

Kandhal Asphalt Literature

Over the last 40 years, I had the opportunity and privilege of authoring/co-authoring over 120 **practical**, technical papers on asphalt paving technology. I have been very fortunate in working with competent researchers during this period. These papers have been published in prestigious journals such as those of the US Transportation Research Board (TRB) (52 papers), Association of Asphalt Paving Technologists (AAPT) (20 papers), and American Society for Testing Materials (ASTM) (20 papers). That is, about 3 TRB papers every 2 years; 1 AAPT paper every 2 years; and 1 ASTM paper every 2 years. The topics for these papers have ranged widely from materials (asphalt binder, aggregate and mineral filler) to mix design (Marshall and Superpave) to mix characterization (resistance to rutting, fatigue cracking, low-temperature cracking and moisture susceptibility) to different asphalt mixture types (such as Superpave, stone matrix asphalt, warm mix asphalt, open graded friction course, large stone mixes, and sulphur extended asphalt) to asphalt construction (mix production, compaction, and longitudinal joint construction) to asphalt pavement maintenance (pothole repair, seal coat) to asphalt pavement rehabilitation (full depth reclamation) to recycling (hot/cold, plant/in-place).

Since most highway engineers, academia, and researchers in developing countries do not have access to international journals, I have attempted to make my practical papers (in many cases full text) available on line to facilitate advancement of asphalt paving technology in those countries. These papers may be of some interest to you.

Please select the topic of your interest from the following subject index. The paper number(s) pertaining to that topic is given in parenthesis []. Then, go down the list of papers arranged in chronological order (from most recent to oldest). Click or CTRL plus click on the internet link (or copy and paste in URL) of the desired numbered paper. You can then download the paper from these links.

Sincerely,
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Topics of Kandhal Asphalt Literature

A. Materials

(a) Asphalt Binder (Bitumen)

Viscosity graded asphalt binder research [24, 15, 14, 8, 7, 3]

Superpave performance graded binders [57, 55]

Absorption- Effect on asphalt properties [40]

Rheological properties of binder [26]

Durability of binder [24]

Low temperature cracking of binder [15, 13]
Low temperature ductility of binder [9]
Shear susceptibility of binder [6]
(b) Aggregates
Both coarse and fine aggregates [65, 63, 58, 42, 38, 2]
Coarse aggregate [80, 75, 72, 46]
Fine aggregate [78, 76, 67, 41, 37, 1]
Steel slag aggregate [62]
Bottom ash, fly ash, incinerator residue, waste glass, coal mine refuse [48]

(c) **Mineral Filler** [74 Part I, 74 Part II, 70, 67, 17]

(d) **Aggregate Gradation** [98, 97, 90, 87, 84, 83, 44]

B. Mix Design

(a) **Marshall mix design** [84, 69, 58, 56, 55, 53, 45, 39, 35, 34, 33, 32, 31, 29, 25]

(b) **Superpave mix design** [98, 97, 90, 87, 84, 83, 71, 69, 60, 58, 56, 55]

(c) **Asphalt absorption in mix** [38,2]

C. Mix Characterization

(a) **Mix performance** [65, 58, 55, 52, 50, 45, 43, 42, 30, 29, 13, 9, 7, 6, 3]

(b) **Rutting** [102, 101, 100, 98, 96, 95, 91, 90, 87, 84, 83, 82, 81, 77, 66, 65, 45, 42]

(c) **Fatigue cracking** [98, 87, 65]

(d) **Low temperature cracking** [57, 26. 15, 13]

(e) **Moisture susceptibility (stripping)** [65, 50, 43, 30]

(f) **Loaded wheel testers for rutting** [102, 101, 100, 96, 95, 91, 84, 82, 81, 77]

D. Asphalt Mixture Types

(a) **Stone matrix asphalt (SMA)** [88]

(b) **Warm mix asphalt (WMA)** [103]

(c) **Superpave mix** [98, 97, 90]

- (d) Large stone mix [35, 34, 33, 32, 31]
- (e) Open graded asphalt friction course (OGFC) [89, 85, 79, 73, 11]
- (f) Sulphur extended asphalt (SEA) [19, 18]
- (g) Ultra thin asphalt pavement mix [68]
- (h) Mixture for intersections [66]
- (i) Cold emulsion mixes [28, 27]

D. Asphalt Construction

- (a) Statistical specification for construction [47, 44]
- (b) Mix production [56, 44, 12, 5, 4]
- (c) Compaction [22, 20]
- (d) Longitudinal joint construction [93, 59, 54, 51, 49]

E. Asphalt Pavement Distresses

Stripping [85, 67, 43, 30]

F. Asphalt Pavement Maintenance

- (a) Pothole repair [16]
- (b) Surface treatment or seal coat [36, 21]

G. Asphalt Pavement Rehabilitation

Full depth reclamation (FDR) [94, 92, 86, 64]

H. Asphalt Pavement Recycling [103, 71, 64, 61, 60, 52, 27, 23]

Manual on all types of recycling [64]

J. General Topics

- (a) Noise from tire-pavement interaction [99]
- (b) Skid resistance [46]
- (c) Waste materials in hot mix asphalt [62, 48]

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[This first-ever textbook on hot mix asphalt (HMA) technology is not only used in several universities in the US, it is also a good reference book for practicing engineers. It has chapters on asphalt refining, uses and properties; aggregates; hot mix asphalt mix design; characterization of asphalt mixes; equipment and construction; quality control/quality assurance; special mixtures such as OGFC, SMA and patching mixes; hot mix recycling; performance and distress of HMA; and maintenance and rehabilitation of asphalt pavements. This textbook is published by the NAPA Research and Education Foundation who has the sole copyright for this book. The book can be obtained on line at www.hotmix.org

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