

Under revision see DR89098

Superseded by AS 2350.2-1991

AS 2350.2—1980

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHODS OF TESTING PORTLAND AND BLENDED CEMENTS

AS 2350.2
CHEMICAL COMPOSITION OF PORTLAND CEMENT

1 SCOPE. This standard sets out the method for the determination of the chemical composition of portland cement.

2 APPARATUS. The following apparatus shall be used:

- (a) *Analytical balances.* Balances shall have a capacity of not less than 100 g in each pan and shall have an accuracy of not less than ± 0.2 g at full load. Analytical balances other than of the equal arm type may be used provided that the capacity and accuracy are not less than that specified for the equal arm type.
- (b) *Weights.* Weights shall comply with the requirements of the National Measurement Laboratory for Class B weights.
- (c) *Glassware.* Glassware and other vessels shall be chemically resistant and where applicable shall conform to the relevant Australian standards. (See AS 2162 for recommendations covering the use of volumetric glassware.)

3 REAGENTS. The reagents used shall be of an analytical reagent grade of purity conforming to the American Chemical Society's requirements for this grade. Where references to water are made, these references shall be understood to mean pure distilled water.

The reagents used shall have the following concentrations:

- (a) *Concentrated acids and ammonium hydroxide.* When acids and ammonium hydroxide are specified only by name or chemical formula, it shall be understood that concentrated reagents of the following densities or concentrations are intended:

Hydrochloric acid (HCl)	ρ_{20} 1160 kg/m ³
Hydrofluoric acid (HF)	48 percent
Nitric acid (HNO ₃)	ρ_{20} 1420 kg/m ³
Phosphoric acid (H ₃ PO ₄)	85 percent
Sulphuric acid (H ₂ SO ₄)	ρ_{20} 1840 kg/m ³
Ammonium hydroxide (NH ₄ OH)	ρ_{20} 900 kg/m ³

The desired density or concentration of all other concentrated acids is stated where they are specified.

- (b) *Dilute acids and ammonium hydroxide.* Concentrations of dilute acids and ammonium hydroxide, except when standardized, are specified as the ratio of the number of volumes of concentrated reagents to be added to a given number of volumes of water; e.g. HCl (1:99) means one volume of concentrated HCl (ρ_{20} 1160 kg/m³) added to 99 volumes of water.
- (c) *Non-standardized solutions.* Concentrations of non-standardized solutions prepared by dissolving a given mass of the solid reagent in a solvent are specified in grams of the reagent per litre of solution, and it shall be understood that water is the solvent unless otherwise specified; e.g. NaOH (10 g/L) means 10 g of NaOH dissolved in water and the solution diluted with water to 1 L.

For certain reagents the concentration may be specified as a percentage by mass; e.g. ethanol (50%) means a solution containing 50 g of ethanol per 100 g of solution.

Other non-standardized solutions may be specified by name only, and the concentrations of such solutions shall be governed by the instructions for their preparation.