

Australian Standard®

Methods for sampling and testing aggregates

Method 66: Methylene blue adsorption value of fine aggregate and mineral fillers

AS 1141.66—2012

PREFACE

This Standard incorporates Amendment No. 1 (December 2018). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

1 SCOPE

This Standard sets out a method for determining the methylene blue adsorption value (MBV) for fine aggregate and mineral fillers.

This method applies to aggregate of less than 5 mm nominal size and may be used for both natural and manufactured sands. The application of the test to slag, other artificial aggregate or to recycled aggregate has not been evaluated. The method tests the passing 75 µm fraction of a laboratory dried, unwashed fine aggregate sample.

For mineral fillers for asphalt, the test may be applied to fillers from bag house fines or from ground limestone products or to mixtures of these two materials. The test is not suitable for cement or fly ash fillers, and by definition, mineral fillers are 90% or more passing the 75 µm sieve. The test applies to the total sample of mineral filler and not to a test portion.

This Standard was developed from the International Slurry Surfacing Association (ISSA) Technical Bulletin No. 145, *Test method for the Determination of Methylene Blue Adsorption Value (MBV) of Mineral Aggregate Fillers and Fines*, proposed February 1989, 1st Revision 2005 and as modified by the Ohio Department of Transport with respect to solution concentration (also known as the AASHTO T330-2007 method).

NOTE: There are no text or technical differences between the 2005 version of the ISSA method and the version issued in February 1989.

2 APPLICATION AND INTERFERENCES

2.1 Application

Methylene blue dye is adsorbed onto the charged surfaces of clay particles. A dye test using methylene blue has found widespread use in soil science as a measure of the cationic exchange capacity of a soil. In this application, the test is used as an indicator of reactive clays (smectites) in the fine aggregate to be used in concrete and in mineral fillers to be used in asphalt.

This test is not to be confused with those tests that use the fines from a sample of clean crushed aggregate with methylene blue dye to test for reactive clays contained within the rock fabric.