



BSI Standards Publication

**Recycling of roads and other paved areas using bitumen emulsion, foamed bitumen or hydraulic material —  
Materials, production, installation and product type testing — Specification**

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# Foreword

## Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 September 2021. It was prepared by Subcommittee B/510/2, *Surface Treatments*, under the authority of Technical Committee B/510, *Road Materials*. A list of organizations represented on these committees can be obtained on request to their committee manager.

## Relationship with other publications

This British Standard has been introduced to supersede [BS 434-2:2006](#), *Bitumen road emulsions – Part 2: Code of practice for the use of cationic bitumen emulsions on roads and other paved areas*, which has in part also been superseded by cited harmonized product standards for emulsions (BS EN 13808), surface dressing (BS EN 12271) and slurry surfacing (BS EN 12273).

[BS 434-2](#) included clauses for a number of different uses of emulsions, each of which is in the process of being updated and published as a separate British Standard. BS 9228 replaces [BS 434-2:2006](#), Clause **10**, Retread and Clause **11**, Deep recycling.

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## Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

*Commentary, explanation and general informative material is presented in smaller italic type and does not constitute a normative element.*

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

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## 1 Scope

This British Standard specifies requirements for materials processed with either bituminous emulsion, foamed bitumen or hydraulic material, including their design and composition, production, installation and performance testing.

This British Standard includes requirements for mixtures prepared using bituminous binders that may also contain hydraulic material.

This British Standard describes a number of processes and methods by which existing material in the road or other paved areas is either processed in-situ or uses recycled material processed ex-situ.

*NOTE 1* [BS 9227](#) specifies requirements for the production, installation, testing and conformity of hydraulically bound materials (HBM) conforming to [BS EN 14227](#) Parts 1 to 5 for pavement applications, whether constructed by the ex-situ or in-situ methods. It also includes requirements for preliminary work at the laying site, needed to ensure that the substrate is fit to receive the HBM. [BS 9227](#) includes only materials conforming with [BS EN 14227](#) Parts 1 to 5 whether from recycled or virgin materials. For the recycling of pavements, TRL Report TRL 611 [1] can be used.

*NOTE 2* [BS EN 13108-31](#) specifies requirements for asphalt concrete using aggregate conforming to [BS EN 13043](#) and bituminous emulsion for use on roads, and other trafficked areas.

*NOTE 3* Guidance on the selection and use of cold recycled materials is given in [Annex A](#).

## 2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document<sup>1)</sup>. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

### Standards publications

[BS 1377-3:2018](#), *Methods of test for soils for civil engineering purposes – Part 3: Chemical and electrochemical testing*

[BS 1924-1](#), *Hydraulically bound and stabilized materials for civil engineering purposes – Part 1: Sampling, sample preparation and testing of materials before treatment*

[BS 1924-2](#), *Hydraulically bound and stabilized materials for civil engineering purposes – Part 2: Sample preparation and testing of materials during and after treatment*

[BS 594987:2017](#), *Asphalt for roads and other paved areas – Specification for transport, laying, compaction and product type testing protocols*

[BS EN 932-1](#), *Tests for general properties of aggregates – Part 1: Methods for sampling*

[BS EN 933-1](#), *Tests for geometrical properties of aggregates – Part 1: Determination of particle size distribution – Sieving method*

[BS EN 12591](#), *Bitumen and bituminous binders – Specifications for paving grade bitumen*

[BS EN 12697-1](#), *Bituminous mixtures – Test methods – Part 1: Soluble binder content*

[BS EN 12697-2](#), *Bituminous mixtures – Test methods – Part 2: Determination of particle size distribution*

[BS EN 12697-6](#), *Bituminous mixtures – Test methods for hot mix asphalt – Part 6: Determination of bulk density of bituminous specimens*

<sup>1)</sup> Documents that are referred to solely in an informative manner are listed in the Bibliography.