



TOPICS IN ASPHALT

Asphalt - road materials with quality



Quality management

Customers of the U.K. asphalt* industry can be increasingly assured of receiving asphalt with quality - whether it is for roads, parking areas, industrial developments, cycleways, pedestrian areas, leisure facilities or any of the other many uses of the materials - thanks to a number of recent developments. Apart from improvements arising from routine investment in new plant and equipment, national quality management schemes for the production of asphalt and its constituents and for asphalt laying, have been introduced in the industry. Also, schemes for assessing the performance of proprietary, branded asphalt products are now well established.

**The term 'asphalt' is used here in its generic sense to refer to the range of coated macadam and asphalt road materials available in the UK.*



The first of these developments was the introduction, in 1998/1999, of the first of a series of what have become known as National Highways Sector Schemes (NHSS) for quality management of highway products and services, developed jointly by industry and the principal client organisations, Highways Agency and County Surveyors' Society. That first scheme was the Sector 14 Scheme covering asphalt production. Since its introduction, it has been refined on several occasions in the light of experience and is now a very mature scheme. It is called up by the majority of client highway authorities, at both national and local level, as a requirement for supplies of asphalt to their contracts.

Concept

The current edition of the Sector 14 Scheme is based on the year 2000 edition of the international quality assurance standard BS EN ISO 9001 and it interprets, where necessary, the requirements of that standard in specific relation to the production and supply of asphalt for roads and other paved areas. In addition to general quality management requirements, the Sector Scheme Document contains schedules of minimum frequencies for plant inspections, calibrations and testing of both raw materials and asphalt mixes.

Some Important Details

Apart from following the general requirements of BS EN ISO 9001, the



Sector 14 scheme has a number of important aspects. These are:

- compliance of producers against the requirements of the scheme is assessed by third-party certification bodies accredited by the United Kingdom Accreditation Service (UKAS) as competent in the sector;
- the scheme contains penalties for poor plant control, in the form of major increases in testing rates, thus encouraging the best possible practice;
- added assurance of the quality of the operation of the control laboratory through a requirement for regular duplicate audit testing of samples by a laboratory accredited by UKAS;
- a customer-focused approach to quality management, with stated commitment to continual improvement of products and services;
- an assurance that procedures are controlled and carried out by suitably trained and/or qualified staff.

Monitoring of the scheme

The Sector 14 scheme is monitored by an Advisory Committee having representation from central and local government highways client bodies, from the asphalt industry and from UKAS as well as from certification bodies that are involved in assessing producers under the scheme. The Advisory Committee undertakes a regular review of the scheme and its requirements and, where necessary, implements amendments to ensure the

continued satisfactory operation of the scheme in the light of ongoing experience in its application.

Benefits

There are benefits to asphalt producers and their customers arising from the Sector 14 QA scheme. Benefits for the customer include:

- an assurance that material supplied is of the type and quality ordered;
- traditional routine client acceptance testing (which duplicates the producers testing at the plant) can be reduced to the absolute minimum;
- customer audits of asphalt plants are not required;
- in the case of publicly-funded contracts, the elimination of acceptance testing and plant auditing by the client, which provides savings which can be diverted to other, more important, aspects of highway maintenance work.

For the producer the main benefits are increased reliability and consistency of production, with consequent improved customer satisfaction and less wastage.

More recent schemes

Following in the footsteps of the proven success of the Sector 14 Scheme, the same principles of quality management are now being adopted throughout the asphalt supply chain. For example, the bitumen used in the asphalt mix is now covered by a Sector

Quality Assurance Scheme - Sector Scheme 15 - which is also third-party audited. In addition, aggregates used in asphalt are now produced under European Standards which include requirements for Factory Production Control (FPC).

And the quality management developments do not stop there, as the laying of asphalt is now covered with the introduction of the Sector 16 Scheme. This scheme is not meant just for major highway works, but covers both major and minor works and both road and off-highway applications. The Highways Agency has required contractors laying asphalt on its works from 1 July 2005 to be accredited against this scheme and a number of local highway authorities have indicated similar intentions. Thus, asphalt laying contractors who wish to demonstrate their competence to their clients are now able to do so by signing up to this scheme.

Principal features of the Sector 16 Scheme are:

- implementation of a documented quality manual and quality plan for individual contracts;
- guidance on competency levels of personnel;
- guidance on plant and equipment requirements;
- a commitment to continuous improvement and customer focus, including provision of feedback mechanisms.



Product assessment

Another major step on the road to quality adopted by both the supply industry and client sector has been the Highways Authorities Product Approval Scheme (HAPAS). This Scheme was set up by the Highways Agency, CSS and the British Board of Agrément (BBA), with industry involvement and consultation, with the objective of developing national approval arrangements for innovative and proprietary products, materials and systems for use in highways, thus removing the need for individual clients to carry out their own assessments and tests. The scheme covers a wide range of highway products and systems.

HAPAS Specialist Groups (SGs), made up of technical experts from representative organisations in the particular field, draw up Guidelines Documents giving details of the tests, assessment criteria and quality assurance requirements for evaluating particular products, which the BBA then uses in its evaluation of applicant products. The BBA's HAPAS approval process involves laboratory testing, site inspection and evaluation of production. If the product under assessment meets the requirements of the Guidelines, it is approved and a BBA Certificate is issued. The Certificate declares the performance levels achieved against the test parameters, as well as installation and maintenance requirements.

The process does not end there however, as regular Surveillance visits to the proprietor are conducted by BBA to ensure that the specification of the product is being

maintained. At the end of each five-year certification period, a formal Review process is undertaken. In this way, specifiers can be assured that the product will perform as set out in its HAPAS Certificate.

As far as asphalt is concerned, the HAPAS Scheme assesses the properties and performance of proprietary asphalt Thin Surfacing Systems, which are now widely used on roads in the UK. Assessment includes both production and installation of Thin Surfacing Systems, and takes into account the requirements of the Sector 14 and 16 schemes detailed above.

All of these initiatives and schemes have been, and continue to be, developed by close industry and client liaison. This relationship is vital to ensuring that both producers and customers benefit from the adoption of quality management and that asphalt continues to be the quality road material of choice.

Further information

Sector 14 Scheme Document:

Sector Scheme for the Quality Assurance of the Production of Asphalt Mixes

Sector 15 Scheme Document:

Sector Scheme for the Supply of Paving Grade Bitumen

Sector 16 Scheme Document: Sector Scheme for the Laying of Asphalt Mixes

Sector Scheme Documents are available from:

UKAS

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Tel 020 8917 8400

Email info@ukas.com

www.ukas.com/information_centre/publications.asp

Further Information on HAPAS is available from:

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