

**Asphalt standards**

# All change please, for asphalt standards

Series 900 of the Specification for Highway Works has been revised in response to Harmonised European Standards in asphalt and further developments, as explained in this Modern Asphalts guide to the changes.

Asphalt mixes and products are now specified in the UK to the same standard as elsewhere in the European Union – to BS EN 13108. The new European Standard came into UK operation on 1 January 2008 and now the Highways Agency has revised the Specification for Highway Works (SHW) in line with these and other changes.

A complete revised 900 Series of the SHW, for Bituminous Bound Materials, has been included in a new Interim Advice Note – IAN 101/07 – from the HA. This includes the new names and designations now used for asphalt mixes, and new

clauses for placing and compacting asphalt and EME2 (Enrobé à Module Élevé) ‘Asphalt Concrete’.

The HA has taken the opportunity to update the 900 Series in response to several developments all at once. While the new EN 13108 standard has been in final preparation, high strength EME2 asphalt has been introduced for UK base and binder courses. Concurrently, the HA, Quarry Products Association and Refined Bitumen Association have been investigating asphalt pavement durability.

A new Clause 903 – Placing & Compaction of Bituminous Mixtures – has

resulted from the HA, QPA and RBA research (carried out by TRL). This is reported in TRL Road Note 42 – Best Practice Guide for Durability of Asphalt Pavements – and an equivalent for overlaying asphalt on concrete, Road Note 41, both of which are due for publication soon.

Clause 903 sets out asphalt laying requirements more demanding than previous with emphasis on compaction, bonding and sealing of joints, among other things. Three years of work has preceded and prepared the new HA clause and TRL Road Notes. A comprehensive overview of

Asphalt type					
AC		HRA		SMA	
Size 'D'					
2	6	10	14	20	32
Course type					
SURF		BIN		BASE	
Binder Grade					
10/20	30/45	70/100	100/150	100/150	160/220

Grading type		
DENSE	CLOSE	MED/OPEN
Mix Type		
HDM	HMB	EME2
Designed mixtures		
DES		
Miscellaneous		
PSV		

asphalt durability has been documented, with guidance on pavement design, material production and asphalt laying for achieving durable pavements – to be used with EN 13108 and a new British Standard, BS 594987.

This is the new UK specific standard for asphalt transport, laying and compaction, developed in line with the European Standard for specification. BS 594987 is the ‘baseline’ document for application of bituminous materials in all sectors and is partly the basis for the HA’s 900 Series revisions. BS 594987 also contains Type Testing protocols as part of changes to asphalt mixture approval and Quality Assurance procedures.

Protocols have changed in line with the European Standard. Conformity QA testing is now carried out to Factory Production Control based on suppliers’ target mix compositions instead of a fixed recipe approach. More rigorous Operating Compliance Level measurement of suppliers’ deviation from their targets has replaced the old Q-Value system. And for meeting the HA’s Clause 901 at least, asphalt suppliers must now declare their products conform with EN 13108 by providing a CE Mark Certificate.

This is gained through Type Testing (of asphalt mix properties) and Factory Production Control, which has also led to

minor revisions to the HA’s Sector Scheme 14 for asphalt production.

Type Testing is described in EN 13108 Part 20 and Factory Production Control in EN 13108 Part 21. The other main parts are numbered one to eight and cover the different types of asphalt used across the EU. Those applicable to the UK are Asphalt Concrete (Part 1, including EME2), Hot Rolled Asphalt (Part 4), Stone Mastic Asphalt (Part 5) and Reclaimed Asphalt (Part 8).



Guidance on use of EN 13108 has been provided in the form of the BSI document PD 6691, which contains example specifications showing how asphalt mixes traditionally used in the UK are specified in terms of the new European Standard. Further guidance, PD 6692, describes the 44 test methods supporting EN 13108.

Product descriptions have changed, with new shorthand designations to describe asphalt mixes and binder penetration –

such as ‘AC 14 BIN 30/45’ replacing ‘14mm DBM 35’ – but the materials are still much the same. The term macadam has been replaced by Asphalt Concrete and binder penetration is now described to grade designations in the relevant European specifications EN 12591 (paving grade binders), EN 13924 (hard paving grades) and EN 14023 (framework for polymer modified binders).

The change over to the European asphalt standard from the now defunct BS 594 and BS 4987 has been relatively seamless. Extensive industry training and communication during 2007 has helped. As have the efforts of a UK delegation to CEN, the European standards organisation. The UK representatives have ensured materials traditionally used in the UK are included and terminology changes kept to a minimum.

There is still much to take on board however, particularly for those working on contracts under way due to the many changes that have taken affect as a result of EN 13108 and the work of the HA, QPA, RBA and others. Guidance on the use of the HA’s revised 900 Series, for schemes in progress, is provided in another Interim Advice Note – IAN 102/07.