TNZ Q/2:1995

SPECIFICATION FOR QUALITY ASSURANCE FOR HOT MIX ASPHALT

1. SCOPE

This specification covers the quality assurance requirements for contracts which include surfacings work incorporating hot mix asphalt.

2. SYSTEM REQUIREMENTS

Surfacings work shall be carried out by a contractor who has an approved quality assurance system in place that has been certified by a Joint Accreditation System Australia and New Zealand (JAS-ANZ) accredited agency.

The approved quality assurance systems are either:

- NZS ISO 9002:1987 or NZS ISO 9002:1994; or
- Transit New Zealand Quality Standard TQS1:1994;

This system shall be in place prior to award of the contract.

The approved quality assurance system shall also include the technical requirements for the control of hot mix asphalt stated in this specification Q/2.

3. TECHNICAL REQUIREMENTS

The control of hot mix asphalt is defined under four headings: design, production, delivery, and construction. For each heading, procedures and documentation shall be provided to cover the components detailed in this specification Q/2.

4. DESIGN

Before construction for a design and build contract, and before tendering for all other contracts, the following checks must be performed.

4.1 Contract Review

A contract review shall be performed to verify the availability and suitability of resources proposed for the contract, and the appropriateness of the contract time frame.

4.2 Materials

Specific checks shall be made for materials which are intended for use in the contract including:

(a) Aggregate — check that the intended aggregate source can meet the specified source and production properties.

(b) Bitumen — check the availability of the specified bitumen grade and quality.

(c) Other materials — check the availability of specified materials, the shelf life, that the grade and quality are within the specified limits, and that the handling and storage facilities are adequate for the intended purposes.

4.3 Mix Design

Check the practicality and availability of the mix design and values.

4.4 Production and Laying Tolerances

Check that specified design criteria are within current plant capabilities.

5. PRODUCTION

Process control of hot mix asphalt production must consist of a system that details the methodology for controlling the following components.

5.1 Plant

(a) The calibration method, frequency of calibration verification, and recalibration procedures shall be defined for:

— aggregate feeders and proportioning system;

— bitumen proportioning and temperature control system.

(b) Dryer/mixer methodology shall be defined for the control of:

— temperature;

— mixing effectiveness;

— moisture content.

(c) Inspection and laboratory testing: Inspection and laboratory testing methods and frequencies for sampling and testing shall be detailed, including reporting and analysis methodologies.

5.2 Materials

Procedures for controlling aggregate, bitumen, and any additive shall be stated, and these shall include the requirements for:

— material specification;

— delivery acceptance;

— handling and stockpiling or storage;

— compliance testing.

5.3 Reporting and Authorisation

Procedures for controlling non-conformance of materials or processes in accordance with the quality plan shall be detailed, including the identification of personnel authorised to stop or reject production.

Procedures for increasing inspection frequency when non-conformance is encountered shall be detailed.

6. DELIVERY

Delivery and transportation of hot mix asphalt must be controlled by a system that addresses the following components.

6.1 Storage

The storage system must maintain control of:

— maximum time from mixing to delivery;

— temperature of the mix delivered to the truck.

Procedures shall also be detailed which cover the methods and inspection procedures employed to minimise aggregate segregation.

6.2 Sales/Dispatch

Systems must be in place which cover:

(a) Calibration and certification of the weighing system which is used to measure products sold/dispatched from the plant;

(b) Documentation specifying as a minimum:

— truck identification
— time and date
— temperature of hot mix asphalt
— tonnage supplied.

(c) Maintaining communication with the laying crew.

6.3 Transport

Procedures for transport of the hot mix asphalt shall be detailed covering:

— inspection of the truck deck;

— use of release agents;

— insulation and protection of the mix;

— instructions to the driver regarding delivery to the work site, safe handling procedures, return of undelivered material, and a contingency plan for spillages.

7. CONSTRUCTION

Control systems shall be detailed to cover site acceptance, plant, and laying/compaction methodology.

7.1 Site Acceptance

Procedures shall be established to assess the site that include:

— adequacy and suitability of the existing surface for the proposed treatment;

— surface levels;

— surface tolerances;

— surface moisture conditions;

— weather conditions.

7.2 Plant

A methodology shall be included to check the suitability of the paver, rollers and tack coat sprayer for use in the contract.

The calibration method and frequency of calibration verification for level and compaction control equipment shall be defined.

7.3 Methodology

(a) A methodology for laying hot mix asphalt shall be detailed that includes:

- surface preparation;
- tack coat application;
- traffic control;
- laying pattern;
- compaction pattern;
- joint construction;
- hand spreading;
- temperature control;
- control of surface shape, level and mat thickness.

(b) A methodology for compacting hot mix asphalt shall be detailed that includes:

- density control;
- compaction temperature;
- control of surface shape and level;
- compaction pattern;
- traffic control.