Transport Roads & Maritime Services

NSW GOVERNMENT

# Test method T1173

## Heat degradation test on hot-poured joint sealing compound

**NOVEMBER 2012**

# Revision Summary

| Ed/Rev Number | Clause Number | Description of Revision | Authorisation | Date |
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Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T1173 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

# Test method T1173

# Heat degradation test on hot-poured joint sealing compound

## 1. Scope

This test method describes the procedure for determining the degree to which a hot-poured joint sealing compound is degraded by prolonged heating, the degree of degradation being assessed by the effect on the flow properties and the tensile bond strength 2 ± 2°C (adhesion and cohesion) of the material after heating.

**Note: Precautions shall be taken during all operations to prevent local overheating of the sample and contamination with oil, water or other contaminants.**

## 2. Safety Notes:

Handling precautions relevant for bitumen also apply to hot poured joint sealant. A poster describing the action to be taken in the event of bitumen burns must be displayed in the laboratory in the vicinity of the bitumen pouring area(s). Use either tongs or heat resisting gloves when handling hot bitumen. Loose or puncture lids before heating containers. Examine cold samples for signs of water. Remove all visible water. Wear spectacles when heating samples suspected of containing water. Cleaning solvents such as toluene may be toxic, handle such solvents in a fume cupboard, consult Safety Data Sheet.

## 3. Apparatus

(a) Aluminium heating block. Approximate dimensions of 130 mm high and 200 mm wide. It shall be bored out so as to accept a 1000 ml heat resistant glass beaker and shall be wide enough to allow a small gap for a suitable temperature maintaining oil.

(b) Hot plate capable of maintaining temperature of the joint sealant at up to 190° for 6 hours.

(c) Stirring apparatus capable of suitably circulating joint sealant at 190° for 6 hours.

(d) Thermometer capable of measuring temperatures between 150 - 250°C to an accuracy of ± 1°C.

(e) Fume cupboard.

(f) A stiff metal spatula approximately 150 mm long and 25 mm wide.

## 4. Procedure

(a) Remove the packaging from the block of sealing compound so that part of the bottom of the sample is exposed. Chop pieces of sealing compound from the block, maximum dimension 30 mm. A hot knife may be used. Approximately equal numbers of pieces should be taken from the top and bottom of the block. If the sample was not received as a block the report will record the method of sub sampling.

(b) Heat the aluminium block, oil and glass beaker to a temperature which will allow the joint sealing material to reach a molten state suitable to commence initial stirring.

(c) Place pieces of the sample into the glass beaker one at a time. Stir continually when a molten state is first reached.

(d) Heat the sample until it reaches 5°C above the lower limit of the manufacturer's recommended pouring temperature.

(e) Maintain the sample at this temperature for a period of 6 hours or for the maximum period set by the manufacturer, whichever is longer.

(f) Immediately pour specimens for the flow properties (T1171) and the tensile bond strength 2 ± 2°C (T1172).

## 5. Reporting

Report the behaviour of the compound after prolonged heating as "Pass" or "Fail" in the light of its behaviour in the tests carried out after heat.