AS 3727.1:2016

Pavements

Part 1: Residential

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- Australian Asphalt Pavement Association
- Australian Stabilisation Industry Association
- Bureau of Steel Manufacturers of Australia
- Cement Concrete and Aggregates Australia
- Concrete Institute of Australia
- Concrete Masonry Association of Australia
- Engineers Australia
- Institute of Public Works Engineering Australasia
- Master Builders Australia
- Pavement Recycling and Stabilisation Association
- Queensland Building and Construction Commission
- Steel Reinforcement Institute of Australia
- Think Brick Australia

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Australian Standard®

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Part 1: Residential

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PREFACE

This Standard was prepared by the Standards Australia Committee, BD-098, Pavements, to supersede AS 3727—1993, *Guide to residential pavements*.

The objective of this Standard is to provide criteria to ensure that residential pavements are designed and constructed to provide an acceptable level of performance; whether constructed in concrete, segmental and flag pavements or asphalt and bituminous spray-seal pavements.

This Standard represents a significant divergence from the 1993 edition with the following major changes:

(a) Written in mandatory (normative) terms.

(b) Adjustment of the Standard designs to allow for low traffic density commercial vehicles with a gross vehicle mass less than 10 t.

(c) Recognition that the Standard has application beyond residential construction to encompass footpaths, vehicle crossovers, cycleways, etc.

(d) Identification of design and performance criteria which are common to pavement types.

(e) Review and update of referenced documents and Bibliography.

The committee proposes the addition of further parts in this series will be forthcoming.

Statements expressed in mandatory terms in notes to Tables and Figures are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendices to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

This Standard (AS 3727.1) has been developed in response to a need to define the performance of light duty, low traffic volume pavements. Poor workmanship, inadequate site preparation, and misuse of basic materials have been cited as common problems within the industry.

While AS 3727—1993 provided good guidance to constructors of pavements, it fell short in the following key areas:

(a) As a ‘guide’ it lacked the authority of a normative document.

(b) The limitations on vehicle mass were confusing and reduced its application even in strictly residential pavements where heavier vehicles may occasionally need access.

(c) There was confusion as to the target audience. Some details were quite simplistic whereas other requirements demanded a complex knowledge of test procedures and methods.

This Standard seeks to address these issues in the following ways:

(i) The Standard has been written in normative terms.

(ii) The allowable gross vehicle mass for light volume traffic pavements has been retained at 10 t but with clarification. As standard designs are available for this vehicle mass, pavements designed and constructed using this Standard could accommodate delivery vehicles on driveways and crossovers; service vehicles on cycleways in parks and gardens; and light plant and equipment on other recreational pavements.

(iii) The Standard recognizes that the typical user of this Standard may not have access to sophisticated testing to establish compaction and material quality. Where possible the test requirements have been replaced by ‘deemed to comply’ statements, which rely on observation and strict adherence to known procedures.

NOTE: Normative references to other Standards and documents have been kept to a minimum.

The committee recognizes that a Standard cannot address all eventualities. When pavements are to be constructed on problem or reactive clay sites, greater engineering input is required. The site limitations expressed in the 1993 edition have been retained.

The committee also recognizes that site conditions change over time and levels of maintenance, landscaping and drainage can affect the long-term performance of all pavements. These issues have been considered in the acceptance criteria.

STANDARDS AUSTRALIA

Australian Standard
Pavements

Part 1: Residential

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the design and construction of pavements for light usage, low speed, non-commercial applications for vehicles with a gross vehicle mass not exceeding 10 t. This includes patios, paths, driveways, vehicle crossovers and recreational pavements such as cycleways.

This Standard excludes the following:

(a) Concrete pavements using fibres as the sole means of reinforcement.

(b) Roads and industrial pavements.

(c) Class H1, H2, E and P sites (see Table 1.5).

1.2 LIMITATIONS

Pavement design requirements in this Standard shall be based on the prerequisite of adequate subgrades on well-drained sites (see Clauses 4.2 and 4.1 respectively). Engineering design shall be applied to pavements on sites that do not conform with these conditions.

This Standard does not apply to permeable and porous pavements.

The pavement designs specified in this Standard do not apply where brittle surfacing layers exceeding 16 m^2 are used.

1.3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS
1289 Methods of testing soils for engineering purposes (series)

1379 Specification and supply of concrete

2008 Bitumen for pavements

2150 Hot mix asphalt—A guide to good practice

2870 Residential slabs and footings

3600 Concrete structures

AS/NZS
2425 Bar chairs in reinforced concrete—Product requirements and test methods

4455 Masonry units, pavers, flags and segmental retaining wall units
4455.2 Part 2: Pavers and flags

