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## Book Review

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# Book review

## Asphalt Mixture Selection, 1st edn

C. Nicholls and A. Hannah. CRC Publishing, Boca Raton, FL, USA, 2019, ISBN 978-1-1386-1682-0 (hardback), 978-0-4294-6183-5 (ebook), £63.99, 144 pp.

Cliff Nicholls and Arthur Hannah are very well known in the field of asphalt technology. Dr Nicholls spent much of his career with the Transport Research Laboratory (TRL) researching the behaviour of asphalts, primarily surface courses, and is the author or co-author of many TRL reports. Mr Hannah was with RMC, subsequently Cemex, and has experience in numerous senior management positions in the asphalt industry. He has considerable experience in site inspections and the resolution of problems in the asphalt industry.

### The summary states

This practical guide starts with a survey of the types of site and the asphalt properties which are required. Various external influences which may affect the relative importance of some properties are addressed, and the interplay of sites and external is considered. Asphalt mixture types and their properties are reviewed, largely as defined in the EN 13108 series but subdivided into further categories, and into maximum nominal coarse aggregate sizes using EN 13043 basic set plus set 2 sizes. Guidance is given, including using flowcharts, of the different mixtures that are suitable for each situation. In some cases a range of choices or mixtures with different degrees of suitability is offered. The guidance covers surface course, binder course and base, but with more focus on the surface course where the external influence is most significant. The site and external influence combinations on which a mixture can be used successfully are also given. The book is primarily intended for those who select asphalt on an occasional basis, such as architects or housing developers, but could be of use to other engineers with limited experience. It is also

useful as an educational textbook for those studying asphalt technology.

In fact this is an accurate summary of the contents of this book.

The book contains nine chapters. Chapters 1 and 2 comprise an introduction and a consideration of basics, respectively. Chapter 3 discusses the various properties of asphalt, after which the different types of asphalt are considered with each being accorded a general comparative and indicative rating of the properties discussed earlier in the chapter, the ratings being good, moderate, and so on. Chapter 4 considers the wide range of uses to which asphalts can be put – that is, different categories of road, bridge decks, airfields, footways and cycleways, a range of car park types, docks and ancillary uses such as playgrounds and tennis courts. Chapter 5 addresses external influences including site-related factors (substrate, road geometry, etc.), traffic, environment and economics. Each sub-section in this chapter is accorded a rating against the properties discussed in Chapter 3. Chapter 7 deals with asphalt mixture selection and consists of a large number of flowcharts that give guidance on the use of particular asphalt mixtures for the individual layers in roads – that is, surface courses, binder courses and bases. This approach is repeated for airfields, footways and cycleways, docks and ancillary purposes. Each of the flowcharts makes reference to particular tables included in the chapter, with each table having headings of traffic, cost band, mixture type, suggested NMAAS (nominal maximum aggregate size) and design specifics. The tables would benefit from having lines to avoid any possibility of being misread. Chapter 8 lists recommended uses for particular asphalts. Chapter 9 is the final chapter in the book and provides examples of asphalts to be used in a major road, a minor road, an airfield, a cycleway and a dock. It also contains a short summary.

The reviewer thought that the layout of the book was excellent, being very user friendly. The book understates the range of practitioners who will find its contents very helpful. Unfortunately, the book does not consider TS2010, which is the surface course on some 70% of roads in Scotland. Despite this, the reviewer considers this book to be essential reading for all personnel involved in specifying asphalts.

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