



LABORATORIUM JALAN RAYA
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN UII
 Jl. Kalihurang Km.14,4 Telp. 95330 Yogyakarta 55584

lampiran 20

Pekerjaan Test Marshall Dikerjakan Oleh : 1. Irwan Sugianto
 Jenis Campuran Aspal Beton 2. Sandhi Nugroho
 Tanggal 2 Maret 2000 Diperiksa Oleh :

Batu kapur : batu pecah = 66.67% : 33.33%

PERHITUNGAN TEST MARSHALL

No	t	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
1	7.08	4.71	4.5	1185	1193	663.00	530	2.235849	2.40358	9.65	83.37508	6.98	16.62492	58.02447	6.978398	432	1480.766	1237.66*	3.302
2	7.17	4.71	4.5	1168	1197	664.00	533	2.19137	2.40358	9.45	81.71644	8.83	18.28356	51.71101	8.828947	331	1134.569	937.46	3.556
3	6.71	4.71	4.5	1181	1196	673.00	523	2.258126	2.40358	9.74	84.2058	6.05	15.7942	61.68488	6.051566	555	1902.374	1678.86	2.794
4	6.87	5.26	5	1180	1199	676.00	523	2.256214	2.387276	10.82	83.694	5.49	16.306	66.33133	5.490013	503	1724.133	1476.04	3.302
5	6.98	5.26	5	1183	1205	675.00	530	2.232075	2.387276	10.70	82.79858	6.50	17.20142	62.20572	6.501152	350	1199.695	1014.33	2.794
6	6.98	5.26	5	1192	1210	683.00	527	2.26186	2.387276	10.84	83.90342	5.25	16.09658	67.36243	5.253532	395	1353.942	1144.70	3.81
7	6.79	5.82	5.5	1189	1203	678.00	525	2.264762	2.371191	11.94	83.56892	4.49	16.43108	72.68332	4.488425	422	1446.489	1254.84	3.556
8	6.87	5.82	5.5	1187	1205	676.00	529	2.243856	2.371191	11.83	82.79751	5.37	17.20249	68.78316	5.370074	522	1789.259	1531.85	3.556
9	6.79	5.82	5.5	1180	1198	672.00	526	2.243346	2.371191	11.83	82.77868	5.39	17.22132	68.69232	5.391596	430	1473.911	1278.60	4.064
10	6.87	6.38	6	1170	1189	667.00	522	2.241379	2.355321	12.89	82.26851	4.84	17.73149	72.71719	4.837649	389	1333.375	1141.55	4.318
11	6.70	6.38	6	1186	1200	674.00	526	2.254753	2.355321	12.97	82.75938	4.27	17.24062	75.23379	4.269848	441	1511.616	1336.82	3.81
12	6.89	6.38	6	1177	1195	667.00	528	2.229167	2.355321	12.82	81.82025	5.36	18.17975	70.53776	5.356162	469	1607.591	1356.23	3.302
13	6.70	6.95	6.5	1176	1181	660.00	521	2.257198	2.339663	14.07	82.40843	3.52	17.59157	79.96391	3.524664	381	1305.954	1154.99	4.572
14	6.76	6.95	6.5	1180	1199	672.00	527	2.239089	2.339663	13.95	81.7473	4.30	18.2527	76.44927	4.298643	378	1295.671	1131.31	3.81
15	6.85	6.95	6.5	1179	1197	670.00	527	2.237192	2.339663	13.94	81.67802	4.38	18.32198	76.09567	4.379746	339	1161.99	997.07	4.064

r = FLOW (kelebihan plastis)
 Suhu Pencampuran : ±160°C
 Suhu Pematangan : ±140°C
 Suhu Water Bath : 60°C
 B.J. Aspal : 1,043
 B.J. Agregat : 2,561
 Tanda Tangan :

k = (100-i-j) jumlah kandungan rongga
 l = (100-j) rongga terhadap agregat

$$m = \frac{100 \times \left(\frac{l}{100} \right) \times \text{rongga yang terisi aspal}}{(V_{FW})}$$
 N = rongga yang terisi campuran $100 - \left(100 \times \frac{g}{h} \right)$
 o = pembacaan arloji (stabilitas)
 p = o x kalibrasi proving ring
 q = p x koreksi tebal sampel (STABILITAS)

h = B.J maksimum (teoritis)

$$i = 100 \left(\frac{\% \text{aggr}}{B.J \text{ Aggr}} + \frac{\% \text{aspal}}{B.J \text{ Aspal}} \right)$$

$$j = \frac{b \times g}{B.J \text{ aspal}}$$

$$k = \frac{(100 - b) \times g}{B.J \text{ agregat}}$$

t = tebal benda uji
 a = % aspal terhadap batu
 b = % aspal terhadap camp
 c = berat kering/sblm diren
 d = berat dlm keadaan SSL
 e = berat didalam air (gr)
 f = Vol (isi) = d -
 g = berat isi sampel