Australian Standard®

AS 1012.4.1:2014

Methods of testing concrete

Method 4.1: Determination of air content of freshly mixed concrete—Measuring reduction in concrete volume with increased air pressure

1 SCOPE

This Standard sets out the method for determining the air content of freshly mixed concrete from observations of the change in volume of the concrete when it is subjected to an increased air pressure (see Note 1). When performed for quality control purposes such as for plant production testing or for mixer uniformity tests, the apparent air content only may be sufficient.

The results obtained are dependent on the compaction method used. This Standard provides for compaction of the sample by rodding or by vibration or by using self compacting concrete (SCC) placed in the bowl.

NOTES:

1 This method is intended for use with concretes made with relatively dense natural aggregates for which the aggregate correction factor can be determined satisfactorily by the technique described in Clause 10. It is not recommended for use with concretes made with lightweight aggregates, or aggregates of high porosity (see AS 1012.4.3).

2 This Standard may involve hazardous materials, operations, and equipment. The Standard does not purport to address all of the safety problems associated with its use. The user of this Standard should establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1012 Methods of testing concrete
1012.1 Method 1: Sampling of fresh concrete
1012.2 Method 2: Preparation of concrete mixes in the laboratory
1012.3.1 Method 3.1: Determination of properties related to the consistency of concrete—Slump test
1012.4.3 Method 4.3: Determination of air content of freshly mixed concrete—Measuring air volume when concrete is dispersed in water

3 PRINCIPLE

The air content of freshly mixed concrete is determined by measuring the reduction in the volume of the concrete caused by the application of a specified pressure to the concrete.