AS 3582.2—1991

Australian Standard®

Supplementary cementitious materials for use with portland cement

Part 2: Slag—Ground granulated iron blast–furnace

This Australian Standard was prepared by Committee BD/31, Supplementary Cementitious Materials for Use with Portland Cement. It was approved on behalf of the Council of Standards Australia on 20 September 1990 and published on 11 February 1991.

The following interests are represented on Committee BD/31:

Association of Consulting Engineers, Australia

AUSTROADS

Bureau of Steel Manufacturers of Australia

Cement and Concrete Association of Australia

CSIRO, Division of Building, Construction and Engineering

Electricity Commission of New South Wales

Engineering and Water Supply Department, S.A.

National Ash Association of Australasia

National Ready Mixed Concrete Association

Public Works Department, N.S.W.

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PREFACE

This Standard was prepared by the Standards Australia Committee on Supplementary Cementitious Materials for use with Portland Cement.

Since 1966, in Australia, ground granulated iron blast–furnace slag has been used as a binder and, since 1972, for the production of blended cement in accordance with AS 1317. With recent developments in the industry, it has become necessary to lay down requirements for ground granulated iron blast–furnace slag when intended for use as a binder component in the manufacturing of concrete and mortar.

In preparing this Standard, it was the intention that the concrete manufactured using this material should be subject to the same requirements that apply to concrete and mortars produced from blended cements.

With this object, and in the interest of flexibility, it has been found necessary to stipulate that tests for strength and water demand be performed in conjunction with samples of the portland cement that is to be used for a particular mix.

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1 SCOPE This Standard sets out requirements for finely ground granulated iron blast-furnace slag for use as a cementitious material in concrete and mortar.

NOTE: Alternative methods for determining compliance with this Standard are given in Appendix A.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1199 Sampling procedures and tables for inspection by attributes

1289 Methods of testing soils for engineering purposes
1289.A2 Preparation of disturbed soil samples for testing

1317 Blended cement

1399 Guide to AS 1199, Sampling procedures and table for inspection by attributes

2350 Methods of testing portland and blended cements
2350.8 Method 8: Fineness index of portland cement by air permeability

3583 Methods of test for supplementary cementitious materials for use with portland cement
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3583.14 Method 14: Determination of insoluble residue content

3900 Quality systems—Guide to selection and use

3904 Quality systems—Guide to quality management and quality system elements

ASTM
C 465 Specification for processing additions for use in the manufacture of hydraulic cements

ISO
Guide 44—1985 General Rules for ISO or IEC International Third Party Certification scheme for Products

3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

3.1 Iron blast-furnace slag—a non-metallic product, consisting essentially of silicates and aluminosilicates of calcium, produced simultaneously with iron in a blast furnace.

3.2 Granulated iron blast-furnace slag—the glassy granular material resulting from the rapid chilling of molten iron blast-furnace slag.

NOTE: Hereafter in this Standard, and in AS 3583 Ground granulated iron blast-furnace slag is usually referred to as 'Slag'.

4 ADDITIONS Unless the fact is clearly stated in writing by the manufacturer, additions of materials other than water or calcium sulfate containing not less than 30 percent sulfuric anhydride (SO_3), shall not be permitted. Where processing additions have been made, such materials shall not be deleterious to the end use and shall be in accordance with the recommendations of ASTM C 465.

NOTE: At the request of a purchaser, the manufacturer may state in writing the nature, proportion and identity of any processing additions that have been used together with test data showing compliance of such processing addition(s) with ASTM C 465.

5 MARKING The following information shall appear on the container in which the ground, granulated iron blast-furnace slag is supplied or shall accompany bulk supplies of the slag:

(a) The sources of slag, the name of the manufacturer, and the name of the works in which it is processed.

(b) A statement that a processing addition has been incorporated (if appropriate).