

Top Diameter Sawlog Tables

Forestry Commission
Field Book 1

Forestry Commission
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Introduction

Top Diameter Sawlog Tables

General

1. The top diameter method for estimating the volume of logs is usually confined to softwood sawlogs. The method is less time consuming and so cheaper than the more traditional mid diameter method and is best suited to batches of uniform length logs. The description of logs in terms of top diameter and length provides a useful basis for size classification.

2. A standard taper rate of 1:120 (i.e. 1 cm diameter in 1.2 m length) has been used in constructing the tables. This rate refers to the taper between the top and the mid point of the log and is considered to be reasonably appropriate for softwood sawlogs in Britain. The taper rate of individual logs can be expected to differ significantly from the standard rate, so volume estimates derived by this method are likely to be subject to greater errors than by the mid diameter method. The tables will tend to be less reliable for small numbers of logs or for parcels where butt or top logs predominate. The top diameter method is not recommended for estimating the volume of logs with lengths longer than 8.3 m.

3. The volume is derived from measurements of top diameter and length using the following formula:

$$V = L \times \left(\frac{\pi}{40\,000} \times \left(d + \frac{(L \times 0.5)}{1.2} \right)^2 \right)$$

where V = volume in cubic metres

L = length in metres

d = top diameter in centimetres

$\pi = 3.1415927$

Practice

4. Lengths will normally be rounded down to the nearest 0.1 m. It is expected that most sawlogs will be cross cut to conform to the international sawn softwood standard length specifications which range from 1.8 m to 6.3 m in steps of 0.3 m. Therefore length intervals in the tables have been grouped in threes so that the standard 0.3 m multiples appear as the first entry in each group. In such cases a small extra allowance, normally 0.05 m, will be made on the sawlog length to permit subsequent cross cutting and should be agreed with the buyer beforehand.

5. *Top diameters*, normally measured underbark, should be measured across the smallest diameter. Plastic rules incorporating an abbreviated version of the tables are available and are graduated in terms of 2 cm classes. The top diameter entries in the tables are tabulated in 2 cm intervals from 10 to 80 cm. The diameters shown at the head of each column refer to the lower limit of the diameter class, e.g. the 14-16 cm class is headed 14.

6. *Volumes* in the tables are calculated using the mean diameter of each class. For example the 14-16 cm class is headed 14, but volumes are calculated using 15 cm top diameter. This is based on the assumption that the top diameters of individual logs will be distributed evenly over the range of each 2 cm class. If logs are cut to specified top diameters the volumes in the tables will be more appropriate if the specified diameters accord with the mean top diameter of the 2 cm class. ↗

7. It is intended that the tables should be used with underbark top diameter to give underbark volumes but estimation of overbark volume can be obtained from the tables by using overbark measurements of top diameter. An alternative method of obtaining overbark equivalents is to use the table of bark percentages for different species on page 24.

Example

Actual length = 6.67 m.

Rounded down length = 6.6 m

Actual underbark diameter = 23.5 cm, so use diameter class 22 cm.

Volume from table = 0.34 m³.

Top Diameter Sawlog Tables

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
10	12		14	16
0.02	0.03	1.8	0.04	0.04
0.02	0.03	1.9	0.04	0.05
0.02	0.03	2.0	0.04	0.05
0.02	0.03	2.1	0.04	0.05
0.02	0.03	2.2	0.04	0.06
0.03	0.04	2.3	0.05	0.06
0.03	0.04	2.4	0.05	0.06
0.03	0.04	2.5	0.05	0.06
0.03	0.04	2.6	0.05	0.07
0.03	0.04	2.7	0.06	0.07
0.03	0.04	2.8	0.06	0.07
0.03	0.05	2.9	0.06	0.08
0.04	0.05	3.0	0.06	0.08
0.04	0.05	3.1	0.06	0.08
0.04	0.05	3.2	0.07	0.08
0.04	0.05	3.3	0.07	0.09
0.04	0.06	3.4	0.07	0.09
0.04	0.06	3.5	0.07	0.09
0.04	0.06	3.6	0.08	0.10
0.05	0.06	3.7	0.08	0.10
0.05	0.06	3.8	0.08	0.10
0.05	0.07	3.9	0.08	0.11
0.05	0.07	4.0	0.09	0.11
0.05	0.07	4.1	0.09	0.11
0.05	0.07	4.2	0.09	0.12
0.06	0.07	4.3	0.10	0.12
0.06	0.08	4.4	0.10	0.12
0.06	0.08	4.5	0.10	0.13
0.06	0.08	4.6	0.10	0.13
0.06	0.08	4.7	0.11	0.13
0.06	0.08	4.8	0.11	0.14
0.07	0.09	4.9	0.11	0.14
0.07	0.09	5.0	0.11	0.14

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
10	12		14	16
0.07	0.09	5.1	0.12	0.15
0.07	0.09	5.2	0.12	0.15
0.07	0.10	5.3	0.12	0.15
0.07	0.10	5.4	0.13	0.16
0.08	0.10	5.5	0.13	0.16
0.08	0.10	5.6	0.13	0.16
0.08	0.11	5.7	0.14	0.17
0.08	0.11	5.8	0.14	0.17
0.08	0.11	5.9	0.14	0.18
0.09	0.11	6.0	0.14	0.18
0.09	0.12	6.1	0.15	0.18
0.09	0.12	6.2	0.15	0.19
0.09	0.12	6.3	0.15	0.19
0.09	0.12	6.4	0.16	0.19
0.10	0.13	6.5	0.16	0.20
0.10	0.13	6.6	0.16	0.20
0.10	0.13	6.7	0.17	0.21
0.10	0.13	6.8	0.17	0.21
0.10	0.14	6.9	0.17	0.21
0.11	0.14	7.0	0.18	0.22
0.11	0.14	7.1	0.18	0.22
0.11	0.14	7.2	0.18	0.23
0.11	0.15	7.3	0.19	0.23
0.12	0.15	7.4	0.19	0.23
0.12	0.15	7.5	0.19	0.24
0.12	0.16	7.6	0.20	0.24
0.12	0.16	7.7	0.20	0.25
0.12	0.16	7.8	0.20	0.25
0.13	0.16	7.9	0.21	0.26
0.13	0.17	8.0	0.21	0.26
0.13	0.17	8.1	0.21	0.26
0.13	0.17	8.2	0.22	0.27
0.14	0.18	8.3	0.22	0.27

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
18	20		22	24
0.06	0.07	1.8	0.08	0.09
0.06	0.07	1.9	0.08	0.10
0.06	0.07	2.0	0.09	0.10
0.07	0.08	2.1	0.09	0.11
0.07	0.08	2.2	0.10	0.12
0.07	0.09	2.3	0.10	0.12
0.08	0.09	2.4	0.11	0.13
0.08	0.10	2.5	0.11	0.13
0.08	0.10	2.6	0.12	0.14
0.09	0.10	2.7	0.12	0.14
0.09	0.11	2.8	0.13	0.15
0.09	0.11	2.9	0.13	0.16
0.10	0.12	3.0	0.14	0.16
0.10	0.12	3.1	0.14	0.17
0.10	0.13	3.2	0.15	0.17
0.11	0.13	3.3	0.15	0.18
0.11	0.13	3.4	0.16	0.19
0.12	0.14	3.5	0.16	0.19
0.12	0.14	3.6	0.17	0.20
0.12	0.15	3.7	0.18	0.20
0.13	0.15	3.8	0.18	0.21
0.13	0.16	3.9	0.19	0.22
0.13	0.16	4.0	0.19	0.22
0.14	0.17	4.1	0.20	0.23
0.14	0.17	4.2	0.20	0.24
0.15	0.18	4.3	0.21	0.24
0.15	0.18	4.4	0.21	0.25
0.15	0.18	4.5	0.22	0.26
0.16	0.19	4.6	0.22	0.26
0.16	0.19	4.7	0.23	0.27
0.17	0.20	4.8	0.24	0.27
0.17	0.20	4.9	0.24	0.28
0.17	0.21	5.0	0.25	0.29

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
18	20		22	24
0.18	0.21	5.1	0.25	0.29
0.18	0.22	5.2	0.26	0.30
0.19	0.22	5.3	0.26	0.31
0.19	0.23	5.4	0.27	0.31
0.20	0.23	5.5	0.28	0.32
0.20	0.24	5.6	0.28	0.33
0.20	0.24	5.7	0.29	0.34
0.21	0.25	5.8	0.29	0.34
0.21	0.25	5.9	0.30	0.35
0.22	0.26	6.0	0.31	0.36
0.22	0.27	6.1	0.31	0.36
0.23	0.27	6.2	0.32	0.37
0.23	0.28	6.3	0.32	0.38
0.24	0.28	6.4	0.33	0.38
0.24	0.29	6.5	0.34	0.39
0.25	0.29	6.6	0.34	0.40
0.25	0.30	6.7	0.35	0.41
0.25	0.30	6.8	0.36	0.41
0.26	0.31	6.9	0.36	0.42
0.26	0.31	7.0	0.37	0.43
0.27	0.32	7.1	0.38	0.44
0.27	0.33	7.2	0.38	0.44
0.28	0.33	7.3	0.39	0.45
0.28	0.34	7.4	0.40	0.46
0.29	0.34	7.5	0.40	0.47
0.29	0.35	7.6	0.41	0.47
0.30	0.35	7.7	0.42	0.48
0.30	0.36	7.8	0.42	0.49
0.31	0.37	7.9	0.43	0.50
0.31	0.37	8.0	0.44	0.50
0.32	0.38	8.1	0.44	0.51
0.32	0.38	8.2	0.45	0.52
0.33	0.39	8.3	0.46	0.53

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
26	28		30	32
0.11	0.13	1.8	0.14	0.16
0.12	0.13	1.9	0.15	0.17
0.12	0.14	2.0	0.16	0.18
0.13	0.15	2.1	0.17	0.19
0.13	0.15	2.2	0.18	0.20
0.14	0.16	2.3	0.18	0.21
0.15	0.17	2.4	0.19	0.22
0.15	0.18	2.5	0.20	0.23
0.16	0.18	2.6	0.21	0.24
0.17	0.19	2.7	0.22	0.25
0.17	0.20	2.8	0.23	0.26
0.18	0.21	2.9	0.24	0.27
0.19	0.22	3.0	0.25	0.28
0.19	0.22	3.1	0.25	0.29
0.20	0.23	3.2	0.26	0.30
0.21	0.24	3.3	0.27	0.31
0.22	0.25	3.4	0.28	0.32
0.22	0.26	3.5	0.29	0.33
0.23	0.26	3.6	0.30	0.34
0.24	0.27	3.7	0.31	0.35
0.24	0.28	3.8	0.32	0.36
0.25	0.29	3.9	0.33	0.37
0.26	0.30	4.0	0.34	0.38
0.27	0.30	4.1	0.34	0.39
0.27	0.31	4.2	0.35	0.40
0.28	0.32	4.3	0.36	0.41
0.29	0.33	4.4	0.37	0.42
0.29	0.34	4.5	0.38	0.43
0.30	0.35	4.6	0.39	0.44
0.31	0.35	4.7	0.40	0.45
0.32	0.36	4.8	0.41	0.46
0.32	0.37	4.9	0.42	0.47
0.33	0.38	5.0	0.43	0.48

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
26	28		30	32
0.34	0.39	5.1	0.44	0.49
0.35	0.40	5.2	0.45	0.51
0.36	0.41	5.3	0.46	0.52
0.36	0.41	5.4	0.47	0.53
0.37	0.42	5.5	0.48	0.54
0.38	0.43	5.6	0.49	0.55
0.39	0.44	5.7	0.50	0.56
0.39	0.45	5.8	0.51	0.57
0.40	0.46	5.9	0.52	0.58
0.41	0.47	6.0	0.53	0.59
0.42	0.48	6.1	0.54	0.61
0.43	0.49	6.2	0.55	0.62
0.43	0.49	6.3	0.56	0.63
0.44	0.50	6.4	0.57	0.64
0.45	0.51	6.5	0.58	0.65
0.46	0.52	6.6	0.59	0.66
0.47	0.53	6.7	0.60	0.67
0.48	0.54	6.8	0.61	0.69
0.48	0.55	6.9	0.62	0.70
0.49	0.56	7.0	0.63	0.71
0.50	0.57	7.1	0.64	0.72
0.51	0.58	7.2	0.65	0.73
0.52	0.59	7.3	0.66	0.74
0.53	0.60	7.4	0.68	0.76
0.53	0.61	7.5	0.69	0.77
0.54	0.62	7.6	0.70	0.78
0.55	0.63	7.7	0.71	0.79
0.56	0.64	7.8	0.72	0.81
0.57	0.65	7.9	0.73	0.82
0.58	0.66	8.0	0.74	0.83
0.59	0.67	8.1	0.75	0.84
0.60	0.68	8.2	0.76	0.85
0.60	0.69	8.3	0.77	0.87

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
34	36		38	40
0.18	0.20	1.8	0.22	0.25
0.19	0.21	1.9	0.24	0.26
0.20	0.22	2.0	0.25	0.27
0.21	0.24	2.1	0.26	0.29
0.22	0.25	2.2	0.28	0.30
0.23	0.26	2.3	0.29	0.32
0.24	0.27	2.4	0.30	0.33
0.26	0.28	2.5	0.31	0.35
0.27	0.30	2.6	0.33	0.36
0.28	0.31	2.7	0.34	0.38
0.29	0.32	2.8	0.35	0.39
0.30	0.33	2.9	0.37	0.41
0.31	0.34	3.0	0.38	0.42
0.32	0.36	3.1	0.40	0.44
0.33	0.37	3.2	0.41	0.45
0.34	0.38	3.3	0.42	0.47
0.35	0.39	3.4	0.44	0.48
0.37	0.41	3.5	0.45	0.50
0.38	0.42	3.6	0.46	0.51
0.39	0.43	3.7	0.48	0.53
0.40	0.44	3.8	0.49	0.54
0.41	0.46	3.9	0.51	0.56
0.42	0.47	4.0	0.52	0.57
0.43	0.48	4.1	0.53	0.59
0.45	0.50	4.2	0.55	0.60
0.46	0.51	4.3	0.56	0.62
0.47	0.52	4.4	0.58	0.63
0.48	0.53	4.5	0.59	0.65
0.49	0.55	4.6	0.60	0.67
0.50	0.56	4.7	0.62	0.68
0.52	0.57	4.8	0.63	0.70
0.53	0.59	4.9	0.65	0.71
0.54	0.60	5.0	0.66	0.73

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
34	36		38	40
0.55	0.61	5.1	0.68	0.74
0.56	0.63	5.2	0.69	0.76
0.58	0.64	5.3	0.71	0.78
0.59	0.65	5.4	0.72	0.79
0.60	0.67	5.5	0.74	0.81
0.61	0.68	5.6	0.75	0.83
0.63	0.69	5.7	0.77	0.84
0.64	0.71	5.8	0.78	0.86
0.65	0.72	5.9	0.80	0.88
0.66	0.74	6.0	0.81	0.89
0.68	0.75	6.1	0.83	0.91
0.69	0.76	6.2	0.84	0.92
0.70	0.78	6.3	0.86	0.94
0.71	0.79	6.4	0.87	0.96
0.73	0.80	6.5	0.89	0.98
0.74	0.82	6.6	0.90	0.99
0.75	0.83	6.7	0.92	1.01
0.76	0.85	6.8	0.93	1.03
0.78	0.86	6.9	0.95	1.04
0.79	0.88	7.0	0.97	1.06
0.80	0.89	7.1	0.98	1.08
0.82	0.90	7.2	1.00	1.09
0.83	0.92	7.3	1.01	1.11
0.84	0.93	7.4	1.03	1.13
0.86	0.95	7.5	1.05	1.15
0.87	0.96	7.6	1.06	1.16
0.88	0.98	7.7	1.08	1.18
0.90	0.99	7.8	1.09	1.20
0.91	1.01	7.9	1.11	1.22
0.92	1.02	8.0	1.13	1.23
0.94	1.04	8.1	1.14	1.25
0.95	1.05	8.2	1.16	1.27
0.96	1.07	8.3	1.18	1.29

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
42	44		46	48
0.27	0.30	1.8	0.32	0.35
0.29	0.31	1.9	0.34	0.37
0.30	0.33	2.0	0.36	0.39
0.32	0.35	2.1	0.38	0.41
0.33	0.36	2.2	0.40	0.43
0.35	0.38	2.3	0.42	0.45
0.36	0.40	2.4	0.43	0.47
0.38	0.42	2.5	0.45	0.49
0.40	0.43	2.6	0.47	0.51
0.41	0.45	2.7	0.49	0.53
0.43	0.47	2.8	0.51	0.55
0.45	0.49	2.9	0.53	0.57
0.46	0.50	3.0	0.55	0.59
0.48	0.52	3.1	0.57	0.62
0.49	0.54	3.2	0.59	0.64
0.51	0.56	3.3	0.61	0.66
0.53	0.58	3.4	0.63	0.68
0.54	0.59	3.5	0.65	0.70
0.56	0.61	3.6	0.67	0.72
0.58	0.63	3.7	0.68	0.74
0.59	0.65	3.8	0.70	0.76
0.61	0.67	3.9	0.72	0.79
0.63	0.68	4.0	0.74	0.81
0.64	0.70	4.1	0.76	0.83
0.66	0.72	4.2	0.78	0.85
0.68	0.74	4.3	0.80	0.87
0.69	0.76	4.4	0.82	0.89
0.71	0.78	4.5	0.84	0.91
0.73	0.80	4.6	0.86	0.94
0.75	0.81	4.7	0.88	0.96
0.76	0.83	4.8	0.91	0.98
0.78	0.85	4.9	0.93	1.00
0.80	0.87	5.0	0.95	1.02

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
42	44		46	48
0.82	0.89	5.1	0.97	1.05
0.83	0.91	5.2	0.99	1.07
0.85	0.93	5.3	1.01	1.09
0.87	0.95	5.4	1.03	1.11
0.89	0.97	5.5	1.05	1.14
0.90	0.99	5.6	1.07	1.16
0.92	1.00	5.7	1.09	1.18
0.94	1.02	5.8	1.11	1.20
0.96	1.04	5.9	1.13	1.23
0.98	1.06	6.0	1.15	1.25
0.99	1.08	6.1	1.18	1.27
1.01	1.10	6.2	1.20	1.30
1.03	1.12	6.3	1.22	1.32
1.05	1.14	6.4	1.24	1.34
1.07	1.16	6.5	1.26	1.36
1.08	1.18	6.6	1.28	1.39
1.10	1.20	6.7	1.30	1.41
1.12	1.22	6.8	1.33	1.43
1.14	1.24	6.9	1.35	1.46
1.16	1.26	7.0	1.37	1.48
1.18	1.28	7.1	1.39	1.51
1.20	1.30	7.2	1.41	1.53
1.22	1.32	7.3	1.44	1.55
1.23	1.34	7.4	1.46	1.58
1.25	1.36	7.5	1.48	1.60
1.27	1.38	7.6	1.50	1.62
1.29	1.41	7.7	1.52	1.65
1.31	1.43	7.8	1.55	1.67
1.33	1.45	7.9	1.57	1.70
1.35	1.47	8.0	1.59	1.72
1.37	1.49	8.1	1.61	1.75
1.39	1.51	8.2	1.64	1.77
1.41	1.53	8.3	1.66	1.79

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
50	52		54	56
0.38	0.41	1.8	0.44	0.47
0.40	0.43	1.9	0.46	0.50
0.42	0.46	2.0	0.49	0.53
0.44	0.48	2.1	0.51	0.55
0.47	0.50	2.2	0.54	0.58
0.49	0.53	2.3	0.57	0.61
0.51	0.55	2.4	0.59	0.63
0.53	0.57	2.5	0.62	0.66
0.55	0.60	2.6	0.64	0.69
0.58	0.62	2.7	0.67	0.72
0.60	0.65	2.8	0.69	0.74
0.62	0.67	2.9	0.72	0.77
0.64	0.69	3.0	0.75	0.80
0.67	0.72	3.1	0.77	0.83
0.69	0.74	3.2	0.80	0.86
0.71	0.77	3.3	0.82	0.88
0.73	0.79	3.4	0.85	0.91
0.76	0.82	3.5	0.88	0.94
0.78	0.84	3.6	0.90	0.97
0.80	0.86	3.7	0.93	1.00
0.83	0.89	3.8	0.96	1.02
0.85	0.91	3.9	0.98	1.05
0.87	0.94	4.0	1.01	1.08
0.89	0.96	4.1	1.04	1.11
0.92	0.99	4.2	1.06	1.14
0.94	1.01	4.3	1.09	1.17
0.96	1.04	4.4	1.12	1.20
0.99	1.06	4.5	1.14	1.23
1.01	1.09	4.6	1.17	1.25
1.04	1.11	4.7	1.20	1.28
1.06	1.14	4.8	1.22	1.31
1.08	1.17	4.9	1.25	1.34
1.11	1.19	5.0	1.28	1.37

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
50	52		54	56
1.13	1.22	5.1	1.31	1.40
1.15	1.24	5.2	1.33	1.43
1.18	1.27	5.3	1.36	1.46
1.20	1.29	5.4	1.39	1.49
1.23	1.32	5.5	1.42	1.52
1.25	1.35	5.6	1.45	1.55
1.28	1.37	5.7	1.47	1.58
1.30	1.40	5.8	1.50	1.61
1.32	1.43	5.9	1.53	1.64
1.35	1.45	6.0	1.56	1.67
1.37	1.48	6.1	1.59	1.70
1.40	1.50	6.2	1.61	1.73
1.42	1.53	6.3	1.64	1.76
1.45	1.56	6.4	1.67	1.79
1.47	1.58	6.5	1.70	1.82
1.50	1.61	6.6	1.73	1.85
1.52	1.64	6.7	1.76	1.88
1.55	1.66	6.8	1.79	1.91
1.57	1.69	6.9	1.82	1.94
1.60	1.72	7.0	1.84	1.97
1.62	1.75	7.1	1.87	2.00
1.65	1.77	7.2	1.90	2.04
1.67	1.80	7.3	1.93	2.07
1.70	1.83	7.4	1.96	2.10
1.73	1.86	7.5	1.99	2.13
1.75	1.88	7.6	2.02	2.16
1.78	1.91	7.7	2.05	2.19
1.80	1.94	7.8	2.08	2.22
1.83	1.97	7.9	2.11	2.26
1.85	1.99	8.0	2.14	2.29
1.88	2.02	8.1	2.17	2.32
1.91	2.05	8.2	2.20	2.35
1.93	2.08	8.3	2.23	2.38

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
58	60		62	64
0.50	0.54	1.8	0.57	0.61
0.53	0.57	1.9	0.61	0.65
0.56	0.60	2.0	0.64	0.68
0.59	0.63	2.1	0.67	0.72
0.62	0.66	2.2	0.71	0.75
0.65	0.69	2.3	0.74	0.79
0.68	0.72	2.4	0.77	0.82
0.71	0.76	2.5	0.81	0.86
0.74	0.79	2.6	0.84	0.89
0.77	0.82	2.7	0.87	0.93
0.80	0.85	2.8	0.91	0.96
0.83	0.88	2.9	0.94	1.00
0.86	0.91	3.0	0.97	1.03
0.89	0.94	3.1	1.01	1.07
0.91	0.98	3.2	1.04	1.11
0.94	1.01	3.3	1.07	1.14
0.97	1.04	3.4	1.11	1.18
1.00	1.07	3.5	1.14	1.21
1.03	1.10	3.6	1.18	1.25
1.07	1.14	3.7	1.21	1.29
1.10	1.17	3.8	1.24	1.32
1.13	1.20	3.9	1.28	1.36
1.16	1.23	4.0	1.31	1.40
1.19	1.27	4.1	1.35	1.43
1.22	1.30	4.2	1.38	1.47
1.25	1.33	4.3	1.42	1.51
1.28	1.36	4.4	1.45	1.54
1.31	1.40	4.5	1.49	1.58
1.34	1.43	4.6	1.52	1.62
1.37	1.46	4.7	1.56	1.65
1.40	1.50	4.8	1.59	1.69
1.43	1.53	4.9	1.63	1.73
1.47	1.56	5.0	1.66	1.77

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
58	60		62	64
1.50	1.60	5.1	1.70	1.80
1.53	1.63	5.2	1.73	1.84
1.56	1.66	5.3	1.77	1.88
1.59	1.70	5.4	1.81	1.92
1.62	1.73	5.5	1.84	1.96
1.65	1.76	5.6	1.88	1.99
1.69	1.80	5.7	1.91	2.03
1.72	1.83	5.8	1.95	2.07
1.75	1.87	5.9	1.99	2.11
1.78	1.90	6.0	2.02	2.15
1.81	1.93	6.1	2.06	2.19
1.85	1.97	6.2	2.09	2.22
1.88	2.00	6.3	2.13	2.26
1.91	2.04	6.4	2.17	2.30
1.94	2.07	6.5	2.20	2.34
1.98	2.11	6.6	2.24	2.38
2.01	2.14	6.7	2.28	2.42
2.04	2.18	6.8	2.31	2.46
2.07	2.21	6.9	2.35	2.50
2.11	2.25	7.0	2.39	2.54
2.14	2.28	7.1	2.43	2.58
2.17	2.32	7.2	2.46	2.61
2.21	2.35	7.3	2.50	2.65
2.24	2.39	7.4	2.54	2.69
2.27	2.42	7.5	2.58	2.73
2.31	2.46	7.6	2.61	2.77
2.34	2.49	7.7	2.65	2.81
2.37	2.53	7.8	2.69	2.85
2.41	2.56	7.9	2.73	2.89
2.44	2.60	8.0	2.76	2.93
2.48	2.64	8.1	2.80	2.97
2.51	2.67	8.2	2.84	3.01
2.54	2.71	8.3	2.88	3.06

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
66	68		70	72
0.65	0.69	1.8	0.73	0.77
0.69	0.73	1.9	0.77	0.81
0.72	0.77	2.0	0.81	0.86
0.76	0.81	2.1	0.85	0.90
0.80	0.84	2.2	0.89	0.94
0.83	0.88	2.3	0.94	0.99
0.87	0.92	2.4	0.98	1.03
0.91	0.96	2.5	1.02	1.08
0.95	1.00	2.6	1.06	1.12
0.98	1.04	2.7	1.10	1.17
1.02	1.08	2.8	1.15	1.21
1.06	1.12	2.9	1.19	1.25
1.10	1.16	3.0	1.23	1.30
1.14	1.20	3.1	1.27	1.34
1.17	1.24	3.2	1.31	1.39
1.21	1.28	3.3	1.36	1.43
1.25	1.32	3.4	1.40	1.48
1.29	1.36	3.5	1.44	1.52
1.33	1.41	3.6	1.49	1.57
1.37	1.45	3.7	1.53	1.61
1.40	1.49	3.8	1.57	1.66
1.44	1.53	3.9	1.62	1.71
1.48	1.57	4.0	1.66	1.75
1.52	1.61	4.1	1.70	1.80
1.56	1.65	4.2	1.75	1.84
1.60	1.69	4.3	1.79	1.89
1.64	1.73	4.4	1.83	1.94
1.68	1.78	4.5	1.88	1.98
1.72	1.82	4.6	1.92	2.03
1.76	1.86	4.7	1.96	2.07
1.79	1.90	4.8	2.01	2.12
1.83	1.94	4.9	2.05	2.17
1.87	1.98	5.0	2.10	2.21

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
66	68		70	72
1.91	2.03	5.1	2.14	2.26
1.95	2.07	5.2	2.19	2.31
1.99	2.11	5.3	2.23	2.35
2.03	2.15	5.4	2.28	2.40
2.07	2.20	5.5	2.32	2.45
2.11	2.24	5.6	2.37	2.50
2.15	2.28	5.7	2.41	2.54
2.20	2.32	5.8	2.46	2.59
2.24	2.37	5.9	2.50	2.64
2.28	2.41	6.0	2.55	2.69
2.32	2.45	6.1	2.59	2.73
2.36	2.50	6.2	2.64	2.78
2.40	2.54	6.3	2.68	2.83
2.44	2.58	6.4	2.73	2.88
2.48	2.63	6.5	2.77	2.93
2.52	2.67	6.6	2.82	2.97
2.56	2.71	6.7	2.87	3.02
2.60	2.76	6.8	2.91	3.07
2.65	2.80	6.9	2.96	3.12
2.69	2.84	7.0	3.00	3.17
2.73	2.89	7.1	3.05	3.22
2.77	2.93	7.2	3.10	3.27
2.81	2.98	7.3	3.14	3.32
2.85	3.02	7.4	3.19	3.36
2.90	3.06	7.5	3.24	3.41
2.94	3.11	7.6	3.28	3.46
2.98	3.15	7.7	3.33	3.51
3.02	3.20	7.8	3.38	3.56
3.07	3.24	7.9	3.42	3.61
3.11	3.29	8.0	3.47	3.66
3.15	3.33	8.1	3.52	3.71
3.19	3.38	8.2	3.57	3.76
3.24	3.42	8.3	3.61	3.81

TOP DIAMETER

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
74	76		78	80
0.81	0.85	1.8	0.90	0.94
0.86	0.90	1.9	0.95	1.00
0.90	0.95	2.0	1.00	1.05
0.95	1.00	2.1	1.05	1.11
1.00	1.05	2.2	1.10	1.16
1.04	1.10	2.3	1.15	1.21
1.09	1.15	2.4	1.21	1.27
1.14	1.20	2.5	1.26	1.32
1.18	1.25	2.6	1.31	1.38
1.23	1.29	2.7	1.36	1.43
1.28	1.34	2.8	1.41	1.48
1.32	1.39	2.9	1.47	1.54
1.37	1.44	3.0	1.52	1.59
1.42	1.49	3.1	1.57	1.65
1.46	1.54	3.2	1.62	1.70
1.51	1.59	3.3	1.67	1.76
1.56	1.64	3.4	1.73	1.81
1.61	1.69	3.5	1.78	1.87
1.65	1.74	3.6	1.83	1.92
1.70	1.79	3.7	1.89	1.98
1.75	1.84	3.8	1.94	2.04
1.80	1.89	3.9	1.99	2.09
1.85	1.94	4.0	2.04	2.15
1.89	1.99	4.1	2.10	2.20
1.94	2.05	4.2	2.15	2.26
1.99	2.10	4.3	2.20	2.31
2.04	2.15	4.4	2.26	2.37
2.09	2.20	4.5	2.31	2.43
2.14	2.25	4.6	2.37	2.48
2.19	2.30	4.7	2.42	2.54
2.24	2.35	4.8	2.47	2.60
2.28	2.40	4.9	2.53	2.65
2.33	2.46	5.0	2.58	2.71

Volume in cubic metres

Top diameter in centimetres		Length in metres	Top diameter in centimetres	
74	76		78	80
2.38	2.51	5.1	2.64	2.77
2.43	2.56	5.2	2.69	2.82
2.48	2.61	5.3	2.75	2.88
2.53	2.66	5.4	2.80	2.94
2.58	2.72	5.5	2.85	3.00
2.63	2.77	5.6	2.91	3.05
2.68	2.82	5.7	2.96	3.11
2.73	2.87	5.8	3.02	3.17
2.78	2.93	5.9	3.07	3.23
2.83	2.98	6.0	3.13	3.29
2.88	3.03	6.1	3.19	3.34
2.93	3.08	6.2	3.24	3.40
2.98	3.14	6.3	3.30	3.46
3.03	3.19	6.4	3.35	3.52
3.08	3.24	6.5	3.41	3.58
3.13	3.30	6.6	3.46	3.64
3.18	3.35	6.7	3.52	3.69
3.24	3.40	6.8	3.58	3.75
3.29	3.46	6.9	3.63	3.81
3.34	3.51	7.0	3.69	3.87
3.39	3.57	7.1	3.75	3.93
3.44	3.62	7.2	3.80	3.99
3.49	3.67	7.3	3.86	4.05
3.54	3.73	7.4	3.92	4.11
3.60	3.78	7.5	3.97	4.17
3.65	3.84	7.6	4.03	4.23
3.70	3.89	7.7	4.09	4.29
3.75	3.95	7.8	4.14	4.35
3.80	4.00	7.9	4.20	4.41
3.86	4.05	8.0	4.26	4.47
3.91	4.11	8.1	4.32	4.53
3.96	4.16	8.2	4.37	4.59
4.01	4.22	8.3	4.43	4.65

BARK

Top diameter under-bark (cm)	Bark as a percentage of underbark volume						
	Species						
	SP	CP	SS	NS	EL	JL	DF
10	16.5	25.5	13.5	10.0	25.0	20.5	16.5
15	14.0	22.0	11.0	10.0	22.0	18.0	14.0
20	14.0	20.5	10.0	9.5	20.5	16.5	13.0
25	15.5	20.5	9.0	9.0	20.0	16.0	13.0
30	17.5	21.0	8.5	8.5	20.5	16.0	13.5
35	19.5	21.5	8.0	8.0	21.0	16.0	13.5
40	21.5	22.5	7.5	7.5	21.5	16.5	14.0
45	23.0	23.5	7.5	7.0	22.0	17.0	14.0
50	24.0	24.5	7.0	6.5	22.5	17.5	14.5

Notes:

(i) It is important to note that the above values are percentages of *underbark* volume. To convert underbark volume to overbark volume add the appropriate percentage (p) of the underbark volume as follows:

$$\text{o.b. volume} = \text{u.b. volume} \times \frac{(100 + p)}{100}$$

(ii) The table is applicable only to the range of log lengths covered by the sawlog tables.

(iii) The values given for Scots pine and Corsican pine are slightly different from previously published values. It should be noted that the part of the tree from which the sawlog is taken in these species has a marked influence on the bark percentage. The assumption made in calculating the values in the table is that sawlog material is taken predominantly from the lower half of the merchantable stem.

(iv) *Other species*

For South Coastal Lodgepole pine use Scots pine bark percentages minus 2%. For other provenances of Lodgepole pine use Scots pine bark percentages minus 4%.

For: Western hemlock }
 Western red cedar } use Sitka spruce percentages.
 Grand fir }
 Noble fir }

of / ~~Omorika spruce~~ }
 Serbian spruce } Lawson Cypress

Further Information

1. Forestry Commission publications:

- Field Book 9 – Classification and Presentation of Softwood Sawlogs.
- Field Book 11 – Mid Diameter Sawlog Tables (1990).
- Booklet 39 – Forest Mensuration (1985).
- Booklet 48 – Yield Models for Forest Management (1981).
- Booklet 49 – Timber Measurement – A Field Guide (1983).

These can be obtained from the Forestry Commission,
P.O. Box 100, Fareham, Hampshire, PO14 2SX.
Tel: 01329 331345 Fax: 01329 330034.
E-mail: reception@telelink.co.uk

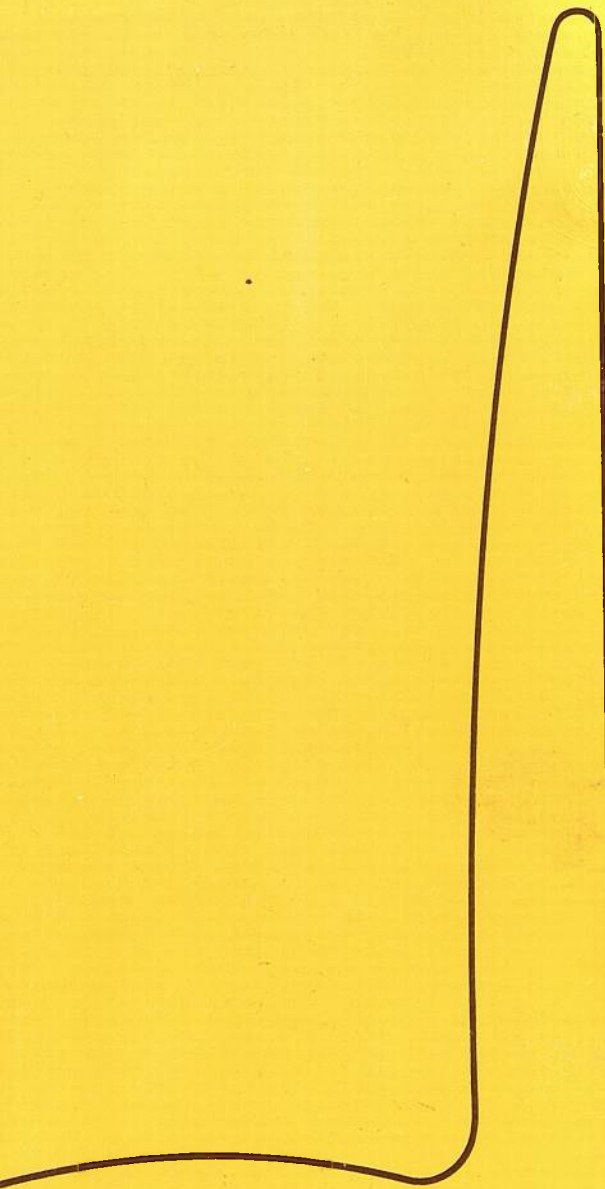
A full list of Forestry Commission publications can be viewed on the Internet at <http://www.forestry.gov.uk>

2. Advice on any matter relating to timber measurements is available from:

Mensuration Branch,
Forest Research,
Alice Holt Lodge,
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