

LAMPIRAN

Lampiran 1. Data Hasil Pemeriksaan Material Agregat

1. Pengujian Berat Jenis dan Penyerapan Air

No.	Uraian	Satuan	Sampel I	Sampel II
1	Berat kering oven	gram	4871,4	4901,6
2	Berat jenuh kering permukaan	gram	5011,5	5020,5
3	Berat dalam air	gram	3138,7	3150,2
4	Berat jenis curah kering		2,601	2,621
5	Berat jenis curah kering permukaan		2,676	2,684
6	Berat jenis semu		2,811	2,799
7	Penyerapan air	%	2,876	2,426

2. Pengujian Kadar Lumpur

No.	Uraian	Satuan	Sampel I	Sampel II
1	Berat kering oven	gram	5024	5093
2	Berat kering setelah pencucian	gram	5012	5084
3	Kandungan lumpur	%	0,24	0,18

3. Pengujian Keausan Agregat

No.	Uraian	Satuan	Sampel I	Sampel II
1	Berat kering oven	gram	4985,9	5003
2	Berat kering setelah pencucian	gram	4892,1	4923,3
3	Keausan	%	1,88	1,59

4. Analisis Saringan

Ukuran Saringan (inch)	Berat Tertahan (gram)	Jumlah Tertahan (gram)	Persen Tertahan (%)	Persen Lolos (%)	Spesifikasi
3	0	0	0	100	100
2 ¹ / ₂	403,64	403,64	8	92	90 – 100

(Tabel Lanjutan)

2	1866,84	2270,48	37	55	25 – 60
1 ^{1/2}	479,32	2749,80	9,5	45,5	25 – 60
1	0	2749,80	0	0	–
³ / ₄	2295,70	5045,50	45,5	0	0 – 10
¹ / ₂	0	0	0	0	0 – 5
³ / ₈	0	0	0	0	–
Pan	0	0	0	0	–
Jumlah	5045,50	5045,50	100		–

Lampiran 2. Data Hasil Pemeriksaan Material Aspal

1. Uji Penetrasi

Pemeriksaan penetrasi pada suhu 25°C	Sampel		
	I	II	II
1	66	58	60
2	72	66	66
3	64	67	70
4	67	72	68
5	68	70	65
Rata – rata	67,4	66,6	65,8
Rata – rata penetrasi	66,7		

2. Pengujian Titik Lembek

No.	Suhu yang diamati (°C)	Waktu (menit)		Titik Lembek	
		Sampel I	Sampel II	Sampel I	Sampel II
1	5	0	0		
2	10	39"	39"		
3	15	1'32"	1'32"		
4	20	2'14"	2'14"		
5	25	3'03"	3'03"		
6	30	3'52"	3'52"		
7	35	4'41"	4'41"		
8	40	5'38"	5'38"		
9	45	6'19"	6'19"		
10	50	6'53"	7'13"	52	54
Rata – rata				53	

3. Pengujian Berat Jenis Aspal

No.	Uraian	Satuan	Sampel I	Sampel II
1	Massa piknometer	gram	30,058	30,01
2	Massa piknometer + air	gram	80,588	79,88
3	Massa air	gram	50,53	49,87
4	Massa piknometer + aspal	gram	33,287	33,417
5	Massa aspal	gram	3,229	3,407
6	Massa piknometer + aspal + air	gram	83,817	83,287
7	Massa air	gram	47,3039	47,063
8	Berat jenis	%	1,0009	1,214

4. Kehilangan Minyak

No	Uraian	Satuan	Sampel I	Sampel II
1	Berat aspal sebelum pemanasan	gram	50,66	50,65
2	Berat aspal setelah pemanasan	gram	50,579	50,605
3	Kehilangan berat	gram	0,081	0,045
4	Kehilangan berat	%	0,16	0,09
	Rata – rata			0,13

Lampiran 4. Hasil Pengujian Tekan

1. Balas Bersih (BB)

Siklus 1							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	2.215	121.168	0.58571	0.575	1.188252	0.026406	0.195237
2	4.03	280.385	1.05893	1.05	2.749638	0.061103	0.352977
3	5.635	491.28	1.47656	1.475	4.817811	0.107062	0.492187
4	7.245	804.675	1.89688	1.8875	7.891166	0.175359	0.632293
5	8.855	1141.748	2.31583	2.3125	11.19672	0.248816	0.771943
6	10.465	1628.983	2.73676	2.725	15.97487	0.354997	0.912253
7	12.075	2139.243	3.15583	3.15	20.97881	0.466196	1.051943
8	13.68	2642.816	3.57411	3.5625	25.91717	0.575937	1.19137
9	15.86	3339.598	4.1375	4.1375	32.75027	0.727784	1.379167
10	18.655	4078.845	4.8625	4.8625	39.99981	0.888885	1.620833

Siklus 2							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.94	291.896	0.24926	0.2375	2.862522	0.063612	0.083087
2	1.88	674.822	0.49028	0.4875	6.617743	0.147061	0.163427
3	2.825	1116.045	0.73661	0.725	10.94466	0.243215	0.245537
4	3.77	1579.778	0.97708	0.975	15.49233	0.344274	0.325693
5	4.715	2079.381	1.21953	1.2125	20.39176	0.45315	0.40651
6	5.655	2557.422	1.46167	1.45	25.07974	0.557328	0.487223
7	6.6	2946.815	1.70662	1.7	28.89838	0.642186	0.568873
8	7.545	3382.452	1.95	1.95	33.17052	0.737123	0.65
9	8.485	3663.81	2.19338	2.1875	35.9297	0.798438	0.731127
10	9.43	4078.824	2.4375	2.4375	39.9996	0.88888	0.8125

2. Balas Kotor (BK)

Siklus 1							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	2.06	182.328	0.5525	0.55	1.788027	0.039734	0.184167
2	3.635	332.332	0.96471	0.9625	3.259064	0.072424	0.32157
3	5.21	628.266	1.37946	1.375	6.161185	0.136915	0.45982
4	6.785	957.201	1.79167	1.7875	9.386935	0.208599	0.597223
5	8.36	1334.842	2.20074	2.2	13.09033	0.290896	0.73358
6	9.935	1886.784	2.60903	2.6	18.50303	0.411178	0.869677
7	11.51	2388.059	3.01786	3.0125	23.41886	0.520419	1.005953
8	13.085	2973.383	3.42734	3.425	29.15893	0.647976	1.142447
9	14.745	3350.367	3.85833	3.85	32.85588	0.730131	1.28611
10	17.485	4079.341	4.5625	4.5625	40.00467	0.888993	1.520833

Siklus 2							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.865	227.672	0.23661	0.225	2.2327	0.049616	0.07887
2	1.735	534.302	0.45972	0.45	5.239713	0.116438	0.15324
3	2.605	893.439	0.6875	0.6875	8.761644	0.194703	0.229167
4	3.475	1323.719	0.90833	0.9	12.98125	0.288472	0.302777
5	4.345	1803.257	1.13125	1.125	17.68391	0.392976	0.377083
6	5.215	2338.753	1.35156	1.35	22.93533	0.509674	0.45052
7	6.085	2882.01	1.575	1.575	28.26286	0.628064	0.525
8	6.955	3401.722	1.79779	1.7875	33.3595	0.741322	0.599263
9	7.825	3760.021	2.02188	2.0125	36.87321	0.819405	0.67396
10	8.7	4078.472	2.2375	2.2375	39.99615	0.888803	0.745833

3. Balas Bersih + Aspal 2% Lapis 1 (BB1)

Siklus 1							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.43	312.059	0.4375	0.4375	3.060253	0.068006	0.145833
2	0.865	657.706	0.86875	0.8625	6.449893	0.143331	0.289583
3	1.3	987.981	1.3	1.3	9.688784	0.215306	0.433333
4	1.735	1425.877	1.72917	1.725	13.98308	0.310735	0.57639
5	2.17	1830.984	2.15937	2.15	17.95582	0.399018	0.71979
6	2.605	2258.274	2.59063	2.5875	22.1461	0.492136	0.863543
7	3.04	2735.672	3.025	3.025	26.82778	0.596173	1.008333
8	3.475	3218.748	3.475	3.475	31.56514	0.701447	1.158333
9	3.91	3436.029	3.93125	3.925	33.69593	0.748799	1.310417
10	4.345	3768.153	4.375	4.375	36.95296	0.821177	1.458333
11	4.78	4074.93	4.825	4.825	39.96141	0.888031	1.608333

Siklus 2							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.305	721.456	0.3	0.3	7.075066	0.157224	0.1
2	0.62	1419.267	0.61875	0.6125	13.91825	0.309295	0.20625
3	0.93	1983.216	0.9375	0.9375	19.44871	0.432193	0.3125
4	1.24	2413.222	1.2625	1.2625	23.66562	0.525903	0.420833
5	1.55	2849.77	1.57812	1.575	27.9467	0.621038	0.52604
6	1.86	3228.349	1.9	1.9	31.65929	0.70354	0.633333
7	2.17	3339.125	2.225	2.225	32.74563	0.727681	0.741667
8	2.48	3471.534	2.55	2.55	34.04412	0.756536	0.85
9	2.79	3569.071	2.87	2.8625	35.00063	0.777792	0.956667
10	3.1	3852.914	3.1875	3.1875	37.78418	0.839648	1.0625
11	3.41	4078.477	3.5	3.5	39.9962	0.888804	1.166667

4. Balas Kotor + Aspal 2% Lapis 1 (BK1)

Siklus 1							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.625	261.111	0.58333	0.575	2.560624	0.056903	0.194443
2	1.26	552.869	1.18333	1.175	5.421793	0.120484	0.394443
3	1.89	818.594	1.775	1.775	8.027665	0.178393	0.591667
4	2.525	1122.545	2.36875	2.3625	11.00841	0.244631	0.789583
5	3.155	1445.862	2.95	2.95	14.17906	0.31509	0.983333
6	3.785	1856.024	3.5375	3.5375	18.20138	0.404475	1.179167
7	4.42	2363.61	4.135	4.125	23.1791	0.515091	1.378333
8	5.05	2894.332	4.7375	4.7375	28.3837	0.630749	1.579167
9	5.685	3469.53	5.365	5.3625	34.02447	0.756099	1.788333
10	6.315	4077.218	5.975	5.975	39.98385	0.88853	1.991667

Siklus 2							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.275	166.547	0.25938	0.25	1.633268	0.036295	0.08646
2	0.55	426.357	0.5125	0.5125	4.181134	0.092914	0.170833
3	0.83	749.532	0.77292	0.7625	7.350398	0.163342	0.25764
4	1.11	1134.819	1.025	1.025	11.12877	0.247306	0.341667
5	1.385	1564.999	1.2775	1.275	15.3474	0.341053	0.425833
6	1.665	2024.37	1.5375	1.5375	19.85229	0.441162	0.5125
7	1.945	2551.73	1.79583	1.7875	25.02392	0.556087	0.59861
8	2.225	3079.233	2.0575	2.05	30.19696	0.671044	0.685833
9	2.5	3627.091	2.325	2.325	35.56961	0.790436	0.775
10	2.78	4081.135	2.5875	2.5875	40.02226	0.889384	0.8625

5. Balas Bersih + Aspal 2% Lapis 3 (BB3)

Siklus 1							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.615	297.808	0.53125	0.525	2.920499	0.0649	0.177083
2	1.235	681.138	1.06875	1.0625	6.679682	0.148437	0.35625
3	1.855	1161.387	1.6	1.6	11.38932	0.253096	0.533333
4	2.475	1561.429	2.1375	2.1375	15.31239	0.340275	0.7125
5	3.095	2040.481	2.68	2.675	20.01028	0.444673	0.893333
6	3.715	2341.523	3.2125	3.2125	22.9625	0.510278	1.070833
7	4.335	2575.97	3.75	3.75	25.26164	0.56137	1.25
8	4.955	2872.792	4.3025	4.3	28.17247	0.626055	1.434167
9	5.575	3152.241	4.875	4.875	30.91292	0.686954	1.625
10	6.195	3420.5	5.45312	5.45	33.54365	0.745414	1.817707
11	6.82	3792.172	6.03333	6.025	37.1885	0.826411	2.01111
12	7.44	4078.551	6.6	6.6	39.99692	0.88882	2.2

Siklus 2							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.42	101.74	0.3675	0.3625	0.997729	0.022172	0.1225
2	0.845	272.99	0.74167	0.7375	2.677117	0.059491	0.247223
3	1.265	492.56	1.11	1.1	4.830364	0.107341	0.37
4	1.69	773.938	1.48125	1.475	7.589739	0.168661	0.49375
5	2.115	1146.921	1.84375	1.8375	11.24745	0.249943	0.614583
6	2.54	1602.058	2.20833	2.2	15.71082	0.349129	0.73611
7	2.965	2161.137	2.56875	2.5625	21.19351	0.470967	0.85625
8	3.385	2782.449	2.925	2.925	27.2865	0.606367	0.975
9	3.81	3446.145	3.2875	3.2875	33.79514	0.751003	1.095833
10	4.235	4079.014	3.6625	3.6625	40.00146	0.888921	1.220833

6. Balas Kotor + Aspal 2% Lapis 3 (BK3)

Siklus 1							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.465	435.962	0.43333	0.425	4.275327	0.095007	0.144443
2	0.935	706.081	0.875	0.875	6.924289	0.153873	0.291667
3	1.4	1138.862	1.31667	1.3125	11.16842	0.248187	0.43889
4	1.87	1533.703	1.775	1.775	15.04049	0.334233	0.591667
5	2.34	1916.473	2.25	2.25	18.79418	0.417648	0.75
6	2.81	2378.553	2.71563	2.7125	23.32564	0.518347	0.90521
7	3.28	2765.421	3.1825	3.175	27.11952	0.602656	1.060833
8	3.745	3244.305	3.6375	3.6375	31.81576	0.707017	1.2125
9	4.215	3634.37	4.1	4.1	35.64099	0.792022	1.366667
10	4.685	4079.149	4.5625	4.5625	40.00279	0.888951	1.520833

Siklus 2							
No	Time (sec)	Load (kgf)	Stroke (mm)	Spare	Load (kN)	Tegangan (Mpa)	Regangan (%)
1	0.25	189.866	0.23125	0.225	1.861949	0.041377	0.077083
2	0.505	524.94	0.46562	0.4625	5.147903	0.114398	0.155207
3	0.76	921.992	0.7	0.7	9.041653	0.200926	0.233333
4	1.015	1355.75	0.93393	0.925	13.29537	0.295453	0.31131
5	1.27	1842.552	1.16786	1.1625	18.06926	0.401539	0.389287
6	1.525	2353.004	1.4	1.4	23.07509	0.51278	0.466667
7	1.78	2888.076	1.63333	1.625	28.32235	0.629386	0.544443
8	2.035	3481.069	1.875	1.875	34.13763	0.758614	0.625
9	2.29	4079.215	2.1125	2.1125	40.00343	0.888965	0.704167