



**Reflective and Fluorescent
for Vehicle and Traffic**
European Regulations and Guidelines



High Visibility Vehicle Markings for Chapter 8 and Safety at Street Works

Specification

Chapter 8 Part 3 of the UK Highways Traffic Signs Manual, and the Safety at Street Works and Road Works Code of Practice, sets out guidelines for the use of high visibility conspicuity markings for vehicles stopping on all motorways, highways and roads. It is a best practice adopted by local authorities, highway construction and maintenance companies.

Conspicuity markings comprise of high visibility rear chevron markings of alternate strips of red reflective and fluorescent yellow non retro-reflective material. These chevrons should be spaced not less than 150mm width each, inclined at 45° (or up to 60°) to the horizontal and pointing upwards.

The reflective ensures nighttime conspicuity while the fluorescent yellow daytime. Chapter 8 Part 3 requires a high grade R3B prismatic reflective for works vehicles on high speed roads (>40mph), and R2 for lower speed roads. Safety at Street Works and Road Works requires a red reflective which can be RA1, RA2 or R3B and is for non-motorway use.

Please refer to the Department for Transport website at www.dft.gov.uk for Chapter 8 and Safety at Street Works and Road Works full guidelines for rear chevrons, additional side markings and text markings.

Recommended Products for Chapter 8 Part 3 and Safety at Street Works and Road Works

Product	Specification	Chapter 8	Safety at Street Works	Rear Chevron	Side Markings
AURA® 191 High Intensity Prismatic Grade	5 years durability Class R2 - BS EN 12899-1 Class R3B	✓	✓	Red	
Metamark MD-RF7 Engineering Grade Reflective	7 years durability Class RA1 - BS EN 12899-1		✓	Red	
AURA® 139 Fluorescent Vinyl	3 years durability	✓	✓	Yellow	
AURA® 144 Conspicuity Tape	7 years durability ECE-104 Class C compliant for side and rear markings	✓			White Yellow



Images for illustration purposes. Kits available: metamark.co.uk/chevrons



ECE-104 Class C Conspicuity Vehicle Markings

Specification

ECE-104 Class C is the European regulation for use of retro-reflective material for vehicle outline markings for buses, trucks over 7.5 tonnes and trailers over 3.5 tonnes, on vehicles registered after 2011. It is required by law to have full contour markings on the vehicles rear, and markings to the side. ECE-104 Class C regulation sets out the full specification required. ECE-104 Class 3 conspicuity tape in white, red or yellow is used to outline HGV vehicles. ECE Regulation 48 mandates ECE-104 specification.

Vehicle outline conspicuity tape for use on rigid vehicles, is applied in rolls and supplied segmented for use on flexible side curtain vehicles. AURA® 144 is supplied in a roll format for use on rigid sides.

Recommended Products for ECE-104 Class C

Product	Specification	Roll Size	Rear Markings	Side Markings
AURA® 144 Conspicuity Tape	7 years durability ECE-104 Class C for HGV vehicle conspicuity markings, on rigid surfaces	50mm x 50m	Red Yellow	Yellow White



BS 8442:2015 / EN 12899-1:2007 Class RA1 and RA2 (R2)

Specification

British Standards regulation BS 8442:2015 'Miscellaneous road traffic signs and devices' uses the performance requirements of part 1 of EN 12899 which relates to fixed, vertical road signs comprising of retro-reflective materials made of glass bead technology.

Class RA2 - High Intensity Reflective (previously BS 873 Class 1). The standard material for the majority of road traffic signs. For signs going on the main highway. RA2 is for glass beaded and R2 prismatic.

Class RA1 - Engineering Grade Vinyl (previously BS 873 Class 2). For use on permanent road traffic signs and delineators, street nameplates, safety markings and other everyday signing that is less critical for road users. Used on private roads and industrial estates.

Products to Specification

Product	Durability	EN 12899 Specification Requirements
AURA® 191 High Intensity Prismatic Grade	5 years durability	EN 12899-1:2007 Class RA2 and Class R3B-UK (Red)
Metamark MD-RF7 Engineering Grade Reflective	7 years durability	EN 12899-1:2007 Class RA1

Choose Metamark

Metamark materials are trusted by the world's leading producers of signs and graphics. They are specified by leading brands' managers and are insisted on when looking for quality and value.

Technical Leadership

Our class leading manufacturing, selection and conversion control processes guarantee the highest standard of quality, technical compatibility and consistency. Metamark's technical leadership is delivered as standard with every product we sell.

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Aura Optical Systems

Specialising in reflective film and pressure-sensitive adhesive products, Aura Optical Systems products cut across a broad range of industries, technologies and applications.

Handling and Removal

- When using vehicle outline libraries, double check the vehicle dimensions and if necessary, adjust the profile prior to cutting.
- Compared to some other micro prismatic, AURA® 191 does not require edge sealing.
- Prismatic materials including AURA® 191 are non-conformable, so must be profile cut so each panel lays flat on the vehicle. Metamark MD-RF7 is a flexible reflective with better conformability.
- AURA® 191 can be purchased at full width roll to plotter cut, or by pre-cut 150mm rolls, the method depends on the type of vehicle.
- Recessing the red from the edge of the yellow allows easier tolerances when finishing.
- Applying the yellow over the whole required area allows faster installation and cleaner removal.
- The use of heat can aid removal followed by Metamark Adhesive Remover. See the full range of Metamark application and removal accessories from our website.



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