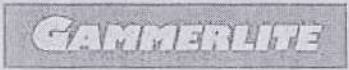


Gammerlite Sdn. Bhd. (180947-D)



F14: Marshall Stability & Flow Test

Client: Gammerlite Sdn Bhd
 Project: Federal Road Maintenance East Coast Sabah
 Location: Asten Cook, Labuk Lab. Sample No. FRM/R/Sdk/Labuk/14-7
 Date Taken : 09.11.2014 Time Taken : 10.00 a.m Temperature :
 Bitumen Grade : 80/100 S.G. of Bitumen : 1.03
 S.G. of Aggregate Blend : 2.540

% Bitumen by wt. of total mix (a)	Specimen height (mm) (b)	Specimen wt. in air (gm) (c)	Specimen wt. in water (gm) (d)	Wt. of saturated surface-dry specimen (gm) (e)	Bulk volume (c.c.) (f)	Bulk Density (Mg/m3) (g)
5.47 ✓	64.2	1,154	667	1,182	515	2.241
	65.2	1,186	689	1,205	516	2.298
	63.2	1,121	643	1,157	514	2.181
Average=						2.24

Maximum Theoretical Density (Mg/m3) (h)	Volume % Total			% voids		
	Bitumen (i)	Aggregate (j)	Voids (k)	Aggregate (l)	Aggregate filled with Bitumen (m)	Total mix (n)
2.351	$\frac{a \times g}{SG \text{ Bit}}$	$\frac{(100-a) \times g}{SG \text{ Agg}}$	$100 - i - j$	$100 - j$	$\frac{i}{l} \times 100\%$	$100 - \frac{(100g)}{h}$
	11.9	83.4	4.7	16.6	71.6 ✓	4.7 ✓

STABILITY and FLOW

	Test 1	Test 2	Test 3	Average of three tests
Measured (N)	12,054	11,201	9,215	10,823
Adjusted (N)	10,608	10,742	8,367	9,906 ✓
Flow (mm)	3.2	3.5	2.8	3.2 ✓
Stiffness (N/mm)	3,315	3,069	2,988	3,124 ✓

Remark : ACW Cold Premix

Tested by : *Alsimar*
 Name: Alsimar Abah
 Date: 09.11.2014

Verified by: *Ho Ken Chai*
 Name: IR. HO KEN CHAI
 Date:



Alsimar
BAHARUDDIN BIN BASARI
 ROAD MAINTENANCE ENGINEER
 SANDAKAN CENTRE

Gammerlite Sdn. Bhd. (180947-D)



F13: Bitumen Extraction Test

Client: Gammerlite Sdn Bhd
Project: Federal Road Maintenance East Coast Sabah
Location: Asten Cook, Labuk
Date Taken: 09.11.2014
Lab. Sample No. FRM/R/Sdk/Labuk/14-7
Time Taken: 10.00a.m

(a) Mass of bowl	gm	1,492
(b) Mass of bowl + sample	gm	2,378
(c) Mass of bowl + residue	gm	2,328
(d) Mass of bitumen + ash (b-c)	gm	50
(e) Probable ash content (0.03d)	gm	1.5
(f) Mass of bitumen (d-e)	gm	48.5
(g) Mass of sample (b-a)	gm	886
(h) % Bitumen by mass of total mix (f)/(g)	%	5.47
(i) Mass of residue + ash (c-a+e)	gm	837.5
(j) % Bitumen by mass of hundred parts aggregate (f)/(i)	%	5.79

Remarks : ACW Cold Premix

Tested by : *Alsimal Abah*
Name: Alsimal Abah
Date: 09.11.2014
Verified by: *IR. HO KEN CHAI*
Name: IR. HO KEN CHAI
Date:

Baharuddin Bin Basari
BAHARUDDIN BIN BASARI
ROAD MAINTENANCE ENGINEER
SANDAKAN CENTRE



Gammerlite Sdn. Bhd. (180947-D)



F6: Sieving Analysis

Client: Gammerlite Sdn Bhd
 Project: Federal Road Maintenance East Coast Sabah

Location: Asten Cook, Labuk Lab. Sample No. FRM/R/Sdk/Labuk/14-7

WET SIEVING DRY SIEVING

a) Mass of dried sample before washing through 75 um sieve : gm
 b) Mass of dried sample after washing through 75 um sieve : gm

B.S. Sieve	Mass retained on sieve (gm)	Mass coarser than sieve (gm)	Percentage (%) coarser than sieve	Percentage finer than sieve (%)	Remarks
75 mm					
63 mm					
50 mm					
37.5 mm					
25 mm				100	
20 mm	78.0	78	8.17	91.83	
14 mm	98.0	176	18.43	81.57	
10 mm	88.00	264	27.64	72.36	
5 mm	155.00	419	43.87	56.13	
3.35 mm	100.00	519	54.35	45.65	
1.18 mm	189.00	708	74.14	25.86	
600 um					
425 um	110.00	818	85.65	14.35	
300 um					
150 um	59.00	877	91.83	8.17	
75 um	55.00	932	97.59	2.41	
Pan dry	23.00	955	100.00	0.00	
Pan wet					
Total	955.0	955			

Remarks : ACW Cold Premix

Tested by:
 Name: Alsimal B. Abah
 Date: 09.11.2014

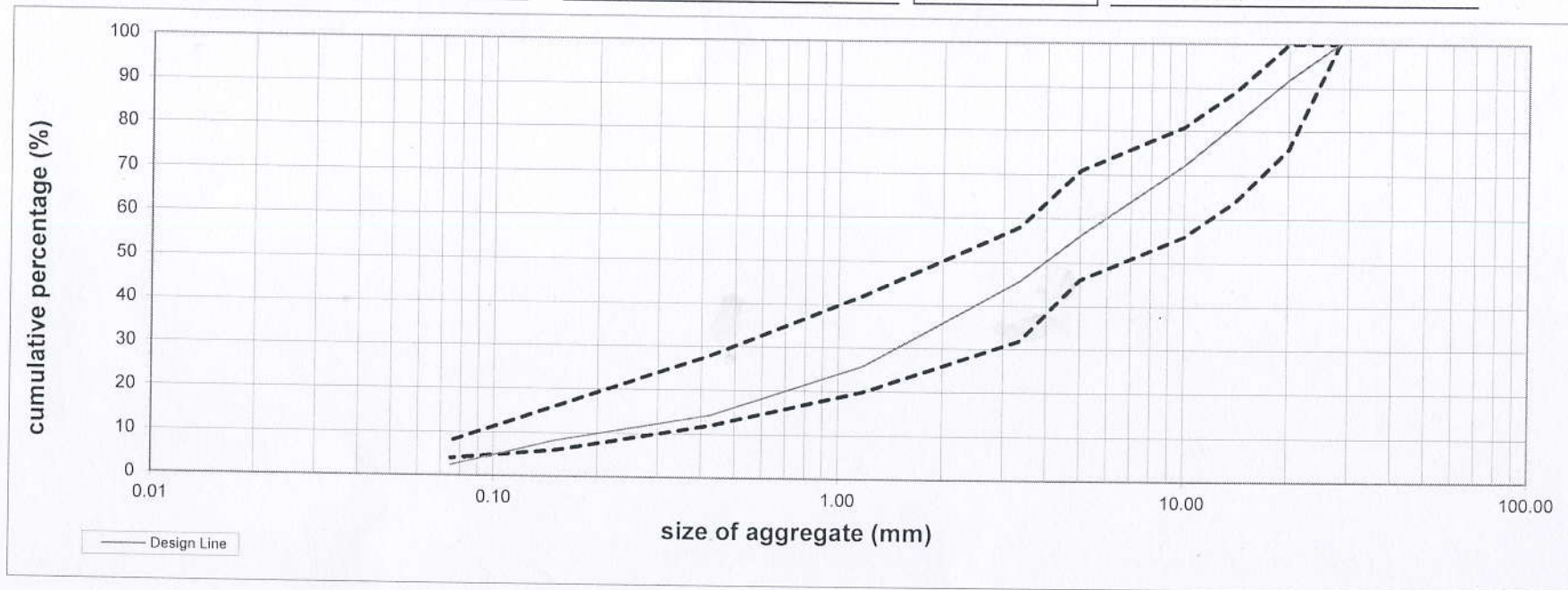
Verified by:
 Name:
 Date:

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 ROAD MAINTENANCE ENGINEER
 SANDAKAN CENTRE



COMBINED GRADING

Client	Gammerlite Sdn Bhd	
Project	Federal Road Maintenance East Coast Sabah	
Mix Type	ACW 20	
Lab Sample No	Location	Asten Cook, Labuk



Remarks : ACW Cold Premix

Tested by : *Alsimar*
Name: Alsimar B. Abah
Date: 09.11.2014

Baharuddin Bin Basari
BAHARUDDIN BIN BASARI
ROAD MAINTENANCE ENGINEER
SANDAKAN CENTRE

Verified by: *Ho Ken Chai*
Name: IR. HO KEN CHAI
Date:

