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Guidance

Load securing: vehicle operator guidance

Updated 8 October 2020

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Foreword

In this section:

- foreword by the Driver and Vehicle Standards Agency
- foreword by the Traffic Commissioners for Great Britain
- foreword by the Freight Transport Association
- foreword by the Road Haulage Association

Foreword by the Driver and Vehicle Standards Agency (DVSA)

Welcome to our operator guide on load securing.

The securing of a load must be of primary concern for all road users, whether using a seatbelt to secure our loved ones in the family car, or transporting groceries in lorries to the local supermarket.

Not only does effective load securing prevent goods from falling onto roads causing danger to other road users, it also saves money by ensuring that goods arrive at their destination undamaged.

This guide sets out to complement existing Department for Transport (DfT) guidance and the European Commission (EC) code of practice, providing operators from different sectors of industry with useful information on how DVSA and other regulators expect loads to be secured when in transit.

It also provides useful links to other industry specific guidance and a section explaining what your responsibilities are in relation to load securing aimed at operators, consignors and drivers.

This guide was compiled with the assistance of industry experts and other key stakeholders and should be viewed as part of the suite of DVSA publications dedicated to giving useful information to operators, drivers and other parties involved in the carriage of goods by road.

Gareth Llewellyn
DVSA Chief Executive

Foreword by the Traffic Commissioners for Great Britain

I am pleased to be able to introduce this new DVSA guide to load securing, which plays a vital role in keeping our roads safe.

The operation of all commercial vehicles carries some element of risk and operator licensing is designed to reduce this as much as possible.

Taking steps to address the risks associated with load securing is a critical component of your responsibilities, whether as a licence holder, transport manager or driver.

Health and Safety Executive (HSE) statistics show that workplace transport is one of the highest risk activities.

This load securing guide sets out the DVSA's approach and how to deal with certain types of load, including industry specific guidance for a wide range of sectors.

Please use this guide to check and if necessary improve your current procedures and educate your staff and manage the risks that can arise if a load is not secured properly.

Beverley Bell
Senior Traffic Commissioner

Foreword by the Freight Transport Association (FTA)

FTA has welcomed the opportunity to assist in the development of this DVSA load securing guidance which will assist operators in the transport and supply chain industry in understanding some of the methods of securing loads, and to improve compliance with load securing standards.

The guidance is primarily aimed at general haulage operators and contains some good practical advice for FTA members which provides them with information regarding securing loads in curtain side vehicles used on pallet and general haulage type operations which is welcomed.

Foreword by the Road Haulage Association (RHA)

The RHA were pleased to be associated with input in producing this guidance, which it is hoped operators will find easy to use and understand with a resulting improvement in secure and safer loads across industry.

1. Introduction

In this section:

- why load securing is important
- about this guidance
- load securing systems

[Go back to the main contents](#)

1.1 Why load securing is important

DVSA is responsible for lorry, bus and coach enforcement including:

- roadworthiness - including both the vehicle and the load it's carrying
- traffic enforcement - including drivers' hours and overloading

During 2013, DVSA issued over 2,000 prohibitions to vehicles which presented a road safety risk because of how their load was secured.



22,000 road impact incidents

There were 22,000 road impact incidents in England in 2013 caused by objects falling from vehicles.

In the same period, the Highways Agency reported over 22,000 road impact incidents caused by objects falling from vehicles. This is dangerous to all road users.

This resulted in the closure of either a single lane or the full carriageway. On average, it takes 20 minutes to deal with each incident.

This places a significant financial burden on the UK economy from:

- time wasted in traffic
- damage to goods
- damage to infrastructure.

1.2 About this guidance

This guidance has been produced by DVSA and representatives from the transport industry. The subject matters chosen were the areas causing the greatest industry concern.

This document does not replace the more extensive guidance available in:

- DfT's code of practice (<https://www.gov.uk/government/publications/safety-of-loads-on-vehicles-code-of-practice>)
- the European best practices guidelines on cargo securing for road transport (PDF, 24.9MB, 96 pages) (http://bookshop.europa.eu/en/cargo-securing-for-road-transport-pbMI0614080/downloads/MI-06-14-080-EN-C/MI0614080ENC_002.pdf?FileName=MI0614080ENC_002.pdf&SKU=MI0614080ENC_PDF&CatalogueNumber=MI-06-14-080-EN-C)

These more comprehensive documents underpin the current approach to enforcement and should be familiar to anybody involved in the movement of goods via the road network.

For the benefit of this guidance any reference to a vehicle should be read as any vehicle, trailer or combination unless specified otherwise.

1.3 Load securing systems

The load securing systems you use should be appropriate for both:

- the loads being carried
- the vehicles being used

These may include:

- 'over-the-top' lashings
- rear kites
- intermediate bulk heads
- direct lashing to specific anchor points

Whoever is responsible for loading a vehicle needs to consider other important factors like axle weights and vehicle stability. These are the fundamental requirements in making sure vehicles are safe before starting a journey.

2. Load securing: the basics

In this section:

- good practice
- make sure the vehicle is fit for purpose
- load the vehicle properly
- choose the most appropriate securing method
- use adequate load restraint
- communication is important
- load restraint system

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2.1 Good practice

Load securing: good practice (<https://www.youtube.com/watch?v=HXVQxn24kiw>)

2.2 Make sure the vehicle is fit for purpose

You should consider the types of loads being carried when buying vehicles.

There are aftermarket products which can provide bespoke securing products to adapt vehicles to ensure they're fit for purpose.

There are also specialist companies who can give advice on the right load securing system for your operation and the loads you carry. The relevant trade body for your business may be able to help their members.

2.3 Load the vehicle properly

Stack the load against the headboard with the centre of gravity as low as possible. Make sure it's stable without lashings to reduce the risk of it falling over during unloading.

If the load is not stable by itself, think about how you can support it: put it in a box, stillage or transport frame.

If the load is not against the headboard - or items could slide over it - think about other ways you can stop the load from moving forward. You may need extra lashings, sails, chocks or blocking.

The headboard is a key part of the load securing system - fix any damage as soon as possible.

2.4 Choose the right securing method

Whatever method you choose, the load restraint system needs to secure the load to the vehicle chassis and prevent movement.

Not all loads or vehicles are the same. Choose a securing system that stops the load moving without creating other risks - like unnecessary manual handling and working at height.

Webbing straps or chains are often used to secure loads, but they are not right for every situation. For example fragile or live loads need different securing methods to prevent damage.

2.5 Use adequate load restraint

Incidents happen when drivers and operators underestimate how much restraint is needed to keep a load on the vehicle.

Dynamic forces are much higher than static forces. For example, more force is required to secure a load when it is moving (dynamic) than when it is stationary (static).

2.6 Communication is important

Fatal and serious injuries do not usually 'just happen'. Generally, there are some minor incidents and near misses beforehand.

Reporting these and other issues - such as restricted access to delivery sites - can help prevent a more serious situation in the future.

Give drivers clear information about:

- the loads they carry
- how to unload
- what they should do if the load shifts

This is particularly important if the driver has not loaded their vehicle or trailer. It's useful for everyone involved if a loading plan is provided.

2.7 Load restraint system

The combined strength of the load restraint system must be sufficient to withstand a forwards force not less than the total weight of the load to prevent the load moving under severe braking, and half the weight of the load moving backwards and sideways.

Even at low speeds, the forces acting on a load when the vehicle is moving can be high enough for the load to move.

Heavy loads can and do move and the weight of the load alone should never be relied on to hold the load in place.

Once moving, forces to prevent the load from continuing to move are much higher than if the load was static.

3. Responsibility for load securing

In this section:

- general responsibilities
- responsibility for loading vehicles
- responsibility for unloading vehicles
- responsibility for hauling the load

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3.1 General responsibilities

The driver is not the only person responsible for the safety of the vehicle and its load.

Everybody in the transport chain should make themselves aware of the rules set out in the [DfT](#) code of practice: safety of loads on vehicles (<https://www.gov.uk/government/publications/safety-of-loads-on-vehicles-code-of-practice>).

You may also find the European best practices guidelines helpful.

Download 'European best practices guidelines on cargo securing for road transport' (PDF, 24.9MB) (http://bookshop.europa.eu/en/cargo-securing-for-road-transport-pbMI0614080/downloads/MI-06-14-080-EN-C/MI0614080ENC_002.pdf?FileName=MI0614080ENC_002.pdf&SKU=MI0614080ENC_PDF&CatalogueNumber=MI-06-14-080-EN-C)

Load securing: roles and responsibilities (<https://www.youtube.com/watch?v=PoVXOJXbMe4>)

Stay up to date

[DVSA](#) regularly updates its 'Moving On' (<https://movingon.blog.gov.uk/>) blog which gives official advice and information for lorry, bus and van operators and drivers. You can also sign up to get email alerts when new posts are published.

The trade associations also provide regular updates.

Health and safety

Employers have specific responsibilities under the Health and Safety at Work Act 1974 and The Management of Health & Safety at Work Regulations 1999 to ensure the health and safety of:

- their employees
- anyone else affected by their work activities

Risk assessment

Risk assessment is a legal requirement that helps you to identify issues and take reasonably practicable steps to control the risks.

This should help reduce the chances of problems occurring, but you should think about what happens if the load shifts in transit.

Drivers should not be expected to deal with an unsafe load alone at the roadside.

Go back to the list of responsibilities

3.2 Responsibility for loading vehicles

If you're responsible for loading vehicles, you should make sure that they're loaded so the load remains in a safe condition during:

- loading
- transit
- unloading

You should decide:

- who will carry out the loading
- what training they should have
- how they will be supervised

Involve drivers in the loading process if possible

If the drivers do not load the vehicle ideally they should be given the opportunity to observe the competent person loading the vehicle.

If it's not appropriate for the drivers to watch the loading then they should be given information about how the load has been secured and/or given the chance to check the load prior to departure.

If a driver is not happy with how the load is secured or how stable it is, you should make sure that the load is:

- assessed by a competent person
- reloaded or resecured if necessary

Report load shifts

Drivers should be asked to report load shifts so that you can take action to deal with it safely and stop it happening again.

Loads can move even under normal driving conditions so do not automatically assume the driver is at fault if the load shifts during a journey.

Appropriate method of load securing

You, or a competent person appointed by you, should decide on the most appropriate method of load securing for the load and the vehicle.

You should provide safe access (such as working platforms or access ladders) if the chosen method involves drivers or loaders accessing the trailer bed.

It's good practice to involve those actually doing the loading in the decision-making process, as they may be able to identify practical solutions.

Loading plan

You may find it useful to develop a loading plan for the loads you transport.

It's important to communicate with both the haulier and the delivery site when preparing the loading plan so that everyone knows what they're responsible for.

You should think about:

- how the load is to be unloaded
- what happens if the load shifts in transit

Information about the load should be clearly communicated to the driver. You need to take account of possible driver handovers and language barriers.

A loading docket that travels with the load may help to communicate information to the haulier and the delivery site. This can be as simple as a sketch showing the position of the load and the load securing system.

The driver should be made aware of what's expected of them at the delivery site, including things like whether they should:

- report to security on arrival
- stay in their cab during unloading or if they're expected to help unloading

Go back to the list of responsibilities

3.3 Responsibility for unloading vehicles

Many of the same principles will apply if you're responsible for unloading vehicles.

You can help drivers and operators by providing clear information about:

- what's expected on your site
- who's responsible for what

Vehicles that arrive with a shifted load

You should think about what happens if a vehicle arrives at your site with a shifted load.

A vehicle in a potentially dangerous condition should not be sent back onto the public highway. It should be moved to a quarantined area where:

- its condition can be assessed
- a decision made about how best to unload it

Go back to the list of responsibilities

3.4 Responsibility for hauling the load

If you're responsible for hauling the load, you should make sure that:

- you're using a suitable vehicle for the task
- the vehicle is loaded so that it's safe for transport on the road

Communicate with suppliers, the delivery site and driver

You should communicate with both the supplier and the delivery site so that:

- any issues can be identified
- remedial action taken before they become problems

Wherever possible, drivers should be involved in the loading process. Their experience may help the loader(s) identify any problems before the vehicle sets out on its journey.

Secure the load

The load should be secured to the trailer before the driver takes it out on the road. You should:

- agree the method(s) of load restraint with the supplier
- make sure that the vehicle is suitable for the method chosen (like, for restraint bars you need to make sure that the correct type of side rail is fitted)

If loads are to be secured using webbing straps and/or chains, you need to make sure that they can be secured either:

- directly to the chassis of the trailer
- to rated attachment points

Rope hooks are not suitable attachment points. Straps and chains should not be used in the same assembly.

Go back to the list of responsibilities

4. Consequences of poor load securing

In this section:

- death or serious injury
- damaged reputation
- prosecution

Go back to the main contents

4.1 Death or serious injury

First and foremost, it can result in death or serious injury.

Load securing: the consequences of poor load securing (<https://www.youtube.com/watch?v=AkdTEefDr8o>)

It can have serious consequences for the driver, other road users, and anyone involved with unloading the vehicle.

HSE statistics show that workplace transport is one of the highest risk work activities, accounting for over half of all death or injury incidents reported to HSE.

Many incidents are a direct result of poor load securing, for example:

- items falling out of any vehicle when the curtain is opened for unloading and hitting someone stood next to the vehicle
- items falling out of a vehicle during unloading, causing someone to jump out of the way and fall
- poorly-secured loads collapsing or falling over during the journey so they have to be unloaded by hand, and someone then slipping over on the load bed or falling from the vehicle
- damage to goods, property or the infrastructure, which will eventually be passed onto the consumer

- damaged roads, which may themselves lead to more wear and tear on vehicles resulting in increased overheads for the operator

Go back to the list of consequences

4.2 Damaged reputation

Your corporate reputation may well suffer if you're involved in a load securing incident. This could be as a result of:

- adverse publicity in the press
- loss of contracts due to damaged goods etc

Go back to the list of consequences

4.3 Prosecution

You could be prosecuted for causing the death of an employee or a member of the public due to negligence on their part.

Negligence could be viewed as ignorance or the lack of effective processes, like failing to comply with existing guidance. This can result in substantial fines for the company or individuals in the case of a partnership or sole trader.

Go back to the list of consequences

5. Enforcement

In this section:

- how DVSA assesses how loads are secured
- load security matrix
- prohibition and fixed penalty
- penalty points
- other action

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5.1 How DVSA assesses how loads are secured

DVSA deals with load securing under the following laws:

- The Road Vehicles (Construction and Use) Regulations 1986, regulation 100 (<http://www.legislation.gov.uk/ukxi/1986/1078/regulation/100/made>)
- The Road Traffic Act 1988, section 40a (<http://www.legislation.gov.uk/ukpga/1988/52/section/40A>)

Load securing: how DVSA enforces the rules (<https://www.youtube.com/watch?v=cjeBg4SABZw>)

DVSA examiners ask themselves a series of questions:

- can the load slide or topple forwards or backwards?
- can the load slide or topple off the side?

- is the load unstable?
- is the load securing equipment in poor condition?
- is there anything loose that might fall off?
- does the vehicle present an immediate likelihood of causing danger of injury due to its load security or stability?

The examiner will refer to the load security matrix if they answer 'yes' to any of these questions. The matrix helps them decide the appropriate course of action to take based on the risk.

Encourage drivers to ask these questions

You can encourage your drivers to ask the same questions before the start of any journey. This will:

- help identify potential problems
- make sure load securing remains high on the drivers' agenda

5.2 Load security matrix

The load security matrix has 3 tables showing:

- the risk represented by the type of load
- the type of load securing used
- what action to take based on where a load and its security fit within the previous tables

Risk represented by the type of load

This table shows examples of the different load types, but there are other kinds.

Load type A	Load type B	Load type C
Metal pipes, sheet or bar	Timber	Clothing
Reinforced concrete	FIBCs/bulk powder	Wood chip
Bricks, stone or concrete	Roll cages	Waste paper
Vehicles including scrap	Bagged aggregate	Coal bags
Plant machinery	Empty skips stacked 3 high	Bulk material (in tipper)
Reels including steel, wire or paper	Heavy palletised goods (pallet weight of 400kg or above)	Packaging material
Kegs and barrels		Single loaded skips
Stacked loaded skips		Empty skips less than 3 high
Empty skips stacked more than 3 high		Light palletised goods (pallet weight up to 400kg)
Metal casings		
Glass		

Load type A	Load type B	Load type C
Containers or work cabins		

Type of load security used

Defect category 1	Defect category 2	Defect category 3
No load securing	Up to 30cm gap between load and vehicle headboard, unless other means of preventing forward movement have been used	Lashings on ropehooks (this is always poor practice, but there may be no other suitable attachment points)
More than 30cm gap between the front of load and vehicle headboard, unless other means of preventing forward movement have been used	Unsheeted load in bulk tipper or skip	Minor damage to headboard not affecting structural integrity
Unstable load affecting vehicle stability or likely to topple from the vehicle	Inadequate load securing leading to likely risk of harm	Unsuitable load securing
Severe structural damage to the headboard, or gaps in the headboard that would allow load penetration	Unsuitable stacking of load items likely to lead to risk of harm	Poor condition of securing equipment
Items loaded over the height of the headboard (unless it's a single indivisible item, in which case the headboard must support the item to the height of its centre of gravity)	Height of load likely to affect vehicle stability	Unsuitable vehicle for the load

Appropriate action

Load type	Defect category 1	Defect category 2	Defect category 3
Load type A	Prohibit	Prohibit	Advise
Load type B	Prohibit	Prohibit/Advise	Advise
Load type C	Prohibit	Advise	Advise

You cannot consider the vehicle's headboard part of the load securing system if there are large gaps between it and the load. If there are, then you need to find other ways of preventing forward movement.

5.3 Prohibition and fixed penalty

A prohibition prevents the vehicle from being moved until the load securing problem is fixed.

When a prohibition is issued, the driver is given a fixed penalty notice.

The driver then has 60 minutes to fix the problem. If they cannot do this, then the DVSA immobilisation policy (<https://www.gov.uk/government/publications/immobilisation-of-a-vehicle>) would be followed with a release fee incurred.

5.4 Penalty points

Penalty points are not routinely issued, but they can be in certain situations, for example where a vehicle is deemed to be in a dangerous condition due to the condition or suitable purpose, or weight, distribution, packing and adjustment of the load.

This offence carries 3 penalty points and a licence endorsement for the driver. The court may also give the driver an unlimited fine.

All vehicles with load securing issues are dangerous, but some are a more significant risk than others.

For example, no load securing on a flat-bed vehicle carrying a load of steel would be considered substantially more dangerous than a curtain-side vehicle laden with a few loose bags of clothing.

The vehicle carrying steel could result in a charge of dangerous condition, whereas a less serious offence might result in the driver being given advice or a verbal warning.

5.5 Other action

Depending on how serious the load securing breach is, **DVSA** can interview you about the issues found at the roadside. This action could result in either:

- legal proceedings against you
- a report to the Traffic Commissioner (**T.C.**)

Following consideration of any **DVSA** report, the **T.C.** may take regulatory action for failure to comply with the undertaking of an operator's licence. Disciplinary action could include suspension, curtailment or revocation of your licence.

The **T.C.** also has the power to take action against a driver's vocational licence, such as a suspension. Not only will this have an adverse impact on the driver, it might also create additional problems for the operator.

Prohibitions also adversely impact on an operator's compliance risk score (<https://www.gov.uk/operator-compliance-risk-score/overview>) (**OCRS**).

6. Types of vehicles

In this section:

- curtain-sided bodies and EN 12642 XL rating
- double-deck trailers
- rigid-sided vehicles
- euroliner vehicles and trailers

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6.1 Curtain-sided bodies and EN 12642 XL rating

Even with load retaining curtains, a standard curtain-sided vehicle or trailer body will not normally give enough load securing.

The body structure and curtains only provide weather protection for the load. Load and secure goods the same as you would on a flatbed vehicle.

EN 12642 (BS EN 12642 in the UK) is a build standard for vehicle and trailer bodies. It sets out two types that can be built:

- standard body types (L)
- reinforced body types (XL)

Vehicle and trailer bodies do not have to be built to this standard in the UK but XL bodies are a useful part of the load securing system.

Light goods

You can secure goods or unstacked pallets that weigh less than 400kg per item:

- using buckle straps that hang from the roof of the body structure
- with inner curtains - see light palletised goods

Treat goods and pallets over 400kg - and stacked pallets if the combined weight of the stack is more than 400kg - as heavy goods.

Heavy goods

Secure heavy goods that weigh more than 400kg per item or pallet with:

- lashing
- load-rated nets
- tarpaulins with integral straps

Whatever method you use, it must be able to restrain half the weight of the load to the side and rear, and the full weight forward.

This is the minimum standard for normal road driving.

In most cases, the load carried and the body structure used will show the best way to secure the load.

Both the [DfT](http://bookshop.europa.eu/en/cargo-securing-for-road-transport-pbMI0614080/downloads/MI-06-14-080-EN-C/MI0614080ENC_002.pdf?FileName=MI0614080ENC_002.pdf&SKU=MI0614080ENC_PDF&CatalogueNumber=MI-06-14-080-EN-C) (http://bookshop.europa.eu/en/cargo-securing-for-road-transport-pbMI0614080/downloads/MI-06-14-080-EN-C/MI0614080ENC_002.pdf?FileName=MI0614080ENC_002.pdf&SKU=MI0614080ENC_PDF&CatalogueNumber=MI-06-14-080-EN-C) and EU (<https://www.gov.uk/government/publications/safety-of-loads-on-vehicles-code-of-practice>) guides provide detailed instructions on how to secure different loads depending on things like:

- materials
- weight
- friction between the load and the load bed

Tests on ordinary trailers show that the weakest point is the frame.

This highlights the limited benefits of attaching stronger curtains to ordinary trailers.

EN 12642 XL



XL rated bodies display stickers in prominent positions.

Trailers and vehicles built to the EN 12642 XL standard can withstand a minimum of 40% of the rated payload to the side - without extra load securing - when following the manufacturer's guidance.

DVSA accept an EN 12642 XL rated vehicle/trailer keeping 50% of the rated payload to the side without any extra securing, as long as the load fills the entire load area to the front, rear and to within 80mm of the side. This is often called a 'positive fit'.

It's acceptable to fit lateral bulkheads or use packing material to fill any gaps in the load to guarantee positive fit when loading.

Using XL rated vehicles to transport diminishing or part loads is not ideal but it's still possible as long as the following are met:-

- any gaps created by a diminishing load are blocked keeping a positive fit
- a partial load which does not fill the load area has extra securing - this should be enough to meet the DfT rules: 50% to the side, rear and 100% to the front

For example, the use of rated 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 should be secured as it would in a non-'XL' rated vehicle.

The EN 12642 XL standard refers to the entire vehicle or trailer and not just the curtains. So, reinforced curtains fitted to an ordinary trailer do not meet the XL standard. There's no such thing as an 'XL curtain'.

XL stickers

XL-rated bodies have stickers in prominent positions - usually on the rear door or front bulkhead - to show they meet the standard.

The curtains of an XL-rated body also have to be built to EN 12641.

Stickers confirming this are usually found on the inside of the curtains at the rear of the body.

XL stickers should provide the following information:

- confirmation that the body structure - not just the curtain sides - meets the EN 12642 XL standard
- the name of the vehicle or trailer manufacturer
- the year of manufacture

XL body test reports or certificates

XL bodies are covered either by:

- a test report specific to the vehicle
- another document, such as a certificate

You might be able to get these from the organisation that tested the vehicle or trailer to the standard.

The manufacturer will be able to tell you who carried out the test.

You do not have to keep these documents with the vehicle or trailer. But you may find it useful to provide copies to be shown to enforcement authorities at the roadside.

Some vehicles are tested to a higher standard than EN 12642 so that they can carry larger or unusual loads. In these cases, DVSA expects you to be able to show the relevant certificate at the roadside.

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6.2 Double-deck trailers

Double-deck trailers are designed to optimise the available space in trailers. This reduces the carbon footprint and improves efficiency.

These benefits have led to an increase in their use over the last few years.

Risks assessments and securing solutions

Working at height can be problematic on any vehicle, however double decks present particular problems.

Operators and consignors (the person sending a shipment) should make sure that a thorough risk assessment has been carried out to identify the most practicable means of loading and securing goods on the vehicle.

Securing solutions are available to help to mitigate the risks of working at height on double deck trailers. For example, netting and strapping systems that attach to the trailer roof and can be pulled into place over the load and secured to the vehicle chassis from ground level allow goods to be secured without accessing the load bed.

Carrying palletised loads

Double deck trailers often carry palletised loads. Individual laden pallets are known as:

- 'light pallets' if they weigh up to 400kg
- 'heavy pallets' if they weight over 400kg

do not use the upper deck for carrying stacked pallets or pallets weighing over 400kg.

Secure heavy pallets and stacked light pallets on the lower deck with rave to rave lashing or something similar.

Load securing on the upper deck

RHA, The Pallet Network (TPN) and the Association of Pallet Networks (APN) gave DVSA an acceptable solution on loading and securing for double-deck trailers:

Laden pallets on the upper deck of double-deck curtain-siders should be single-stacked; and weigh no more than 400kg each.

RHA, TPN, APN and enforcement bodies have agreed that the use of an extra internal curtain with integral straps designed to hug the load on the upper deck is a practicable means of mitigating the risks of falling objects during unloading and working at height.

This arrangement can be used by any operator or trailer manufacturer. It's recommended particularly for new trailers, but can also be fitted retrospectively.

The benefit of the internal curtain with integral straps is that it contains the pallets more effectively than using internal straps alone. This improves safety both on the road and in the workplace.

Load securing on the lower deck

Generally speaking loads carried on the lower deck and swan neck of a double-deck trailer should be secured as if they were carried on a single deck trailer.

Your risk assessment may indicate that for light goods or crushable loads it's practicable to use hanging straps or internal curtains on the lower deck.

Other methods of securing

This guidance is the minimum requirement needed to secure loads on existing double-deck trailers.

You can decide to use other methods of securing the load as well as those in this section, for example rated ratchet straps.

Go back to the list of types of vehicles

6.3 Rigid-sided vehicles

Vehicles with rigid sides are no different to any other vehicle when it comes to load securing. Load securing requirements still apply.

Gate-type systems

Most rigid-sided vehicles have a gate-type system. The security of the sides relies on 'locking' the sides to an anchor stanchion or stanchions fitted to the bed of the trailer.

These items must be kept in good condition. Any defects must be repaired at the earliest opportunity if the load securing relies on the sides of the vehicle.

Loads above the height of the sides

Loads stacked above the height of the sides of the vehicles need to be secured to the vehicle by other means - usually by over-the-top lashings. The sides of the vehicle cannot be relied upon to secure this type of loading.

Loads above the height of a vehicles sides can affect stability and will raise the centre of gravity.

Load shift

Box vans and rigid-sided vehicles offer some load security, but you need to consider the effect of a load shift on vehicle stability. Goods carried in containers should also be secured to prevent movement during a journey.

Stop loose items from falling

Tarpaulins or netting/sheeting should be used on tippers, bulk containers and skips to stop loose items from falling.

Goods should not be loaded over the height of the sides of the vehicle or skip.

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6.4 Euroliner vehicles and trailers

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, either lengthways - to strengthen the side - or across the width of the vehicle to separate the load.

The securing of light palletised goods - where each pallet or stack weigh no more than 400kg - on Euroline vehicles is accepted as sufficient when the these conditions are met:

- the load bed is filled to prevent the contents from moving when in transit
- 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/beams is less than 80 mm (approximately 3 inches)
- if the load does not reach the rear doors, then additional measures are in place to stop backward movement
- the beams and frame are in a serviceable condition, for example there are no cracks or obvious signs of damage, decay or rot
- the beams adequately contain the load so that there is no risk of items falling from the trailer when the curtains are pulled back - for example 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 are more than 400kg
- the goods do not fill the load area - to prevent uncontrolled movement of the load under normal driving conditions

Additional securing could include rated lashing (heavy duty) straps attached between raves (hooks), or other approved methods.

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7. Types of loads

In this section:

- overview of vehicle stability
- light palletised goods
- roll cages
- crushable loads

- lightweight and fragile loads
- multi-drop or collection (diminishing loads)
- bulk loads carried loose
- equipment carried on vehicles
- skips
- flexible intermediate bulk containers (FIBCs)
- vehicle transporters
- drinks industry
- scaffolding equipment
- round timber
- steel, machinery and plant

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7.1 Overview of vehicle stability

The transport industry and the loads carried are extremely diverse, so it's very difficult to provide generic guidance on load securing that covers everything.

Many sectors of the industry have specific problems which require bespoke solutions to follow the [DfT](#) and [EC](#) guidelines.

[DfT](#) and [EC](#) guides

The [DfT](#) and [EC](#) guides do cover the vast majority of situations that you're likely to come across. They also include information on:

- the impact of the coefficient of friction ([COF](#))
- how different materials move in relation to each other
- the number of straps required to overcome the effect of different [COF](#) values

What vehicle loading affects

How a vehicle is loaded can significantly affect:

- its handling on the road
- the likelihood of the load moving or becoming unstable during the journey

It's important to think about load distribution and load stability at the planning stage.

Centre of gravity

The centre of gravity of a loaded goods vehicle tends to be much higher than that of a passenger car. This makes a goods vehicle more likely to roll over than a car at the same speed.

Single items with a high centre of gravity (like large plant equipment) should be transported on low loaders to minimise the unbalancing effect.

Loads that move from side to side

Loads that are free to move from side to side within a vehicle can result in serious stability issues, even if the load is contained within the vehicle body.

The movement of live loads (like bagged sand or aggregate, hanging clothes or meat) can result in a 'pendulum' effect that quickly leads to vehicle rollover.

Rollcages

Rollcages can cause particular problems if they are not secured.

There have been instances where cages have:

- rolled forward and punched through the headboard
- rolled backwards when the driver opens the rear doors for unloading

Go back to the list of types of loads

7.2 Light palletised goods

Pallets are widely used to carry all manner of goods, mainly because they are a safe and convenient way to store and move goods around via fork lift trucks.

Individual laden pallets are referred to as:

- 'light pallets' if they weigh up to 400kg
- 'heavy pallets' if they weight over 400kg

The goods on the pallets are often shrink-wrapped to restrict movement during transit. However, this wrapping does not provide any load securing.

Palletised loads must be stable and freestanding before any load securing is applied. Make sure goods are shrink-wrapped or banded to the pallet they're transported on. Otherwise, they could slide or topple off the pallet in transit or during unloading. Make sure that the unit load remains in a secure and stable condition at all times.

Transporting light palletised goods in curtained-sided vehicles

When deciding how to transport light palletised goods in curtain-sided vehicles, you should:

- think carefully about the most appropriate securing method for the load
- carry out a risk assessment that takes account of:
 - whether the load can be carried in a different body type
 - possible alternate securing methods that do not crush/damage the load
 - the risks of working at height when securing the load compared to the likely risks due to the load moving

You need to secure the load to reduce the risk of harm as far as is reasonably practicable.

Stacked light palletised goods

Stacked light palletised goods need to be secured in the same way as palletised goods over 400kg.

The best way is to use over-the-top lashings secured to the vehicle chassis or rave-to-rave.

Securing some products may present additional challenges, particularly if they're susceptible to strap damage (see crushable loads).

Light pallets on double-deck trailers

On double-deck trailers with inner curtains, light pallets should be carried on the top deck with heavier pallets or goods secured on the lower deck using over-the-top lashings.

Centre of gravity

Irrespective of the weight of a pallet, you should consider the centre of gravity.

Pallets with a high centre of gravity need extra strapping because of the potential for the load to be unstable, which increases the likelihood of movement during transit.

Loose items

Loose items (such as single pallets, pump trucks or chains) on flat beds need to be secured by other methods, as the internal strapping system or curtains will have no effect.

'Load hugging' curtains

Inner curtains tapered at the roof of the trailer are known as 'load hugging' curtains. These are used by some industries to secure the loads carried.

There will also be an outer curtain on these vehicles for weather protection as the inner curtains are constructed of nets and securing straps.

These vehicles and trailers are commonly found in the drinks industry and are covered extensively in the [ETA](#) guidance document (see the drinks industry).

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7.3 Roll cages

Roll cages are frequently used to carry goods in all types of vehicles. These are becoming increasingly popular because they:

- make it easier to move goods around
- offer an element of security above that provided by pallets

Once loaded onto the vehicle they need securing to stop them from moving. This is often done using securing bars, lashings or other suitable methods.

Insecure roll cages can move around freely inside a vehicle load area. This can:

- have a significant impact on the vehicle's stability
- damage the goods

This is a particular problem with partially loaded vehicles (see diminishing loads) and presents further problems when unloading. You should take appropriate steps to stop movement of the roll cages to the side, front and particularly to rear.

To prevent goods being damaged care should be taken to stack products within the footprint of the cage. Damaging the goods can lead to the loads becoming loose and causing further problems when off loading.

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7.4 Crushable loads

Goods that could be damaged by rave-to-rave over-the-top lashings can be protected by using:

- corner boards
- edge protectors
- wide strapping systems

These spread the load to allow the load to be secured to the vehicle bed.

Crushable loads could need extra protection (like shrink-wrap or other packaging) to be protected enough to be transported. Netting systems (with straps interwoven through the netting) can be used for these loads.

Other methods or other vehicle types may need to be considered for crushable loads.

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7.5 Lightweight and fragile loads

There are some loads which are very unlikely to cause any load securing problems while in transit in curtain side vehicles, for example small amounts of polystyrene insulation.

It's still important that the load is stopped from moving due to the danger to the person responsible for unloading the vehicle.

You might not be able to use traditional lashings because of the damage they would cause. However, internal straps may retain the load sufficiently dependant on the size of the objects.

You could also use some sort of internal frame or roll cage to provide the necessary securing. Make sure the frame itself is secure if you use this method

Go back to the list of types of loads

7.6 Multi-drop or collection (diminishing loads)

The DfT code of practice requires 50% of the load to be secured to prevent rearward and sideways movement.

When an entire load is delivered in one drop using the appropriate securing, it's quite straight forward. However, this becomes more difficult for vehicles involved in multi-drops or carrying diminishing loads.

Multi-site deliveries can cause issues with responsibility for the safety of the load.

Plan for the diminishing load

Diminishing loads should be accounted for at the planning stage.

You should develop a clear system of work and communicate it to all parties so there's no misunderstanding about what should be done at each delivery.

Having enough appropriate securing

Dependant upon the type of vehicle used, parts of the load will either be removed from:

- the side when using curtain-sided vehicles
- the rear with rigid-sided vehicles
- both from a flat bed

So it's important that the driver has enough appropriate securing with them to be able to fix the problems caused by diminishing loads.

Load the vehicle correctly

The whole process can be made much easier if the vehicle is loaded correctly in the first place.

If the load is removed in a hap-hazard way, gaps may appear that could be detrimental to effectiveness of the load securing system. If this happens, the driver might find it easier to use dunnage or blocking to fill the gaps, and keep the integrity of the original security.

Reload the vehicle

The other way to keep safe would be to reload the vehicle and reapply the chosen securing.

This shows why it's important to plan properly, load the vehicle correctly and make sure the driver has enough load securing equipment.

Diminishing load from the rear

A diminishing load from the rear causes extra problems, as the rear of the trailer will not provide any security once the rearmost part of the load has been removed.

Loads can be secured by cross over straps, kites or sails to comply with the 50% requirement. The strapping needs to be maintained as the load diminishes or an intermediate bulkhead could be used.

Watch out for overloading

Drivers should be wary about axle overloads when removing large portions of the load from either the front or the rear. The remaining load may well need re-distribution to avoid these situations.

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7.7 Bulk loads carried loose

You should carry loads like wood chippings, pellets and grain in solid-sided vehicles and curtain-sided vehicles specifically adapted for that use. These vehicles have additional strapping and covering to secure the load within the vehicle.

The likelihood of such items becoming insecure is unlikely if carried in a covered secure containing trailer.

Grain carriers and vehicles servicing the wood processing industry will have this type of vehicle. Most will have a blowing system fitted to the vehicle to load and unload the vehicle contents into a storage unit.

Standard curtain-sided trailers should not be used for this kind of load.

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7.8 Equipment carried on vehicles

Equipment carried on vehicles (like Hiabs, fork lift trucks and pallet pump trucks) should be properly secured when not in use.

Lorry-mounted cranes (Hiabs)

Hiabs should be deactivated and correctly seated and not used as part of the load securing system.

Pallet pump trucks

Pallet pump trucks should be secured in the same way as the rest of a vehicles load, for example with lashings or other suitable methods.

Lorry-mounted fork list truck

Lorry-mounted fork lift trucks (often called 'moffetts') should be secured using the manufacture's recommended instructions.



Rear-mounted forklift truck.

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7.9 Skips

Empty or loaded skips can be carried on either:

- dedicated skip lorries
- flatbed vehicles

It's recommended that skips are carried on skip lorries wherever possible, as it can be very difficult to adequately secure a skip on a flatbed vehicle.

Loaded or partly-loaded skips

Loaded or partly-loaded skips should not be stacked on top of each other for transport, even on a dedicated skip lorry.

The lower skip does not provide a stable base and there is a risk of the upper skip/skips moving under sudden braking, or falling from the side of the vehicle under a combined steering and braking manoeuvre (for example, swerving to avoid another road user).



Skips

Loaded or partly-loaded skips should not be stacked on top of each other for transport.

Lifting arms

Some skip lorries have a shaft connecting the upper ends of the lifting arms. This is used by some operators to 'press down' on stacked skips. This is not recommended. Using the lifting arms for load restraint can lead to fatigue, which could lead to cracking in the lifting arms.

Fatigue cracks can grow very slowly and the lifting arms will still operate normally. Eventually the crack will grow to the extent that there's no longer enough strength in the arm to hold the weight of a skip, and sudden and unexpected failure of the lifting arm may occur.

The lifting arms of skip lorries should be inspected every 12 months by a competent person in order to comply with the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). (<http://www.hse.gov.uk/work-equipment-machinery/loler.htm>)

Some types of lifting equipment have a connecting beam between the two hydraulic lifting arms. In certain situations, this beam can be used to secure two loaded skips.

Tests show that when two loaded skips are carried on the vehicle and the hydraulic rams are pushing the bar down onto the top skip, then enough pressure is applied.

DVSA will accept this as providing acceptable security when these conditions are met:

- the lifting equipment is in good condition and tested to LOLER regulations
- there's a connecting beam between the two lifting arms and it's in contact with the top skip at both sides
- the bottom of the top skip is at least 100 millimetres below the top of the bottom skip
- loose loads are sheeted or covered properly
- if skips are carried in a line, then loaded skips are only at the rear of the vehicle where the hydraulic lifting arms and beams secure the load

- you can produce evidence at the roadside that the vehicle has been tested at TRL (Transport Research Laboratory) or a similar facility
- the chains used to lift the skips are attached for extra security

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7.10 Flexible intermediate bulk containers (FIBCs)

FIBCs, sacks and other bulk bags can become unstable during transport due to the loads settling. This could put the driver or anyone else unloading the vehicle at risk.

The most appropriate vehicle for this type of load would be a rigid-sided vehicle with securing supplemented by lashings.

Drop-side vehicles

When using drop-side vehicles, make sure the tail boards, hinges and any fastening mechanisms are in good condition.

You might also need to consider additional security if the load is higher than the side of the vehicle. Also consider using tarpaulins to prevent any loose loads being blown from the FIBCs.

Flat bed vehicles

These loads should be loaded to the headboard if they're carried on flat bed vehicles. To stop movement to the side, use lashing straps with edging strips or some other method to disperse the pressure from the strap onto the load.

Tarpaulins rated for load securing with inter woven rated straps can also be used to provide effective security. Due to the nature of the load it is good practice to check for movement during a journey.

Curtained-sided vehicles

FIBCs carried in curtain-sided vehicle present similar problems and should be secured in the same way.

Other load securing solutions are also available which would be effective for FIBC such as wide straps suspended on bungee cord (see load securing solutions).

Open or unsealed FIBCs

You may need to put extra sheeting or tarpaulin over the top of the load to stop products from escaping the FIBC if they're not sealed or closed.

Roping and sheeting

Roping and sheeting, used correctly, and using equipment in good condition, can be an effective way of securing FIBCs to meet the requirements of UK and European standards.

DVSA recommends that you use rope and sheets that have been strength tested and rated. This is so you can easily prove that the load is secured to enforcement authorities at the roadside.

The sheet should also fully contain the load, rather than resting on top of it.

Damaged or torn sheets, and frayed or worn ropes, should be replaced or repaired.

Intermediate bulk containers (IBCs)

Secure IBCs to the load bed. Use at least one over-the-top lashing from the vehicle's chassis or rave-to-rave lashing.

Make sure the lashing straps are placed across the strongest point of the frame. This will avoid crushing the frame and potentially damaging the container.

Check the Chemical Business Association's guidance (<https://www.chemical.org.uk/publications/>) for more information about securing hazardous goods IBCs.

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7.11 Vehicle transporters

You can move vehicles and plant equipment on specialised vehicles like:

- car transporters
- flatbed vehicles
- low loaders

Moving cars and light vans up to 3,500kg on car transporters

Vehicles carried on car transporters should face forward, unless the loading scheme says otherwise.

Their weight should be distributed evenly across the width of the vehicle so the driver has enough space to work safely on either side.

Their centre of gravity should be over the lengthwise centre line of the transporter.

When loading, follow the manufacturer's recommendations. The parking brake should always be on after a vehicle's loaded.

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

Use extra securing to prevent movement in transit. Securing is generally achieved through a mixture of blocking/chocking and webbing lashings.

The number of chocks and lashings used depends on the load. But as a general guide, there should be three points of contact between the vehicle and the transporter

How the vehicle is loaded	How it needs to be secured
Vehicle on flat deck	2 wheels secured by lashings, preferably diagonally opposite, plus one chock or lashing on a third wheel of each vehicle
Vehicle on angled deck	3 wheels secured, 2 with lashings and one with chocks, or 3 with lashings
First and last vehicles on decks	4 wheels secured by lashings on vehicles loaded at the front and rear

If it's impractical to use chocks for some vehicles on a transporter, an extra wheel can be secured with a lashing strap.



Regularly inspect the check plate for wear and tear.

Some vehicle manufacturers recommend that each wheel should be attached. You should follow this advice.

Lashings used to secure vehicles should be:

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

Lashings should ideally pass over the wheel lengthways to hold the wheel down to the load bed.

The lashings should be attached to either dedicated attachment points or to dedicated attachment eyes fitted to the transporter or floor attachment points, as long they're in a serviceable condition. Ratchets should be closed and locked.

If you use wheel chocks, they should be placed so that they aid load security by securing against:

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

Cars and light vans up to 3,500kg transported on flatbed or curtain-sided trailers

Flatbed trailers do not have a superstructure to stop unintended load movement. Because of this more securing is needed.

Load vehicles as close to the headboard as possible, with the parking brake on.

How the vehicle is loaded	How it needs to be secured
Vehicle on standard flatbed	All 4 wheels secured with lashings, with chocks on at least 2 wheels (preferably diagonally opposite)
Vehicle on recovery transporter trailer	Winch cable attached, plus lashings on at least 2 wheels (preferably diagonally opposite)

If the design of the transporting vehicle makes it difficult to secure the wheels, use extra lashings.

Stacked scrap vehicles should be stable without lashings.

To stop the webbing being damaged by sharp edges, use webbing sleeves or something similar to protect any lashings passing over the stack.

Lashings used to secure vehicles should be:

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

The superstructure and curtains of a standard curtain-sided trailer are not enough to provide load restraint for a vehicle. The vehicle must be secured as if it was being transported on a flatbed trailer.

A trailer constructed to the BS EN 12642-XL standard may provide some containment. But an XL trailer alone is not enough to prevent load movement. The reinforced body structure should be thought of as an extra safety measure rather than part of the load securing system.

Vehicles should be loaded as close to the headboard as possible - with the parking brake on - and chocked and lashed.

Transporting vehicles over 3,500 kg on car transporters

Generally, there should be four points of contact between the vehicle and the transporter, consisting of either:

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

Transporting vehicles over 3,500 kg on flatbed trailers

Ideally, vehicles over 3,500 kg should be moved on low loader 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.

There should be four points of contact between the vehicle and the trailer, in the form of lashing straps on each wheel.

Chocks can be used for extra safety but should not be considered part of the load securing system.

Vehicles should be loaded to the headboard with the parking brake on and the vehicle left in gear if possible.

Heavy goods vehicles

Ideally, tractor units and trailers should be moved on low loaders so that the centre of gravity is kept as low as possible. This helps to reduce the risk of rollover or loss of control.

Secure vehicles using a lashing system to prevent unintended movement. Chains are preferable.

The parking brake must be on and the wheels chocked or otherwise prevented from movement. For example, by placing the vehicle up against the swan neck.

Vehicles should be lashed using direct lashing. This means, one attached to the vehicle, and the other to the transporting low loader or flatbed.

There should be at least four lashings, secured as part of two opposing pairs. The angle of the straps or chains relative to the load bed should be as close to horizontal as possible.

Extra frictional lashing - up and over the load - using webbing straps can be used to increase the safety of the load.

If the vehicle has attachment points, use these for load securing. Also, attach lashings to rated attachment points on the low loader or flatbed load bed wherever possible.

Lashings should not be attached to sheeting hooks, as these are not strong enough to withstand the required forces.

If more than one trailer is carried by piggy-back, each trailer should be lashed to the trailer it's carried on, and then to the transporting vehicle.



Carrying by 'piggyback'

Carrying vehicles by 'piggyback' can significantly reduce the stability of the transporting vehicle.

Plant equipment

Heavy-wheeled plant should ideally be moved on low loaders so that the centre of gravity is kept as low as possible. This helps to reduce the risk of rollover or loss of control.

Secure vehicles using a lashing system to prevent unintended movement. Chains are preferable.

There should be at least four lashings, secured as part of two opposing pairs. The angle of the straps or chains relative to the load bed should be as close to horizontal as possible.

Extra frictional lashing - up and over the load - using webbing straps can be used to increase the safety of the load.

If the vehicle has attachment points, use these for load securing. Also, attach lashings to rated attachment points on the low loader or flatbed load bed wherever possible.

Lashings should not be attached to sheeting hooks, as these are not strong enough to withstand the required forces.

Ideally, vehicles should be loaded against the swan neck of a low loader or the headboard of a flatbed. This creates a physical barrier to movement besides the lashing system.

Chocks or lateral timbers can also help to prevent movement.

Booms, jibs, buckets, grabs and other components should be separately secured to the transporting vehicle with one or more lashing.

do not rely on hydraulic pressure or any other form of stored energy to prevent movement.

There's very specific guidance on securing plant vehicles in the DfT code of practice. You should bear in mind the rules contained in the Construction and Use Regulations

(<http://www.legislation.gov.uk/ukxi/1986/1078/regulation/100/made>) about the maximum dimensions when any equipment is extended to the front or rear of the vehicle.

Scrap metal

Scrap metal, including scrap cars, should be transported with care. It's a high-density load and may contain sharp edges that can cut through webbing lashings.

It's recommended that you use chain lashings for this type of load.

The friction between the load and the vehicle load bed is likely to be very low so it's important to use an adequate number of lashings.

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7.12 Drinks industry



Kegs and barrels should be secured to:

- prevent them moving while the vehicle is in motion
- reduce the risk of them falling out of the vehicle during unloading

This is very important for kerbside deliveries to smaller premises where pedestrians are at risk of being hit.

Lashing loads to multi-drop kerbside delivery sites may put the driver at more risk. Other restraint methods should be used if possible.

You should transport small and/or breakable items in stillages if no other method can be used.

Download 'Load securing for the brewing and drinks industry' (PDF, 1.26MB)
(https://fta.co.uk/files/public/road/brewing_and__drinks_bpg_may2013)

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7.13 Scaffolding equipment

Scaffolding equipment will comprise of poles, boards and ancillary equipment, and is often transported on flatbed vehicles.

Scaffolding equipment should be loaded so that it does not move relative to the vehicle under normal driving conditions. Fold-up sides and a rear gate or sail can:

- help to prevent load movement
- allow equipment to be transported without lashings as long as the load is not stacked higher than the sides

The load should be placed in contact with the headboard if possible. If a gap is left, an intermediate bulkhead (which can be constructed from scaffold boards), blocking or dunnage can be used to prevent movement, or lashings can be used over the load.

Groups of poles should be 'belly wrapped' and secured to prevent movement during the journey.

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7.14 Round timber

Round timber is normally carried on a skeleton type trailers with goal posts. This is allowed as long as the goal posts are in good condition and are secure.

As a minimum, each pair of goal posts should be accompanied by over-the-top lashing, either straps or chains, from chassis to chassis.

Download 'Road haulage of round timber: code of practice' from the Timber Transport Forum website (PDF, 1.2MB)

(<https://timbertransportforum.org.uk/attachments/article/24/Timber%20Transport%20Forum%20Road%20Haulage%20of%20Round%20Timber%205%20Ed%20Digital.pdf>)

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7.15 Steel, machinery and plant

Chains are used for heavy loads like steel, machinery and plant equipment.

Steel is a high-density, high-risk load. The consequences of load shift can be extremely serious.

Movement of the load endangers:

- the driver - if the load slides forward during the journey or shifts sideways and causes the driver to lose control of his vehicle
- other road users and pedestrians - if the load shifts sideways or slides backwards and falls off the vehicle
- unloading personnel - if the load has become unstable during the journey and collapses during unloading

It is very important to load steel so that they are stable on the vehicle without relying on lashings. This may mean using chocks or blocking to make sure the load is stable.

Even though steel is heavy, do not rely on the weight of the load alone to hold it in place.

The friction between individual items in the load, and between the load and the load bed, can be very low - particularly for painted or coated products and cold rolled products.

If the vehicle is loaded in an uncovered area, wet or icy weather conditions can also reduce the positive effect of friction.

Loading against the headboard

Steel should be loaded so that it is against the headboard of the vehicle if possible.

Loading to the headboard also means that the:

- headboard can be considered part of the load securing system
- minimum number of lashings needed will be less than for a load loaded away from the headboard

The headboard should be strong enough to prevent the load moving.

If the load comes through the headboard it will go into the driver's cab, the headboard is critical in protecting the driver. For the same reason, the load should not be loaded above the height of the headboard unless precautions have been taken to stop it sliding forward.

Securing with chain lashings

The load should be secured with chain lashings when it's loaded.

It's very important to make sure that all parts of the load are secured. Building the load into a 'pyramid' shape can help to:

- make sure that the lashings are in contact with the whole load
- stop individual items sliding or toppling

Belly-wrapping is particularly useful in securing bundled products.

Chain lashings are very effective in restraining steel and are not damaged by sharp edges like webbing lashings. If any webbing is used, it should be protected from any sharp edges by using either:

- webbing sleeves
- edge protectors on the load

Side posts or side boards help to protect both other road users and unloading personnel. They're a useful way of making sure the load does not endanger anyone if the lashing system fails for any reason.



Steel loaded correctly

Chain lashings are very effective in restraining steel and are not damaged by sharp edges like webbing lashings.

Unloading steel

Steel can be unloaded by fork lift truck or by crane.

Avoid anyone standing on the load bed during unloading. If this cannot be avoided, you need to think carefully about:

- where they should stand
- communication with the fork lift truck driver or crane operator
- whether they need fall arrest equipment

Download 'Multi-product load restraint' (PDF, 2.38MB)

(<http://www.nass.org.uk/NassEvents/Has3385/Alan%20White%20Multi%20Drop.pdf>)

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8. Load securing solutions

In this section:

- overview of load securing solutions
- securing equipment
- headboards and bulk head
- rope hooks

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8.1 Overview of load securing solutions

Since the DVSA and Health and Safety Laboratory (<http://www.hsl.gov.uk/>) initiative on load securing there has been a large increase in the number of load securing solutions available.

These range from systems which reduce the risk of working at height including lashings suspended from bungee cords to specially designed extendable poles used to help the driver.

The following have also become more readily available:

- wider lashings
- kites
- sails
- friction mats
- edge protectors

All of these are valuable tools to help you secure awkward loads to vehicles to reduce the risk of load movements and associated road safety problems.

8.2 Securing equipment

All equipment used to secure a load to a vehicle should be in a good serviceable condition.

Damage to securing equipment

Damage to the equipment should be reported and the equipment replaced as soon as reasonably practicable.

Spare equipment

Spare equipment should be carried to allow the driver to:

- supplement the load securing if required
- replace any lashings which have become damaged during transit or where a third party has secured a load inadequately

Inspecting equipment

You should regularly inspect the state of the vehicle headboard or any other internal bulk head (if used).

Curtains should be inspected and where rips are identified they should be repaired as these will compromise the curtains ability to contain a load should a load shift occur.

Equipment not in use

When not in use, the equipment should be stored safely or secured to prevent it falling from the vehicle during transit.

8.3 Headboards and bulk head

The DfT code of practice requires that the load securing systems used should be able to withstand a force not less than 100% of the load to the front.

Generally, but not exclusively, vehicles will rely on a headboard/bulk head or intermediate bulk head to provide this security.

Inspect the headboard regularly

You should regularly inspect the headboard to make sure it's in good condition.

Different types of headboard

Different vehicles have different types of headboard and not all are suitable to retain 100% of the load. You should make sure that the headboard fitted to your vehicle is strong enough for the load being carried.

Put loads as close to the headboard as possible

To take the full advantage of the bulkhead/headboards loads should be located as close to the bulkhead as possible.

However this might not always be possible due to the potential for exceeding weights or due to the nature of the load itself.

Fill the gap between the load and headboard

In situations where the load is not located up to the headboard then ideally suitable blocking or dunnage should be used to fill the gap.

The type of blocking used will be dictated by the load carried and the size of the gap, for example the larger the gap the more robust the blocking would need to be.

In some circumstances it would be appropriate to use additional lashings to secure the load rather than blocking.

Height of the load

Another issue to consider is the height of the load in relation to the height of the headboard.

Where a vehicle is laden with a large indivisible load, the headboard can provide support as long as the load cannot topple over the height of the headboard.

If the load could topple over the headboard then additional securing will be required, such as cross strapping to the front, if indeed the chosen vehicle is suitable for the load.

Items above the headboard

Individual items which are above the headboard (such as scaffolding pipes or large wooden planks) will need either:

- extra suitable securing to increase the down force
- an intermediate bulkhead

8.4 Rope hooks

Rope hooks are for securing sheeting to the vehicle, with ropes or nets attached to protect the load from the weather.

They should not be used as an anchor point to secure over-the-top straps or chains.

Drivers who have traditionally 'roped and sheeted' a load using the 'klinch' or 'drivers' knot can use the rope hooks to secure the load to the vehicle if this system is sufficient to do so.

Many drivers do not have the knowledge or ability to rope and sheet as more effective systems have become available.

Check ropes regularly

The ropes should be:

- rated and marked as such
- inspected regularly to identify any damage

Ropes showing signs of wear should be replaced at the earliest opportunity.

Over-the-top lashings

Over-the-top lashings should never be attached to the rope hooks. The tensioning of the lashings could:

- damage the hooks
- cause the load to become insecure

Lashing straps should attach either directly to the vehicle chassis or rave.