

AS 2734—1984

Australian Standard<sup>®</sup>

---

**ASPHALT (HOT-MIXED) PAVING  
—GUIDE TO GOOD PRACTICE**

---

[Title Allocated by Defence Cataloguing Authority:  
RECOMMENDATIONS FOR ASPHALT PAVING]

This Australian standard was prepared by Committee CE/6, Asphalt and Sprayed Surfacing. It was approved on behalf of the Council of the Standards Association of Australia on 31 July 1984 and published on 9 November 1984.

---

The following interests are represented on Committee CE/6:

- Association of Consulting Engineers Australia
  - Australian Asphalt Pavement Association Limited
  - Australian Council of Local Government Associations
  - Australian Institute of Petroleum Limited
  - Australian Road Research Board
  - Confederation of Australian Industry
  - Department of Housing and Construction
  - National Association of Australian State Road Authorities
- 

**Review of Australian Standards.** To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

---

This Standard was issued in draft form for comment as DR 82034.

Australian Standard<sup>®</sup>

---

**ASPHALT (HOT-MIXED) PAVING  
—GUIDE TO GOOD PRACTICE**

---

First published . . . . . 1984
--------------------------------

PUBLISHED BY STANDARDS AUSTRALIA  
(STANDARDS ASSOCIATION OF AUSTRALIA)  
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 3495 8

## PREFACE

This standard was prepared by the Association's Committee on Asphalt and Sprayed Surfacing as a guide to good practice in asphalt paving.

When AS 2150, Asphalt (Hot-mixed), prepared by the Association's Committee on Bitumen and Related Products (for Roadmaking), was published, it was considered appropriate to produce a new standard dealing with the laying and compaction of asphalt. It was then decided that a new committee be formed (Committee CE/6) to deal with any standards related to this field. The consideration of AS 2150 and the preparation of a guide to good practice in asphalt paving passed to Committee CE/6 at the time of its formation.

## CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 Scope . . . . .	4
1.2 Application . . . . .	4
1.3 Referenced Documents . . . . .	4
1.4 Definitions . . . . .	4
SECTION 2. PLANNING	
2.1 Structural Strength of Pavement . . . . .	6
2.2 Layer Thicknesses . . . . .	6
2.3 Paving Trials . . . . .	6
2.4 Scheduling of Work . . . . .	6
2.5 Provision for Traffic . . . . .	6
2.6 Supervision . . . . .	6
2.7 Basis for Payment . . . . .	6
SECTION 3. SELECTION OF MIX TYPES	
3.1 General . . . . .	7
3.2 Characteristics of Performance . . . . .	7
3.3 Mix Types Generally Used . . . . .	7
3.4 Binders Generally Used . . . . .	7
3.5 Completion of Appendix J of AS 2150, Asphalt (Hot-mixed) . . . . .	8
SECTION 4. PREPARATION OF SURFACE	
4.1 Correction of Surface Defects . . . . .	10
4.2 Pretreatment . . . . .	10
4.3 Cleaning . . . . .	10
4.4 Public Utilities . . . . .	10
4.5 Surface Condition . . . . .	10
SECTION 5. TACK COATING	
5.1 General . . . . .	11
5.2 Materials . . . . .	11
5.3 Rates of Application . . . . .	11
5.4 Techniques . . . . .	11
SECTION 6. TRANSPORT	
6.1 General . . . . .	12
6.2 Vehicles . . . . .	12
6.3 Techniques . . . . .	12

	<i>Page</i>
SECTION 7. SPREADING	
7.1 General . . . . .	13
7.2 Spreading by Self-propelled Paving Machine . . . . .	13
7.3 Spreading by Grader . . . . .	13
7.4 Spreading by Drag Spreader . . . . .	13
7.5 Spreading by Hand . . . . .	14
7.6 Asphalt Temperatures . . . . .	14
7.7 Layer Thickness . . . . .	14
7.8 Joints . . . . .	14
7.9 Automatic Level Control . . . . .	15
7.10 Techniques . . . . .	15
7.11 Safety in Paving . . . . .	15
SECTION 8. COMPACTION	
8.1 General . . . . .	17
8.2 Equipment . . . . .	17
8.3 Procedure for Dense-graded Mixes . . . . .	17
8.4 Procedure for Open-graded Mixes . . . . .	18
8.5 Compaction Techniques . . . . .	18
SECTION 9. FINISHED PAVEMENT PROPERTIES	
9.1 Level . . . . .	20
9.2 Thickness . . . . .	20
9.3 Shape . . . . .	20
9.4 Density . . . . .	20
APPENDIX A. BASIS OF PAYMENT . . . . .	22

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

## STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard**  
**for**  
**ASPHALT (HOT-MIXED) PAVING — GUIDE TO GOOD PRACTICE**

## SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This standard sets out basic guidelines for good workmanship in asphalt paving, requirements for suitable mixes for use under various conditions, and the means of describing such mixes using Appendix J of AS 2150.

Mix design, manufacture and supply of asphalt are dealt with in AS 2150.

**1.2 APPLICATION.** The standard is not intended as a specification. It mentions alternative materials properties and practices, the most suitable of which should be selected and used for each distinct job. The standard may be used as a guide in writing specifications, it may be used as a reference in specifications or extracts from it may be included in specifications. In using the standard for this purpose, consideration should be given to the varying levels of workmanship appropriate to different types of projects. For example, a car park would be treated differently to a freeway or an airport.

The standard is also not intended as a training manual. It aims to state concisely what is good practice without attempting to give reasons.

**1.3 REFERENCED DOCUMENTS.** The following standards are referred to in this standard:

AS 1152	Test Sieves
AS 1160	Bitumen Emulsions for Construction and Maintenance of Pavements
AS 1507	Road Tars for Pavements
AS 1742	Manual of Uniform Traffic Control Devices Part 1—Description and Use of Element Traffic Control Devices Part 2—Application of Traffic Control Devices to Traffic Situations
AS 1743	Road Signs
AS 2008	Residual Bitumen for Pavements
AS 2150	Asphalt (Hot-mixed)
AS 2157	Cutback Bitumen.

**1.4 DEFINITIONS.** For the purpose of this standard, the following definitions apply:

**1.4.1 Adhesive agent (Anti-stripping agent)** — a substance used for the purpose of improving the adhesion between a bituminous binder and the aggregate. The term generally refers to adhesion in the presence of water.

**1.4.2 Aggregate** — a granular material processed from deposits of sand, gravel, rock, metallurgical slag or other suitable synthetic product.

**1.4.3 Asphalt (hot-mixed)** — a mixture of bituminous binder and aggregate with or without mineral filler produced hot in a mixing plant. It is delivered, spread and compacted while hot. In this standard, asphalt shall mean asphalt (hot-mixed).

**1.4.4 Asphalt base course** — one or more layers of asphalt constituting a structural element of a pavement, immediately below the asphalt intermediate course or wearing course where there is no asphalt intermediate course.

**1.4.5 Asphalt intermediate course** — that part of the pavement which rests on the asphalt base course and is immediately below the wearing course.

**1.4.6 Asphaltic concrete** — dense continuously graded mixture of coarse and fine aggregates, mineral filler and bitumen produced hot in a mixing plant. It is delivered, spread and compacted while hot.

**1.4.7 Binder** — a material used for the purpose of holding aggregate particles together as a coherent mixture.

**1.4.8 Bitumen** — a bituminous material obtained by processing the residue from the refining of certain natural or refining crude oils.

**1.4.9 Bitumen emulsion** — a liquid product in which a substantial amount of bitumen (to which some oil may be added) is dispersed in a finely divided condition in water and stabilized, by means of one or more emulsifying agents.

**1.4.10 Bituminous** — having physical properties similar to those of bitumen or tar, or containing substances having such properties.

**1.4.11 Coarse aggregate** — general term used to differentiate between various sizes of aggregate, usually material retained on a 4.75 mm sieve.

**1.4.12 Deep lift** — paving technique whereby asphalt is placed in a lift of at least 75 mm compacted thickness.

**1.4.13 Deep strength asphalt pavement** — pavement structure in which the wearing course and a substantial portion of the base course consists of asphalt.

**1.4.14 Filler (Mineral filler)** — material passing a 75 µm sieve derived from aggregate or other suitable granular material.

**1.4.15 Fine aggregate** — general term used to differentiate between various sizes of aggregate, usually material passing a 4.75 mm sieve, and retained on a 75 µm sieve.

**1.4.16 Full depth asphalt pavement** — pavement in which asphalt is used for all courses above the subgrade or improved subgrade.

**1.4.17 Grading** — particle size distribution.

**1.4.18 Harsh mix** — a mix having low workability due to its high level of stability resulting in difficulty in placing and compaction.

**1.4.19 Nominal size** — a designation for a mix, chosen to give an indication of the largest size particle present.