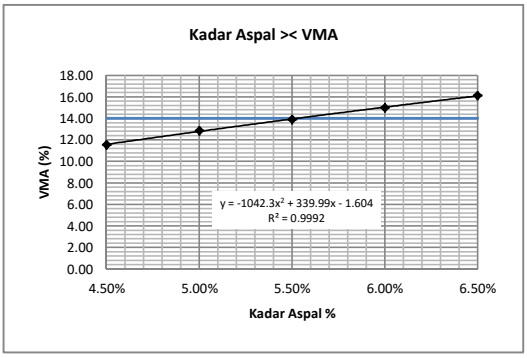
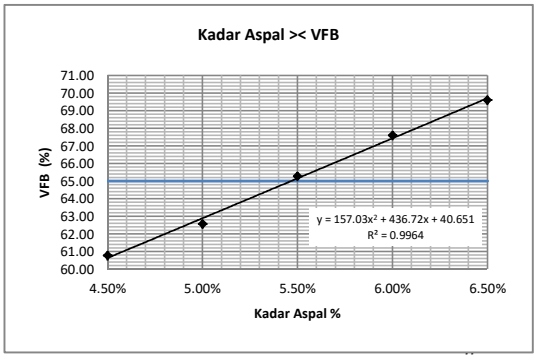
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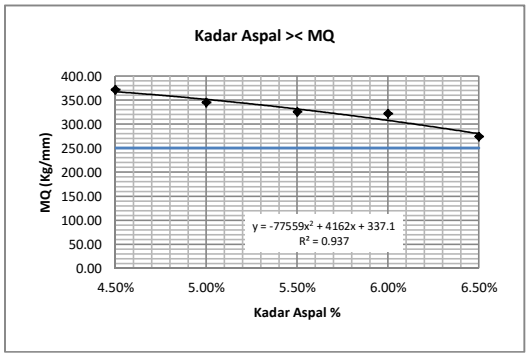
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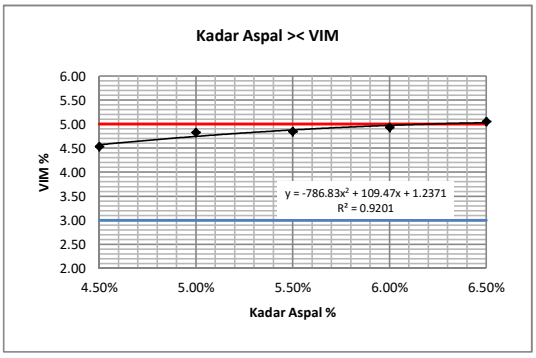
Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

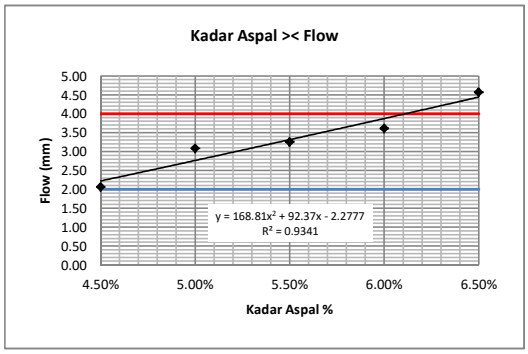
GRAFIK MARSHALL

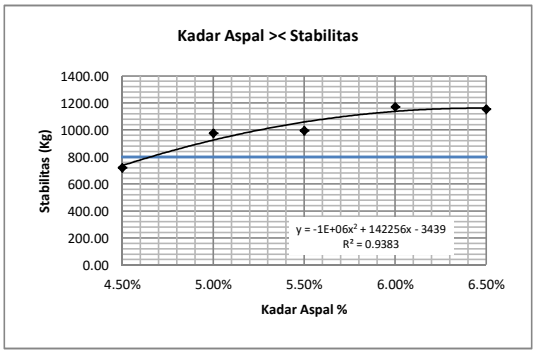


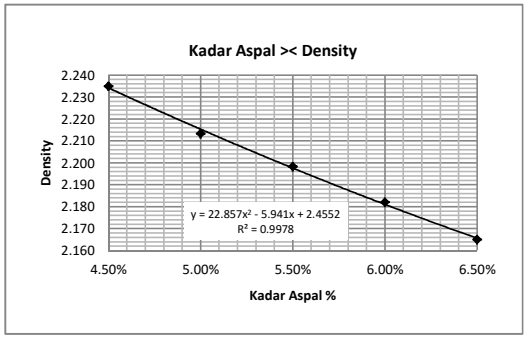












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Pengujian Marshall AC-BC

NO	% Aspal Terhadap Campuran	% Aspal Terhadap Agregat	Bj Bulk Agg Mix (Gsb)	Bj Semu Agg Mix (Gsa)	Bj Efektif Agg Mix (Gse)	Berat Uji Benda			Isi Benda Uji	Berat Isi Benda Uji (Kepadatan)	Bj. Maks Campuran (Gmm)	% Rongga			Bacaan Arloji Stabilitas	Stabilitas			Flow	MQ
						Kering	Dalam Air	SSD				Diantara Agregat (VMA)	Terhadap Campuran (VIM)	Terisi Aspal (VFB)		Terhadap Kalibrasi	Nilai Koreksi	Terhadap Koreksi		
	(%)	(%)	(gr/cc)	(gr/cc)	(gr/cc)	(gram)	(gram)	(gram)	(cc)	(gr/cc)	(gr/cc)	(%)	(%)	(%)		(4.99)		(Kg)	(mm)	(Kg/mm)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	4.50	4.71	2.41	2.57	2.49	1198.0	690.0	1227.2	537.2	2.23	2.34	11.75	4.75	59.60	100.00	498.96	0.94	211.62	2.1	100.77
	4.50	4.71	2.41	2.57	2.49	1201.0	690.0	1227.4	537.4	2.24	2.34	11.55	4.53	60.75	167.00	833.26	0.94	779.10	2.4	324.63
	4.50	4.71	2.41	2.57	2.49	1193.0	700.0	1232.6	532.6	2.24	2.34	11.35	4.32	61.95	251.00	1252.39	0.94	1170.98	1.7	688.81
	Rata-rata					**1197.3**	**693.3**	**1229.1**	**535.7**	**2.24**	**2.34**	**11.55**	**4.53**	**60.77**	**172.67**	**861.54**	**0.94**	**720.57**	**2.07**	**371.40**
2	5.00	5.26	2.41	2.57	2.49	1225.0	720.0	1276.8	556.8	2.20	2.33	13.39	5.40	59.67	200.00	997.92	0.90	898.13	2.0	457.84
	5.00	5.26	2.41	2.57	2.49	1197.0	713.0	1253.4	540.4	2.22	2.33	12.80	4.76	62.85	175.00	873.18	0.94	816.42	4.1	199.33
	5.00	5.26	2.41	2.57	2.49	1188.0	705.0	1238.9	533.9	2.23	2.33	12.41	4.33	65.13	260.00	1297.30	0.94	1212.97	3.2	378.28
	Rata-rata					**1203.3**	**712.7**	**1256.4**	**543.7**	**2.21**	**2.33**	**12.87**	**4.83**	**62.55**	**211.67**	**1056.13**	**0.92**	**975.84**	**3.09**	**345.15**
3	5.50	5.82	2.41	2.57	2.49	1181.0	690.0	1223.2	533.2	2.22	2.31	13.26	4.12	68.89	236.00	1177.55	0.94	1101.01	3.9	283.35
	5.50	5.82	2.41	2.57	2.49	1219.0	720.0	1275.4	555.4	2.20	2.31	14.04	4.99	64.46	215.00	1072.76	0.89	949.40	3.8	250.24
	5.50	5.82	2.41	2.57	2.49	1197.0	725.0	1272.8	547.8	2.19	2.31	14.44	5.42	62.43	200.00	997.92	0.94	933.06	2.1	442.80
	Rata-rata					**1199.0**	**711.7**	**1257.1**	**545.5**	**2.20**	**2.31**	**13.91**	**4.85**	**65.26**	**217.00**	**1082.74**	**0.92**	**994.49**	**3.26**	**325.46**
4	6.00	6.38	2.41	2.57	2.49	1197.0	710.0	1249.2	539.2	2.22	2.30	13.52	3.28	75.78	182.00	908.11	0.90	817.30	3.6	225.68
	6.00	6.38	2.41	2.57	2.49	1195.0	710.0	1259.2	549.2	2.18	2.30	15.24	5.19	65.92	350.00	1746.36	0.94	1632.85	4.1	394.51
	6.00	6.38	2.41	2.57	2.49	1204.0	710.0	1270.0	560.0	2.15	2.30	16.25	6.33	61.08	228.00	1137.63	0.94	1063.68	3.1	344.86
	Rata-rata					**1198.7**	**710.0**	**1259.5**	**549.5**	**2.18**	**2.30**	**15.00**	**4.93**	**67.59**	**253.33**	**1264.03**	**0.92**	**1171.28**	**3.61**	**321.68**
5	6.50	6.95	2.41	2.57	2.49	1181.0	665.0	1200.6	535.6	2.21	2.28	14.57	3.30	77.34	210.00	1047.82	0.94	979.71	5.7	173.13
	6.50	6.95	2.41	2.57	2.49	1201.0	615.0	1163.4	548.4	2.19	2.28	15.15	3.96	73.87	248.00	1237.42	0.89	1095.12	4.7	230.91
	6.50	6.95	2.41	2.57	2.49	1197.0	620.0	1190.0	570.0	2.10	2.28	18.63	7.91	57.58	298.00	1486.90	0.94	1390.25	3.3	417.65
	Rata-rata					**1193.0**	**633.3**	**1184.7**	**551.3**	**2.17**	**2.28**	**16.12**	**5.05**	**69.59**	**252.00**	**1257.38**	**0.92**	**1155.03**	**4.58**	**273.90**
											Min	**14**	**3**	**65**	**-**	**-**	**-**	**800**	**2**	**-**
											Max	**-**	**5**	**-**	**-**	**-**	**-**	**-**	**4**	**-**

Parepare, 21 Oktober 2024

Koordinator Laboratorium
Jalan & Aspal

Ir. Andriyani, ST.,MT.
NBM. 1210 588

Asisten Laboratorium
Jalan & Aspal

Asiz, ST.

LABORATORIUM JALAN DAN ASPAL
PRODI TEKNIK SIPIL FAKULTAS TEKNIK
UNIVERSITAS MUHAMMADIYAH PAREPARE
Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

RANCANGAN CAMPURAN ASPAL AC WC

U R A I A N		NILAI	SATUAN
Proporsi fraksi Kasar	CA	60.66	%
Proporsi fraksi Halus	FA	33.75	%
Proporsi Bahan Pengisi	FF	5.59	%
Nilai Konstanta	K	1.00	%
Perkiraan Kadar Aspal	Pb	***5.65***	%

Rumus Perkiraan Kadar Aspal (Pb)

Pb =0,035 (CA) + 0,045 (FA) + 0,18 (FF) + K

K O M P O N E N		KOMPOSISI AGREGAT	KADAR ASPAL RENCANA (%)				
			4.5	5	5.50	6	6.5
a	Split	18%	17.19	17.10	17.01	16.92	16.83
b	Screen	31%	29.61	29.45	29.30	29.14	28.99
c	Abu Batu	48%	45.84	45.60	45.36	45.12	44.88
e	Filler	3%	2.87	2.85	2.84	2.82	2.81
TOTAL AGG. CAMPURAN (%)		100%	95.50	95.00	94.50	94.00	93.50
TOTAL CAMPURAN (%)			100.00	100.00	100.00	100.00	100.00

KOMPOSISI CAMPURAN		KOMPOSISI AGGREGAT	BERAT TIMBANGAN				
		%	4.5	5	5.5	6	6.5
	Split	18%	206.3	205.2	204.1	203.0	202.0
	Screen	31%	355.3	353.4	351.5	349.7	347.8
c	Abu Batu	48%	550.1	547.2	544.3	541.4	538.6
e	Filler	3%	34.4	34.2	34.0	33.8	33.7
BERAT AGREGAT CAMPURAN (gr)			1146.0	1140.0	1134.0	1128.0	1122.0
			54.0	60.0	66.0	72.0	78.0
			1200.0	1200.0	1200.0	1200.0	1200.0

Parepare, 8 Maret 2024
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Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

ANALISA BERAT JENIS AGREGAT

KOMPONEN	PROPORSI (%)	BERAT JENIS			KETERANGAN
		BULK	SSD	APPARENT	
Split	18%	2.400	2.460	2.552	
Screen	31%	2.378	2.427	2.501	
Abu Batu	48%	2.446	2.521	2.642	
Filler	3%	3.150	3.150	3.150	

$$\text{BULK} = \frac{100}{\frac{18}{2.400} + \frac{31}{2.378} + \frac{48}{2.446} + \frac{3}{3.150}} = 2.432$$

$$\text{SSD} = \frac{100}{\frac{18}{2.460} + \frac{31}{2.427} + \frac{48}{2.521} + \frac{3}{3.150}} = 2.495$$

$$\text{APPARENT} = \frac{100}{\frac{18}{2.552} + \frac{31}{2.501} + \frac{48}{2.642} + \frac{3}{3.150}} = 2.593$$

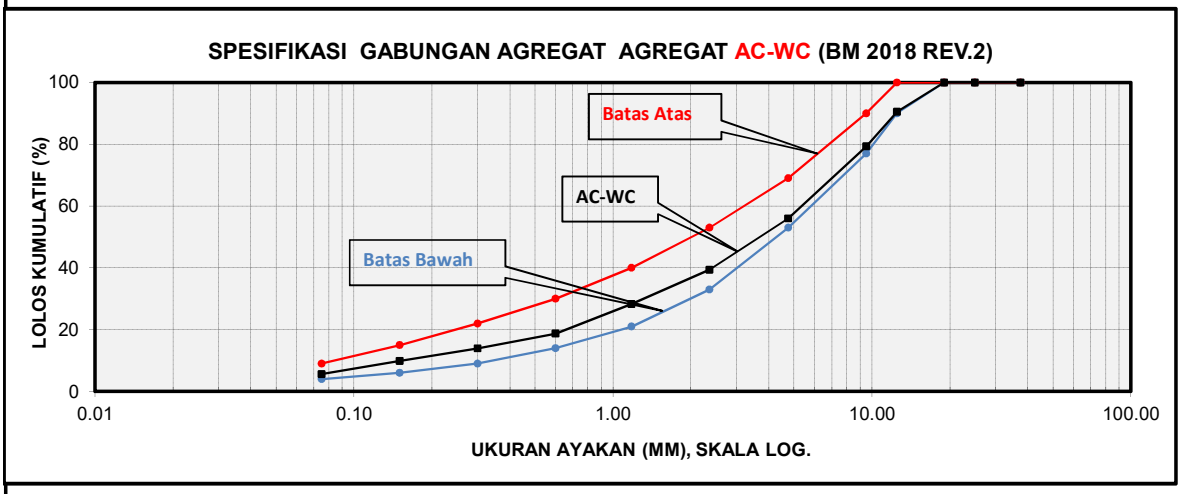
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LABORATORIUM JALAN DAN ASPAL
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Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

GRADASI GABUNGAN AGREGAT AC-WC

UKURAN AYAKAN (MM)	LOLOS KUMULATIF (%)				LOLOS KUMULATIF (%), GABUNGAN AGREGAT					LOLOS KUM. (%) SPEK BM 2010 Rev.3	
	Split (A)	Screen (B)	Abu Batu (C)	Filler (D)	Split (A)	Screen (B)	Abu Batu (C)	*Filler* (D)	JUMLAH GAB. A+B+C+D	AC-WC	
	100	100	100	100	18.00	31.00	48.00	3.00	100.00	Bawah	Atas
37.50	100.00	100.00	100.00	100.00	18.00	31.00	48.00	3.00	100.00	100	100
25.00	100.00	100.00	100.00	100.00	18.00	31.00	48.00	3.00	100.00	100	100
19.00	100.00	100.00	100.00	100.00	18.00	31.00	48.00	3.00	100.00	100	100
12.50	57.21	94.03	100.00	100.00	10.30	29.15	48.00	3.00	90.45	90	100
9.50	34.81	71.03	100.00	100.00	6.27	22.02	48.00	3.00	79.29	77	90
4.75	20.28	18.77	90.66	100.00	3.65	5.82	43.52	3.00	55.99	53	69
2.36	1.01	0.23	75.18	100.00	0.18	0.07	36.09	3.00	39.34	33	53
1.18	0.17	0.00	52.55	100.00	0.03	0.00	25.22	3.00	28.26	21	40
0.60	0.17	0.00	32.61	100.00	0.03	0.00	15.65	3.00	18.68	14	30
0.30	0.16	0.00	22.69	100.00	0.03	0.00	10.89	3.00	13.92	9	22
0.15	0.14	0.00	14.33	100.00	0.03	0.00	6.88	3.00	9.90	6	15
0.075	0.05	0.00	5.37	100.00	0.01	0.00	2.58	3.00	5.59	4	9



Kesimpulan:

1. Ukuran Nominal Agregat hasil analisa ayak sama dengan Spesifikasi BM 2010 Rev.3 untuk AC-WC, Yaitu 12,5 mm;
2. Proporsi Optimum Hasil Penggabungan Agregat dg metoda coba-coba (Trial & Error), di dapat:

a. Split	18.0 %
b. Screening	31.0 %
c. Abu Batu	48.0 %
d. *Filler* (PCC)	3.0 %
Jumlah Total	100.0 %

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Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

ANALISA AYAK AGREGAT
(SNI 03-6884-2002/ ASTM 136-1996a/ AASHTO T.27-1999)

UKURAN AYAKAN (MM)	TERTAHAN (GRAM)				TERTAHAN (%)				TERTAHAN KUMULATIF (%)				LOLOS KUMULATIF (%)			
	Split A	Screen B	Abu Batu C	Filler D	Split A	Screen B	Abu Batu C	Filler D	Split A	Screen B	Abu Batu C	Filler D	Split A	Screen B	Abu Batu C	Filler D
37.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00
25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00
19.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00
12.50	641.90	89.50	0.00	0.00	42.79	5.97	0.00	0.00	42.79	5.97	0.00	0.00	57.21	94.03	100.00	100.00
9.50	335.90	345.00	0.00	0.00	22.39	23.00	0.00	0.00	65.19	28.97	0.00	0.00	34.81	71.03	100.00	100.00
4.75	218.00	784.00	140.05	0.00	14.53	52.27	9.34	0.00	79.72	81.23	9.34	0.00	20.28	18.77	90.66	100.00
2.36	289.10	278.00	232.25	0.00	19.27	18.53	15.48	0.00	98.99	99.77	24.82	0.00	1.01	0.23	75.18	100.00
1.18	12.50	3.50	339.45	0.00	0.83	0.23	22.63	0.00	99.83	100.00	47.45	0.00	0.17	0.00	52.55	100.00
0.60	0.00	0.00	299.15	0.00	0.00	0.00	19.94	0.00	99.83	100.00	67.39	0.00	0.17	0.00	32.61	100.00
0.30	0.25	0.00	148.70	0.00	0.02	0.00	9.91	0.00	99.84	100.00	77.31	0.00	0.16	0.00	22.69	100.00
0.15	0.20	0.00	125.50	0.00	0.01	0.00	8.37	0.00	99.86	100.00	85.67	0.00	0.14	0.00	14.33	100.00
0.075	1.40	0.00	134.30	0.00	0.09	0.00	8.95	0.00	99.95	100.00	94.63	0.00	0.05	0.00	5.37	100.00
< 0,075	0.75	0.00	80.6	1500.00	0.05	0.00	5.37	100.00	100.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00
Jumlah	1500.00	1500.00	1500.00	1500.00	100.00	100.00	100.00	100.00								

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LABORATORIUM JALAN DAN ASPAL
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UNIVERSITAS MUHAMMADIYAH PAREPARE

Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

BERAT JENIS DAN PENYERAPAN

SNI 03 - 1970 - - 1990

AGREGAT KASAR : ***Split*** ***SUMBER MATERIAL*** : ***GUNUNG TOLONG, KAB. BARRU***

NOMOR CONTOH			1	2	Rata - rata
BERAT CONTOH KERING		Gram	4876	4918	
BERAT CONTOH KERING PERMUKAAN		Gram	4971	5069	
BERAT CONTOH DALAM AIR		Gram	2990.0	2966.0	
BERAT JENIS BULK	A / B - C	Gr/cc	2.461	2.339	2.400
BERAT JENIS SSD	B / B - C	Gr/cc	2.509	2.410	2.460
BERAT JENIS APPARENT	A / A - C	Gr/cc	2.585	2.519	2.552
PENYERAPAN AIR	B - A / A X 100%	%	1.948	3.070	2.509

AGREGAT KASAR : ***Screen*** ***SUMBER MATERIAL*** : ***GUNUNG TOLONG, KAB. BARRU***

NOMOR CONTOH			1	2	Rata - rata
BERAT CONTOH KERING		Gram	4970	4936	
BERAT CONTOH KERING PERMUKAAN		Gram	5090	5021	
BERAT CONTOH DALAM AIR		Gram	2995.0	2950.0	
BERAT JENIS BULK	A / B - C	Gr/cc	2.372	2.383	2.378
BERAT JENIS SSD	B / B - C	Gr/cc	2.430	2.424	2.427
BERAT JENIS APPARENT	A / A - C	Gr/cc	2.516	2.485	2.501
PENYERAPAN AIR	B - A / A X 100%	%	2.414	1.722	2.068

AGREGAT HALUS : ***Abu Batu*** ***SUMBER MATERIAL*** : ***GUNUNG TOLONG, KAB. BARRU***

NOMOR CONTOH			1	2	Rata - rata
BERAT CONTOH KERING		Gram	488.2	482.2	
BERAT BOTOL + AIR		Gram	721.1	735.6	
BERAT BOTOL + AIR + CONTOH		Gram	1026.8	1033	
BERAT JENIS BULK	A / B + 500 - C	Gr/cc	2.513	2.380	2.446
BERAT JENIS SSD	500 / B + 500 - C	Gr/cc	2.573	2.468	2.521
BERAT JENIS APPARENT	A / B + A - C	Gr/cc	2.675	2.609	2.642
PENYERAPAN AIR	500 - A / A X 100%	%	2.417	3.691	3.054

Parepare, 8 Maret 2024
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UNIVERSITAS MUHAMMADIYAH PAREPARE
Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

PEMERIKSAAN BERAT JENIS ASPAL

nomor sampel	A	B	C	D	E
	Gram	Gram	Gram	Gram	(Gr/cc)
1	71.70	167.50	149.20	169.30	1.02
2	71.40	166.70	149.00	169.30	1.03

Keterangan :

$$\text{Berat jenis (E)} = \frac{(C - A)}{(B - A) - (D - C)}$$

A = Berat piknometer (gram)
B = Berat piknometer + air suling (gram)
C = Berat piknometer + aspal (gram)
D = Berat piknometer + air suling + aspal (gram)

A. ANALISA DATA

sampel 1

$$\text{Berat jenis (E)} = \frac{(C - A)}{(B - A) - (D - C)}$$

$$= \frac{(\ 149.20\ ) - (\ 71.70\ )}{(\ 167.5 - 71.70\ ) - (\ 169.3 - 169.3\ )}$$

= 1.02 Gr/cc

sampel 2

$$\text{Berat jenis (2)} = \frac{(C - A)}{(B - A) - (D - C)}$$

$$= \frac{(\ 149.00\ ) - (\ 149.00\ )}{(\ 166.7 - 71.40\ ) - (\ 169.3 - 149.0\ )}$$

= 1.03 Gr/cc

B. KESIMPULAN

Berat jenis aspal yang diperoleh adalah 1.03 Gr/cc dan masuk dalam spesifikasi yang disyaratkan yaitu minimal 1.020 - 1.040

Parepare, 8 Maret 2024
Asisten Laboratorium
Jalan & Aspal

Asiz, ST.

LABORATORIUM JALAN DAN ASPAL
PRODI TEKNIK SIPIL FAKULTAS TEKNIK
UNIVERSITAS MUHAMMADIYAH PAREPARE

Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

PENGUJIAN ANALISA SARINGAN

AGREGAT KASAR : *1-2* ***SUMBER MATERIAL*** : ***GUNUNG ALITTA, KAB. PINRANG***

NO Saringan	SAMPEL 1				SAMPEL 2				
	Berat Tertahan	(%) Tertahan	Komulatif Tertahan	(%) Lolos	Berat Tertahan	(%) Tertahan	Komulatif	(%) Lolos	Rata - Rata
1"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.00%
3/4"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.00%
1/2"	683.80	45.6%	683.80	54.4%	600.00	40.0%	600.00	60.0%	57.21%
3/8"	384.80	25.7%	1068.60	28.8%	287.00	19.1%	887.00	40.9%	34.81%
4	211.00	14.1%	1279.60	14.7%	225.00	15.0%	1112.00	25.9%	20.28%
8	205.20	13.7%	1484.80	1.0%	373.00	24.9%	1485.00	1.0%	1.01%
16	10.00	0.7%	1494.80	0.3%	15.00	1.0%	1500.00	0.0%	0.17%
30	0.00	0.0%	1494.80	0.3%	0.00	0.0%	1500.00	0.0%	0.17%
50	0.50	0.0%	1495.30	0.3%	0.00	0.0%	1500.00	0.0%	0.16%
100	0.40	0.0%	1495.70	0.3%	0.00	0.0%	1500.00	0.0%	0.14%
200	2.80	0.2%	1498.50	0.1%	0.00	0.0%	1500.00	0.0%	0.05%
Pan	1.50	0.1%	1500.00	0.0%	0.00	0.0%	1500.00	0.0%	0.00%
Jumlah	1500.00	100.0%			1500.00	100.0%			

AGREGAT KASAR : *0,5-1* ***SUMBER MATERIAL*** : ***GUNUNG ALITTA, KAB. PINRANG***

NO Saringan	SAMPEL 1				SAMPEL 2				
	Berat Tertahan	(%) Tertahan	Komulatif Tertahan	(%) Lolos	Berat Tertahan	(%) Tertahan	Komulatif	(%) Lolos	Rata - Rata
1"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.0%
3/4"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.00%
1/2"	94.00	6.3%	94.00	93.7%	85.00	5.7%	85.00	94.3%	94.03%
3/8"	340.00	22.7%	434.00	71.1%	350.00	23.3%	435.00	71.0%	71.03%
4	791.00	52.7%	1225.00	18.3%	777.00	51.8%	1212.00	19.2%	18.77%
8	271.00	18.1%	1496.00	0.3%	285.00	19.0%	1497.00	0.2%	0.23%
16	4.00	0.3%	1500.00	0.0%	3.00	0.2%	1500.00	0.0%	0.00%
30	0.00	0.0%	1500.00	0.0%	0.00	0.0%	1500.00	0.0%	0.00%
50	0.00	0.0%	1500.00	0.0%	0.00	0.0%	1500.00	0.0%	0.00%
100	0.00	0.0%	1500.00	0.0%	0.00	0.0%	1500.00	0.0%	0.00%
200	0.00	0.0%	1500.00	0.0%	0.00	0.0%	1500.00	0.0%	0.00%
Pan	0.00	0.0%	1500.00	0.0%	0.00	0.0%	1500.00	0.0%	0.00%
Jumlah	1500.00	100.0%			1500	100.0%			
	0.00				0.00				

LABORATORIUM JALAN DAN ASPAL
PRODI TEKNIK SIPIL FAKULTAS TEKNIK
UNIVERSITAS MUHAMMADIYAH PAREPARE

Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

PENGUJIAN ANALISA SARINGAN

AGREGAT HALUS : ***ABU BATU (KERING)*** ***SUMBER MATERIAL*** : ***GUNUNG ALITTA, KAB. PINRANG***

NO Saringan	SAMPEL 1				SAMPEL 2				
	Berat Tertahan	(%) Tertahan	Komulatif Tertahan	(%) Lolos	Berat Tertahan	(%) Tertahan	Komulatif	(%) Lolos	Rata - Rata
1"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.0%
3/4"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.00%
1/2"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.00%
3/8"	0.00	0.0%	0.00	100.0%	0.00	0.0%	0.00	100.0%	100.00%
4	160.10	10.7%	160.10	89.3%	120.00	8.0%	120.00	92.0%	90.66%
8	192.50	12.8%	352.60	76.5%	272.00	18.1%	392.00	73.9%	75.18%
16	333.90	22.3%	686.50	54.2%	345.00	23.0%	737.00	50.9%	52.55%
30	303.30	20.2%	989.80	34.0%	295.00	19.7%	1032.00	31.2%	32.61%
50	167.40	11.2%	1157.20	22.9%	130.00	8.7%	1162.00	22.5%	22.69%
100	146.00	9.7%	1303.20	13.1%	105.00	7.0%	1267.00	15.5%	14.33%
200	103.60	6.9%	1406.80	6.2%	165.00	11.0%	1432.00	4.5%	5.37%
Pan	93.20	6.2%	1500.00	0.0%	68.00	4.5%	1500.00	0.0%	0.00%
Jumlah	1500.00	100.0%			1500	100.0%			

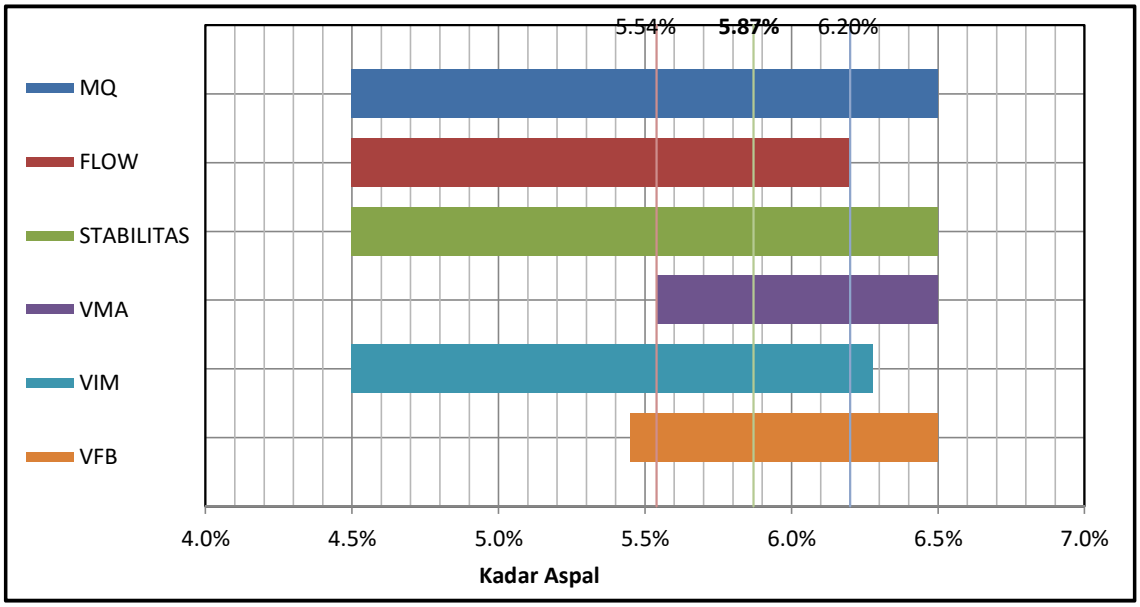
Parepare, 8 Maret 2024
Asisten Laboratorium
Jalan & Aspal

Asiz, ST.

LABORATORIUM JALAN DAN ASPAL
PRODI TEKNIK SIPIL FAKULTAS TEKNIK
UNIVERSITAS MUHAMMADIYAH PAREPARE

Alamat: Jl. Jend. Ahmad Yani Km. 6 Kampus II UMPAR Gedung F Lantai Dasar

EVALUASI
SIFAT - SIFAT CAMPURAN ASPAL



No	SIFAT - SIFAT	NILAI	SATUAN	SPESIFIKASI
1	Kadar aspal optimum	5.87	%	-
2	Kepadatan	2.185	g/cm^3	-
3	Rongga dalam agregat (VMA)	14.76	%	Min 14
4	Rongga terisi aspal (VFB)	66.83	%	Min 65
5	Rongga dalam campuran (VIM)	4.95	%	3 - 5
6	Stabilitas	2998.68	Kg	Min 800
7	Marshall Quotient (MQ)	615.24	Kg/mm	Min 250
8	Kelelehan Marshall (Flow)	3.73	mm	Min 2

Parepare, 21 Oktober 2024

Koordinator Laboratorium
Jalan & Aspal

Ir. Andriyani, ST.,MT.
NBM. 1210 588

Asisten Laboratorium
Jalan & Aspal

Asiz, ST.

DOKUMENTASI





Pengujian penetrasi aspal





Pengujian berat jenis aspal





Pengujian abrasi agregat





Pengujian kehilangan berat aspal





Penimbangan agregat





Proses pembuatan benda uji





pemadatan benda uji dengan penumbuk manual





penimbangan benda uji