

YEAR 2018 CCIL CORRELATION

MIX COMPLIANCE (Ontario)

PLEASE NOTE: Type B Marshall Only and Type B Marshall and Superpave laboratories are required to carry out Marshall compliance testing using two Plant Mix samples.

SAMPLES

Two (2) bulk samples, identified as Materials **I-II-III-IV-MC-(N)** have been provided. The two samples will be either I and II or III and IV or II and III. Each of these samples shall be tested individually, i.e. do not combine them.

TESTING

On receipt, each sample shall be warmed and a representative portion obtained by quartering or using a riffle splitter. Two replicates of this representative portion shall then be tested as per LS-264, (latest revision) "Method of Test for Theoretical Maximum Relative Density of Bituminous Paving Mixtures"

Sufficient material from each sample shall then be heated to the appropriate temperature to prepare three briquettes. The briquette specimens shall be prepared as per LS-261 (latest revision), "Method of Test for Preparation of Marshall Specimens". Trough, moulds and hammers shall be preheated to $140 \pm 5^{\circ}\text{C}$.

For I-MC-(N), use a briquette mass 1235 ± 25 g and the compaction temperature of 138°C
For II-MC-(N), use a briquette mass 1240 ± 25 g and the compaction temperature of 138°C
For III-MC-(N), use a briquette mass 1280 ± 25 g and the compaction temperature of 144°C
For IV-MC-(N), use a briquette mass 1250 ± 25 g and the compaction temperature of 138°C

Note 1: With the manual hammer, the following should be noted: (a) the compaction pedestal must be secured; (b) the timing of blows should be 60 blows per minute (plus or minus 5 blows); (c) the hammer should be allowed to rebound between successive blows.

Thereafter the specimens shall be tested for:

1. Bulk relative density, LS-262 (latest revision) "Bulk Relative Density of compacted Bituminous Mixes"
2. Marshall stability and flow, LS-263 (latest revision), "Resistance to Plastic Flow of Bituminous Mixtures using the Marshall Apparatus"
3. Air voids, LS-265, (latest revision) "Determination of Percent Air Voids in Compacted Dense Bituminous Pavement Mixtures"
4. Voids in mineral aggregate, LS-266 (latest revision), "Determination of V.M.A. in Compacted Bituminous Mixtures"

Note 2: For calculation of the V.M.A. use the values for aggregate bulk relative densities and asphalt cement provided on Pages 3 and/or Page 4. An example of a completed work sheet is shown on page 4. A hard copy of this sheet must be submitted with the laboratory work sheets. The VMA values shall be reported in the designated spaces on the Mix Compliance Report form.

YEAR 2018 CCIL CORRELATION

All test results shall be reported online and submitted by **January 5 2018**. An example of a completed report form is shown on Page 6.

Hard copies of the report forms and work sheets must be submitted by **January 5 2018** by mail or courier to the following address. **DO NOT** send reports and worksheets by fax.

Nabil Kamel, M.A.Sc., P.Eng.
CCIL Program Manager
3410 South Service Road, Suite 104
Burlington, Ontario, L7N 3T2
Tel: 289-337-8888: Fax: 289-337-8889: e-mail: nkamel@ccil.com

YEAR 2018 CCIL CORRELATION

MIX COMPLIANCE - % VMA WORK SHEET (Samples I and II)

LABORATORY No. :

LABORATORY NAME

MATERIAL I

Coarse Aggregate 1	(CA1)	28.0%
Fine Aggregate 1	(FA1)	53.0%
Fine Aggregate 2	(FA2)	19.0%
BRD Coarse Aggregate	(CA)	2.662
BRD Fine Aggregate 1	(FA1)	2.674
BRD Fine Aggregate 2	(FA2)	2.765

Compacted Mix BRD (Db) SAMPLE # _____

(1) _____

(2) _____

(3) _____

% AC 5.50 (by mass of total mix)

Combined Aggregate BRD (Gb): _____

% VMA = (1) _____ (2) _____ (3) _____

MATERIAL II

Coarse Aggregate	(CA1)	42.0%
Fine Aggregate 1	(FA1)	31.0%
Fine Aggregate 2	(FA2)	17.0%
Fine Aggregate 3	(FA3)	10.0%

BRD Coarse Aggregate	(CA1)	2.662
BRD Fine Aggregate 1	(FA1)	2.674
BRD Fine Aggregate 2	(FA2)	2.690
BRD Fine Aggregate 3	(FA3)	2.765

Compacted Mix BRD (Db) SAMPLE # _____

(1) _____

(2) _____

(3) _____

% AC 5.10 (by mass of total mix)

Combined Aggregate BRD (Gb): _____

% VMA = (1) _____ (2) _____ (3) _____

YEAR 2018 CCIL CORRELATION

MIX COMPLIANCE - % VMA WORK SHEET (EXAMPLE)

LABORATORY No. : 175 LABORATORY NAME Apex Construction

MATERIAL I

Coarse Aggregate	(CA)	45.2%
Fine Aggregate #1	(FA)	54.8%

BRD Coarse Aggregate	(CA)	BRD 2.697
BRD Fine Aggregate #1	(FA)	BRD 2.659

Compacted Mix BRD (Db) SAMPLE I-MC-14

- (1) 2.372
- (2) 2.369
- (3) 2.374

% AC 5.27 (by mass of total mix)

Combined Aggregate BRD (Gb): 2.673

% VMA = (1) 15.9 (2) 16.1 (3) 15.9

YEAR 2018 CCIL CORRELATION

2018 CCIL CORRELATION - EXAMPLE FORM - ONTARIO

Testing Admin Information your assigned CCIL Asphalt Lab No.: **ON999**

<ul style="list-style-type: none"> • Lab Name (include Branch or Mobile #) • E-mail Address • Reported by (Contact Name) • Phone Number (Contact) • Tested by (Name(s)) • Results Reporting Date 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"> </td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="text-align: center;">(999) 999-9999</td></tr> <tr><td style="height: 20px;"> </td></tr> <tr><td style="text-align: center;">January 5 2018</td></tr> </table>			(999) 999-9999		January 5 2018
(999) 999-9999						
January 5 2018						

* For Type B Laboratories.

Mix Compliance I-MC & II-MC

RECOMPACTED MARSHALL TESTS								
Results for:	Material I				Material II			
Replicate	(i)	(ii)	(iii)	Average	(i)	(ii)	(iii)	Average
• <i>BRD</i>	2.376	2.380	2.379	2.378	2.421	2.430	2.426	2.426
• <i>M RD</i>	2.485	2.484		2.485	2.501	2.504		2.503
• <i>% Voids</i>				4.3				4.5
• <i>% VMA</i>	15.6	15.8	15.7	15.7	14.2	14.4	14.3	14.3
• <i>Stability (N)</i>	10,864	11,625	11,425	11,305	9424	9821	9720	9655
• <i>Flow</i> (0.25mm units)	10.4	10.2	10.3	10.3	9.6	10.2	9.9	9.9