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

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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

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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.

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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 Elemental 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 Adhesion 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 naturally occurring 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.