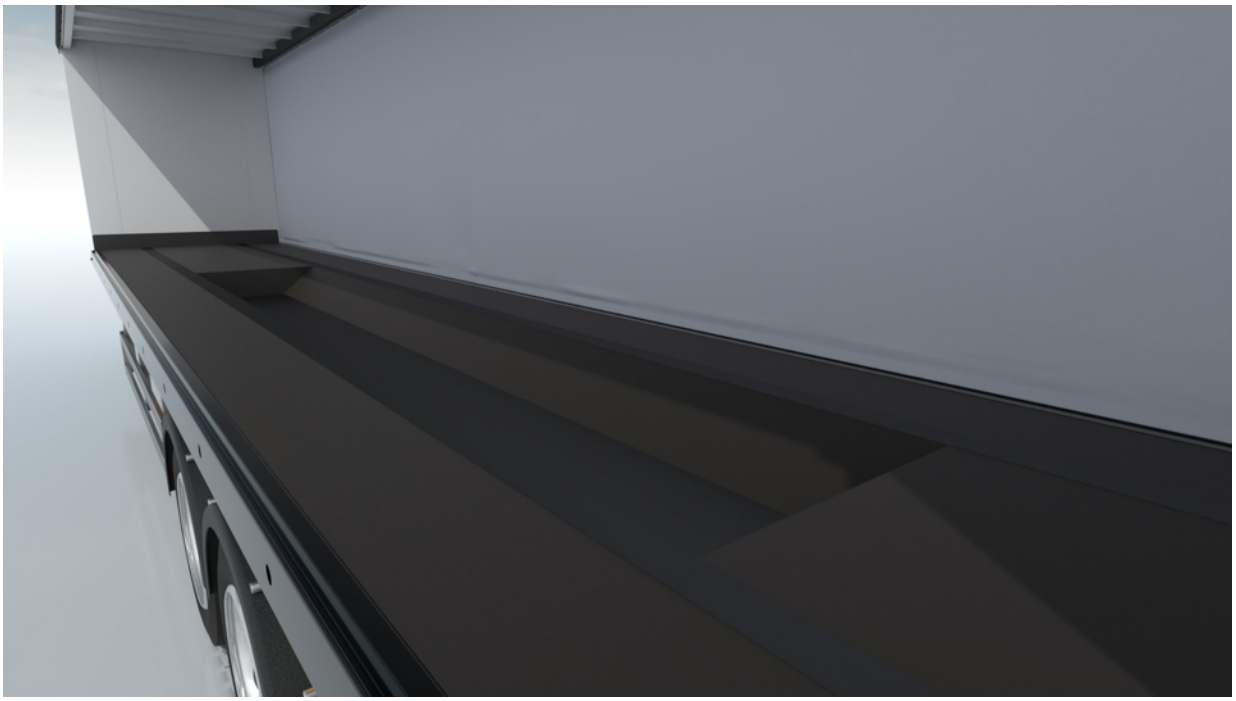
- use a combination of straps and chains in the same lashing to secure a load – straps and chains stretch differently (often referred to as elongation properties)
- use straps as anchor points for chains
- use chains as anchor points for straps

Coil wells, chocks and cradles,

You can stop loads moving by using:

- coil wells
- rubber, plastic, or wooden chocks
- cradles

These pieces of equipment work by providing a physical barrier to movement. You will normally need to use an additional method of securing the load, but you may not need to use as many lashings.



An example of a trailer with a coil well – this can help to secure loads that can roll.

You may need to use wheel chocks or timbers in addition to lashings when you transport plant equipment on flatbed, lowloader, and curtainsider vehicles. Make sure that the chocks or timbers are also secured to the load bed.

You may not need to use separate chocks if the vehicles are fitted with wheel recesses or an auto-chock system.

Friction matting and high friction surfaces,

A high friction surface can be very effective as part of a load securing system, but you must not use it by itself. You cannot rely on friction alone to secure a load.

You should use friction matting or a high-friction floor for some load types, for example paper reels or work cabins not transported on twist locks.

You can fit a high friction surface across the full load area on a vehicle, or you can use individual mats strategically under a load.

High friction surfaces increase the coefficient of friction between the load and the load bed, so you will need fewer lashings. High-friction surfaces should have a coefficient of friction of at least 0.6 to be effective.

Headboards and bulkheads,

A headboard or a bulkhead is a physical barrier. It's generally attached directly to the vehicle between the cab and the load area, or within the load area itself.

If the vehicle has a headboard or bulkhead that is used as part of the load securing system, you must place the load in contact with the headboard or bulkhead or within 30cm of it wherever possible. This will stop the load moving forward when the vehicle brakes.

If this is not possible (for example, if it would overload an axle), you must use additional securing methods to prevent the load moving forward. You could:

- fit an obstacle, such as stacked timbers strapped to the vehicle - this effectively moves the headboard towards the back of the vehicle
- use blocks, timbers, dunnage, or chocks to prevent items moving forward - make sure that they're properly secured to the vehicle
- use additional lashing

An example of blocking placed between the load and the headboard to prevent the load from moving forward.

If you're carrying a load in a van, you should:

- use straps secured to the vehicle body or pack any gaps between the load and the vehicle body
- load to the bulkhead between the cargo space and the cab

Loading over the headboard

Divisible loads

A divisible load is a load that can be broken down into multiple smaller parts, such as a bundle of pipes or bars.

When parts of a divisible load are higher than the headboard, you must use additional load securing methods to stop the load moving forward when the vehicle brakes.

Indivisible loads

An indivisible load is a load that cannot be broken down into smaller parts.

You should only load an indivisible load higher than the headboard if the headboard is as high as the centre of gravity of the load. This will stop the load toppling forward over the bulkhead when the vehicle brakes.

Lashing straps,

You can use lashing straps (also known as webbing ratchet straps) to secure a wide variety of loads.

They're an effective load securing method when used correctly, but they can be damaged easily.

You must not:

- use a combination of ratchet straps and chains to secure a load – straps and chains stretch differently (often referred to as elongation properties) and one could break before the other
- use straps and chains in the same lashing – for example, you must not use a strap as an anchor point for a chain

Keeping straps in a usable condition

The webbing material is vulnerable to damage from many sources, including:

- sharp or abrasive edges
- the weather
- contamination by oil and dirt

You can keep your straps in a usable condition by using sleeves or protectors over corners and sharp or abrasive edges.

You should:

- store your straps somewhere dry and covered when they're not being used
- use a storage box or compartment on the vehicle wherever possible
- check all straps at least every 6 months and record the condition
- look for any signs of damage on the straps before using them - you must replace any straps that are significantly damaged
- inspect any straps involved in a load shift incident – do not use them if they're worn or damaged, even if the damage appears to be minor

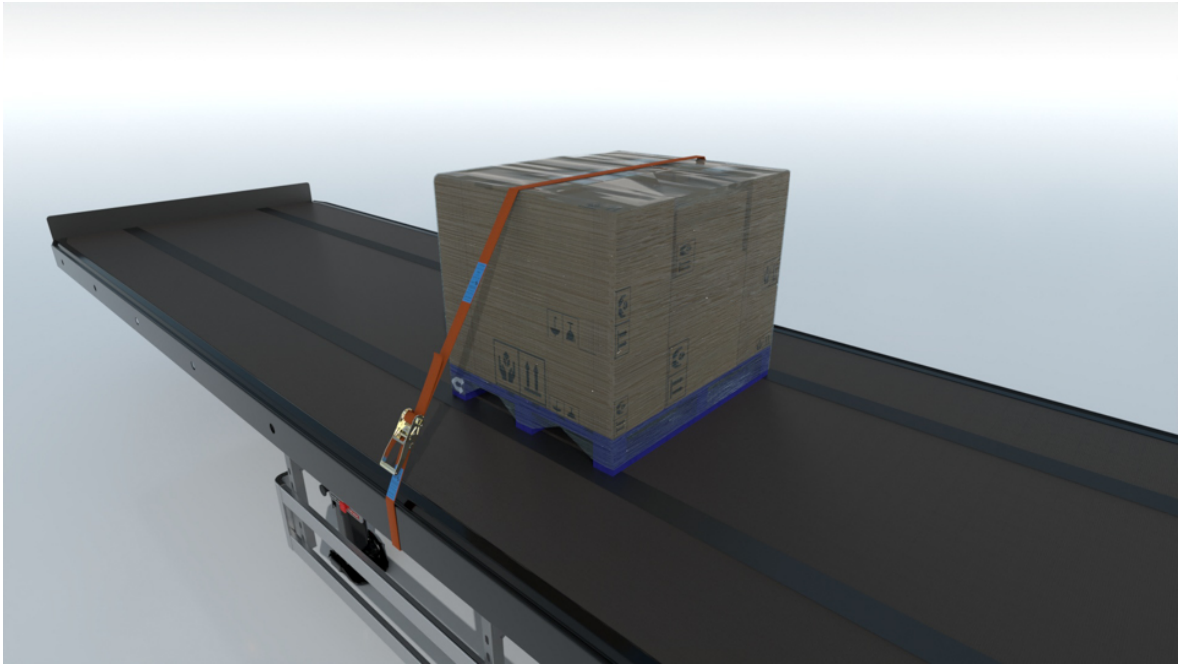
The end fittings (hooks or delta fittings) are designed to withstand the forces on the strap when in use. You should replace the strap if the fittings are missing. Never tie a knot in any part of the strap that is under tension.

Lashing method

Lashing straps are most effective when a suitable lashing method is used.

The most common lashing methods are:

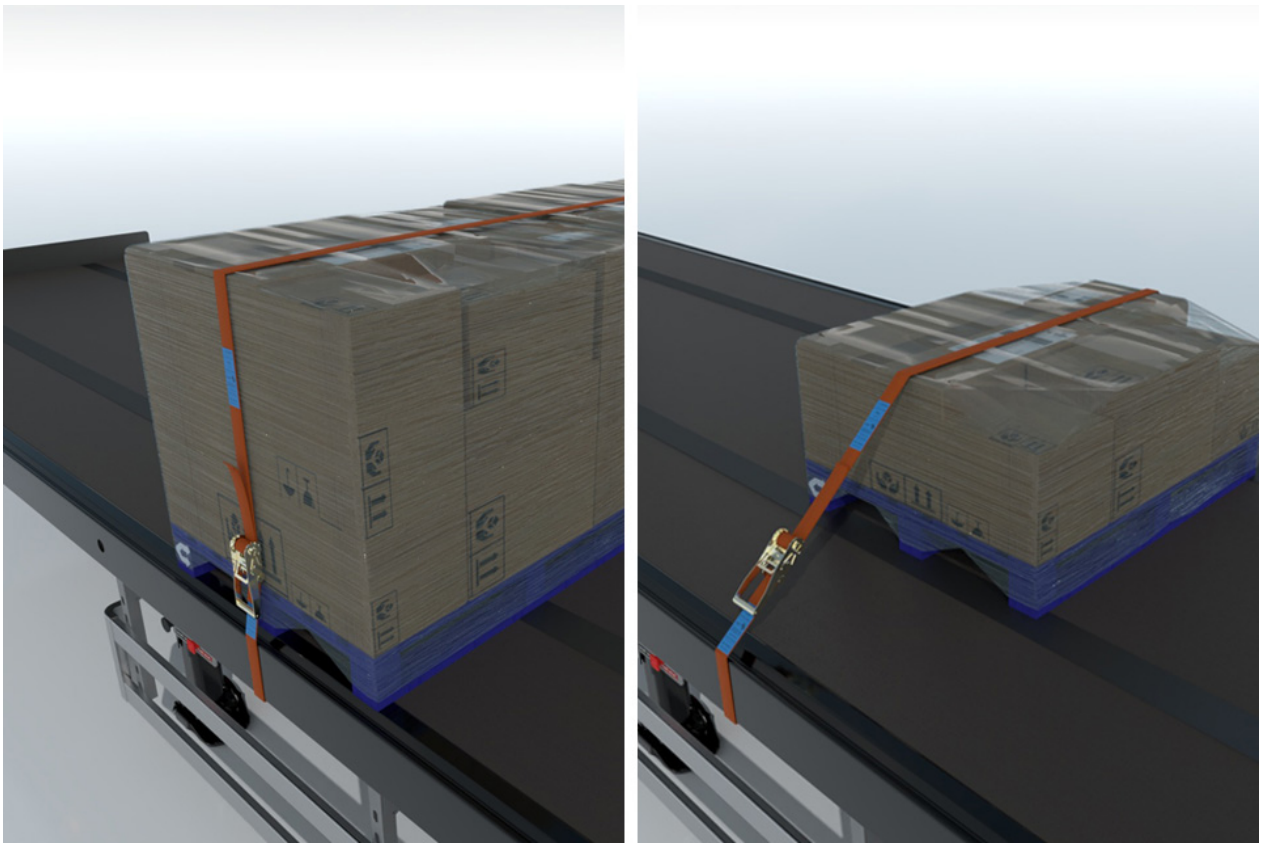
- frictional (tie-down)
- direct – where one end of the lashing is attached to the load and the other end is attached to the vehicle
- loop (choke) – where the lashing wraps around the load



An example of the tie down method using lashing straps.

Frictional lashing

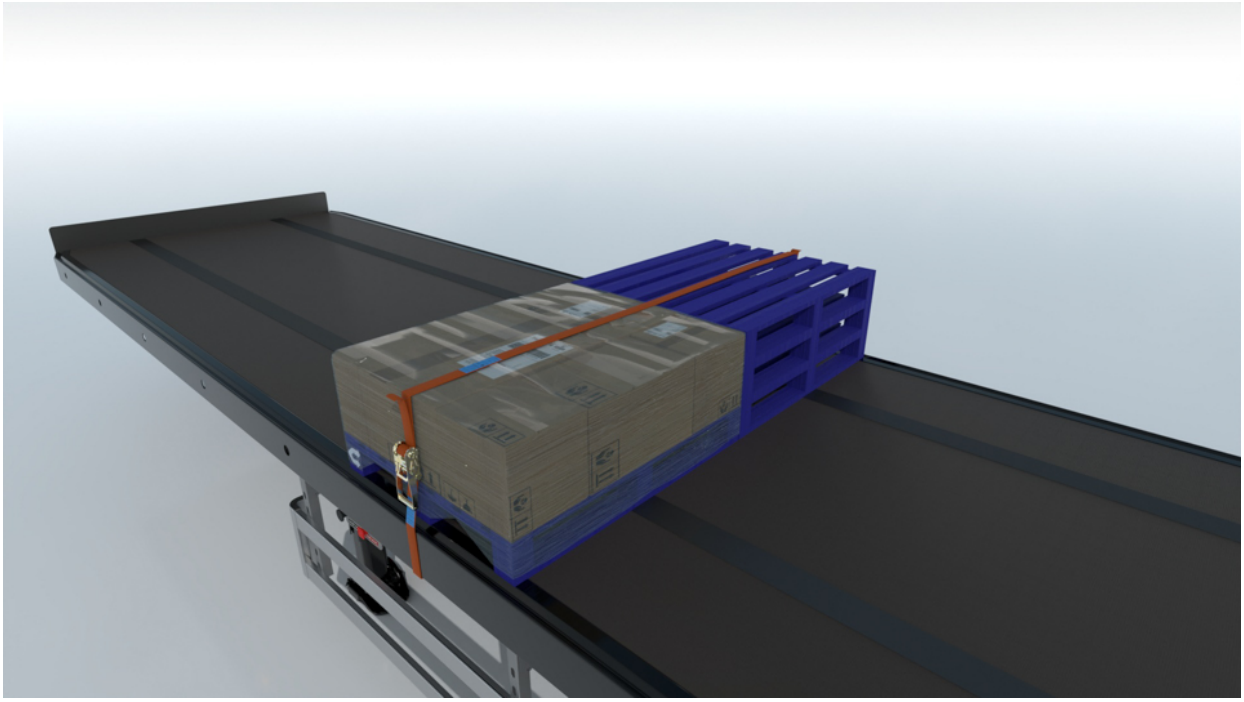
Frictional lashing is most effective when the angle of the lashing relative to the load bed is as close to vertical as possible. If the angle is less than 30°, the lashing will not be effective.



Left: A 90° strap angle provides more security.Right: A 30° strap angle provides less security.

When securing a load in the middle of the load bed, or a load that is not very tall, you should either:

- increase the height of the load (for example, by placing empty pallets or other suitable item on top of it)
- change the angle of the strap using a pallet to the side



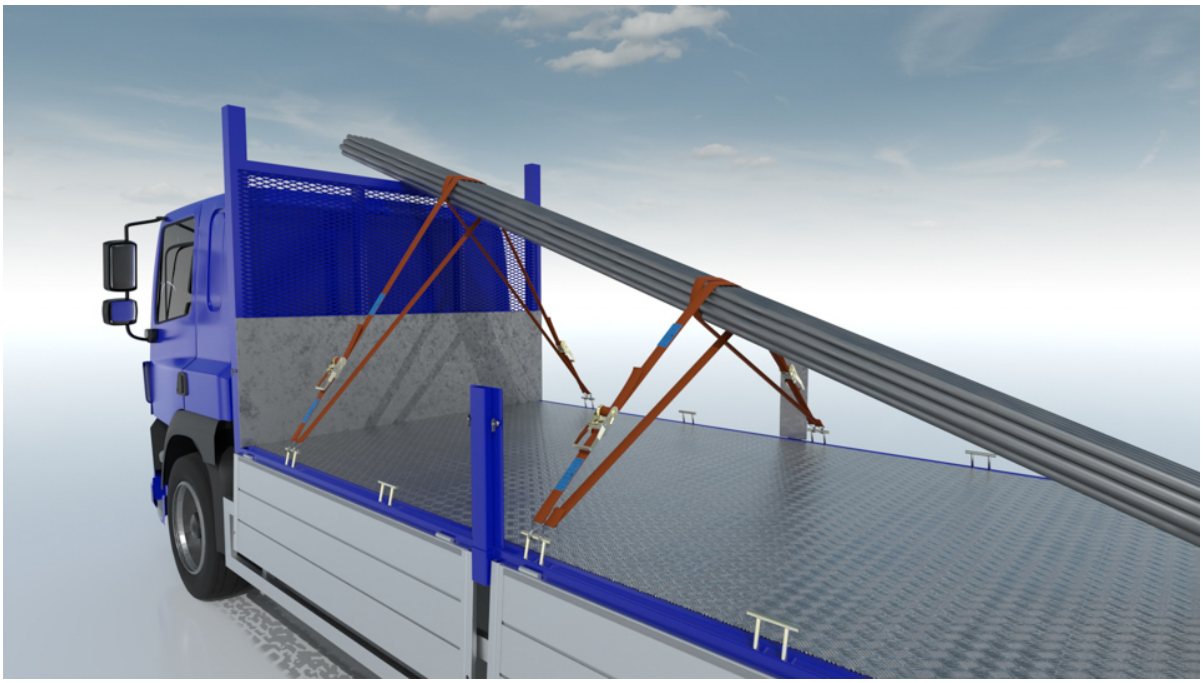
An example of pallets being used to change the angle of the strap to make the load more secure.
Alternatively, you could use a different method of securing.

Loop (choke) lashing

You can use loop (choke) lashing for loads such as:

- wooden boards
- planks
- poles
- pipes

Loop (choke) lashing is particularly effective when these loads are carried at an angle over the headboard of a vehicle. You must use a minimum of 2 loop (choke) lashings for this type of load unless each item is individually clamped to the headboard.



An example of choke lashing - the most effective way to secure loads that extend over the headboard.

Understanding the strap label

Most ratchet straps used in the UK have a label attached to them with information about their strength and how they can be used.

Check the label to make sure you're using the best strap for the load you want to secure. Any lashing is only as strong as its weakest component, so you need to make sure that all parts of the lashings and the attachment points are in good condition and suitable for what you intend to use them for.

An example of a label attached to a lashing strap.

Strap labels often get damaged or torn off, so it's a good idea to keep a record of the strap rating in case you need to check it later.

The most important information on the label is the:

- lashing capacity (LC) in decaNewtons (daN)
- standard tension force (STF) in daN

Lashing capacity (LC)

The LC is the maximum force the lashing can safely withstand without damage when pulled in a straight line. It's only used to calculate the number of lashings needed in direct lashing.

Standard tension force (STF)

The STF is the working tension in the strap created when the lashing is ratcheted down over the load. It's only used to calculate the number of lashings needed in frictional lashing.

The number of straps needed for frictional lashing will also depend on:

- whether the load is loaded to the headboard or blocked from forward movement – you'll need to use extra straps if there's an uncontrolled gap of more than 30cm between the load and the headboard
- the friction between the load and the load bed
- the angle of the straps relative to the load bed

Straps used in the UK usually have an STF of 350daN or lower. For some loads, you may need to use straps with an STF of 500daN or more to reduce the number of lashings required.

Other information on the strap

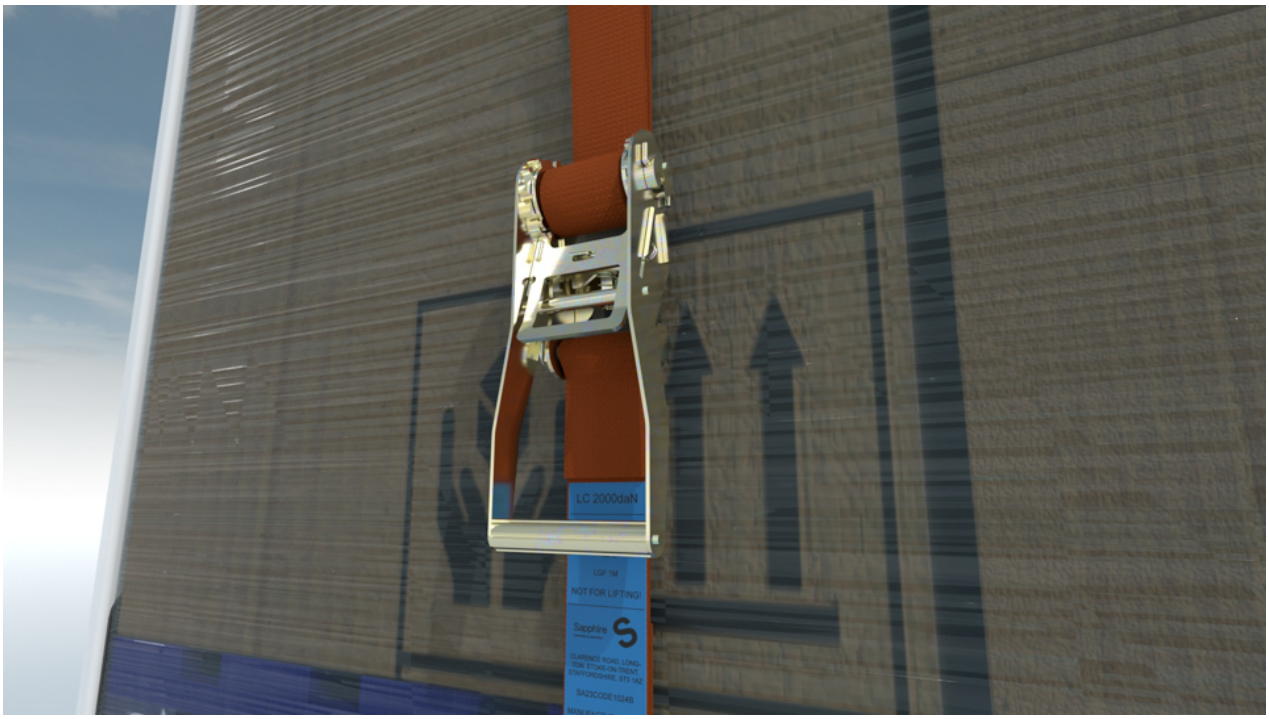
The strap label should also tell you:

- when the strap was manufactured
- that it was manufactured in accordance with BS EN 12195-2

Some strap labels have a 'breaking strength' or 'breaking force', but you do not need this to work out how many straps you need to secure the load.

Ratchets

Make sure that the ratchet is locked once you've applied the correct tension. Depending on how much friction is needed to secure a load, it may be better to use a downward pull ratchet. This allows you to apply more pressure than an upward push ratchet.



An example of a downward pull ratchet and strap.

Positive fit,

Positive fit is a way of securing a load inside a trailer or vehicle body that's strong enough to withstand the forces likely to be exerted on it during the journey, for example a vehicle constructed to the BS EN 12642 XL standard.

The load itself should fill the load bed with minimal gaps wherever possible.

For effective positive fit, the load must be:

- against or within 30cm of the headboard
- loaded tightly along the length without a gap or cumulative gaps of more than 30cm
- within 30cm of the rear doors
- within 8 cm of either side

If you cannot achieve this with the load alone, you can fill the gaps with:

- packing material
- dunnage
- empty pallets
- timbers

If you cannot fill the gaps, you must secure the load as in any non-XL rated vehicle.

You can achieve positive fit with cylindrical loads (such as paper reels) when the extremity of either one reel or two reels side by side is within 8cm of the side of the vehicle.

An example of a load that positively fits the trailer.

An example of a load that does not positively fit the trailer - there are gaps in the load and different types of goods which will move during transit.

Ropes,

You can use rope for:

- sheeting or netting a light load to prevent it moving upwards
- attaching weather protection on loads that have already been secured

You may decide to use rope to increase safety when unloading, but it cannot be used for load securing for the journey.

Rope is not suitable for securing loads because it's difficult to establish its load capacity and age. Ropes can also wear or deteriorate more quickly than lashing straps.

Sheeting and netting,

To stop items bouncing out of a vehicle (for example sided flatbeds and bulk tippers), or loose loads like sand being blown from a vehicle, you can use:

- sheets (sometimes called tarpaulins) – these are solid
- nets – these have gaps in the material, so are not suitable for all types of load

Sheets and nets are used to contain a load but not to secure it. They must only be used with other suitable measures such as lashings.

Sheets and nets used to contain a load must:

- be in good condition – there must be no rips or tears
- be suitable for the load carried
- cover the entire load bed so that no part of the load can escape
- be secured down to the vehicle so they do not come loose when the vehicle is moving

Vehicle mounted equipment,

Some flatbed vehicles have a crane fitted for loading and unloading. You must not use the crane or any lifting accessories to secure a load.

If you lay down a crane, grab arm or boom over a load, you must secure it separately with lashings or a mechanical interlock.

You can use the rigid sides of a tipper if:

- the boom sits well below the vehicle sides

- it has been designed to withstand this kind of force

You could put other road users or pedestrians at risk if you do not secure the boom for travel, as it could result in uncontrolled slewing from side to side.

You must stow and lock any stabiliser legs before the start of the journey. Any alarms and sensors that monitor the position of the legs and alert the driver if there is a dangerous situation must be in working order.

Lifting equipment must be maintained and regularly inspected as required by the Lifting Operations and Lifting Equipment Regulations (LOLER). It must only be operated by people who are trained and competent to do so.

5. How to load different HGVs, light goods vehicles, small vans and cars

How to secure loads on different types of vehicle.

Agricultural vehicles and loads,

You must secure agricultural loads in the same way as any other load when travelling on a public road, even if the journey is short and the vehicle is travelling at low speed.

Box pushers

A box pusher uses a hydraulic press to force a box or load towards the headboard or bulkhead of a vehicle.

In order to stop the load from moving during transit, you should:

- check that the box or container, the headboard and the box pusher are in good working order
- keep the journey relatively short (for example, from the field to a storage place)

You should not:

- double or triple-stack the boxes vertically
- exceed the speed limits for agricultural vehicles

Use extra securing methods (like over-the-top lashings) if any of these conditions are not possible.

Open vehicles and trailers,

Bulk tippers

You can use bulk tippers to carry a variety of loose loads, including:

- sand
- soil
- aggregate
- construction waste
- scrap metal
- sugar beet or other crops
- silage and agricultural material

The body of the tipper will prevent the load moving forwards, backwards, and to the side.

Covering the load will prevent it from bouncing out of the vehicle when you take it on the road.

In some circumstances, where the load sits below the sides of the vehicle, you might not need to use an appropriate cover. The operator must assess the risks and be able to justify it as a safe system.

If your risk assessment shows you need an appropriate cover

You must:

- use a sheet or net if the load sits below the height of the vehicle sides – a sheet provides better containment
- use a sheet if the load sits above the height of the vehicle sides – it must completely cover the load bed with no gaps to any side
- use a suitable sheet or a solid cover if you're transporting divisible loads like aggregate or scrap metal items that are higher than the vehicle's sides

You must not:

- rely on the load settling below the height of the sides
- use a net if the load is higher than the vehicle sides

Flatbeds and lowloaders

You can use flatbeds and lowloaders to transport many different load types.

They have no body structure (sometimes not even a headboard), so they offer flexibility in loading and unloading.

However, this also means:

- it can be difficult to secure some heavy load types, such as some steel loads
- the load will not be contained if the securing system fails

You must load against the headboard or within 30cm of it wherever possible. If this is not possible for weight distribution reasons, you can:

- use blocks, timbers, dunnage, or chocks to prevent items moving forward – make sure that they're properly secured to the vehicle platform
- use additional lashings to prevent forward movement
- fit an obstacle, such as stacked timber secured by lashing, across the load bed and attach it firmly to the vehicle – this effectively moves the headboard towards the back

You should reverse plant equipment onto the trailer if possible and place it against the step, for example on a low loader, to stop it moving forward. The wheels or tracks must be sufficiently supported by the load bed. If this is not possible, the body of the equipment must be supported instead.

Vehicles carried on flatbed vehicles and trailers such as car transporters and recovery trailers must be restrained for transport. You should attach the winch cable if one is fitted. However, this is not part of the securing system.

Drop and fixed sided flatbeds

You cannot rely on the sides of drop or fixed sided flatbeds to secure a load by themselves. In some circumstances, load items could bounce over the sides.

You must:

- secure individual items using lashings wherever possible
- cover the load bed with a net or sheeting
- place items against the headboard or within 30cm of it wherever possible
- attach any lashings you're using to the vehicle chassis before fixing the vehicle sides

Most of these vehicles have a gate-type sided system. The sides are secured by being locked to anchor stanchions fitted to the bed of the vehicle. These must be kept in good condition. You must repair any defects as soon as possible.

You must make sure that the load cannot move backwards if the vehicle has sides but not a rear bulkhead. You can do this by using:

- additional lashing
- another method such as a rear tarpaulin secured by lashing

Unloading from the rear of a drop or fixed sided flatbed

When unloading from the rear of the vehicle at the side of the road, you should:

- park so the vehicle is facing oncoming traffic
- put the vehicle hazard warning lights on
- wear a hi-vis jacket or vest - this applies to anyone involved in loading and unloading

You should only park against the traffic flow for the shortest time possible to allow safe unloading. You should not obstruct traffic or cause danger to other road users.

Soft-sided vehicles,

Standard curtainsiders (Tautliners)

Standard curtainsiders are designed to keep the load out of sight and protect it from the weather. The superstructure is not designed to be load securing.

You can only use anything attached to it (such as buckle straps or internal nets hanging from roof rails) to secure loads up to a maximum of 400kg.

XL curtainsiders

Vehicles built to the BS EN 12642 XL standard can withstand a minimum of 40% of the rated payload to the side without additional load securing if they're loaded to the manufacturer's specification.

However, for proactive enforcement purposes, XL vehicles are accepted as restraining 50% of the rated payload to the side without any extra securing if the load fills the entire load area:

- within 30cm of the front
- within 30cm of the rear
- within 8cm of either side
- without cumulative gaps or a single gap of more than 30cm along the vehicle load bed

This is often referred to as ‘positive fit’.

The BS EN 12642 XL standard

BS EN 12642 is a build standard for the entire vehicle. It applies to the whole vehicle structure, including the:

- curtains
- doors
- headboard

The strength of the vehicle body must be verified by the manufacturer and the vehicle should be clearly marked as an XL body. It must be supplied with a certificate or other documentation to confirm that the body is rated for load securing. The curtains of an XL body must also be manufactured to BS EN 12641.

A vehicle built to BS EN 12642 standard will always display a label with build details.

When the standard is not met

Fitting XL rated curtains to a standard or ‘L’ rated vehicles does not meet the standard. You would need additional load security even if the load meets the positive fit requirements.

The XL rating is not effective if:

- the front of the load is more than 30cm away from the headboard
- the rear of the load is more than 30cm away from the rear doors
- there is a gap between the load of more than 30cm along the length of the load bed
- there are significant gaps along the length of the load that are cumulatively more than 30cm
- there is a gap, to the side, between the load and the vehicle/trailer side of more than 8cm

Diminishing or part loads

You can fit lateral bulkheads or use packing material to fill gaps in the load to guarantee positive fit.

You can transport diminishing or part loads in an XL vehicle as long as:

- any gaps created by a diminishing load are blocked to maintain positive fit
- a partial load which does not fill the load area has extra securing

For example, lashing straps across the rear of the load must provide security for 50% of the entire load. This will secure the load in the same way as the rear of the vehicle would for a full load. Or, the load can be secured as it would in a non-XL rated vehicle.

Chipliners

Chipliners are a special type of curtainsider used to transport forest bulk products. They have more buckles in the curtains than a standard curtainsider.

They do not usually require additional securing.

Make sure that they’re well-maintained and repair any damage to the curtains, including to the buckles, as soon as possible.

Loads other than forest bulk products transported in a chipliner, including waste, must be secured as if they were being transported on a standard curtainsider.

Tilts and Euroliners

Euroliner semi-trailers have an internal frame running down their length, usually hidden by standard curtain sides. Different sized beams (made of aluminium or wood) can be placed in the frame. These can be:

- lengthways – this strengthens the side
- across the width of the vehicle – this separates the load

Tilt trailers also have an internal frame, but they do not have the same structure as a standard curtainsided trailer. UK-based vehicle operators do not usually use them.

Light palletised goods (where each item or stack of items weighs up to a maximum of 400kg) can be transported inside a Euroliner or tilt without additional securing as long as:

- the load bed is filled to prevent the contents from moving when in transit (positive fit)
- the load is stacked against the headboard, or with any gap between the front of the load and the headboard packed to prevent it sliding forward
- the gap between the sides of the load and the frame or beams is less than 8cm
- additional measures are in place to stop rearward movement if the load does not reach the rear doors or within 30cm of them
- the beams and frame are in a usable condition – there are no cracks or obvious signs of damage, decay, or rot
- the beams contain the load so that there is no risk of items falling from the trailer when the curtains are pulled back – the load cannot escape under, through or over the beams

Additional securing will be needed if:

- the vehicle is used to carry palletised or stacked loads which weigh over 400kg
- the goods do not fill the load area (positive fit)

Multi-deck trailers

Multi-deck trailers have three deck areas:

- the main deck
- the swan neck
- the upper (or lift) deck

There are specific risks to using multi-deck trailers because of the height of the upper deck. When loading a multi-deck trailer, you need to consider the risks of working at height on the upper deck and load items falling from the upper deck.

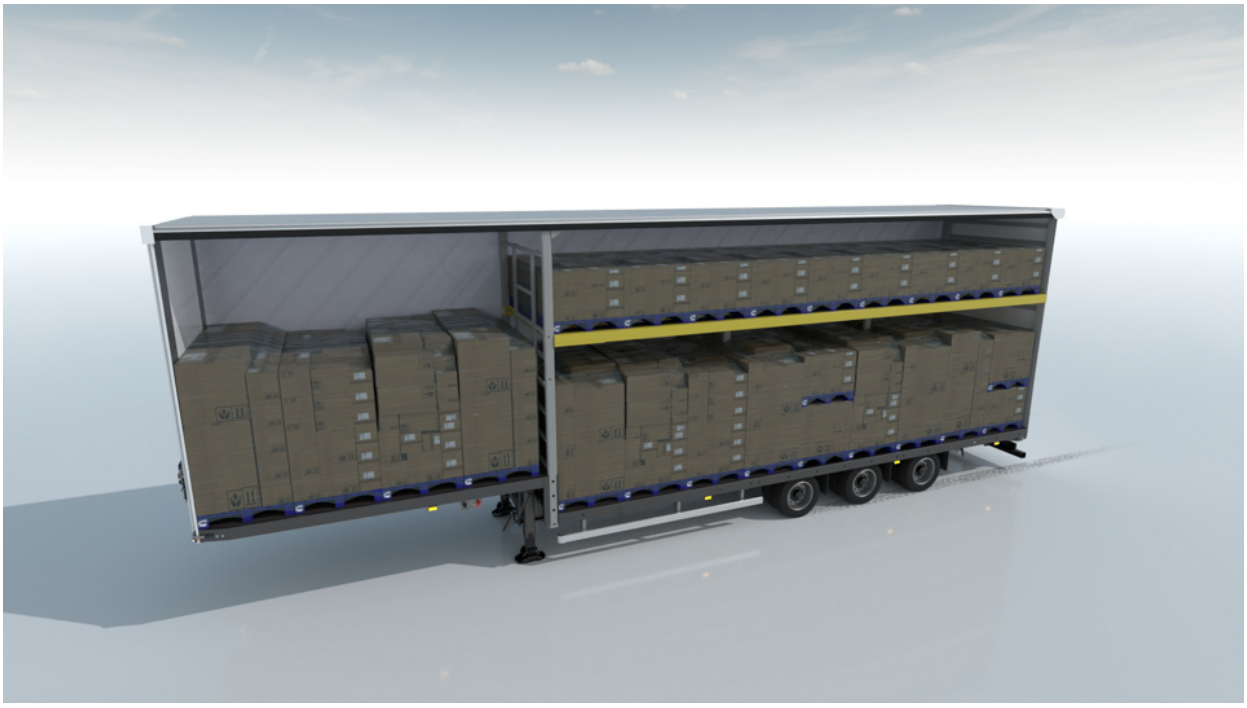
Items, boxes, or palletised goods carried on the upper deck must:

- be loaded in a single layer – do not stack them
- be stable without lashings
- weigh up to a maximum of 400kg

You must secure palletised goods to the pallet and to each other before loading and securing them on the trailer.

Use a ground-operated internal net or securing system to protect drivers and site personnel from items falling from the upper deck when the curtain is pulled back for unloading.

Internal nets or roof-mounted buckle straps must not be used for items or stacks weighing over 400kg. You must load heavier items and stacks on the main deck or swan neck and secure them as you would on a single-deck trailer.



A fully loaded double deck XL rated trailer - the pallets on the upper deck weigh up to a maximum of 400kg and the heavier pallets are on the main and swan deck.

You should take the same precautions against items falling from the upper deck for trailers constructed to the BS EN 12642 XL standard, even if the trailer body structure is sufficient to provide on-road load securing. You may want to use additional securing methods if the load does not fill the entire upper deck (positive fit).

Solid-sided vehicles and trailers, including passenger cars and light vans,

Boxsiders

You can use box-sided vehicles (sometimes called rigid-sided vehicles) to transport a wide variety of goods.

The rigid sides are usually enough to prevent the load moving sideways. However, unsecured loads can:

- increase the risk of rollover
- affect vehicle handling, including braking performance

Loading box-sided vehicles

To prevent the load moving during transit, the load must be:

- against or within 30cm of the headboard
- without cumulative gaps or a single gap of more than 30cm along the vehicle load bed
- within 30cm of the rear doors

If there are gaps larger than 30cm between the back of the load and the rear doors you can:

- fill the space with empty pallets or packing material
- use straps or bars behind the load

Loads that can affect a box-sided vehicle's stability

The rigid sides of this type of vehicle mean you can secure pallets over 400kg on both the lower and upper decks of multi-deck vehicles. However, you should load heavier pallets on the bottom deck to help keep your vehicle as stable as possible.

The movement of hanging or live loads (such as animal carcasses hanging from rails) can create a pendulum effect. This can affect your vehicle's stability.

You should include the risk presented by different loads in your risk assessment and take appropriate steps to manage any risk.

Unloading box-sided vehicles

You should consider how to unload safely without the flexibility that flatbed or curtainsider bodies allow. This is particularly important where drivers are making

kerbside deliveries using a body-mounted tail lift, as there is a risk of the load or the driver falling from height.

Cars

Loads carried in passenger cars must be loaded and secured so there is no risk of harm to:

- the driver
- passengers
- other road users

This applies whether you're driving for work or leisure.

Wherever possible, you should place loads in the boot of the car, against the bulkhead. Fill any gaps so the load cannot slide around.

Always load hazardous, sharp, or heavy items in the boot if possible.

Roof racks

Do not put loads heavier than the manufacturer's recommended maximum weight limit on roof racks.

You must secure the load to the roof rack with:

- cargo ratchet straps
- effective clamping

Effective clamping is generally provided by specific products used to secure loads, such as bike roof bars.

Do not use rope, bungee cords or other cords or cables. They will not secure the load effectively.

You should tie down any loads that project significantly in front of the support of the roof rack, like ladders and canoes. Use strong rope to tie them to the front of the vehicle.

You must never load items directly onto the roof of a car, because:

- it is not designed for this purpose
- friction between the roof and the load is likely to be very low
- there will not be enough suitable attachment points to secure the load properly

Refrigerated vehicles (reefers)

Refrigerated vehicles have rigid sides that are usually enough to prevent the load moving sideways. However, unsecured loads can still increase the risk of rollover or affect vehicle handling, including braking performance. You can use cargo bars or restraint poles to reduce load movement.

Ice can build up in the vehicle, which could reduce the coefficient of friction between the goods and the load bed.

Vans

This section applies to any type of van (from small car derived vans up to larger box vans) used by tradespeople, couriers, or for delivering goods of any kind.

The rigid sides of a box van will usually be enough to prevent the load moving sideways. However, unsecured loads can still increase the risk of rollover or affect vehicle handling, including braking performance.

Where possible, you should:

- load items against a bulkhead
- group smaller items together within a box or container
- secure large or heavy items to the vehicle
- use positive fit

There must be a bulkhead between the load compartment and the cab to protect the driver and any passengers from load movement under heavy braking. This should be in a usable condition and strong enough to stop whatever is in the load compartment coming forward. It should not have any gaps in it that could allow a load item into the cab.

If the vehicle has been converted from a van body and is now classed as a motor caravan (motor home) by DVLA, it does not need a bulkhead between the cab and the rear of the vehicle. However, you should make sure that items in the rear are safely stowed for the journey.

If you're carrying out multi-drop deliveries, check that the load is still in a safe condition between drops to minimise any movement that might affect vehicle handling.

You must not store load items, including work tools and gas cylinders, in the cab.

Roof racks

If you load ladders or other work equipment on a roof rack, you must:

- not exceed the manufacturer's recommended weight limit
- clamp the load or secure it to the roof rack with cargo ratchet straps

You must not use rope as the main method of securing. However, you can use it to tie down the front of a long load to stop it lifting off the roof rack once the vehicle is moving.

6. How to carry different types of load in HGVs and goods vehicles

Ways to load items on a goods vehicle safely.

The types of load in this section are listed in alphabetical order.

Abnormal loads,

Abnormal loads are generally larger or heavier than ordinary plant equipment or machinery. They can cause significant harm to the driver and other road users if they become detached from the vehicle.

Operators should make a separate plan for every abnormal load movement and make sure the load is secured appropriately because of the increased risk.

You must take reasonably practicable steps to secure abnormal loads.

The most effective way to do this is with a combination of physical restraints to movement such as lashings – use chains instead of straps for heavy loads – and:

- bulkheads
- chocks or dunnage
- cradles

The load must be stable on the load bed without lashings.

You must not:

- attach more than one lashing to a single attachment point
- loop lashings through or around attachment points and then hook the lashing onto itself – this can damage the lashing and reduce its effectiveness

If the vehicle does not have a headboard and there is no reasonably practicable way of fitting a physical barrier to stop the load moving forward, you must use additional lashings, preferably chains, to achieve an equivalent level of safety. You may also need to use friction matting or a high-friction floor to reduce the risk of movement.

Wheeled or tracked equipment

If the load bed does not adequately support the equipment's wheels or tracks, you should either:

- make sure the body is supported instead
- rest the equipment on timbers or something similar

Operator and consignor responsibilities

Operators and consignors should:

- carefully plan each abnormal load movement
- make sure that the abnormal load is secured appropriately
- agree what loading and securing scheme to use
- give any drivers or loaders that will secure the abnormal load appropriate training on how to load and secure the load

Operators and consignors must work together to provide clear instructions to drivers on:

- suitable methods of loading and securing for each load type
- how to check tension in the lashings at regular intervals
- what to do if the load shifts during the journey

They must ensure that the load complies with Road Vehicles Lighting Regulations 1989 (SI No 1796) if it obscures:

- obligatory lights
- reflectors
- rear markings
- registration plates

Check the rules for abnormal load vehicles and their escort vehicles.

Bales and boxes,

You must load hay and straw bales so that their weight is fully supported by the load bed. You must make sure the stacks are stable before you secure them.

You must secure hay and straw bales carried on vehicles or open trailers using either:

- at least one lashing strap that passes over the top of each stack of bales or individual bale, and additional strapping at the front and the rear of the load
- rated nets or sheets, straps, and chains
- strapping over the top of an empty pallet (or similar items that spread the forces) placed on top of the bale to help distribute the force of the straps
- strapping to secure bales that sit above the sides of the trailers with hydraulic operated bale securing frames or clamps

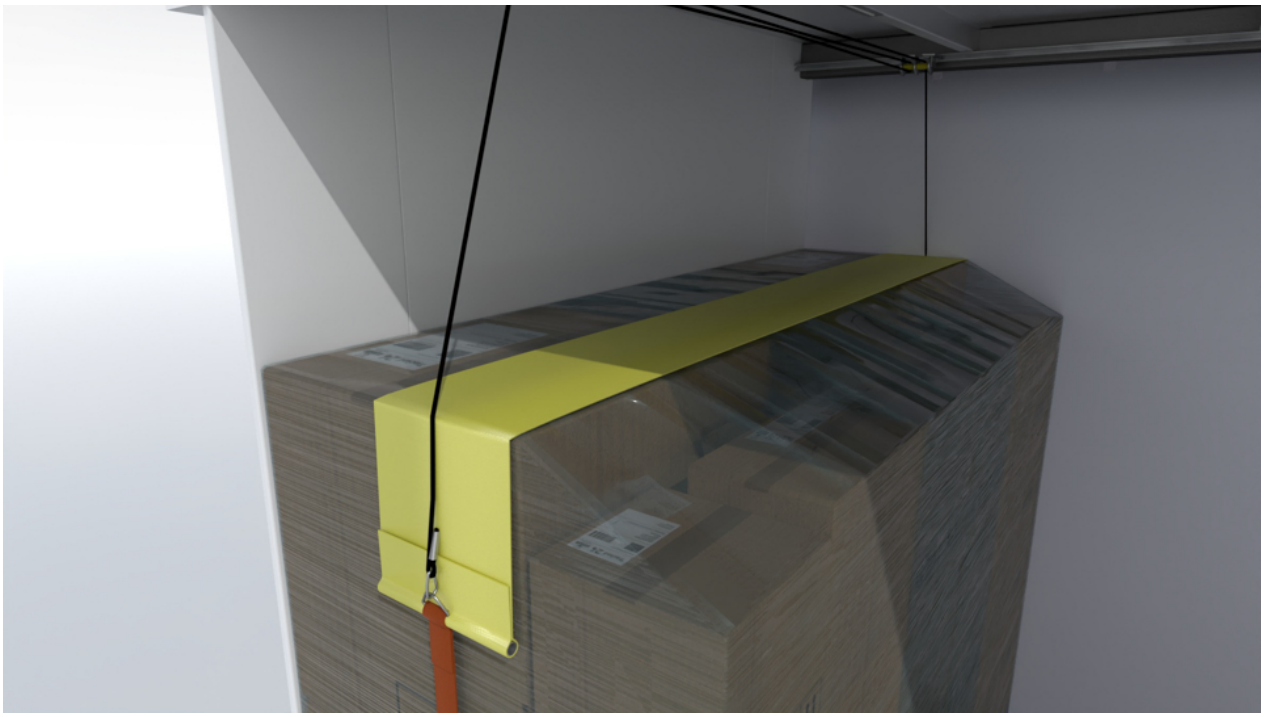
Wider lashing straps can help to spread the force over the load, which can prevent it being damaged or ‘cut into’ by traditional lashing straps.

You must make sure that hay or straw does not become loose during transport and cause a hazard to other road users. The looser the bale, the more likely it is to blow off the vehicle.

If you have diagonal straps at the rear of the load in addition to straps over the top of the bales, remove these first during unloading before removing the straps that pass over the top of the bales.

When transporting boxes you should:

- place them against the headboard or within 30cm of it if possible, and secure them using lashing ratchet straps if carried on open trailers
- use additional strapping at the front and rear if the boxes are stacked
- not stack boxes more than 3 on top of each other



An example of a wider lashing strap.

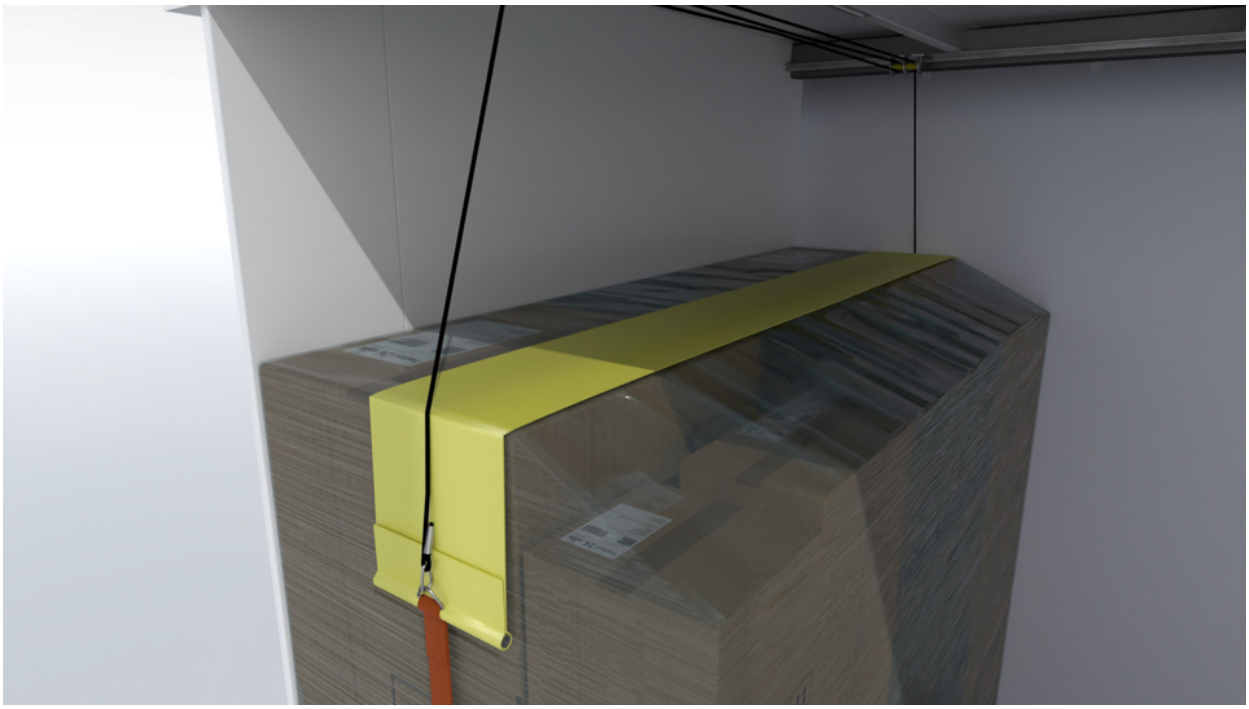
Bulk bags,

You should secure bulk bags by:

- using suitable nets or sheets
- strapping the load to the vehicle through the bag lifting eyelets or lifting pocket
- strapping over the top of an empty pallet placed on top of the bag to distribute the force of the straps
- using wider lashing straps to distribute the force over the load

You must:

- use at least one strap per row
- cover any open bags if the securing method does not prevent the contents spilling or blowing out



An example of a wider lashing strap, which distributes forces over the load. Although it's not being used on a bulk bag in this example, a wider lashing strap can help to spread the forces over bulk bags, as well as bales and boxes.

Construction products,

You must secure construction products, like bricks and blocks, to the vehicle. Stacks of these products must be stable without lashings.

You should load them against the headboard if possible, or within 30cm of it if not.

One frictional lashing over each row will usually be enough for most loads.

If the load is higher than the headboard, you should use at least 2 frictional lashings over the front row of the load to create a bulkhead.

You must:

- secure the last row with 2 frictional lashings
- use a frictional lashing to prevent sideways movement if you use diagonal lashing (cross strapping) to create a rear bulkhead and stop rearward movement

If you use lashing straps to create a rear bulkhead, make sure that the lashings do not go under the base of a pallet used to carry the product. The lashing must go round the load and attach to the vehicle chassis.

If you are transporting construction products on pallets, you should secure them to the pallet to form a single unit before securing the entire unit to the vehicle.

Dangerous goods,

Everyone involved in transporting dangerous goods should know how to stow and secure them properly to protect:

- the driver
- other road users
- anyone in the vicinity during unloading
- the environment

If possible, you should carry dangerous goods in vehicles with:

- caged bodies
- closed bodies (including tankers)
- curtain sided bodies

If you are not carrying the dangerous goods in a closed body vehicle, you should:

- place them against a bulkhead
- secure them to the vehicle

You may need to take additional precautions if there's a risk of ignition.

Dangerous goods regulations

You can find the full legal requirements on the transport of dangerous goods in:

- Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009
- Agreement concerning the International Carriage of Dangerous Goods by Road

Dangerous goods safety advisers

You must have a dangerous goods safety adviser (DGSA) if you transport dangerous goods unless:

- you only do it occasionally, for example breakdown recovery vehicles
- you're only receiving the dangerous goods (you're the 'consignee')

- they're in 'limited quantities'
- you're moving them a very short distance by road, for example between buildings on an industrial estate
- you're using private vehicles

The dangerous goods safety adviser can be someone you train in-house, or you can appoint an external adviser.

Segregating dangerous goods

Some hazardous materials can react dangerously with others if they're accidentally mixed during transport. If you're carrying them on the same vehicle, you must secure them so that the materials cannot mix, even in a collision.

The consignor must inform the operator about any dangerous goods in the load that are incompatible.

If you are not sure, you should get additional expert advice.

You should not transport lithium batteries at the front of a mixed load. If there is a collision they could be damaged by movement of the load behind.

Gas cylinders

Gas cylinders should be either:

- carried upright or at an angle in racks designed for this purpose and fitted on the vehicle
- in lift-on-off cribs or frames

If you're carrying cylinders individually, you must secure them using lashings. This is to prevent any movement in the load space that could damage the cylinders or other items in the load.

Protect the cylinders' valves from damage if you are carrying them horizontally. This protection should be in addition to the standard fittings such as surrounding rings or other protective fitments.

Gas can escape under pressure if the valves become damaged. This may propel the containers with significant force.

You must not carry cylinders in the cab or footwell of any vehicle. This could cause an injury in a collision. Pressurised equipment such as fire extinguishers and cooking gas cylinders must be properly stowed.

Liquefied petroleum gas (LPG) containers must be carried upright. This is to prevent the relief device malfunctioning if it comes into contact with the liquefied gas.

If you're carrying small numbers of cylinders in a closed van, the cargo space must be properly ventilated.

You must not carry toxic gases in the same compartment as the driver or vehicle crew.

Intermediate bulk containers (IBCs) used to carry dangerous goods

You must secure intermediate bulk containers (IBCs) used to transport dangerous goods with either:

- 2 lashing straps
- another lashing method such as a bungee tarpaulin system that distributes the securing force across the top of the IBC

This is because the skeleton frame of an IBC does not usually have a central upright. A single ratchet strap over the IBC can deform the frame and cause the load securing system to fail.

You can use one ratchet strap over the central support if a central upright is fitted.

You can secure empty IBCs with one strap if this does not damage the frame.

Inspect the IBCs before loading to make sure they're in good condition. Check that there are no leaks, particularly around the fittings for filling and discharging.

Each IBC must have the marks required under ADR readily available for inspection.

Barrels

You should either:

- shrink-wrap and band barrels to a pallet to form a single unit
- use plastic locators if you need to minimise movement

You should then secure them to the vehicle using ratchet straps or similar.

Tanks and similar containers

Tanks can be:

- rigidly attached by twist locks or similar to a vehicle
- a tank container – where the tank is fitted inside an ISO frame (shipping container) for multi-modal transport

You must:

- properly secure the tank container to the vehicle
- make sure hatches and valves are securely closed during transport
- secure any hoses or ancillary equipment

You should examine all openings, including pressure relief devices for security and leakage, before the journey. You should have a system in place for examining non-visible openings.

Asbestos waste

When asbestos waste contains more than 0.1% asbestos it is defined as:

- ‘hazardous waste’ in England and Wales
- ‘special waste’ in Scotland

You need a hazardous waste or special waste consignment note when transporting asbestos waste.

Some manufactured products or asbestos contained within a binder such as cement or resin do not need to be transported as dangerous goods if the products are not worn or damaged.

Damaged products or fibrous and unbounded asbestos must be transported as Class 9 dangerous goods and you must follow the regulations on transporting dangerous goods.

They must be:

- double-bagged or wrapped
- labelled correctly
- transported in a closed box or solid vehicle body

Explosives

Explosives are sensitive to heat. They may be sensitive to shock as well.

You must secure explosive cargo to:

- prevent chafing and friction
- prevent impact between them during transport

You must make sure that any other items carried in the load compartment are well secured so they do not impact the explosive items. This includes things like:

- toolkits
- fire extinguishers
- other heavy equipment

You must not use combustible materials such as paper or straw as packing for explosive cargoes.

Consignors and vehicle operators are responsible for segregating explosive loads and complying with national and international regulations.

Radioactive material

Radioactive material will be packed so that it does not present any hazard during transport, as long as the packaging remains intact.

To keep any radiation to the lowest possible level, you should stow radioactive packages:

- at the rear of the load compartment
- as far away as possible from the driver
- carefully to prevent them getting damaged during the journey

If you transport Class 7 dangerous goods (radioactive material), you should consult and may need to appoint a Radiation Protection Adviser (RPA). This can be either someone you train in-house or an external adviser.

Fragile, crushable, or non-uniform loads,

Some loads may not be straightforward to secure using ratchet straps, for example barrels with plastic locators or palletised drinks deliveries.

You should secure loads of this type with:

- positive fit (within a box-sided or XL body)
- bungee securing sheet
- strapping over edge protectors or a pallet or similar on top of the load

Bungee sheets and edge protectors distribute the force of the securing straps and prevent damage to the load.

Glass,

Glass is a high-risk load type. You should pack it and secure it carefully to prevent it falling from the vehicle.

Where possible, you should transport glass in a transport frame or within a box that can be secured to the vehicle.

It's particularly important to secure glass carefully if you're transporting it on a flatbed, as there will be no structure to provide secondary containment.

You can carry glass on a frail (an external frame) on the exterior of a van. The glass should not extend longitudinally more than 30cm beyond the frame in total. You should firmly attach the panes to the frail with clamps, lashing straps or rope in good condition.

Kegs and barrels containing non-hazardous goods,

You should either:

- shrink-wrap or band the kegs or barrels to a pallet to form a single unit
- use locators if you need to minimise movement

You should then secure them to the vehicle using ratchet straps or similar.

Intermediate bulk containers (IBCs) containing non-hazardous goods,

You must secure intermediate bulk containers (IBCs) with either:

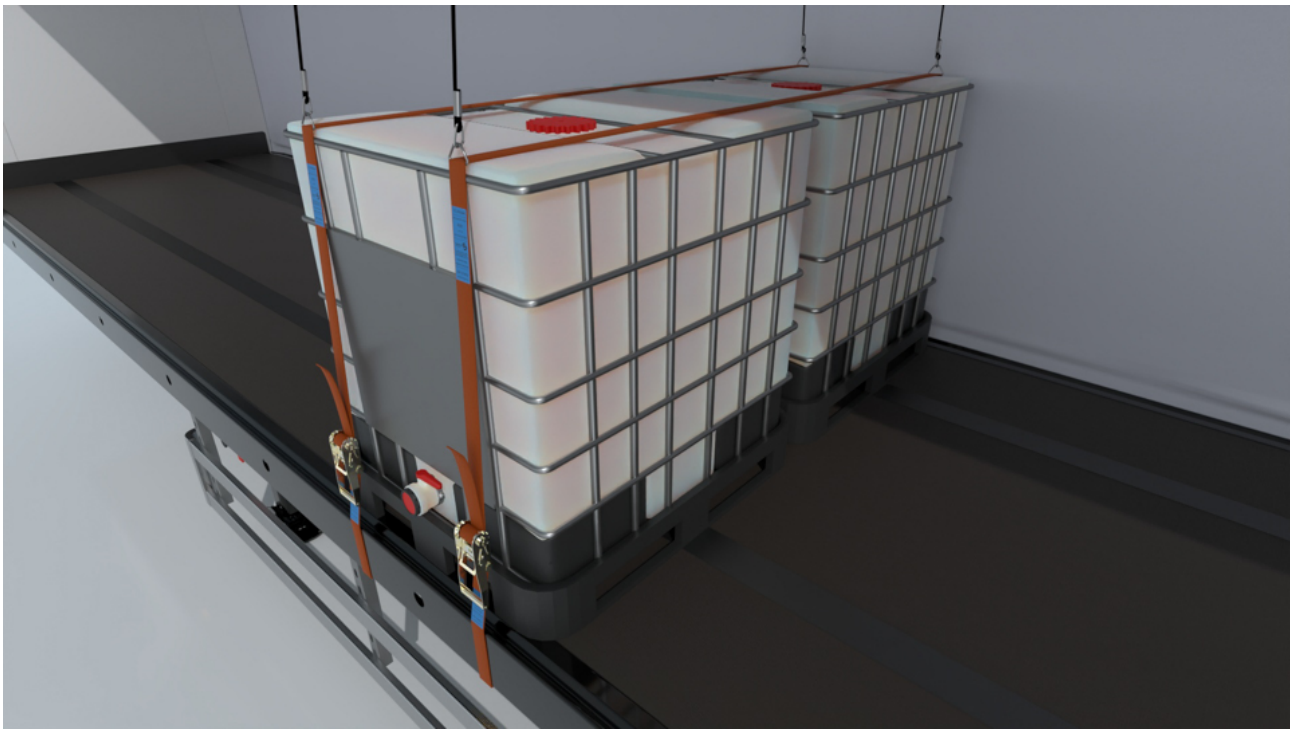
- 2 lashing straps that pass over the skeleton frame
- another lashing method such as a bungee tarpaulin system that distributes the securing force across the top of the IBC

This is because the skeleton frame of an IBC does not usually have a central upright. A single ratchet strap over the IBC can deform the frame and cause the load securing system to fail.

You can use one ratchet strap over the central support if a central upright is fitted.

You can secure empty IBCs with one strap if this does not damage the frame.

Inspect the IBCs before loading to make sure they're in good condition. Check that there are no leaks, particularly around the fittings for filling and discharging.



An example of an intermediate bulk container (IBC) secured by 2 straps over the strongest point of the frame, rather than over the middle where the frame is likely to bend.

Preventing IBCs from moving

IBCs can slide on the load bed. You should load them against the headboard or put a physical barrier in place to stop them moving forward.

Make sure the inside face of the headboard or any other load item in front of the IBC has no projections that could pierce the container if the load moves.

Metal loads,

Metal loads are at risk of moving due to:

- their size

- their weight
- low friction between the load and load bed

You should use a combination of lashings and physical barriers to movement to make sure that metal loads are secured correctly.

Chains are the preferred method for securing metal loads.

If you use lashing straps to secure the load, you should protect them from sharp edges to avoid the straps getting damaged or broken.

You must secure scrap metal in tipper bodies in the same way as any other load in a tipper body. You must:

- use a sheet or net if the load sits below the height of the vehicle sides – a sheet provides better containment
- use a suitable sheet or solid cover if the load sits above the height of the vehicle sides

You must not:

- rely on the load settling below the height of the sides
- use a net if the load is higher than the vehicle sides

Find out more about securing metal loads in British Steel's load restraint guidance.

Pallets,

You must secure the load to the pallet to form a single unit before loading the pallet onto the vehicle. Securing the pallet to the vehicle by itself is not enough.

You can secure the load to the pallet using:

- shrink wrapping
- banding
- strapping

You can secure bulk bags and flexible intermediate bulk containers (FIBC) to pallets with:

- suitable sheets or nets
- an empty pallet or other rigid cover over the bag, secured with lashing straps

Make sure that the load cannot slide on the pallet. If the load moves on the pallet, the restraint system for that pallet and those around them could fail.

Loading pallets onto the vehicle

Check the pallets for damage or signs of weakness before loading them onto the vehicle. Do not accept them for loading if you think they are not strong enough to hold their load.

Pallets come in a variety of weights and sizes. This means that it may not always be possible to fill the load bed to achieve positive fit inside the vehicle. You can fill the gaps with packing material or use extra lashings.

When carrying pallets on vehicles with van bodies, you must restrain the pallets with lashings if there are spaces:

- between the pallets
- between the pallets and the vehicle sides
- between the pallets and the headboard

If you cannot use lashings, you must fill the spaces with packing material or dunnage to stop the pallets moving.

Load pallets as close to each other as possible along the longitudinal (front to back) centre line of the vehicle if:

- the load space is not fully utilised
- weight distribution is a concern

Stacking palletised loads

When you stack palletised loads, you should make sure that the pallets on the lower layer are strong and level enough to fully support the weight of the pallets above. Do not stack heavy pallets on top of light pallets.

Each stack must be stable without lashings when loaded.

You should use the weight of the stack rather than the weight of individual pallets when deciding on a load securing method. For example, if you stack two 300kg pallets you need to secure them as if it were a 600kg pallet.

Equipment for loading pallets

Manual handling equipment carried on the vehicle for loading and unloading, such as pump trucks, are also part of the load when the vehicle is moving. You must secure them to the load bed. Use dedicated securing points for this equipment if they're fitted.

Take care to properly secure pallets onto vehicles that are equipped with a roller loading system.

Loading empty pallets

You should secure empty pallets like any other timber load when you carry them on flatbed and curtainsider trailers. The curtains of a standard curtainsider will not be enough to stop them moving sideways.

Lash the pallets or use another securing method, such as positive fit in an XL curtainsider.

If you stack empty pallets above the height of the headboard of a flatbed vehicle, you must create a bulkhead using at least 2 frictional lashings.

Do not stack the pallets so high that the stack is unstable and likely to fall from the vehicle. Stacks should be no higher than 4 times the longest dimension of the base of the pallet.

Paper and cardboard,

Baled paper

Only use internal buckle straps hanging from the roof rails for bales or stacks of bales that weigh up to a maximum of 400kg. Secure them by another method, like frictional lashing, if they weigh more than 400kg.

You can carry baled paper in XL-rated curtainsider trailers without additional securing if there is positive fit.

You can carry baled paper in box-sided trailers or shipping containers. Block the spaces with packing material if the bales do not fill the load space.

If the load moves around, it can increase the risk of rollover or affect vehicle handling.

Cardboard

Secure light cardboard loads (single layer items or stacks weighing up to a maximum of 400kg) in a curtainsider with buckle straps.

You can secure heavier loads with:

- positive fit
- lashing straps
- a bungee system

Paper reels

It's important to secure paper reels correctly. They can present a significant risk of injury or death to:

- the driver
- other road users
- anyone involved in unloading

XL-bodied vehicles can provide a good level of secondary containment for paper reels. If there is no positive fit, the XL body cannot be the primary load securing system.

You can achieve positive fit by loading reels side by side within 8cm of the side curtains and 30cm from the headboard and rear doors, without gaps between each reel.

On end (vertical)

Paper reels are likely to 'walk' on the load bed when they're transported on end (vertically). This can cause the restraint system to fail.

Lashings alone may not be enough to secure paper reels, and additional securing methods may be needed. This is because there is a low coefficient of friction between paper reels and the load bed.

You should use a high-friction contact surface in addition to lashings, as this will reduce the number of lashings needed.

A high-friction contact surface can be in the form of:

- the load bed flooring with a coefficient of friction greater than 0.6
- friction matting with a coefficient of friction of a minimum of 0.6

You may be able to use fewer straps if you use ratchet straps with an STF of at least 500daN.

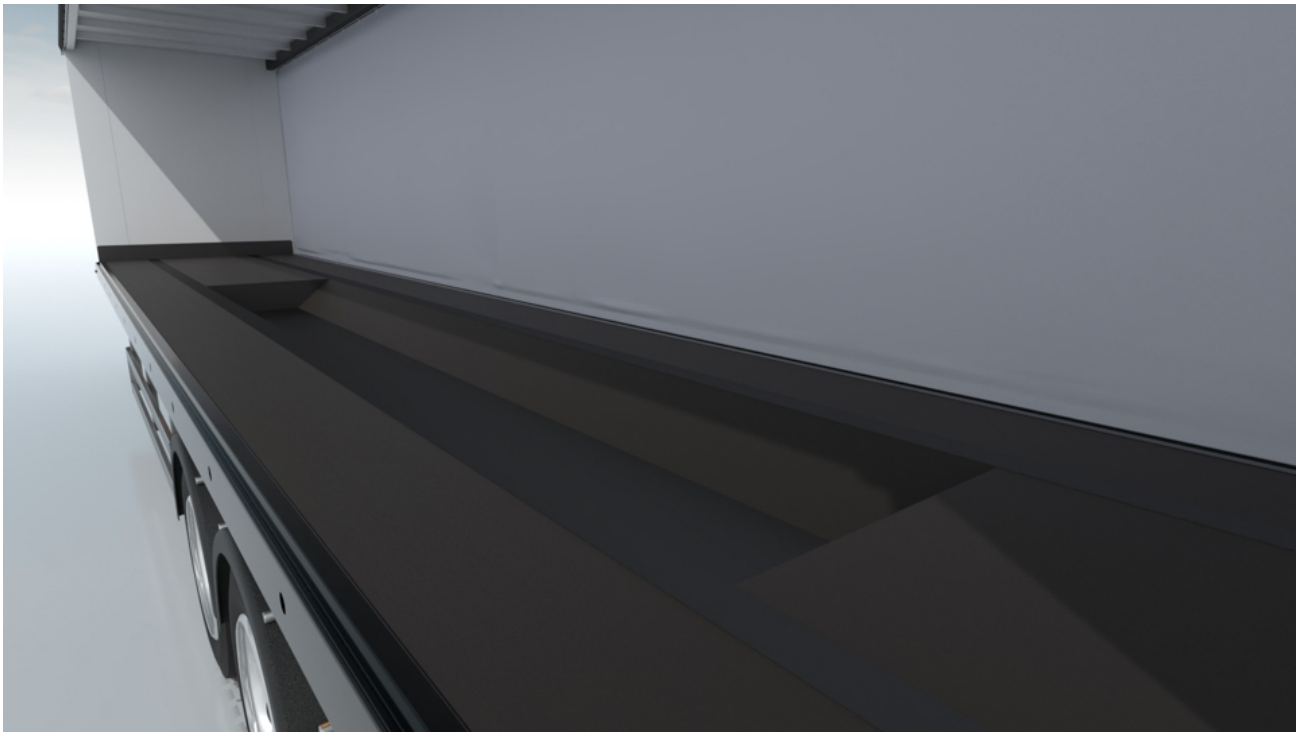
Use additional straps on the front or rear reel or row if it is not possible to load within 30cm of the headboard or rear doors.

On reel (horizontal)

You should secure paper reels transported on reel (horizontally) with a combination of lashings and physical barriers to movement.

The barriers to movement can include:

- a well
- a cradle
- chocks underneath the reel



An example of a well in a trailer bed, which can be used as a barrier to movement when transporting paper reels horizontally.

Plant equipment,

Plant equipment is usually carried on dedicated trailers that allow easy loading and securing. A lowloader trailer helps to make sure the centre of gravity is kept low to reduce the risk of rollover or other loss of control.

You should load plant to the step if you are transporting it on a lowloader. This prevents it from moving forward.

If the load bed does not adequately support the wheels or tracks of plant equipment, you should either:

- make sure the body is supported instead
- rest the equipment on timbers or something similar

Securing heavy plant

Heavy plant is defined as a vehicle not necessarily constructed for road use (such as an agricultural tractor, appliances, or construction vehicles and plant) that cannot be safely or legally transported on:

- a light goods vehicle (3,500 kg gross weight or less)
- a light trailer (maximum permitted weight of 3,500kg)

You must secure heavy plant with a combination of:

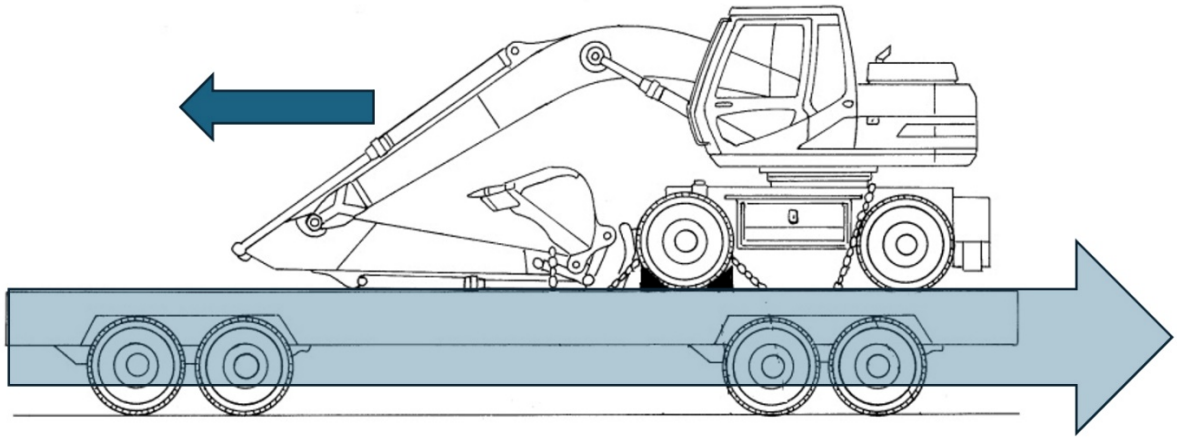
- physical barriers to the front – for example, the bulkhead or step on a low loader or step trailer
- physical barriers to the rear – for example chocks or solid timbers, which also require securing to the load bed
- lashings

The lashings for heavy plant are usually:

- at least 4 direct lashings (where one end of the lashing is attached to the carrying trailer and the other to the plant)
- frictional (tie down) lashing of any boom arms, buckets, or additional equipment

You should use a suitable securing method for the type of plant you are carrying, taking account of whether the plant is wheeled and what type of wheels it has.

When loading a vehicle with a boom arm, such as a digger or excavator, you should load it so that the arm faces away from the direction of travel. This will minimise damage from bridge strikes.



An example of the boom arm on a plant vehicle facing away from the direction of travel. The smaller arrow shows the direction the boom arm is facing, and the larger arrow shows the direction of travel.

Securing light plant

You can carry light plant (such as mini excavators) on trailers. You must secure them with a combination of:

- positive fit
- frictional lashing - 3 straps or chains is enough, with one of these securing any boom arm that is operated hydraulically

Lash down loose items, like spare buckets, separately.

Precast concrete,
Precast concrete products come in a wide variety of shapes and sizes that can make them challenging to secure effectively. It is important to use a combination of physical barriers to movement and lashing to protect the driver and other road users.

You must secure precast concrete with chain or lashing straps combined with:

- loading up to the headboard or other bulkhead
- packing any gaps to the headboard with timber
- fitting stanchions or pins to contain sideways movement

You must protect lashing straps from any abrasive edges on the load and check them regularly for signs of wear and damage.

You can use:

- plastic edge protectors
- fabric protective sleeves

You must support unstable or top-heavy loads or put them in a transport frame or stillage before securing them with lashings. An unstable load can never be made safe with lashings alone.

Roll cages and roll containers,

You should load roll cages and roll containers against a bulkhead and apply the brakes if this is practicable.

You can secure the load with straps or tension bars. As a general guide, a strap or tension bar should be fitted across the width of the vehicle every 3 rows and at the very rear of the load to protect the driver and loaders during unloading.

Do not overload roll cages and roll containers. Check them regularly for damage and repair them as necessary.

Scaffolding equipment,

Scaffolding poles and boards are likely to shift during the journey because there's a low coefficient of friction between:

- the load and the load bed
- individual parts of the load

If the poles and boards are stacked at an angle over the headboard, you must secure them with a minimum of 2 loop (choke) lashings unless they're individually clamped to the headboard. Frictional (tie-down) lashing is not enough to secure them.

If you stack poles and boards horizontally on the load bed, you must also secure them to the vehicle. It's best to sheet the entire load bed (or as much of the load as possible if there are also items stacked at an angle over the headboard) and then lash the load to the bed using frictional lashings.

If there is no tailboard or the load extends behind the load bed at the rear, you must create a physical barrier to stop the load moving. This can be a temporary bulkhead or a 'sail'. You can create a sail by wrapping a tarpaulin around the rear of the load and securing it to the load bed with straps.

You must transport fittings (connectors) in a lidded or covered container that can be secured to the load bed. A sheet may serve as the cover for the container if the load bed is sheeted.

Unloading scaffolding equipment

When loading or unloading from the rear of the vehicle at the side of the road, you should:

- park the vehicle so that it's facing oncoming traffic
- put the hazard warning lights on
- wear a hi-vis jacket or vest – this applies to anyone involved in loading and unloading

You should only park against the traffic flow for the shortest time possible to allow safe unloading. You should not obstruct traffic or cause danger to other road users.

Skips,

Single skips

You must secure single skips to the vehicle with a minimum of 2 lashings if you're carrying them on a flatbed or lowloader.

You do not need to strap single skips to the vehicle if:

- they're on a dedicated skip wagon
- the lifting chains are attached
- the rear hooks are in the raised position if they're capable of providing some restraint to movement along the length of the load bed

You can use a lashing strap instead if this is not possible, as long as the skip is on a dedicated skip wagon.

Stacked empty skips

You can carry stacked empty skips on a dedicated skip wagon if:

- they're nested
- the lifting chains are attached
- the midpoint of the uppermost skip is no higher than the height of the lifting arms in the stowed position
- the stack is secured to the vehicle with at least one lashing.

If you carry empty stacked skips on a normal flatbed vehicle, you must make sure that:

- they are suitably secured using lashing straps or chains
- any gaps between the load are minimised or blocked
- the stacks are stable and do not affect vehicle stability – this will usually mean no more than 3 skips in a stack
- skips are well seated – this will usually mean not stacking larger skips into smaller skips

Stacked loaded skips

You must not stack loaded skips or use a connecting rod or bar between the lifting arms to push down on stacked loaded skips, unless:

- you have agreed with the enforcing authorities that your vehicles have been tested to withstand the forces likely to be exerted
- you have demonstrated that you have a suitable system in place to manage the risks of transporting skips in this way

The test measures the system's load securing capability to an equivalent technical level to the Annex B (dynamic) test set out in BS EN 12642. The vehicle is loaded in line with the test conditions, and the lifting arms and associated equipment are inspected in line with Lifting Operations and Lifting Equipment Regulations (LOLER) requirements.

Evidence of the agreed system's suitability must be made available to enforcement bodies if they request it.

Special load types, deliveries and activities,

Hedge or tree trimming and roadside grass cutting activities

Carry out highway maintenance activities, like grass cutting, in a way that minimises the danger or nuisance to other road users.

You do not need to secure the load while carrying out the maintenance activity. However, you should secure the load for:

- the journey to the next location
- the journey back to the depot

Local deliveries, including brewery and coal

You do not need to re-secure the load between deliveries if you're delivering goods to a number of premises within a small geographical area on low-speed roads (30mph or less) and using an XL rated vehicle.

However, you should secure the load:

- when it leaves the warehouse or distribution centre at the beginning of the day
- in between deliveries for longer journeys
- on the return journey to the warehouse or distribution centre at the end of the day

Employers should consider the risks to drivers when undertaking kerbside deliveries and take steps to minimise the risk of harm.

Download 'Load securing for the brewing and drinks industry' from the Logistics UK website (PDF, 1.3MB)

On-road activities including gritting and putting out traffic cones

You do not need to secure the load while carrying out the activity (for example, while putting out traffic cones or signs).

However, you should secure the load for:

- the journey from the depot until the point of first use
- the journey back to the depot
- longer journeys

Roadside recovery

Usually, all 4 wheels of a vehicle transported on a recovery vehicle must be secured for transport.

There are 2 exceptions to this:

- when recovering vehicles on a fast road (50 mph or above) where you'll be at risk securing all 4 wheels - in this case, secure 2 wheels and move the vehicle at a reduced speed to the nearest place of safety (such as the next motorway services) to secure the other wheels

- if you're faced with threats of violence and aggression on urban roads - in this case, secure the vehicle as well as you can and move at a low speed to the nearest place of safety to secure it fully

The journey cannot be any longer than the minimum distance required to reach a place of safety.

Timber,

You must secure timber loads to the vehicle. This includes finished products.

You must secure prepared timber with lashings or chains. For long lengths of prepared timber you will usually need 3 straps rather than 2 to make sure the load does not rotate on the load bed.

You must not use rope as the primary method of securing. You can use rope to tie timber roof trusses to central goal posts for additional security during unloading.

The best method to secure uncut timber is to use chains with additional security to the side provided by "goal posts".

Find out more about securing timber in the Timber Transport Forum's good practice guides.

Vehicles,

You should position vehicles being carried so that their weight is fully supported by the carrying vehicle. You can use spreader plates if you need to.

Cars and light vans up to 3,500kg on dedicated car transporters

You should complete a load plan before loading a dedicated car transporter. Having a plan will make sure that:

- drivers are safe working on and around the transporter
- the lowest loaded height is achieved
- load stability is maximised
- vehicle gross and axle weights are not exceeded
- there's a suitable delivery drop order that does not adversely affect any of the above

Vehicles carried on specialised car transporters should face forward unless the loading scheme says otherwise or the weight of the vehicle would overload an axle.

You should distribute their weight evenly across the width of the vehicle so there's enough space to work safely on either side. Their centre of gravity should be over the lengthwise centre line of the transporter.

Car transporters have a high centre of gravity compared to many other types of goods vehicles. Place heavier vehicles on the lower deck to reduce the risk of rollover.

You should always:

- follow the manufacturer's recommendations when loading
- apply the vehicle's parking brake after it has been loaded
- put the vehicle in an appropriate gear – this would be 'park' or first gear for a vehicle driven on to the platform, or reverse gear if it is reversed on

You can prevent the vehicles moving during the journey with a combination of:

- lashings
- chocks

The number of lashings and chocks to use depends on the load. Check the vehicle logistics safe loading code of practice for more detailed guidance on lashing strap requirements and where to place chocks.

For vehicles on a flat deck, there should be:

- 2 wheels secured by lashings (preferably diagonally opposite)
- 1 chock or lashing on a third wheel of each vehicle

For vehicles on an angled deck, there should be 3 wheels secured by either:

- 2 with lashings and 1 with chocks
- 3 with lashings

Vehicles carried at the very front and rear of a transporter must have all 4 wheels secured by lashings. This does not include the vehicle secured directly behind the cab if the transporter is fully loaded.

You should always use lashings as points of contact in preference to chocks. For example, 3 points of contact should consist of 2 lashings and 1 chock or 3 lashings. It should never consist of 2 chocks and 1 lashing, or of 3 chocks.

If it's impractical to use chocks for some vehicles on a transporter, you can secure an extra wheel with a lashing strap. Some vehicle manufacturers recommend that each wheel should be attached.

The lashings you use to secure vehicles should be:

- manufactured to the BS EN 12195-2 standard
- rated for at least 1,500 daN
- in good condition without any obvious defects that would affect their strength

When securing the vehicles, you should:

- pass the lashings over the wheel lengthways to hold the wheel down to the load bed
- attach the lashings to dedicated attachment points or to dedicated attachment eyes fitted to the transporter or floor attachment points
- close and lock ratchets

If you use wheel chocks, they should be placed so that they secure the load against:

- the braking force on a flat deck
- gravity on an angled deck

Find out more about the rules and guidance for driving and loading a car transporter in the vehicle logistics safe loading code of practice.

Salvage vehicles

You should use 4 lashings to secure salvage vehicles. If the design of the transporting vehicle or the condition of a damaged vehicle makes it difficult to secure all the wheels, you must use either:

- lashings that pass over the top of the vehicle
- lashings that attach directly to structural parts of the chassis
- a combination of lashings that pass over the top of the vehicle or attach directly to the structural part of the chassis

You should attach the winch cable if one is fitted. However, this is not part of the securing system.

You should load damaged vehicles on the lower decks unless advised otherwise by the load plan. Use nets or a suitable cover to prevent loose items from blowing off the vehicle during transit.

Cars and light vans up to 3,500kg on other types of vehicle

Curtainsiders

The superstructure and curtains of a standard curtain-sided vehicle are not strong enough to provide load restraint for a vehicle. You must secure the loaded vehicle as if it was being transported on a flatbed.

A vehicle constructed to the BS EN 12642-XL standard may provide some containment. However, the XL body alone is not enough on its own to prevent load movement because you're unlikely to get a positive fit.

You should think of the reinforced body structure as an extra safety measure rather than part of the load securing system.

You should:

- load the vehicle as close to the headboard as possible
- apply the vehicle's parking brake after it has been loaded
- secure with chocks and lashings in the same way as on a flatbed trailer
- put the vehicle in an appropriate gear

Flatbed trailers

Flatbed trailers do not have a superstructure to stop a load moving, so you need to use additional securing methods.

You should:

- load the vehicle as close to the headboard as possible
- apply the vehicle's parking brake after it has been loaded
- secure all 4 wheels with lashings or wheel tethers
- put the vehicle in an appropriate gear

Recovery transporter trailers

You should attach the winch cable if one is fitted. However, this is not part of the securing system.

You must secure all 4 wheels.

If the design of the transporting vehicle or the condition of a recovered vehicle makes it difficult to secure the wheels, you must use either:

- lashings that pass over the top of the vehicle
- lashings that attach directly to structural parts of the chassis
- a combination of lashings that pass over the top of the vehicle or lashings that attach directly to the structural parts of the chassis

You should use nets or a suitable cover to prevent loose items from blowing off the trailer during transit.

Stacked vehicles

You should stabilise stacked vehicles with stanchions or pins before securing them with lashings.

Use webbing sleeves to protect any lashing straps that pass over the stack.

If more than one vehicle is carried by piggy-back, you must:

- lash each vehicle to the one below
- lash the entire load to the transporting vehicle

Lashings used to secure vehicles should be:

- manufactured to the BS EN 12195-2 standard
- rated for a lashing capacity of at least 1,500 daN
- in good condition without obvious defects that would affect their strength

Vehicles over 3,500kg on car transporters

There should be 4 points of contact between the vehicle and the transporter, consisting of either:

- 2 chocks and 2 lashing straps - preferably on diagonally opposing wheels
- 1 chock and 3 lashing straps
- 4 lashing straps (one on each wheel)

Vehicles over 3,500kg on flatbed trailers

Ideally, you should move vehicles over 3,500kg on lowloader trailers so that the centre of gravity is as low as possible. A high centre of gravity can affect the stability of the transporting vehicle and increase the risk of rollover or loss of control.

You should:

- load the vehicle as close to the headboard as possible
- apply the vehicle's parking brake after it has been loaded
- put the vehicle in an appropriate gear

There must be 4 points of contact between the vehicle and the trailer, including:

- lashing straps on each wheel
- at least 2 chocks or other physical barrier to movement

You may need to secure damaged vehicles with:

- chains
- direct lashings
- lashings attached to structural parts of the chassis

Heavy goods vehicles

You should move tractor units and trailers on low loaders so that the centre of gravity is as low as possible. A high centre of gravity can affect the stability of the transporting vehicle and increase the risk of rollover or loss of control.

You should:

- apply the vehicle's parking brake after it has been loaded
- chock the wheels or place the vehicle up against the swan neck or other bulkhead to stop it moving
- secure the vehicle with direct lashing
- put the vehicle in an appropriate gear

Use a minimum of 4 lashings, secured as part of 2 opposing pairs. The angle of the straps or chains relative to the load bed should be as close to horizontal as possible. You can use additional frictional lashing (up and over the load) using lashing straps to increase the safety of the load.

Use the vehicle's attachment points if it has them. You should also attach lashings to rated attachment points on the lowloader or flatbed load bed wherever possible.

Do not attach lashings to sheeting hooks, as these are not strong enough.

Carrying trailers by piggy-back

If you're carrying more than one trailer by piggy-back, you must:

- lash each vehicle or trailer to the one below with at least 4 lashings
- secure an additional 4 tie-down lashings over the entire load

You should consider the effect on vehicle stability and overall height when deciding how many trailers to transport like this.

Motorcycles and scooters

You should use a dedicated motorcycle trailer to transport motorcycles if possible.

If you do not use a dedicated motorcycle trailer, motorcycles can be either:

- transported in a box or cage that can be strapped down to the load bed
- chocked or placed in a frame and lashed to the vehicle

If you're transporting scrap bikes you can lay them down and lash them to the load bed.

Work cabins and containers,

You can secure work cabins and containers on flatbed vehicles using:

- twistlocks (if available)
- lashings

If you do not use twistlocks, you should:

- load the cabin or container as close to the headboard as possible
- pack the gap between the headboard and cabin or container with timbers or empty pallets if the gap is more than 30cm

You should use a high friction surface between the cabin and the load bed.

Secure the cabin or container to the load bed by either:

- a minimum of 3 frictional lashings
- 4 direct lashings attached to separate lashing points

Damaged twistlocks

The twistlocks or twistlock sockets on containers or cabins can become damaged. When this happens, you may not be able to lock the load to the carrying vehicle at the damaged corner.

If this happens, you should not use the damaged socket as an anchor point.

You must:

- secure the undamaged corners with twistlocks
- use a minimum of 2 lashing straps to secure the load by frictional (tie-down) lashing