



CANADIAN ASPHALT MIX EXCHANGE HISTORICAL DATA

Test		Average	S _x	S _r	S _R	Average	S _x	S _r	S _R	Average	S _x	S _r	S _R	Average	S _x	S _r	S _R	Average	S _x	S _r	S _R
		Marshall Mix 2000				Marshall Mix 2001				Marshall Mix 2002				Marshall Mix 2003				Marshall Mix 2004			
Bulk Density of	B.D.Coarse Aggregate	2.669	0.009	0.0070	0.011	2.652	0.008	0.0056	0.009	2.652	0.011	0.0040	0.012	2.680	0.012	0.0066	0.013	2.667	0.013	0.0064	0.014
Aggregates (g/cm ³)	B.D. Fine Aggregate	2.642	0.011	0.0138	0.016	2.631	0.011	0.0057	0.012	2.631	0.022	0.0055	0.023	2.636	0.019	0.0056	0.020	2.632	0.020	0.0067	0.020
Water Absorption (%)	W.A. Fine Aggregate	0.923	0.16	0.126	0.19	0.963	0.15	0.060	0.15	1.001	0.19	0.165	0.23	1.166	0.18	0.067	0.19	1.297	0.30	0.075	0.31
	W.A. Coarse Aggregate	1.209	0.15	0.064	0.16	0.943	0.11	0.053	0.12	0.921	0.11	0.043	0.11	1.000	0.11	0.053	0.12	1.227	0.23	0.056	0.24
Theor. Max. Specific Gravity & Density	Regular MTD	2.480	0.0142	0.0039	0.0145	2.473	0.0079	0.0046	0.0088	2.469	0.0116	0.0154	0.0171	2.484	0.0092	0.0037	0.0097	2.488	0.0085	0.0039	0.0091
	Modified Rice	2.490	0.0170	0.0039	0.0173	2.482	0.0080	0.0037	0.0086	2.480	0.0094	0.0058	0.0105	2.495	0.0124	0.0075	0.0138	2.499	0.0072	0.0037	0.0078
Bulk Density (g/cm ³)	B.D. Hand Compaction	2.382	0.012	0.0050	0.013	2.346	0.015	0.0051	0.016	2.363	0.012	0.0054	0.013	2.368	0.016	0.0049	0.016	2.385	0.015	0.0068	0.016
	B.D. Mech. Compaction	2.381	0.015	0.0050	0.016	2.347	0.017	0.0050	0.017	2.362	0.010	0.0042	0.010	2.366	0.013	0.0057	0.014	2.384	0.013	0.0062	0.014
Marshall Stability (kN)	Stab. Hand Compaction	6.835	1.6	0.55	1.7	8.283	1.8	0.58	1.8	9.096	1.4	0.62	1.5	9.313	1.6	0.59	1.7	10.261	2.3	0.78	2.4
	Stab. Mech. Compaction	6.472	1.5	0.52	1.6	8.173	1.5	0.67	1.6	9.090	1.5	0.50	1.5	8.934	1.6	0.60	1.7	9.548	1.4	0.69	1.5
Flow (mm)	Flow Hand Compaction	2.0	0.75	0.20	0.77	2.2	0.48	0.20	0.51	2.3	0.61	0.24	0.65	2.3	0.39	0.21	0.43	2.4	0.39	0.25	0.45
	Flow Mech. Compaction	1.9	0.45	0.16	0.47	2.0	0.33	0.16	0.36	2.3	0.66	0.20	0.68	2.2	0.46	0.17	0.48	2.4	0.45	0.22	0.49
VMA (%)	VMA Hand Compaction	14.9	0.45	0.18	0.48	15.7	0.55	0.18	0.57	15.2	0.69	0.19	0.71	15.4	0.56	0.18	0.58	14.6	0.55	0.26	0.59
	VMA Mech. Compaction	14.9	0.52	0.18	0.54	15.8	0.70	0.19	0.72	15.2	0.64	0.15	0.65	15.5	0.57	0.21	0.59	14.7	0.50	0.22	0.54
Air Voids (%)	AV Hand Compaction	3.9	0.69	0.20	0.72	5.2	0.61	0.20	0.64	4.3	0.59	0.23	0.62	4.7	0.70	0.20	0.72	4.2	0.66	0.26	0.69
	AV Mech. Compaction	3.9	0.71	0.20	0.73	5.2	0.66	0.20	0.69	4.3	0.41	0.19	0.44	4.7	0.62	0.23	0.65	4.1	0.61	0.25	0.65
Voids Filled With Asphalt (%)	VF Hand Compaction	73.8	4.3	1.0	4.3	67.3	3.1	0.9	3.2	71.9	3.7	1.1	3.8	69.8	3.8	0.9	3.9	71.6	4.1	1.3	4.2
	VF Mech. Compaction	73.8	4.2	1.1	4.3	67.5	3.0	1.0	3.1	71.8	2.5	0.9	2.6	69.6	3.3	1.1	3.4	72.5	3.7	1.3	3.8
		Gyratory Compaction 2000				Gyratory Compaction 2001				Gyratory Compaction 2002				Gyratory Compaction 2003				Gyratory Compaction 2004			
Bulk Density (g/cm ³)	134 Gyration	2.414	0.016	0.0045	0.016	2.377	0.025	0.0053	0.025	2.394	0.011	0.0069	0.012	2.385	0.013	0.0049	0.014	2.422	0.026	0.0044	0.026
	86 Gyration	2.393	0.017	0.0049	0.018	2.355	0.025	0.0055	0.025	2.370	0.012	0.0075	0.013	2.356	0.026	0.0052	0.026	2.395	0.028	0.0054	0.028
	7 Gyration	2.238	0.026	0.0058	0.027	2.196	0.030	0.0178	0.034	2.199	0.019	0.0139	0.022	2.178	0.023	0.0103	0.025	2.210	0.034	0.0095	0.035
Air Voids (%)	86 Gyration	4.25	0.69	0.20	0.71	5.62	1.01	0.22	1.03	4.04	0.48	0.30	0.53	4.31	0.64	0.20	0.66	4.10	1.09	0.22	1.10
VMA (%)	86 Gyration	14.3	0.63	0.18	0.65	15.0	0.89	0.20	0.90	14.8	0.55	0.27	0.59	14.6	0.75	0.18	0.77	14.7	0.98	0.21	0.99
Voids Filled (%)	86 Gyration	70.4	4.0	1.1	4.1	62.7	4.8	1.0	4.8	72.8	2.5	1.4	2.7	70.6	2.8	1.0	2.9	72.5	5.9	1.3	6.0
		Ignition Oven 2000				Ignition Oven 2001				Ignition Oven 2002				Ignition Oven 2003				Ignition Oven 2004			
Asphalt Content (%)	By Mass of Oven-Dry	5.1	0.055	0.075	0.083	5.1	0.057	0.059	0.075	5.3	0.100	0.054	0.110	5.1	0.110	0.076	0.126	5.1	0.097	0.069	0.113

Legend:
s_x = Standard Deviation
s_r = Repeatability Standard Deviation
s_R = Reproducibility Standard Deviation

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