

# Wood Properties and Conversions

## Abbreviations

**SOB** Solid Over Bark

**SUB** Solid Under Bark

**SWE** Solid Wood Equivalent

Species	SUB kg/m <sup>3</sup>	SUB lb/ft <sup>3</sup>	Loose chips kg/m <sup>3</sup>	Loose chips lb/ft <sup>3</sup>
Spruce, Canadian	450	28.1	156	9.8
Spruce, Norway	430	26.8	149	9.3
Spruce, Sitka	450	28.1	156	9.8
Spruce, western white	450	28.1	156	9.8
Pine, radiata	480	30.0	167	10.4
Pine, Scots	510	31.8	177	11.1
Pine, white	430	26.8	149	9.3
Pine, yellow	420	26.2	146	9.1
Alder	550	34.3	191	11.9
Ash, white	750	46.8	260	16.3
Ash, black	540	33.7	188	11.7
Ash, European	710	44.3	247	15.4
Aspen	420	26.2	146	9.1
Birch	640	40.0	222	13.9
Cedar	530	33.1	184	11.5
Cedar, western red	380	23.7	132	8.2
Douglas Fir	530	33.1	184	11.5
Fir, Subalpine	351	21.9	122	7.6
Hemlock, western	500	31.2	174	10.8
Maple	685	42.8	238	14.8
Oak	750	46.8	260	16.3
Oak, American Red	740	46.2	257	16.0
Oak, American White	770	48.1	267	16.7
Poplar	425	26.5	148	9.2
Eucalyptus	490	30.6	170	10.6
Acacia	460	28.7	160	10.0

\* Air Dried. Wood can be highly variable depending on environment, age, etc.

## Conversions

1 m <sup>3</sup> SUB	2.88	m <sup>3</sup> loose chips
1 m <sup>3</sup> SUB	0.417	ords
1 m <sup>3</sup>	35.3	ft <sup>3</sup>
1 kg	2.20	lb

### Tree Volume (SUB) in m3 (multiply by 35.3 to get ft3)

Length (m)	Avg Dia (mm)							
	75	150	225	300	375	450	525	600
5	0.02	0.09	0.20	0.35	0.55	0.80	1.08	1.41
6	0.03	0.11	0.24	0.42	0.66	0.95	1.30	1.70
7	0.03	0.12	0.28	0.49	0.77	1.11	1.52	1.98
8	0.04	0.14	0.32	0.57	0.88	1.27	1.73	2.26
9	0.04	0.16	0.36	0.64	0.99	1.43	1.95	2.54
10	0.04	0.18	0.40	0.71	1.10	1.59	2.16	2.83
11	0.05	0.19	0.44	0.78	1.21	1.75	2.38	3.11
12	0.05	0.21	0.48	0.85	1.33	1.91	2.60	3.39
13	0.06	0.23	0.52	0.92	1.44	2.07	2.81	3.68
14	0.06	0.25	0.56	0.99	1.55	2.23	3.03	3.96
15	0.07	0.27	0.60	1.06	1.66	2.39	3.25	4.24
16	0.07	0.28	0.64	1.13	1.77	2.54	3.46	4.52
17	0.08	0.30	0.68	1.20	1.88	2.70	3.68	4.81
18	0.08	0.32	0.72	1.27	1.99	2.86	3.90	5.09
19	0.08	0.34	0.76	1.34	2.10	3.02	4.11	5.37
20	0.09	0.35	0.80	1.41	2.21	3.18	4.33	5.65