

Australian Standard®

Methods of test for supplementary cementitious materials for use with portland cement

Method 4: Determination of autoclave expansion

PREFACE

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

METHOD

1 SCOPE This Standard sets out the reference method for determination of autoclave expansion of mortar containing supplementary cementitious materials.

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

AS

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| 1210 | SAA Unfired Pressure Vessels Code |
| 1315 | Portland cement |
| 1449 | Wrought alloy steels—Stainless and heat-resisting steel plate, sheet and strip |
| 2350 | Methods of testing portland and blended cements |
| 2350.3 | Method 3: Normal consistency of portland and blended cements |
| 3582 | Supplementary cementitious materials for use with portland cement |
| 3582.1 | Part 1: Fly Ash |

3 PRINCIPLE A specimen is prepared from a mortar containing the test sample. It is then measured and subjected to steam autoclaving for a prescribed period. After cooling it is remeasured, and the percentage change in length is reported.

4 APPARATUS The following apparatus is required:

- Autoclave, specified in Appendix A.
- Form mould, specified in Appendix A.
- Length comparator, specified in Appendix A.
- Moist cupboard or room, capable of maintaining the atmosphere within it at a temperature of $23 \pm 2^\circ\text{C}$ and at a relative humidity of not less than 90 percent.
- Water bath, of sufficient capacity to accommodate and fully immerse the test specimen, and which is capable of being controlled at 23°C to within $\pm 1^\circ\text{C}$ for not less than 15 min.

5 PREPARATION OF SPECIMENS

5.1 Preparation of paste Prepare a paste of normal consistency in accordance with the method set out in AS 2350.3, but using the following material quantities:

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| (a) Fly ash | 120 g |
| (b) Portland cement complying with AS 1315 | 480 g |