



Specifications For Manufactured Materials

Section: CUTBACK ASPHALT

Subject: RAPID CURING GRADES

1. PRODUCT DESCRIPTION

1.1. Description

The specification for Rapid Curing (RC) Cutback Asphalts applies to liquid asphaltic materials in the form of an asphalt cement combined with a petroleum solvent of a gasoline type. RC Cutback Asphalts are specified by the following grades: RC-30, RC-70, RC-250, RC-800, RC-3000.

1.2. Composition/Characteristics

Rapid Curing Cutback Asphalt shall consist of an asphalt cement which has been liquified by blending with a gasoline type of petroleum solvent.

1.3. Application/Use

The RC Cutback Asphalt described herein shall be suitable for use as outlined in Table 1 - Principal Uses of Asphalt Materials of the National Standard of Canada CAN/CGSB-16.6-M89, PRINCIPAL USES AND TERMINOLOGY FOR ASPHALT MATERIALS FOR ROAD PURPOSES.

1.4. Method of Production

The RC Cutback Asphalt is a mixture of an asphalt cement, with a gasoline type of solvent.

If the supplier elects to use non traditional material components in the RC Cutback Asphalt the Province must be advised in writing before any material is shipped to Department destinations.

1.5. Definitions

Asphalt Cement: A dark brown to black solid or semi-solid cementitious material which gradually liquifies when heated. One type of bitumen that is obtained as residue in refining crude oil.

Bitumen: Any mixture of hydrocarbons of natural or pyrogenous origin or both which is completely soluble in carbon disulphide.

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Cutback Asphalt: Asphalt cement which has been liquified by blending with petroleum solvents or oils of low volatility or equivalent material.

Residual Bitumen: The residual material which remains after the distillation of a cutback asphalt as described by the test methods referenced in this specification.

2. PRODUCT SPECIFICATION

2.1. General Requirements

2.1.1. **Uniformity**

All grades of RC Cutback Asphalts described herein shall be free of contamination and shall be homogeneous and uniform in character throughout.

2.1.2. **Delivery**

The specified material shall be delivered in accordance with SHT SMM 104 - General Provisions for Asphalt Supply Contracts.

2.1.3. **Prequalification Samples**

First time suppliers of products described in the specification are referred to Item 3 of the Terms and Conditions of Tender.

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2.2. Material Characteristics and Properties

TABLE 1
Requirements of Rapid Curing Cutback Asphalts

GRADE	RC-30		RC-70		RC-250		RC-800		RC-3000		Test Method
Property	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Flash Point (Open Tag),(° C)	-	-	-	-	27	-	27	-	27	-	ASTM D3143
Kinematic Viscosity at 60° C, (mm ² /s)	30	60	70	140	250	500	800	1 600	3 000	6 000	ASTM D2170
Distillation Test, (% of Total Distillate to 360° C)											ASTM 402
to 190° C	15	-	10	-	-	-	-	-	-	-	
to 225° C	55	-	50	-	35	-	15	-	-	-	
to 260° C	75	-	70	-	60	-	45	-	25	-	
to 315° C	90	-	85	-	80	-	75	-	70	-	
Residue from Distillation to 360° C, Volume % by difference	50	-	55	-	65	-	75	-	80	-	
Tests on Residue from distillation											
Penetration @ 25° C, 100 g, 5 s, (0.1 mm)	80	120	80	120	80	120	80	120	80	120	ASTM D5
Ductility @ 25° C, (cm)	100	-	100	-	100	-	100	-	100	-	ASTM D113
Solubility in Trichloroethylene (% by mass)	99.0	-	99.0	-	99.0	-	99.0	-	99.0	-	ASTM D2042
Water, % by volume	-	0.2	-	0.2	-	0.2	-	0.2	-	0.2	ASTM D95

* If the ductility at 25° C is less than 100, the material will be acceptable if its ductility at 15° C is more than 100.

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3. QUALITY ASSURANCE

3.1. Samples

Samples for quality assurance testing will be collected in accordance with SHT STP 102 - Sampling Asphalt Materials.

3.2. Testing

3.2.1. **Sample Preparation**

The samples shall be stirred prior to testing to ensure a homogeneous and uniform character throughout.

3.2.2. **Pay Reduction Tests**

The Province has the option to do any one of or any number of tests listed in Table 1 on any of the samples obtained by it. Pay reductions will be based on results of the tests performed.

If a test result is found to fall outside of the specification limits, a second test will be done on another portion of the same sample and the results averaged to assess the pay adjustment.

Should the duplicate test results differ by more than the tolerances for repeatability stated in 3.2.3 of this specification then the average of the two test values shall not be used and instead the test result numerically nearest the specification limit shall govern.

3.2.3. **Interpretation of Results**

The criteria for judging the acceptability of test results for each property specified herein shall be the tolerances for repeatability specified in the most recent ASTM Standard Test Method for that property.

3.2.4. **Loads on which no tests are performed or where tests have not been made within four weeks of sampling date, will be accepted without pay adjustment.**

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3.3. Acceptance and Rejection

Pay reductions on RC cutback asphalts which do not meet specification will be calculated as outlined in the attached form - FORM FOR DETERMINING THE PAY REDUCTION FOR RC CUTBACK ASPHALT THAT DOES NOT MEET SPECIFICATION.

4. MEASUREMENT

Measurement of RC Cutback Asphalt will be in accordance with SMM 104 - General Provisions for Asphalt Supply Contracts.

5. DELIVERY

Delivery of RC Cutback Asphalt will be in accordance with the Terms and Conditions of Tender and SMM 104 - General Provisions for Asphalt Supply Contracts.

6. PAYMENT

Payment for RC Cutback Asphalt will be in accordance with the Terms and Conditions of Tender and SMM 104 - General Provisions for Asphalt Supply Contracts.

FORM FOR DETERMINING THE PAY REDUCTION FOR RC CUTBACK ASPHALT THAT DOES NOT MEET SPECIFICATION

MANUFACTURER: _____ LAB ADMITTANCE NO.: _____

PRODUCT TYPE: _____ CONTROL SECTION: _____

DELIVERY SLIP NO: _____ SHT CONTRACT NO: _____

DATE SAMPLED: _____ LOCATION: _____

DATE TESTED: _____ RES. ENG/AMS: _____

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SPECIFICATION ADJUSTMENT TEST	LIMITS		NO. OF UNITS TEST OUTSIDE SPEC		NO. OF MULTIPLIER		POINTS
	MIN	MAX	RESULTS	LIMITS	FACTOR		
Flashpoint (Open Tag), °C	_____	_____	_____	_____	(Note 1)	_____	_____
Kinematic Viscosity @ 60° C (mm ² /s)	_____	_____	_____	_____	(Note 2)	_____	_____
Distillation Test (% of Total Distillate to 360° C)							
- To 190° C	_____	_____	_____	_____	(Note 3)	_____	_____
- To 225° C	_____	_____	_____	_____	(Note 3)	_____	_____
- To 260° C	_____	_____	_____	_____	(Note 3)	_____	_____
- To 315° C	_____	_____	_____	_____	(Note 3)	_____	_____
Residue from Distillation to 360° C (Volume % by Difference)	_____	_____	_____	_____	100	_____	_____
Penetration of @ 25° C, 100 g, 5 s (0.1 mm)	_____	_____	_____	_____	25	_____	_____
Ductility @ 25° C, (cm)	_____	_____	_____	_____	27	_____	_____
Solubility in Trichloroethylene (% by mass)	_____	_____	_____	_____	150	_____	_____
Water, % by mass or volume	_____	_____	_____	_____	150	_____	_____
TOTAL ADJUSTMENT POINTS							_____

Note 1: Any product that has a flashpoint below minimum specs will have a No Payment pay adjustment.

Note 2: If test result < minimum specified value, Multiplication Factors: RC30 is 70 RC70 is 30 RC250 is 20 RC800 is 7 RC3000 is 2
If test result > maximum specified value, Multiplication Factors: RC30 is 30 RC70 is 20 RC250 is 7 RC800 is 2 RC3000 is 2

Note 3: RC30 Multiplication Factor is 10 RC800 Multiplication Factor is 20
RC70 Multiplication Factor is 10 RC3000 Multiplication Factor is 30
RC250 Multiplication Factor is 15

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$$\text{PAY ADJUSTMENT} = \left(\frac{\text{Total Adjustment Points}}{\text{POINTS}} \right)^{1.4} = \left(\frac{\quad}{100} \right)^{1.4} = \quad 100$$

If Pay Adjustment Points \leq 5, Pay Factor is 1

If Pay Adjustment Points $>$ 5, Pay Factor is $1 - \frac{\text{Pay Adjustment Points}}{100}$

Payment = (Price/Kilogram) (Total Weight) (Pay Factor); Except that, if the calculated pay adjustment points exceed 5, the pay reduction will be \$200.00 or the calculated pay reduction, whichever is greater.

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APPROVAL SHEET

New ___ Revision X Date of Previous Document: 92-02-11
Effective Date: 99-03-15

Description of Revision (Reason for Revision):

Update Lab Admittance No.

Review/Implementation Process:

Reviewed by the testing Standards Engineer

Other Manuals/Policies Affected

Nil

Follow-up/Training Required:

Nil

Comments/Concerns/Implications (Budget/Environment/Stakeholders):

Nil

Prepared and Recommended by: Abdul Qayyum 99-03-15
Testing Services Engineer Date

Recommended by: _____
Director, Testing Services Date

Recommended by: _____
Executive Director, Eng. Services Date

Approved by: _____
Asst. Deputy Minister, Operations Date

Electronic File Updated _____
Update Mailed _____

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Nil

Prepared and Recommended by: Abdul Qayyum 99-03-15
Testing Services Engineer Date

Recommended by: [Signature] April 19, 1999
Director, Testing Services Date

Recommended by: RA Fidge May 31/99
Executive Director, Eng. Services Date

Approved by: [Signature] 1999-06-01
Asst. Deputy Minister, Operations Date

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Update Mailed _____

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