

ATT-68/96 APPEAL TESTING, Asphalt Content, Density and Gradation

1.0 SCOPE

This method describes the procedures and Test Methods used for the appeal of acceptance test results for asphalt content, density and gradation.

2.0 TEST PROCEDURES AND DATA SHEETS

Procedure	Data Sheet
ATT-56, Part II, Stratified Random Test Sites, ACP	Stratified Random Test Sites (MAT 6-82)
ATT-5, Coring	N/A
ATT-7, Density, Immersion Method, Saturated Surface Dry Asphalt Concrete Specimens ATT-12, Part II, Filterless Extraction and Filterless Centrifuge Method	Core Density, Extraction and Sieve Analysis (MAT 6-79)
ATT-26, Sieve Analysis 20 000 Fm Minus ATT-12, Part III, Correction Factor, Extracted Asphalt Content	Extraction Asphalt Content Correction Factor (MAT 6-75)

3.0 PROCEDURE

3.1 Sampling by the Contractor

When an appeal **asphalt content** correction factor is required, the Contractor supplies a minimum of 15 kg of representative aggregate of each split, and a 4 R sample of project asphalt cement for the appealed Lot. The materials and the Design gradation are shipped with the cores to the Appeal Testing Laboratory where they will be used by the Appeal Testing Consultant to establish an extraction correction factor.

3.2 Sampling by Quality Assurance Consultant

Quality assurance testing technologists use the following core sampling procedures for appeals of **asphalt content, density, and gradation**. The Contractor may observe the sampling process.

1. Core locations are established using the Stratified Random Test Site procedure ATT-56, Part II.
2. For density appeals, the core thickness must meet the requirements described in ATT-5 (or ATT-56, Part II).

3. For asphalt content or gradation appeals, sufficient cores are taken at the same location, to provide the Appeal Testing Laboratory with a minimum 2000 g extraction sample. This is the weight after trimming and removing the cut rock, as described in ATT-12, Part II. Cores for asphalt content appeals taken on bottom lifts over crackfiller, are discarded and recored.
4. For each cored specimen, a saw is used to separate the layer to be tested from other pavement layers and to remove all tack.
5. Each layer to be tested is identified by segment number only and placed in an appeal testing shipping box.
6. The cores, aggregate and asphalt cement samples (if applicable), are then submitted to the Appeal Laboratory. A completed Stratified Random Test Sites form (MAT 6-82), is included with the cores.

3.3 Density Appeal Testing

1. Each core is processed using the procedure for core density (ATT-7).

3.4 Asphalt Content Appeal Testing

1. The asphalt content is determined for each segment in accordance with test method ATT-12, Part II, Filterless Extraction and Filterless Centrifuge Method.

If there is more than one core for a segment, the cores are heated and trimmed to remove the cut rock portions. The remaining uncut rock portions of the segment cores are combined and processed.

2. An asphalt correction factor is determined using test method ATT-12, Part III, CORRECTION FACTOR, Extracted Asphalt Content. The average (uncorrected) extraction asphalt content of the five samples is used as the Target Asphalt Content. Five samples are required to establish a correction factor.

This correction factor is applied to the extracted asphalt content to correct for asphalt binder loss due to absorption by the aggregate.

3. The gradation of each extracted sample is determined according to ATT-26, SIEVE ANALYSIS, 20 000 Fm MINUS AGGREGATE.

3.5 Gradation Appeal Testing

1. Repeat steps 1 and 3 of Section 3.4 above.

4.0 REPORTING PROCESS

- The Appeal Consultant submits to the Engineer, a completed copy of the Appeal Testing form (MAT 6-92), as shown in Figure 1. The form shall be signed by the Contractor. The Contractor is then given a photocopy of the signed form.

	<h2 style="margin: 0;">APPEAL TESTING</h2> <p style="margin: 0;">APPEAL NUMBER <u>999</u></p>
PROJECT NO. <u>HW 99:02</u> LOT NO. <u>9</u> DATE LAID <u>May 29, 1995</u> DATE CORED <u>May 31, 1995</u> FROM <u>Here</u> TO <u>There</u> APPEAL CONSULTANT <u>Accurate Testing</u> PROJECT MANAGER <u>B. Roads</u> CONTRACTOR <u>V. Good</u> CONTRACT NO. <u>9999/95</u>	

SEGMENT NUMBER	1	2	3	4	5
STATION OF SEGMENT TEST SITE	<u>17+573</u>	<u>17+749</u>	<u>17+796</u>	<u>18+135</u>	<u>18+482</u>
LOCATION FROM CENTERLINE	<u>1.0 m Lt.</u>	<u>3.2 m Lt.</u>	<u>4.0 m Lt.</u>	<u>2.4 m Lt.</u>	<u>1.7 m Lt.</u>

DENSITY

A LOT AVERAGE MARSHALL DRY DENSITY						B TOTAL	AVERAGE
CORE DRY DENSITY kg/m^3							

ASPHALT CONTENT

Correction Factor 0.18 %

CORRECTED EXTRACTION ASPHALT CONTENT (%)						C TOTAL	AVERAGE
	<u>5.71</u>	<u>5.58</u>	<u>5.42</u>	<u>5.52</u>	<u>5.33</u>	<u>27.56</u>	<u>5.51</u>

GRADATION OF EXTRACTED CORES

SIEVE SIZE (μm)	PERCENT PASSING (%)					AVERAGE	JOB MIX FORMULA
16 000	<u>100</u>	<u>100</u>	<u>99</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
12 500	<u>92</u>	<u>93</u>	<u>94</u>	<u>92</u>	<u>91</u>	<u>92</u>	<u>87</u>
10 000	<u>85</u>	<u>83</u>	<u>84</u>	<u>82</u>	<u>81</u>	<u>83</u>	<u>78</u>
5 000	<u>63</u>	<u>60</u>	<u>62</u>	<u>61</u>	<u>60</u>	<u>61</u>	<u>58</u>
1 250	<u>39</u>	<u>40</u>	<u>40</u>	<u>38</u>	<u>37</u>	<u>39</u>	<u>40</u>
630	<u>34</u>	<u>34</u>	<u>34</u>	<u>33</u>	<u>32</u>	<u>33</u>	<u>33</u>
315	<u>27</u>	<u>25</u>	<u>28</u>	<u>24</u>	<u>26</u>	<u>26</u>	<u>25</u>
160	<u>15</u>	<u>14</u>	<u>15</u>	<u>13</u>	<u>14</u>	<u>14</u>	<u>14.0</u>
80	<u>8.3</u>	<u>8.3</u>	<u>8.5</u>	<u>8.0</u>	<u>7.9</u>	<u>8.2</u>	<u>7.8</u>

LOT ASPHALT CONTENT OR DENSITY CALCULATION

THREE REMAINING DENSITY OR ASPHALT CONTENT DEPARTMENT TESTS	D	<u>4.98</u>	E	<u>5.35</u>	F	<u>5.37</u>
G. FINAL LOT DENSITY OR ASPHALT CONTENT	(D + E + F + B or C) / 8				kg / m^3 or %	
H. LOT TARGET ASPHALT CONTENT					%	
I. DEVIATION FROM TARGET ASPHALT CONTENT	H - G				%	
J. FINAL LOT PERCENTAGE OF MARSHALL DENSITY	(100 G / A)				%	
K. LOT UNIT PRICE ADJUSTMENT FOR DENSITY OR ASPHALT CONTENT	(TABLE 3.50 A or B)				\$/t	
L. LOT TONNES OF MIX					t	
M. APPEAL LOT ADJUSTMENT	K x L				\$	

MATB-92/85

SHADED AREAS - COMPLETED BY DEPARTMENT
REMARKS _____


PROJECT MANAGER


CONTRACTOR


APPEAL CONSULTANT

Figure 1