

CERTIFICATE OF COMPLIANCE
NZTA T/12:2013

Applicator: Hino FC Mac Stripper, registration number BQY303, fleet number T91, Plant Number:116033 Type LA

Owner: Downer NZ Ltd
Private Bag 93225
Otahuhu
Auckland

Test Description: **The pavement marking applicator as described by this certificate has been tested under the conditions described and found to comply with the relevant requirements of TNZ Specification NZTA T/12:2013.**

Test Conditions: The scope of the Certification was as follows:
1) Application of Extruded Flat Thermoplastic to Schedule One, with thickness in accordance with NZTA P/22:2006, NZTA P30:2008 and NZTA T12:2013.
2) Application of Audio Tactile Markings to Schedule Two, with markings in accordance with NZTA M/24:2006, NZTA P30:2008 and NZTA T12:2013.
3) Application of Profiled Multi Dot Line Markings to Schedule Three, with thickness in accordance with ITS Multi Dot Line Technical Specification NZTA P/30:2008 and NZTA T/12:2013.

Test Identification: The tests were carried out at the Downer NZ Depot at 645 Great South Rd Penrose, from October 18th 2017 to October 25th 2017.
The Applicator Chassis Number is JHDFC4JJPXXX101157.
The test materials used were:
Ennis Premium Extrusion Grade for Schedule One.
Ennis Premium A/P Grade for Schedule Two.
Ennis Premium Multi Dot Grade for Schedule Three.
Ennis Intermediate Glass Beads were used for Schedule One and Three
Potters Type B Drop-On Glass Beads were used for Schedule Two

Equipment Tested:

Extrusion Heads	Mini Mac	FC
	Hofmann Multi Dot Line	
	ITS Profile Head	
Extruder	Mini Mac 75mm	FC
Temperature Controller	Carel	FC
Compressor	Ingersoll Rand	8830199
Speedometer	Roadmarker	FC
Bead Gun	VisiMax Bead Gun	FC

Applicator speeds:

Schedule	Line Width			
	100mm	150mm	200mm	300mm
One		4.4		
Two		2.9		
Three		4.7		

Special Notes: The applicator is not capable of applying turn arrows.

Premelter: Nissan PreMelter Unit XG2463 T/18 Certificate No:4451 was used for the T/12 tests.

Schedule One

Extruded Flat Thermoplastic in Accordance with NZTA P/22:2006

The markings when applied to flat electro-galvanised steel plates met all dimension and performance requirements as specified in NZTA P22: 2006, NZTA P30: 2008 and NZTA T12:2013.

The values specified in NZTA P/22:2006 used for determination of compliance were as follows:

Gap Length Between Segments

- Where gap is 3.0m or more $\pm 300\text{mm}$
- Where gap is less than 3.0m but greater than 1.0m $\pm 150\text{mm}$
- Where gap is 1.0m or less $\pm 50\text{mm}$

Length of Segments

- Where segment is longer than 5.0m $\pm 150\text{mm}$
- Where segment is shorter than 5.0m but longer than 1.0m $\pm 75\text{mm}$
- Where segment is 1.0m or shorter $\pm 50\text{mm}$

Thermoplastic Line Width

All line widths $+10\% - 5\%$

Thermoplastic Height

- New markings – asphalt 2.0 – 2.5mm
- New markings – chipseal 2.0 – 3.0mm

Retroreflectivity

AS/NZS 2009 Ennis Intermix Glass beads applied uniformly at a minimum rate of 300 grams/m²
Reflectivity (dry – R): A minimum of 150 mcd/m²/lux.
Reflectivity (condition of wetness – RW): A minimum of 80 mcd/m²/lux.

Skid Resistance

Greater than 50 BPN but less than 65 BPN



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Schedule Two

Thermoplastic Audio-Tactile in Accordance with NZTA M24: 2006, NZTA P/30:2008 and T/12:2013

The markings when applied to flat electro-galvanised steel plates meet all dimension and performance requirements as specified in NZTA M24: 2006 Specification for Audio-Tactile Profiled Roadmarkings, NZTA P/30:2008 Specification for High Performance Roadmarkings and NZTA T/12:2013 Specification For Long-Life Pavement Marking Material Applicator Testing.

The values specified in NZTA M/24, NZTA P/30 and NZTA T/12:2013 used for determination of compliance were as follows.

Thermoplastic Line Width

All line widths +10% - 5%

Thermoplastic Base Height

N/A Profile Blocks only

Raised Blocks

Spacing between blocks +5% - 5% of specified value (250mm)

Spacing between blocks +5% - 5% of specified value (500mm)

Length of block +30% - 20% of specified value (500mm)

Width of block +30% - 20% of specified value (100mm, 150mm & 200mm)

Block Height -5% +15% of specified value (15mm)

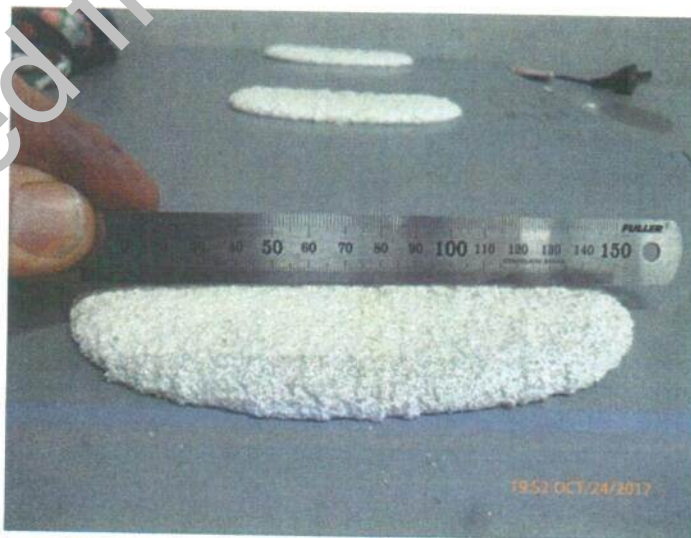
Retroreflectivity

AS/NZS 2009 Potters Drop-On Glass beads applied uniformly at a minimum rate of 275 grams/m².

Reflectivity (dry - R): A minimum of 150 mcd/m²/lux.

Reflectivity (condition of wetness - RW): A minimum of 80 mcd/m²/lux.

Skid Resistance *Not Applicable*



Schedule Three

Profiled "MultiDotLine" - markings in Accordance with ITS Technical Specification, NZTA P/30:2008, and NZTA T/12:2013

MultiDotLine Application

Inside of a housing a hollow cylinder (scattering drum) positioned at the periphery and equipped with outlets is rotating during forward movement of the extruder. At a lockable slot, which width corresponds to the requested line width, outlets continuously open and close when the cylinder periphery is sliding along towards the road. Through these outlets the thermoplastic marking material will be applied in portions on the road.

The result is an exact defined regular pattern with regular distribution.

The markings when applied to flat electro-galvanised steel plates meet all dimension and performance requirements as specified in NZTA P/30:2008 Specification for High Performance Roadmarkings.

The values specified in NZTA P/30:2008 used for determination of compliance were as follows:

Gap Length Between Segments

Where gap is 3.0m or more $\pm 300\text{mm}$

Where gap is less than 3.0m but greater than 1.0m $\pm 150\text{mm}$

Where gap is 1.0m or less $\pm 50\text{mm}$

Length of Segments

Where segment is longer than 5.0m $\pm 150\text{mm}$

Where segment is shorter than 5.0m but longer than 1.0m $\pm 75\text{mm}$

Where segment is 1.0m or shorter $\pm 50\text{mm}$

MultiDotLine Dots

Dot height $4.0\text{mm} \pm 1.0\text{mm}$

Length of Dot $+30\% - 20\%$ of specified value (50mm)

Width of Dot $+30\% - 20\%$ of specified value (20mm)

Minimum material application rate of 6kg/m^2

A coverage between 55 and 75%

MultiDotLine Width

All line width $+10\% - 5\%$

Retroreflectivity

AS/NZS 2609 Ennis Intermix Glass beads applied uniformly at a minimum rate of 300 grams/m^2

Reflectivity (dry – R): A minimum of $150\text{ mcd/m}^2/\text{lux}$.

Reflectivity (condition of wetness – RW):

A minimum of $80\text{ mcd/m}^2/\text{lux}$.

Skid Resistance

Greater than 50 BPN but less than 65 BPN





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 **The New Zealand Roadmarkers Federation Inc**
PO Box 13 606, Auckland
Phone: (09) 625 7470

Registration Details: {NZRF Stamp & Unique Number}

Initial Certificate Issuing Officer: R J Ridings
Quality Surveillance Ltd

Testing Officer: P Del Favero
Downer NZ LTD

Date of Expiry: 18 October 2018

Signed: 