AS 2758.1:2014
(Incorporating Amendment No. 1)

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Aggregates and rock for engineering purposes

Part 1: Concrete aggregates

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- ARRB Group
- Australasian Procurement and Construction Council
- Australasian Slag Association
- Australian Asphalt Pavement Association
- Australian Chamber of Commerce and Industry
- Australian Geomechanics Society
- Austroads
- Bureau of Steel Manufacturers of Australia
- Cement Concrete and Aggregates Australia
- Engineering and Construction Laboratories Association
- Institute of Quarrying Australia
- National Association of Testing Authorities Australia
- Rail Industry Safety and Standards Board

A1

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PREFACE

This Standard was prepared by the Standards Australia Committee CE-012, Aggregates and Rock for Engineering Purposes, to supersede AS 2758.1—1998.

This Standard incorporates Amendment No. 1 (October 2016). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This Standard is part of a series that covers specification for aggregates and rock, as follows:

AS		
2758	Aggregates and rocks for engineering purposes	
2758.0	Part 0:	Definitions and classification
2758.1	Part 1:	Concrete aggregates (this Standard)
2758.2	Part 2:	Aggregate for sprayed bituminous surfacing
2758.4	Part 4:	Aggregate for gabion baskets and wire mattresses
2758.5	Part 5:	Asphalt aggregates
2758.6	Part 6:	Guidelines for the specification of armourstone
2758.7	Part 7:	Railway ballast

This Standard is called up by AS 3600, *Concrete structures*. In this Standard, extensive reference is made to AS 1141, *Methods for sampling and testing aggregates* (series), which is designed to include all aggregate tests, not only those for concrete.

This revision of AS 2758.1 has introduced the following changes to the 1998 edition:

(a) A note to the scope advising of the application of the specification to individual components of a concrete mix and the subsequent need for concrete mix design.

(b) Removal of specified aggregate gradings, recognizing the wide variety of gradings in use in Australia. The assumption is made that a supply agreement will exist between the aggregate supplier and the concrete producer and that what must be specified is the deviations in the agreed gradings. Aggregate gradings are recommended in informative Appendix B.

(c) A full specification for manufactured fine aggregate has been included.

(d) Specification requirements for testing, classifying and reporting the potential for aggregates to react with the alkalis in the concrete mix are included. Requirements for dealing with aggregates that are classified as reactive to alkalis in concrete are included by linking requirements to the specifications in AS 1379, *Specification and supply of concrete*.

This specification has relevance to aggregate suppliers and concrete suppliers. It will also be of relevance to specifiers of concrete, consultants, contractors, manufacturers and suppliers of precast concrete products and asset owners, all of whom may be concerned with the properties of aggregates used in production of concrete or concrete products used for engineering purposes

One normative appendix and two informative appendices are included as follows:

(i) The exposure classifications of concrete structures, in accordance with AS 3600, which may impact on the properties of aggregate required for satisfactory performance (Appendix A, normative).

(ii) Advice on suitable standard aggregate gradings where this information is not provided in a supply agreement, or where parties to a supply agreement are seeking guidance on suitable grading envelopes (Appendix B, informative).

(iii) Guidance on mitigative procedures for the control of alkali-silica reactivity, including details of procedures used by State road authorities on the East Coast of Australia (Appendix C, informative).

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix 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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STANDARDS AUSTRALIA

Australian Standard
Aggregates and rock for engineering purposes

Part 1: Concrete aggregates

1 SCOPE

This Standard provides a basis for specifying requirements for aggregates intended for use in the production of concrete, including precast products. The requirements and alternatives relate to—

(a) the quality of rock;

(b) the potential for reaction between the aggregate and other components of the concrete mix; and

(c) the properties of aggregates including lightweight aggregates and manufactured fine aggregate, referring to the relevant test methods in the AS 1141 series, the AS 1012 series and AS 4489.7.1 and to the requirements and recommendations for the production of concrete in AS 1379 and AS 3600.

NOTE: This Standard specifies the requirements for the individual aggregate components used to produce a concrete mix. At the very least, the mix will comprise one coarse and one fine aggregate component, but many mixes will include multiple coarse and fine aggregates. The Standard is based on the successful use of individual components, complying with the properties specified; however, it is not possible for this Standard to consider the performance of all possible combinations of aggregates. Therefore, although a material complying with this Standard should be acceptable as a mix component, the selection and proportions of the components in the concrete mix will need to be determined by trial mixes and/or from records of field performance.

2 APPLICATION

This Standard is intended to be used in combination with a works specification for contract purposes. While a number of the basic requirements are not negotiable, the specifier may select from the options available in this Standard, or use alternative test methods and limits (which may be from Australian Standards or other appropriate Standards) for incorporation into the works specification.

The basic requirements for all concrete aggregates are prescribed in Clauses 7 to 14. Additional basic requirements for slag and lightweight aggregates are prescribed in Clauses 15 and 16 respectively. Alternatives are presented for the assessment of durability in Clause 9. However, not more than one of these alternatives should be specified for routine supply from a known aggregate source.

The selection of test procedures and test limits, where alternatives are provided, and the frequency at which individual tests are required, is a subject of the individual supply agreement.

The works specification should specify all the tests appropriate to the source rock or the tender samples, or both, but the whole range of tests is not necessarily applied to control acceptance of the product during the performance of a contract.