BRITISH STANDARD

BS 594-2:2002

Incorporating Corrigendum No. 1

Hot rolled asphalt for roads and other paved areas —

Part 2: Specification for transport, laying and compaction of hot rolled asphalt

ICS 93.080.10

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Committees responsible for this British Standard

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British Civil Engineering Test Equipment Manufacturer's Association
County Surveyors' Society
Institution of Civil Engineers
Institution of Highways and Transportation
Mastic Asphalt Council Ltd.
Ministry of Defence — UK Defence Standardization
Office of the Deputy Prime Minister — Highways Agency
Quarry Products Association
Refined Bitumen Association
Road Surface Dressing Association
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Foreword

This British Standard has been prepared by Technical Committee B/510/1. It supersedes BS 594-2:1992 which is withdrawn.

This revision of BS 594-2 introduces the following changes:

— all bitumen grade references are in accordance with BS EN 12591.

Terminology which will be used in future European asphalt standards is used to familiarize UK users with the new terms.

BS 594 comprises two parts:

— *Part 1: Specification for constituent materials and asphalt mixtures*;

— *Part 2: Specification for the transport, laying and compaction of hot rolled asphalt*.

This part includes requirements for transporting asphalt mixtures and for site work.

Requirements for asphalt mixtures and their constituent materials and for coated chippings applied to the surface of some asphalt surface courses are given in BS 594-1.

Methods of test associated with the laying of asphalt, for example to determine the rate of spread of coated chippings, texture-depth of the finished surface and density of cores drilled from asphalt surfacing are specified in BS 598 (see Clause **2**). BS 598-109 contains a method for assessing the compaction performance of other rollers by comparison with the performance of a non-vibrating 8 t roller.

It has been assumed in the drafting of BS 594-2 that the execution of its provisions is entrusted to appropriately qualified and experienced people.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

Summary of pages

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1 Scope

This part of BS 594 specifies requirements for the transport, delivery and discharge, laying, rolling and compaction of hot rolled asphalt mixtures, conforming to BS 594-1, from the time they leave the mixing plant until they are placed on the road ready to receive a superimposed layer or traffic. It also covers preparatory work at the laying site needed to ensure the substrate is fit to receive the asphalt, and the procedure necessary to provide a rough-textured surface on the surface course for skid-resistance and the testing of performance specified mixtures conforming to BS 594-1:2002, **5.4**.

NOTE The terms "base (roadbase)", "binder course" and "surface course" are used throughout this standard in place of the traditional terms "roadbase", "basecourse" and "wearing course" respectively to encourage use of the new terminology which will be used in European asphalt standards to be introduced in the near future.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 63-1, *Road aggregates — Part 1: Specification for single-sized aggregate for general purposes.*[1)]

BS 434-1:1984, *Bitumen road emulsions (anionic and cationic) — Part 1: Specification for bitumen road emulsions.*

BS 594-1:2002, *Hot rolled asphalt for roads and other paved areas — Part 1: Specification for constituent materials and asphalt mixtures.*

BS 598-100:1987, *Sampling and examination of bituminous mixtures for roads and other paved areas — Part 100: Methods for sampling for analysis.*

BS 598-102, *Sampling and examination of bituminous mixtures for roads and other paved areas — Part 102: Analytical test methods.*

BS 598-104:1989, *Sampling and examination of bituminous mixtures for roads and other paved areas — Part 104: Methods of test for the determination of density and compaction.*

BS 598-108:1990, *Sampling and examination of bituminous mixtures for roads and other paved areas — Part 108: Methods for determination of the condition of the binder on coated chippings and for measurement of the rate of spread of coated chippings.*

BS 598-109:1990, *Sampling and examination of bituminous mixtures for roads and other paved areas — Part 109: Methods for the assessment of the compaction performance of a roller and recommended procedures for the measurement of the temperature of bituminous mixtures.*

BS 598-110, *Sampling and examination of bituminous mixtures for roads and other paved areas — Part 110: Methods of test for the determination of wheel-tracking rate and depth.*

BS 6100, *Glossary of building and civil engineering terms.*

BS EN 12697-5, *Bituminous mixtures — Part 5: Test methods for hot mix asphalt — Determination of the maximum density.*

BS EN 13036-1, *Road and airfield surface characteristics — Test methods — Part 1: Measurement of pavement surface macrotexture depth using a volumetric patch technique.*

3 Terms and definitions

For the purposes of this part of BS 594 the terms and definitions given in BS 6100 and BS 594-1 apply.

[1)] BS 63-1 will be withdrawn in June 2004 when it will be superseded by BS EN 13043.

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4 Transport, delivery and discharge

4.1 Transport

Loading of asphalt shall be carried out such that segregation is minimized.

Hot rolled asphalt shall be transported to the site in insulated and sheeted vehicles. It shall be sheeted to prevent an excessive drop in temperature and to ensure its protection against adverse weather conditions.

4.2 Delivery

Hot rolled asphalt shall be delivered to the site at appropriate times co-ordinated with the rate of laying (see Clause **6**) to avoid interruption to the laying process.

NOTE To ensure adequate time is available for compaction to be substantially completed before the temperature falls below the specified minimum for rolling (see **8.3.1**), minimum delivery temperatures, taken within 30 min of arrival on site, of 140 °C for surface course mixtures and 120 °C for other mixtures are recommended. However, some variation in these temperatures may be necessary to suit specific site conditions and mixes. Temperatures should be measured in accordance with BS 598-109.

4.3 Discharge

Diesel oil, kerosene or any other oils that are likely to cause softening or damage to the asphalt shall not be used on the floor of the vehicle to facilitate discharge of the asphalt.

NOTE Sealing grit, sand, soap solution or a proprietary release agent may be used on the floor of the vehicle to facilitate discharge of the mixed material. The amount used should be kept to a minimum by brushing.

5 Preparatory works at the laying site

5.1 General

The surface on which asphalt is to be laid shall be clean and free from mud, slurry or other deleterious material.

NOTE Trafficking prior to completion of the surface course should be, as far as possible, restricted to plant and equipment used for laying and compaction of the materials.

5.2 Surface level tolerances

Prior to commencement of laying, the previous course shall be shaped and then compacted by rolling to produce a firm, dense surface on which the asphalt is to be placed.

Deviations in level, at any point on the constructed surface of the pavement layer, from the true-surface level shall not exceed the following:

a) sub-base to receive hot rolled asphalt base: $^{+10}_{-30}$ mm;

b) base (roadbase) to receive hot rolled asphalt binder course: ±15 mm;

c) binder course to receive hot rolled asphalt surface course on motorways, trunk roads and principal roads: ±6 mm;

d) binder course to receive hot rolled asphalt surface course in other situations, such as minor roads, car parks, playgrounds: ±10 mm.

The sum of the deviations in level of different pavement layers shall not reduce the specified surface course thickness by more than 12.5 %.

NOTE See also the requirements for surface regularity in Clause **10**.

5.3 Resurfacing

5.3.1 When an existing surface is used as a base (roadbase) or binder course, the shape shall be improved, if necessary, by milling or planing and/or by the addition of a regulating course so that the maximum depression under a 3 m straight edge placed longitudinally, and under a template placed transversely, does not exceed 13 mm when the asphalt surfacing is to consist of two-course work, or 10 mm when the asphalt is to be a single surface course.

5.3.2 When an existing surface shows an excess of binder this shall be removed by planing, milling or other suitable methods.

NOTE Methods other than planing or milling should be approved by the purchaser.

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