

Conspicuity marking requirements on goods vehicles



FTA Compliance Guide

Edition 2 • February 2011

Department for
Transport

Delivering safe, efficient, sustainable logistics



FREIGHT TRANSPORT ASSOCIATION

FTA compliance guide to Conspicuity marking requirements on goods vehicles

Edition 2 • February 2011

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FTA compliance guides are produced once legislative changes have been published and new requirements and responsibilities are known. Compliance guides are intended to provide clear guidance to members on what to do and how to comply.

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Introduction

The Department for Transport (DfT) has committed to implementing European legislation on the fitment of conspicuity markings to large goods vehicles. These markings effectively illuminate the outline of a vehicle at night by reflection from the headlights of vehicles following behind. DfT's research estimates the potential to prevent 76 killed and serious injury accidents per year if all goods vehicles were fitted with conspicuity markings.

These requirements were intended to be transposed into the Road Vehicles Lighting Regulations and enter into force on 10 October 2009. However, in September 2009, the Secretary of State for Transport announced that the requirement for heavy goods vehicles to be fitted with conspicuity markings had been postponed and will be introduced from 10 July 2011.

This guide provides details of the legislation regarding conspicuity markings and guidance on how to comply with the marking requirements including examples of various vehicle body types and designs. It has been produced for information purposes and is not intended to be a substitute for the full legislative details contained in UN ECE Regulations or the Road Vehicles Lighting Regulations 1989.

Edition 2 of the guide incorporates amendments to UN ECE Regulation 48 which entered into force on 9 December 2010 concerning derogations and changes to height requirements for conspicuity markings.

Background

Currently, the Road Vehicles Lighting Regulations 1989 (RVLR) require certain motor vehicles with a gross vehicle weight exceeding 7.5 tonnes to be fitted with retro-reflective rear marker plates approved to the European Regulation, UNECE Regulation 70.00. (The latest version of this regulation is known as Regulation 70.01, however the UK still permits the use of Regulation 70.00 marker plates.) These plates are fitted in addition to rear lights and reflectors and are intended to make the vehicle more conspicuous to other drivers so they are aware of the presence of a large, potentially slow moving vehicle.

Some vehicle operators also fit conspicuity markings to their vehicles. These are vertical and horizontal lines of retro-reflective material which emphasise the length and shape of the vehicle and also warn other drivers of their presence. UNECE Regulation 104 (R104) provides a technical specification for these conspicuity markings and their use on vehicles in the UK is optional at present under the Road Vehicles Lighting Regulations.

UNECE Regulation 48 (R48) is a European regulation that sets out harmonised installation requirements for vehicle lights and reflectors. It is broadly equivalent to the RVLR and the UK cannot refuse registration of vehicles approved to this regulation on the grounds of their lighting. Recently R48 was amended to mandate R104 specification conspicuity markings on certain new hgv's and trailers.

Amendments to the UK Road Vehicles Lighting Regulations 1989 (RVLR)

The Department for Transport has made a commitment to align RVLR with UNECE Regulation 48 and require conspicuity marking material to be fitted to new heavy goods vehicles and their trailers from 10 July 2011. DfT has completed amendments to the Road Vehicles Lighting Regulations 1989 which entered into force on 4 January 2010, detailing the

requirements for conspicuity markings including optionally-fitted markings. Rear marker plates which have been mandatory on certain vehicles and trailers for some time in the UK are intended to serve the same function as conspicuity marking material, so DfT has made the decision not to mandate both.

Optionally-fitted conspicuity markings

The amendments allow vehicles to be fitted with optional conspicuity markings, but where fitted they are required to conform to the relevant ECE Regulation 48 requirements. If compliant conspicuity markings are optionally-fitted to vehicles, then there is no requirement to fit rear marker plates to vehicles. However, the optional use of rear marker plates in addition to conspicuity markings will continue to be permitted.

The RVLR have also been updated to require rear marker plates, when fitted optionally from the mandatory conspicuity marking implementation date of 10 July 2011, to comply with the latest technical specifications set out in UN ECE Regulation 70.01. This aligns with the latest requirements in UN ECE Regulation 48.

Application

Mandatory conspicuity marking legislation detailed in the UK RVLR applies to the following classes.

- Goods vehicles with a gross vehicle weight exceeding 7,500kg first used on or after 10 July 2011
- Trailers with a gross vehicle weight exceeding 3,500kg manufactured on or after 10 July 2011

Exemptions

- A vehicle which is not a goods vehicle
- Goods vehicles not exceeding 7,500kg gvw

- Trailers not exceeding 3,500kg gvw
- Chassis cabs
- An incomplete vehicle which is proceeding to a works for completion or to a place where it is to be stored or displayed for sale
- Tractor units
- Vehicles/trailers with overall width not exceeding 2.1 metres do not require rear markings
- Vehicles/trailers with overall length not exceeding 6 metres do not require side markings

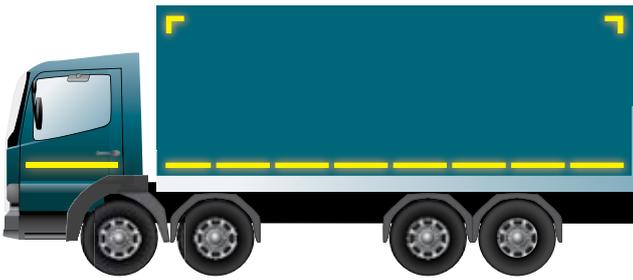
Marking requirements

Conspicuity marking legislation requires a full contour marking on the vehicle's rear, ie horizontal and vertical markings to outline the shape of the vehicle, and partial contour markings on the side. Partial contour markings consist of a horizontal line showing the length of the vehicle and 'tick' marks showing the upper corners of the vehicle. However, where the shape, structure, design or operational requirements make it impossible to install the mandatory contour marking, a line marking is acceptable.

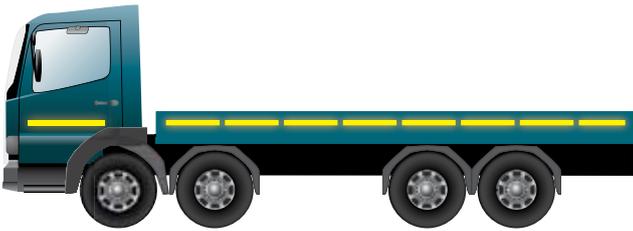
Basic layout



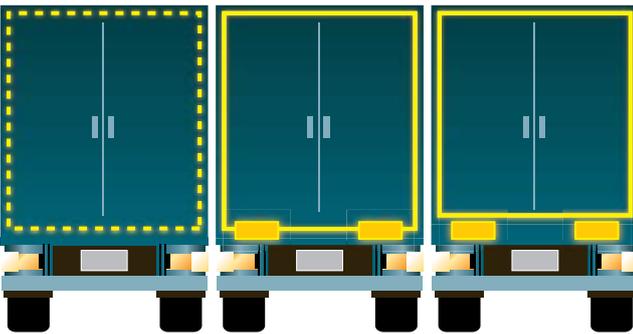
Tractor units are exempt from requirements



Marking required on rigid vehicle cab



Line marking



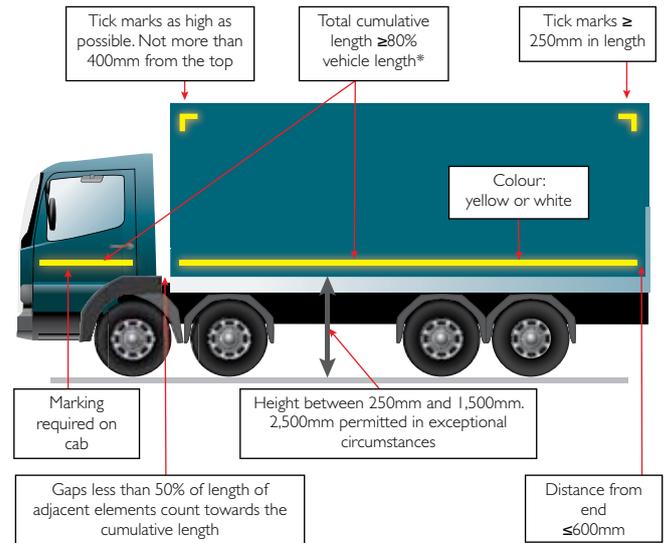
Rear markings

(Rear marker plates are optional, but can contribute to rear contour marking if approved to UNECE Reg 70.01)

The use of partial or full contour marking is permitted in place of mandatory line markings, and full contour marking may be applied in place of mandatory partial contour marking.

Side markings in detail

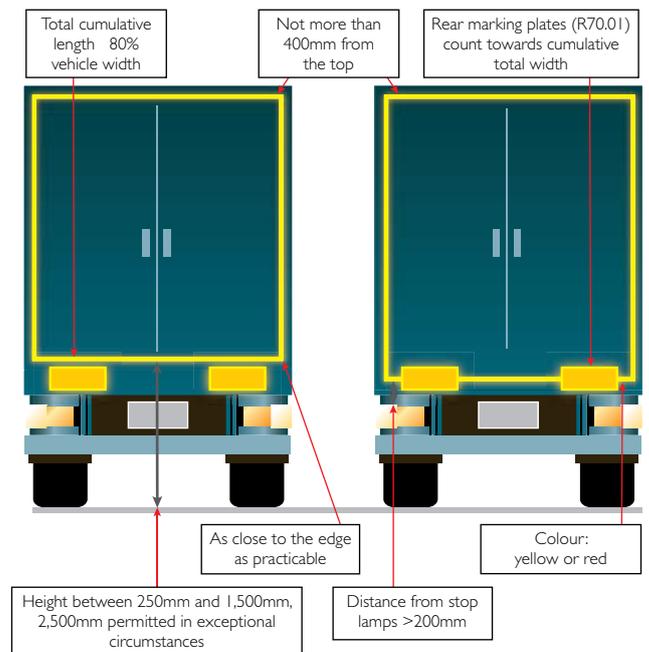
The side markings are required to extend to within 600mm of each end of the vehicle, and cover 80 per cent of the whole vehicle length (the vehicle length excludes the cab, however the cab must be marked). The lower markings must be between 250mm and 1,500mm from ground (up to 2,500mm is acceptable if 1,500mm is not possible). Upper markings must be within 400mm of the top of the vehicle.



*Vehicle length excludes the cab, however the cab must still be marked.

Rear markings in detail

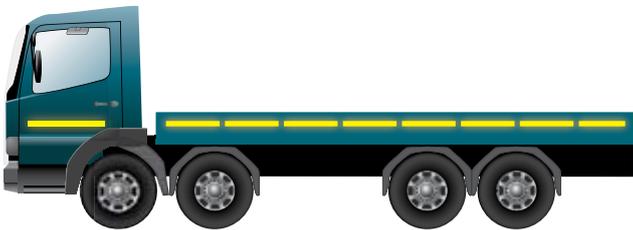
The rear markings are required to be as close as practicable to the edge of the vehicle and cover 80 per cent of the vehicle total width. The marking must be at least 200mm from any mandatory stop lamp. The lower line must be between 250mm and 1,500mm from ground (up to 2,500mm acceptable if 1,500mm is not possible), and the upper line must be within 400mm of the top of the vehicle.



Note: If a vehicle has rear marker plates fitted which comply with UN ECE Regulation 70.01 these can be counted as contributing to the rear contour marking. Marker plates approved to UNECE Regulation 70.00 do not count towards the conspicuity marking.

Other technical requirements

- The orientation of the markings must be as close as possible to vertical and horizontal; if this is not possible the markings must follow as close as possible the contour of the outer shape of the vehicle
- Breaks in the markings are permitted and will be considered to be continuous if gaps in the markings are less than 50 per cent of shortest adjacent elements length. A recent amendment to UN ECE Regulation 48 permits the gap to be larger than 50 per cent of the shortest adjacent element up to a maximum of one metre. This is only permitted in cases where the manufacturer can prove to the satisfaction of the type approval authority that it is impossible to comply with a gap of 50 per cent or less



Vehicle structures which prove difficult to apply a length of marking at a continuous height may apply various sections of marking at different heights providing they are fitted within the upper and lower height requirements.

Explanation of the 80 per cent requirement.

The diagram below gives examples of the 80 per cent coverage requirement on a vehicle with an overall length of 10 metres. The diagram illustrates that if a continuous strip of marking material 8 metres long (80 per cent of the total vehicle length) is applied to the vehicle, it would not meet legislation requirements as it would not extend to within 600mm of each end of the vehicle. Therefore a longer marking would be required, or the marking could be fitted with gaps as shown.



Derogations

A temporary derogation exists up to the date of 10 October 2011, where a manufacturer can prove that it is impossible to mark 80 per cent of the length, in which case a reduced marking coverage will be acceptable. However, a recent amendment to UN ECE Regulation 48 has been adopted with regard to applying the markings to a vehicle where the shape, structure, design or operational requirements make it impossible

to install the mandatory contour markings and entered into force on 9 December 2010. This amendment replaces the temporary derogations that allow less than 80 per cent to be marked. The revision removes the specific limits and allows the manufacturer to comply as far as possible, provided they can demonstrate to the type approval authority that full compliance is not possible.

Conspicuity marking material requirements

UNECE Regulation 48 requires that the location designated for installing the markings shall allow for marking material at least 60mm in width. The actual width of the marking material is specified in UNECE Regulation 104, which states the width should be 50mm (+10 -0). So provided the vehicle will accept markings of 60mm it is acceptable to fit any marking material approved to Regulation 104. The certification approval process for conspicuity products is done to ensure that they meet requirements for colour, reflectivity and durability set out in Regulation ECE104. The E marking, as shown, is a proof that the product has been tested, certified and meets all the requirements of ECE 104. Without the E-mark, the product is not compliant with the regulation.



Colour of marking material

Rear marking	red or yellow
Side marking	yellow or white

Note: White reflective markings are not permitted on the rear of vehicles.

Type approval

Vehicles which have EC whole vehicle or lighting type approvals to UN ECE Regulation 48 requirements are required to be fitted with mandatory conspicuity markings from 10 October 2009. Other mandatory dates apply for conspicuity markings to type approved vehicles under EC Whole Vehicle Type Approval Framework Directive 2007/46/EC. It is therefore likely that many new vehicles registered before the RVL R implementation date of 10 July 2011 will be fitted with conspicuity markings.

When mandatory EC Whole Vehicle Type Approval comes into force, the application and conformity of conspicuity marking requirements will be determined between the vehicle/body manufacturer and the type approval authority (in the UK, this is the Vehicle Certification Agency – VCA) during the approval

process. This process will ensure that the end users receive a vehicle which is compliant with the conspicuity marking requirements, having been granted a lighting type approval.

However, for vehicles which are not subject to EC Whole Vehicle Type Approval, or do not have lighting approvals to European requirements, the situation is somewhat different. In this case, compliance with conspicuity marking requirements will not require approval prior to the vehicle being registered, and end users will need to liaise with their vehicle providers to ensure compliance to the marking requirements. This is where issues of interpretation and subjectivity may result in varying standards being applied, and the possibility of vehicle operators falling foul of enforcement authorities where interpretations may not meet the required standards.

Guidance on applying conspicuity markings to various vehicle and body types

The legal requirement to comply with the fitment of mandatory conspicuity markings is no different to any other mandatory requirement to fit lamps and/or reflectors as laid down in the RVL R, or European lighting regulations, and as such vehicle design and construction will need to take into account the requirement to incorporate the fitment of conspicuity markings. As there is no requirement to retrofit conspicuity markings to existing vehicles, any redesigning of existing vehicles and/or vehicle bodywork will not be required. However, for new vehicles first registered from 10 July 2011, vehicle and body manufacturers may need to make moderate design changes to enable vehicles to be fitted with conspicuity markings which fully comply with the legislative requirements. This may require additional bracketry or outwardly facing mounting surfaces to be built into the vehicle design to accommodate the required markings, as would be the case for any other mandatory lamp or device.

However, it is recognised and acknowledged by European regulators, the Department for Transport and type approval authorities that the fitment of conspicuity markings to various differing vehicle and body types is problematic, particularly where the shape, structure, design or operational requirements make it impossible to install the mandatory contour markings which fully comply with the legislative requirements. As already mentioned, if the shape, structure, design or operational requirements make it impossible to install the mandatory contour marking, then a line marking is acceptable. Also, derogations exist if a manufacturer can prove that it is impossible to comply with the 80 per cent marking requirement.

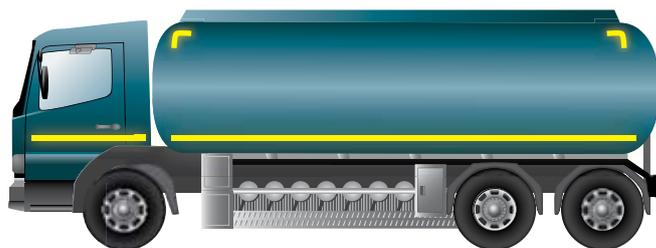
This section of the guide is aimed at providing guidelines on marking some particular vehicles, which have been agreed with DfT, VCA and VOSA. However, it must be stressed that due to the vast array of vehicle types and body designs it is not possible to provide specific guidance on every possible vehicle/body configuration.

Examples of vehicle and body types where a line marking is deemed acceptable (non-exhaustive list)

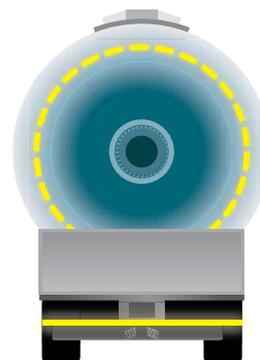
- Flat bed
- Skeletal
- Swap-body
- Container carrier
- Hook lift
- Vehicle transporter
- Concrete mixer
- Refuse collection
- Boat carrier
- Rear mounted crane
- Low loader
- Skip loader

Examples of acceptable conspicuity markings

Tanker – side view



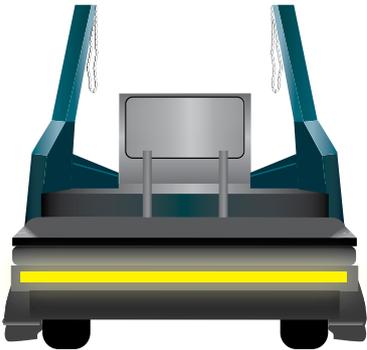
Tanker – rear view



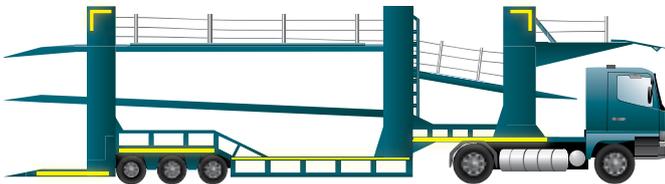
Skip loader – side view



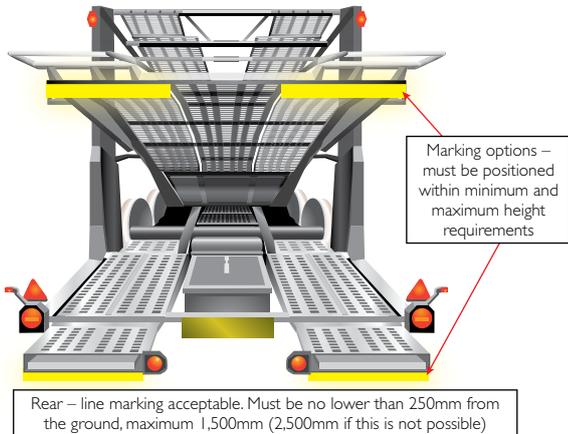
Skip loader – rear view



Car transporter – side view



Car transporter – rear view



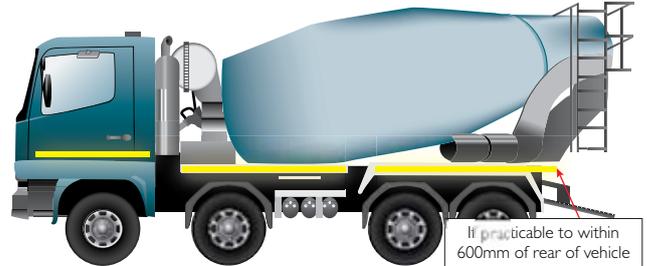
Skeletal trailer – side view



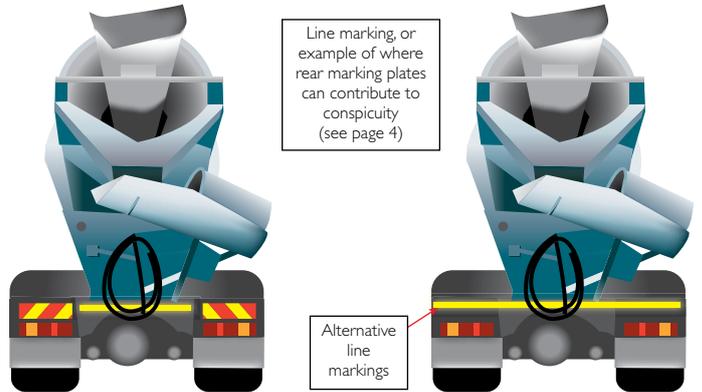
Skeletal trailer – rear view



Mixer – side view



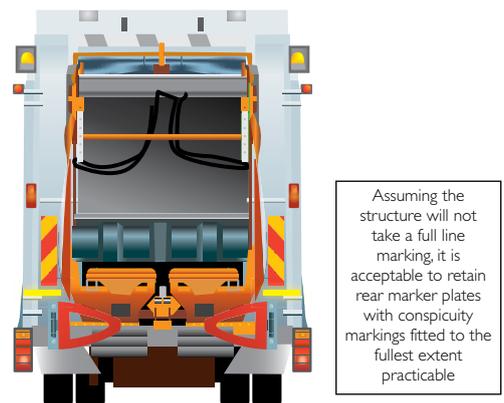
Mixer – rear view



Refuse vehicle – side view



Refuse vehicle – rear view



Enforcement by VOSA

VOSA has issued instructions on enforcement action if vehicles or trailers are presented for test or encountered at roadside where rear marker plates are missing from vehicle/trailer types where they are normally required, and conspicuity markings are fitted in their place.

Until the mandatory date of 10 July 2011, VOSA will only carry out checks on conspicuity markings where vehicles are encountered with no rear marker plates fitted.

VOSA examiners will check that rear marker plates are fitted to vehicles which normally require them to be fitted (vehicles over 7,500kg and trailers over 3,500kg). If no rear marker plates are fitted, but the vehicle or trailer is instead fitted with rear conspicuity markings conforming to the requirements of UN ECE Regulation 48, then this will be acceptable and the vehicle/trailer will not fail the check.

Rear conspicuity markings

If conspicuity markings are fitted in place of the rear marker boards, VOSA examiners will carry out checks to confirm the following compliance requirements.

- The lowest edge of the markings is between 250mm to 1,500mm from the ground. If 1,500mm is not practicable this can be increased to 2,500mm
- The maximum height is as high as practicable but no lower than 400mm from the upper extremity of vehicle/trailer
- The conspicuity markings must not come within 200mm of a mandatory stop lamp
- The vertical aspects of the conspicuity markings should be as close to the edge of the vehicle/trailer as practicable
- The rear conspicuity markings shall be coloured red or yellow
- The width of the conspicuity marking should be no less than 50mm and no more than 60mm

VOSA will include side and rear conspicuity marking in the annual test from 1 January 2012 and roadside checks from the same date. While it will expect all vehicles within the scope of the requirement to be marked, it recognises that derogations will apply in many cases. However, where fitted, VOSA will expect marking to be in good condition and correctly positioned.

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Further information

The latest version of UN ECE Regulation 48 can be downloaded at: www.unece.org/trans/main/wp29/wp29regs41-60.html

The Road Vehicle Lighting Regulation amendment detailing the new requirement for conspicuity markings can be downloaded at: www.opsi.gov.uk/si/si2009/uksi_20093220_en_1

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