


WMA TRIALS - COEDMORE

MUCH ASPHALT (PTY) LTD							YEAR: 2009				
FINAL PRODUCT QUALITY CONTROL REPORT SHEET							BRANCH: Coedmore				
MIX TYPE: Type D - 13.2mm Wearing Course with 40/50 + 10% RA (HMA)							Contract : WMA Trials (Plant trials)				
SAMPLE NUMBER	Target	P2515	P2516	P2517	P2518	P2519					
DATE SAMPLED		13-May-09	13-May-09	13-May-09	13-May-09	13-May-09					
DATE TESTED		13-May-09	13-May-09	13-May-09	13-May-09	13-May-09					
Details		Plant Trial (5.0%)	Plant Trial (5.0%)	Plant Trial (4.7%)	Plant Trial (5.3%)	Plant Trial (5.0%)					
Temp		140	160	135	140	150					
GRADATION TEST	% PASS	% PASS	% PASS	% PASS	% PASS	% PASS	Basic Statistics				
							Upper	Lower	Ave		
SIEVE SIZES	37.5	100	100	100	100	100	100	100	100		
	26.5	100	100	100	100	100	100	100	100		
	19.0	100	100	100	100	100	100	100	100		
	13.2	99	98	98	99	97	99	94	98		
	9.5	86	81	83	85	83	85	81	83		
	6.7	76	74	76	80	76	78	71	77		
	4.75	63	63	66	69	67	69	59	67		
	2.36	41	41	43	46	43	45	37	44		
	1.18	28	28	29	32	30	32	24	30		
	0.600	19	19	20	21	22	21	15	21		
	0.300	13	13	14	14	15	15	10	14		
0.150	10	9	10	10	11	10	8	10			
0.075	7.2	6.1	7.0	7.3	7.9	7.8	5.2	7.22			
Compaction Temperature (°C)		140	140	140	140	140			140		
Moisture Content (%) - Oven dried		0.1	0.1	0.1	0.1	0.1			0.1		
BINDER CONTENT (%)	5.0	4.5	4.7	4.7	5.4	5.2			4.90		
MARSHALL DENSITY (g/ml)		2.315	2.322	2.316	2.377	2.343			2.335		
MAX THEORETICAL DENSITY (g/ml)		2.497	2.501	2.488	2.470	2.473			2.486		
VOIDS IN MIX (%)	5.2	7.3%	7.2%	6.9%	3.8%	5.3%			6.08%		
Voids-In-Mineral Aggregate (%)		16.2%	16.1%	16.3%	14.8%	15.8%			15.8%		
MARSHALL STABILITY (kN)		13.4	13.8	13.4	13.7	13.6			13.6		
MARSHALL FLOW (mm)		3.0	3.1	2.9	3.2	3.0			3.0		
Indirect Tensile Strength (kPa)		1230	1352	1250	1235	1340			1281		
Gyratory voids (%)											
Film Thickness (µm)	7 min	7.4	7.1	6.9	7.7	7.5			7.33		
Stability/Flow Ratio		4.5	4.5	4.6	4.3	4.5			4.5		
Filler/Bitumen Ratio		1.4	1.5	1.6	1.5	1.5			1.5		
Voids Filled With Bitumen (%)		55.0%	55.6%	57.7%	74.5%	66.7%			62%		