

# **COMMENTARY TO AG:PT/T131 - SOFTENING POINT OF POLYMER MODIFIED BINDERS**

## **PREFACE**

This modified binder test method was prepared by the Bituminous Surfacing Research Reference Group on behalf of the Austroads. Representatives of Austroads, ARRB Group and the Australian Asphalt Pavement Association (AAPA) have been involved in the development and review of this test method.

## **FOREWORD**

AAPA has developed a Code of Practice for the manufacture and placement of styrene-butadiene-styrene (SBS) modified asphalt. The Code provides recommendations covering the manufacture and transportation of Polymer Modified Binders (PMBs) modified with SBS polymer. The Code has been prepared in response to concerns relating to reports that some workers have experienced physical discomfort when using asphalt manufactured with SBS-based PMBs. A recommendation of the Code is to specify a minimum limit on the flash point of a PMB. A low flash point indicates the presence of low boiling petroleum fractions which may contribute to fuming from the binder during normal use.

## **SCOPE**

This test method sets out the procedure for determination of the softening point of PMBs.

## **Further Development**

There are no further plans for the development of this test method.

# SOFTENING POINT OF POLYMER MODIFIED BINDERS

## 1 REFERENCED DOCUMENTS

The following documents are referred to in this method:

### AUSTROADS

AG:PT/T101 Method of sampling polymer modified binders, polymers and crumb rubber

AG:PT/T102 Protocol for handling polymer modified binders in the laboratory

### AS

2341 Methods of testing bitumen and related roadmaking products

2341.18 Method 14: Determination of softening point (ring and ball method)

## 2 APPARATUS

The required apparatus is given in AS 2341.18.

## 3 PROCEDURE

### 3.1 General

PMBs are complex mixtures of polymers and a variety of petroleum products. If handled in accordance with the directions of the suppliers, there should be no significant risk. The hazard of burns with PMBs is greater than with standard bitumens, due to the (normally) higher handling temperatures. It is recommended that a notice, describing the action to be taken in the event of bitumen or PMB burns, should be displayed in the laboratory in the areas where bitumen and PMBs are handled. A suitable warning could be as follows:

**WARNING: HOT BITUMEN & PMBs CAN CAUSE BURNS**

The following precautions should be taken when handling bitumen, or PMBs:

- a. Eye protection, such as safety glasses and/or face shields, shall be worn when handling hot bitumen or PMBs.
- b. Heat-resistant gloves, with close-fitting cuffs, and other suitable protective clothing, shall be worn when handling hot bitumen or PMBs.
- c. There shall be no smoking while handling hot bitumen or PMBs.
- d. While the material is still cold, loosen the lid of the sample container (invert the can and warm the lid, if necessary), or punch a hole in the lid.

- e. Examine the cold sample for the presence of water. If water is thought to be present, drain most of it out, or blow with clean compressed air to evaporate the free water.

### **3.2 Sample Preparation**

Samples for testing shall be provided in accordance with AG:PT/T101 and AG:PT/T102.

### **3.3 Softening Point**

Determine the Softening Point of the binder in accordance with the test method set out in AS2341.18.

## **4 REPORT**

Report the Softening Point, in °C.

## **5 PRECISION**

Precision is given in AS2341.18.

## AMENDMENT RECORD

Amendment No.	Clauses amended	Action	Date
1	Commentary Page	New	June 2005
	Footer and header	Format	
	Applied revised test method number	Format	
	Applied new styles	Format	
2	Applied new test method numbers	Substitution	March 2006

### Key

Format	Change in format
Substitution	Old clause removed and replaced with new clause
New	Insertion of new clause
Removed	Old clauses removed