

Hot-applied thermoplastic road marking materials —

Part 1: Specification for constituent materials and mixtures

UDC 625.746.533.85:667.637.222:678.073

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Road Engineering Standards Policy Committee (RDB/-) to Technical Committee RDB/25, upon which the following bodies were represented

- British Resin Manufacturers' Association
- Chemical Industries Association
- County Surveyors' Society
- Department of Transport (Highways)
- Department of Transport (Transport and Road Research Laboratory)
- Glass Manufacturers' Federation
- Institution of Civil Engineers
- Institution of Highways and Transportation
- Oil and Colour Chemists' Association
- Road Markings Manufacturers' and Contractors' Association
- Society of Chemical Industry

This British Standard, having been prepared under the direction of the Road Engineering Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 29 September 1989

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First published as BS 3262-1 September 1960
First revision as BS 3262 January 1972
Second revision as BS 3262-1 February 1987
New edition September 1989

The following BSI references relate to the work on this standard:
Committee reference RDB/25
Draft for comment 87/15708 DC

ISBN 0 580 17524 3

Amendments issued since publication

Amd. No.	Date of issue	Comments
8783	November 1995	Indicated by a sideline in the margin

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Foreword

This British Standard has been prepared under the direction of the Road Engineering Standards Policy Committee. It is published in three Parts:

- *Part 1: Specification for constituent materials and mixtures;*
- *Part 2: Specification for road performance;*
- *Part 3: Specification for application of material to road surfaces.*

This Part of BS 3262 replaces BS 3262-1:1987 which is withdrawn.

There have been many changes in materials and methods of laying since the first issue of this standard in 1960 and the basis of the standard has been changed to include performance requirements. Part 1 specifies the composition and quality control requirements of mixtures. Part 2 specifies the performance requirements for type approval of the materials when they have been applied to the road surface. Part 3 specifies the requirements for the application of material to the road surfaces.

This edition introduces technical changes to bring the standard up-to-date but it does not reflect a full review of the standard, which will be undertaken in due course.

In this new edition, requirements for black thermoplastic material are now included and synthetic resin binders are no longer limited to the hydrocarbon type.

It was previously thought that the measurement of the luminance coupled with the heat stability test would give a sufficient guarantee of the whiteness of a marking. This is not necessarily the case as the luminance factor is a measure of brightness and therefore work is now in hand to develop an ultra-violet light ageing test and a yellowness index test for use in determining the whiteness of the marking.

The 1976 edition of the standard indicated that the skid resistance of a material which has been laid on the road surface would tend to increase once the weathering of any resin film on the surface of the marking had occurred. Experience at a road trial site has shown that this is not necessarily the case and a test is being developed which will give an accurate indication of the change in skid resistance of a material with the passage of time and traffic. A minimum skid resistance value based on laboratory tests has been included in the standard.

A British Standard specification for solid glass beads has been published as BS 6088 and glass beads used in road marking materials are now required to comply with that standard.

The committee is considering the matter of the repeatability and reproducibility of the test methods contained in this standard but at present there is insufficient data on which to base limits.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

Purchasers ordering to this standard are advised to specify in their purchasing contract that the supplier operate a quality system in compliance with the appropriate Parts of BS 5750 to assure themselves that the products claimed to comply with this Part of BS 3262 consistently achieve the required levels of quality.

This standard was confirmed in November 1995 on publication of amendment No. 1. The changes incorporated did not reflect a full review of the standard, but were those felt necessary to maintain its currency for the foreseeable future pending its withdrawal and supersession by European Standards currently in course of preparation.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 3262 specifies the requirements for white, yellow and black thermoplastic road marking materials and their constituents that are melted and applied hot to road surfaces, using screeded or sprayed application, as thin superimposed layers for centre lines, edge lines, pedestrian crossing stripes and the like. It does not apply to thermoplastic materials intended to be inset into the road surface.

The marking material consists of an aggregate which is light coloured except for black thermoplastic material, pigment and extender, bound together with a thermoplastic resin, plasticized as necessary. Provision is made for reflectorization using solid glass beads of a suitable grade complying with BS 6088 to improve the visibility of road markings.

The information to be given and requested with the invitation to tender is listed in appendix A.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this Part of BS 3262 the following definitions apply.

2.1 Aggregates

2.1.1

silica sand

a naturally occurring sand that consists of grains of substantially pure silica

2.1.2

calcite

a naturally occurring form of crystalline calcium carbonate

2.1.3

quartz

a naturally occurring form of crystalline silica

2.1.4

calcined flint

a prepared material made by heating pure flints to a sufficiently high temperature for change to the crystalline state to occur with an accompanying change in colour from black to white

2.2

pigment

a fine powder added primarily to impart colour to the mixture

2.3

extender

powder added to assist the dispersion of the pigment and impart body to the mixture

2.4 Binding materials

2.4.1

binder

the thermoplastic resinous material (together with any included oils or other thermoplastics) which provides adhesion to the road surface and cohesion between the other components (i.e. filler, pigment, aggregate and solid glass beads where specified)

2.4.2

natural resin

a member of the group of glassy, amorphous, organic solids that are secreted by certain plants and insects and are insoluble in water but soluble in many organic solvents

2.4.3

synthetic resin

a synthetic product resembling in some ways natural resin

2.4.4

rosin

a specific kind of natural resin originating together with other organic liquids in pine trees; there are two forms:

- a) **gum rosin**. The natural resin which is obtained from the oleo-resin collected from living trees.
- b) **wood rosin**. The natural resin which is obtained from the oleo-resin contained in dead wood such as stumps.

2.5

reflectorization

the use of solid glass beads complying with BS 6088 in road marking materials

2.6

luminance factor

the ratio of the luminance of a non-luminous body, under specified conditions of illumination and observation, to the luminance of a perfect diffuser receiving the same illumination

2.7

maximum application temperature

the maximum temperature at which the material can be maintained for at least 6 h in an open-topped melting-machine or open-topped application-machine with constant agitation by an efficient stirring device, without serious degradation or discoloration occurring

2.8

maximum safe heating temperature

the temperature above which the material is not to be heated at any time