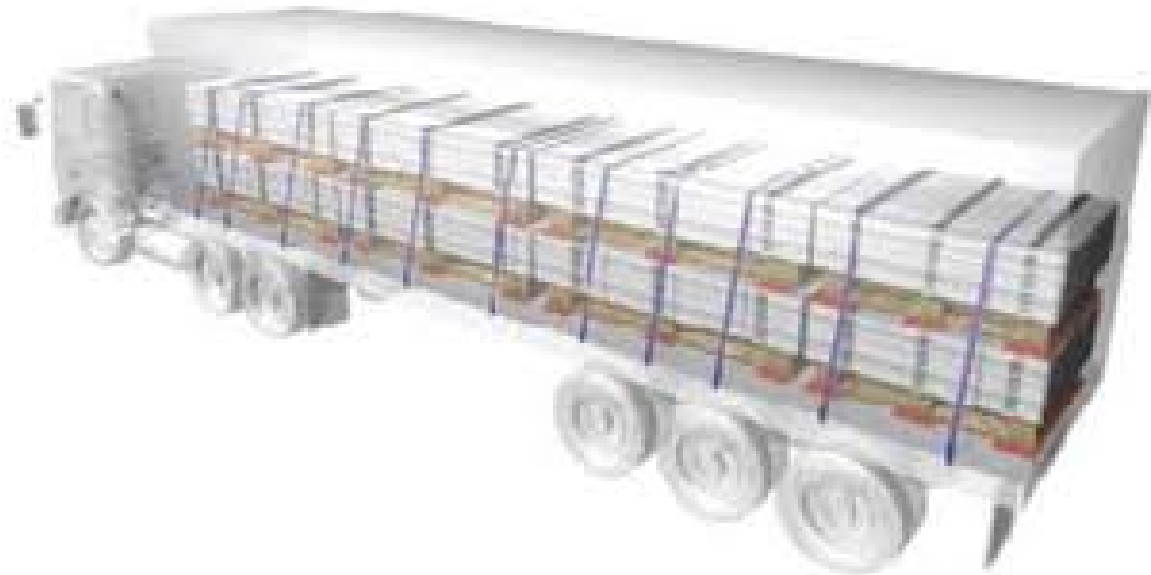




Chemical Business Association

# Load Securing Guidance



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## Disclaimer

The information in the Guidance is given in good faith and belief in its accuracy at the time of publication, but it does not imply any legal liability or responsibility by the CBA

Users of this Guidance should pay regard to any relevant legislation or authoritative recommendations, which may have evolved subsequently to the date of publication.

This Guidance is not an authoritative interpretation of the Law, but if you do follow the Guidance, you will normally be doing enough to comply with the Law. Health and Safety Inspectors may refer to this Guidance as illustrating good practice.

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## FOREWORD

“The Health and Safety Executive (HSE) was involved with the Chemical Business Association in producing this guidance. HSE endorses the guidance as it follows a sensible and proportionate approach to managing health and safety. Health and Safety inspectors seeking to secure compliance with the law may refer to this Guidance as illustrating good practice.”

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# INTRODUCTION

- 1.** The Department for Transport (DfT) Code of practice ‘Safety of loads on vehicles’ third edition<sup>1</sup> supplemented with the Driver and Vehicle Standards Agency (DVSA) guidance Load securing: Vehicle operator guidance<sup>2</sup> sets the baseline standards for load securing within the United Kingdom. Following this guidance is not mandatory but doing so helps to demonstrate compliance with the requirements of the Road Traffic Act 1988 and the Road Vehicles (Construction & Use) Regulations 1986.
- 2.** The CBA guidelines complement the DfT and DVSA guidance and provide good practice advice and instructions to everyone involved in loading, stowing, securing and unloading packaged chemical cargo to and from vehicles, including carriers and shippers. The updated document represents a contribution to the HSE Strategy on Helping GB Work Well<sup>3</sup>. It will help when planning driver training and should also be useful for enforcement bodies and courts. They also include information on the practical application and enforcement of adequate cargo stowage and securing for all situations that may occur in normal UK road transport conditions. There are additional specific national legal requirements in some EU Member States and for movements by other transport modes.
- 3.** They cover the carriage of packaged dangerous goods of UN Classes 2, 3, 4, 5, 6, 8 and 9 and substances, mixtures and articles not classified as dangerous for carriage within the United Kingdom.
- 4.** All packaged chemical loads carried on vehicles must be segregated, stowed and secured safely, whatever the journey. This is to protect the people involved in loading, unloading and driving the vehicle, as well as other road users, pedestrians, the load itself and the vehicle.
- 5.** Loading and unloading should be carried out by appropriately trained staff that are aware of the risks involved. Drivers should also be aware of the additional risk of the load, or parts of the load, moving when the vehicle is being driven. This applies to all vehicles and to all types of load, regardless of the length of the journey or road type.
- 6.** In the United Kingdom, drivers are legally responsible for the safety of the vehicle on the road. However, safe stowage of the load on the vehicle and securing of it to the vehicle is a shared responsibility with other duty holders in the transport chain. In practice the driver may have to collect a pre-loaded and sealed trailer or shipping container. Another frequent situation is where the loading operation is carried out by the shipper’s employees, even obliging the driver to wait elsewhere until the loading of the vehicle has been completed.

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<sup>1</sup> DfT CODE OF PRACTICE Safety of Loads on Vehicles Third edition 2002:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/411093/safetyloadsonvehicles.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411093/safetyloadsonvehicles.pdf)

<sup>2</sup> DVSA GUIDANCE - Load securing: Vehicle operator guidance <https://www.gov.uk/government/publications/load-securing-vehicle-operator-guidance/load-securing-vehicle-operator-guidance>

<sup>3</sup> <http://www.hse.gov.uk/strategy/>

7. All duty holders must be aware of their respective responsibilities and undertake all reasonable checks in respect of load stowage and securing. Where access can be gained to the vehicle load bed and where it is safe and practicable to do so, drivers shall check the stowage and securing of the load before commencing the journey.
8. In some Member States the legal obligations of the other participants involved within the transport chain are already accounted for within their national regulations and may differ from the requirements within the United Kingdom.
9. If an international journey commences in the UK it is advisable to seek advice from the relevant member state regarding the provisions they apply in addition to ADR<sup>4</sup>.

## LEGAL DUTIES

10. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (CDG Regulations)<sup>5</sup>, the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), both as amended and associated guidance documents provide an overview of the requirements for product segregation. The guidance places great importance on the integrity of the packaging. Special requirements apply to the transport of Class 1 and Class 7 materials and certain other dangerous goods; therefore specific advice from the manufacturer/supplier of these must be followed.
11. The Road Vehicles (Construction & Use) Regulations 1986 (as amended)<sup>6</sup> and international legal requirements laid down by the ADR-agreement make the securing of dangerous goods mandatory.
12. There are also duties under the Road Traffic Act 1988, as amended, and the Health and Safety at Work Act (HASWA) 1974 in relation to the protection of other persons not involved in the carriage with regard to dangerous vehicles and the potential injury from falling objects.
13. The [guidance](#) and [reference](#) sections list the most relevant legislation.

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<sup>4</sup>ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road

<sup>5</sup> The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (as amended)

<sup>6</sup> The Road Vehicles (Construction & Use) Regulations 1986 (as amended)

<http://www.legislation.gov.uk/uksi/1986/1078/contents/made>

# THE IMPORTANCE OF CORRECT STOWAGE AND SECURING

## General Principles

- 14.** Loads should be stowed and secured to prevent movement in any direction during conditions likely to be encountered during the journey to be undertaken. Additional precautions may become necessary dependent on the type of journey e.g. journeys by sea.
- 15.** Orientation arrows, as described within chapter 5.2.1.9 of ADR, will define the methods of stowage to be used. Application of these marks will require the package to be stowed on the vehicle with the arrow pointing upwards.
- 16.** Additional information regarding the principles of restraining palletised goods can be found in the Department for Transport (DfT) Code of practice 'Safety of loads on vehicles' third edition paragraph 11.10.

## Load/weight distribution guidance

- 17.** When any load is placed upon a vehicle, the maximum authorised dimensions, axle and maximum authorised mass must not be exceeded (see EU Guidance Annex 8.1: Load distribution guidance<sup>7</sup>). Minimum axle loads should also be considered to ensure adequate stability, steering and braking.
- 18.** If the vehicle is partly loaded or unloaded during its journey it will have an impact on the load distribution. The effect on maximum authorised mass, individual axle weights, securing and stability of the load must not be overlooked. Although removing part of the load will reduce the gross vehicle weight, the change in weight distribution may also cause individual axles to become overloaded (known as the diminishing load effect). The centre of gravity of both the cargo and the vehicle/cargo combination will change accordingly; therefore take account of these changes when the vehicle is loaded and throughout the journey.
- 19.** Untripped vehicle rollover is one of the most frequent accident types encountered due to incorrect load distribution.
- 20.** A weight distribution plan is the basis for placing a load on the vehicle so that individual axles are neither under nor over loaded. For a single vehicle, the weight distribution plan will only need to be drawn once and will depend on the vehicle's maximum authorised mass and the minimum/maximum axle loads. The weight distribution plan must be recalculated if any characteristics of the vehicle are altered, such as a body change. Any machinery mounted on the vehicle (vehicle-mounted cranes, forklifts) and vertical loads from trailers will also need to be considered in a weight distribution plan.

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<sup>7</sup> [https://ec.europa.eu/transport/road\\_safety/topics/vehicles/cargo\\_securing\\_loads\\_en](https://ec.europa.eu/transport/road_safety/topics/vehicles/cargo_securing_loads_en)

- 21.** Trucks that are equipped with a trailer coupling device must be treated according to their usual operating conditions. Vertical coupling loads may be considered as load (in cases where a trailer is not usually drawn) or as part of the vehicle weight (if the truck is usually used with a trailer).
- 22.** Necessary data for calculating a weight distribution plan are:
- maximum authorised mass;
  - maximum payload;
  - unladen weight;
  - front axle load(s) of unladen vehicle;
  - rear axle load(s) of unladen vehicle;
  - maximum permitted front axle load(s);
  - maximum permitted rear axle load(s);
  - minimum front axle load(s);
  - minimum rear axle load(s) (% of total weight);
  - wheelbase;
  - distance front axle to foremost point of the headboard;
  - load platform length.
- 23.** Most of this data may be taken from plates fitted to the vehicle, registration documents, type-approval document or determined by measuring the vehicle. However, some of the information may only be available from the vehicle manufacturer (minimum front axle load(s) for example).

## **Load stowage guidance**

- 24.** 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 axle weights or due to the nature of the load itself.
- 25.** 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, segregation requirements and the size of the gap i.e. 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.
- 26.** When involved in multi-drop/collection operations vehicle operators need to either:
- block any gaps created to retain a 'positive fit'
  - use extra securing including on vehicles constructed to the XL standard as such vehicles would no longer meet the requirements for reduced strapping because the diminishing load will leave gaps.
- This will be a continuous process throughout multi-drop/collection journeys. Drivers may seek customer assistance in restowing the remaining load to eliminate gaps or may apply



additional load securing measures such as straps, repositioned internal load bearing curtains/nets etc. Ideally this should be agreed with the customer in advance.

## Segregation

27. This CBA 'Good Practice Guidance' recommends that incompatible products are separated from each other. The distance and type of separation will depend on many factors, not least the size of the package. The purpose of the guidance is to provide industry with a method to develop their own segregation policy.

Class	2			3	4			5		6	8	9
	2.1	2.2	2.3	-	4.1	4.2	4.3	5.1	5.2	-	-	-
2 COMPRESSED GASES												
2.1 Flammable	-	1	1	2	1	2	2	2	3	1	2	0
2.2 Non flammable/non toxic	1	-	1	1	0	2	0	0	2	0	2	0
2.3 Toxic	1	1	-	2	0	2	1	0	2	0	2	0
3 FLAMMABLE LIQUIDS	2	1	2	-	1	2	1	1	3	0	2	0
4 FLAMMABLE SOLIDS												
4.1 Readily combustible	1	0	0	1	-	1	1	1	3	0	1	0
4.2 Spontaneously combustible	2	2	2	2	1	-	1	2	3	1	0	0
4.3 Dangerous when wet	2	0	1	1	1	1	-	1	2	0	1	0
5 OXIDISING SUBSTANCE												
5.1 Oxidising substances	2	0	0	1	1	2	1	-	2	0	0	0
5.2 Organic Peroxides	3	2	2	3	3	3	2	2	-	1	1	2
6 TOXIC SUBSTANCES	1	0	0	0	0	1	0	0	1	-	1	0
8 CORROSIVE SUBSTANCES	2	2	2	2	1	0	1	0	1	1	0	0
9 OTHER DANGEROUS SUBSTANCES	0	0	0	0	0	0	0	0	2	0	0	0

### Key to the Table

0 Consideration

Separation may not be necessary but suppliers should be consulted about requirements for individual substances. In particular, it should be noted that some types of chemicals within the same class may react violently, generate much heat if mixed or evolve toxic fumes. Specific guidance on incompatibilities can be found on manufacturers/suppliers Emergency Instructions and/or Safety Data Sheets.

1 Separation

- a) For receptacles, which have an internal capacity of 450 litres or more, or weigh 450 kilograms or more, products should be separated from other incompatible products by a distance of one metre horizontally or vertically in the case of over-stowing. Inert substances in packaging, which present a low fire hazard, may be carried in the one metre space.
- b) For receptacles which have an internal capacity of less than 450 litres or weigh less than 450 kilograms separation may be achieved by either (a) above or the use of appropriate UN packaging designed to minimise the possibility of failure and product interaction.

2 Segregation

Segregate incompatible products by at least one metre distance (as in (a) above) plus the use of UN packaging designed to minimise the possibility of failure and product interaction. Should the latter option not be available, the use of separation aids for example, moveable bulkheads, separate compartments, or drawbar combinations should be considered.

3 Isolation

Isolate incompatible products by utilising draw bar vehicles, specialised vehicles with robust compartments, or separate vehicles.

Exceptions

There are many incompatible goods within classes but some of the more common requirements for segregation are:

SEGREGATION TABLE		
	Receptacles less than 450 litres / Kgs	Receptacles of 450 litres / Kgs or more
Packing Group I products from any other hazardous product	2	2
Chlorites, Hypochlorite's, Sulphide's with Acids	1	2
Chlorites, Hypochlorite's with Ammonia	1	2
Cyanides with Acids	3	3
Ammonia with Acids	1	2
Food/Feed and additives from Class 6	2	2
Food/Feed and additives from dangerous goods	1	1

## VEHICLE DESIGN

**28.** There are numerous types of vehicles in which chemicals are carried. The loading and stowage methods must be compatible with the vehicle design, which will typically be of the following construction:

a) Curtain sided vehicle with internal load restraining features;

BS EN 12642:2016<sup>8</sup> standard 'L' rated vehicle  
BS EN 12642:2016 'XL' rated vehicle

b) Flatbed vehicle with load restraining sides;

c) Solid sided vehicles, for example a box van with load restraining features;

d) Skeletal or flat trailers carrying shipping containers with an internal securing system; or

e) Small light goods vehicles with load-restraining features.

f) Double deck trailers

g) Euroliners

## PACKAGE DESIGN AND SECURING METHOD

**29.** Securing method described, within this section, is for standard vehicles or on 'XL' rated vehicles where a 'positive fit' is not achieved.

**30.** Intermediate Bulk Container (IBC)

An IBC as defined within CDG/ADR is a receptacle with a maximum capacity of 3,000 litres. There are numerous designs and styles of IBC available in the current marketplace, but in general they are categorised as follows:

- Rigid IBC – designed for the carriage of mainly liquids, some solids  
These are IBCs with a 'fixed' skeletal frame surrounding an inner container or solid side walls. They retain their shape whilst full or empty.
- Collapsible IBC – designed for the carriage of food grade, low SG liquid, free flowable solids  
These IBCs have 'collapsible' sides and can be disassembled after use for the return journey to reduce carriage requirements. They usually contain a liner to hold the contents which is discarded after use.
- Flexible Intermediate Bulk Container (FIBC) – designed for the carriage of solids

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<sup>8</sup> BS EN 12642:2016 "Securing of cargo on road vehicles. Body structure of commercial vehicles. Minimum requirements"

These are IBCs manufactured from 'flexible' materials such as woven fabric and have no rigid structure. They are often called 'big bags'.

IBCs must be secured to the vehicle load bed by two suitable ratchet straps. The securing of IBCs by ropes is not considered a safe practice. IBCs should be loaded onto the vehicle so that the outlet valve, if applicable to the design of IBC, is facing outwards with a secondary closure fitted.

With regard to powdered materials in 'Flexible IBCs', care needs to be taken during transit because recently packed materials are often 'air-entrained' and the material will settle during the journey leading to a loosening of the straps. These straps should be rechecked during the initial stages of the journey. BS EN 12195<sup>9</sup> 'Load restraint assemblies on road vehicles' is a useful cross reference document in this area and also contains information regarding the stacking of FIBCs and the requirement for the use of 'edge protectors' to prevent abrasion and eventual damage of the FIBC. The use of load securing nets or tarpaulins with integral ratchet straps should be considered. These can be fitted captive to the vehicle on bungee cords or ropes to reduce manual handling.

### **31. Drums**

Drums, usually containing approximately 200 litres, are usually manufactured from steel or plastic to contain liquids and powders (not gases under pressure). They are individual packages designed to be transported as they stand.

There are a number of methods that can be utilised to prevent movement of these packages during transit, which depend on the orientation of the package.

- UPRIGHT
  - secured to pallets by steel or heavy-duty plastic banding, or suitable shrink/stretch wrap and the loaded pallet then secured to the vehicle load bed with a minimum of two suitable straps.
  - If not secured onto a pallet, then they should be gathered into groups, secured together, and the group secured to the vehicle load bed with a minimum of two suitable straps.
- DRUMS 'ON THE ROLL'
  - should be secured using suitable shaped stillages or dunnage and straps

### **32. Small packs**

These are individual packages designed to be transported as they stand containing between 5 litres and 60 litres. They are often referred to as 'jerricans' warboys, carboys or kegs. They are usually constructed of metal, plastic or fibreboard.

There are many ways in which small packs can be secured, but in principle they should first be secured in to stable load handling units, for example palletised, and secured together to

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<sup>9</sup> BS EN 12195-1:2010 Load restraining on road vehicles. Safety - Calculation of securing forces. Obtainable from BSI bookshop: <http://shop.bsigroup.com/en/ProductDetail/?pid=00000000030213241>

avoid movement during transit, before the complete load handling unit is secured to the vehicle. Securing the packs together can be achieved by strapping or wiring each small pack to another, either through the handles or surrounding the stack of receptacles, or by shrink or stretch-wrapping the receptacles securely on to the pallet.

Small packs may only be double-stacked provided all small packs on the top and bottom are designed to be interlocked and adequately secured to the pallet and, after that, the pallet of containers should then be secured to the vehicle load bed using a minimum of two suitable straps.

Individual small packs must be adequately secured to the vehicle load bed, headboard or to adjacent items of the load using suitable load restraints.

### **33. Combination packs**

These are packages that consist of one or more inner packagings secured within an outer package. The inner package design and materials of construction will vary but they are typically metallic, plastic, fibreboard, or glass. The outer packages are generally boxes or cages constructed of fibreboard, metal, or plastic and designed to secure the inner packages. The number of inner packagings will vary depending on their size. 5 litres are generally packed in units of 4 and 1 litres are generally packed in units of 12.

There are many ways in which combination packs can be secured, but in principle they should first be secured in to stable load handling units, for example palletised and secured together by shrink or stretch wrapping the receptacles securely on to a pallet.

Each load handling unit should then be secured to the vehicle load bed using a minimum of two straps or equivalent.

### **34. Bagged material**

These are generally paper or plastic 'sacks' designed to contain around 25 kgs of powdered material. However, depending on the properties of the powder, they can be larger or smaller.

Bagged material should always be palletised and adequately secured to the pallet by sheeting, shrink or stretch wrapping. Shrink or stretch wrapping may not be considered to be sufficient weather protection, therefore, materials transported on open vehicles may require additional protection by sheeting at all times.

Pallets must then be adequately secured to the vehicle load bed using suitable, straps or load securing nets or tarpaulins with integral ratchet straps. Rope can only be used to secure a sheet over a load for weather protection.

Single stacked pallets of bagged materials must be secured with a minimum of 2 suitable straps. If pallets are double-stacked the stack must be intrinsically stable without lashings and, apart from a minimum of 2 suitable straps, there will be additional securing required (for example nets or straps) to ensure movement does not occur during transit. Edge boarding, or a pallet placed on top of the bag, should be used if the straps are likely to cut into or damage bags.

Care needs to be taken during transit as recently bagged materials are often 'air-entrained' and the material will settle during the journey leading to a loosening of the straps, which should be rechecked during the journey.

**35. Samples.**

Samples carried on commercial vehicles or in cars should be suitably packed, stowed, and secured to prevent damage to the packaging or risk of uncontrolled release of the contents.

**36. Nominally empty packages**

Nominally empty packages for hazardous products that have been optimally drained of all contents as far as reasonably practicable attract minimal requirements in respect of the dangerous goods rules but must still be adequately secured on or within the vehicle. However, if these packages have not been optimally drained of all their contents, then these packages fall within scope and, as such, should be treated as if they were full.

In either case, wherever possible, empty packages should be palletised and secured to the pallets using suitable wire, banding, stretch/shrink wrap or straps. If they are not palletised, then they should be secured together into groups and the groups individually secured to the vehicle load bed. Only nominally empty packages, which have a cap or bung properly fitted may be carried and, wherever possible, in an upright position.

Cage systems may be used for the carriage of nominally empty packages.

**37. Pressure Receptacles**

This is the collective term for systems design to transport gas under pressure. With regard to packaged chemicals these generally relate to gas cylinders and pressure drums.

As these receptacles are designed to transport gas under pressure, securing to prevent movement and impact is critical to their safe movement.

In general terms pressure receptacles should be transported:

- in 'sufficiently' ventilated vehicles;
- with their valves suitable protected from impact damage; and
- horizontally to the direction of travel, if at the front on the vehicle.

Load securing methods for pressure receptacles vary; detailed information can be obtained from:

- European Industrial Gas Association (EIGA) document – IGC Doc 52/06/E
- UK Liquefied Petroleum Gas Association (UKLPG) – Code of Practice 27
- British Compressed Gas Association (BCGA) – TIS No 8 & Leaflet L1

In general, cylinders should be secured in cages or boxes, which are themselves secured to the vehicle load bed. Single cylinders should be secured to a sufficiently stable part of the vehicle, such as the head board,

Pressure drums are usually transported 'on the roll' so they will be secured using a combination of wedges, stillages, dunnage and suitable straps or chains

**38. Over stowing**

Liquid products must not be stowed above dry (bagged) products, either directly or on double deck vehicles.

Packages shall not be stacked unless designed for that purpose. Where different designs/ types of packages that have been designed for stacking are to be loaded together, consideration shall be given to their compatibility for stacking with each other. Where necessary, stacked packages shall be prevented from damaging the package below by the use of load-bearing devices.

**39. Palletised loads**

These are often carried in double deck trailers and are referred to as

- Light pallets individual weight up to and including 400kg
- Heavy pallets individual weight over 400kg

**40. Loading and unloading equipment**

Operators should ensure that such equipment is suitably stowed and secured in, and if necessary, to the vehicle.

## VEHICLE DESIGN AND STOWAGE METHOD

**41. Double deck trailers**

The Driver and Vehicle Standards Agency (DVSA) guidance<sup>10</sup> states that only light pallets should be loaded onto the upper deck and the lower deck and swan neck if applicable can be used for heavy pallets.

Upper deck pallets should not be over stowed and additional internal load bearing curtains or nets with load bearing straps may be used both to reduce the risk of falling objects during loading/unloading and to contribute to securing the load to the vehicle bed during carriage.

Heavy pallets or stacked laden light pallets on the lower deck may be secured by lashings or similar or alternatively for curtainsided vehicles to BS EN 12642 XL specification additional internal load bearing curtains or nets with load bearing straps may be used both to reduce the risk of falling objects during loading/unloading and to contribute to securing the load to the vehicle bed during carriage.

For BS EN 12642 'L' specification vehicles each row of pallets should be secured by lashings or similar.

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<sup>10</sup> <https://www.gov.uk/government/publications/load-securing-vehicle-operator-guidance/load-securing-vehicle-operator-guidance>

## **42. BS EN 12642**

### **L rated vehicles**

Most of the vehicles constructed historically in the UK are L rated, the structure of a standard L rated curtain-sided vehicle or body is not normally strong enough to provide enough load securing, even if load-retaining curtains are used.

The curtains should be considered as nothing more than weather protection. The vehicle should be loaded as you would load a flat-bed vehicle without curtains.

### Lighter goods

Lighter goods may be contained to a satisfactory level via the hanging straps or the use of inner curtains but consideration must be given to the stability of the load and whether the load can move on the load bed

### Heavier goods

Heavier goods should be secured by lashing or other methods like load-rated nets with integral straps. Whatever method is chosen, it should restrain at least half the weight of the load to the side and rear with 100% retained to the front.

In most cases, the load carried will dictate the best way to secure it to the vehicle or trailer bed.

### **XL rated vehicles**

The curtains on 'XL' rated vehicles do have load-bearing capacity when loads are block stacked to the headboard with full width to within 80mm of the curtains, i.e. 'positive fit'.

For loads that conform to this 'positive fit', there is no requirement for additional strapping. Where the load does not completely fill the load-bed from headboard to the rear doors, the rear-most freight must be secured to prevent any movement of the entire load.

Loads that do not conform to the 'positive fit' requirements must be secured in the same way as on standard or 'L' rated vehicles.



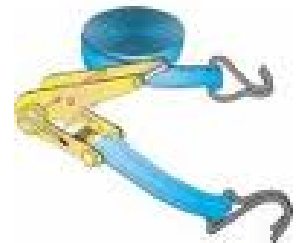
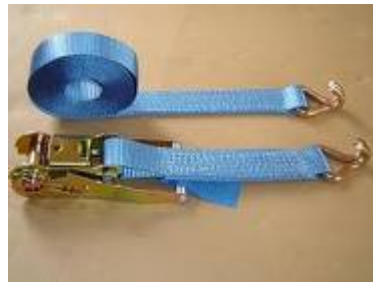
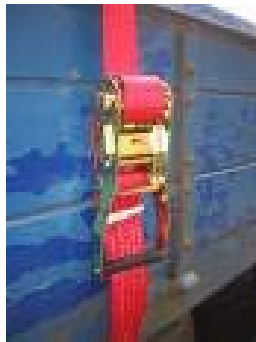
# SECURING DEVICES

**43.** Information regarding the numerous types of securing equipment available can be found in:

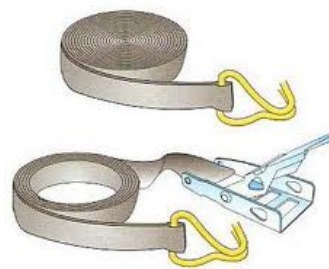
- Section 5 of the Department for Transport Code of practice 'Safety of loads on vehicles' third edition; and
- Section 3 of the European Commission 'European Best Practice Guidelines on cargo securing for road transport'

**44.** For the purposes of this guidance, there are two definitions in relation to 'straps' used to secure loads, as follows:

- Ratchet Straps  
These are 'heavy duty straps' with a stated 'load rating' when new. The load rating is given on the label, which should also state which standard the strap was manufactured to and the date of manufacture.



- Buckle straps traps  
These straps are otherwise known as 'over centre buckle' straps and are generally designed with a 'load rating' of up to one tonne when new.



## TRAINING

**45. Procedures**

Staff involved in stowage and securing of packaged chemical cargoes eg drivers, loaders/unloaders & load planners, should receive training in the relevant procedures.

**46. Induction**

New employees should receive appropriate training in the relevant procedures on joining the undertaking as part of their induction programme.

**47. Refresher**

Existing employees should receive appropriate training whenever there are any changes to the relevant procedures and at suitable periodic intervals.

**48. Records**

Records of training should be maintained and copies made available to the employee.

# GLOSSARY

## Banding

Securing packages together using suitable plastic or metal bands.

## Box Trailer

The most common type of trailer, which is also called a van trailer. It has solid sides.

## Curtainsider

A curtain sider is similar to a box trailer except that the sides are movable curtains made of reinforced fabric coated with a waterproof coating. The purpose of a curtain sider is to provide the theft security and weather resistance of a box trailer with the ease of loading of a flatbed.



## BS EN 12642:2006

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.

XL rated bodies must display stickers in prominent positions (usually on the rear door and headboard) stating 'This body complies with the standard EN 12642 XL'. In addition they can also be located beside the MOT and plating certificate



## Domestic Carriage

Carriage within the United Kingdom (England, Scotland, Wales and Northern Ireland)

### Drop-deck trailer

A drop-deck trailer is a trailer on which the floor drops down a level once clear of the tractor unit; the most common types of drop-deck trailer are flatbeds and curtain siders.



### Double deck

These are trailers with either a fixed, hinged or moveable second floor to enable them to carry more palletised goods. In general a double deck trailer can carry 40 pallets, as opposed to 26 for a standard trailer. Double deck trailers are generally stepped box or curtain siders, with box trailers having either a fixed or movable (floating) deck, and curtain sides having either a fixed or hinged second deck; this hinged second deck generally swings into a position down the length of the trailer, and can be divided into 2 or 3 sections to allow greater load flexibility.



### Edge Protectors

These are devices manufactured from various materials designed to distribute the 'lashing force' to prevent the lashings from cutting into the packaging.



### Euroliners

Curtainsiders vehicles feature a sliding roof, sliding curtains, solid rear doors, side boards and side gates



### Flatbed

Consists of a load floor and removable side rails and a bulkhead in front to protect the tractor in the event of a load shift. They can be used to haul almost anything that can be stacked on and strapped down.

### Loading and unloading equipment

Additional equipment used during loading and unloading



### Positive fit

Load is block stacked to the headboard across the full width of the load-bed to within 80mm of the curtains.

### Segregation

Separation by distance or physical barriers of incompatible goods.

### Skeletal Trailer

A road trailer, which has no floor but only struts fitted with locks to hold ISO shipping containers in either 20 feet and/or 40 feet length configurations.



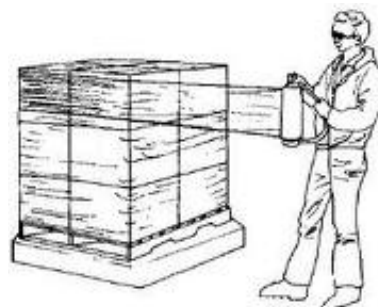
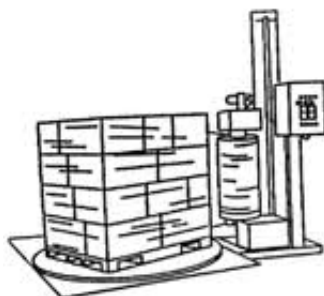
### Shrink wrap

Shrink film is essentially a large plastic hood that is placed over the pallet load, which is then heated to make the plastic shrink and therefore make the load more rigid. The pallet can be considered as a stable load unit if the loaded pallet is able to withstand a tilt angle of at least 26° without any significant deformation. Shrink film is not suitable for use with substances of Class 3 and is not usually suitable for heavy pallet loads, or loads with sharp corners that may damage the film.



### Stretch wrap

Stretch film is easy to apply and the desired rigidity of form is achieved for the entire pallet load by using an appropriate number of “wraps”. The wraps can be applied manually or by using a machine. Stretch wrap wrapping is not usually suitable for heavy pallet loads, or loads with sharp corners that may damage the film.



### Stowage

Where and how goods are stored on the vehicle

## REFERENCES

1. UK Department for Transport (DfT) Code of Practice on the safety of loads on vehicles, 3<sup>rd</sup> Edition. ISBN 011-552547-5. Downloadable from:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/411093/safetyloadsonvehicles.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411093/safetyloadsonvehicles.pdf)
2. HSE Strategy 2016 – Helping Great Britain Work Well  
<http://www.hse.gov.uk/strategy/>
3. ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road
4. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (as amended)
5. The Road Vehicles (Construction & Use) Regulations 1986 (as amended)  
<http://www.legislation.gov.uk/uksi/1986/1078/contents/made>
6. European Commission – DG Mobility and Transport - Best practice guidelines on cargo securing and abnormal transport. Downloadable from:  
[http://ec.europa.eu/transport/road\\_safety/vehicles/guidelines\\_cargo\\_securing\\_en.htm](http://ec.europa.eu/transport/road_safety/vehicles/guidelines_cargo_securing_en.htm)
7. BS EN 12642:2016  
“Securing of cargo on road vehicles. Body structure of commercial vehicles. Minimum requirements”. Obtainable from BSI Bookshop:  
<http://shop.bsigroup.com/ProductDetail/?pid=000000000030324374>
8. BS EN 12195-1:2010  
Load restraining on road vehicles. Safety - Calculation of securing forces. Obtainable from BSI bookshop: <http://shop.bsigroup.com/ProductDetail/?pid=000000000030299312>
9. Driver and Vehicle Standards Agency  
Load securing: vehicle operator guidance  
<https://www.gov.uk/government/publications/load-securing-vehicle-operator-guidance/load-securing-vehicle-operator-guidance>

## GUIDANCE



- o HSE

	Publication Title	ISBN Number
INDG199	Workplace transport safety – An overview	0-7176-2821-3
INDG379	Health and Safety in road haulage	0-7176-2765-9

- o Industry

Organisation	Publication Title	Web link
EIGA	Load securing of class 2 receptacles	<a href="#">EIGA Doc 52/13/E</a>
BCGA	Leaflet L1 – Gas Cylinders	<a href="#">BCGA Leaflet No1</a>
BCGA	Technical Information sheet No 8 (Download)	<a href="#">BCGA TIS No8</a>
BCGA	Carriage of gas cylinders on vehicles Guidance Note 27	<a href="#">BCGA GD27</a>
UKLPG	Code of practice 27: 2009 (amended in 2011) (Chargeable Guidance)	<a href="#">UKLPG COP 27</a>
Schutz	Secure Loads booklet	<a href="#">Booklet</a>

## FURTHER READING

	Publication Title	Weblink
RR1078	The use of vehicle structure in load securing on heavy goods vehicles	<a href="#">Full report</a> 
RR1079	Access to and work on flatbed vehicles	<a href="#">Full report</a> 



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