

Appendix C

Conversion Tables

TABLE C-1. Approximate Quantities of Asphalt Concrete per Square Yard

Approximate Thickness			Weight Per Square Yard - Pounds					
Total Depth	Surface	Binder or Base	Gravel or Granite			Limestone or Trap Rock		
			Total Weight	Surface Weight	Binder or Base Weight	Total Weight	Surface Weight	Binder or Base Weight
1"	1"	—	110	110	—	115	115	—
1 1/2"	1 1/2"	—	165	165	—	173	173	—
2"	2"	—	220	220	—	230	230	—
2 1/2"	1"	1 1/2"	275	110	165	288	115	173
3"	1"	2"	335	115	220	350	120	230
3 1/2"	1"	2 1/2"	390	115	275	408	120	288
4"	1"	3"	454	115	339	474	120	354
5"	1"	4"	577	115	462	592	120	472
6"	1"	5"	680	115	565	710	120	590
7"	1"	6"	793	115	678	828	120	708
8 1/2"	1"	7 1/2"	960	115	845	1004	120	884
9"	1 1/2"	7 1/2"	1018	173	845	1064	180	884

TABLE C-2. Gallons of Emulsified Asphalt Required Per 100 Linear Feet: Various Widths and Rates

Gals per Sq. Yd.	WIDTH - FEET														
	1	2	6	7	8	9	10	11	12	14	16	18	20	22	24
0.10	1.1	2.2	6.7	7.8	8.9	10.0	11.1	12.2	13.3	15.6	17.8	20.0	22.2	24.4	26.7
0.15	1.7	3.3	10.0	11.7	13.3	15.0	16.7	18.3	20.0	23.3	16.7	10.0	33.3	36.7	40.0
0.20	2.2	4.4	13.3	15.6	17.8	20.0	22.2	24.4	26.7	31.1	35.6	40.0	44.4	48.9	53.3
0.25	2.8	5.6	16.7	19.4	22.2	25.0	27.8	30.6	33.3	38.9	44.4	50.0	55.6	61.1	66.7
0.30	3.3	6.7	20.0	23.3	26.7	30.0	33.3	36.7	40.0	46.7	53.3	60.0	66.7	73.3	80.0
0.35	3.9	7.8	23.3	27.2	31.1	35.0	38.9	42.8	46.7	54.4	62.2	70.0	77.8	85.5	93.3
0.40	4.4	8.9	26.7	31.1	35.6	40.0	44.4	48.9	53.3	62.2	71.1	80.0	88.9	97.8	107.
0.45	5.0	10.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	70.0	80.0	90.0	100.	110.	120.
0.50	5.6	11.1	33.3	38.9	44.4	50.0	55.5	61.1	66.7	77.8	88.9	100.	111.	122.	133.
0.55	6.1	12.2	36.7	42.8	48.9	55.0	61.1	67.2	73.3	85.5	97.8	110.	122.	134.	147.
0.60	6.7	13.3	40.0	46.7	53.3	60.0	66.7	73.3	80.0	93.3	107.	120.	133.	147.	160.
0.65	7.2	14.4	43.3	50.6	57.8	65.0	72.2	79.4	86.7	101.	115.	130.	144.	159.	173.
0.70	7.8	15.6	46.7	54.4	62.2	70.0	77.8	85.5	93.3	109.	124.	140.	156.	171.	187.
0.75	8.3	16.7	50.0	58.3	66.7	75.0	83.3	91.7	100.	117.	133.	150.	167.	183.	200.
0.80	8.9	17.8	53.3	62.2	71.1	80.0	88.9	97.8	107.	124.	142.	160.	178.	196.	213.
0.85	9.4	18.9	56.7	66.1	75.5	85.0	94.4	104.	113.	132.	151.	170.	189.	208.	227.
0.90	10.0	20.0	60.0	70.0	80.0	90.0	100.	110.	120.	140.	160.	180.	200.	220.	240.
0.95	10.6	21.1	63.3	73.9	84.4	95.0	106.	116.	127.	148.	169.	190.	211.	232.	253.
1.00	11.1	22.2	66.7	77.8	88.9	100.	111.	122.	133.	156.	178.	200.	222.	244.	267.
1.10	12.2	24.4	73.3	85.5	97.8	110.	122.	134.	147.	171.	196.	220.	244.	269.	293.
1.20	13.3	26.7	80.0	93.3	107.	120.	133.	147.	160.	187.	213.	240.	267.	293.	320.
1.25	13.9	27.8	83.3	97.2	111.	125.	139.	153.	167.	194.	222.	250.	278.	306.	333.
1.30	14.4	28.9	86.7	101.	116.	130.	144.	159.	173.	202.	230.	260.	288.	318.	347.
1.40	15.6	31.1	93.3	109.	124.	140.	156.	171.	187.	218.	249.	280.	311.	342.	373.
1.50	16.7	33.3	100.	117.	133.	150.	167.	183.	200.	233.	267.	300.	333.	367.	400.
1.75	19.4	38.9	117.	136.	156.	175.	194.	214.	230.	272.	311.	350.	389.	427.	467.
2.00	22.2	44.4	133.	156.	178.	200.	222.	244.	267.	311.	356.	400.	444.	499.	533.
2.25	25.0	50.0	150.	175.	200.	225.	250.	275.	300.	350.	400.	450.	500.	550.	600.
2.50	27.8	55.6	167.	194.	222.	250.	278.	306.	333.	389.	444.	500.	556.	611.	667.
2.75	30.6	61.1	183.	214.	244.	275.	306.	336.	367.	428.	489.	550.	611.	672.	733.
3.00	33.3	66.7	200.	233.	267.	300.	333.	367.	400.	467.	533.	600.	667.	733.	800.

Note.- Formula used for calculation: $Q = \frac{100W}{9}$ R = 11.11WR

Where: Q = Quantity of asphalt required, in gallons per 100 ft.
 R = Rate of application in gallons per sq. yd.
 W= Width of application, in feet

TABLE C-3. Tons of Material Required Per 100 Linear Feet for Various Widths and Pounds Per Square Yard

lb/yd ²	WIDTH - FEET														
	1	2	6	7	8	9	10	11	12	14	16	18	20	22	24
10	0.06	0.11	0.17	0.22	0.28	0.33	0.39	0.44	0.50	0.56	1.11	1.67	2.22	2.78	3.33
20	0.11	0.22	0.33	0.44	0.56	0.67	0.78	0.89	1.00	1.11	2.22	3.33	4.44	5.56	6.67
30	0.17	0.33	0.50	0.67	0.83	1.00	1.17	1.33	1.50	1.67	3.33	5.00	6.67	8.33	10.00
40	0.22	0.44	0.67	0.89	1.11	1.33	1.56	1.78	2.00	2.22	4.44	6.67	8.89	11.11	13.33
50	0.28	0.56	0.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	5.56	8.33	11.11	13.89	16.67
60	0.33	0.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	6.67	10.00	13.33	16.67	20.00
70	0.39	0.78	1.17	1.56	1.94	2.33	2.72	3.11	3.50	3.89	7.78	11.67	15.56	19.44	23.33
80	0.44	0.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	8.89	13.33	17.78	22.22	26.67
90	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	10.00	15.00	20.00	25.00	30.00
100	0.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.56	11.11	16.67	22.22	27.78	33.33
200	1.11	2.22	3.33	4.44	5.56	6.67	7.78	8.89	10.00	11.11	22.22	33.33	44.44	55.56	66.67
300	1.67	3.33	5.00	6.67	8.33	10.00	11.67	13.33	15.00	16.67	33.33	50.00	66.67	83.33	100.00
400	2.22	4.44	6.67	8.89	11.11	13.33	15.56	17.78	20.00	22.22	44.44	66.67	88.89	111.11	133.33
500	2.78	5.56	8.33	11.11	13.89	16.67	19.44	22.22	25.00	27.78	55.56	83.33	111.11	138.89	166.67
600	3.33	6.67	10.00	13.33	16.67	20.00	23.33	26.67	30.00	33.33	66.67	100.00	133.33	166.67	200.00
700	3.89	7.78	11.67	15.56	19.44	23.33	27.22	31.11	35.00	38.89	77.78	116.69	155.56	194.44	233.33
800	4.44	8.89	13.33	17.78	22.22	26.67	31.11	35.56	40.00	44.44	88.89	133.33	177.78	222.22	266.67
900	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	100.00	150.00	200.00	250.00	300.00
1,000	5.56	11.11	16.67	22.22	27.78	33.33	38.89	44.44	50.00	55.56	111.11	166.67	222.22	277.78	333.33

NOTE: Formula used for calculation $w = \left[\frac{W}{3} \right] \left[\frac{100}{3} \right] \left[\frac{R}{2000} \right] = 0.005556 RW$

Where: w = Weight of material in tons per 100 feet
 R = Rate of application, lb/yd²
 W = Width of application, feet

TABLE C-4. Cubic Yards of Material per 100 Linear Feet: Various Widths and Depths

Per 100 Linear Feet	Width, Feet	Depth - Inches											
		1	2	3	4	5	6	7	8	9	10	11	12
1	1	0.31	0.62	0.93	1.23	1.54	1.85	2.16	2.47	2.78	3.09	3.40	3.70
	2	0.62	1.23	1.85	2.47	3.09	3.70	4.32	4.94	5.56	6.17	6.79	7.41
	3	0.93	1.85	2.78	3.70	4.63	5.56	6.48	7.41	8.33	9.26	10.2	11.1
	4	1.23	2.47	3.70	4.94	6.17	7.41	8.64	9.88	11.1	12.3	13.6	14.8
	5	1.54	3.09	4.63	6.17	7.72	9.26	10.8	12.3	13.9	15.4	17.0	18.5
2	6	1.85	3.70	5.56	7.41	9.26	11.1	13.0	14.8	16.7	18.5	20.4	22.2
	7	2.16	4.32	6.48	8.64	10.8	13.0	15.1	17.3	19.4	21.6	23.8	25.9
	8	2.47	4.94	7.41	9.88	12.3	14.8	17.3	19.8	22.2	24.7	27.2	29.6
	9	2.78	5.56	8.33	11.1	13.9	16.7	19.4	22.2	25.0	27.8	30.6	33.3
	10	3.09	6.17	9.26	12.3	15.4	18.5	21.6	24.7	27.8	30.9	34.0	37.0
3	20	6.17	12.3	18.5	24.7	30.9	37.0	43.2	49.4	55.6	61.7	67.9	74.1
	30	9.26	18.5	27.8	37.0	46.3	55.6	64.8	74.1	83.3	92.6	102	111
	40	12.3	24.7	37.0	49.4	61.7	74.1	86.4	98.8	111	123	136	148
	50	15.4	30.9	46.3	61.7	77.2	92.6	108	123	139	154	170	185
	4	60	18.5	37.0	55.6	74.1	92.6	111	130	148	167	185	204
70		21.6	43.2	64.8	86.4	108	130	151	173	194	216	238	259
80		24.7	49.4	74.1	98.8	123	148	173	198	222	247	272	296
90		27.8	55.6	83.3	111	139	167	194	222	250	278	306	333
100		30.9	61.7	92.6	123	154	185	216	247	278	309	340	370

NOTE: Formula used for calculation:

Where: q = Quality of material, cubic yards

Per 100 Lin. Ft.: $q = \left[\frac{D}{36} \right] \left[\frac{W}{3} \right] \left[\frac{100}{3} \right] = 0.3086 DW$

D = Depth, inches
 W = Width, feet
 L = Length

Per Mile: $q = \left[\frac{D}{36} \right] \left[\frac{W}{3} \right] \left[\frac{5,280}{3} \right] = 16.2963 DW$

TABLE C-5.

COMMON PREFIXES USED WITH METRIC UNITS		
Prefix	Symbol	Multiplication Factor
giga	G	1,000,000,000
mega	M	1,000,000
kilo	K	1,000
hecto	h	100
deka	da	10
base unit	--	1
deci	d	0.1
centi	c	0.01
milli	m	0.001
micro	μ	0.000001

METRIC UNITS AND SYMBOLS		
Length	kilometer	km
	meter	m
	centimeter	cm
	millimeter	mm
Area	micrometer	μm
	hectare	ha
	square meter	m ²
	square centimeter	cm ²
Volume	square millimeter	mm ²
	cubic meter	m ³
	cubic centimeter	cm ³
	cubic millimeter	mm ³
Mass	kiloliter	kL
	liter	L
	milliliter	mL
	megagram	Mg
Temp.	kilogram	kg
	gram	g
	degrees Celsius	°C
Pressure	°C = (°F-32)/1.8	
	pascal	Pa
	kilopascal	kPa
Force	megapascal	MPa
	newton	N
	kilonewton	kN

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Based on ASTM E 380

TABLE C-6.

ENGLISH (INCH-POUND UNITS) METRIC (SI) CONVERSION

	Multiply ▼	To Find ▼	By ▼
Length	mile	kilometer	1.609347
	yard	meter	0.9144
	foot (U.S. Survey)	meter	0.3048006
	inch	millimeter	25.4
	Sta (English)	Sta (Metric)	0.3048006
Mass	ton (2,000 lb.)	megagram	0.9071847
	pound	kilogram	0.4535924
	ounce	gram	28.34952
Pressure	lbs./sq. in.	kilopascals	6.894757
	lbs./sq. ft.	pascals	47.880263
Volume	cubic yd.	cubic meter	0.7645549
	cubic ft.	cubic meter	0.02831685
	cubic in.	cubic millimeter	16,387.06
	gallon	liter	3.785412
	fluid ounce	milliliter	29.57353
	board ft.	cubic meter	0.00236
Area	acre	hectare	0.4046873
	sq. yd.	sq. meter	0.8361274
	sq. ft.	sq. meter	0.09290304
	sq. in.	sq. millimeter	645.16
	sq. mi.	sq. kilometer	2.589998
	▲ To Find	▲ Divide	▲ By