Test Method

Alkali Aggregate Reactivity Assessment - using the Concrete Prism Test

RC 376.04

1. Scope

This test method is suitable for the assessment of aggregates for Alkali Silica Reactivity and also for Alkali Carbonate Reactivity. The test follows AS 1012.13, except where noted below.

2. Apparatus

Apparatus shall be as used in AS 1012.13 except that:

(a) The drying room shall be replaced by a moist cabinet maintained at 38°C and at least 98% relative humidity

3. Procedure

The test is performed on duplicate specimens of concrete prisms and as per AS 1012.13 except that:

(a) Components of the mix shall be in accordance with the design and a minimum cement content equivalent to 420 Kg/m^3 .

(b) Mixing water shall be intermixed with sodium hydroxide, so that the level of cement alkali is adjusted to 1.38% Na_2O equivalent.

(c) All initial measurements shall be performed in a constant temperature room of 23+/- 2°C. All further measurements shall be performed after the specimens have recovered in the 23 +/- 2°C room overnight.

(d) Length measurements shall be carried out weekly in the first month and twice a month in next two months and then monthly up to age of one year, commencing from time of placing into the moist cabinet.

(e) Clause 8 of AS 1012.13, shall be replaced with clause 3 of this method.

4. Calculations and Reporting

The expansion is calculated as follows:

(a) For each period of storage time, subtract the mean initial length (mm), from the length measured, at that time (mm).

(b) Divide the difference obtained at step (a) by the original effective gauge length of 250 mm.

(c) Calculate the percentage expansion relative to the gauge length of 250 mm.

For each period of storage time for the one sample of concrete, calculate the average expansion of the duplicate results.

5. Aggregate Classification

Aggregate shall be classified as either:

(a) reactive when the average expansion at 12 months is greater than 0.03%, or

(b) non reactive when the average expansion at 12 months is equal to or below 0.03%.

Test Method - Revision Summary

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Date	Clause Number	Description of Revision	Authorised by
June 2013	Full document Cl 2 (a)	Re-issued with minor corrections made Re-named moist cabinet and change to minimum RH	Manager – Construction Materials