

# TRANSPORT FOR NSW (TfNSW)

## QA SPECIFICATION 3254

### BITUMEN EMULSION

#### NOTICE

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#### REVISION REGISTER

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Ed 7	1 2 & 3 2, 4 4 5 7.3 Annexure 3254/1 A1	Include bitumen emulsion with or without polymers Replaced ISO 9002 with ISO 9001 Reference to AS 2008 deleted Include minimum residual binder content requirement Include retention of properties during transport and storage Include Classification of bitumen emulsion, "Use by" date and Materials Safety Data Sheet requirements New annexure - Schedule of Identified Records Update nomenclature	GM, RNIC	31.08.01
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Ed 9/Rev 0 (cont'd)	Global  3 5 5 8.3, 8.4  Annex D  Annex M Appendix A, section A1 Appendix A, sections A2 & A4	Text revised to direct imperative style. “shall” replaced by “must”. Clauses rearranged and renumbered. Reformatting and minor editing to clarify intent.  Definitions of “you” and “your” added  Terminology change - “classification” to “designation”  Example of bitumen designation added  Additional details for “Details of Consignment” and “Information to be Provided” added  MSDS added to Schedule of Identified Records  References updated  Separate “grade” and “designation” details consolidated under “designation”.  Clauses re-written to improve clarity		
Ed 9/Rev 1	Global	References to “Roads and Maritime Services” or “RMS” changed to “Transport for NSW” or “TfNSW” respectively.	DCS	22.06.20



# BITUMEN EMULSION

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VERSION FOR: DATE:
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## FOREWORD

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### REVISIONS TO PREVIOUS VERSION

This document has been revised from Specification TfNSW 3254 Edition 9 Revision 0.

All revisions to the previous version (other than minor editorial and project specific changes) are indicated by a vertical line in the margin as shown here, except when it is a new edition and the text has been extensively rewritten.

### PROJECT SPECIFIC CHANGES

Any project specific changes are indicated in the following manner:

- (a) Text which is additional to the base document and which is included in the Specification is shown in bold italics e.g. ***Additional Text***.
- (b) Text which has been deleted from the base document and which is not included in the Specification is shown struck out e.g. ~~Deleted Text~~.

## **TfNSW QA SPECIFICATION 3254**

### **BITUMEN EMULSION**

#### **1 SCOPE**

This Specification sets out the requirements for the supply and delivery of anionic and cationic bitumen emulsions with or without polymers.

#### **2 STRUCTURE OF THE SPECIFICATION**

This Specification includes a series of annexures that detail additional requirements.

##### **2.1 (NOT USED)**

##### **2.2 SCHEDULE OF IDENTIFIED RECORDS**

The records listed in Annexure 3254/C are **Identified Records** for the purposes of Specification TfNSW Q Annexure Q/E.

##### **2.3 (NOT USED)**

##### **2.4 REFERENCED DOCUMENTS AND DEFINITIONS**

Unless specified otherwise, the applicable issue of a referenced document, other than a TfNSW Specification, must be the issue current at the date one week before the closing date for tenders, or where no issue is current at that date, the most recent issue.

Standards, specifications and test methods are referred to in abbreviated form (e.g. AS 2350). For convenience, the full titles are given in Annexure 3254/M.

The term “the Supplier” means the supplier of the product covered by the scope of this Specification.

#### **3 (NOT USED)**

#### **4 SUPPLIER’S QUALITY MANAGEMENT SYSTEM**

The Supplier must establish and maintain a Quality Management System complying with AS/NZS ISO 9001 as a means of ensuring that the product conforms to this Specification.

Provide evidence verifying compliance with this Clause.

## 5 DESIGNATION

Designation of the bitumen emulsion must include the following:

- (i) type (anionic or cationic);
- (ii) grade (based on setting time) according to AS 1160;
- (iii) class of bitumen;
- (iv) minimum percentage of residual bitumen content in the emulsion.

For example, **CRS/170-67** represents:

- CRS** Cationic Rapid Setting grade emulsion;
- 170** Class 170 residual bitumen;
- 67** minimum percentage of binder.

**Note:** If a polymer is present in the bituminous emulsion, the suffix 'P' must be added to the designation to generally signify the presence of a polymer modifier.

## 6 MATERIAL REQUIREMENTS

Verify that the production batch complies with the properties for its type and grade as set down in AS 1160, except that the residue from evaporation of Cationic Aggregate Mixing (CAM) emulsion must be determined in accordance with Test Method TfNSW T560. Report test results on NATA endorsed test documents.

For bitumen emulsions listed in Table 1 of AS 1160, the retention of properties of the bitumen emulsion during transport and storage in the original container in an appropriate manner, must be such that when the bitumen emulsion is tested at any time up to 90 days after manufacture, it must comply with all requirements of this Specification. Unless agreed otherwise, despatch must be within 10 days of manufacture.

The material must also comply with these requirements at the point of delivery.

## 7 PRODUCT CERTIFICATION

Provide a certificate of compliance verifying that the bitumen emulsion complies with Clause 6 of this Specification for the relevant grade and type of bitumen emulsion as specified in AS 1160, together with results for all tests reported on NATA endorsed test documents.

The certification must relate only to the formulation on which the tests were made.

New certification will be required every 5 years or whenever a change in product formulation is made.



## **8 DELIVERY**

### **8.1 CONTAINERS**

Make deliveries in either 205 litre steel drums of the returnable, bung type or bulk road or rail tankers as ordered.

All containers must be in good condition.

### **8.2 DELIVERY PROCEDURES**

As part of the Quality Management System, implement delivery procedures which ensure that all containers are clean and free from any deleterious material prior to filling with emulsion. The delivery procedures must include periodic sampling from containers to verify compliance with Clause 6.

If adequate delivery procedures are not maintained, take samples, for testing, at the point of delivery in accordance with Clause 9.

Fill all drums to hold at least 200 litres. Partly filled drums will not be accepted.

### **8.3 DETAILS OF CONSIGNMENT**

Mark each container clearly and durably with the following information:

- (a) Name of manufacturer and/or supplier;
- (b) Product name or trade name;
- (c) Product reference number or identification number (if any);
- (d) Nominal quantity;
- (e) Batch number;
- (f) Date of manufacture;
- (g) Designation (as per Clause 5);
- (h) "Use by" date.

### **8.4 INFORMATION TO BE PROVIDED BY SUPPLIER**

Provide the following details with each delivery:

- (a) documentary evidence that the delivery procedures in Clause 8.2 have been complied with for that delivery;
- (b) documentary evidence that the production batch complied with the material requirements in Clause 6;
- (c) Safety Data Sheet;
- (d) special handling requirements, if any.

## **9 SAMPLING AND TESTING**

Carry out all sampling in accordance with the relevant procedure of AS 1160.

Where sampling is carried out at the point of delivery (reference Clause 8.2), submit to the Purchaser, within fourteen days of delivery, test results demonstrating compliance with AS 1160 for:

- (a) Setting Time;
- (b) Residue from Evaporation;
- (c) Sieve Residue;
- (d) Consistency at 25°C (Engler Viscometer);
- (e) Stone Coating Ability (for CAM grade);

Report test results on NATA endorsed test documents.

**ANNEXURES 3254/A TO 3254/B – (NOT USED)****ANNEXURE 3254/C – SCHEDULE OF IDENTIFIED RECORDS**

Refer to Clause 2.2.

The records listed below are Identified Records for the purposes of TfNSW Q Annexure Q/E.

<b>Clause</b>	<b>Description of Identified Records</b>
6	Verification that the production batch complies with all relevant requirements together with test results on NATA endorsed test documents
7	Certificate of compliance verifying that the bitumen emulsion complies with the Specification together with results for all tests reported on NATA endorsed test documents
8.4	Safety Data Sheet
9	Test results demonstrating compliance with AS 1160 on NATA endorsed test documents

**ANNEXURES 3254/D TO 3254/L – (NOT USED)****ANNEXURE 3254/M – REFERENCED DOCUMENTS**

Refer to Clause 2.4.

**TfNSW Specification**

TfNSW Q                      Quality Management System

**TfNSW Test Methods**

TfNSW T510                      Viscosity of CAM and HBC Bitumen Emulsion – Redwood No.2.

TfNSW T560                      Apparent Bitumen Content of Bitumen Emulsion and Recovery of Bitumen for Testing.

**Australian Standards**

AS 1160                      Bitumen emulsions for the construction and maintenance of pavements.

AS/NZS ISO 9001                      Quality management systems – Requirements

## APPENDIX A

The requirements of this Appendix apply where the order on the Supplier is placed directly by the Transport for NSW (TfNSW).

### A1 INFORMATION TO BE STATED BY THE PURCHASER.

The TfNSW must state the following information at the time of order:

- (a) Designation of bitumen emulsion, including type (refer Clause 5).
- (b) Any binder modification required (e.g. polymer modified).
- (c) Quantity, with delivery dates and schedules, and delivery point.
- (d) Requirements for consistency if other than those specified (CAM to be 50 - 200 seconds as measured by Test Method TfNSW T510).
- (e) Intended use or uses for the emulsion, where appropriate.

### A2 DEMURRAGE CHARGES

The Supplier must load the vehicles to be used for delivering the bitumen emulsion and despatch them to their delivery destination promptly. The Supplier is liable for any demurrage or other charges that may be levied by the transport company as a result of any delay by the Supplier in loading and despatch of the vehicle.

### A3 MEASUREMENT

For bitumen emulsion supplied in drums, measurement for payment purposes is based on a nominal 200 litre capacity. For bulk delivery, measurement for payment purposes is by net mass as measured on a certified weighbridge.

### A4 PAYMENT

Payment for bitumen emulsion conforming to the specification will be made on the basis of the quantities measured in accordance with Clause A3.

Where sampling at the point of delivery is carried out (refer Clause 8.2), the Supplier must provide the TfNSW with the required test results before payment can be made.

In the event that the bitumen emulsion delivered does not conform to the Specification, the cost of loading, freight and other charges incurred by the TfNSW prior to, or subsequent to, the material being rejected will be a charge against the Supplier.

Payment for bitumen emulsion will be based on the bitumen content. Material supplied with a "Residue from Evaporation" less than the amount specified (as measured by Test Method TfNSW T560), may be accepted at the sole discretion of the TfNSW, but subject to a deduction such that the payment rate is reduced in the same ratio as that between the actual measured "Residue from Evaporation" to the minimum specified "Residue from Evaporation".