

**2010 CANADIAN ASPHALT EXCHANGE PROGRAM**  
**(Asphalt Cement Portion)**  
**Schedule of Testing and Handling of Test Materials**

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The package of materials for the testing of a 150-200A asphalt cement contains three replicate samples of two litres each. Each of the tests specified should be performed on each replicate sample.

Report the results of a single determination only, not the average of two or more except in cases where an average is called for in the method. Each specified test should be made on the three replicates by the same operator. However, it is not necessary that all tests listed be done by the same operator.

Return your completed data collection forms to:

Magdy Beshara, P.Eng.  
Testing Standards Engineer  
Saskatchewan Ministry of Highways & Infrastructure  
Engineering Standards Branch  
1610 Park Street  
Regina, Saskatchewan  
S4N 2G1

Samples have been prepared and shipped by Imperial Oil of Sarnia, Ontario. If you have any questions with respect to the samples, please contact:

Mary Gale  
Imperial Oil, Research Department  
453 Christina Street South  
P.O. Box 3022  
Sarnia, Ontario  
N7T 8C8  
Phone: (519) 339-4831  
Fax: (519) 339-4436  
mary.j.gale@esso.ca

Questions or comments with respect to the Schedule of Testing and Handling of Test Materials or the Data Collection and Submission Form should be directed to:

Magdy Beshara, P.Eng.  
Testing Standards Engineer  
Saskatchewan Ministry of Highways & Infrastructure  
Engineering Standards Branch  
1610 Park Street  
Regina, Saskatchewan  
S4N 2G1  
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Directions for the individual tests on each of the three replicates of the asphalt cement samples.

The following tests shall be performed:

**Original Materials**

1. Penetration of Bituminous Materials - ASTM D5

Report to the nearest whole unit the average of three penetrations at 25° C, 100 g, 5 s, whose values do not differ more than the amount given in ASTM D5.

2. Penetration of Bituminous Materials - ASTM Method D5

Report to the nearest whole unit the average of three penetrations at 4° C, 100 g, 5 s, whose values do not differ more than the amount given in ASTM D5.

3. Solubility of Bituminous Materials in Organic Solvents - ASTM Method D2042

Report the percentage of material soluble in trichloroethylene to the nearest 0.01%.

4. Specific Gravity of Semi-Solid Bituminous Materials - ASTM Method D70

Determine the specific gravity at 25° C relative to water at 25° C. Report the results to the nearest 0.001 gravity unit.

5. Kinematic Viscosity of Asphalts - ASTM Method D2170

Report to the nearest whole unit the kinematic viscosity at 135° C, mm<sup>2</sup>/s.

6. Absolute Viscosity of Asphalts - ASTM Method D2171

Report to the nearest 0.1 unit the absolute viscosity at 60° C, 300 mm Hg vacuum, Pa·s.

**Tests After Thin Film Oven Test**

7. Thin Film Oven Test - ASTM Method D1754

Weigh the sample and container to the nearest milligram. Report the average loss or gain of the material in the two containers. Record the barometric pressure on the day the testing is done in kPa.

8. Penetration of the Residue - ASTM Method D5

Report to the nearest whole unit the average of three penetrations at 25° C, 100 g, 5 s, whose values do not differ by more than the amount given in method D5.

9. Penetration of the Residue - ASTM Method D5

Report to the nearest whole unit the average of three penetrations at 4° C, 100 g, 5 s, whose values do not differ by more than the amount given in ASTM D5.

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10. Retained Penetration After T.F.O. Test - ASTM Method D5

Report as percent of the original penetration (at 25° C) to the nearest percent.

11. Kinematic Viscosity of the Residue - ASTM Method D2170

Report to the nearest whole unit the kinematic viscosity at 135° C, mm<sup>2</sup>/s.

12. Absolute Viscosity of the Residue - ASTM Method D2171

Report to the nearest 0.1 unit the absolute viscosity of the residue at 60° C, 300 mm Hg vacuum Pa·s.

**OPTIONAL TESTING**

The Rolling Thin Film Oven Test is optional.

**Tests After Rolling Thin Film Oven Test**

13. Rolling Thin Film Oven Test - ASTM Method D2872

Weigh the sample and container to the nearest milligram. Report the average loss or gain of the material in the two containers. Record the barometric pressure on the day the testing is done in kPa.

14. Penetration of the Residue - ASTM Method D5

Report to the nearest whole unit the average of three penetrations at 25° C, 100 g, 5 s, whose values do not differ by more than the amount given in method D5.

15. Penetration of the Residue - ASTM Method D5

Report to the nearest whole unit the average of three penetrations at 4° C, 100 g, 5 s, whose values do not differ by more than the amount given in ASTM D5.

16. Retained Penetration After R.T.F.O. Test - ASTM Method D5

Report as percent of the original penetration (at 25° C) to the nearest percent.

17. Kinematic Viscosity of the Residue - ASTM Method D2170

Report to the nearest whole unit the kinematic viscosity at 135° C, mm<sup>2</sup>/s.

18. Absolute Viscosity of the Residue - ASTM Method D2171

Report to the nearest 0.1 unit the absolute viscosity of the residue at 60° C, 300 mm Hg vacuum, Pa·s.

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**A. PARTICIPANT DOCUMENTATION**

Agency/Company \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Contact Person \_\_\_\_\_

Telephone No. \_\_\_\_\_

Fax No. \_\_\_\_\_

E-mail Address \_\_\_\_\_

**B. SAMPLE DOCUMENTATION**

Date Samples Received \_\_\_\_\_

Date Testing Commenced \_\_\_\_\_

Dated Testing Completed \_\_\_\_\_

**C. PARTICIPANT COMMENTS**

Please provide any comments which may be of value to this or future exchanges:

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\_\_\_\_\_

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**D. TEST RESULTS**

ASPHALT CEMENT 150 - 200A			
<b>Replicate Number</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Penetration at 25°C (dmm)</b> <small>(Report to the nearest whole unit)</small>	<input type="text"/>	<input type="text"/>	1
<b>Penetration at 4°C (dmm)</b> <small>(Report to the nearest whole unit)</small>	<input type="text"/>	<input type="text"/>	2
<b>Solubility in Trichloroethylene, %</b> <small>(Report to the nearest 0.01%)</small>	<input type="text"/>	<input type="text"/>	3
<b>Specific Gravity 25/25°C</b> <small>(Report to the nearest 0.001)</small>	<input type="text"/>	<input type="text"/>	4
<b>Kinematic Viscosity at 135°C, (mm<sup>2</sup>/sec)</b> <small>(Report to the nearest whole unit)</small>	<input type="text"/>	<input type="text"/>	5
<b>Tube Type</b>	<input type="text"/>	<input type="text"/>	
<b>Size Number</b>	<input type="text"/>	<input type="text"/>	
<b>Fill Time</b>	<input type="text"/>	<input type="text"/>	
<b>Absolute Viscosity at 60°C, (Pa-s)</b> <small>(Report to the nearest 0.1 Pa-s)</small>	<input type="text"/>	<input type="text"/>	6
<b>Tube Type</b>	<input type="text"/>	<input type="text"/>	
<b>Size Number</b>	<input type="text"/>	<input type="text"/>	
<b>Fill Time (1)</b>	<input type="text"/>	<input type="text"/>	
<b>Fill Time (2)</b>	<input type="text"/>	<input type="text"/>	
<b>Agency / Company Name:</b>	<input style="width: 100%;" type="text"/>		

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ASPHALT CEMENT 150 - 200A			
<b>Replicate Number</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Test No.			
<b>Thin Film Oven Test</b>			
<b>Thin Film Oven Test</b> <small>(Report Loss or Gain by Circling Appropriate Response)</small>	<b>Loss</b> <b>Gain</b>	<b>Loss</b> <b>Gain</b>	<b>Loss</b> <b>Gain</b>
<b>Loss on Heating</b> <small>(Report to the nearest 0.001%)</small>	<input type="text"/>	<input type="text"/>	7
<b>Penetration of Residue at 25°C (dmm)</b> <small>(Report to the nearest unit)</small>	<input type="text"/>	<input type="text"/>	8
<b>Penetration of Residue at 4°C (dmm)</b> <small>(Report to the nearest unit)</small>	<input type="text"/>	<input type="text"/>	9
<b>Percent of Original Penetration (at 25°C)</b> <small>(Report to the nearest %)</small>	<input type="text"/>	<input type="text"/>	10
<b>Kinematic Viscosity of Residue at 135°C, (mm<sup>2</sup>/sec)</b> <small>(Report to the nearest whole unit)</small>	<input type="text"/>	<input type="text"/>	11
<b>Tube Type</b>	<input type="text"/>	<input type="text"/>	
<b>Size Number</b>	<input type="text"/>	<input type="text"/>	
<b>Fill Time</b>	<input type="text"/>	<input type="text"/>	
<b>Absolute Viscosity of Residue at 60°C (Pa-s)</b> <small>(Report to the nearest 0.1 Pa-s)</small>	<input type="text"/>	<input type="text"/>	12
<b>Tube Type</b>	<input type="text"/>	<input type="text"/>	
<b>Size Number</b>	<input type="text"/>	<input type="text"/>	
<b>Fill Time (1)</b>	<input type="text"/>	<input type="text"/>	
<b>Fill Time (2)</b>	<input type="text"/>	<input type="text"/>	
<b>Barometric Pressure on the day T.F.O.T. was done, (kPa)</b> <small>(Report to the nearest kPa)</small>	<input type="text"/>	<input type="text"/>	7
<b>Agency / Company Name:</b>	<input style="width: 100%;" type="text"/>		

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ASPHALT CEMENT 150 - 200A			
<b>Replicate Number</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
			Test No.
<b>Rolling Thin Film Oven Test</b>			
<b>Rolling Thin Film Oven Test</b> <small>(Report Loss or Gain by Circling Appropriate Response)</small>	<b>Loss</b> <b>Gain</b>	<b>Loss</b> <b>Gain</b>	<b>Loss</b> <b>Gain</b>
<b>Loss on Heating</b> <small>(Report to the nearest 0.001%)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	13
<b>Penetration of Residue at 25°C (dmm)</b> <small>(Report to the nearest unit)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	14
<b>Penetration of Residue at 4°C (dmm)</b> <small>(Report to the nearest unit)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	15
<b>Percent of Original Penetration (at 25°C)</b> <small>(Report to the nearest %)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	16
<b>Kinematic Viscosity of Residue at 135°C (mm<sup>2</sup>/sec)</b> <small>(Report to the nearest whole unit)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	17
<b>Tube Type</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Size Number</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Fill Time</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Absolute Viscosity of Residue at 60°C (Pa-s)</b> <small>(Report to the nearest 0.1 Pa-s)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	18
<b>Tube Type</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Size Number</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Fill Time (1)</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Fill Time (2)</b>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	
<b>Barometric Pressure on the day R.T.F.O.T. was done, (kPa)</b> <small>(Report to the nearest kPa)</small>	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>	13
<b>Agency / Company Name:</b>	<input style="width: 100%;" type="text"/>		