

NZTA M13: 2025

Specification for Adhesion Agents

1 Scope

This specification sets out the requirements for anti-stripping (adhesion) agents for use in cutback bitumen for chip sealing. It defines the procedure by which an adhesion (anti-stripping) agent can be demonstrated to be compatible with a bituminous binder and a sealing chip aggregate for cutback bitumen surfacing.

2 Referenced Documents

- (a) NZ Transport Agency NZTA M06 Specification for Sealing Chip.
- (b) NZ Transport Agency NZTA T31 Method of Measuring the Active Adhesion Between a Bituminous Binder and a Chip Seal Aggregate
- (c) Standards New Zealand NZS ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories

3 Definitions

- (a) Testing agency: The Testing Agency shall be a laboratory accredited to NZS ISO/IEC 17025 and experienced with testing bituminous materials.
- (b) Accreditation Body: an organisation that accredits testing laboratories as compliant with the requirements of NZS ISO/IEC 17025. Normally this will be International Accreditation New Zealand (IANZ).

4 Quality Management Requirements

All sampling and testing required by this specification shall be carried out by, or under the direct control of the Testing Agency and test reports shall carry the endorsement of the Accreditation Body.

5 Approval

The Contractor shall arrange for the particular adhesion agent and its proposed dosage rate to be tested with each aggregate source to be used for cutback bitumen sealing.

The adhesion agent and dosage rate for a particular chip source will be considered approved and compliant with this specification when the adhesion agent gives a Binder Aggregate Adhesion Test result not less than 80% using the method of NZTA T31, with the proviso that at least a 0.5pph dosage rate (by mass) of adhesion agent be used.

The Contractor shall provide the Principal with results from the testing agency of satisfactory binder aggregate adhesion test.

Approval shall be withdrawn if change of chip source or adhesion agent quality produces a Binder Aggregate Adhesion Test result of less than 80%.

6 Requirements for Testing

6.1 Chip Sample

The Contractor shall provide a sample of sealing chips from each source to the testing agency. The sample shall be at least 15 kg of NZTA M06 Grade 3 sealing chips or sufficient quantity of other aggregate of sealing chip quality to produce a 10kg sample which passes a 13.2mm sieve and is retained by a 9.5mm sieve.

The sieved sample shall comply with the requirements of AGD/ALD ratio and ALD for Grade 3 chip specified in NZTA M06.

6.2 Adhesion Agent

The Contractor shall supply the testing agency with the following material and information.

- (a) Trade name of adhesion agent.
- (b) At least 100g of each adhesion agent to be tested.
- (c) The proposed dosage rate for each test. The dosage rate shall be expressed as parts per hundred parts of bitumen at 15°C by mass for solid adhesion agents and by volume for liquid adhesion agents (at 15°C).
- (d) The Material Safety Data Sheet (MSD) for the specific adhesion agent.
- (e) Geological name and quarry of the parent stone for each nominated chip source.

6.3 Test Results

The testing agency shall report the following information for each Binder Aggregate Adhesion test:

- (a) The sealing chip source location.
- (b) The geological name and quarry of the parent stone.
- (c) The average adhesion value expressed as percentage from four test plates.
- (d) The name of the adhesion agent and nominated additive rate tested.
- (e) Specific test conditions for adhesion agents containing diluents as supplied by the manufacturer.