PART R47

SUPPLY AND APPLICATION OF AUDIO TACTILE LINE MARKING

CONTENTS

1. GENERAL

This Part specifies the requirements for the supply and application of Audio Tactile Line Marking (**"ATLM"**).

Documents referenced in this Part are listed below:

AS 4049.2.	Paints & Related Materials – Pavement Marking Materials
AS 2009	Glass Beads for Pavement Marking Materials

"PCCP" means Painting Contractors Certification Program (refer www.apas.gov.au/pccp).

2. QUALITY REQUIREMENTS

The Contractor must prepare and implement a Quality Plan that includes detailed procedures for:

(a) Ensuring that the plant, processes and personnel used to apply ATLM comply with the specified certification requirements and are capable of delivering the quality of marking required;

(b) Controlling the quality of materials used;

(c) Verifying that materials have been applied at the specified application rates; and

(d) Verifying that the field performance meets specified requirements.

If not submitted beforehand, the procedures must be submitted at least 28 days prior to the commencement of site work.

Provision of the documentation listed in this Clause shall constitute a **HOLD POINT.**

3. CONTRACTOR ACCREDITATION

The work must be undertaken by a company that has PCCP accreditation for Class 22-2, Audio-Tactile markings.

4. MATERIALS

4.1 Thermoplastic Pavement Marking Material

Thermoplastic pavement marking material must comply with the requirements of AS 4049.2 except as modified below:

(a) Softening Point

When determined in accordance with AS 2341.18, the softening point must not be less than 95^{o}C.

(b) Cold Flow

When determined in accordance with AS 4049.2 Appendix 1, the cold flow must be no more than 5% at 40 ^{o}C.

Thermoplastic pavement marking material intended for use under this Contract must provide a functional service life of at least 5 years. The colour of the thermoplastic pavement marking material must be white as described in AS 4049.2.

4.2 Product Certification

The Contractor must provide, prior to delivery, a certificate of compliance verifying that the thermoplastic pavement marking material complies with Clause 4.1, together with the results of the relevant tests. The tests must be carried out by a laboratory accredited by NATA to carry out such tests.

Certificates relate only to the formulation on which the tests were made and must be valid for not more than three years. New certification must be provided whenever changes in product formulation are made.

Provision of the certificates shall constitute a **HOLD POINT**.

4.3 Beads

Glass beads must comply with AS 2009, Type B beads (drop-on beads) and APAS 0042.

5. APPLICATION OF ATLM

5.1 Site Preparation

The Contractor must prepare the site including removal of existing unsound pavement markings. Where the ATLM is to be applied to a surface where it may be incompatible with the existing marking or surface, the surface must be suitably treated.

Where the existing material is flaking or chipping, is of a type or is in such a condition that adhesion of the new material to the road surface cannot be guaranteed for the required life of the marking, the Contractor must obtain the agreement of the Superintendent to the proposed method of surface preparation and its extent.

The area to be marked must be dry and free of dirt, gravel, flaking pavement marking material and other loose or foreign material. The area around the marking must also be free of dirt, gravel and other loose or foreign material so that tracking of such material on to the new marking is avoided.

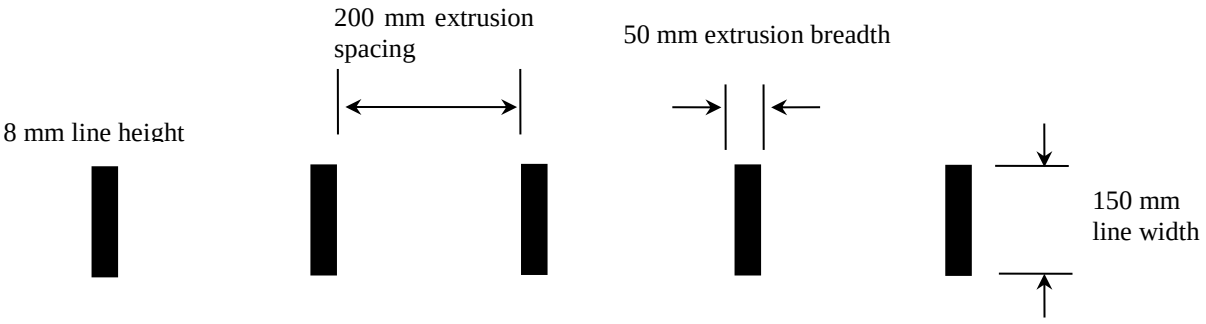
Where removal of unsuitable pavement marking is required, the removal must be undertaken so as to not adversely affect the skid resistance, texture depth, susceptibility to ponding and appearance of the road surface. The Contractor must obtain approval of the proposed removal method prior to undertaking the removal. Any materials produced by removal activity must be immediately collected and removed from site and disposed of in an environmentally acceptable manner.

5.2 Spotting Alignment

The Contractor must complete any spotting that may be required for the installation of the ATLM. If the edge line is missing the spotting must be completed to match the correct lane widths for that section of road.

5.3 Pattern and Dimensions

Unless specified otherwise, the pattern must conform to the following dimensions:



5.4 Application of Beads

Glass beads must be sprinkled or sprayed on to the thermoplastic pavement marking material while it is in a fluid state immediately after it has been applied to the pavement. The surface beads must be distributed to give a uniform coverage over the whole surface of the plastic material.

5.5 Test Run

The Contractor must apply an initial run of ATLM over a distance of 1 km. At the completion of this initial run a **HOLD POINT** shall apply.

5.6 Tolerances

Unless otherwise specified, the ATLM must be installed within the tolerance specified in Table 5.6 “Tolerances”.

TABLE 5.6 TOLERANCES	
Line width	+ 20 mm, - 5 mm
Line height	+ 2 mm, - 0 mm
Extrusion breadth	+ 10 mm, - 0 mm
Extrusion spacing	± 15 mm
Extrusion shape	± 10 mm at any point from rectangular shape.
Distance between the centreline of the ATLM and the centreline of the existing marking or spotting	< 20 mm

The apparent line of the markings must be smooth and continuous when viewed in the direction of the line

5.7 Protection of Work

The Contractor is responsible for protecting the work by an appropriate means until the work can be trafficked without being picked up and/or spread by tyres of passing traffic. If pick-up does occur, the Contractor must remove the spread thermoplastic material.

6. TESTING AND ACCEPTANCE

The completed ATLM must be uniform in appearance, texture, width and thickness and the surface must be free from blisters, air bubbles, tears, lumps, streaks, overlaps, unbeaded areas, tyre marks or other defects.

The Contractor must prove the test results specified in Clause 8 “verification Requirements and Records”. The minimum thickness of ATLM specified must be determined from the height above the upper road surface level including glass beads.

7. RECTIFICATION OF DEFECTS

The Contractor must maintain the ATLM for a period of 18 months and during that time must carry out remedial work to rectify defective sections where:

(a) ATLM was not installed to specified dimensions, or distorted in shape or lost shape due to any reason, other than normal wear, such that the height of individual extrusions is less than 6 mm above the top of adjacent road surface aggregate particles, over more than 10% of the length of the marking;

(b) ATLM has shattered or no longer adheres to the road surface over more than 1% of the length of the marking; or

(c) ATLM has shattered or no longer adheres to the road surface over a continuous length exceeding 5 m.

8. VERIFICATION REQUIREMENTS AND RECORDS

The Contractor must undertake the testing specified in this Clause and must supply written evidence of compliance on a weekly basis.

CLAUSE REF.	SUBJECT	PROPERTY	PROCEDURE	FREQUENCY	ACCEPTANCE LIMITS
5.3	Application of ATLM	Pattern and Dimensions	Contractor to provide a record of field measurements	minimum every 500 metres of marking	Refer Clause 4.6 "Tolerances"
5.4	Application of Beads	Application Rate of Glass Beads	Contractor to provide evidence through materials consumption and area	2 per day or 1 per visit of line marker whichever is the greater; and after pressure or speed settings are changed.	Minimum of 300 g/m2 retained on the marking surface

9. HOLD POINTS

The following is a summary of Hold Points referenced in this Part:

CLAUSE REF.	HOLD POINT	RESPONSE TIME
2	Quality Documentation	7 working days
4.2	Product Certification	1 working day
5.5	After completion of the initial 1 km of applied markings	Within 1 hour