

Testing Aggregates for Sprayed Bituminous Surfacing

1. Introduction

This Code of Practice sets down the procedures to be followed when sampling and testing Classes A, B and C aggregates for use in sprayed bituminous surfacing.

2. Lot Testing

Aggregates shall be tested in lots which shall be separately and independently assessed for compliance with VicRoads Standard Specification Section 831 - *Aggregates for Sprayed Bituminous Surfacing*.

A lot shall consist of not more than 350 tonne of aggregate of the same class and size, and which is uniform in appearance and has been produced under essentially uniform conditions. VicRoads may agree to lot sizes up to 700 tonne for quarry sources that are able to demonstrate a consistent history production, satisfactory test results and performance.

3. Test Methods

The following Australian Standards (AS) and VicRoads Test Methods (RC) are applicable:

AS 1141.3.1	Sampling - Aggregates
AS 1141.15	Flakiness index
AS 1141.18	Crushed particles in coarse aggregate derived from gravel
AS 1141.20.1	Average least dimension - Direct measurement (nominal size 10 mm and greater)
AS 1141.20.2	Average least dimension - Direct measurement (nominal size 5 mm & 7 mm)
AS 1141.20.3	Average least dimension - Calculation (nomograph)
AS 1289.1.4.1	Selection of sampling sites - Random number method.
AS 2891.3.3	Bitumen content and aggregate grading - Pressure filter method

RC 372.01	Coarse Aggregate Quality by Visual Assessment
RC 372.02	Preparation of Reference Specimens for Sound, Marginal and Unsound Stone
RC 375.11	Particle Size Distribution of Sealing Aggregate
RC 375.12	Percentage of Fine Material (< 75 µm) in Sealing Aggregate, by washing

4. Sampling

A sample shall be taken randomly from each lot prior to delivery to stock sites. The sample shall be taken not more than 90 days prior to delivery of material in the lot. The sample shall be obtained in accordance with the relevant provisions of AS 1141.3.1 and selected in accordance with AS 1289.1.4.1.

Any aggregate which appears visually not to comply with the specification shall be excluded from the lot before sampling commences.

Loads delivered from a stockpile which has been tested as a lot and conforms to the specification requirements do not require further testing.

Unless otherwise permitted by VicRoads, aggregates which are to be pre-coated shall be sampled for testing prior to pre-coating.

5. Testing

(a) Particle size distribution

Each sample shall be tested for particle size distribution in accordance with RC 375.11 or RC 375.12, as appropriate, using the method of washing and dry sieving, unless otherwise permitted by VicRoads.

The percentage passing the 75 µm (0.075 mm) sieve shall be reported to the nearest 0.1 %.

(b) Flakiness Index

Each sample of aggregate shall be tested for Flakiness Index in accordance with AS 1141.15.

(c) Average least dimension

For testing aggregates for average least dimension (ALD), the following applies to determine the ALD for the lot:

1. For 5 mm and 7 mm aggregate, ALD shall be determined only using AS 1141.20.2.
2. For aggregate of nominal size 10 mm and greater, ALD shall be determined using either AS 1141.20.1 or AS 1141.20.3.
To resolve disputes, the referee method is AS 1141.20.1.

(d) Coarse aggregate quality

When applicable, samples shall also be tested for coarse aggregate quality in accordance with RC 372.01. Where daily production of the same source and class of aggregate exceeds 350 tonne, only one individual lot of any aggregate size needs to be tested for coarse aggregate quality.

(e) Percentage of crushed particles

When applicable, samples shall also be tested for percentage of crushed particles in accordance with AS 1141.18.

(f) Precoated aggregates

If, for any reason, aggregate that has been pre-coated is to be tested:

- (i) a sub-sample for the sample taken shall be tested in accordance with AS 2891.3.3 to determine the particle size distribution of the fine portion of the aggregate, in particular the percentage of material passing the 2.36 mm and 600 µm sieves, and the percentage of pre-coating material in the sample; and
- (ii) another sub-sample for the sample taken shall be tested in accordance with AS 1141.18, AS 1141.15 and RC 372.01, as applicable.

NOTE: A sample that is coated with a flammable pre-coating material should be dried in an oven complying with AS 1691 Type 1 (explosion proof), controlled to operate at a temperature of 105°-110°C.

6. Re-testing

Re-testing shall not be undertaken merely because, on the basis of results of the first testing, the lot was deemed to have failed.

Re-testing shall be undertaken only if an error is known or reasonably suspected to have occurred in the sampling and testing procedures.

When re-testing is required due to a known or reasonably suspected error in sampling and testing procedures, the results from the first testing shall be discarded and only the results from the second testing shall be used.

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VicRoads Code of Practice - Revision Summary

RC 500.09 - Testing Aggregates for Sprayed Bituminous Surfacing

Date	Clause	Description of Revision	Authorised by
July 2018	3 – Table & 5(a) 5(c)	Deleted AS 1141.11.1 and AS 1141.12 (not now relevant) Deleted references to dates	Principal Advisor – Pavements, Geotech & Materials
May 2018	Cl 3 Table & Cl 5	Marked AS 1141.11.1 and AS 1141.12 as accepted methods only until 30 June 2018 Added AS 1141.12, RC 375.11 and RC 375.12	Principal Advisor – Pavements, Geotech & Materials
	Cl 5	Adjusted reporting requirements for material passing 0.075 mm sieve	
	Cl 5	From 1 July 2018, ALD for 5 and 7 mm aggregate determined by AS 1141.20.2 only. Specific instruction for aggregate 10 mm and greater	
	Cl 5	Sub-numbering of tests	
December 2012	Full document	Updated in line with revised requirements in Section 831, 2012 release	Principal Advisor – Pavements & Materials