STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TESTING PORTLAND AND BLENDED CEMENTS

AS 2350.11
COMPRESSIVE STRENGTH OF PORTLAND AND BLENDED CEMENTS

PREFACE

This Standard was prepared by the Association's Committee on Cement and will supersede AS 2350.6—1980 one year after its publication. However, during the one-year period before withdrawal of AS 2350.6—1980 both this Standard and AS 2350.6—1980 may be used.

This Standard is based on European Standard EN 196, Methods of Testing Cement, Part 1: Determination of Strength, and it will supersede AS 2350.6—1980 because it provides for a greater precision (based on repeatability and reproducibility) in respect of measuring the compressive strength of cement.

1 SCOPE. This Standard describes the reference method for determining the compressive strength of portland and blended cements. The method allows the use of alternative procedures provided that the alternatives do not significantly affect the results as specified in Appendix B.

NOTE: The precision of the method is discussed in Appendix A.

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

AS
1100 Technical drawing
Part 201: Mechanical drawing (AS 1100.201)

2193 Methods for calibration and grading of force-measuring systems of testing machines

2350 Methods of testing portland and blended cements.
Part 3: Normal consistency of portland and blended cements (AS 2350.3)
Part 6: Compressive strength of portland and blended cements (AS 2350.6)

EN
196 Methods of testing cement
Part 1: Determination of strength (EN 196.1)

Although not referred to in this Standard the following documents are of relevant interest:

Manual for the testing of cement strength—Cembureau, the European Cement Association.

The ISO/CEN Mortar prism test for cement strength—Operator's manual, Cement and Concrete Association of Australia.

3 PRINCIPAL FEATURES OF THE METHOD. The method comprises the determination of the compressive strength of prismatic test specimens 40 × 40 × 160 mm in size.

These specimens are cast from a batch of plastic mortar containing one part by mass of cement and three parts by mass of standard sand with a water-cement ratio of 0.50. Standard sands from various sources and countries may be used provided that they meet the requirements of EN 196.1.

The mortar is prepared by mechanical mixing and is compacted in a mould using a vibrating table.

The specimens in the mould are stored in a moist atmosphere for 24 h and then the demoulded specimens are stored under water until strength testing.

At the required age, the specimens are taken from their wet storage, and each end is tested for strength in compression.