



Asset Management Section – Head Office

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Highway Management Division Memorandum No. SM 8/02/01

Subject: Interim SH Texture Requirements

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1. Purpose

The purpose of this memo is to define requirements for texture of existing surfaces pending completion of further research work and implementation in T/10

This memo supersedes the instructions attached to the SCRIM+ Exception Report relating to texture distributed to Regions earlier this year.

2. Background

The issue of macro texture (texture) of road surfacings was discussed at the recent Nationwide Skid Resistance Workshops. Basically, texture is required to assist drainage of water from the tyre-road surface contact area. For a moving vehicle the loss of skid resistance is progressive up to full hydroplaning when the tyre is no longer in contact with the road surface and skid resistance is effectively zero.

The following factors contribute to reduced skid resistance when the road surface is wet.

- Low tyre tread depth;
- Low surface texture;
- Thick water film on the road surface;
- Vehicle speed.

The factors we have direct control over as a road controlling authority are;

- Texture
- Road surface shape (Minimising drainage path lengths and increasing crossfall both reduce water film thickness for a given rainfall. Rutting and deviations from design surface shape may lead to lower crossfall and increased water depths or ponding)

This memo discusses action with respect to texture only.

The previous memo SM 8/01/04 Skid Resistance for New Surfacing (dated 4 September 2001) detailed interim requirements for texture of new surfacings at time of construction, and remains current. Instructions attached to the SCRIM+ exception report from the 2001/02 SCRIM survey included targets for maintenance treatments of existing surfacings and is superseded by this memo.

3. Research

Research undertaken this year indicates that in order to maintain our surfacings to skid resistance levels assumed in the Geometric Design Manual, we need to specify a minimum level of texture and to increase micro texture (MSSC) levels in T/10. Work is underway to calculate the extent to which these improvements can be economically justified. Current indications are that a combination of actions including reducing skid resistance assumed in design and maintaining the network to higher levels may be necessary.

4. Texture Requirements for Maintenance (measurement units are MPD)

Until some of the issues identified in the preliminary research are better understood, the following interim requirements for texture on the network will be used. There is nothing radical about these limits as they have been encapsulated in our current maintenance documents and manuals for many years. However, it does reinforce the need to identify and treat flushed areas of the network, both of extended length and in isolated patches (particularly on curves).

a. Chipseal Surfaces

Road lengths with surface texture below 0.5mm as recorded in the 2001/02 HSD Survey need maintenance / treatment to improve safety. The programme should aim for treatment of the identified sections by the following sealing season. Higher priority should be given to Site Categories 1 to 3 (see T/10).

Note:

- i. Generally treatment will involve a resurfacing or removal of excess bitumen (water blasting etc). Where low texture cannot be treated this season, slippery surface signage may be appropriate in the most extreme cases.
- ii. Low texture on chipseal surfaces requires earlier treatment than on asphaltic concrete because the texture is expected to continue reducing with an attendant increased risk of reduced skid resistance, or bleeding and flushing.

b. Asphaltic Concrete and similar materials

The following actions are required:

- i. Identify sites where texture is less than 0.5mm as recorded in the 2001/02 HSD Survey.
- ii. Low texture sites with a wet road crash rate higher than or equal to the average for similar sections of the network should be treated during the 2002/03 resurfacing season. Where the wet road crash rate is lower than the average treatment may be deferred.

Treatment to improve macro texture on asphaltic concrete will normally be grooving or a new surfacing. High pressure water blasting may be effective on some surfaces.

4. Texture requirements for new surfacings

Highway Management Division Memorandum No SM 8/01/04, Skid Resistance for New Surfacing covers requirements for texture on new surfacings at the time of construction.

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