

Shell Bitumen

Bitumen bible is testament to change

The UK's asphalt industry has changed dramatically over the last decade and the newly updated Shell Bitumen Handbook includes information on the latest bitumen innovations.

An update of bitumen's bible, the Shell Bitumen Handbook, has just been published – the first in 13 years, which might suggest to industry outsiders that bitumen has undergone little technical development. But nothing could be further from the truth as a cursory glance at the chapter headings and index of the new fifth edition confirms.

Pace and extent of change has been impressive and the move to performance based specifications unleashed a tide of new product development. The asphalt industry's staple product, hot rolled asphalt, has been all but displaced by thin surfacings in a very short space of time. Understanding of the mechanisms by

which pavements fail has increased substantially since the last edition and emulsions have grown in importance.

Pigmented binders are covered in more detail which reflects the growing selection of asphalt for aesthetic reasons. Fuel resisting binders are covered for the first time and there is also new information on foamed bitumen. There are many other significant changes and to accommodate them all the fifth edition has about 25% more pages than the 336 of the old handbook.

Shell's handbook has a pedigree stretching back to 1949 when it was known as the Mexphalte Handbook. The black leather bound book published by

'Shell Mex and BP' provided technical information and advice concerning the Mexphalte range of standard grade binders. The name Mexphalte remains well known as a Shell brand name, although Shell and BP have gone their separate ways. The second edition of the Mexphalte Handbook came along in 1955 and the third in 1963.

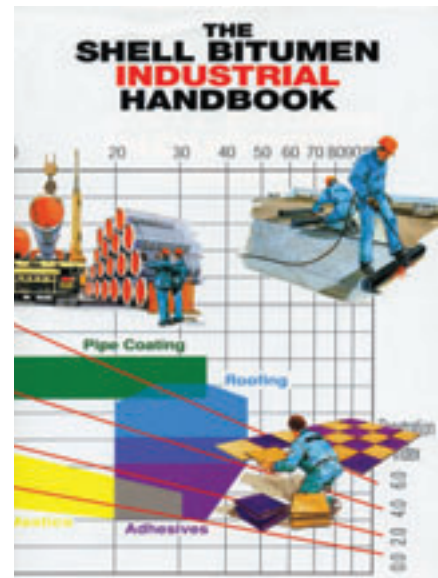
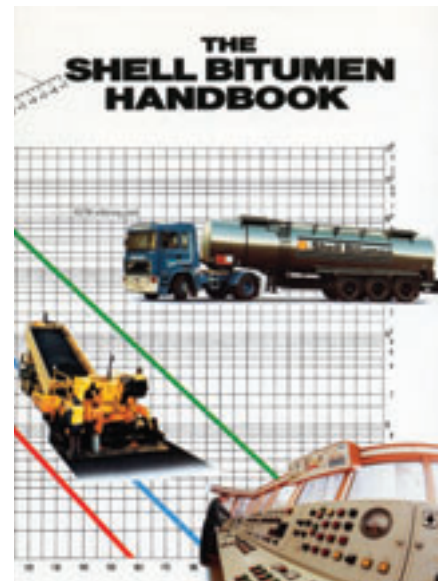
"The book we know as the Shell Bitumen Handbook was effectively the fourth edition of that series," says Shell Bitumen New Technology Manager David Whiteoak, who was the main hand behind the 1990 edition and co-authored the new edition with Shell Bitumen UK and Ireland Technology Manager Dr John Read.

The handbook has become a recognised authority around the world and the first print run of 5000 copies ran out in 18 months. Its success has spawned other successful related texts from Shell, including a handbook for non road bitumen uses and a hydraulic engineering handbook.

German and French translations of the fifth edition are planned; Germany and France had their own versions of the fourth edition, but standardisation across Europe has been sufficient for widespread use of what is still primarily a UK book. The fourth edition was also translated into Mandarin and 'pirated' copies have been seen in

Shell Bitumen's UK and Ireland Technology Manager Dr John Read (far left) and New Technology Manager David Whiteoak (left) co-authored the fifth edition of the Shell Bitumen Handbook





other languages such as Korean.

The fourth edition marked a radical departure from what had gone before. Whiteoak explains: "The 1960s version was only 143 pages long and was mostly information from relevant British Standards

the fourth edition as it was so different to the ones that went before. But both the 1990 and the current editions took longer to prepare than expected – copies had to be couriered to the launch event straight from the printers in 1990."

"Some tough decisions had to be made about what to leave out and when to publish.

Standards and technologies are always changing but we delayed publication to include the new European aggregate standards." David Whiteoak

and some of the basic bitumen tests. There was little about asphalt testing in it."

The latest edition includes analytical and rheological testing on bitumen and fundamental asphalt tests to determine true engineering properties of asphalt. There are also chapters dealing with the analytical design of flexible pavements and the technology of surface dressing. Much of this would have been a foreign language to the users of the Mexphalte Handbook in the 1940's.

Producing the new edition took three years. Whiteoak recalls: "We had no idea how long it would take when we started

The recently published edition was, like the old, compiled by input from several people in the Shell Bitumen European Technical Team, drawn together by Whiteoak and Read. External help in the shape of Dr Robert Hunter, a specialist in the use of asphalt in road construction, was drafted in to edit the book. "When we sat down to review the size of the task we were surprised by how many changes there had been," says Whiteoak, "even though we have been involved in most of them.

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Shell's handbook has spawned other successful related texts.

always changing and we delayed publication to incorporate the new European standards for aggregates. There is hardly a page which is not significantly different from previous editions."

There is no sign of the pace of change slowing down either, according to Whiteoak. "New materials will always be needed in a market where performance specifications are used, and asphalt and pavement technology are constantly developing. Shell has always been active in developing products and solutions in conjunction with customers and we expect that to continue. There is still a lot of fundamental research into bitumen going on around the world which we will eventually have to incorporate in later editions of the handbook."

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