

## YEAR 2010 CCIL CORRELATION

### IGNITION FURNACE GENERAL INSTRUCTIONS - ALBERTA

The following samples have been forwarded to your laboratory:

Material **A-IGCF-#** (Five samples)

Material **A-IGMF-#** (Two samples)

Asphalt Cement **A-IGAC-#** (One sample)

#### A) Ignition Furnace Procedure

- 1) While furnace is at room temperature calibrate the furnace balance as described in the furnace manual provided by the manufacturer.
- 2) Set the combustion temperature of 540°C (deemed appropriate for this type of sample) or as indicated for Irradiation type furnace.
- 3) Set the start time (Auto Timer) so that the furnace is at the specified run temperature (see 2) above) for at least 60 minutes before starting the burn of the first sample of the day.
- 4) Set the furnace endpoint to 1.0g

#### B) Sample Preparation

##### Correction Factor (A-IGCF-#) Samples:

- 1) Five sample bags containing approximately 1500g of mixed aggregates and one sample of asphalt cement are supplied
- 2) Aggregates are to be dried to constant weight at temperature not to exceed 150°C and cooled to room temperature prior to mixing.
- 3) Place the asphalt cement sample (supplied) in an oven set at 140°C
- 4) Follow Alberta Field Test Procedure ATT 74, Part II Section 3.2.1
- 4) Mixing temperature for the correction factor samples is 140°C.
- 5) Weigh and record the dried aggregate sample.
- 6) Based on this weigh add sufficient asphalt cement (supplied) to produce a mix containing **5.25% A-IGAC-#** basis aggregate portion only.
- 7) Five samples are provided. Calibration Factor shall be determined from 3 of the 5 samples.

##### Premixed A-IGMF-1-# Samples:

- 1) Two sample bags containing approximately 1500g of **A-IGMF-#** are supplied and are ready for testing. Use total sample for analysis. **Determination of moisture content is not required.**
- 2) Follow Alberta Field Test Procedure ATT 74, Part I, Section 3.5 and record the appropriate data in the ignition data report form included herein.

**NOTE: LABORATORIES SHOULD TAKE CAUTION REGARDING NEGATIVE CALIBRATION FACTORS. A LARGE NEGATIVE CALIBRATION FACTOR SUGGESTS THAT THE ASPHALT CEMENT HAS NOT BEEN COMPLETELY BURNED DURING THE IGNITION RUN.**

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### C) Ignited Aggregate Gradation

#### A) Correction factor samples

- 1) Carefully transfer the total residue after ignition *including ash brushed off of pans and instruments* to a weighing pan and weigh to the nearest 0.1g.
- 2) Perform a wash sieve analysis on all five samples and record the data for the 3 selected samples on the upper portion of the report form provided (available on the CCIL Website)

#### B) Premixed samples

- 1) Carefully transfer the total residue after ignition *including ash brushed off of pans and instruments* to a weighing pan and weigh to the nearest 0.1g.
- 3) Perform a wash sieve analysis on all five samples and record the data for the two samples on the lower portion of the report form provided (available on the CCIL Website).

All test results shall be reported by e-mail in the designated spaces on the (MS-Excel) Ignition Furnace Report form (listed separately on CCIL Web Site). An example of a completed report form is shown on page 3.

The completed Ignition Furnace Report form shall be e-mailed to [ibullen@ccil.com](mailto:ibullen@ccil.com) by **January 8, 2010**.

Hard copies of the report forms and work sheets (including Tables 1-4) must be submitted by **January 8, 2010** by mail or courier to:

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CCIL Program Manager  
3166 Lakeshore Road  
Burlington, Ontario, L7n 1A4  
Tel: 905-632-6456; Fax: 905-632-1990; e-mail: [nkamel@ccil.com](mailto:nkamel@ccil.com)

**DO NOT** send reports and worksheets by fax

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2010 CCIL CORRELATION - IGNITION FURNACE EXAMPLE FORM					
<b>Testing Admin Information</b>			Enter your assigned Lab No.:		<b>ABxx</b>
• Lab Name (include Branch or Mobile #)	<b>Apex Construction</b>				
• E-mail Address	enstein@apex.xom				
• Reported by (Contact Name)	Frank Enstein				
• Phone Number (Contact)	(999) 999-9999				
• Tested by (Name(s))	I.P. Daly				
• Results Reporting Date	January 8, 2010				
IGNITION FURNACE					
Manufacturer:	Easy Bake	Model:	100 W	S/N:	123321
Calibration Factor Samples (Material A-CF-#) (Enter only the 3 samples used)					
Sample Number	x	y	z	Average	
• %A.C.	5.22	5.15	5.14	5.17	
% Passing Sieve, mm					
• 16.0	100.0	100.0	100.0	100.0	
• 12.5	100.0	100.0	100.0	100.0	
• 10.0	97.6	96.9	97.4	97.3	
• 5.00	84.7	84.5	85.1	84.8	
• 2.50	63.1	63.4	63.2	63.2	
• 1.25	52.5	52.1	52.3	52.2	
• 0.630	42.8	42.7	42.3	42.6	
• 0.315	33.7	33.5	33.8	33.7	
• 0.160	20.6	20.3	20.4	20.4	
• 0.080	8.0	8.3	8.1	8.1	
Material A-MF-xx					
Sample Number	X	Y	Average		
• %A.C.	5.01	5.13	5.07		
% Passing Sieve, mm					
• 16.0	100.0	100.0	100.0		
• 12.5	100.0	100.0	100.0		
• 10.0	96.9	97.8	97.4		
• 5.00	84.7	84.3	84.5		
• 2.50	63.4	62.8	63.1		
• 1.25	51.8	52.4	52.1		
• 0.630	43.8	43.4	43.6		
• 0.315	33.7	33.5	33.6		
• 0.160	20.6	20.3	50.5		
• 0.080	8.4	8.2	8.3		
Save as Ignition Furnace Report - Lab ### where ### is your code number.					

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**TABLE 1. CORRECTION FACTOR - ALBERTA**

**A . ACTUAL ASPHALT CONTENT AND SAMPLE PREPARATION**

SAMPLE NUMBER		1	2	3	4	5
A	Wt of dry aggregate + basin + spoon @ 130°C	g				
B	Tare of basin + spoon @ 130°C (Basin No. )	g				
C	Wt of dry aggregate A - B	g				
D	Target asphalt content	%				
E	Wt of asphalt required CD /100	g				
F	Required wt of basin + spoon + dry aggregate + asp A+E	g				
G	Actual wt of basin + spoon + dry aggregate + asp	g				
H	Wt of asphalt added G - A	g				
I	Actual asphalt content 100 H / C	g				

**B. IGNITION BASKET WEIGHT CORRECTION FACTOR FOR TEMPERATURE**

Basket Number						
AA	Wt of ignition basket @ 538°C					
BB	Wt of ignition basket @ 130°C					
CC	Ignition basket weight AA - BB					

**C. ASPHALT CONTENT IGNITION**

J	Wt of ignition basket (No. )					
K	Wt of dry mix H + C or G - B					
L	Wt of dry aggregate + basket @ 538°C					
M	Wt of dry aggregate from ignition L - J					
N	Wt of asphalt K - M					
o	Ignition asphalt content 100 N / M					

**D. IGNITION ASPHALT CONTENT CORRECTION FACTOR**

P	Difference of asphalt contents I - O	%				
Q	Average asphalt correction factor (P1, P2, P3, P4, P5) / 5	%				

**Remarks:**


**TABLE 2. IGNITION DATA - PREPARED SAMPLES - ALBERTA**

		Sample A	Sample B
K	Dry weight of mix	g	
L	Weight of ignition basket	g	
M	Ignition basket weight correction factor	g	
N	Weight of ignition basket @ 538°C L + M	g	
O	Weight of dry aggregate + ignition basket @538°C	g	
P	Weight of dry aggregate from ignition O - N	g	
Q	Weight of asphalt K - P	g	
R	Uncorrected asphalt content 100 Q / P	%	
S	Ignition asphalt content correction factor	%	

**Remarks:**


**TABLE 3: Gradation of In-House Prepared Calibration Factor Samples  
(After Ignition) - ALBERTA**

		Calibration Factor Samples				
		Code No.	Code No.	Code No.	Code No.	Code No.
Laboratory Balance	Initial Mass, g					
	Final Mass, g					
Furnace Balance	Initial Mass, g					
	Final Mass, g					
AGGREGATE						
Dry mass before washing, g						
Dry mass after washing, g						
GRADATION	% Passing					
	16.0 mm					
	12.5 mm					
	10.0 mm					
	5.00 mm					
	2.50 mm					
	1.25 mm					
	0.630 mm					
	0.315 mm					
	0.160 mm					
0.080 mm						

Laboratory Name: \_\_\_\_\_ Date \_\_\_\_\_  
 Tested: \_\_\_\_\_

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**TABLE 4: Gradation of Aggregates From Prepared HMA Samples  
(After Ignition) - ALBERTA**

		Prepared HMA Samples				
		Code No.	Code No.	Code No.	Code No.	Code No.
Laboratory Balance	Initial Mass, g					
	Final Mass, g					
Furnace Balance	Initial Mass, g					
	Final Mass, g					
<b>AGGREGATE</b>						
Dry mass before washing, g						
Dry mass after washing, g						
<b>GRADATION</b>	<b>% Passing</b>					
	16.0 mm					
	12.5 mm					
	10.0 mm					
	5.00 mm					
	2.50 mm					
	1.25 mm					
	0.630 mm					
	0.315 mm					
	0.160 mm					
0.080 mm						

Laboratory Name: \_\_\_\_\_ Date Tested: \_\_\_\_\_