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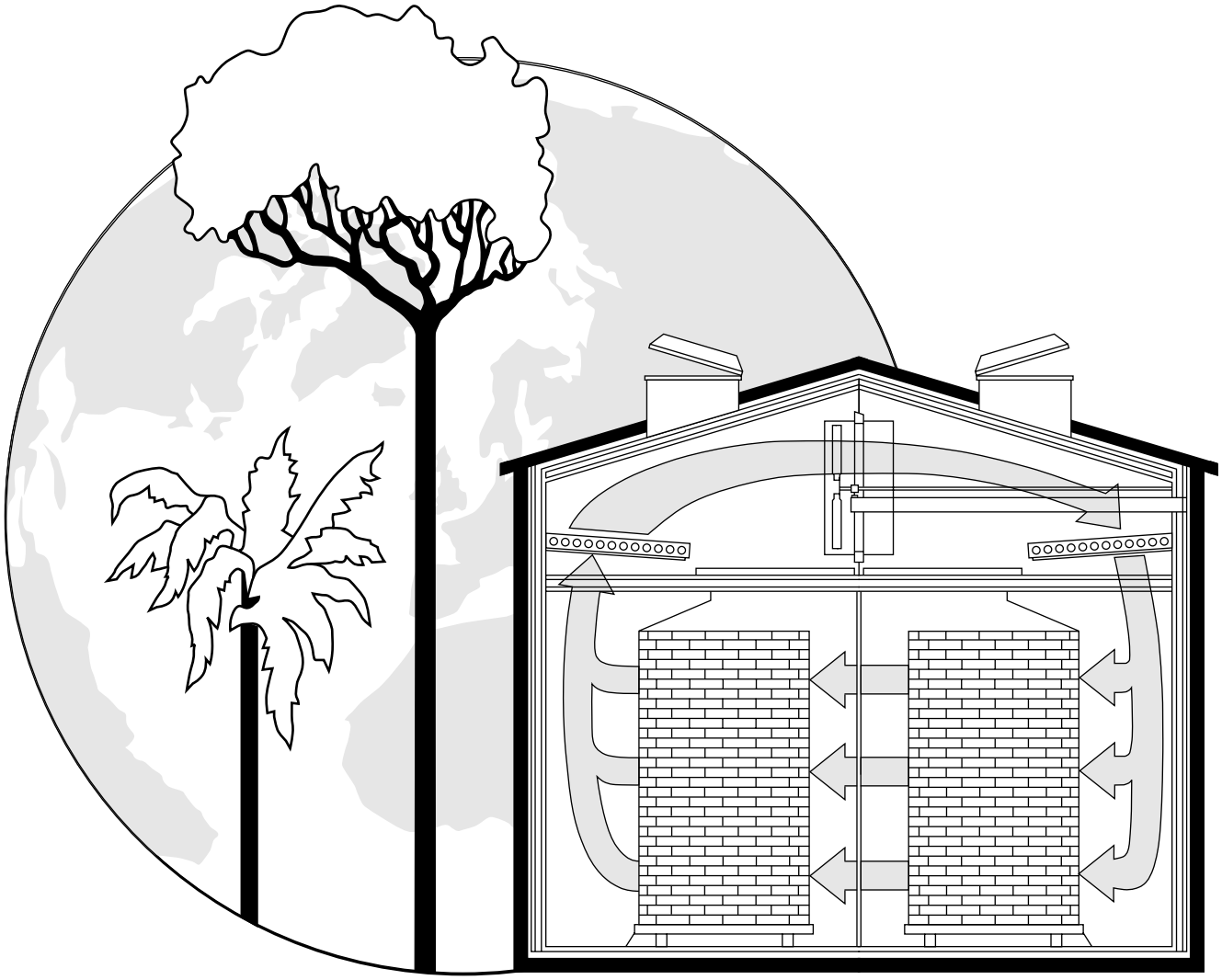
Method to Estimate Dry-Kiln Schedules and Species Groupings

Tropical and Temperate Hardwoods

William T. Simpson



Abstract

Dry-kiln schedules have been developed for many wood species. However, one problem is that many, especially tropical species, have no recommended schedule. Another problem in drying tropical species is the lack of a way to group them when it is impractical to fill a kiln with a single species. This report investigates the possibility of estimating kiln schedules and grouping species for drying using basic specific gravity as the primary variable for prediction and grouping. In this study, kiln schedules were estimated by establishing least squares relationships between schedule parameters and basic specific gravity. These relationships were then applied to estimate schedules for 3,237 species from Africa, Asia and Oceana, and Latin America. Nine drying groups were established, based on intervals of specific gravity where drying times were similar, with the appropriate schedule applied to all members of the group.

Keywords: tropical species, kiln schedule, kiln drying, dry kiln

Contents

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Method to Estimate Dry-Kiln Schedules and Species Groupings

Tropical and Temperate Hardwoods

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Introduction

The large number of tree species in the world, especially in the tropics, presents two problems in drying lumber. Some species have been used for timber products for decades, and dry-kiln schedules for these species have been recommended based on experience and research . However, recommended kiln schedules are not available for many less-utilized species, especially tropical species.

A second problem stems from the sheer number of tropical species and their heterogeneous occurrence in the forest. As a consequence, it is not always practical to fill a dry kiln with a single species. The problem is the lack of a method to group species, based on similar drying characteristics, so that species can be mixed and dried together in the same dry kiln.

The purpose of this study was to develop and evaluate a method to solve these two problems. The first part of the report develops a method to estimate a kiln schedule for a species when a recommended schedule is not available; the second part of the report builds on the first part to develop a species grouping method.

Estimation of Kiln Schedules

Background

The strategy in selecting a kiln schedule is finding the right compromise between the desire to dry as fast as possible, which calls for severe drying conditions in the form of high dry-bulb temperatures and large wet-bulb depressions (low relative humidity), and the desire to minimize drying defects, such as surface checks and honeycomb, by using lower temperatures and smaller wet-bulb depressions. Several wood properties are associated with the allowable severity of a kiln schedule, properties such as specific gravity, shrinkage, and mechanical properties perpendicular to the grain. Specific gravity is the only property that is widely reported in the literature, so our analysis is confined to specific gravity.

Related Research

Hisada and Sato (1976), Hisada and others (1986), and Durand (1985) conducted analyses to relate known kiln schedules of Southeast Asian and African species to physical properties. They developed multiple linear regressions between several kiln schedule parameters as the dependent variables and physical properties as the independent variables. Specific gravity was found to have the largest influence on schedule parameters. In general, they found good agreement between the recommended and estimated schedules, but noted that the estimated schedule for some species deviated considerably from the recommended schedule. Jankowski (1992) developed a rapid and simple test to indicate the probable performance of wood species in kiln drying by comparing the test performance of six known species in relation to their recommended schedule. Results showed that the selected schedules were adequate for the species tested.

Current Kiln Schedules

For many years, kiln schedules for temperate and tropical hardwoods have been developed by numerous people in research institutions and industry throughout the world. Many schedules are summarized in Hildebrand (1970), Pratt and Turner (1986), Boone and others (1988), and USDA (1991). These schedules are recommended as conservative starting points—a safe reference to be adjusted upward in severity with experience. A typical kiln schedule consists of several steps. An initial dry-bulb temperature and initial wet-bulb depression begin the drying at some green moisture content. These conditions are held until a predetermined moisture content level is reached; then, the first change (increase) is made in the wet-bulb depression. At subsequent moisture content levels during drying, additional increases in the wet-bulb depression are made. During the latter stages of the kiln schedule, increases are made in both the dry-bulb temperature and the wet-bulb depression. A typical kiln schedule for meranti (*Shorea* spp.), consisting of eight steps, is given in Table 1 (Boone and others 1988).

Table 1—Typical kiln schedule for hardwood lumber, in this case meranti (*Shorea* spp.) (Boone and others 1988)

Step	Moisture content (%)	Temperature (°C) Dry-bulb	Temperature (°C) Wet-bulb	EMC[a] (%)	Relative humidity (%)	Temperature (°F) Dry-bulb	Temperature (°F) Wet-bulb
1	>50	49	45	14.4	80	120	113
2	50 to 40	49	44	12.1	72	120	110
3	40 to 35	49	41	9.6	60	120	105
4	35 to 30	49	35	6.5	40	120	95
5	30 to 25	55	32	4.0	22	130	90
6	25 to 20	60	32	2.9	15	140	90
7	20 to 15	66	38	3.2	18	150	100
8	15 to final	82	55	3.5	26	180	130

[a]Equilibrium moisture content.

Our knowledge of the process that led to recommended kiln schedules for different species is incomplete. For hardwoods native to the United States,

> Extensive pilot testing and widespread commercial use have demonstrated that the general schedules for hardwoods developed by the Forest Products Laboratory are satisfactory for the drying of 51-mm (2-in.) and thinner hardwood lumber and other products. They form a base from which an operator can develop the most economical schedule for a particular type of kiln. (Rasmussen 1961).

Despite this generalized description, we can be reasonably confident that years of collective experience have confirmed those species that are sensitive and require a mild schedule and those that can tolerate severe schedules.

How the schedules for tropical hardwoods were assigned is less clear. The major references are Hildebrand (1970), Kukachka (1970), McMillen and Bois (1972), Chudnoff (1984), Pratt and Turner (1986), and Boone and others (1988). The origin of some of these schedules is unknown, but as explained by McMillen and Bois (1972), some were derived from schedules published in Great Britain and are listed most recently by Pratt and Turner (1986). The schedules were developed mainly by drying tests at the Princes Risborough Laboratory, but also from data obtained elsewhere.

The kiln schedules recommended in the literature are not from a uniform experimental design of replicated, controlled experiments where standard, precise observations were made to establish critical schedule parameters, such as initial dry-bulb temperature, initial wet-bulb depression, moisture content for the first wet-bulb depression change, and the subsequent increases in dry-bulb temperature and wet-bulb depression. Furthermore, it is possible that some recommendations were made on incomplete observations. An example would be failure to experimentally bracket the dividing point between a schedule that is too severe and one that is too mild. This could occur in a situation where a schedule is applied, no defect is observed, and the schedule is declared appropriate even though it is not optimized. For these reasons and the general lack of knowledge about criteria that led to schedule recommendation, it does not seem justifiable to apply statistical analyses that lead to probability-based inferences on the credibility of schedule estimates. The procedure we use is simple least squares curve fitting. Also, keep in mind that conservative schedules are used as the base for establishing the relationship to specific gravity. The intent of these schedules is to serve only as a starting point to be adjusted upward in severity as experience is gained with the species in question. Even though all we can hope for in schedule estimation are approximate guidelines, we feel that this is a substantial improvement over the current situation of having no starting point in schedule selection.

Method of Schedule Estimation

Schedule estimation is based on relationships established between basic specific gravity (green volume and ovendry weight) and known recommended kiln schedules for 268 species or species groups as reported in the references previously cited. In some cases, specific gravity data from the literature citations had to be converted to basic specific gravity, as illustrated in Appendix A. (Appendix B describes the method to estimate drying time; Appendix C lists species data for kiln drying.) The genera *Quercus* and *Eucalyptus* have been omitted from the analysis because of their abnormal sensitivity to drying defects. *Quercus* has abnormally wide ray tissue and is notoriously prone to developing surface checks and honeycomb in the ray tissue. *Eucalyptus* is abnormally prone to collapse. The following are general steps to estimate kiln schedules.

1. Estimate initial dry-bulb temperature.
2. Estimate initial wet-bulb depression.
3. Estimate moisture content for first wet-bulb depression change.
4. Establish method for increasing dry-bulb temperature.
5. Establish method for increasing wet-bulb depression.
6. Calculate estimated kiln schedule.
7. Apply estimation method to species with no apparent recommended schedule.

Estimation of Initial Conditions

The first and most critical step is to estimate the initial dry-bulb temperature, initial wet-bulb depression, and moisture content for the first wet-bulb depression increase. This is done by least squares fitting of basic specific gravity (G_b) as the independent variable and these initial conditions as dependent variables. The relationships between the initial conditions and specific gravity are not necessarily linear, so several transforms were examined. These transform functions and the least squares results are shown in Tables 2–4 for the three initial conditions. Using the selection criteria of maximum coefficient of determination (R^2), the hyperbolic function works best for initial dry-bulb temperature (Table 2) and initial wet-bulb depression (Table 4). The equations for

Table 2—Transforms for fitting initial dry-bulb temperature to basic specific gravity G_b

		°C			°F		
Transform	R^2	a	b	AD[a]	a	b	AD
Hyperbolic $[1/(a + bG_b)]$	0.468	0.0115	0.0167	5.2	0.00564	0.00489	9.3
Exponential $[a \exp(bG_b)]$	0.465	76.8	−0.804	5.2	168	−0.589	9.4
Square root $[a + bG_b^{0.5}]$	0.464	94.1	−59.8	5.2	201	−108	9.4
Log $[a + b \ln(G_b)]$	0.457	36.8	−20.9	5.3	98.2	−37.6	9.5
Power $[aG_b^b]$	0.456	37.8	−0.412	5.3	99.7	−0.303	9.5
Linear $[a + bG_b]$	0.454	72.2	−40.1	5.3	162	−72.1	9.5

[a]Average deviation between actual and estimated initial dry-bulb temperatures.

Table 3—Transforms for fitting moisture content for first wet-bulb depression increase to basic specific gravity G_b

Transform	R^2	a	b	AD[a]
Square root $[a + bG_b^{0.5}]$	0.223	72.3	−34.3	5.1
Log $[a + b \ln(G_b)]$	0.221	39.4	−12.2	5.2
Linear $[a + bG_b^{0.5}]$	0.220	59.8	−23.1	5.0
Exponential $[a \exp(bG_b)]$	0.211	60.5	−0.478	5.1
Power $[aG_b^b]$	0.207	39.7	−0.248	5.3
Hyperbolic $[1/(a + bG_b)]$	0.196	0.0162	0.0101	5.2

[a]Average deviation between actual and estimated moisture content for first wet-bulb depression increase.

Table 4—Transforms for fitting initial wet-bulb depression to basic specific gravity G_b

		°C			°F		
Transform	R^2	a	b	AD[a]	a	b	AD
Hyperbolic $[1/(a + bG_b)]$	0.455	0.0831	0.509	0.7	0.0451	0.283	1.3
Exponential $[a \exp(bG_b)]$	0.421	6.82	−1.53	0.7	12.4	−1.53	1.3
Power $[aG_b^b]$	0.419	1.77	−0.793	0.7	3.19	−0.796	1.3
Log $[a + b \ln(G_b)]$	0.356	1.42	−2.76	0.8	2.56	−4.98	1.4
Square root $[a + bG_b^{0.5}]$	0.355	8.93	−7	0.8	16.1	−14.1	1.4
Linear $[a + bG_b^{0.5}]$	0.341	6.05	−5.19	0.8	10.9	−9.38	1.4

[a]Average deviation between actual and estimated initial wet-bulb depression.

estimating initial dry-bulb temperature (T_i) and initial wet-bulb depression (D_i) are the following:

$$T_i = 1/(0.0115 + 0.0167\ G_b) \quad (°C) \quad R^2 = 0.468 \quad (1)$$
$$T_i = 1/(0.00564 + 0.00489\ G_b) \quad (°F)$$

$$D_i = 1/(0.0832 + 0.509\ G_b) \quad (°C) \quad R^2 = 0.455 \quad (2)$$
$$D_i = 1/(0.0451 + 0.283\ G_b) \quad (°F)$$

Figures 1 and 2 show the 268 initial dry-bulb temperatures and initial wet-bulb depressions as functions of basic specific gravity. The curves in Figure 1 and especially in Figure 2 are somewhat deceiving in that the least squares curves appear to under-represent data; that is, they appear to under predict both T_i and D_i. The reason for this is the massing of points in certain areas and the inability of the graphics to distinguish individual points in these areas. Therefore, more data points are at the lower values of T_i and D_i than Figures 1 and 2 can distinguish. Examination of the R^2 values and Figures 1 and 2 also shows that the large scatter in the data results in weak fits to Equations (1) and (2). This is not surprising given the imprecise nature of the process for recommending kiln schedules, the variability in wood properties, and our incomplete knowledge of how and what wood properties influence optimum schedule.

The method of estimating the moisture content for the first wet-bulb depression increase was done differently for several reasons. The R^2 values were quite low, about 0.2, which indicates a very weak relationship. Also, more than 85 percent of these moisture content values for the first increase were either 40 or 50 percent, and the average of all was 47 percent. Furthermore, the system for estimating kiln schedules would be simplified if we could use just one moisture content for all species. Because of these considerations, the decision was made to use 45 percent as the moisture content for the first wet-bulb depression increase for all species.

The list of 268 species in Table C1 (Appendix C) includes the basic specific gravity, the recommended initial conditions, the initial conditions as estimated by the least squares curve fit, and the absolute value of the deviation between recommended and estimated temperatures. The average deviation between the recommended and estimated initial dry-bulb temperatures is 5.2°C (9ºF) and 0.7ºC (1.3ºF) for the initial wet-bulb depression. However, some deviations are much larger and raise serious concerns about the safety of the estimated schedule. If the deviation is in the direction of schedule acceleration, there is a danger of surface checks or honeycomb.

Estimation of Schedule Step Changes

With the initial kiln conditions established, the next step was to develop a systematic way to increase the dry-bulb temperature and wet-bulb depression. Most hardwood schedules developed in the United States (USDA 1991) hold the initial dry-bulb temperature constant until the average moisture content of the wetter lumber, as estimated by kiln sample boards, is 30 percent. We followed that same pattern and uniformly made the first dry-bulb temperature increase at 30-percent moisture content.

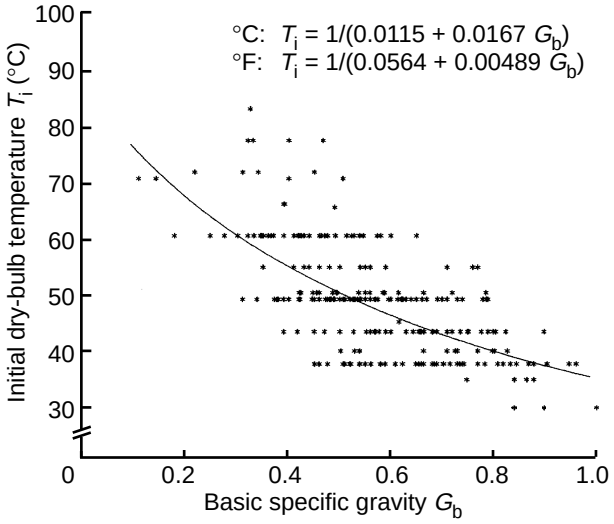

Figure 1—Least squares results of the effect of basic specific gravity on initial dry-bulb temperature.

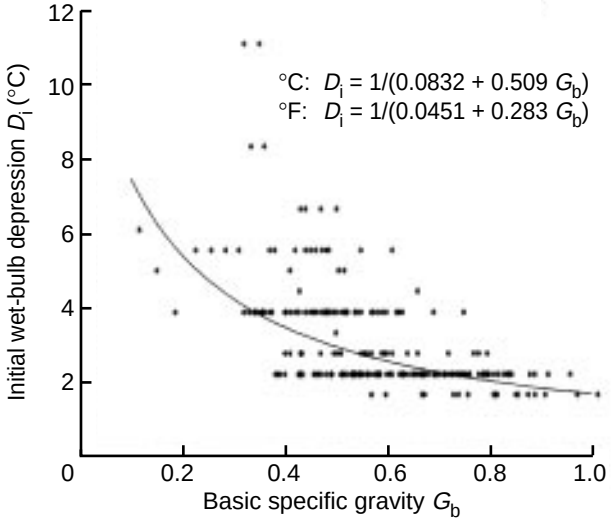

Figure 2—Least squares results of the effect of basic specific gravity on initial wet-bulb depression.

After the first dry-bulb temperature change is made at 30-percent moisture content, the schedules for most U.S. hardwood species call for a 5.6ºC (10ºF) increase for each 5-percent decrease in the average moisture content of the lumber. We followed that pattern.

The final dry-bulb temperature, applied when the average moisture content of the lumber is 15 percent, in many hardwood schedules is 82ºC (180ºF). However, when the schedules become quite mild, the final dry-bulb temperature is generally limited to about 71ºC (160ºF). As the least squares relationships shown in Tables 2–4 and Figures 1 and 2 indicate, schedules become milder as specific gravity increases. To establish a uniformity in schedule estimation, we established the rule that whenever the basic specific gravity exceeds 0.75, the final dry-bulb temperature will be limited to 71ºC.

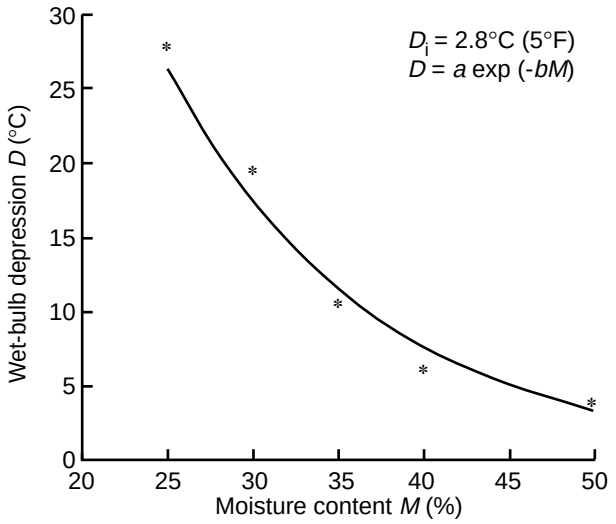

Figure 3—Dependence of wet-bulb depression on moisture content during dry-kiln schedule when initial wet-bulb depression D_i = 5ºF (2.8ºC).

The remaining factor to estimate is the increase in wet-bulb depression during drying. The wet-bulb depression increases with decreasing average moisture content. In the mildest schedule (USDA 1991), it ranges from 1.7ºC (3ºF) when lumber is green to 27.8ºC (50ºF) in the last schedule step, from 15-percent moisture content down to final moisture content. One severe schedule starts with a 8.3ºC (15ºF) depression. The depression in the final step never exceeds 27.8°C. Figure 3 shows a typical (for initial wet-bulb depression of 2.8ºC (5ºF)) wet-bulb depression compared with moisture content. For the purpose of estimating schedules, we want a relationship that allows us to calculate a wet-bulb depression at any point in the schedule. Several transforms used previously (Tables 2–4) were examined for the purpose of relating wet-bulb depression to moisture content. The exponential relationship shown in Figure 3 resulted in the highest overall (all initial wet-bulb depressions) $R^2 = 0.939$, so it was selected and shown as follows:

$$D = a \exp(-bM) \qquad (3)$$

where D is wet-bulb depression, M is moisture content in percent, and a and b are least squares coefficients. Table 5 lists the coefficients of the exponential relationships.

Examination of Table C1 shows that the initial wet-bulb depressions estimated by Equation (2) are not limited to the values in Table 5, but can be any value in between. For example, if the initial estimated depression is 3.3ºC (6ºF), the Equation (3) coefficients listed in Table 5 are not sufficient. Therefore, for the purpose of calculating estimated schedules, we developed a relationship between the least squares coefficients of Equation (3) and initial wet-bulb depression.

Table 5—Coefficients of exponential relationships relating wet-bulb depression *D* to moisture content *M*: $D = a \exp(-bM)$

Initial wet-bulb depression (°C (°F))	a (°C (°F))	b
1.7 (3)	309 (557)	0.1163
2.2 (4)	280 (504)	0.1069
2.8 (5)	216 (388)	0.0921
3.9 (7)	159 (287)	0.0762
5.6 (10)	132 (237)	0.0632
8.3 (15)	87 (157)	0.0435

The previously used transforms were again examined, and the resulting least squares relationships were chosen on the basis of maximum R^2:

$$a = 1/(0.00110 + 0.00124\ D_i) \quad (°C) \quad (R^2 = 0.992) \qquad (4)$$
$$a = 1/(0.000611 + 0.000381\ D_i) \quad (°F)$$

$$b = 0.140 - 0.0458 \ln(D_i) \quad (°C) \qquad (R^2 = 0.995) \qquad (5)$$
$$b = 0.167 - 0.0458 \ln(D_i) \quad (°F)$$

where D_i is initial wet-bulb depression and ln is the natural logarithm. The relationships are shown in Figures 4 and 5.

Calculation of Kiln Schedules

Equations (1) to (5) were used to calculate estimated kiln schedules. The exceptions to the results are the following:

1. If specific gravity exceeds 0.75, the maximum final dry-bulb temperature is limited to 71ºC (160°F).
2. The maximum allowed wet-bulb depression is 27.8ºC (50°F).
3. The minimum allowed wet-bulb temperature is 32ºC (90ºF).

An example schedule for basic specific gravity of 0.500 is given in Table 6.

Estimation of Tropical and Temperate Schedules

Using Equations (1) to (5), we can calculate an estimated kiln schedule for any species that has a known basic specific gravity. We conducted a literature search and found 3,237 species or species groups with specific gravity data: 801 from Africa, 1,532 from Asia and Oceana, and 904 from Latin America. Most of the species are tropical, but some are from temperate regions of China, Burma, India, or Latin America. In some cases, the specific gravity listed had to be converted to basic specific gravity, as illustrated in Appendix A.

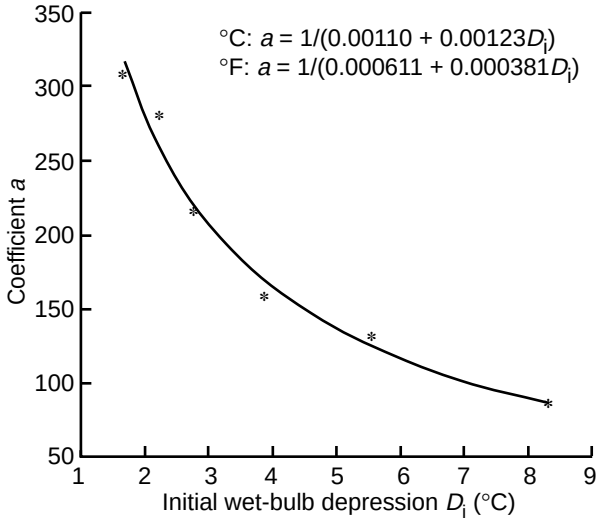

Figure 4—Least squares results relating coefficient *a* of Equation (3) to initial wet-bulb depression D_i.

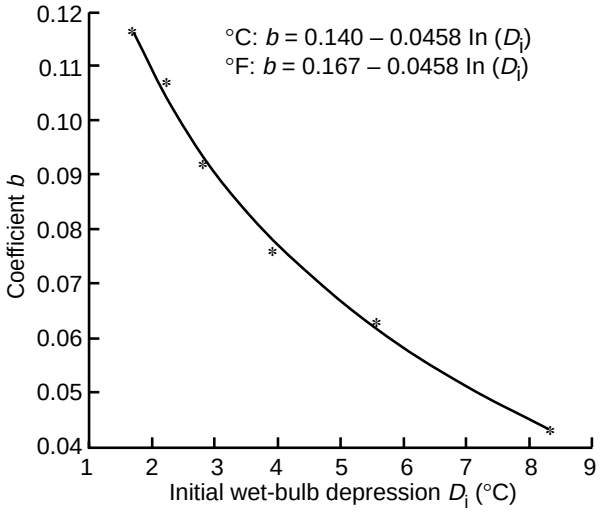

Figure 5—Least squares results relating coefficient *b* of Equation (3) to initial wet-bulb depression D_i.

The following were sources for the specific gravity data: Trotter (1929), Howard (1934, 1948), Anonymous (1951), Sekhar and Bhatnager (1955, 1957), Sekhar and Bhatta (1957, 1960), Sekahr and others (1957), Chowdhury and Ghosh (1958, 1963), Negi and Bhatta (1958), Sekhar and Rhana (1959), Rawat and Rawat (1960), Hundley and Gale (1962), Rodger (1963), Bryce (1967), Bolza and Keating (1972), Goldsmith and Carter (1981), Ramesh and Purkayastha (1972), Hutchison and others (1974), Meniado and others (1974), Takahashi (1975), Okoh (1977), Mainieri (1978), Berni and others (1979), Shukla and Rajput (1980), van der Slooten and others (1981), Sanyal and Gaharwar (1981), Keating and Bolza (1982), Londono (1983), Vega (1983), Teixeira and others (1988), Mainieri and Chimelo (1989), Worbes (1989), Cheng (1992), Reyes and others (1992), Hidayat and Simpson (1994), and Torelli (1994).

The initial dry-bulb temperatures and wet-bulb depressions for the 3,237 species or species groups are given in Appendix C: Table C2 for Africa, Table C3 for Asia and Oceana, and Table C4 for Latin America.

Species Grouping Method

Background

In previous reports, a method was developed to estimate kiln-drying time from basic specific gravity and initial moisture content (Simpson and Baah 1989; Simpson and Sagoe 1991). This allowed us to group species by similar estimated drying times. For example, from a large group of species whose estimated drying time ranged from 4 to 16 days, we might group all species whose drying time was between 9 and 11 days. This small spread in drying time combined with a slightly extended equalizing period should result in all species in the mix emerging from the kiln with a moisture content spread within acceptable limits. One limitation of this method is the lack of optimum kiln schedules. A compromise was made by selecting a single extremely conservative kiln schedule that would not be likely to cause major drying defects in most species. This, however, leads

Table 6—Kiln schedule calculated from Equations (1) to (5) for basic specific gravity of 0.500

Moisture content %	Dry-bulb (°C)	Wet-bulb depression (°C)	Wet-bulb (°C)	Relative humidity (%)	EMC (%)	Dry-bulb (°F)	Wet-bulb depression (°F)	Wet-bulb (°F)
>45	50.4	3.0	47.4	84.8	16.0	123.7	5.4	118.3
45 to 40	50.4	3.6	47.4	82.0	14.9	123.7	6.4	117.3
40 to 35	50.4	5.6	45.3	72.7	12.2	123.7	10.1	113.6
35 to 30	50.4	8.8	42.1	59.5	9.6	123.7	15.9	117.8
30 to 25	56.5	13.9	42.6	44.9	7.1	133.7	24.9	108.7
25 to 20	62.0	21 8	40.3	27.6	4.6	143.7	39.2	104.5
20 to 15	67.6	27.8	39.8	19.3	3.2	153.7	50.0	103.7
15 to final	82.2	27.8	54.4	26.1	3.6	180.0	50.0	130.0

to inefficient drying because some species will be dried more slowly than necessary, resulting in poor use of kiln capacity, unnecessarily lengthy drying times, increased energy consumption, and risk of stain. The ability to estimate kiln schedule from specific gravity, established in the first part of this report, offers a way to integrate schedule selection with estimation of drying time, resulting in a grouping system that optimizes both kiln schedule and drying time.

Estimation of Drying Time

The method of estimating drying time has been reported by others (Simpson and Baah 1989, Simpson and Sagoe 1991), but for completeness of this report, it is described in Appendix B. In summary, drying time is estimated by an empirical equation from basic specific gravity, green moisture content, board thickness, average moisture content of the board at any time during drying, equilibrium moisture content condition, and a temperature coefficient.

Green moisture content data are not always available for calculating an estimated drying time for some species, but it can be estimated from basic specific gravity using a relationship developed by Samad and Wallin (1966) and modified by Simpson and Sagoe (1991) and Hidayat and Simpson (1994). The relationship is

$$M_g = M_{max}\,[1 - \exp(b + cG_b + dG_b^2)] \qquad (6)$$

where

M_g is green moisture content (percent),
M_{max} $100(G_w - G_b)/G_wG_b$ is maximum possible moisture content at G_b,
G_w specific gravity of wood substance, treated as a least squares coefficient , and
b,c,d least squares coefficients.

The least squares coefficients were established by fitting Equation (6) to data from 1,311 species, where both specific gravity and green moisture content data were available (Hidayat and Simpson 1994). The relationship and coefficients are shown in Figure 6.

Kiln Schedules for Groups

With this background, we can propose a series of kiln schedules to be applied to groups of species. The groupings should minimize differences in drying time between group members. Both kiln schedule and drying time depend on specific gravity; therefore, we examined specific gravity as the grouping criterion. Table 7 gives nine schedules, as calculated by Equations (1) to (5), each applied to a different 0.10 basic specific gravity interval, with the midpoint specific gravity used for schedule estimation. For example, one kiln schedule is applied to all species in the basic specific gravity range from 0.50 to 0.60. The schedule is calculated using the midpoint specific gravity of 0.55, an initial dry-bulb temperature of 48ºC (120ºF), and an initial wet-bulb depression of 2.8ºC (5ºF).

Table 8 gives the variations in estimated drying times from green to 8 percent moisture content for a range of specific gravity and green moisture content values in each of the nine groups. The equalizing time required to bring all group members between 7 and 9 percent moisture content is also shown. Figure 6 shows a green moisture content range for any specific gravity. Therefore, to establish the full range of possible estimated drying times within each group, it is necessary to select extreme combinations of specific gravity and green moisture content. The method for doing this is illustrated in Figure 7 for the specific gravity range 0.30 to 0.40 and was applied to each 0.10 specific gravity interval. The extreme combinations are bounded by three of the four corners of the rectangle in Figure 7 and the maximum moisture content curve. In this example, the extreme combinations of specific gravity and green moisture content are

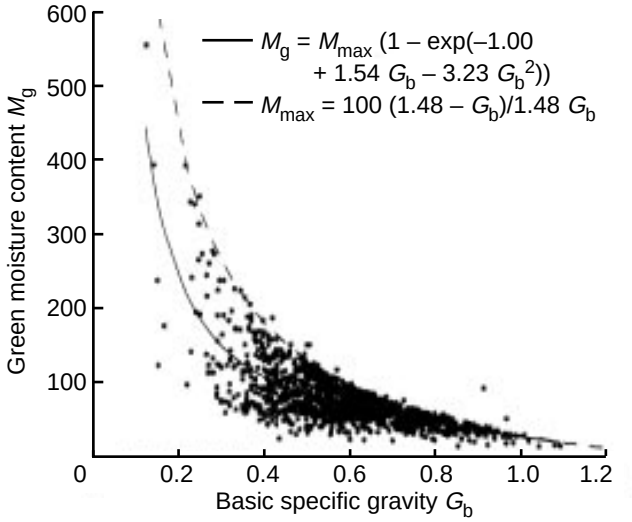

Figure 6—Least squares relationship between basic specific gravity and green moisture content.

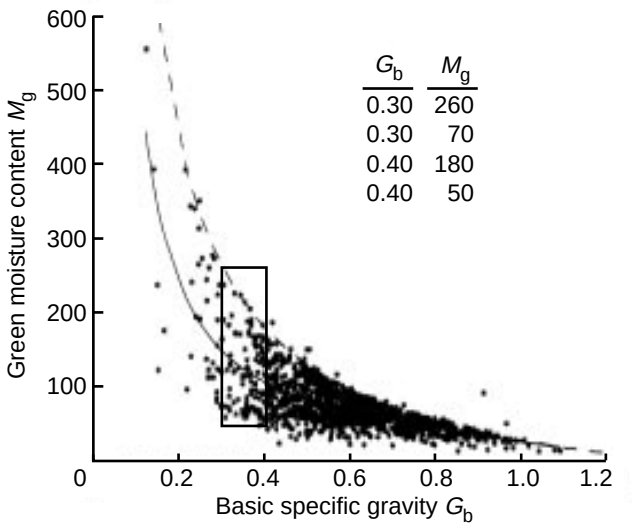

Figure 7—Method for selecting extreme combinations of specific gravity and green moisture content for drying time estimates.

Table 7—Kiln schedules for species groups based on specific gravity (G_b) intervals as indicators of similar estimated drying times

Moisture content (%)	Dry-bulb (°C)	Wet-bulb depression (°C)	Wet-bulb (°C)	Relative humidity (%)	EMC (%)	Dry-bulb (°F)	Wet-bulb depression (°F)	Wet bulb (°F)
G_b = 0.15 (grouping interval: 0.10 < G_b < 0.20)								
>45	71.4	6.3	65.1	74.3	11.3	156.9	11.4	145.5
45 to 40	71.4	9.0	60.3	65.0	9.4	156.9	16.3	140.6
40 to 35	71.4	12.0	57.4	55.9	8.0	156.9	21.5	135.4
35 to 30	71.4	15.8	53.6	45.2	6.6	156.9	28.5	128.4
30 to 25	74.9	20.9	54.0	35.6	5.1	166.9	37.7	129.2
25 to 20	80.5	27.7	52.8	25.6	3.6	176.9	49.8	127.1
20 to 15	86.1	27.8	58.3	27.5	3.6	186.9	50.0	136.9
15 to final	86.1	27.8	58.3	27.5	3.6	186.9	50.0	136.9
G_b = 0.25 (grouping interval: 0.20 < G_b < 0.30)								
>45	63.8	4.8	59.0	79.0	13.0	145.7	8.6	137.1
45 to 40	63.8	6.5	56.7	72.5	11.3	145.7	11.6	134.1
40 to 35	63.8	9.1	54.1	62.9	9.5	145.7	16.4	129.3
35 to 30	63.8	12.9	50.3	50.9	7.6	145.7	23.1	122.6
30 to 25	68.7	18.1	50.6	39.2	5.8	155.7	32.6	123.1
25 to 20	74.3	25.6	48.7	26.5	4.0	165.7	46.0	119.7
20 to 15	79.8	27.8	52.1	25.2	3.6	175.7	50.0	125.7
15 to final	82.2	27.8	54.4	26.1	3.6	180.0	50.0	130.0
G_b = 0.35 (grouping interval: 0.30 < G_b < 0.40)								
>45	57.7	3.8	53.8	82.0	14.4	136.0	6.9	129.1
45 to 40	57.7	4.9	52.8	77.3	12.9	136.0	8.9	127.1
40 to 35	57.7	7.3	50.5	67.8	10.7	136.0	13.2	122.8
35 to 30	57.7	10.9	46.9	55.1	8.5	136.0	19.5	116.5
30 to 25	63.3	16.1	47.3	41.9	6.4	146.0	29.0	117.1
25 to 20	68.9	23.9	45.0	27.1	4.3	156.0	42.9	113.1
20 to 15	74.5	27.8	46.7	22.8	3.5	166.0	50.0	116.0
15 to final	82.2	27.8	54.4	26.1	3.6	180.0	50.0	130.0
G_b = 0.45 (grouping interval: 0.40 < G_b < 0.50)								
>45	52.6	3.2	49.4	84.0	15.5	127.5	5.8	121.7
45 to 40	52.6	3.9	49.1	80.7	14.3	127.5	7.1	120.4
40 to 35	52.6	6.1	47.0	71.3	11.7	127.5	11.0	116.6
35 to 30	52.6	9.4	43.7	58.2	9.2	127.5	16.9	110.6
30 to 25	58.6	14.5	44.1	44.0	6.9	137.5	26.1	111.4
25 to 20	64.2	22.4	41.8	27.4	4.5	147.5	40.4	107.2
20 to 15	69.7	27.8	42.0	20.5	3.3	157.5	50.0	107.5
15 to final	82.2	27.8	54.4	26.1	3.6	180.0	50.0	130.0
G_b = 0.55 (grouping interval: 0.50 < G_b < 0.60)								
>45	48.3	2.8	45.6	85.5	16.4	120.1	5.0	115.1
45 to 40	48.3	3.2	45.7	83.1	15.5	120.1	5.8	114.2
40 to 35	48.3	5.2	43.7	74.0	12.6	120.1	9.3	110.7
35 to 30	48.3	8.3	40.6	60.7	9.9	120.1	14.9	105.1
30 to 25	54.5	13.3	41.2	45.7	7.3	130.1	23.9	106.2
25 to 20	60.0	21.2	38.8	27.7	4.7	140.1	38.1	101.9
20 to 15	65.6	27.8	37.8	18.2	3.1	150.1	50.0	100.1
15 to final	82.2	27.8	54.5	26.1	3.6	180.0	50.0	130.0
G_b = 0.65 (grouping interval: 0.60 < G_b < 0.70)								
>45	44.7	2.4	42.3	86.6	17.2	113.4	4.4	109.0
45 to 40	44.7	2.7	42.5	85.0	16.5	113.4	4.9	108.5
40 to 35	44.7	4.5	40.7	76.1	13.4	113.4	8.1	105.3
35 to 30	44.7	7.4	37.8	62.7	10.4	113.4	13.3	100.1
30 to 25	50.8	12.2	38.6	47.1	7.7	123.4	22.0	101.4
25 to 20	56.3	20.1	36.2	27.8	4.9	133.4	36.2	97.2
20 to 15	61.9	27.8	34.1	15.8	2.8	143.4	50.0	93.4
15 to final	82.2	27.8	54.4	26.1	3.6	180.0	50.0	130.0

Table 7—Kiln schedules for species groups based on specific gravity (G_b) intervals as indicators of similar estimated drying times—con.

Moisture content (%)	Dry-bulb (°C)	Wet-bulb depression (°C)	Wet-bulb (°C)	Relative humidity (%)	EMC (%)	Dry-bulb (°F)	Wet-bulb depression (°F)	Wet bulb (°F)
G_b = 0.75 (grouping interval: 0.70 < G_b < 0.80)								
>45	41.6	2.2	39.5	87.5	17.9	107.4	3.9	103.6
45 to 40	41.6	2.3	39.6	86.5	17.4	107.4	4.2	103.2
40 to 35	41.6	3.9	38.0	77.9	14.2	107.4	7.1	100.3
35 to 30	41.6	6.7	35.2	64.4	10.9	107.4	12.0	95.4
30 to 25	47.5	11.3	36.2	48.3	8.0	117.4	20.3	97.1
25 to 20	53.0	19.1	33.9	27.9	5.0	127.4	34.4	93.0
20 to 15	58.6	26.4	32.2	16.1	3.0	137.4	47.4	90.0
15 to final	71.1	27.8	43.3	21.2	3.4	160.0	50.0	110.0
G_b = 0.85 (grouping interval: 0.80 < G_b < 0.90)								
>45	38.9	1.9	37.0	88.2	18.4	102.1	3.5	98.6
45 to 40	38.9	2.0	36.9	87.7	18.2	102.1	3.6	98.4
40 to 35	38.9	3.5	35.4	79.3	14.8	102.1	6.3	95.8
35 to 30	38.9	6.1	32.9	65.9	11.4	102.1	10.9	91.1
30 to 25	44.5	10.5	34.0	49.4	8.3	112.1	19.0	93.1
25 to 20	50.0	17.8	32.2	29.2	5.3	122.1	32.1	90.0
20 to 15	55.6	23.4	32.2	19.8	3.7	132.1	42.1	90.0
15 to final	71.1	27.8	43.3	21.2	3.4	160.0	50.0	110.0
G_b = 0.95 (grouping interval: 0.90 < G_b < 1.00)								
>45	36.5	1.8	34.8	88.8	18.9	97.2	3.2	94.0
45 to 40	36.5	1.8	34.5	88.7	18.9	97.2	3.2	94.0
40 to 35	36.5	3.1	33.1	80.6	15.4	97.2	5.7	91.6
35 to 30	36.5	4.0	32.2	75.6	13.8	97.2	7.2	90.0
30 to 25	41.8	9.6	32.2	51.5	8.7	107.2	17.2	90.0
25 to 20	47.3	15.1	32.2	35.2	6.2	117.2	27.2	90.0
20 to 15	52.9	20.7	32.2	24.0	4.4	127.2	37.2	90.0
15 to final	71.1	27.8	43.3	21.2	3.4	160.0	50.0	110.0

Table 8—Estimated drying and equalizing times for a range of combinations of group specific gravities and green moisture content levels

	Basis for kiln schedule estimation		Ranges for groups				Estimated drying and equalizing times (days) within group ranges		
			Low G_b		High G_b				
Schedule	G_b	M_g (%)	G_b	M_g (%)	G_b	M_g (%)	Drying	Equalizing	Total
1	0.15	342	0.10	600	0.20	420	3.3	0.4	3.7
			0.10	170	0.20	110			
2	0.25	186	0.20	420	0.30	260	5.3	1.0	6.3
			0.20	110	0.30	70			
3	0.35	126	0.30	260	0.40	180	7.4	1.4	8.8
			0.30	70	0.40	50			
4	0.45	96	0.40	180	0.50	130	10.0	1.4	11.4
			0.40	50	0.50	40			
5	0.55	78	0.50	130	0.60	100	12.7	1.2	14.9
			0.50	40	0.60	40			
6	0.65	64	0.60	100	0.70	75	14.9	0.8	15.7
			0.60	40	0.70	40			
7	0.75	53	0.70	75	0.80	60	16.3	0.4	16.7
			0.70	40	0.80	35			
8	0.85	44	0.80	60	0.90	40	18.4	0	18.4
			0.80	35	0.90	30			
9	0.95	35	0.90	40	1.00	30	15.4	0	15.4
			0.90	30	1.00	30			

0.30 and 70 percent, 0.30 and 260 percent, 0.40 and 50 percent, and 0.40 and 180 percent. The longest estimated equalizing time is 1.4 days, which does not seem unreasonably lengthy, and in some groups, no equalizing period was required. Table 9 lists the details of the steps of a kiln schedule containing the four members of the group between basic specific gravity 0.30 and 0.40.

This method of grouping can be applied only if specific gravity is known from species identification or by testing and requires circumstances where a mill knows this information and can segregate accordingly. In other circumstances, a mill may be faced with a mix of logs or lumber for which either the species is not known or it is impractical or impossible to identify and segregate by species. The quickest way to deal with this latter circumstance is to determine green density from simple weight and volume measurements. However, green density is influenced by both specific gravity and moisture content, thus specific gravity is indeterminant.

For example, green density is 1,080 kg/m^3 (67.4 lb/ft^3) when specific gravity is 0.30 and green moisture content is 260 percent and when specific gravity is 0.80 and green moisture content is 35 percent. The schedule for these two is quite different. Without specific gravity, it is impossible to select the appropriate schedule, so the only alternative would be to select a very conservative schedule that will not be likely to cause drying defects in any species, regardless of specific gravity (Simpson and Sagoe 1991; Hidayat and Simpson 1994).

Conclusions

Research and industrial experience have resulted in recommended dry-kiln schedules for many of the common tropical and temperate hardwood species. However, many underutilized tropical species have no recommended schedule. Furthermore, the large number of tropical species and their heterogeneous occurrence in the forest often makes it impractical to fill a dry kiln with a single species—creating a need for a method to group species with similar drying characteristics. The purpose of this study was to investigate the possibility of estimating kiln schedules for these underutilized species, then to develop a grouping method.

Kiln schedules were estimated by relating initial dry-bulb temperature and initial wet-bulb depression to basic specific gravity using least squares methods. These relationships were established from 268 tropical and temperate hardwood species, for which both the basic specific gravity and a recommended kiln schedule were known. Methods were then developed to systematically estimate schedule increases in dry-bulb temperature and wet-bulb depression. Using these relationships and specific gravity data gathered from the literature, kiln schedules were then estimated for 3,237 species from Africa, Asia and Oceana, and Latin America. Species groupings were then established by estimates of drying time as it depends on specific gravity and green moisture content. The resulting grouping system is based on nine intervals of basic specific gravity. Within each of these groups, all members dry in similar lengths of time using one of nine schedules selected for the nine specific gravity intervals.

On average, least squares relationships can predict the initial dry-bulb temperature within about 5ºC (9ºF) and initial wet-bulb depression within less than 1ºC (1.3ºF) for the 268 species. However, some deviations were large enough for serious concern and could cause drying defects when the error is toward schedule acceleration. One favorable factor is that the known schedules on which we base the least squares relationships are conservative, which moderates the danger of drying defects. Although we cannot give an unqualified recommendation of this method for estimating kiln schedules, we believe it offers useful input for selecting a schedule when no other information is available.

Table 9—Kiln schedule for basic specific gravity range from 0.30 to 0.40, showing estimated drying time at each schedule step, equalizing, and final moisture content distribution[a]

Kiln schedule	Temperature (°C (°F))	EMC (%)	Target MC (%)	Specific gravity	Initial MC	Equalized times to 7% or 9% MC	Time (days)	Final MC (%)
Step 1	57.8 (136.1)	14.4	45	0.30	260		4.1	82.8
				0.30	70		1.2	29.9
				0.40	180		4.4	77.4
				0.40	50		0.4	28.0
						Average	2.5	
Step 2	57.8 (136.1)	12.9	40	0.30	82.8		1.9	37.4
				0.30	29.9		0.0	18.9
				0.40	77.4		2.3	42.1
				0.40	28.0		0.0	19.7
						Average	2.1	
Step 3	57.8 (136.1)	10.7	35	0.30	37.4		0.2	32.2
				0.30	18.9		0.0	17.3
				0.40	42.1		0.7	37.4
				0.40	19.7		0.0	18.4
						Average	0.4	
Step 4	57.8 (136.1)	8.5	30	0.30	32.2		0.2	27.1
				0.30	17.3		0.0	15.4
				0.40	37.4		0.8	32.5
				0.40	18.4		0.0	16.7
						Average	0.5	
Step 5	63.4 (146.1)	6.4	25	0.30	27.1		0.2	22.1
				0.30	15.4		0.0	13.2
				0.40	32.5		0.7	27.6
				0.40	16.7		0.0	14.8
						Average	0.5	
Step 6	68.9 (156.1)	4.3	20	0.30	22.1		0.2	17.2
				0.30	13.2		0.0	10.8
				0.40	27.6		0.7	22.5
				0.40	14.8		0.0	12.5
						Average	0.4	
Step 7	74.5 (166.1)	3.5	15	0.30	17.2		0.2	12.5
				0.30	10.8		0.0	8.3
				0.40	22.5		0.7	17.4
				0.40	12.5		0.0	10.0
						Average	0.5	
Step 8	82.8 (180)	3.6	8	0.30	12.5		0.6	8.0
				0.30	8.3		0.1	5.9
				0.40	17.4		1.2	11.8
				0.40	10.0		0.4	7.4
						Average	0.6	
						Total drying time	7.4	
Equalizing	82.2	8	8	0.30	8.0	0.0	1.4	8.0
				0.30	5.9	0.5	1.4	7.6
				0.40	11.8	1.4	1.4	9.0
				0.40	7.4	0.0	1.4	7.8
						Total drying plus equalizing time	8.8	

[a]Thickness = 29 mm.

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Appendix A—Specific Gravity Conversion

Specific gravity is reported in several forms in the literature. The regressions for the kiln schedule components use basic specific gravity G_b, so all forms were converted to G_b, which is defined as follows:

$$G_b = \frac{\text{ovendry weight of wood (g)}}{\text{volume of green wood (cm}^3\text{)}}$$

Specific gravity conversions were made as follows.

1. When specific gravity G_m was based on ovendry weight and volume at some moisture content m, and

(a) total volumetric shrinkage S_v is known, then

$$G_b = G_m(1 - S_v \frac{(30 - m)}{30})$$

(b) volumetric shrinkage is not known (Simpson 1993), then

$$G_b = \frac{G_m}{1 + 0.265 G_m \frac{(30 - m)}{30}}$$

When specific gravity was other than basic specific gravity, the moisture content was usually stated as being either 0, 12, or 15 percent, or air dry.

2. When specific gravity G_{AD} was based on air-dry weight and air-dry volume (Reyes and others 1992),

$$G_b = 0.0134 + 0.800 G_{AD}$$

Appendix B—Method to Estimate Drying Time

The species grouping method uses green moisture content and basic specific gravity (based on ovendry weight and green volume) as the primary inputs for estimating drying time. Board thickness, drying temperature, and relative humidity are also incorporated into the grouping system. The method is based on the following mathematical model (Simpson and Baah 1989):

$$t = \frac{-L^{1.52}}{b_s} \frac{b_{T1}}{b_{T2}} \ln \frac{M_a - M_e}{M_g - M_e} \qquad \text{(B1)}$$

where

t	is	time (days),
L		board thickness (in.),
b_s		empirical specific gravity coefficient,
b_{T1}		empirical temperature coefficient for T1 = 49ºC,
b_{T2}		empirical temperature coefficient for T2 = 38ºC to 82ºC,
M_a		average moisture content at time t (percent),
M_e		equilibrium moisture content in kiln (percent), and
M_g		initial moisture content (percent).

Determination of the coefficients is described in Tschernitz and Simpson (1977). In that experiment, T1 = 120ºF (49ºC). The coefficient b_s was determined for 43 Philippine species at T1 and related to specific gravity G_b as follows:

$$b_s = 0.0104 + 0.133/G_b \quad (\text{in.}^{1.5}/\text{day}) \qquad \text{(B2)}$$

$$b_s = 1.42 + 18.2/G_b \quad (\text{mm}^{1.52}/\text{day}) \qquad \text{(B2)}$$

The ratio b_{T1}/b_{T2} adjusts b_s for temperatures other than 49ºC (120ºF). The relationship between these coefficients, temperature, and humidity is as follows (Simpson and Tschernitz 1980):

$$b_T = 0.0575 + 0.00142p \quad (\text{mmHg}) \qquad \text{(B3)}$$

where p is the vapor pressure of water in millimeters of mercury (1 mmHg = 0.0193 lb/in^2 = 133 Pa) within the temperature range 38ºC (100ºF) to 82ºC (180ºF), and

$$p = \exp(20.4 - 5132/(T + 273) \qquad \text{(B4)}$$

where T is temperature in °C.

Combining, b_{T1} and b_{T2} are calculated by

$$b = 0.0575 + 0.00142 \exp[20.4 - 5132/(T + 273)] \qquad \text{(B5)}$$

Equation (B1) can then be used to calulate the drying time between any two moisture content values, such as the beginning and ending moisture content of a kiln schedule step. FORTRAN 77 computer programs are available to calculate initial schedule conditions and drying times for each step of a schedule.

Appendix C—Species Data for Kiln Drying

Appendix C contains four tables. The list of 268 species in Table C1 includes basic specific gravity, recommended initial conditions, initial conditions as estimated by the least squares curve fit, and the absolute value of the deviation between recommended and estimated temperatures. Initial dry-bulb temperatures and wet-bulb depressions for 3,237 species or species groups are given in Table C2 for Africa, Table C3 for Asia and Oceana, and Table C4 for Latin America.

Table C1—Hardwood species with basic specific gravity G_b, recommended initial kiln conditions, estimated kiln conditions,[a] and deviations

Botanical name	Recommended initial conditions				Estimated initial conditions			Absolute value of deviations		
	G_b	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)
North America and Europe										
Acer pseudoplatanus	0.504	50.0	50	2.8	50.8	47	3.0	0.8	3	0.2
Acer saccharinum	0.440	54.4	50	3.9	53.5	48	3.3	0.9	2	0.6
Aesculus hippocastanum	0.465	50.0		2.2	52.4	48	3.1	2.4		0.9
Aesculus octandra	0.330	60.0	70	3.9	58.8	51	4.0	1.2	19	0.1
Alnus glutinosa	0.430	60.0	60	6.7	54.0	49	3.3	6.0	11	3.3
Alnus rubra	0.370	60.0	50	3.9	56.8	50	3.7	3.2	0	0.2
Arbutus menziesii	0.580	43.3	35	2.2	47.8	45	2.7	4.4	10	0.4
Betula alleghaniensis	0.550	54.4	40	3.9	48.9	46	2.8	5.5	6	1.1
Betula papyrifera	0.480	60.0	40	3.9	51.8	47	3.1	8.2	7	0.8
Betula pubescens/verucosa	0.505	50.0	50	5.0	50.7	47	3.0	0.7	3	2.0
Buxus sempervirens	0.736	40.0	40	2.2	42.4	42	2.2	2.4	2	0.0
Carpinus betulus	0.598	50.0	50	1.7	47.1	45	2.6	2.9	5	0.9
Carya spp. (pecan)	0.600	54.4	50	2.8	47.0	45	2.6	7.4	5	0.2
Castanea dentata	0.400	60.0	60	3.9	55.4	49	3.5	4.6	11	0.4
Castanea sativa	0.512	40.0	40	2.2	50.4	47	2.9	10.4	7	0.7
Celtis occidentalis	0.490	54.4	40	3.9	51.4	47	3.0	3.1	7	0.9
Cornus florida	0.796	50.0	50	2.8	40.5	41	2.1	9.5	9	0.7
Diospyros virginiana	0.640	48.9	40	2.8	45.6	44	2.5	3.3	4	0.3
Fagus grandifolia	0.560	54.4	40	2.2	48.5	46	2.7	5.9	6	0.5
Fagus sylvatica	0.550	40.0	40	2.2	48.9	46	2.8	8.9	6	0.5
Fraxinus americana	0.550	54.4	35	3.9	48.9	46	2.8	5.5	11	1.1
Fraxinus excelsior	0.549	40.0	40	2.2	49.0	46	2.8	9.0	6	0.5
Fraxinus nigra	0.450	54.4	50	3.9	53.1	48	3.2	1.4	2	0.7
Ilex opaca	0.500	48.9	50	3.9	50.9	47	3.0	2.0	3	0.9
Juglans cinera	0.360	60.0	60	3.9	57.3	50	3.8	2.7	10	0.1
Juglans nigra	0.510	48.9	50	3.9	50.5	47	2.9	1.6	3	1.0
Juglans regia	0.595	50.0	50	2.8	47.2	45	2.6	2.8	5	0.2
Liquidambar styraciflua	0.440	54.4	40	3.9	53.5	48	3.3	0.9	8	0.6
Liriodendron tulipifera	0.400	65.6	50	3.9	55.4	49	3.5	10.2	0	0.4
Magnolia acuminata	0.450	60.0	50	3.9	53.1	48	3.2	6.9	2	0.7
Malus spp.	0.610	48.9	40	2.8	46.7	45	2.5	2.2	5	0.2
Nyssa sylvatica	0.460	71.1	60	5.6	52.6	48	3.2	18.5	12	2.4
Platinus acerifolia/hybrida	0.496	50.0	50	2.8	51.1	47	3.0	1.1	3	0.2
Platanus occidentalis	0.460	48.9	50	2.2	52.6	48	3.2	3.8	2	0.9
Populus deltoides	0.370	60.0	70	5.6	56.8	50	3.7	3.2	20	1.8
Populus nigra/alba	0.402	70.0		3.9	55.3	49	3.5	14.7		0.4
Populus tremuloides	0.350	71.1	60	11.1	57.8	51	3.9	13.3	9	7.3
Populus trichocarpa	0.310	60.0	70	5.6	59.9	52	4.2	0.1	18	1.4
Prunus avium	0.457	50.0		2.2	52.8	48	3.2	2.8		1.0
Prunus serotina	0.470	54.4	35	3.9	52.2	48	3.1	2.2	13	0.8
Pyrus communis	0.547	50.0		2.2	49.0	46	2.8	1.0		0.6
Robinia pseudoacacia	0.660	48.9	30	2.8	44.9	44	2.4	4.0	14	0.4
Salix nigra	0.360	60.0	70	3.9	57.3	50	3.8	2.7	20	0.1
Sassafras albidum	0.420	54.4	50	3.9	54.4	49	3.4	0.0	1	0.5
Tilia americana/heterophylla	0.320	71.1	60	11.1	59.3	51	4.1	11.8	9	7.0
Tilia vulgaris	0.429	60.0	60	4.4	54.0	49	3.3	6.0	11	1.1

Table C1—Hardwood species with basic specific gravity Gb, recommended initial kiln conditions, estimated kiln conditions,[a] and deviations—con.

Botanical name	Recommended initial conditions				Estimated initial conditions			Absolute value of deviations		
	G_b	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)
Ulmus americana	0.460	48.9	50	3.9	52.6	48	3.2	3.8	2	0.7
Ulmus procera/hollandica	0.556	60.0		2.8	48.7	46	2.7	11.3		0.0
Ulmus thomasii	0.570	48.9	35	2.8	48.1	46	2.7	0.7	11	0.0
Umbellularia californica	0.510	48.9	30	3.9	50.5	47	2.9	1.6	17	1.0
African species										
Afzelia africana	0.710	48.9	50	2.2	43.2	43	2.3	5.7	7	0.0
Afzelia bella	0.790	48.9	50	2.2	40.7	41	2.1	8.2	9	0.2
Afzelia quanzensis	0.580	48.9	50	2.2	47.8	45	2.7	1.1	5	0.4
Albizia adianthifolia	0.498	48.9	50	3.9	51.0	47	3.0	2.1	3	0.9
Albizia ferruginea	0.538	48.9	50	3.9	49.4	46	2.8	0.5	4	1.1
Albizia lebbek	0.624	48.9	50	3.9	46.1	44	2.5	2.7	6	1.4
Albizia versicolor	0.482	48.9	50	3.9	51.7	47	3.1	2.8	3	0.8
Alstonia boonei	0.342	60.0	50	3.9	58.2	51	3.9	1.8	0	0.0
Alstonia congensis	0.375	60.0	50	3.9	56.5	50	3.7	3.5	0	0.2
Androstachys johnsonii	0.720	43.3	50	2.2	42.9	43	2.2	0.5	7	0.0
Aningeria robusta	0.540	48.9	50	3.9	49.3	46	2.8	0.4	4	1.1
Antiaris africana	0.517	37.8	50	3.9	50.2	47	2.9	12.5	3	1.0
Aucoumea klaineana	0.382	48.9	50	2.2	56.2	50	3.6	7.3	0	1.4
Baikiaea insignis spp. minor	0.692	43.3	40	2.2	43.8	43	2.3	0.5	3	0.0
Baikiaea plurijuga	0.787	43.3	50	2.2	40.8	41	2.1	2.6	9	0.1
Berlinia grandiflora	0.701	48.9	50	2.2	43.5	43	2.3	5.4	7	0.0
Berlinia ledermannii	0.800	48.9	50	2.2	40.4	41	2.0	8.5	9	0.2
Berlinia spp.	0.545	48.9	50	2.2	49.1	46	2.8	0.2	4	0.6
Bombax spp.	0.400	48.9	35	2.8	55.4	49	3.5	6.5	14	0.7
Bosquiea phoberos	0.501	60.0	60	6.7	50.9	47	3.0	9.1	13	3.7
Brachylaena spp.	0.745	37.8	40	2.2	42.1	42	2.2	4.3	2	0.0
Brachystegia spiciformis	0.726	43.3	40	2.2	42.7	42	2.2	0.7	2	0.0
Burkea africana	0.713	37.8	40	2.2	43.1	43	2.2	5.3	3	0.0
Canarium schweinfurthii	0.428	60.0	50	3.9	54.1	49	3.3	5.9	1	0.5
Casearia battiscombei	0.520	37.8	50	3.9	50.1	47	2.9	12.3	3	1.0
Cassipourea malosana	0.590	37.8	50	3.9	47.4	45	2.6	9.6	5	1.3
Ceiba pentandra	0.284	60.0	50	5.6	61.3	52	4.4	1.3	2	1.1
Cephalosphaera usambarensis	0.480	60.0	50	5.6	51.8	47	3.1	8.2	3	2.5
Chlorophora excelsa/regia	0.632	48.9	50	2.2	45.9	44	2.5	3.0	6	0.3
Chrysophyllum albidum	0.560	50.0	50	2.8	48.5	46	2.7	1.5	4	0.0
Combretodendron macrocarpum/africanum	0.714	37.8	40	2.2	43.1	43	2.2	5.3	3	0.0
Cordia millenil/platythyrsa	0.340	76.7	40	3.9	58.3	51	3.9	18.4	11	0.0
Croton sylvaticus/megalocarpus	0.537	43.3	40	2.2	49.4	46	2.8	6.1	6	0.6
Cylicodiscus gabunensis	0.819	37.8	40	2.2	39.8	41	2.0	2.0	0	0.2
Cynometra alexandri	0.740	37.8	40	2.2	42.2	42	2.2	4.4	2	0.0
Dalbergia melanoxylan	0.910	30.0		1.7	37.3	39	1.8	7.3		0.2
Daniellia thurifera & ogea	0.450	60.0	50	5.6	53.1	48	3.2	6.9	2	2.3
Diospyros celebica	0.852	35.0		1.7	38.9	40	1.9	3.9		0.3
Diospyros sanza-minika	0.797	48.9	50	2.2	40.5	41	2.1	8.4	9	0.2
Distemonanthus benthamianus	0.580	48.9	50	3.9	47.8	45	2.7	1.1	5	1.2
Dumoria africana	0.583	60.0		2.2	47.7	45	2.6	12.3		0.4

Table C1—Hardwood species with basic specific gravity Gb, recommended initial kiln conditions, estimated kiln conditions,[a] and deviations—con.

Botanical name	Recommended initial conditions				Estimated initial conditions			Absolute value of deviations		
	G_b	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)
Dumoria heckilii	0.533	60.0		2.2	49.6	46	2.8	10.4		0.6
Entandrophragma angolense	0.486	37.8	50	3.9	51.5	47	3.0	13.7	3	0.8
Entandrophragma candolei	0.619	37.8	50	3.9	46.3	45	2.5	8.5	5	1.4
Entandrophragma caudatum	0.691	37.8	50	3.9	43.8	43	2.3	6.0	7	1.6
Entandrophragma cylindricum	0.591	37.8	50	3.9	47.4	45	2.6	9.6	5	1.3
Entandrophragma utile	0.549	37.8	50	3.9	49.0	46	2.8	11.2	4	1.1
Erythrophleum guineense	0.720	40.0	45	2.2	42.9	43	2.2	2.9	2	0.0
Erythrophleum ivorense	0.753	43.3	50	2.2	41.8	42	2.2	1.5	8	0.0
Erythroxylum mannii	0.500	65.0		3.3	50.9	47	3.0	14.1		0.4
Fagaropsis angolensis	0.560	43.3	40	2.2	48.5	46	2.7	5.2	6	0.5
Gambeya africana	0.630	48.9	50	2.2	45.9	44	2.5	3.0	6	0.3
Gonioma kamassi	0.762	43.3	40	2.2	41.5	42	2.1	1.8	2	0.0
Gossweilerodendron balsamiferum	0.420	60.0	50	5.6	54.4	49	3.4	5.6	1	2.2
Guarea cedrata & thompsonii	0.536	48.9	50	2.2	49.5	46	2.8	0.6	4	0.6
Guibourtia arnoldiana	0.640	43.3	40	2.2	45.6	44	2.5	2.2	4	0.2
Guibourtia tessmannii	0.740	40.0		1.7	42.2	42	2.2	2.2		0.5
Holopthelea grandis	0.674	40.0	40	2.2	44.4	43	2.4	4.4	3	0.1
Isoberlinia globiflora	0.780	40.0	40	2.2	41.0	42	2.1	1.0	2	0.1
Isoberlinia scheffleri	0.650	48.9	50	2.2	45.2	44	2.4	3.7	6	0.2
Khaya grandifoliola & senegalensis	0.571	37.8	50	3.9	48.1	46	2.7	10.3	4	1.2
Khaya anthotheca & ivorensis	0.456	48.9	50	3.9	52.8	48	3.2	3.9	2	0.7
Lophira alata	0.959	37.8	40	2.2	36.0	39	1.8	1.8	1	0.5
Lovoa klaineana	0.434	50.0		2.8	53.8	49	3.3	3.8		0.5
Lovoa trichilioides	0.470	48.9	50	2.2	52.2	48	3.1	3.3	2	0.9
Maesopsis eminii	0.410	48.9	50	3.9	54.9	49	3.4	6.0	0	0.4
Mansonia altissima	0.538	60.0	50	3.9	49.4	46	2.8	10.6	4	1.1
Microberlinia brazzavillensis	0.700	37.8	40	2.2	43.5	43	2.3	5.7	3	0.0
Millettia laurentii	0.625	50.0		2.2	46.1	44	2.5	3.9		0.3
Mitragyna ciliata	0.477	76.7	40	3.9	51.9	48	3.1	24.8	8	0.8
Musanga cecropioides	0.226	71.1	50	5.6	64.6	54	5.1	6.5	4	0.5
Nauclea diderichii	0.634	48.9	50	2.2	45.8	44	2.5	3.1	6	0.3
Naudea trillesii	0.569	50.0		2.2	48.2	46	2.7	1.8		0.5
Nesogordonia papaverifera	0.671	48.9	50	2.2	44.5	44	2.4	4.4	6	0.1
Newtonia buchananii	0.470	60.0	60	6.7	52.2	48	3.1	7.8	12	3.5
Ocotea usambarensis	0.510	54.4	35	2.8	50.5	47	2.9	3.9	12	0.2
Olea hochstetteri	0.720	48.9	50	2.2	42.9	43	2.2	6.0	7	0.0
Oxystigma oxyphyllum	0.530	48.9	50	2.2	49.7	46	2.8	0.8	4	0.6
Parinari excelsa	0.695	37.8	40	2.2	43.7	43	2.3	5.9	3	0.0
Pericopsis elata	0.570	54.4	50	3.9	48.1	46	2.7	6.3	4	1.2
Piptadeniastrum africanum	0.599	37.8	50	3.9	47.1	45	2.6	9.3	5	1.3
Pterocarpus angolensis	0.549	60.0	50	5.6	49.0	46	2.8	11.0	4	2.8
Pterocarpus soyauxii	0.610	60.0	50	5.6	46.7	45	2.5	13.3	5	3.0
Pycnanthus angolensis	0.460	43.3	40	2.2	52.6	48	3.2	9.3	8	0.9
Ricondendron rautanrnii	0.150	70.0	70	5.0	69.4	56	6.3	0.6	14	1.3
Scottellia coriacea	0.560	48.9	50	2.2	48.5	46	2.7	0.4	4	0.5
Sterculia oblonga	0.610	43.3	40	2.2	46.7	45	2.5	3.3	5	0.3
Sterculia rhinopetala	0.633	37.8	40	2.2	45.8	44	2.5	8.0	4	0.3

Table C1—Hardwood species with basic specific gravity Gb, recommended initial kiln conditions, estimated kiln conditions,[a] and deviations—con.

Botanical name	Recommended initial conditions				Estimated initial conditions			Absolute value of deviations		
	G_b	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)
Tarrietia utilis	0.531	48.9	50	2.2	49.7	46	2.8	0.8	4	0.6
Terminalia ivorensis	0.473	60.0	50	5.6	52.1	48	3.1	7.9	2	2.5
Terminalia superba	0.486	60.0	50	5.6	51.5	47	3.0	8.5	3	2.5
Tieghemella heckelii	0.523	60.0	50	3.9	50.0	47	2.9	10.0	3	1.0
Triplochiton scleroxylon	0.334	82.2	40	8.3	58.6	51	4.0	23.6	11	4.4
Turreanthus africanus	0.493	48.9	50	2.2	51.2	47	3.0	2.3	3	0.8
Vitex doniana	0.400	43.3	40	2.2	55.4	49	3.5	12.0	9	1.3
Asian and Oceanean species										
Acacia melanoxylon	0.570	48.9	50	2.2	48.1	46	2.7	0.7	4	0.5
Acanthopanax ricinifolius	0.434	60.0		2.8	53.8	49	3.3	6.2		0.5
Adina cordifoia	0.579	48.9	50	2.2	47.8	45	2.7	1.1	5	0.4
Agathis alba	0.410	70.0		5.0	54.9	49	3.4	15.1		1.6
Agathis australis	0.440	60.0	60	6.7	53.5	48	3.3	6.5	12	3.4
Albizia falcata	0.320	48.9	50	3.9	59.3	51	4.1	10.4	1	0.2
Albizia lebbek	0.510	48.9	50	2.2	50.5	47	2.9	1.6	3	0.7
Alstonia spp.	0.361	60.0	50	3.9	57.2	50	3.8	2.8	0	0.1
Anthocephalus chinensis	0.355	60.0	50	3.9	57.5	51	3.8	2.5	0	0.0
Balanocarpus utilis	0.844	37.8	40	2.2	39.1	40	2.0	1.3	0	0.3
Canarium euphyllum	0.357	60.0	50	3.9	57.4	50	3.8	2.6	0	0.0
Casuarina spp.	0.830	37.8	40	2.2	39.5	41	2.0	1.7	0	0.2
Ceratopetalum apetalum	0.470	50.0	50	2.8	52.2	48	3.1	2.2	2	0.3
Chloroxylon swietenia	0.800	43.3	40	2.2	40.4	41	2.0	2.9	1	0.2
Chukrasia tabularis	0.570	48.9	50	2.2	48.1	46	2.7	0.7	4	0.5
Cinnamomum camphora	0.435	60.0		2.2	53.7	49	3.3	6.3		1.1
Cratoxylon arborescens	0.390	48.9	50	2.2	55.8	50	3.6	6.9	0	1.3
Dalbergia latifolia	0.680	48.9	50	2.2	44.2	43	2.3	4.7	7	0.1
Dialium spp.	0.800	48.9	50	2.2	40.4	41	2.0	8.5	9	0.2
Dillenia spp.	0.720	43.3	40	2.2	42.9	43	2.2	0.5	3	0.0
Diospyros spp.	0.700	43.3	40	2.2	43.5	43	2.3	0.2	3	0.0
Dipterocarpus spp.	0.669	43.3	50	1.7	44.6	44	2.4	1.2	6	0.7
Dracontomelum dao	0.547	50.0		2.2	49.0	46	2.8	1.0		0.6
Dryobalanops lanceolata	0.660	60.0	60	4.4	44.9	44	2.4	15.1	16	2.1
Duabanga spp.	0.330	76.7	40	3.9	58.8	51	4.0	17.9	11	0.1
Dyera costulata	0.360	60.0	50	3.9	57.3	50	3.8	2.7	0	0.1
Endiandra palmerstonii	0.550	48.9	50	2.2	48.9	46	2.8	0.0	4	0.5
Endospermum spp.	0.380	60.0	50	5.6	56.3	50	3.6	3.7	0	1.9
Eusideroxylon zwageri	0.890	37.8	40	2.2	37.8	40	1.9	0.0	0	0.4
Garcinia spp.	0.750	37.8	40	2.2	41.9	42	2.2	4.1	2	0.0
Gmelina arborea	0.410	76.7	40	3.9	54.9	49	3.4	21.8	9	0.4
Gonystylus bancanus	0.570	43.3	40	2.2	48.1	46	2.7	4.8	6	0.5
Grevillea robusta	0.510	43.3	40	2.2	50.5	47	2.9	7.2	7	0.7
Heritiera spp. (syn. *Tarrietia* spp.)	0.654	43.3	50	2.2	45.1	44	2.4	1.7	6	0.2
Hopea spp.	0.746	43.3	40	2.2	42.0	42	2.2	1.3	2	0.0
Intsia bijuga & palembanica	0.720	43.3	40	2.2	42.9	43	2.2	0.5	3	0.0
Koompassia malaccensis	0.720	48.9	50	2.2	42.9	43	2.2	6.0	7	0.0
Metrosideros collina	0.700	43.3	40	2.2	43.5	43	2.3	0.2	3	0.0

Table C1—Hardwood species with basic specific gravity Gb, recommended initial kiln conditions, estimated kiln conditions,[a] and deviations—con.

Botanical name	Recommended initial conditions				Estimated initial conditions			Absolute value of deviations		
	G_b	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)
Mitragyna stipulosa	0.516	70.0	70	5.0	50.3	47	2.9	19.7	23	2.1
Morus alba	0.590	60.0		2.8	47.4	45	2.6	12.6		0.2
Parashorea spp.	0.440	60.0	50	5.6	53.5	48	3.3	6.5	2	2.3
Pentace spp.	0.560	48.9	50	2.2	48.5	46	2.7	0.4	4	0.5
Pentacme contorta	0.430	48.9	50	2.2	54.0	49	3.3	5.1	1	1.1
Planchonia spp.	0.665	37.8	40	2.2	44.7	44	2.4	6.9	4	0.2
Pseudosindora palustris	0.550	54.4	35	2.8	48.9	46	2.8	5.5	11	0.0
Pterocarpus dalbergioides	0.630	48.9	50	3.9	45.9	44	2.5	3.0	6	1.4
Pterocarpus macrocarpus	0.750	48.9	50	3.9	41.9	42	2.2	7.0	8	1.7
Syncarpia glomulifera	0.700	43.3	40	2.2	43.5	43	2.3	0.2	3	0.0
Tectona grandis	0.550	60.0	50	3.9	48.9	46	2.8	11.1	4	1.1
Terminalia bialata	0.580	48.9	50	2.2	47.8	45	2.7	1.1	5	0.4
Terminalia procera	0.520	48.9	50	2.2	50.1	47	2.9	1.2	3	0.7
Terminalia tomentosa	0.730	43.3	40	2.2	42.5	42	2.2	0.8	2	0.0
Tetramerista glabra	0.610	43.3	40	2.2	46.7	45	2.5	3.3	5	0.3
Tristania spp.	0.800	43.3	40	2.2	40.4	41	2.0	2.9	1	0.2
Xylia xylocarpa	0.810	43.3	40	2.2	40.1	41	2.0	3.2	0	0.2
Latin American species										
Alexa imperatricis	0.550	37.8	40	2.2	48.9	46	2.8	11.1	6	0.5
Amyris balsamifera	0.813	40.0		1.7	40.0	41	2.0	0.0		0.4
Anacardium excelsum	0.432	48.9	50	2.2	53.9	49	3.3	5.0	1	1.1
Andira spp.	0.691	43.3	50	2.2	43.8	43	2.3	0.5	7	0.0
Aspidosperma spp. (Peroba group)	0.650	48.9	50	2.2	45.2	44	2.4	3.7	6	0.2
Astronium fraxinifolium	0.876	35.0		1.7	38.2	40	1.9	3.2		0.2
Astronium graveolens	0.835	43.3	40	2.2	39.4	41	2.0	4.0	0	0.2
Bowdichia spp.	0.740	48.9	35	2.2	42.2	42	2.2	6.7	7	0.0
Byrsonima coriacea	0.606	48.9	50	2.2	46.8	45	2.6	2.1	5	0.3
Caesalpinia echinata	0.674	50.0		1.7	44.4	43	2.4	5.6		0.7
Caesalpinia grandillo	0.809	40.0		1.7	40.1	41	2.0	0.1		0.4
Calophyllum brasiliense	0.532	37.8	50	2.2	49.6	46	2.8	11.9	4	0.6
Calophyllum candidissimum	0.670	37.8	40	2.2	44.5	44	2.4	6.8	4	0.1
Carapa guianensis	0.562	43.3	40	2.2	48.5	46	2.7	5.1	6	0.5
Cariniana pyriformis & spp.	0.570	43.3	50	1.7	48.1	46	2.7	4.8	4	1.0
Catostemma commune	0.518	48.9	50	2.2	50.2	47	2.9	1.3	3	0.7
Cecropia peltata	0.360	54.4	35	8.3	57.3	50	3.8	2.8	15	4.6
Ceiba pentranda	0.256	60.0	50	5.6	62.8	53	4.7	2.8	3	0.8
Centrolobium spp.	0.650	48.9	50	2.2	45.2	44	2.4	3.7	6	0.2
Cordia goeldiana	0.431	50.0	50	2.8	53.9	49	3.3	3.9	1	0.5
Cybistax donnell-smithii	0.400	48.9	70	2.8	55.4	49	3.5	6.5	21	0.7
Dalbergia nigra	0.675	43.3	40	2.2	44.4	43	2.4	1.0	3	0.1
Dalbergia retusa	0.973	37.8	35	1.7	35.7	38	1.7	2.1	3	0.0
Dalbergia stevensonii	0.815	43.3	40	1.7	39.9	41	2.0	3.4	0	0.3
Dalbergia variabilis	0.759	35.0		1.7	41.6	42	2.1	6.6		0.5
Dialyanthera spp.	0.410	48.9	40	2.8	54.9	49	3.4	6.0	9	0.7
Dicorynia guianensis	0.659	37.8	35	2.2	44.9	44	2.4	7.1	9	0.2
Diplotropis purpurea	0.780	54.4	35	2.8	41.0	42	2.1	13.5	7	0.7
Enterolobium cyclocarpum	0.348	48.9	50	3.9	57.9	51	3.9	9.0	0	0.0

Table C1—Hardwood species with basic specific gravity Gb, recommended initial kiln conditions, estimated kiln conditions,[a] and deviations—con.

	Recommended initial conditions				Estimated initial conditions			Absolute value of deviations		
Botanical name	G_b	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)	T_i (°C)	MC (%)	D_i (°C)
Eperua spp.	0.794	37.8	40	2.2	40.6	41	2.1	2.8	1	0.2
Eucryphia cordifolia	0.480	43.3	40	2.2	51.8	47	3.1	8.4	7	0.8
Goupia glabra	0.720	54.4	35	2.8	42.9	43	2.2	11.6	8	0.5
Gossypiospermum praecox	0.626	45.0		2.2	46.1	44	2.5	1.1		0.3
Guaiacum officinale	1.013	30.0		1.7	34.7	38	1.7	4.7		0.0
Guarea spp.	0.538	48.9	50	2.2	49.4	46	2.8	0.5	4	0.6
Hevea brasiliensis	0.490	48.9	50	2.2	51.4	47	3.0	2.5	3	0.8
Hura crepitans	0.387	48.9	50	2.2	56.0	50	3.6	7.1	0	1.4
Hymenaea courbaril	0.760	43.3	40	2.2	41.6	42	2.1	1.7	2	0.0
Juglans spp.	0.517	48.9	50	3.9	50.2	47	2.9	1.3	3	1.0
Lonchocarpus castilloi	0.770	54.4	35	2.8	41.3	42	2.1	13.2	7	0.7
Lysiloma spp.	0.667	43.3	40	2.2	44.6	44	2.4	1.3	4	0.2
Manilkara bidentata	0.856	37.8	35	1.7	38.8	40	1.9	1.0	5	0.3
Manilkara huberi	0.890	35.0		1.7	37.8	40	1.9	2.8		0.2
Mora excelsa	0.780	37.8	40	2.2	41.0	42	2.1	3.2	2	0.1
Mora gonggrijpii	0.838	40.0	45	2.2	39.3	41	2.0	0.7	4	0.3
Nothofagus procera	0.490	48.9	50	2.2	51.4	47	3.0	2.5	3	0.8
Nothofagus dombeyi	0.530	37.8	40	2.2	49.7	46	2.8	11.9	6	0.6
Ochroma lagopus	0.116	70.0		6.1	71.7	58	7.1	1.7		1.0
Ochroma pyramidale	0.186	60.0	50	3.9	67.0	55	5.7	7.0	5	1.8
Ocotea rodiaei	0.880	37.8	40	2.2	38.1	40	1.9	0.3	0	0.3
Ocotea rubra	0.551	48.9	50	2.2	48.9	46	2.8	0.0	4	0.5
Paratecoma peroba	0.600	43.3	50	2.2	47.0	45	2.6	3.7	5	0.4
Parinari spp.	0.674	37.8	40	2.2	44.4	43	2.4	6.6	3	0.1
Phoebe porosa	0.530	48.9	50	2.2	49.7	46	2.8	0.8	4	0.6
Piptadenia rigida	0.730	50.0		1.7	42.5	42	2.2	7.5		0.5
Prioria copaifera	0.427	43.3	40	2.2	54.1	49	3.3	10.8	9	1.1
Protium decandrum	0.539	40.0	40	2.2	49.4	46	2.8	9.4	6	0.6
Qualea spp.	0.578	43.3	50	2.2	47.8	45	2.7	4.5	5	0.4
Schinopsis balansae	0.852	30.0		1.7	38.9	40	1.9	8.9		0.3
Sterculia pruriens	0.461	37.8	50	3.9	52.6	48	3.2	14.8	2	0.7
Swartzia spp.	0.916	37.8	40	2.2	37.1	39	1.8	0.7	0	0.4
Swietenia macrophylla	0.486	48.9	50	3.9	51.5	47	3.0	2.6	3	0.8
Symphonia globulifera	0.587	43.3	40	2.2	47.5	45	2.6	4.2	5	0.4
Tabebuia spp. (Lapacho group)	0.910	43.3	40	1.7	37.3	39	1.8	6.1	0	0.2
Tabebuia spp. (Roble group)	0.520	48.9	50	2.2	50.1	47	2.9	1.2	3	0.7
Terminalia amazonia	0.665	43.3	40	2.2	44.7	44	2.4	1.4	4	0.2
Triplaris spp.	0.585	48.9	50	2.2	47.6	45	2.6	1.3	5	0.4
Vocysia spp.	0.470	37.8	50	3.9	52.2	48	3.1	14.4	2	0.8
Average			47					5.2	5.2	0.7
Standard deviation								4.6	4.1	0.9

[a]Initial temperature $T_i = 1/(0.0115 + 0.0167G_b)$ ($R^2 = 0.468$)); moisture content (MC) for first change is $1/(0.0162 + 0.0101G_b)$ ($R^2 = 0.196$); initial depression $D_i = 1/(0.0832 + 0.509G_b)$ ($R^2 = 0.455$).

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Acacia albida	0.526	81	49	2.9	122	5
Acacia decurrens	0.626	67	46	2.5	115	4
Acacia erioloba	1.001	30	36	1.7	95	3
Acacia galpinii	0.626	67	46	2.5	115	4
Acacia gerrardi	0.731	55	42	2.2	109	4
Acacia goetzei	0.834	45	39	2.0	103	4
Acacia hockii	0.501	86	51	3.0	124	5
Acacia karroo	0.654	64	45	2.4	113	4
Acacia lakai	0.975	33	36	1.7	96	3
Acacia macrothyrsa	0.949	35	37	1.8	97	3
Acacia mearnsii	0.583	73	47	2.6	118	5
Acacia mellifera	0.898	39	38	1.9	100	3
Acacia nigrescens	0.911	38	38	1.8	99	3
Acacia nilotica	0.779	51	41	2.1	106	4
Acacia polyacantha	0.696	59	43	2.3	111	4
Acacia robusta	0.693	60	43	2.3	111	4
Acacia seyal	0.626	67	46	2.5	115	4
Acacia sieberana	0.561	76	48	2.7	119	5
Africana bingeria	0.276	165	62	4.5	143	8
Afrocrania volkensii	0.501	86	51	3.0	124	5
Afzelia bipindensis	0.660	63	45	2.4	113	4
Afzelia pachyloba	0.630	67	46	2.5	115	4
Afzelia spp.	0.670	62	44	2.4	112	4
Aidia micrantha	0.629	67	46	2.5	115	4
Aidia ochroleuca	0.780	50	41	2.1	106	4
Albizia amara	0.719	57	43	2.2	109	4
Albizia antunesiana	0.552	77	48	2.7	120	5
Albizia aylmeri	0.626	67	46	2.5	115	4
Albizia brevifolia	0.757	53	42	2.1	107	4
Albizia glaberrima	0.520	82	50	2.9	122	5
Albizia glabrescens	0.488	88	51	3.0	125	5
Albizia grandibracteata	0.398	109	55	3.5	132	6
Albizia gummifera	0.510	84	50	2.9	123	5
Albizia schimperiana	0.488	88	51	3.0	125	5
Albizia tanganyicensis	0.257	180	64	4.7	145	8
Albizia zimmermannii	0.757	53	42	2.1	107	4
Albizia zygia	0.472	91	52	3.1	126	6
Alchornea hirtella	0.501	86	51	3.0	124	5
Allanblackia floribunda	0.807	48	40	2.0	104	4
Allanblackia stanerana	0.561	76	48	2.7	119	5
Allanblackia stuhlmannii	0.565	75	48	2.7	119	5
Allophylus abyssinicus	0.501	86	51	3.0	124	5
Allophylus africanus	0.450	96	53	3.2	128	6
Allophylus chirindensis	0.539	79	49	2.8	121	5
Alnus glutinosa	0.446	97	53	3.2	128	6
Alstonia gilletii	0.356	123	58	3.8	136	7
Amblygonocarpus andongensis	0.834	45	39	2.0	103	4
Amblygonocarpus obtusangulus	0.829	46	40	2.0	103	4
Amphimas ferrugineus	0.630	67	46	2.5	115	4
Amphimas pterocarpoides	0.726	56	42	2.2	109	4
Amphimas spp.	0.620	68	46	2.5	115	5
Aningeria adolfi-friederici	0.446	97	53	3.2	128	6
Aningeria altissima	0.474	91	52	3.1	126	6
Anisophyllea obtusifolia	0.630	67	46	2.5	115	4
Annonidium mannii	0.290	156	61	4.3	142	8
Anogeissus leiocarpus	0.820	46	40	2.0	104	4
Anopyxis klaineana	0.888	40	38	1.9	100	3
Anthocleista grandiflora	0.603	70	47	2.6	116	5
Anthocleista keniensis	0.500	86	51	3.0	124	5
Anthonotha macrophylla	0.780	50	41	2.1	106	4
Anthostemma aubryanum	0.320	139	60	4.1	139	7
Antiaris spp.	0.380	115	56	3.6	133	7
Antiaris toxicaria	0.372	118	57	3.7	134	7
Antiaris welwitschii	0.449	96	53	3.2	128	6
Antidesma venosum	0.578	74	47	2.7	118	5
Antrocaryon klaineanum	0.500	86	51	3.0	124	5
Antrocaryon micraster	0.479	90	51	3.1	125	6
Antrocaryon nannanii	0.446	97	53	3.2	128	6
Aphloia theiformis	0.526	81	49	2.9	122	5
Apodocephala pauciflora	0.501	86	51	3.0	124	5
Apodytes dimidiata	0.696	59	43	2.3	111	4
Apollonias canariensis	0.671	62	44	2.4	112	4
Apollonias velutina	0.671	62	44	2.4	112	4
Arbutus canariensis	0.561	76	48	2.7	119	5
Asteropeia rhopaloides	0.696	59	43	2.3	111	4
Aulacocalyx dievilleoides	0.539	79	49	2.8	121	5
Autranella congolensis	0.720	57	43	2.2	109	4
Avicennia africana	0.779	51	41	2.1	106	4

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Azanza garkeana	0.693	60	43	2.3	111	4
Baillonella toxisperma	0.710	58	43	2.3	110	4
Balanites aegyptiaca	0.630	67	46	2.5	115	4
Baphia kirkii	0.930	36	37	1.8	98	3
Baphia nitida	0.815	47	40	2.0	104	4
Barringtonia racemosa	0.446	97	53	3.2	128	6
Bauhinia petersiana	0.654	64	45	2.4	113	4
Beilschmiedia corbisieri	0.630	67	46	2.5	115	4
Beilschmiedia diversiflora	0.630	67	46	2.5	115	4
Beilschmiedia kweo	0.560	76	48	2.7	119	5
Beilschmiedia louisii	0.700	59	43	2.3	110	4
Beilschmiedia membranifolia	0.500	86	51	3.0	124	5
Beilschmiedia nitida	0.500	86	51	3.0	124	5
Bequaertiodendron magalismontanum	0.693	60	43	2.3	111	4
Berchemia discolor	0.795	49	40	2.1	105	4
Berchemia zeyheri	0.898	39	38	1.9	100	3
Bersama abyssinica	0.539	79	49	2.8	121	5
Bersama swynnertonii	0.590	72	47	2.6	117	5
Blighia unijugata	0.501	86	51	3.0	124	5
Blighia welwitschii	0.812	47	40	2.0	104	4
Bolusanthus speciosus	0.795	49	40	2.1	105	4
Borassus aethiopum	0.876	41	38	1.9	101	3
Boscia salicifolia	0.565	75	48	2.7	119	5
Bosqueia angolensis	0.501	86	51	3.0	124	5
Brachystegia allenii	0.616	69	46	2.5	116	5
Brachystegia appendiculata	0.626	67	46	2.5	115	4
Brachystegia boehmii	0.561	76	48	2.7	119	5
Brachystegia cynometroides	0.560	76	48	2.7	119	5
Brachystegia glaucescens	0.782	50	41	2.1	106	4
Brachystegia laurentii	0.450	96	53	3.2	128	6
Brachystegia leonensis	0.501	86	51	3.0	124	5
Brachystegia mildbraedii	0.500	86	51	3.0	124	5
Brachystegia nigerica	0.561	76	48	2.7	119	5
Brachystegia tamarindoides	0.626	67	46	2.5	115	4
Brachystegia spp.	0.520	82	50	2.9	122	5
Brachystegia utilis	0.782	50	41	2.1	106	4
Breonia decidua	0.696	59	43	2.3	111	4
Breonia madagascarensis	0.696	59	43	2.3	111	4
Breviea leptosperma	0.501	86	51	3.0	124	5
Bridelia grandis	0.500	86	51	3.0	124	5
Bridelia micrantha	0.525	81	49	2.9	122	5
Bussea occidentalis	0.818	47	40	2.0	104	4
Buxus macowani	0.779	51	41	2.1	106	4
Buxus sempervirens	0.779	51	41	2.1	106	4
Calodendrum capense	0.561	76	48	2.7	119	5
Calophyllum deouhardii	0.561	76	48	2.7	119	5
Calophyllum parviflorum	0.696	59	43	2.3	111	4
Calpocalyx heitzii	0.660	63	45	2.4	113	4
Calpocalyx klainei	0.630	67	46	2.5	115	4
Calpurnia aurea	0.616	69	46	2.5	116	5
Canarium euphyllum	0.424	102	54	3.3	130	6
Canarium madagascariense	0.501	86	51	3.0	124	5
Canarium velutinum	0.398	109	55	3.5	132	6
Canthium lactescens	0.680	61	44	2.3	112	4
Canthium rubrocostratum	0.630	67	46	2.5	115	4
Carapa grandiflora	0.561	76	48	2.7	119	5
Carapa procera	0.590	72	47	2.6	117	5
Carissa spp.	0.779	51	41	2.1	106	4
Casearia engleri	0.501	86	51	3.0	124	5
Cassia abbreviata	0.834	45	39	2.0	103	4
Cassia singueana	0.667	62	44	2.4	112	4
Cassine aethiopica	0.782	50	41	2.1	106	4
Cassine buchananii	0.626	67	46	2.5	115	4
Cassine crocea	0.626	67	46	2.5	115	4
Cassine papillosa	0.526	81	49	2.9	122	5
Cassine schlecterana	0.731	55	42	2.2	109	4
Cassine transvaalensis	0.782	50	41	2.1	106	4
Cassipourea congoensis	0.576	74	48	2.7	118	5
Cassipourea elliotii	0.629	67	46	2.5	115	4
Cassipourea euryoides	0.700	59	43	2.3	110	4
Cassipourea gerrardii	0.529	81	49	2.8	122	5
Cassipourea gummiflua	0.501	86	51	3.0	124	5
Cassipourea ruwensorensis	0.696	59	43	2.3	111	4
Catha edulis	0.616	69	46	2.5	116	5
Celastrus acuminatus	0.876	41	38	1.9	101	3
Celtis adolfi-friderici	0.594	71	47	2.6	117	5
Celtis africana	0.627	67	46	2.5	115	4
Celtis brieyi	0.500	86	51	3.0	124	5
Celtis gomphophylla	0.446	97	53	3.2	128	6

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Celtis mildbraedii	0.800	48	40	2.0	105	4
Celtis soyauxii	0.635	66	45	2.5	114	4
Celtis zenkeri	0.590	72	47	2.6	117	5
Chloroxylon swietenia	0.696	59	43	2.3	111	4
Chrysophyllum africanum	0.523	82	50	2.9	122	5
Chrysophyllum autranianum	0.594	71	47	2.6	117	5
Chrysophyllum boivianum	0.561	76	48	2.7	119	5
Chrysophyllum gorungosanum	0.513	83	50	2.9	123	5
Chrysophyllum natalense	0.626	67	46	2.5	115	4
Chrysophyllum perpulchrum	0.748	54	42	2.2	108	4
Chrysophyllum viridifolium	0.488	88	51	3.0	125	5
Cistanthera papaverifera	0.633	66	45	2.5	114	4
Citropsis daweana	0.783	50	41	2.1	106	4
Clausena anisata	0.462	93	52	3.1	127	6
Cleistanthus apetales	0.603	70	47	2.6	116	5
Cleistanthus mildbraedii	0.870	42	39	1.9	101	3
Cleistopholis patens	0.220	217	66	5.1	149	9
Clerodendron glabrum	0.576	74	48	2.7	118	5
Coelocaryon preussii	0.604	70	46	2.6	116	5
Coffea arabica	0.590	72	47	2.6	117	5
Coffea zanguebariae	0.616	69	46	2.5	116	5
Cola acuminata	0.480	89	51	3.1	125	6
Cola cordifolia	0.500	86	51	3.0	124	5
Cola gigantea	0.460	94	52	3.2	127	6
Cola greenwayi	0.731	55	42	2.2	109	4
Cola laterita	0.472	91	52	3.1	126	6
Cola natalensis	0.700	59	43	2.3	110	4
Cola spp.	0.700	59	43	2.3	110	4
Colophospermum mopane	0.876	41	38	1.9	101	3
Combretum apiculatum	0.821	46	40	2.0	104	4
Combretum collinum	0.821	46	40	2.0	104	4
Combretum elaeagnoides	0.808	48	40	2.0	104	4
Combretum erythrophyllum	0.576	74	48	2.7	118	5
Combretum fragrens	0.616	69	46	2.5	116	5
Combretum hereroense	0.770	51	41	2.1	106	4
Combretum imberbe	1.000	30	36	1.7	95	3
Combretum kraussii	0.626	67	46	2.5	115	4
Combretum molle	0.719	57	43	2.2	109	4
Combretum schumannii	0.879	41	38	1.9	101	3
Commiphora africana	0.270	170	63	4.5	144	8
Commiphora edulis	0.616	69	46	2.5	116	5
Commiphora marlothii	0.436	99	53	3.3	129	6
Commiphora mollis	0.360	122	57	3.8	135	7
Commiphora pyracanthoides	0.283	161	62	4.4	142	8
Commiphora spp.	0.552	77	48	2.7	120	5
Conopharyngia holstii	0.500	86	51	3.0	124	5
Copaifera coleosperma	0.892	40	38	1.9	100	3
Copaifera demeusei	0.573	74	48	2.7	118	5
Copaifera mildbraedii	0.630	67	46	2.5	115	4
Copaifera mopane	0.600	71	47	2.6	117	5
Copaifera religiosa	0.500	86	51	3.0	124	5
Copaifera salikounda	0.727	56	42	2.2	109	4
Cordia abyssinica	0.366	120	57	3.7	135	7
Cordia africana	0.400	109	55	3.5	132	6
Cordia caffra	0.661	63	45	2.4	113	4
Cordia goetzei	0.719	57	43	2.2	109	4
Cordyla africana	0.706	58	43	2.3	110	4
Cordyla madagascariensis	0.779	51	41	2.1	106	4
Cordyla pinnata	0.696	59	43	2.3	111	4
Corylus avellana	0.526	81	49	2.9	122	5
Corynanthe gabonensis	0.560	76	48	2.7	119	5
Corynanthe pachyceras	0.630	67	46	2.5	115	4
Coula edulis	0.985	32	36	1.7	96	3
Craibia brevicaudata	0.654	64	45	2.4	113	4
Craspidospermum verticillatum	0.779	51	41	2.1	106	4
Crataegus oxyacantha	0.696	59	43	2.3	111	4
Craterispermum schweinfurthii	0.629	67	46	2.5	115	4
Crossopteryx febrifuga	0.667	62	44	2.4	112	4
Croton gratissmus	0.860	43	39	1.9	102	3
Croton macrostachyus	0.500	86	51	3.0	124	5
Croton megalobotrys	0.526	81	49	2.9	122	5
Cryptocarya louvelii	0.696	59	43	2.3	111	4
Cryptosepalum staudtii	0.700	59	43	2.3	110	4
Ctenolophon englerianus	0.780	50	41	2.1	106	4
Cunonia capensis	0.561	76	48	2.7	119	5
Curtisia dentata	0.757	53	42	2.1	107	4
Curtisia faginea	0.696	59	43	2.3	111	4

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Cussonia arborea	0.360	122	57	3.8	135	7
Cussonia spp.	0.322	138	59	4.1	139	7
Cussonia spicata	0.385	113	56	3.6	133	6
Cynometra ananta	0.836	45	39	2.0	103	4
Cynometra hankei	0.779	51	41	2.1	106	4
Cynometra lujae	0.679	61	44	2.3	112	4
Dacryodes buettneri	0.530	81	49	2.8	122	5
Dacryodes edulis	0.500	86	51	3.0	124	5
Dacryodes igaganga	0.530	81	49	2.8	122	5
Dacryodes klaineana	0.740	54	42	2.2	108	4
Dacryodes le-testui	0.500	86	51	3.0	124	5
Dacryodes normandii	0.500	86	51	3.0	124	5
Dacryodes pubescens	0.561	76	48	2.7	119	5
Dalbergia africana	0.779	51	41	2.1	106	4
Dalbergia baronii	0.696	59	43	2.3	111	4
Dalbergia divers	0.793	49	41	2.1	105	4
Dalbergia greviana	0.876	41	38	1.9	101	3
Dalbergia nitidula	0.783	50	41	2.1	106	4
Daniellia klainei	0.450	96	53	3.2	128	6
Daniellia oliveri	0.489	88	51	3.0	125	5
Daniellia soyauxii	0.450	96	53	3.2	128	6
Desbordesia pierreana	0.870	42	39	1.9	101	3
Detarium senegalense	0.762	52	41	2.1	107	4
Dialiopsis africana	0.654	64	45	2.4	113	4
Dialium bipindense	0.830	46	40	2.0	103	4
Dialium corbisieri	0.876	41	38	1.9	101	3
Dialium dinklagei	0.720	57	43	2.2	109	4
Dialium engleranum	0.757	53	42	2.1	107	4
Dialium excelsum	0.780	50	41	2.1	106	4
Dialium guineense	0.696	59	43	2.3	111	4
Dialium holtzii	0.667	62	44	2.4	112	4
Dialium macranthum	0.696	59	43	2.3	111	4
Dialium orientale	0.779	51	41	2.1	106	4
Dialium pachyphyllum	0.812	47	40	2.0	104	4
Dialium pentandrum	0.779	51	41	2.1	106	4
Dialium soyauxii	0.626	67	46	2.5	115	4
Dichrostachys cinerea	0.936	36	37	1.8	98	3
Didelotia africana	0.780	50	41	2.1	106	4
Didelotia brevipaniculata	0.530	81	49	2.8	122	5
Didelotia idae	0.626	67	46	2.5	115	4
Didelotia letouzeyi	0.500	86	51	3.0	124	5
Didelotia spp.	0.500	86	51	3.0	124	5
Didymosalpinx norea	0.680	61	44	2.3	112	4
Dilobeia thouarsii	0.876	41	38	1.9	101	3
Diospyros abyssinica	0.667	62	44	2.4	112	4
Diospyros crassiflora	0.779	51	41	2.1	106	4
Diospyros dendo	1.013	29	35	1.7	94	3
Diospyros ferrea	0.744	54	42	2.2	108	4
Diospyros kamerunensis	0.780	50	41	2.1	106	4
Diospyros kirkii	0.603	70	47	2.6	116	5
Diospyros mannii	0.779	51	41	2.1	106	4
Diospyros mespiliformis	0.634	66	45	2.5	114	4
Diospyros natalensis	0.808	48	40	2.0	104	4
Diospyros quiloensis	0.770	51	41	2.1	106	4
Diospyros senensis	0.642	65	45	2.4	114	4
Diospyros spp.	0.820	46	40	2.0	104	4
Diplorhynchus condylocarpon	0.629	67	46	2.5	115	4
Discoglypremna caloneura	0.320	139	60	4.1	139	7
Dombeya burgessiae	0.511	84	50	2.9	123	5
Dombeya goetzeni	0.511	84	50	2.9	123	5
Dombeya rotundifolia	0.629	67	46	2.5	115	4
Dovyalis caffra	0.642	65	45	2.4	114	4
Dovyalis macrocalyx	0.462	93	52	3.1	127	6
Drypetes battiscombei	0.561	76	48	2.7	119	5
Drypetes gerrardii	0.696	59	43	2.3	111	4
Drypetes gossweilleri	0.630	67	46	2.5	115	4
Drypetes spp.	0.630	67	46	2.5	115	4
Ehretia acuminata	0.510	84	50	2.9	123	5
Ehretia cymosa	0.462	93	52	3.1	127	6
Ekebergia benguelensis	0.488	88	51	3.0	125	5
Ekebergia capensis	0.471	91	52	3.1	126	6
Ekebergia rueppelliana	0.501	86	51	3.0	124	5
Elaeocarpus quadrilobus	0.501	86	51	3.0	124	5
Enantia affinis	0.446	97	53	3.2	128	6
Enantia ambigua	0.561	76	48	2.7	119	5
Enantia chlorantha	0.420	103	54	3.4	130	6
Enantia lebrunii	0.446	97	53	3.2	128	6
Enantia polycarpa	0.446	97	53	3.2	128	6
Endodesmia calophylloides	0.660	63	45	2.4	113	4
Entandrophragma bussei	0.680	61	44	2.3	112	4

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Entandrophragma excelsum	0.446	97	53	3.2	128	6
Entandrophragma palustre	0.561	76	48	2.7	119	5
Entandrophragma stolzii	0.385	113	56	3.6	133	6
Eribroma oblongum	0.600	71	47	2.6	117	5
Eriocoelum microspermum	0.500	86	51	3.0	124	5
Erismadelphus exsul	0.560	76	48	2.7	119	5
Erythrina abyssinca	0.411	105	55	3.4	131	6
Erythrina latissima	0.308	146	60	4.2	140	8
Erythrina lysistemom	0.321	139	60	4.1	139	7
Erythrina vogelii	0.250	186	64	4.8	146	9
Erythrophleum africanum	0.876	41	38	1.9	101	3
Erythrophleum le-testui	0.876	41	38	1.9	101	3
Erythrophleum micranthum	0.813	47	40	2.0	104	4
Erythrophleum spp.	0.900	39	38	1.8	100	3
Erythrophleum suaveolens	0.783	50	41	2.1	106	4
Erythroxylum emarginatum	0.744	54	42	2.2	108	4
Erythroxylum zambesiacum	0.821	46	40	2.0	104	4
Euclea divinorum	0.731	55	42	2.2	109	4
Euclea lanceolata	0.661	63	45	2.4	113	4
Euclea natalensis	0.770	51	41	2.1	106	4
Euclea schimperi	0.603	70	47	2.6	116	5
Eugenia spp.	0.696	59	43	2.3	111	4
Excoecaria bussei	0.501	86	51	3.0	124	5
Fagara amaniensis	0.449	96	53	3.2	128	6
Fagara davyi	0.696	59	43	2.3	111	4
Fagara heitzii	0.410	106	55	3.4	131	6
Fagara macrophylla	0.690	60	44	2.3	111	4
Fagara xanthoxyloides	0.603	70	47	2.6	116	5
Fauchera ambrensis	0.876	41	38	1.9	101	3
Fauchera parvifolia	0.876	41	38	1.9	101	3
Faurea macnaughtonii	0.779	51	41	2.1	106	4
Faurea saligna	0.626	67	46	2.5	115	4
Faurea speciosa	0.561	76	48	2.7	119	5
Ficalhoa laurifolia	0.552	77	48	2.7	120	5
Ficus burkei	0.526	81	49	2.9	122	5
Ficus capensis	0.247	189	64	4.8	146	9
Ficus capreifolia	0.372	118	57	3.7	134	7
Ficus exasperata	0.334	133	59	4.0	138	7
Ficus ingens	0.488	88	51	3.0	125	5
Ficus iteophylla	0.400	109	55	3.5	132	6
Ficus kirkii	0.411	105	55	3.4	131	6
Ficus mucuso	0.390	112	56	3.6	133	6
Ficus sansibarica	0.501	86	51	3.0	124	5
Ficus stuhlmannii	0.501	86	51	3.0	124	5
Ficus sycomorus	0.398	109	55	3.5	132	6
Ficus thonningii	0.411	105	55	3.4	131	6
Ficus vogelii	0.411	105	55	3.4	131	6
Ficus zenkeri	0.446	97	53	3.2	128	6
Filicium decipiens	0.744	54	42	2.2	108	4
Foetidia clusioides	0.779	51	41	2.1	106	4
Fraxinus excelsior	0.594	71	47	2.6	117	5
Friesodielsia obovata	0.706	58	43	2.3	110	4
Funtumia africana	0.400	109	55	3.5	132	6
Funtumia elastica	0.370	118	57	3.7	134	7
Funtumia latifolia	0.450	96	53	3.2	128	6
Gaertnera paniculata	0.696	59	43	2.3	111	4
Gambeya lacourtiana	0.630	67	46	2.5	115	4
Gambeya madagascariensis	0.560	76	48	2.7	119	5
Gambeya spp.	0.560	76	48	2.7	119	5
Gambeya subnuda	0.594	71	47	2.6	117	5
Ganophyllum giganteum	0.696	59	43	2.3	111	4
Garcinia gerardii	0.660	63	45	2.4	113	4
Garcinia huillensis	0.770	51	41	2.1	106	4
Garcinia kola	0.561	76	48	2.7	119	5
Garcinia livingstonei	0.693	60	43	2.3	111	4
Garcinia mannii	0.780	50	41	2.1	106	4
Garcinia punctata	0.780	50	41	2.1	106	4
Gardenia jovis-tonantis	0.693	60	43	2.3	111	4
Gilbertiodendron dewevrei	0.650	64	45	2.4	113	4
Gilbertiodendron grandiflorum	0.660	63	45	2.4	113	4
Gilbertiodendron ivorense	0.696	59	43	2.3	111	4
Gilbertiodendron mayombense	0.630	67	46	2.5	115	4
Gilbertiodendron mildbraedii	0.870	42	39	1.9	101	3
Gilbertiodendron splendidum	0.561	76	48	2.7	119	5
Gilbertiodendron spp.	0.660	63	45	2.4	113	4
Gluta turtur	0.501	86	51	3.0	124	5
Grewia monticola	0.719	57	43	2.2	109	4
Guarea laurentii	0.560	76	48	2.7	119	5
Guibourtia coleosperma	0.599	71	47	2.6	117	5

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Guibourtia conjugata	0.872	42	38	1.9	101	3
Guibourtia demeusei	0.700	59	43	2.3	110	4
Guibourtia ehie	0.670	62	44	2.4	112	4
Guibourtia pellegriniana	0.740	54	42	2.2	108	4
Guibourtia spp.	0.720	57	43	2.2	109	4
Gyrocarpus americanus	0.199	244	68	5.4	151	10
Haematostaphis barteri	0.779	51	41	2.1	106	4
Hagenia abyssinica	0.565	75	48	2.7	119	5
Halleria lucida	0.680	61	44	2.3	112	4
Hannoa klaineana	0.280	163	62	4.4	143	8
Haplocoelum foliolosum	0.744	54	42	2.2	108	4
Haplormosia monophylla	0.696	59	43	2.3	111	4
Harungana madagascariensis	0.450	96	53	3.2	128	6
Heberdenia excelsa	0.696	59	43	2.3	111	4
Heritiera utilis[a]	0.591	72	47	2.6	117	5
Herminiera elaphroxylon	0.135	387	73	6.6	159	12
Hernandia voyroni	0.356	123	58	3.8	136	7
Heteropyxis dehniae	0.616	69	46	2.5	116	5
Hexalobus crispiflorus	0.480	89	51	3.1	125	6
Hexalobus monopetalus	0.629	67	46	2.5	115	4
Heywoodia lucens	0.696	59	43	2.3	111	4
Hibiscus lasiococcus	0.356	123	58	3.8	136	7
Holarrhena pubescens	0.693	60	43	2.3	111	4
Holarrhena wulfsbergii	0.501	86	51	3.0	124	5
Homalium le-testui	0.660	63	45	2.4	113	4
Homalium spp.	0.700	59	43	2.3	110	4
Humbertia madagascariensis	0.876	41	38	1.9	101	3
Hylodendron gabonense	0.780	50	41	2.1	106	4
Hymenocardia acida	0.667	62	44	2.4	112	4
Hymenostegia afzelii	0.780	50	41	2.1	106	4
Hymenostegia pellegrini	0.780	50	41	2.1	106	4
Ilex canariensis	0.779	51	41	2.1	106	4
Ilex mitis	0.526	81	49	2.9	122	5
Ilex platyphylla	0.501	86	51	3.0	124	5
Imbricaria maxima	0.626	67	46	2.5	115	4
Irvingia gabonensis	0.848	44	39	1.9	102	4
Irvingia grandifolia	0.780	50	41	2.1	106	4
Isoberlinia angolensis	0.675	62	44	2.3	112	4
Isoberlinia doka	0.604	70	46	2.6	116	5
Julbernardia brieyi	0.661	63	45	2.4	113	4
Julbernardia globiflora	0.780	50	41	2.1	106	4
Julbernardia seretii	0.696	59	43	2.3	111	4
Khaya nyasica	0.470	91	52	3.1	126	6
Kigelia africana	0.539	79	49	2.8	121	5
Kigelia pinnata	0.501	86	51	3.0	124	5
Kiggelaria africana	0.626	67	46	2.5	115	4
Kirkia acuminata	0.531	80	49	2.8	121	5
Klainedoxa busgenii	0.876	41	38	1.9	101	3
Klainedoxa gabonensis	1.031	28	35	1.6	94	3
Klainedoxa latifolia	0.751	53	42	2.2	107	4
Lachnopylis floribunda	0.626	67	46	2.5	115	4
Lannea discolor	0.436	99	53	3.3	129	6
Lannea schweinfurthii	0.526	81	49	2.9	122	5
Lannea welwitschii	0.450	96	53	3.2	128	6
Lasiodiscus usambarensis	0.744	54	42	2.2	108	4
Laurus canariensis	0.561	76	48	2.7	119	5
Lecomtedoxa klaineana	0.780	50	41	2.1	106	4
Leptolaena multiflora	0.876	41	38	1.9	101	3
Letestua durissima	0.870	42	39	1.9	101	3
Loesenera kalantha	0.626	67	46	2.5	115	4
Lonchocarpus capassa	0.719	57	43	2.2	109	4
Lonchocarpus nelsii	0.731	55	42	2.2	109	4
Lophira lanceolata	0.696	59	43	2.3	111	4
Lophira procera	0.833	45	39	2.0	103	4
Lovoa brownii	0.449	96	53	3.2	128	6
Lovoa swynnwetonil	0.501	86	51	3.0	124	5
Macaranga capensis	0.462	93	52	3.1	127	6
Macaranga conglomerata	0.400	109	55	3.5	132	6
Macaranga kilimandscharica	0.400	109	55	3.5	132	6
Macaranga mellifera	0.347	127	58	3.9	136	7
Macrolobium dewevrei	0.693	60	43	2.3	111	4
Macrorhammus faralaotra	0.626	67	46	2.5	115	4
Maesa lanceolata	0.642	65	45	2.4	114	4
Majidea fosteri	0.626	67	46	2.5	115	4
Malacantha alnifolia	0.450	96	53	3.2	128	6
Malacantha superba	0.506	85	50	2.9	123	5
Mammea africana	0.661	63	44	2.4	113	4
Manilkara cuneifolia	0.810	47	40	2.0	104	4
Manilkara lacera	0.868	42	39	1.9	101	3
Manilkara mochisia	1.013	29	35	1.7	94	3

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Manilkara multinervis	0.920	37	37	1.8	99	3
Manilkara propinqua	0.872	42	38	1.9	101	3
Maranthes geotzeniana	0.706	58	43	2.3	110	4
Markhamia acuminata	0.731	55	42	2.2	109	4
Markhamia hildebrandtii	0.500	86	51	3.0	124	5
Markhamia platycalyx	0.450	96	53	3.2	128	6
Markhamia tomentosa	0.446	97	53	3.2	128	6
Maytenus acuminata	0.603	70	47	2.6	116	5
Maytenus heterophylia	0.475	90	52	3.1	126	6
Maytenus undata	0.693	60	43	2.3	111	4
Melia bombolo	0.289	157	61	4.3	142	8
Melia volkensii	0.501	86	51	3.0	124	5
Memecylon capitellatum	0.770	51	41	2.1	106	4
Microberlinia bisulcata	0.630	67	46	2.5	115	4
Microcos coriaceus	0.420	103	54	3.4	130	6
Microcos oligoneura	0.422	102	54	3.4	130	6
Millettia caffra	0.876	41	38	1.9	101	3
Millettia grandis	0.876	41	38	1.9	101	3
Millettia stuhlmannii	0.769	52	41	2.1	106	4
Millettia spp.	0.720	57	43	2.2	109	4
Millettia sutherlandii	0.561	76	48	2.7	119	5
Mitragyna rubrostipulata	0.526	81	49	2.9	122	5
Mitragyna stipulosa	0.470	91	52	3.1	126	6
Monopetalanthus coriaceus	0.450	96	53	3.2	128	6
Monopetalanthus durandii	0.500	86	51	3.0	124	5
Monopetalanthus heitzii	0.390	112	56	3.6	133	6
Monopetalanthus le-testui	0.500	86	51	3.0	124	5
Monopetalanthus pellegrinii	0.470	91	52	3.1	126	6
Monotes engleri	0.731	55	42	2.2	109	4
Monotes glaber	0.706	58	43	2.3	110	4
Morus alba	0.588	72	47	2.6	117	5
Morus lactea	0.626	67	46	2.5	115	4
Morus mesozyga	0.827	46	40	2.0	103	4
Myrianthus holstii	0.449	96	53	3.2	128	6
Myrica faya	0.696	59	43	2.3	111	4
Myrica pilulifera	0.411	105	55	3.4	131	6
Myrsine canariensis	0.779	51	41	2.1	106	4
Nauclea spp.	0.650	64	45	2.4	113	4
Neobeguea spp.	0.779	51	41	2.1	106	4
Neoboutonia macrocalyx	0.320	139	60	4.1	139	7
Neopalissya castaneifolia	0.539	79	49	2.8	121	5
Nesogordonia fouassieri	0.700	59	43	2.3	110	4
Nesogordonia leplaei	0.696	59	43	2.3	111	4
Nesogordonia parvifolia	0.696	59	43	2.3	111	4
Newtonia glandulifera	0.740	54	42	2.2	108	4
Newtonia leucocarpa	0.561	76	48	2.7	119	5
Newtonia paucijuga	0.578	74	47	2.7	118	5
Notelaea excelsa	0.779	51	41	2.1	106	4
Nuxia congesta	0.642	65	45	2.4	114	4
Nuxia floribunda	0.616	69	46	2.5	116	5
Ochna arborea	0.860	43	39	1.9	102	3
Ochna gambleoides	0.719	57	43	2.2	109	4
Ochna hiernii	0.779	51	41	2.1	106	4
Ochna holstii	0.779	51	41	2.1	106	4
Ochna ovata	0.779	51	41	2.1	106	4
Ochna pulchra	0.603	70	47	2.6	116	5
Ochna schweinfurthiana	0.590	72	47	2.6	117	5
Ochrocarpus africanus	0.619	68	46	2.5	115	5
Ochtocosmus africanus	0.780	50	41	2.1	106	4
Ocotea bullata	0.630	67	46	2.5	115	4
Ocotea comoriensis	0.501	86	51	3.0	124	5
Ocotea cymosa	0.501	86	51	3.0	124	5
Ocotea macrocarpa	0.501	86	51	3.0	124	5
Ocotea phoetens	0.501	86	51	3.0	124	5
Ocotea platidisca	0.626	67	46	2.5	115	4
Ocotea racemosa	0.501	86	51	3.0	124	5
Ocotea thouventii	0.501	86	51	3.0	124	5
Ocotea trichophlebia	0.501	86	51	3.0	124	5
Ocotea viridis	0.626	67	46	2.5	115	4
Odyenda gabonensis	0.320	139	60	4.1	139	7
Odyenda spp.	0.320	139	60	4.1	139	7
Odyenda zimmermannii	0.308	146	60	4.2	140	8
Oldfieldia africana	0.780	50	41	2.1	106	4
Olea africana	0.882	41	38	1.9	100	3
Olea capensis	0.797	49	40	2.0	105	4
Olea welwitschii	0.616	69	46	2.5	116	5
Olinia cymosa	0.561	76	48	2.7	119	5
Olinia usambarensis	0.696	59	43	2.3	111	4
Olinia vanguerioides	0.808	48	40	2.0	104	4
Ongokea gore	0.825	46	40	2.0	103	4

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Orhtocarpus africanus	0.605	70	46	2.6	116	5
Oricia bachmannii	0.680	61	44	2.3	112	4
Ormocarpum kirkii	0.706	58	43	2.3	110	4
Ostryoderris stuhlmannii	0.667	62	44	2.4	112	4
Osyris compressa	0.779	51	41	2.1	106	4
Oxyanthus speciosus	0.501	86	51	3.0	124	5
Oxystigma mannii	0.446	97	53	3.2	128	6
Oxystigma msoo	0.462	93	52	3.1	127	6
Pachyelasma tessmannii	0.700	59	43	2.3	110	4
Pachypodanthium confine	0.580	73	47	2.6	118	5
Pachypodanthium staudtii	0.580	73	47	2.6	118	5
Panax spp.	0.385	113	56	3.6	133	6
Pappea capensis	0.834	45	39	2.0	103	4
Paraberlinia bifoliolata	0.560	76	48	2.7	119	5
Paramacrolobium coeruleoides	0.561	76	48	2.7	119	5
Paramacrolobium coeruleum	0.626	67	46	2.5	115	4
Parinari curatellifolia	0.587	72	47	2.6	118	5
Parinari glabra	0.870	42	39	1.9	101	3
Parinari goetzeniana	0.780	50	41	2.1	106	4
Parinari robusta	0.779	51	41	2.1	106	4
Parinari spp.	0.650	64	45	2.4	113	4
Parkia bicolor	0.360	122	57	3.8	135	7
Parkia biglobosa	0.501	86	51	3.0	124	5
Parkia filicoidea	0.501	86	51	3.0	124	5
Pausinystalia brachythyrsa	0.560	76	48	2.7	119	5
Pausinystalia lane-poolei	0.589	72	47	2.6	117	5
Pausinystalia talbotii	0.560	76	48	2.7	119	5
Peltophorum africanum	0.565	75	48	2.7	119	5
Pentaclethra eetveldeana	0.630	67	46	2.5	115	4
Pentaclethra macrophylla	0.914	38	37	1.8	99	3
Pentadesma butyracea	0.788	50	41	2.1	105	4
Pericopsis angolensis	0.757	53	42	2.1	107	4
Persea indica	0.446	97	53	3.2	128	6
Phyllanthus discoideus	0.760	52	41	2.1	107	4
Phyllanthus polyanthus	0.626	67	46	2.5	115	4
Phyllarthron articulatum	0.876	41	38	1.9	101	3
Phyllarthron madagascariense	0.876	41	38	1.9	101	3
Phyllogeiton zeyheri	0.876	41	38	1.9	101	3
Pierreodendron africanum	0.700	59	43	2.3	110	4
Piliostigma thonningii	0.578	74	47	2.7	118	5
Piptadenia africana	0.494	87	51	3.0	124	5
Piptadenia buchananni	0.554	77	48	2.7	120	5
Piptadenia gabunensis	0.700	59	43	2.3	110	4
Pittosporum viridiflorum	0.603	70	47	2.6	116	5
Plagiostyles africana	0.700	59	43	2.3	110	4
Platylophus trifoliatus	0.446	97	53	3.2	128	6
Platysepalum chevalieri	0.696	59	43	2.3	111	4
Pleurostylia africana	0.706	58	43	2.3	110	4
Pleurostylia capensis	0.626	67	46	2.5	115	4
Poga oleosa	0.360	122	57	3.8	135	7
Polyalthia suaveolens	0.660	63	45	2.4	113	4
Polyscias fulva	0.231	204	65	5.0	148	9
Polyscias kikuyuensis	0.339	130	58	3.9	137	7
Polyscias ornifolia	0.501	86	51	3.0	124	5
Premna angolensis	0.630	67	46	2.5	115	4
Premna maxima	0.561	76	48	2.7	119	5
Prosopis africana	0.828	46	40	2.0	103	4
Protea gaguedi	0.629	67	46	2.5	115	4
Protorhus thouarsii	0.696	59	43	2.3	111	4
Prunus africana	0.740	54	42	2.2	108	4
Prunus lusitanica	0.626	67	46	2.5	115	4
Pseudocedrela kotschyi	0.626	67	46	2.5	115	4
Pseudolachnostylis maprouneifolia	0.590	72	47	2.6	117	5
Ptaeroxylon obliquum	0.840	45	39	2.0	103	4
Ptaeroxylon utile	0.911	38	38	1.8	99	3
Pteleopsis hylodendron	0.630	67	46	2.5	115	4
Pteleopsis myrtifolia	0.654	64	45	2.4	113	4
Pterocarpus antunesii	0.626	67	46	2.5	115	4
Pterocarpus brenanii	0.757	53	42	2.1	107	4
Pterocarpus erinaceus	0.661	63	45	2.4	113	4
Pterocarpus rotundifolius	0.578	74	47	2.7	118	5
Pterocarpus tinctorius	0.378	116	56	3.6	134	7
Pterocelastrus echinatus	0.744	54	42	2.2	108	4
Pterygopodium oxyphyllum	0.573	74	48	2.7	118	5
Pterygota bequaertii	0.560	76	48	2.7	119	5
Pterygota macrocarpa	0.470	91	52	3.1	126	6
Pterygota spp.	0.520	82	50	2.9	122	5

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Pycnanthus kombo	0.440	98	53	3.3	128	6
Quercus ilex	0.783	50	41	2.1	106	4
Randia cladantha	0.780	50	41	2.1	106	4
Rapanea melanophleos	0.626	67	46	2.5	115	4
Rapanea rhododendroides	0.654	64	45	2.4	113	4
Rauvolfia macrophylla	0.470	91	52	3.1	126	6
Rauvolfia caffra	0.424	102	54	3.3	130	6
Ravensara ovalifolia	0.561	76	48	2.7	119	5
Ravensara retusa	0.696	59	43	2.3	111	4
Rawsonia lucida	0.706	58	43	2.3	110	4
Rhamnus glandulosa	0.561	76	48	2.7	119	5
Rhizophora racemosa	0.962	34	36	1.7	97	3
Rhodolaena bakeriana	0.696	59	43	2.3	111	4
Rhus lancea	0.783	50	41	2.1	106	4
Rhus longipes	0.667	62	44	2.4	112	4
Rhus pyroides	0.949	35	37	1.8	97	3
Rhus tenuinervis	0.898	39	38	1.9	100	3
Ricinodendron africanum	0.206	234	67	5.3	151	10
Ricinodendron heudelotii	0.200	243	68	5.4	151	10
Ricinodendron viticoides	0.167	301	70	6.0	155	11
Rinorea ferruginea	0.654	64	45	2.4	113	4
Rothmannia fischeri	0.706	58	43	2.3	110	4
Rothmannia urcelliformis	0.513	83	50	2.9	123	5
Saccoglottis gabonensis	0.842	44	39	2.0	102	4
Salix hutchinsii	0.446	97	53	3.2	128	6
Santiria trimera	0.530	81	49	2.8	122	5
Sapium ellipticum	0.500	86	51	3.0	124	5
Sapium integerrimum	0.526	81	49	2.9	122	5
Schefflera umbellifera	0.270	170	63	4.5	144	8
Schotia brachypetala	0.654	64	45	2.4	113	4
Schrebera alata	0.626	67	46	2.5	115	4
Schrebera arborea	0.630	67	46	2.5	115	4
Sclerocarya birrea	0.424	102	54	3.3	130	6
Sclerocarya caffra	0.446	97	53	3.2	128	6
Sclerocarya spp.	0.440	98	53	3.3	128	6
Sclorodophloeus zenkeri	0.680	61	44	2.3	112	4
Scolopia zeyheri	0.686	60	44	2.3	111	4
Scottellia chevalieri	0.500	86	51	3.0	124	5
Scottellia kamerunensis	0.501	86	51	3.0	124	5
Scyphocephalium ochocoa	0.480	89	51	3.1	125	6
Scytopetalum tieghemia	0.686	60	44	2.3	111	4
Sersalisia micrantha	0.779	51	41	2.1	106	4
Sindora klaineana	0.561	76	48	2.7	119	5
Sindoropsis le-testui	0.560	76	48	2.7	119	5
Spathodea campanulata	0.250	186	64	4.8	146	9
Spirostachys africana	0.847	44	39	1.9	102	4
Spirostachys venenifera	0.626	67	46	2.5	115	4
Staudtia gabonensis	0.653	64	45	2.4	113	4
Staudtia stipitata	0.760	52	41	2.1	107	4
Steganthus welwitschii	0.660	63	45	2.4	113	4
Stemonocoleus micranthus	0.560	76	48	2.7	119	5
Sterculia appendiculata	0.578	74	47	2.7	118	5
Sterculia bequaertii	0.321	139	60	4.1	139	7
Sterculia dawei	0.356	123	58	3.8	136	7
Sterculia murex	0.472	91	52	3.1	126	6
Sterculia quinqueloba	0.629	67	46	2.5	115	4
Strephonema pseudocola	0.715	57	43	2.2	109	4
Stereospermum kunthianum	0.578	74	47	2.7	118	5
Strombosia glaucescens	0.932	36	37	1.8	98	3
Strombosia grandifolia	0.740	54	42	2.2	108	4
Strombosia pustulata	0.696	59	43	2.3	111	4
Strombosia scheffleri	0.731	55	42	2.2	109	4
Strombosiopsis tetrandra	0.630	67	46	2.5	115	4
Strychnos atherstonei	0.696	59	43	2.3	111	4
Strychnos cocculoides	0.616	69	46	2.5	116	5
Strychnos madagascariensis	0.629	67	46	2.5	115	4
Strychnos mellodora	0.654	64	45	2.4	113	4
Strychnos mitis	0.661	63	45	2.4	113	4
Strychnos potatorum	0.847	44	39	1.9	102	4
Strychnos spp.	0.626	67	46	2.5	115	4
Strychnos usambarensis	0.696	59	43	2.3	111	4
Suregada procera	0.696	59	43	2.3	111	4
Swartzia fistuloides	0.820	46	40	2.0	104	4
Swartzia madagascariensis	0.975	33	36	1.7	96	3
Symphonia acuminata	0.501	86	51	3.0	124	5
Symphonia globulifora	0.492	87	51	3.0	124	5
Symphonia tanalensis	0.501	86	51	3.0	124	5
Syzygium cordatum	0.590	72	47	2.6	117	5
Syzygium gerrardii	0.616	69	46	2.5	116	5
Syzygium guineense	0.578	74	47	2.7	118	5
Tabernaemontana elegans	0.616	69	46	2.5	116	5
Tamarindus indica	0.706	58	43	2.3	110	4
Tambourissa thouvenotii	0.501	86	51	3.0	124	5
Tarrenna neurophylla	0.795	49	40	2.1	105	4
Tarrenna pavettoides	0.488	88	51	3.0	125	5
Tarrietia densiflora	0.630	67	46	2.5	115	4

Table C2—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for African species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Teclea nobilis	0.696	59	43	2.3	111	4
Teclea simplicifolia	0.696	59	43	2.3	111	4
Terminalia aemula	0.642	65	45	2.4	114	4
Terminalia chebula	0.744	54	42	2.2	108	4
Terminalia gazensis	0.578	74	47	2.7	118	5
Terminalia glaucescens	0.696	59	43	2.3	111	4
Terminalia kilimandscharica	0.561	76	48	2.7	119	5
Terminalia macroptera	0.738	55	42	2.2	108	4
Terminalia mantaly	0.561	76	48	2.7	119	5
Terminalia mollis	0.834	45	39	2.0	103	4
Terminalia prunioides	0.975	33	36	1.7	96	3
Terminalia sericea	0.738	55	42	2.2	108	4
Terminalia stenostachya	0.834	45	39	2.0	103	4
Terminalia stuhlmannii	0.834	45	39	2.0	103	4
Terminalia tetranda	0.561	76	48	2.7	119	5
Tessmania africana	0.850	44	39	1.9	102	3
Tessmania claessensii	0.733	55	42	2.2	108	4
Tessmania lescrauwatii	0.779	51	41	2.1	106	4
Tessmania yangambiensis	0.779	51	41	2.1	106	4
Testulea gabonensis	0.600	71	47	2.6	117	5
Tetraberlinia bifoliolata	0.540	79	49	2.8	121	5
Tetraberlinia tubmania	0.575	74	48	2.7	118	5
Tetrapleura tetraptera	0.567	75	48	2.7	119	5
Tieghemella africana	0.550	78	49	2.8	120	5
Tieghemella callophylloides	0.780	50	41	2.1	106	4
Tieghemella djave	0.590	72	47	2.6	117	5
Tieghemella heckelii	0.610	69	46	2.5	116	5
Tieghemella obovata	0.630	67	46	2.5	115	4
Tieghemella zeyheri	0.770	51	41	2.1	106	4
Toubaouate brevipaniculata	0.542	79	49	2.8	121	5
Trachylobium verrucosum	0.654	64	45	2.4	113	4
Trema guineensis	0.400	109	55	3.5	132	6
Trema orientalis	0.372	118	57	3.7	134	7
Trema spp.	0.400	109	55	3.5	132	6
Trichilia dregeana	0.507	84	50	2.9	123	5
Trichilia gilgiana	0.531	80	49	2.8	121	5
Trichilia heudelotii	0.500	86	51	3.0	124	5
Trichilia prieureana	0.630	67	46	2.5	115	4
Trichilia roka	0.465	92	52	3.1	126	6
Trichoscypha arborea	0.590	72	47	2.6	117	5
Tristania spp.	0.738	55	42	2.2	108	4
Turrala nilotica	0.629	67	46	2.5	115	4
Tylostemon crassifolius	0.520	82	50	2.9	122	5
Tylostemon manni	0.565	75	48	2.7	119	5
Uapaca benguelensis	0.561	76	48	2.7	119	5
Uapaca brieyi	0.626	67	46	2.5	115	4
Uapaca esculenta	0.626	67	46	2.5	115	4
Uapaca guineensis	0.685	60	44	2.3	111	4
Uapaca heudelotii	0.610	69	46	2.5	116	5
Uapaca kirkiana	0.552	77	48	2.7	120	5
Uapaca nitida	0.616	69	46	2.5	116	5
Uapaca paludosa	0.686	60	44	2.3	111	4
Uapaca sansibarica	0.501	86	51	3.0	124	5
Uapaca thouarsii	0.626	67	46	2.5	115	4
Vepris undulata	0.696	59	43	2.3	111	4
Visnea mocanera	0.779	51	41	2.1	106	4
Vitex congolensis	0.446	97	53	3.2	128	6
Vitex fischeri	0.422	102	54	3.4	130	6
Vitex grandifolia	0.398	109	55	3.5	132	6
Vitex micrantha	0.488	88	51	3.0	125	5
Vitex pachyphylla	0.446	97	53	3.2	128	6
Vitex payos	0.603	70	47	2.6	116	5
Warburgia stuhlmannii	0.783	50	41	2.1	106	4
Warburgia ugandensis	0.696	59	43	2.3	111	4
Weinmannia minutiflora	0.626	67	46	2.5	115	4
Weinmannia spp.	0.626	67	46	2.5	115	4
Xanthocercis madagascariensis	0.876	41	38	1.9	101	3
Xanthocercis zambesiaca	0.834	45	39	2.0	103	4
Xeroderris stuhlmanni	0.603	70	47	2.6	116	5
Xylopia aethiopica	0.500	86	51	3.0	124	5
Xylopia chrysophylla	0.700	59	43	2.3	110	4
Xylopia hypolambra	0.630	67	46	2.5	115	4
Xylopia quintasii	0.700	59	43	2.3	110	4
Xylopia rubescens	0.504	85	50	2.9	123	5
Xylopia staudtii	0.360	122	57	3.8	135	7
Xylopia wilwerthii	0.876	41	38	1.9	101	3
Xymalos monospora	0.462	93	52	3.1	127	6
Zanha africana	0.808	48	40	2.0	104	4
Zanha golungensis	0.693	60	43	2.3	111	4
Zanthoxylum capensis[a]	0.750	53	42	2.2	107	4
Zanthoxylum davyi[a]	0.709	58	43	2.3	110	4
Zanthoxylum macrophy[a]	0.922	37	37	1.8	99	3
Ziziphus abyssinica	0.770	51	41	2.1	106	4
Ziziphus mauritiana	0.552	77	48	2.7	120	5
Ziziphus mucronata	0.719	57	43	2.2	109	4

[a] Older scientific name — Newer scientific name
Tarrieta spp. — *Heritiera* spp.
Fagara spp. — *Zanthoxylum* spp.

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Acacia arabica	0.708	58	43	2.3	110	4
Acacia auriculiformis	0.501	86	51	3.0	124	5
Acacia catechu	0.875	41	38	1.9	101	3
Acacia chundra	0.976	32	36	1.7	96	3
Acacia confusa	0.747	54	42	2.2	108	4
Acacia dealbata	0.616	69	46	2.5	116	5
Acacia ferruginea	0.876	41	38	1.9	101	3
Acacia granulosa	0.561	76	48	2.7	119	5
Acacia lenticularis	0.717	57	43	2.2	109	4
Acacia leucophloea	0.725	56	42	2.2	109	4
Acacia modesta	0.845	44	39	1.9	102	4
Acacia pavonima	0.668	62	44	2.4	112	4
Acacia planifrons	0.581	73	47	2.6	118	5
Acacia richii	0.690	60	44	2.3	111	4
Acacia senegal	0.773	51	41	2.1	106	4
Acacia suma	0.764	52	41	2.1	107	4
Acacia tomentosa	0.517	83	50	2.9	122	5
Acer davidii	0.444	97	53	3.2	128	6
Acer decandrum	0.679	61	44	2.3	112	4
Acer mandshuricum	0.614	69	46	2.5	116	5
Acer mono	0.616	69	46	2.5	116	5
Acrocarpus fraxinifolius	0.587	72	47	2.6	118	5
Acronychia pedunculata	0.417	104	54	3.4	130	6
Adenanthera pavonina	0.731	55	42	2.2	109	4
Adina fagifolia	0.610	69	46	2.5	116	5
Adina microcephala	0.751	53	42	2.2	107	4
Adina minutiflora	0.850	44	39	1.9	102	3
Adina pilulifera	0.917	38	37	1.8	99	3
Adinandra acutifolia	0.639	66	45	2.5	114	4
Adinandra fragrans	0.722	56	43	2.2	109	4
Aegele marmelos	0.754	53	42	2.1	107	4
Afzelia cochinchinensis	0.748	54	42	2.2	108	4
Aglaia andamancia	0.713	57	43	2.2	110	4
Aglaia argentea	0.658	63	45	2.4	113	4
Aglaia dasyclada	0.600	71	47	2.6	117	5
Aglaia diffusa	0.699	59	43	2.3	110	4
Aglaia edulis	0.702	59	43	2.3	110	4
Aglaia gigantea	0.657	64	45	2.4	113	4
Aglaia iloilo	0.527	81	49	2.8	122	5
Aglaia llanosiana	0.892	40	38	1.9	100	3
Aglaia maiae	0.597	71	47	2.6	117	5
Aglaia odoratissima	0.717	57	43	2.2	109	4
Aglaia polystachya	0.632	67	45	2.5	115	4
Aglaia roxburghiana	0.783	50	41	2.1	106	4
Aglaia sapindina	0.658	63	45	2.4	113	4
Ailanthus altissima	0.521	82	50	2.9	122	5
Ailanthus excelsa	0.328	135	59	4.0	138	7
Ailanthus glandulosa	0.507	84	50	2.9	123	5
Ailanthus grandis	0.350	126	58	3.8	136	7
Ailanthus malabarica	0.365	120	57	3.7	135	7
Alangium chinense	0.492	87	51	3.0	124	5
Alangium longiflorum	0.648	65	45	2.4	114	4
Alangium meyeri	0.631	67	46	2.5	115	4
Albizia acle[a]	0.573	74	48	2.7	118	5
Albizia amara	0.700	59	43	2.3	110	4
Albizia chinensis	0.297	152	61	4.3	141	8
Albizia julibrissin	0.585	73	47	2.6	118	5
Albizia kalkora	0.482	89	51	3.0	125	6
Albizia lucida	0.571	74	48	2.7	119	5
Albizia moluccana	0.380	115	56	3.6	133	7
Albizia odoratissima	0.632	67	45	2.5	115	4
Albizia procera	0.647	65	45	2.4	114	4
Albizia saman[a]	0.536	80	49	2.8	121	5
Albizia saponaria	0.629	67	46	2.5	115	4
Albizia stipulata	0.380	115	56	3.6	133	7
Albizia thompsoni	0.597	71	47	2.6	117	5
Aleurites moluccana	0.336	132	59	3.9	137	7
Aleurites montana	0.321	139	60	4.1	139	7
Aleurites trisperma	0.427	101	54	3.3	129	6
Alniphyllum fortunei	0.388	112	56	3.6	133	6
Alnus japonica	0.430	100	54	3.3	129	6
Alnus nepalensis	0.365	120	57	3.7	135	7
Alnus sibirica	0.455	95	53	3.2	127	6
Alnus trabeculate	0.437	99	53	3.3	129	6
Alphitonia neo-caledonica	0.561	76	48	2.7	119	5
Alphitonia philippinensis	0.395	110	55	3.5	132	6
Alphitonia zizyphoides	0.500	86	51	3.0	124	5
Alphonsea arborea	0.691	60	44	2.3	111	4
Alseodaphne hainanensis	0.578	74	47	2.7	118	5
Alseodaphne umbaliflora	0.520	82	50	2.9	122	5
Alseodaphne insignis	0.580	73	47	2.6	118	5
Alseodaphne longipes	0.486	88	51	3.0	125	5
Alseodaphne semecarpifolia	0.719	57	43	2.2	109	4
Altingia excelsa	0.739	55	42	2.2	108	4
Altingia chinensis	0.652	64	45	2.4	113	4
Altingia obovata	0.723	56	43	2.2	109	4
Altingia yunnanensis	0.613	69	46	2.5	116	5
Amesiodendron chniense	0.803	48	40	2.0	105	4
Amoora aherniana	0.584	73	47	2.6	118	5
Amoora cucullata	0.555	77	48	2.7	120	5
Amoora macrocarpa	0.545	78	49	2.8	120	5
Amoora rohituka	0.576	74	48	2.7	118	5
Amoora rugbiginosa	0.700	59	43	2.3	110	4

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Amoora wallichii	0.496	86	51	3.0	124	5
Anacolosa densiflora	0.781	50	41	2.1	106	4
Angelesia splendens	0.513	83	50	2.9	123	5
Anisophyllea zeylanica	0.460	94	52	3.2	127	6
Anisoptera aurea	0.532	80	49	2.8	121	5
Anisoptera brunnea	0.540	79	49	2.8	121	5
Anisoptera costata	0.610	69	46	2.5	116	5
Anisoptera glabra	0.475	90	52	3.1	126	6
Anisoptera grossivenia	0.730	56	42	2.2	109	4
Anisoptera laevis	0.490	88	51	3.0	124	5
Anisoptera marginata	0.565	75	48	2.7	119	5
Anisoptera oblonga	0.516	83	50	2.9	123	5
Anisoptera scaphula	0.477	90	52	3.1	125	6
Anisoptera thurifera	0.532	80	49	2.8	121	5
Anneslea fragrens	0.557	76	48	2.7	120	5
Annona squamosa	0.603	70	47	2.6	116	5
Anogeissus acuminata	0.739	55	42	2.2	108	4
Anogeissus latifolia	0.828	46	40	2.0	103	4
Anogeissus pendula	0.795	49	40	2.1	105	4
Anogeissus phillyreaefolia	0.719	57	43	2.2	109	4
Anogeissus sericea	0.738	55	42	2.2	108	4
Anthocephalus cadamba	0.435	99	53	3.3	129	6
Anthocephalus chinensis	0.308	146	60	4.2	140	8
Antiaris toxicana	0.358	123	57	3.8	135	7
Antidesma pleuricum	0.593	71	47	2.6	117	5
Aphanamixis cumingiana	0.581	73	47	2.6	118	5
Aphanamixis perrottetiana	0.511	84	50	2.9	123	5
Aphanamixis polystachya	0.576	74	48	2.7	118	5
Aphananthe aspera	0.525	81	50	2.9	122	5
Aphananthe philippinensis	0.446	97	53	3.2	128	6
Aquilaria agallocha	0.347	127	58	3.9	136	7
Aquilaria sinensis	0.375	117	56	3.7	134	7
Archidendron oblongum	0.356	123	58	3.8	136	7
Ardisia densilepidotula	0.648	65	45	2.4	114	4
Artocarpus altilis	0.339	130	58	3.9	137	7
Artocarpus blancoi	0.422	102	54	3.4	130	6
Artocarpus chaplasha	0.424	102	54	3.3	130	6
Artocarpus elasticus	0.440	98	53	3.3	128	6
Artocarpus heterophyllus	0.505	85	50	2.9	123	5
Artocarpus hirsuta	0.516	83	50	2.9	123	5
Artocarpus integrifolia	0.531	80	49	2.8	121	5
Artocarpus lakoocha	0.530	81	49	2.8	122	5
Artocarpus lanceifolius	0.620	68	46	2.5	115	5
Artocarpus nobilis	0.629	67	46	2.5	115	4
Artocarpus ovata	0.470	91	52	3.1	126	6
Artocarpus rigidus	0.480	89	51	3.1	125	6
Artocarpus scortechinii	0.430	100	54	3.3	129	6
Artocarpus styracifolius	0.522	82	50	2.9	122	5
Artocarpus tonkinensis	0.547	78	49	2.8	120	5
Arytera littoralis	0.733	55	42	2.2	108	4
Atalantia missionis	0.877	41	38	1.9	101	3
Atalantia monophylla	0.773	51	41	2.1	106	4
Averrhoa carambola	0.549	78	49	2.8	120	5
Avicennia marina	0.661	63	45	2.4	113	4
Avicennia officinalis	0.654	64	45	2.4	113	4
Azadirachta indica	0.690	60	44	2.3	111	4
Azadirachta spp.	0.520	82	50	2.9	122	5
Baccaurea sapida	0.590	72	47	2.6	117	5
Balanites triflora	0.629	67	46	2.5	115	4
Balanocarpus heimii	0.847	44	39	1.9	102	4
Balanocarpus spp.	0.760	52	41	2.1	107	4
Barringtonia acutangula	0.488	88	51	3.0	125	5
Barringtonia edulis	0.480	89	51	3.1	125	6
Barringtonia racemosa	0.360	122	57	3.8	135	7
Bassia butyracea	0.632	67	45	2.5	115	4
Bassia latifolia	0.737	55	42	2.2	108	4
Bassia longifolia	0.795	49	40	2.1	105	4
Bassia pasquieri	0.844	44	39	2.0	102	4
Bauhinia foveolata	0.725	56	42	2.2	109	4
Bauhinia malabarica	0.530	81	49	2.8	122	5
Bauhinia purpurea	0.527	81	49	2.8	122	5
Bauhinia racemosa	0.577	74	47	2.7	118	5
Bauhinia retusa	0.657	64	45	2.4	113	4
Bauhinia spp.	0.670	62	44	2.4	112	4
Bauhinia variegata	0.544	78	49	2.8	121	5
Beauprea spathulafolia	0.876	41	38	1.9	101	3
Beilschmiedia intermedia	0.560	76	48	2.7	119	5
Beilschmiedia roxburghiana	0.488	88	51	3.0	125	5
Beilschmiedia tawa	0.580	73	47	2.6	118	5
Berrya ammonilla	0.772	51	41	2.1	106	4
Berrya cordifolia	0.780	50	41	2.1	106	4
Betula albo-sinensis	0.523	82	50	2.9	122	5
Betula alnoides	0.539	79	49	2.8	121	5
Betula costata	0.628	67	46	2.5	115	4
Betula liminifera	0.533	80	49	2.8	121	5
Betula platyphylla	0.515	83	50	2.9	123	5
Bischofia javanica	0.589	72	47	2.6	117	5
Bleasdalea vitiensis	0.430	100	54	3.3	129	6
Blepharistemma	0.589	72	47	2.6	117	5
Blumeodendron tokbrai	0.560	76	48	2.7	119	5
Boehmeria rugulosa	0.539	79	49	2.8	121	5
Bombax ceiba[a]	0.330	135	59	4.0	138	7
Bombax insigne	0.313	143	60	4.1	140	7

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Bombax malabarica[a]	0.330	135	59	4.0	138	7
Bombycidendron vidalianum	0.532	80	49	2.8	121	5
Borassus flabellifer	0.681	61	44	2.3	111	4
Boschia griffithii	0.552	77	48	2.7	120	5
Boswellia serrata	0.498	86	51	3.0	124	5
Bouea burmanica	0.661	63	45	2.4	113	4
Bretschneidera sinensis	0.537	80	49	2.8	121	5
Bridelia balansae	0.627	67	46	2.5	115	4
Bridelia retusa	0.499	86	51	3.0	124	5
Bridelia squamosa	0.500	86	51	3.0	124	5
Broussonetia papyrifera	0.321	139	60	4.1	139	7
Brownlowia elata	0.573	74	48	2.7	118	5
Bruguiera caryophylloides	0.725	56	42	2.2	109	4
Bruguiera eriopetala	0.733	55	42	2.2	108	4
Bruguiera gymnorrhiza	0.741	54	42	2.2	108	4
Bruguiera parviflora	0.825	46	40	2.0	103	4
Bruguiera sexangula	0.808	48	40	2.0	104	4
Buchanania angustifolia	0.517	83	50	2.9	122	5
Buchanania lancifolia	0.539	79	49	2.8	121	5
Buchanania lanzan	0.450	96	53	3.2	128	6
Buchanania latifolia	0.458	94	52	3.2	127	6
Buchanania spp.	0.322	138	59	4.1	139	7
Bucklandia populnea	0.552	77	48	2.7	120	5
Burckella spp.	0.561	76	48	2.7	119	5
Burreavella wakere	0.876	41	38	1.9	101	3
Burretiodendron hsienmu	0.880	41	38	1.9	101	3
Bursera serrata	0.590	72	47	2.6	117	5
Butea frondosa	0.513	83	50	2.9	123	5
Butea monosperma	0.480	89	51	3.1	125	6
Caesalpinia sappan	0.837	45	39	2.0	103	4
Callicarpa tomentosa	0.462	93	52	3.1	127	6
Callistemon lanceolatus	0.706	58	43	2.3	110	4
Calophyllum amoenum	0.517	83	50	2.9	122	5
Calophyllum blancoi	0.510	84	50	2.9	123	5
Calophyllum curtisii	0.510	84	50	2.9	123	5
Calophyllum inophyllum	0.620	68	46	2.5	115	5
Calophyllum kunstleri	0.549	78	49	2.8	120	5
Calophyllum montanum	0.696	59	43	2.3	111	4
Calophyllum neo-ebudicum	0.500	86	51	3.0	124	5
Calophyllum obliquinervium	0.580	73	47	2.6	118	5
Calophyllum polyanthum	0.549	78	49	2.8	120	5
Calophyllum pulcherrimum	0.770	51	41	2.1	106	4
Calophyllum retusum	0.450	96	53	3.2	128	6
Calophyllum saigonensis	0.598	71	47	2.6	117	5
Calophyllum soulatri	0.540	79	49	2.8	121	5
Calophyllum spectabile	0.533	80	49	2.8	121	5
Calophyllum tomentosum	0.516	83	50	2.9	123	5
Calophyllum venustum	0.549	78	49	2.8	120	5
Callophyllum vitiense	0.500	86	51	3.0	124	5
Calophyllum wightianum	0.569	75	48	2.7	119	5
Calycarpa arborea	0.530	81	49	2.8	122	5
Campnosperma auriculata	0.350	126	58	3.8	136	7
Campnosperma brevipetiolata	0.313	143	60	4.1	140	7
Campnosperma macrophylla	0.405	107	55	3.5	131	6
Campnosperma spp.	0.356	123	58	3.8	136	7
Campthotheca acuminata	0.412	105	55	3.4	131	6
Cananga odorata	0.310	145	60	4.2	140	8
Canarium album	0.559	76	48	2.7	119	5
Canarium asperum	0.605	70	46	2.6	116	5
Canarium bengalense	0.557	76	48	2.7	120	5
Canarium calophyllum	0.500	86	51	3.0	124	5
Canarium copaliferum	0.632	67	45	2.5	115	4
Canarium hirsutum	0.397	109	55	3.5	132	6
Canarium luzonicum	0.489	88	51	3.0	125	5
Canarium nigrum	0.513	83	50	2.9	123	5
Canarium pimela	0.560	76	48	2.7	119	5
Canarium rufum	0.470	91	52	3.1	126	6
Canarium salomonense	0.446	97	53	3.2	128	6
Canarium sikkimense	0.257	180	64	4.7	145	8
Canarium spp.	0.503	85	50	3.0	123	5
Canarium strictum	0.532	80	49	2.8	121	5
Canarium vanikoroense	0.540	79	49	2.8	121	5
Canarium vitense	0.540	79	49	2.8	121	5
Canarium vrieseanum	0.562	76	48	2.7	119	5
Canarium zeylanicum	0.372	118	57	3.7	134	7
Canthium dicoccum	0.750	53	42	2.2	107	4
Canthium didymum	0.699	59	43	2.3	110	4
Canthium monstrosum	0.422	102	54	3.4	130	6
Cantleya corniculata	1.040	27	35	1.6	93	3
Carallia brachiata	0.772	51	41	2.1	106	4
Carallia calycina	0.660	63	45	2.4	113	4
Carallia integerrima	0.603	70	47	2.6	116	5
Carallia lucida	0.624	68	46	2.5	115	5
Carapa borneensis	0.530	81	49	2.8	122	5
Carapa granatum	0.706	58	43	2.3	110	4
Carapa mollucensis	0.670	62	44	2.4	112	4
Carapa obovata	0.563	76	48	2.7	119	5
Careya arborea	0.644	65	45	2.4	114	4

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Carpinus chinensis	0.574	74	48	2.7	118	5
Carpinus fangiana	0.561	76	48	2.7	119	5
Carpinus londoniana	0.528	81	49	2.8	122	5
Carya cathayensis	0.596	71	47	2.6	117	5
Caryota urens	0.590	72	47	2.6	117	5
Casaeria graveolens	0.578	74	47	2.7	118	5
Cassia fistula	0.728	56	42	2.2	109	4
Cassia javanica	0.685	60	44	2.3	111	4
Cassia marginata	0.770	51	41	2.1	106	4
Cassia nodosa	0.517	83	50	2.9	122	5
Cassia siamea	0.840	45	39	2.0	103	4
Cassia spectabilis	0.484	89	51	3.0	125	5
Cassia timoriensis	0.744	54	42	2.2	108	4
Cassia tonkinensis	0.564	75	48	2.7	119	5
Castanea henryi	0.536	80	49	2.8	121	5
Castanea mollissima	0.565	75	48	2.7	119	5
Castanea seguinii	0.506	85	50	2.9	123	5
Castanopsis argentea	0.730	56	42	2.2	109	4
Castanopsis brevispina	0.539	79	49	2.8	121	5
Castanopsis carlesii	0.477	90	52	3.1	125	6
Castanopsis delavayi	0.650	64	45	2.4	113	4
Castanopsis eyrei	0.486	88	51	3.0	125	5
Castanopsis fabri	0.483	89	51	3.0	125	5
Castanopsis fargesii	0.508	84	50	2.9	123	5
Castanopsis fissa	0.421	103	54	3.4	130	6
Castanopsis fordii	0.450	96	53	3.2	128	6
Castanopsis hainanensis	0.634	66	45	2.5	114	4
Castanopsis hystrix	0.550	78	49	2.8	120	5
Castanopsis indica	0.578	74	47	2.7	118	5
Castanopsis lamontii	0.469	92	52	3.1	126	6
Castanopsis magacarpa	0.719	57	43	2.2	109	4
Castanopsis philippensis	0.510	84	50	2.9	123	5
Castanopsis sclerophylla	0.486	88	51	3.0	125	5
Castanopsis tibetana	0.566	75	48	2.7	119	5
Castanopsis tribuloides	0.666	63	44	2.4	112	4
Catalpa duclouxii	0.392	111	56	3.5	132	6
Cedrela microcarpa	0.401	108	55	3.5	132	6
Cedrela multijuga	0.475	90	52	3.1	126	6
Cedrela serrata	0.474	91	52	3.1	126	6
Celtis luzonica	0.488	88	51	3.0	125	5
Celtis philippinensis	0.604	70	46	2.6	116	5
Celtis sinensis	0.552	77	48	2.7	120	5
Celtis spp.	0.422	102	54	3.4	130	6
Celtis yunnanrnsis	0.517	83	50	2.9	122	5
Cerbera manghas	0.283	161	62	4.4	142	8
Cercidiphyllum japonicum	0.417	104	54	3.4	130	6
Ceriops roxburghiana	0.719	57	43	2.2	109	4
Ceriops tagal	0.803	48	40	2.0	105	4
Chailletia gelonioides	0.541	79	49	2.8	121	5
Chisocheton cumingianus	0.520	82	50	2.9	122	5
Chisocheton divergens	0.517	83	50	2.9	122	5
Chisocheton grandiflorus	0.645	65	45	2.4	114	4
Chisocheton paniculatus	0.533	80	49	2.8	121	5
Chisocheton pentandrus	0.518	83	50	2.9	122	5
Chisocheton schvmanii	0.501	86	51	3.0	124	5
Choerospondias axillaris	0.474	91	52	3.1	126	6
Chosenia macrolepis	0.320	139	60	4.1	139	7
Chukrasia velutina	0.680	61	44	2.3	112	4
Cinnamomum austro-sinense	0.440	98	53	3.3	128	6
Cinnamomum cecicodaphne	0.475	90	52	3.1	126	6
Cinnamomum densiflora	0.444	97	53	3.2	128	6
Cinnamomum granduliferum	0.475	90	52	3.1	126	6
Cinnamomum iners	0.508	84	50	2.9	123	5
Cinnamomum inunctum	0.573	74	48	2.7	118	5
Cinnamomum mercadoi	0.650	64	45	2.4	113	4
Cinnamomum obtusifolium	0.590	72	47	2.6	117	5
Cinnamomum parthenoxylon	0.630	67	46	2.5	115	4
Cinnamomum porrectum	0.411	105	55	3.4	131	6
Cinnamomum tamala	0.488	88	51	3.0	125	5
Cinnamomum tsangii	0.447	96	53	3.2	128	6
Cinnamomum zeylanicum	0.545	78	49	2.8	120	5
Citrus aurantium	0.581	73	47	2.6	118	5
Citrus decumana	0.533	80	49	2.8	121	5
Citrus grandis	0.592	72	47	2.6	117	5
Citrus medica	0.605	70	46	2.6	116	5
Cleidion spiciflorum	0.495	87	51	3.0	124	5
Cleistanthus collinus	0.880	41	38	1.9	101	3
Cleistocalyx operculatus	0.664	63	44	2.4	113	4
Cleistocalyx spp.	0.760	52	41	2.1	107	4
Cleyera japonica	0.558	76	48	2.7	120	5
Coccoceras plicatum	0.462	93	52	3.1	127	6
Cochlospermum religiosum	0.270	170	63	4.5	144	8
Coelestegia spp.	0.561	76	48	2.7	119	5
Colona serratifolia	0.389	112	56	3.6	133	6
Combretocarpus rotundatus	0.760	52	41	2.1	107	4
Combretodendron quadrialatum	0.570	75	48	2.7	119	5
Cordia dichotoma	0.436	99	53	3.3	129	6

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Cordia fragrantissima	0.654	64	45	2.4	113	4
Cordia subcordata	0.640	66	45	2.4	114	4
Cordia spp.	0.530	81	49	2.8	122	5
Cornus controversa	0.565	75	48	2.7	119	5
Cotoneaster bacillaris	0.656	64	45	2.4	113	4
Cotylelobium burckii	1.010	30	35	1.7	95	3
Cotylelobium malayanum	0.970	33	36	1.7	96	3
Cotylelobium melanoxylon	0.990	31	36	1.7	95	3
Crataeva religiosa	0.530	81	49	2.8	122	5
Crataeva roxburghii	0.526	81	49	2.9	122	5
Cratoxylon formosum	0.682	61	44	2.3	111	4
Cratoxylum ligustrinum	0.745	54	42	2.2	108	4
Cratoxylon neriifolium	0.706	58	43	2.3	110	4
Crossostylis spp.	0.501	86	51	3.0	124	5
Croton oblongifolius	0.578	74	47	2.7	118	5
Crypteronia paniculata	0.513	83	50	2.9	123	5
Cryptocarya liebertiana	0.497	86	51	3.0	124	5
Cryptocarya spp.	0.590	72	47	2.6	117	5
Ctenolophon parvifolius	0.760	52	41	2.1	107	4
Ctenolophon spp.	0.719	57	43	2.2	109	4
Cubilia cubili	0.486	88	51	3.0	125	5
Cudrania tricuspidata	0.936	36	37	1.8	98	3
Cullenia ceylanica	0.510	84	50	2.9	123	5
Cullenia excelsa	0.532	80	49	2.8	121	5
Cupaniopsis apiocarpa	0.696	59	43	2.3	111	4
Cyanodaphne cuneata	0.922	37	37	1.8	99	3
Cyathocalyx maingayi	0.500	86	51	3.0	124	5
Cyathocalyx martabanicus	0.709	58	43	2.3	110	4
Cyclobalanopsis bambusaefolia[a]	0.810	47	40	2.0	104	4
Cyclobalanopsis blakei[a]	0.796	49	40	2.0	105	4
Cyclobalanopsis chungii[a]	0.780	50	41	2.1	106	4
Cyclobalanopsis delavayi[a]	0.730	56	42	2.2	109	4
Cyclobalanopsis fleuryi[a]	0.863	42	39	1.9	101	3
Cyclobalanopsis glauca[a]	0.694	59	43	2.3	111	4
Cyclobalanopsis glaucoides[a]	0.738	55	42	2.2	108	4
Cyclobalanopsis myrsinaefolia[a]	0.721	56	43	2.2	109	4
Cyclobalanopsis patelliformis[a]	0.839	45	39	2.0	103	4
Cydonia oblonga	0.610	69	46	2.5	116	5
Cydonia vulgaris	0.610	69	46	2.5	116	5
Cynometra insularis	0.760	52	41	2.1	107	4
Cynometra polyandra	0.757	53	42	2.1	107	4
Cynometra ramiflora	0.697	59	43	2.3	111	4
Cynometra spp.	0.800	48	40	2.0	105	4
Dacryodes rastrata	0.660	63	45	2.4	113	4
Dacryodes rugose	0.840	45	39	2.0	103	4
Dacroydes spp.	0.610	69	46	2.5	116	5
Dactylocladus stenostachys	0.530	81	49	2.8	122	5
Dalbergia assamica	0.452	95	53	3.2	127	6
Dalbergia balanse	0.538	79	49	2.8	121	5
Dalbergia bariensis	0.875	41	38	1.9	101	3
Dalbergia cana	0.593	71	47	2.6	117	5
Dalbergia cochinchinensis	0.922	37	37	1.8	99	3
Dalbergia cultrata	0.766	52	41	2.1	107	4
Dalbergia fusia	0.805	48	40	2.0	104	4
Dalbergia hainanensis	0.710	58	43	2.3	110	4
Dalbergia hipeana	0.733	55	42	2.2	108	4
Dalbergia kurzii	0.661	63	45	2.4	113	4
Dalbergia lanceolaria	0.596	71	47	2.6	117	5
Dalbergia obtusifolia	0.685	60	44	2.3	111	4
Dalbergia odorifera	0.890	40	38	1.9	100	3
Dalbergia oliveri	0.787	50	41	2.1	105	4
Dalbergia ovata	0.621	68	46	2.5	115	5
Dalbergia paniculata	0.640	66	45	2.4	114	4
Dalbergia rimosa	0.590	72	47	2.6	117	5
Dalbergia sissoo	0.678	61	44	2.3	112	4
Daphniphyllum atrobadium	0.543	79	49	2.8	121	5
Daphniphyllum glaucescens	0.536	80	49	2.8	121	5
Davidia involucrata	0.411	105	55	3.4	131	6
Degeneria vitiensis	0.350	126	58	3.8	136	7
Dehaasia caesis	0.820	46	40	2.0	104	4
Dehaasia cuneata	0.770	51	41	2.1	106	4
Dehaasia nigrescens	0.510	84	50	2.9	123	5
Dehaasia triandra	0.643	65	45	2.4	114	4
Delonix regia	0.479	90	51	3.1	125	6
Derris robusta	0.617	68	46	2.5	116	5
Dichopsis polyantha	0.594	71	47	2.6	117	5
Dicrostachys cinera	1.103	22	34	1.6	91	3
Diplodiscus paniculatus	0.632	67	45	2.5	115	4
Diploknema butyracea	0.632	67	45	2.5	115	4
Distylium racemosum	0.731	55	42	2.2	109	4
Docynia indica	0.685	60	44	2.3	111	4
Dodonaea viscosa	0.994	31	36	1.7	95	3
Dolichandrone serrulata	0.424	102	54	3.3	130	6
Dolichandrone stipulata	0.475	90	52	3.1	126	6
Doona zeylanica	0.385	113	56	3.6	133	6
Dracontomelon edule	0.459	94	52	3.2	127	6

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Dracontomelon mangiferum	0.580	73	47	2.6	118	5
Dracontomelon spp.	0.500	86	51	3.0	124	5
Drimycarpus racemosus	0.545	78	49	2.8	120	5
Dryobalanops aromatica	0.730	56	42	2.2	109	4
Dryobalanops beccarii	0.680	61	44	2.3	112	4
Dryobalanops fusca	0.840	45	39	2.0	103	4
Dryobalanops keithii	0.600	71	47	2.6	117	5
Dryobalanops oblongifolia	0.670	62	44	2.4	112	4
Dryobalanops rappa	0.820	46	40	2.0	104	4
Drypetes bordenii	0.754	53	42	2.1	107	4
Drypetes hainanensis	0.790	49	41	2.1	105	4
Duabanga grandifolia	0.376	116	56	3.6	134	7
Duboisia myoporoides	0.321	139	60	4.1	139	7
Durio carinatus	0.580	73	47	2.6	118	5
Durio oxleyanus	0.555	77	48	2.7	120	5
Durio zibethinus	0.502	85	50	3.0	124	5
Durio spp.	0.530	81	49	2.8	122	5
Dyera laxiflora	0.295	153	61	4.3	141	8
Dyera lowii	0.360	122	57	3.8	135	7
Dysoxylum altissimum	0.424	102	54	3.3	130	6
Dysoxylum binectariferum	0.569	75	48	2.7	119	5
Dysoxylum decandrum	0.507	84	50	2.9	123	5
Dysoxylum densiflorum	0.710	58	43	2.3	110	4
Dysoxylum euphlebium	0.637	66	45	2.5	114	4
Dysoxylum glandulosum	0.590	72	47	2.6	117	5
Dysoxylum grande	0.616	69	46	2.5	116	5
Dysoxylum hamiltonii	0.476	90	52	3.1	126	6
Dysoxylum loureirii	0.715	57	43	2.2	109	4
Dysoxylum macranthum	0.696	59	43	2.3	111	4
Dysoxylum malabaricum	0.581	73	47	2.6	118	5
Dysoxylum purpureum	0.701	59	43	2.3	110	4
Dysoxylum quercifolium	0.490	88	51	3.0	124	5
Dysoxylum richii	0.490	88	51	3.0	124	5
Echinocarpus assamicus	0.297	152	61	4.3	141	8
Echinocarpus dasycarpus	0.403	108	55	3.5	131	6
Echinocarpus sigun	0.421	103	54	3.4	130	6
Ehretia acuminata	0.526	81	49	2.9	122	5
Ehretia thyrisiflora	0.533	80	49	2.8	121	5
Elaeagnus angustifolia	0.431	100	54	3.3	129	6
Elaeocarpus chinensis	0.474	91	52	3.1	126	6
Elaeocarpus ferrugineus	0.581	73	47	2.6	118	5
Elaeocarpus floribundus	0.557	76	48	2.7	120	5
Elaeocarpus ganitrus	0.347	127	58	3.9	136	7
Elaeocarpus lacunosus	0.437	99	53	3.3	129	6
Elaeocarpus lanceaefolius	0.456	94	52	3.2	127	6
Elaeocarpus robustus	0.469	92	52	3.1	126	6
Elaeocarpus rugosus	0.453	95	53	3.2	127	6
Elaeocarpus serratus	0.400	109	55	3.5	132	6
Elaeocarpus stapfianus	0.453	95	53	3.2	127	6
Elaeocarpus subglobosus	0.558	76	48	2.7	120	5
Elaeocarpus sylvestris	0.464	93	52	3.1	126	6
Elaeocarpus tuberculatus	0.403	108	55	3.5	131	6
Elaeocarpus varunna	0.349	126	58	3.8	136	7
Elaeocarpus wallichii	0.541	79	49	2.8	121	5
Elaeodendron glaucum	0.659	63	45	2.4	113	4
Elaeodendron roxburghii	0.693	60	43	2.3	111	4
Elateriospermum tapos	0.740	54	42	2.2	108	4
Elmelliria mollis	0.450	96	53	3.2	128	6
Elmelliria ovalis	0.430	100	54	3.3	129	6
Emblica officinalis	0.800	48	40	2.0	105	4
Endiandra hainanensis	0.626	67	46	2.5	115	4
Endiandra laxiflora	0.536	80	49	2.8	121	5
Engelhardtia roxburghiana	0.490	88	51	3.0	124	5
Engelhardtia spicata	0.460	94	52	3.2	127	6
Engelhardtia chrysolepsis	0.539	79	49	2.8	121	5
Epicharis cumingiana	0.729	56	42	2.2	109	4
Erinocarpus nimmonii	0.589	72	47	2.6	117	5
Eriobotrya bengalensis	0.709	58	43	2.3	110	4
Eriobotrya deflexa	0.772	51	41	2.1	106	4
Eriobotrya japonica	0.757	53	42	2.1	107	4
Eriobotrya petiolata	0.665	63	44	2.4	112	4
Erioglossum rubiginosum	0.765	52	41	2.1	107	4
Eriolaena candollei	0.676	61	44	2.3	112	4
Erythrina fusca	0.254	183	64	4.7	145	9
Erythrina indica	0.313	143	60	4.1	140	7
Erythrina lithosperma	0.283	161	62	4.4	142	8
Erythrina stricta	0.301	150	61	4.2	141	8
Erythrina suberosa	0.320	139	60	4.1	139	7
Erythrina subumbrans	0.236	199	65	4.9	147	9
Erythrophleum densiflorus	0.687	60	44	2.3	111	4
Erythrophleum fordii	0.804	48	40	2.0	104	4
Eugenia formosa	0.795	49	40	2.1	105	4
Eugenia gardneri	0.758	53	42	2.1	107	4
Eugenia griffithii	0.660	63	45	2.4	113	4
Eugenia jambolana	0.647	65	45	2.4	114	4
Eugenia kurzii	0.731	55	42	2.2	109	4
Eugenia spp.	0.650	64	45	2.4	113	4
Eugenia sylvestris	0.642	65	45	2.4	114	4
Euodia meliaefolia	0.383	114	56	3.6	133	7
Euphoria longan	0.913	38	37	1.8	99	3
Euptelea pleiospermum	0.534	80	49	2.8	121	5
Euroshinus viellardii	0.501	86	51	3.0	124	5
Eurya japonica	0.590	72	47	2.6	117	5

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Evodia aromatica	0.430	100	54	3.3	129	6
Evodia fraxinifolia	0.277	165	62	4.5	143	8
Evodia meliaefolia	0.323	138	59	4.0	139	7
Evodia roxburghiana	0.365	120	57	3.7	135	7
Exbucklandia populnea[a]	0.610	69	46	2.5	116	5
Exbucklandia tonkinensis[a]	0.525	81	50	2.9	122	5
Excoecaria agallocha	0.334	133	59	4.0	138	7
Fagraea fragans	0.810	47	40	2.0	104	4
Fagraea gracilipes	0.840	45	39	2.0	103	4
Fagraea sogroria	0.660	63	45	2.4	113	4
Fagraea spp.	0.730	56	42	2.2	109	4
Fagus engleriana	0.668	62	44	2.4	112	4
Fagus longipetiolata	0.610	69	46	2.5	116	5
Feronia elephantum	0.633	66	45	2.5	114	4
Ficus altissima	0.495	87	51	3.0	124	5
Ficus bengalensis	0.475	90	52	3.1	126	6
Ficus benjamina	0.649	65	45	2.4	113	4
Ficus botryocarpa	0.430	100	54	3.3	129	6
Ficus cunia	0.295	153	61	4.3	141	8
Ficus elastica	0.565	75	48	2.7	119	5
Ficus glomerata	0.398	109	55	3.5	132	6
Ficus harmandii	0.363	121	57	3.7	135	7
Ficus hispida	0.398	109	55	3.5	132	6
Ficus infrctoria	0.449	96	53	3.2	128	6
Ficus minahassae	0.419	103	54	3.4	130	6
Ficus religiosa	0.462	93	52	3.1	127	6
Ficus retusa	0.526	81	49	2.9	122	5
Ficus roxburghii	0.449	96	53	3.2	128	6
Ficus rumphii	0.360	122	57	3.8	135	7
Ficus tsiela	0.449	96	53	3.2	128	6
Ficus varietata	0.282	161	62	4.4	143	8
Filicium decipiens	0.805	48	40	2.0	104	4
Firmiana simplex	0.417	104	54	3.4	130	6
Flacourtia cataphracta	0.781	50	41	2.1	106	4
Flindersia ifflaiano	0.779	51	41	2.1	106	4
Flindersia laevicarpa	0.561	76	48	2.7	119	5
Flindersia spp.	0.561	76	48	2.7	119	5
Fokienia kwai	0.442	98	53	3.2	128	6
Fraxinus chinensis	0.536	80	49	2.8	121	5
Fraxinus excelsior	0.600	71	47	2.6	117	5
Fraxinus griffithii	0.561	76	48	2.7	119	5
Fraxinus mandshurica	0.564	75	48	2.7	119	5
Fraxinus micrantha	0.605	70	46	2.6	116	5
Ganophyllum falcatum	0.626	67	46	2.5	115	4
Ganua motleyana	0.420	103	54	3.4	130	6
Ganua obovatifolia	0.590	72	47	2.6	117	5
Garcinia oblongifolia	0.662	63	44	2.4	113	4
Garcinia paucinervia	0.845	44	39	1.9	102	4
Gardenia coronaria	0.654	64	45	2.4	113	4
Gardenia erythroclada	0.680	61	44	2.3	112	4
Gardenia gummifera	0.607	70	46	2.6	116	5
Gardenia latifolia	0.635	66	45	2.5	114	4
Gardenia obtusifolia	0.719	57	43	2.2	109	4
Gardenia turgida	0.636	66	45	2.5	114	4
Garuga floribunda	0.562	76	48	2.7	119	5
Garuga gamblei	0.457	94	52	3.2	127	6
Garuga pinnata	0.511	84	50	2.9	123	5
Geijera salicifolia	0.876	41	38	1.9	101	3
Geissocs spp.	0.501	86	51	3.0	124	5
Gelonium multiflorus	0.616	69	46	2.5	116	5
Gironniera sinensis	0.478	90	51	3.1	125	6
Gironniera subaequalis	0.439	98	53	3.3	128	6
Gleditsia sinensis	0.590	72	47	2.6	117	5
Glochidion puberum	0.580	73	47	2.6	118	5
Gluta renghas	0.690	60	44	2.3	111	4
Gluta spp.	0.630	67	46	2.5	115	4
Gluta tavoyana	0.725	56	42	2.2	109	4
Gluta tranvancorica	0.621	68	46	2.5	115	5
Glycosmis citrifolia	0.478	90	51	3.1	125	6
Glycosmis pentaphylla	0.541	79	49	2.8	121	5
Gmelina hainanensis	0.650	64	45	2.4	113	4
Gmelina moluccana	0.398	109	55	3.5	132	6
Gmelina spp.	0.446	97	53	3.2	128	6
Gmelina vitiensis	0.540	79	49	2.8	121	5
Gnetum gnemon	0.570	75	48	2.7	119	5
Gonocaryum calleryanum	0.639	66	45	2.5	114	4
Gonystylus macrophyllus	0.528	81	49	2.8	122	5
Gonystylus punctatus	0.570	75	48	2.7	119	5
Gordonia hainanensis	0.667	62	44	2.4	112	4
Gordonia obtusa	0.513	83	50	2.9	123	5
Grewia asiatica	0.629	67	46	2.5	115	4
Grewia elastica	0.606	70	46	2.6	116	5
Grewia humilis	0.565	75	48	2.7	119	5
Grewia laevigata	0.453	95	53	3.2	127	6
Grewia microcos	0.577	74	47	2.7	118	5
Grewia multiflora	0.462	93	52	3.1	127	6
Grewia oppositifolia	0.683	61	44	2.3	111	4
Grewia tiliaefolia	0.651	64	45	2.4	113	4
Grewia vestita	0.606	70	46	2.6	116	5
Gymnocladus burmanicus	0.413	105	55	3.4	131	6
Halfordia spp.	0.876	41	38	1.9	101	3
Hardwickia binata	0.733	55	42	2.2	108	4
Hardwickia pinnata	0.528	81	49	2.8	122	5
Harpullia arborea	0.623	68	46	2.5	115	5

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Harpullia cupaniodes	0.549	78	49	2.8	120	5
Harpullia imbricata	0.526	81	49	2.9	122	5
Harpullia pendula	0.626	67	46	2.5	115	4
Harrisonia bennettii (syn. *H. perforata*)	0.744	54	42	2.2	108	4
Hartia kwangtungensis	0.671	62	44	2.4	112	4
Helicia erratica	0.578	74	47	2.7	118	5
Helicia milagirica	0.617	68	46	2.5	116	5
Helicia obvatifolia	0.595	71	47	2.6	117	5
Hemicyclia sepiara	0.757	53	42	2.1	107	4
Heteropanax fragrans	0.334	133	59	4.0	138	7
Heterophragma adenophyllum	0.726	56	42	2.2	109	4
Heterophragma roxburghii	0.525	81	50	2.9	122	5
Heterophragma sulfuerum	0.552	77	48	2.7	120	5
Heynea trijuga	0.512	84	50	2.9	123	5
Hibiscus macrophyllus	0.488	88	51	3.0	125	5
Hibiscus tiliaceus	0.571	74	48	2.7	119	5
Holarrhena antidysenterica	0.445	97	53	3.2	128	6
Holigarna arnottiana	0.313	143	60	4.1	140	7
Holigarna beddomei	0.365	120	57	3.7	135	7
Holigarna grahamii	0.413	105	55	3.4	131	6
Holigarna helferi	0.365	120	57	3.7	135	7
Holigarna longifolia	0.337	131	59	3.9	137	7
Holoptelea integrifolia	0.498	86	51	3.0	124	5
Homalanthus populneus	0.381	115	56	3.6	133	7
Homalium bhamoense	0.685	60	44	2.3	111	4
Homalium foetidum	0.910	38	38	1.8	99	3
Homalium grandiflorum	0.805	48	40	2.0	104	4
Homalium hainanense	0.675	62	44	2.3	112	4
Homalium longifolium	0.790	49	41	2.1	105	4
Homalium minutiflorum	0.613	69	46	2.5	116	5
Homalium tomentosum	0.755	53	42	2.1	107	4
Homalium spp.	0.760	52	41	2.1	107	4
Homalium zeylanicum	0.725	56	42	2.2	109	4
Hopea hainan	0.970	33	36	1.7	96	3
Hopea mollissima	0.749	54	42	2.2	108	4
Horsfieldia spp.	0.398	109	55	3.5	132	6
Hovenia delcis	0.538	79	49	2.8	121	5
Humboldtia decurrens	0.581	73	47	2.6	118	5
Humboldtia vahliana	0.437	99	53	3.3	129	6
Huodendron biaristatum	0.594	71	47	2.6	117	5
Hydnocarpus alpinia	0.635	66	45	2.5	114	4
Hydnocarpus anthelminthica	0.517	83	50	2.9	122	5
Hydnocarpus wightiana	0.457	94	52	3.2	127	6
Hydnocarpus woodii	0.667	62	44	2.4	112	4
Hymenodictyon excelsum	0.418	104	54	3.4	130	6
Idesia polycarpa	0.424	102	54	3.3	130	6
Ilex chinensis	0.587	72	47	2.6	118	5
Ilex denticulala	0.497	86	51	3.0	124	5
Ilex dipyrena	0.565	75	48	2.7	119	5
Ilex godajam	0.557	76	48	2.7	120	5
Iiex hookeri	0.645	65	45	2.4	114	4
Ilex insignis	0.509	84	50	2.9	123	5
Ilex odorata	0.413	105	55	3.4	131	6
Ilex plelobrachiata	0.610	69	46	2.5	116	5
Ilex sterrophylla	0.653	64	45	2.4	113	4
Ilex sulcata	0.605	70	46	2.6	116	5
Ilex venulosa	0.501	86	51	3.0	124	5
Ilex wightiana	0.453	95	53	3.2	127	6
Illicium verum	0.585	73	47	2.6	118	5
Irvingia malayana	0.840	45	39	2.0	103	4
Irvingia oliveri	0.773	51	41	2.1	106	4
Ixonanthes chinensis	0.645	65	45	2.4	114	4
Ixonanthes khasiana	0.589	72	47	2.6	117	5
Jackia ornata	0.834	45	39	2.0	103	4
Juglans fallax	0.468	92	52	3.1	126	6
Juglans mandshurica	0.424	102	54	3.3	130	6
Kalopanax septemlobus	0.422	102	54	3.4	130	6
Kandelia candel	0.557	76	48	2.7	120	5
Kandelia rheedeii	0.488	88	51	3.0	125	5
Kayea assamica	0.713	57	43	2.2	110	4
Kayea floribunda	0.665	63	44	2.4	112	4
Kayea garciae	0.661	63	45	2.4	113	4
Kayea kinstleri	0.709	58	43	2.3	110	4
Kermadecia sinuata	0.501	86	51	3.0	124	5
Keteleeria davidiana	0.780	50	41	2.1	106	4
Kingiodendron alternifolium	0.480	89	51	3.1	125	6
Kleinhovia hospita	0.364	120	57	3.7	135	7
Knema conferta	0.573	74	48	2.7	118	5
Knema spp.	0.530	81	49	2.8	122	5
Kokoona filiformis	0.749	54	42	2.2	108	4
Kokoona littoralis	0.750	53	42	2.2	107	4
Kokoona spp.	0.626	67	46	2.5	115	4
Koompassia borneensis	1.013	29	35	1.7	94	3
Koompassia excelsa	0.743	54	42	2.2	108	4
Koordersiodendron	0.720	57	43	2.2	109	4
Kurrimia paniculata	0.505	85	50	2.9	123	5
Kurrimia pulcherrima	0.541	79	49	2.8	121	5
Kydia calycina	0.720	57	43	2.2	109	4
Lagerstroemia divers	0.649	65	45	2.4	113	4
Lagerstroemia flos-reginae	0.518	83	50	2.9	122	5

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Lagerstroemia hypoleuca	0.517	83	50	2.9	122	5
Lagerstroemia lanceolata	0.504	85	50	2.9	123	5
Lagerstroemia microcarpa	0.603	70	47	2.6	116	5
Lagerstroemia parviflora	0.620	68	46	2.5	115	5
Lagerstroemia piriformis	0.487	88	51	3.0	125	5
Lagerstroemia speciosa	0.612	69	46	2.5	116	5
Lagerstroemia tomentosa	0.546	78	49	2.8	120	5
Lagerstroemia villosa	0.654	64	45	2.4	113	4
Lannea coromandelica	0.497	86	51	3.0	124	5
Lannea grandis	0.497	86	51	3.0	124	5
Lansium anamallayanum	0.789	50	41	2.1	105	4
Lansium decandrum	0.525	81	50	2.9	122	5
Lepisanthes tetraphylla	0.813	47	40	2.0	104	4
Letsea vang	0.615	69	46	2.5	116	5
Leucaena leucocephala	0.728	56	42	2.2	109	4
Ligustrum lucidum	0.542	79	49	2.8	121	5
Limonia acidissima	0.795	49	40	2.1	105	4
Lindera assamica	0.488	88	51	3.0	125	5
Lindera kwangtungensis	0.612	69	46	2.5	116	5
Linociera ramiflora	0.798	49	40	2.0	105	4
Liquidambar acalycina	0.624	68	46	2.5	115	5
Liquidambar formosama	0.699	59	43	2.3	110	4
Liriodendron chinense	0.453	95	53	3.2	127	6
Litchi chinensis	0.857	43	39	1.9	102	3
Litchi philippinensis	0.872	42	38	1.9	101	3
Lithocarpus amygdalifolius	0.772	51	41	2.1	106	4
Lithocarpus celebica	0.680	61	44	2.3	112	4
Lithocarpus chrysocomus	0.666	63	44	2.4	112	4
Lithocarpus dealbatus	0.700	59	43	2.3	110	4
Lithocarpus glaber	0.535	80	49	2.8	121	5
Lithocarpus handelianus	0.726	56	42	2.2	109	4
Lithocarpus hystrix	0.626	67	46	2.5	115	4
Lithocarpus llanosii	0.630	67	46	2.5	115	4
Lithocarpus longipedicellatus	0.580	73	47	2.6	118	5
Lithocarpus soleriana	0.630	67	46	2.5	115	4
Lithocarpus sundaicus	0.580	73	47	2.6	118	5
Litsea baviensis	0.449	96	53	3.2	128	6
Litsea firma	0.495	87	51	3.0	124	5
Litsea garciae	0.344	128	58	3.9	137	7
Litsea lancilimba	0.560	76	48	2.7	119	5
Litsea leytensis	0.350	126	58	3.8	136	7
Litsea mangifera	0.410	106	55	3.4	131	6
Litsea megacarpa	0.310	145	60	4.2	140	8
Litsea monopetala	0.463	93	52	3.1	127	6
Litsea odorifera	0.510	84	50	2.9	123	5
Litsea perrottetii	0.486	88	51	3.0	125	5
Litsea sebifera	0.610	69	46	2.5	116	5
Litsea zeylanica	0.706	58	43	2.3	110	4
Livistona rotundifolia	0.787	50	41	2.1	105	4
Lophopetalum duperreanum[a]	0.521	82	50	2.9	122	5
Lophopetalum fimbriatum[a]	0.530	81	49	2.8	122	5
Lophopetalum javanicum[a]	0.560	76	48	2.7	119	5
Lophopetalum wallichii[a]	0.428	101	54	3.3	129	6
Lophopetalum wightianum[a]	0.374	117	57	3.7	134	7
Loropetalum chinenses	0.822	46	40	2.0	104	4
Lumnitzera coccinea	0.706	58	43	2.3	110	4
Lumnitzera spp.	0.565	75	48	2.7	119	5
Lysidice rhodostegia	0.564	75	48	2.7	119	5
Macaranga bicolor	0.291	156	61	4.3	142	8
Macaranga denticulata	0.510	84	50	2.9	123	5
Macaranga sampsoni	0.336	132	59	3.9	137	7
Machilus chinensis	0.463	93	52	3.1	127	6
Machilus edulis	0.545	78	49	2.8	120	5
Machilus gammieana	0.462	93	52	3.1	127	6
Machilus micrantha	0.445	97	53	3.2	128	6
Machilus odoratissima	0.570	75	48	2.7	119	5
Machilus pauhoi	0.473	91	52	3.1	126	6
Machilus pingii	0.518	83	50	2.9	122	5
Machilus thumbergii	0.465	92	52	3.1	126	6
Machilus villosa	0.411	105	55	3.4	131	6
Madhuca fulva	0.530	81	49	2.8	122	5
Madhuca hainanensis	0.891	40	38	1.9	100	3
Madhuca latifolia	0.808	48	40	2.0	104	4
Madhuca longifolia	0.740	54	42	2.2	108	4
Madhuca obevatifolia	0.558	76	48	2.7	120	5
Madhuca oblongifolia	0.530	81	49	2.8	122	5
Madhuca utilis	0.920	37	37	1.8	99	3
Maesopsis eminii	0.400	109	55	3.5	132	6
Magnifera indica	0.540	79	49	2.8	121	5
Magnolia campbelli	0.334	133	59	4.0	138	7
Mallotus cochinchinensis	0.380	115	56	3.6	133	7
Mallotus multiglandulosus	0.424	102	54	3.3	130	6
Mallotus philippinensis	0.603	70	47	2.6	116	5
Malus baccata	0.589	72	47	2.6	117	5
Mangifera altissima	0.549	78	49	2.8	120	5
Mangifera caloneura	0.493	87	51	3.0	124	5
Mangifera foetida	0.685	60	44	2.3	111	4
Mangifera indica	0.549	78	49	2.8	120	5
Mangifera longipes	0.501	86	51	3.0	124	5
Mangifera merrillii	0.523	82	50	2.9	122	5

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Mangifera sylvatica	0.479	90	51	3.1	125	6
Mangifera spp.	0.690	60	44	2.3	111	4
Manglietia glauca	0.389	112	56	3.6	133	6
Manglietia hainanensis	0.396	110	55	3.5	132	6
Manglietia hookeri	0.445	97	53	3.2	128	6
Manglietia insignis	0.428	101	54	3.3	129	6
Manilkara kauki	1.030	28	35	1.6	94	3
Manilkara littoralis	0.902	39	38	1.8	99	3
Maniltoa grandiflora	0.760	52	41	2.1	107	4
Maniltoa minor	0.760	52	41	2.1	107	4
Mansonia dipikae	0.521	82	50	2.9	122	5
Mansonia gagei	0.712	57	43	2.2	110	4
Mappia foetida	0.469	92	52	3.1	126	6
Maranthes corymbosa	0.738	55	42	2.2	108	4
Markhamia cauda-felina	0.644	65	45	2.4	114	4
Markhamia stipulata	0.615	69	46	2.5	116	5
Mastixia philippinensis	0.473	91	52	3.1	126	6
Melaleuca leucadendron	0.850	44	39	1.9	102	3
Melanorrhoea glabra	0.549	78	49	2.8	120	5
Melanorrhea laccifera	0.796	49	40	2.0	105	4
Melanorrhoea spp.	0.630	67	46	2.5	115	4
Melanorrhoea torquata	0.620	68	46	2.5	115	5
Melanorrhoea usitala	0.737	55	42	2.2	108	4
Melanorrhoea wallichii	0.660	63	45	2.4	113	4
Melia azedarach	0.491	87	51	3.0	124	5
Melia birmanica	0.589	72	47	2.6	117	5
Melia composita	0.388	112	56	3.6	133	6
Melia dubia	0.414	105	54	3.4	131	6
Melia indica	0.693	60	43	2.3	111	4
Melicope triphylla	0.374	117	57	3.7	134	7
Meliosma angustifolia	0.555	77	48	2.7	120	5
Meliosma arnottiana	0.413	105	55	3.4	131	6
Meliosma dilleniaefolia	0.433	100	54	3.3	129	6
Meliosma macrophylla	0.266	173	63	4.6	144	8
Meliosma pungens	0.429	101	54	3.3	129	6
Meliosma rigida	0.581	73	47	2.6	118	5
Meliosma simplicifolia	0.505	85	50	2.9	123	5
Meliosma squamulata	0.504	85	50	2.9	123	5
Meliosma thomsoni	0.405	107	55	3.5	131	6
Melliodendron xylocarpum	0.443	97	53	3.2	128	6
Melochia umbellata	0.247	189	64	4.8	146	9
Memecylon capitellatum	0.770	51	41	2.1	106	4
Memecylon edule	0.757	53	42	2.1	107	4
Memecylon pubescens	0.770	51	41	2.1	106	4
Meria excelsa	0.600	71	47	2.6	117	5
Mesua assamica	0.687	60	44	2.3	111	4
Mesua ferrea	0.855	43	39	1.9	102	3
Mesua floribunda	0.665	63	44	2.4	112	4
Metrosideros petiolata	1.150	19	33	1.5	89	3
Metrosideros vera	1.150	19	33	1.5	89	3
Michelia balansae	0.590	72	47	2.6	117	5
Michelia catchcartii	0.455	95	53	3.2	127	6
Michelia champaca	0.463	93	52	3.1	127	6
Michelia excelsa	0.441	98	53	3.3	128	6
Michelia fiveolata	0.533	80	49	2.8	121	5
Michelia kisopa	0.421	103	54	3.4	130	6
Michelia lanuginosa	0.345	128	58	3.9	137	7
Michelia macclurei	0.531	80	49	2.8	121	5
Michelia mannii	0.493	87	51	3.0	124	5
Michelia montana	0.480	89	51	3.1	125	6
Michelia nilagirica	0.485	88	51	3.0	125	5
Michelia oblonga	0.370	118	57	3.7	134	7
Michelia platyphylla	0.506	85	50	2.9	123	5
Michelia velutina	0.520	82	50	2.9	122	5
Microcos paniculata	0.594	71	47	2.6	117	5
Microcos stylocarpa	0.396	110	55	3.5	132	6
Micromelum compressum	0.642	65	45	2.4	114	4
Miliusa roxburghiana	0.629	67	46	2.5	115	4
Miliusa tectona	0.645	65	45	2.4	114	4
Miliusa velutina	0.626	67	46	2.5	115	4
Millettia atropurpurea	0.493	87	51	3.0	124	5
Millettia brandisiana	0.521	82	50	2.9	122	5
Millettia macrostachya	0.421	103	54	3.4	130	6
Millettia pendula	0.867	42	39	1.9	101	3
Millettia prainii	0.533	80	49	2.8	121	5
Millettia pulchra	0.565	75	48	2.7	119	5
Millingtonia hortensis	0.526	81	49	2.9	122	5
Mimusops elengi	0.870	42	39	1.9	101	3
Mimusops hexandra	0.936	36	37	1.8	98	3
Mimusops littoralis	0.902	39	38	1.8	99	3
Mischocarpus fuscescens	0.617	68	46	2.5	116	5
Mischocarpus oppositifolius	0.810	47	40	2.0	104	4
Mischodon zeylanicus	0.898	39	38	1.9	100	3
Mitragyna diversifolia	0.553	77	48	2.7	120	5
Mitragyna parvifolia	0.558	76	48	2.7	120	5
Mitragyna rotundifolia	0.553	77	48	2.7	120	5
Mitragyna speciosa	0.400	109	55	3.5	132	6
Mitrephora maingayi	0.612	69	46	2.5	116	5
Mitrephora vulpina	0.637	66	45	2.5	114	4
Monocarpia marginalis	0.501	86	51	3.0	124	5
Montrouziera spp.	0.779	51	41	2.1	106	4
Moringa pterygosperma	0.269	171	63	4.5	144	8
Morus indica	0.565	75	48	2.7	119	5

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Morus laevigata	0.541	79	49	2.8	121	5
Morus nigra	0.556	77	48	2.7	120	5
Morus serrata	0.577	74	47	2.7	118	5
Murraya exotica	0.808	48	40	2.0	104	4
Murraya koenigi	0.565	75	48	2.7	119	5
Mutsaendopsis beccariana	0.920	37	37	1.8	99	3
Myrica rubra	0.716	57	43	2.2	109	4
Myristica attenuata	0.426	101	54	3.3	130	6
Myristica castaneifolia	0.490	88	51	3.0	124	5
Myristica chartacea	0.490	88	51	3.0	124	5
Myristica gigantea	0.540	79	49	2.8	121	5
Myristica gillespieana	0.490	88	51	3.0	124	5
Myristica iners	0.530	81	49	2.8	122	5
Myristica irya	0.680	61	44	2.3	112	4
Myristica laurifolia	0.430	100	54	3.3	129	6
Myristica lowiana	0.501	86	51	3.0	124	5
Myristica maingayi	0.540	79	49	2.8	121	5
Myrsine semiserrata	0.667	62	44	2.4	112	4
Mytilaria laosensis	0.524	82	50	2.9	122	5
Neesia altissima	0.390	112	56	3.6	133	6
Neesia spp.	0.530	81	49	2.8	122	5
Neesia synandra	0.405	107	55	3.5	131	6
Neolitsea ellipsoidea	0.452	95	53	3.2	127	6
Neonauclea bernardoi	0.624	68	46	2.5	115	5
Neonauclea excelsa	0.731	55	42	2.2	109	4
Neonauclea hagenii	0.594	71	47	2.6	117	5
Neonauclea sessilifolia	0.731	55	42	2.2	109	4
Neoscortechinia forbsii	0.578	74	47	2.7	118	5
Neotrewia cumingii	0.546	78	49	2.8	120	5
Nephelium lappaceum	0.568	75	48	2.7	119	5
Nephelium litchi	0.353	125	58	3.8	136	7
Nephelium longana	0.813	47	40	2.0	104	4
Nephelium stipulaceum	0.733	55	42	2.2	108	4
Nothopegia colebrookiana	0.721	56	43	2.2	109	4
Nyssa sinensis	0.577	74	47	2.7	118	5
Ochanostachys amentacea	0.820	46	40	2.0	104	4
Ochna foxworthyi	0.860	43	39	1.9	102	3
Ochna wallichii	0.706	58	43	2.3	110	4
Ochrocarpus longifolius	0.769	52	41	2.1	106	4
Ochrocarpus siamensis	0.645	65	45	2.4	114	4
Ochroma grandiflora	0.200	243	68	5.4	151	10
Octomeles sumatrana	0.305	147	60	4.2	140	8
Odina wodier	0.462	93	52	3.1	127	6
Olea fragrans	0.851	44	39	1.9	102	3
Olea ferruginea	0.783	50	41	2.1	106	4
Ormosia balansae	0.470	91	52	3.1	126	6
Ormosia hosiei	0.632	67	45	2.5	115	4
Ormosia pinnata	0.620	68	46	2.5	115	5
Ormosia robusta	0.481	89	51	3.1	125	6
Ormosia semicastrata	0.629	67	46	2.5	115	4
Ormosia sumatrana	0.680	61	44	2.3	112	4
Ormosia watsonii	0.501	86	51	3.0	124	5
Ormosia xylocarpa	0.492	87	51	3.0	124	5
Oroxylon indicum	0.317	141	60	4.1	139	7
Ostodes paniculata	0.347	127	58	3.9	136	7
Ostrya japonica	0.644	65	45	2.4	114	4
Osyris wightiana	0.808	48	40	2.0	104	4
Ougeinia dalbergioides	0.704	58	43	2.3	110	4
Pahudia rhomboidea	0.730	56	42	2.2	109	4
Pajanelia rheedii	0.681	61	44	2.3	111	4
Palaquium burckii	0.660	63	45	2.4	113	4
Palaquium ellipticum	0.565	75	48	2.7	119	5
Palaquium ferox	0.670	62	44	2.4	112	4
Palaquium fidjiense	0.480	89	51	3.1	125	6
Palaquium grande	0.469	92	52	3.1	126	6
Palaquium gutta	0.635	66	45	2.5	114	4
Palaquium hexandrum	0.560	76	48	2.7	119	5
Palaquium hipidum	0.460	94	52	3.2	127	6
Palaquium hornei	0.700	59	43	2.3	110	4
Palaquium javense	0.480	89	51	3.1	125	6
Palaquium lanceolatum	0.548	78	49	2.8	120	5
Palaquium leiocarpum	0.730	56	42	2.2	109	4
Palaquium luzoniense	0.508	84	50	2.9	123	5
Palaquium maingayi	0.560	76	48	2.7	119	5
Palaquium microphyllum	0.780	50	41	2.1	106	4
Palaquium oblusifolium	0.560	76	48	2.7	119	5
Palaquium petiolare	0.488	88	51	3.0	125	5
Palaquium philippense	0.407	107	55	3.4	131	6
Palaquium quereifolium	0.540	79	49	2.8	121	5
Palaquium rostratum	0.610	69	46	2.5	116	5
Palaquium tenuipetiolatum	0.500	86	51	3.0	124	5
Palaquium vitilevuense	0.480	89	51	3.1	125	6
Palaquium walsifolium	0.660	63	45	2.4	113	4
Pangium edule	0.504	85	50	2.9	123	5
Paramichelia baillonii	0.530	81	49	2.8	122	5
Parapyrenaria multisepala	0.624	68	46	2.5	115	5
Parartocarpus triandra	0.470	91	52	3.1	126	6
Parastemon urophyllus	0.940	36	37	1.8	98	3
Paratrophis glabra	0.771	51	41	2.1	106	4
Parinari annamensis	0.690	60	44	2.3	111	4
Parinari corymbosa	0.863	42	39	1.9	101	3
Parinari insularum	0.650	64	45	2.4	113	4
Parinari nonda	0.626	67	46	2.5	115	4
Parinari rubiginosum	0.740	54	42	2.2	108	4

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Parinari salomonensis	0.626	67	46	2.5	115	4
Parinari spp.	0.680	61	44	2.3	112	4
Parishia insignis	0.410	106	55	3.4	131	6
Parkia leiophylla	0.405	107	55	3.5	131	6
Parkia roxburghii	0.344	128	58	3.9	137	7
Parkia speciosa	0.430	100	54	3.3	129	6
Parkia streptocarpa	0.453	95	53	3.2	127	6
Parkinsonia aculeata	0.681	61	44	2.3	111	4
Parrotia jacquemontiana	0.629	67	46	2.5	115	4
Pasania fissa	0.451	96	53	3.2	127	6
Paulownia fargesii	0.219	218	66	5.1	149	9
Paulownia fortunei	0.247	189	64	4.8	146	9
Payena acuminata	0.730	56	42	2.2	109	4
Payena elliptica	0.731	55	42	2.2	109	4
Payena leeni	0.870	42	39	1.9	101	3
Payena lucida	0.770	51	41	2.1	106	4
Payena utilis	0.731	55	42	2.2	109	4
Peltophorum dasyrachi	0.804	48	40	2.0	104	4
Peltophorum ferrugineum	0.804	48	40	2.0	104	4
Peltophorum pterocarpum	0.616	69	46	2.5	116	5
Peltophorum tonkinensis	0.690	60	44	2.3	111	4
Petunga roxburghii	0.475	90	52	3.1	126	6
Pentacme mindanensis	0.398	109	55	3.5	132	6
Pentacme siamensis	0.779	51	41	2.1	106	4
Pentacme suavis	0.779	51	41	2.1	106	4
Pentacme tonkinensis	0.960	34	36	1.8	97	3
Pentaphylax euryoides	0.523	82	50	2.9	122	5
Pentaspadon velutinus	0.540	79	49	2.8	121	5
Pericopsis mooniana	0.870	42	39	1.9	101	3
Peronema canescens	0.630	67	46	2.5	115	4
Phaeanthus ebracteolatus	0.561	76	48	2.7	119	5
Phellodendron amurense	0.419	103	54	3.4	130	6
Phoebe goalparensis	0.422	102	54	3.4	130	6
Phoebe hainesiana	0.475	90	52	3.1	126	6
Phoebe lanceolata	0.654	64	45	2.4	113	4
Phoebe opaca	0.570	75	48	2.7	119	5
Phoebe paniculata	0.629	67	46	2.5	115	4
Phoebe zhennan	0.556	77	48	2.7	120	5
Photinia davidsoniae	0.701	59	43	2.3	110	4
Photinia integrifolia	0.709	58	43	2.3	110	4
Photinia lindleyana	0.725	56	42	2.2	109	4
Photinia notoniana	0.701	59	43	2.3	110	4
Photinia serrulata	0.850	44	39	1.9	102	3
Phyllanthus emblica	0.680	61	44	2.3	112	4
Phyllanthus indicus	0.706	58	43	2.3	110	4
Phylocladus hypophyllus	0.580	73	47	2.6	118	5
Picrasma javanica	0.363	121	57	3.7	135	7
Picrasma quassiodes	0.429	101	54	3.3	129	6
Pisonia umbellifera	0.214	224	67	5.2	150	9
Pistache chinensis	0.665	63	44	2.4	112	4
Pistacia integerrima	0.733	55	42	2.2	108	4
Pithecellobium affine	0.437	99	53	3.3	129	6
Pithecellobium bigeminum	0.337	131	59	3.9	137	7
Pithecellobium confertum	0.510	84	50	2.9	123	5
Pithecellobium lobatum	0.389	112	56	3.6	133	6
Pithecellobium splendens	0.594	71	47	2.6	117	5
Pittosporum floribundum	0.557	76	48	2.7	120	5
Pittosporum pentandrum	0.512	84	50	2.9	123	5
Pittosporum tetraspermum	0.585	73	47	2.6	118	5
Pityyrantha verrucosa	0.706	58	43	2.3	110	4
Planchonella firma	0.446	97	53	3.2	128	6
Planchonella kaernbachiana	0.446	97	53	3.2	128	6
Planchonella thyrsoidea	0.398	109	55	3.5	132	6
Planchonella torricellensis	0.446	97	53	3.2	128	6
Planchonella vitiensis	0.779	51	41	2.1	106	4
Platea parvifolia	0.477	90	52	3.1	125	6
Platycarya strobilacea	0.582	73	47	2.6	118	5
Pleurostylia wightii	0.685	60	44	2.3	111	4
Poeciloneuron indicum	0.898	39	38	1.9	100	3
Poinciana elata	0.493	87	51	3.0	124	5
Poinciana regia	0.349	126	58	3.8	136	7
Polyalthia cerasoides	0.586	72	47	2.6	118	5
Polyalthia flava	0.514	83	50	2.9	123	5
Polyalthia fragrans	0.445	97	53	3.2	128	6
Polyalthia hypoleuca	0.800	48	40	2.0	105	4
Polyalthia lateriflora	0.517	83	50	2.9	122	5
Polyalthia longifolia	0.421	103	54	3.4	130	6
Polyalthia simiarun	0.591	72	47	2.6	117	5
Polyosma cambodiana	0.567	75	48	2.7	119	5
Polyosma integrifolia	0.605	70	46	2.6	116	5
Polyscias nodosa	0.377	116	56	3.6	134	7
Pometia acuminata	0.654	64	45	2.4	113	4
Pometia pinnata	0.636	66	45	2.5	114	4
Pometia tomentosa	0.800	48	40	2.0	105	4
Pongamia glabra	0.609	69	46	2.5	116	5
Populus ciliata	0.372	118	57	3.7	134	7
Populus euphratica	0.393	111	56	3.5	132	6
Populus lasiocarpa	0.401	108	55	3.5	132	6
Populus maximowiczii	0.310	145	60	4.2	140	8
Populus rotundifolia	0.390	112	56	3.6	133	6
Populus tomentosa	0.452	95	53	3.2	127	6
Populus yunnanensis	0.330	135	59	4.0	138	7
Pouteria microphylla	0.876	41	38	1.9	101	3
Pouteria villamilii	0.474	91	52	3.1	126	6

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Premna integrifolia	0.654	64	45	2.4	113	4
Premna latifolia	0.513	83	50	2.9	123	5
Premna pyramidata	0.603	70	47	2.6	116	5
Premna tomentosa	0.960	34	36	1.8	97	3
Prosopis glandulosa	0.549	78	49	2.8	120	5
Prosopis spicigera	0.634	66	45	2.5	114	4
Prunus armenica	0.642	65	45	2.4	114	4
Prunus henryi	0.583	73	47	2.6	118	5
Prunus nepalensis	0.497	86	51	3.0	124	5
Prunus padus	0.481	89	51	3.1	125	6
Prunus puddum	0.532	80	49	2.8	121	5
Psidium guajava	0.552	77	48	2.7	120	5
Pterocarpus acerifolium	0.507	84	50	2.9	123	5
Pterocarpus indicus	0.523	82	50	2.9	122	5
Pterocarpus marsupium	0.671	62	44	2.4	112	4
Pterocarpus pedatus	0.756	53	42	2.1	107	4
Pterocarpus santalinus	0.967	33	36	1.7	96	3
Pterocarya stenoptera	0.355	124	58	3.8	136	7
Pteroceltis tartarinowii	0.643	65	45	2.4	114	4
Pterocymbium beccarii	0.289	157	61	4.3	142	8
Pterocymbium macrorater	0.470	91	52	3.1	126	6
Pterocymbium tinctorium	0.278	164	62	4.5	143	8
Pterospermum acerifolium	0.549	78	49	2.8	120	5
Pterospermum celebicum	0.440	98	53	3.3	128	6
Pterospermum diversifolium	0.650	64	45	2.4	113	4
Pterospermum glabrescens	0.365	120	57	3.7	135	7
Pterospermum heterophyllum	0.452	95	53	3.2	127	6
Pterospermum jackianium	0.573	74	48	2.7	118	5
Pterospermum javanicum	0.360	122	57	3.8	135	7
Pterospermum lancaefolium	0.557	76	48	2.7	120	5
Pterospermum reticulatum	0.557	76	48	2.7	120	5
Pterospermum rubiginosum	0.581	73	47	2.6	118	5
Pterospermum semisagagittatum	0.569	75	48	2.7	119	5
Pterospermum suberiflolium	0.493	87	51	3.0	124	5
Pterostyrax hispidas	0.314	142	60	4.1	139	7
Pterygota alata	0.475	90	52	3.1	126	6
Pterygota horsfieldii	0.594	71	47	2.6	117	5
Punica granatum	0.731	55	42	2.2	109	4
Putranjiva roxburghii	0.642	65	45	2.4	114	4
Pygeum acuminatum	0.609	69	46	2.5	116	5
Pygeum arboreum	0.469	92	52	3.1	126	6
Pygeum vulgare	0.566	75	48	2.7	119	5
Pygeum wightianum	0.557	76	48	2.7	120	5
Pyrenocarpa hainanensis	0.701	59	43	2.3	110	4
Radermachera pinnata	0.506	85	50	2.9	123	5
Radermachera sinica	0.621	68	46	2.5	115	5
Randia dumetorium	0.693	60	43	2.3	111	4
Randia uliginosa	0.681	61	44	2.3	111	4
Rapanea neriifolia	0.643	65	45	2.4	114	4
Rhamnus davurica	0.581	73	47	2.6	118	5
Rhizophora apiculata	1.050	26	35	1.6	93	3
Rhizophora conjugata	1.040	27	35	1.6	93	3
Rhizophora mucronata	0.867	42	39	1.9	101	3
Rhodamnia dumetorum	0.894	40	38	1.9	100	3
Rhus potaninni	0.487	88	51	3.0	125	5
Rhus succedanea	0.424	102	54	3.3	130	6
Saccopetalum tomentosum	0.615	69	46	2.5	116	5
Saccopetalum unguiculatum	0.597	71	47	2.6	117	5
Salix matsudana	0.457	94	52	3.2	127	6
Samanea saman	0.450	96	53	3.2	128	6
Sageraea elliptica	0.705	58	43	2.3	110	4
Sageraea laurina	0.522	82	50	2.9	122	5
Sageraea listeri	0.682	61	44	2.3	111	4
Salix tetrasperma	0.436	99	53	3.3	129	6
Salix wallichiana	0.459	94	52	3.2	127	6
Samadera indica	0.325	137	59	4.0	138	7
Sandoricum indicum	0.424	102	54	3.3	130	6
Sandoricum koetjape	0.443	97	53	3.2	128	6
Sandoricum vidalii	0.434	99	54	3.3	129	6
Santalum album	0.840	45	39	2.0	103	4
Santalum austrocaledonium	0.696	59	43	2.3	111	4
Santalum yasi	0.481	89	51	3.1	125	6
Santiria graffithii	0.800	48	40	2.0	105	4
Santiria laevigata	0.545	78	49	2.8	120	5
Santiria oblongifolia	0.630	67	46	2.5	115	4
Santiria rubiginosa	0.840	45	39	2.0	103	4
Santiria tomentosa	0.650	64	45	2.4	113	4
Sapindus emarginatus	0.808	48	40	2.0	104	4
Sapindus laurifolius	0.786	50	41	2.1	105	4
Sapindus mukorossi	0.640	66	45	2.4	114	4
Sapindus rarak	0.808	48	40	2.0	104	4
Sapindus saponaria	0.580	73	47	2.6	118	5
Sapindus trifoliatus	0.808	48	40	2.0	104	4
Sapium baccatum	0.310	145	60	4.2	140	8
Sapium discolor	0.400	109	55	3.5	132	6
Sapium insigne	0.360	122	57	3.8	135	7
Sapium luzonicum	0.396	110	55	3.5	132	6

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Sapium sebiferum	0.486	88	51	3.0	125	5
Saraca indica	0.475	90	52	3.1	126	6
Saraca thaipingensis	0.520	82	50	2.9	122	5
Sarcanthidon sarmentosum	0.561	76	48	2.7	119	5
Sarcocephalus cordatus	0.462	93	52	3.1	127	6
Sarcospermum arboreum	0.398	109	55	3.5	132	6
Sarcosperma laurinum	0.464	93	52	3.1	126	6
Sassafras tzumu	0.491	87	51	3.0	124	5
Saurauia roxburghii	0.552	77	48	2.7	120	5
Saurauia tristyla	0.341	130	58	3.9	137	7
Scaphium affine	0.590	72	47	2.6	117	5
Scaphium macropodum	0.660	63	45	2.4	113	4
Schefflera octophylla	0.363	121	57	3.7	135	7
Schima argentea	0.524	82	50	2.9	122	5
Schima crenata	0.660	63	45	2.4	113	4
Schima noronhae	0.605	70	46	2.6	116	5
Schima oblata	0.710	58	43	2.3	110	4
Schima sinensis	0.553	77	48	2.7	120	5
Schima superba	0.568	75	48	2.7	119	5
Schima wallichii	0.615	69	46	2.5	116	5
Schizomeria spp.	0.501	86	51	3.0	124	5
Schleichera oleosa	1.010	30	35	1.7	95	3
Schleichera trijuga	0.897	39	38	1.9	100	3
Schoutenis ovata	0.980	32	36	1.7	96	3
Schrebera swietenoides	0.820	46	40	2.0	104	4
Scorodocarpus borneensis	0.800	48	40	2.0	105	4
Semecarpus anacardium	0.640	66	45	2.4	114	4
Semecarpus auriculata	0.317	141	60	4.1	139	7
Semecarpus kurzii	0.373	117	57	3.7	134	7
Semecarpus travancorica	0.397	109	55	3.5	132	6
Serialbizia acle	0.570	75	48	2.7	119	5
Serianthes melanesica	0.480	89	51	3.1	125	6
Serianthes myriadenia	0.501	86	51	3.0	124	5
Sesbania grandiflora	0.397	109	55	3.5	132	6
Shorea accuminatissima	0.455	95	53	3.2	127	6
Shorea acuminata	0.485	88	51	3.0	125	5
Shorea agsaboensis	0.367	119	57	3.7	135	7
Shorea almon	0.429	101	54	3.3	129	6
Shorea assamica	0.479	90	51	3.1	125	6
Shorea astylosa	0.825	46	40	2.0	103	4
Shorea atrinervosa	0.980	32	36	1.7	96	3
Shorea barcteolata	0.660	63	45	2.4	113	4
Shorea belangeran	0.860	43	39	1.9	102	3
Shorea bracteolata	0.480	89	51	3.1	125	6
Shorea ciliata	0.747	54	42	2.2	108	4
Shorea cochinchinensis	0.788	50	41	2.1	105	4
Shorea contorta	0.440	98	53	3.3	128	6
Shorea cutisii	0.520	82	50	2.9	122	5
Shorea dasyphylla	0.410	106	55	3.4	131	6
Shorea elliptica	0.950	35	37	1.8	97	3
Shorea faguetiana	0.487	88	51	3.0	125	5
Shorea falcifera	1.010	30	35	1.7	95	3
Shorea gibbosa	0.465	92	52	3.1	126	6
Shorea gisok	0.757	53	42	2.1	107	4
Shorea glauca	0.895	39	38	1.9	100	3
Shorea guiso	0.700	59	43	2.3	110	4
Shorea gysbertsiana	0.290	156	61	4.3	142	8
Shorea hemsleyana	0.590	72	47	2.6	117	5
Shorea hopeifolia	0.500	86	51	3.0	124	5
Shorea hypochra	0.550	78	49	2.8	120	5
Shorea javanica	0.630	67	46	2.5	115	4
Shorea kalunti	0.455	95	53	3.2	127	6
Shorea kunstleri	0.730	56	42	2.2	109	4
Shorea laevifolia	0.910	38	38	1.8	99	3
Shorea laevis	0.895	39	38	1.9	100	3
Shorea lamellata	0.574	74	48	2.7	118	5
Shorea lepidota	0.480	89	51	3.1	125	6
Shorea leprosula	0.490	88	51	3.0	124	5
Shorea leptoclados	0.360	122	57	3.8	135	7
Shorea macrophylla	0.300	150	61	4.2	141	8
Shorea macroptera	0.460	94	52	3.2	127	6
Shorea malibato	0.778	51	41	2.1	106	4
Shorea maxwelliana	0.935	36	37	1.8	98	3
Shorea multiflora	0.660	63	45	2.4	113	4
Shorea negrosensis	0.434	99	54	3.3	129	6
Shorea obtusa	0.960	34	36	1.8	97	3
Shorea ochracea	0.540	79	49	2.8	121	5
Shorea ochrophloia	0.630	67	46	2.5	115	4
Shorea ovalis	0.510	84	50	2.9	123	5
Shorea ovata	0.750	53	42	2.2	107	4
Shorea pachyphylla	0.770	51	41	2.1	106	4
Shorea palembanica	0.550	78	49	2.8	120	5
Shorea palosapis	0.390	112	56	3.6	133	6
Shorea parvifolia	0.390	112	56	3.6	133	6
Shorea pauciflora	0.543	79	49	2.8	121	5
Shorea philippinensis	0.420	103	54	3.4	130	6
Shorea pinanga	0.420	103	54	3.4	130	6
Shorea plagata	0.698	59	43	2.3	110	4
Shorea platycarpa	0.720	57	43	2.2	109	4
Shorea platyclados	0.580	73	47	2.6	118	5
Shorea polita	0.464	93	52	3.1	126	6
Shorea polysperma	0.461	93	52	3.1	127	6
Shorea quadrinervis	0.570	75	48	2.7	119	5
Shorea resinanigra	0.430	100	54	3.3	129	6

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Shorea retinodes	0.760	52	41	2.1	107	4
Shorea robusta	0.768	52	41	2.1	106	4
Shorea rugosa	0.530	81	49	2.8	122	5
Shorea sandakanensis	0.540	79	49	2.8	121	5
Shorea selanica	0.460	94	52	3.2	127	6
Shorea seminis	0.900	39	38	1.8	100	3
Shorea sinitiana	0.500	86	51	3.0	124	5
Shorea smithiana	0.350	126	58	3.8	136	7
Shorea squamata	0.386	113	56	3.6	133	6
Shorea stenoptera	0.490	88	51	3.0	124	5
Shorea sumatrana	0.880	41	38	1.9	101	3
Shorea superba	0.660	63	45	2.4	113	4
Shorea talura	0.550	78	49	2.8	120	5
Shorea teysmanniana	0.590	72	47	2.6	117	5
Shorea uliginos	0.640	66	45	2.4	114	4
Shorea virescens	0.500	86	51	3.0	124	5
Shorea vulgaris	0.780	50	41	2.1	106	4
Shorea waltonil	0.350	126	58	3.8	136	7
Sideroxylon longepetiolatum	0.484	89	51	3.0	125	5
Sideroxylon tomentosum	0.667	62	44	2.4	112	4
Sindora cochinchinensis	0.883	41	38	1.9	100	3
Sindora coriacea	0.560	76	48	2.7	119	5
Sindora geledupa	0.690	60	44	2.3	111	4
Sindora glabra	0.560	76	48	2.7	119	5
Sindora leiocarpa	0.600	71	47	2.6	117	5
Sindora wallichii	0.730	56	42	2.2	109	4
Siphonodon celastrineus	0.583	73	47	2.6	118	5
Sloanea javanica	0.530	81	49	2.8	122	5
Sloanea sinensis	0.483	89	51	3.0	125	5
Sloetia elongata	0.910	38	38	1.8	99	3
Sonneratia alba	0.780	50	41	2.1	106	4
Sonneratia apelata	0.521	82	50	2.9	122	5
Sonneratia caseolaris	0.552	77	48	2.7	120	5
Sonneratia griffithii	0.654	64	45	2.4	113	4
Sonneratia pagatpat	0.693	60	43	2.3	111	4
Sophora japonica	0.631	67	46	2.5	115	4
Sorbus pohuashanensis	0.556	77	48	2.7	120	5
Soymida febrifuga	0.965	33	36	1.7	97	3
Spatholobus orientalis	0.504	85	50	2.9	123	5
Spermolepis gummifera	0.779	51	41	2.1	106	4
Spondias acuminata	0.397	109	55	3.5	132	6
Spondias axillaris	0.333	133	59	4.0	138	7
Spondias dulcis	0.356	123	58	3.8	136	7
Spondias mangifera	0.329	135	59	4.0	138	7
Spondias pinnata	0.230	205	65	5.0	148	9
Spondias tonkinensis	0.353	125	58	3.8	136	7
Stemonurus luzoniensis	0.367	119	57	3.7	135	7
Stenocarpus trinervis	0.779	51	41	2.1	106	4
Stephegyne diversifolia	0.539	79	49	2.8	121	5
Stephegyne parvifolia	0.590	72	47	2.6	117	5
Stephegyne tubulosa	0.552	77	48	2.7	120	5
Sterculia alata	0.475	90	52	3.1	126	6
Sterculia angustifolia	0.389	112	56	3.6	133	6
Sterculia campanulata	0.282	161	62	4.4	143	8
Sterculia ceramica	0.270	170	63	4.5	144	8
Sterculia coccinea	0.229	207	65	5.0	148	9
Sterculia colorata	0.309	145	60	4.2	140	8
Sterculia foetida	0.450	96	53	3.2	128	6
Sterculia fulgens	0.309	145	60	4.2	140	8
Sterculia guttata	0.189	260	68	5.6	152	10
Sterculia lanceolata	0.523	82	50	2.9	122	5
Sterculia ornata	0.170	295	70	5.9	155	11
Sterculia urens	0.670	62	44	2.4	112	4
Sterculia villosa	0.230	205	65	5.0	148	9
Sterculia vitiensis	0.310	145	60	4.2	140	8
Stereospermum annamensis	0.804	48	40	2.0	104	4
Stereospermum chelonoides	0.604	70	46	2.6	116	5
Stereospermum fimbriatum	0.706	58	43	2.3	110	4
Stereospermum neuranthum	0.539	79	49	2.8	121	5
Stereospermum suaveolens	0.617	68	46	2.5	116	5
Stereospermum xylocarpum	0.589	72	47	2.6	117	5
Stranvaesia glaucescens	0.589	72	47	2.6	117	5
Streblus asper	0.501	86	51	3.0	124	5
Strombosia ceylanica	0.693	60	43	2.3	111	4
Strombosia javanica	0.540	79	49	2.8	121	5
Strombosia philippinensis	0.714	57	43	2.2	110	4
Strychnos nux-blanda	0.706	58	43	2.3	110	4
Strychnos potatorum	0.880	41	38	1.9	101	3
Styrax benzoin	0.570	75	48	2.7	119	5
Styrax hypoglauca	0.436	99	53	3.3	129	6
Styrax tonkinensis	0.389	112	56	3.6	133	6
Swintonia floribunda	0.566	75	48	2.7	119	5
Swintonia foxworthyi	0.622	68	46	2.5	115	5
Swintonia schwenkii	0.610	69	46	2.5	116	5
Swintonia spicifera	0.640	66	45	2.4	114	4
Sycopsis dunni	0.631	67	46	2.5	115	4
Symplocos anomala	0.489	88	51	3.0	125	5
Symplocos baptica	0.501	86	51	3.0	124	5
Symplocos caudata	0.562	76	48	2.7	119	5
Symplocos cochinchinensis	0.541	79	49	2.8	121	5

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Symplocos lancifolia	0.457	94	52	3.2	127	6
Symplocos racemosa	0.706	58	43	2.3	110	4
Syzygium araiocladum	0.682	61	44	2.3	111	4
Syzygium buetlnerianium	0.561	76	48	2.7	119	5
Syzygium cumini	0.700	59	43	2.3	110	4
Syzygium grande	0.872	42	38	1.9	101	3
Syzygium luzonense	0.630	67	46	2.5	115	4
Syzygium malaccense	0.501	86	51	3.0	124	5
Syzygium nitidum	0.744	54	42	2.2	108	4
Syzygium simile	0.558	76	48	2.7	120	5
Syzygium spp.	0.690	60	44	2.3	111	4
Syzygium tetragonum	0.706	58	43	2.3	110	4
Talauma gioi	0.556	77	48	2.7	120	5
Talauma hodgsonii	0.471	91	52	3.1	126	6
Talauma phellocarpa	0.472	91	52	3.1	126	6
Talauma rabaniana	0.485	88	51	3.0	125	5
Tamarindus indica	0.750	53	42	2.2	107	4
Taraktogenos kurzii	0.541	79	49	2.8	121	5
Tarenna incerta	0.706	58	43	2.3	110	4
Tarrietia cochinchinensis	0.674	62	44	2.3	112	4
Tarrietia javanica	0.475	90	52	3.1	126	6
Tectona hamiltoniana	0.719	57	43	2.2	109	4
Teijsmanniodendron ahernianum	0.903	39	38	1.8	99	3
Terminalia alata	0.706	58	43	2.3	110	4
Terminalia arjuna	0.686	60	44	2.3	111	4
Terminalia belerica	0.662	63	44	2.4	113	4
Terminalia brassii (native)	0.449	96	53	3.2	128	6
Terminalia brassii (plantation)	0.269	171	63	4.5	144	8
Terminalia calamansanai	0.536	80	49	2.8	121	5
Terminalia catappa	0.520	82	50	2.9	122	5
Terminalia chebula	0.773	51	41	2.1	106	4
Terminalia citrina	0.704	58	43	2.3	110	4
Terminalia complanata	0.398	109	55	3.5	132	6
Terminalia copelandii	0.458	94	52	3.2	127	6
Terminalia coriacea	0.706	58	43	2.3	110	4
Terminalia crenulata	0.706	58	43	2.3	110	4
Terminalia eddowesii	0.398	109	55	3.5	132	6
Terminalia edulis	0.570	75	48	2.7	119	5
Terminalia foetidissima	0.547	78	49	2.8	120	5
Terminalia glabra	0.731	55	42	2.2	109	4
Terminalia hainanensis	0.700	59	43	2.3	110	4
Terminalia impediens	0.398	109	55	3.5	132	6
Terminalia kaernbachii	0.398	109	55	3.5	132	6
Terminalia manii	0.665	63	44	2.4	112	4
Terminalia megalocarpa	0.536	80	49	2.8	121	5
Terminalia microcarpa	0.528	81	49	2.8	122	5
Terminalia myriocarpa	0.508	84	50	2.9	123	5
Terminalia nitens	0.595	71	47	2.6	117	5
Terminalia olivera	0.731	55	42	2.2	109	4
Terminalia paniculata	0.654	64	45	2.4	113	4
Terminalia parviflora	0.616	69	46	2.5	116	5
Terminalia pterocarpa	0.480	89	51	3.1	125	6
Terminalia pyrifolia	0.631	67	46	2.5	115	4
Terminalia solomonensis	0.446	97	53	3.2	128	6
Terminalia steenisiana	0.536	80	49	2.8	121	5
Ternstroemia gymnanthera	0.561	76	48	2.7	119	5
Ternstroemia japonica	0.565	75	48	2.7	119	5
Ternstroemia megacarpa	0.530	81	49	2.8	122	5
Ternstroemia penangiana	0.645	65	45	2.4	114	4
Tetracentron sinense	0.368	119	57	3.7	134	7
Tetrameles nudiflora	0.289	157	61	4.3	142	8
Thespesia lampas	0.385	113	56	3.6	133	6
Thespesia populnea	0.585	73	47	2.6	118	5
Tilia amurensis	0.406	107	55	3.5	131	6
Tilia endochrysea	0.512	84	50	2.9	123	5
Tilia mandshurica	0.330	135	59	4.0	138	7
Tilia tuan	0.437	99	53	3.3	129	6
Toona calantas	0.294	154	61	4.3	141	8
Toona ciliata	0.424	102	54	3.3	130	6
Toona febrifuga	0.513	83	50	2.9	123	5
Toona sinensis	0.477	90	52	3.1	125	6
Toona sureni	0.390	112	56	3.6	133	6
Toxicodendron succedaneum	0.536	80	49	2.8	121	5
Toxicodendron sylvestris	0.641	65	45	2.4	114	4
Toxicodendron verniciflum	0.397	109	55	3.5	132	6
Trema amboinensis	0.347	127	58	3.9	136	7
Trema orientalis	0.305	147	60	4.2	140	8
Trewia nudiflora	0.372	118	57	3.7	134	7
Trichospermum richii	0.320	139	60	4.1	139	7
Tristiropsis acutangula	0.594	71	47	2.6	117	5
Tristiropsis ferruginea	0.594	71	47	2.6	117	5
Turpinia affinis	0.456	94	52	3.2	127	6
Turpinia ovalifolia	0.364	120	57	3.7	135	7
Turpinia pomifera	0.427	101	54	3.3	129	6
Ulmus davidiana	0.431	100	54	3.3	129	6
Ulmus laciniata	0.456	94	52	3.2	127	6
Ulmus parvoflora	0.786	50	41	2.1	105	4
Ulmus pumila	0.537	80	49	2.8	121	5
Ulmus wallichiana	0.435	99	53	3.3	129	6
Unona latifolia	0.293	154	61	4.3	141	8
Urandra (lasianthera) spp.	0.762	52	41	2.1	107	4

Table C3—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Asian and Oceana species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Vateria acuminata	0.539	79	49	2.8	121	5
Vateria indica	0.483	89	51	3.0	125	5
Vateria macrocarpa	0.513	83	50	2.9	123	5
Vatica astrotricha	0.633	66	45	2.5	114	4
Vatica cuspidata	0.860	43	39	1.9	102	3
Vatica dyerii	0.860	43	39	1.9	102	3
Vatica lancearfolia	0.633	66	45	2.5	114	4
Vatica mangachapoi	0.663	63	44	2.4	113	4
Vatica oblongifolia	0.860	43	39	1.9	102	3
Vatica obscura	1.040	27	35	1.6	93	3
Vatica pachyphylla	0.771	51	41	2.1	106	4
Vatica papuana	0.561	76	48	2.7	119	5
Vatica rassak	0.600	71	47	2.6	117	5
Vatica roxburghiana	0.776	51	41	2.1	106	4
Vatica stapfiana	0.610	69	46	2.5	116	5
Vatica tonkinensis	0.796	49	40	2.0	105	4
Vepris bilocularis	0.813	47	40	2.0	104	4
Vernonia arborea	0.380	115	56	3.6	133	7
Vitex altissima	0.771	51	41	2.1	106	4
Vitex canescens	0.526	81	49	2.9	122	5
Vitex cofaesus	0.740	54	42	2.2	108	4
Vitex glabrata	0.526	81	49	2.9	122	5
Vitex leucoxylon	0.526	81	49	2.9	122	5
Vitex limonifolia	0.783	50	41	2.1	106	4
Vitex negundo	0.545	78	49	2.8	120	5
Vitex parviflora	0.736	55	42	2.2	108	4
Vitex peduncularis	0.960	34	36	1.8	97	3
Vitex pierreana	0.900	39	38	1.8	100	3
Vitex pubescens	0.706	58	43	2.3	110	4
Vitex quinata	0.680	61	44	2.3	112	4
Vitex turczaninowii	0.487	88	51	3.0	125	5
Wallaceodendron celebicum	0.550	78	49	2.8	120	5
Walsura glauca	0.797	49	40	2.0	105	4
Walsura piscidia	0.793	49	41	2.1	105	4
Walsura robusta	0.733	55	42	2.2	108	4
Walsura villosa	0.728	56	42	2.2	109	4
Weinmannia luzoniensis	0.490	88	51	3.0	124	5
Wendlandia merilliana	0.744	54	42	2.2	108	4
Wendlandia notoniana	0.693	60	43	2.3	111	4
Wendlandia tinctoria	0.424	102	54	3.3	130	6
Wightia speciosissima	0.193	253	68	5.5	152	10
Wightia tomentosa	0.526	81	49	2.9	122	5
Winchia calophylla	0.480	89	51	3.1	125	6
Woodfordia fruticosa	0.706	58	43	2.3	110	4
Xanthophyllum andamanicum	0.581	73	47	2.6	118	5
Xanthophyllum cochinchinensis	0.780	50	41	2.1	106	4
Xanthophyllum excelsum	0.652	64	45	2.4	113	4
Xanthophyllum flavescens	0.584	73	47	2.6	118	5
Xanthophyllum glaucum	0.517	83	50	2.9	122	5
Xanthophyllum griffithii	0.725	56	42	2.2	109	4
Xanthophyllum hainanense	0.657	64	45	2.4	113	4
Xanthophyllum papuanum	0.626	67	46	2.5	115	4
Xanthophyllum verrucosum	0.650	64	45	2.4	113	4
Xanthophyllum virens	0.605	70	46	2.6	116	5
Xanthostemon brassii	0.876	41	38	1.9	101	3
Xanthostemon oppositifolius	0.876	41	38	1.9	101	3
Xanthostemon verdugonianus	1.040	27	35	1.6	93	3
Xerospermum ferrugineum	0.789	50	41	2.1	105	4
Xerospermum glabratum	0.673	62	44	2.4	112	4
Xerospermum macrophyllum	0.804	48	40	2.0	104	4
Xylia dolabriformia	0.779	51	41	2.1	106	4
Xylia kerrii	0.852	43	39	1.9	102	3
Xylocarpus borneensis	0.530	81	49	2.8	122	5
Xylocarpus granatum	0.700	59	43	2.3	110	4
Xylocarpus moluccensis	0.670	62	44	2.4	112	4
Xylopia malayana	0.630	67	46	2.5	115	4
Xylopia parvifolia	0.649	65	45	2.4	113	4
Zanthoxylum budrunga	0.552	77	48	2.7	120	5
Zanthoxylum rhetsa	0.473	91	52	3.1	126	6
Zelkova schneideriana	0.666	63	44	2.4	112	4
Ziziphus jujuba	0.557	76	48	2.7	120	5
Zizyphus mauritiana	0.629	67	46	2.5	115	4
Ziziphus spp.	0.760	52	41	2.1	107	4
Zizyphus rugosa	0.590	72	47	2.6	117	5
Ziziphus talanai	0.527	81	49	2.8	122	5
Ziziphus xylopyra	0.850	44	39	1.9	102	3

[a]

Older scientific name	Newer scientific name
Bombax malabaricum	*Bombax ceiba*
Gossampinus spp.	*Ceiba* spp.
Samanea spp.	*Albizia* spp.
Serialbizia spp.	*Albizia* spp.
Solenospermum spp.	*Lophopetalum* spp.

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Abarema jupumba	0.661	63	45	2.4	113	4
Acacia pennatula	0.960	34	36	1.8	97	3
Aceude candeia	0.770	51	41	2.1	106	4
Acrodicridium spp.	0.906	39	38	1.8	99	3
Adenostephanus organensis	0.557	76	48	2.7	120	5
Aextoxicon punctatum	0.470	91	52	3.1	126	6
Albizia caribaea	0.660	63	45	2.4	113	4
Albizia guachapele[a]	0.560	76	48	2.7	119	5
Albizia saman[a]	0.470	91	52	3.1	126	6
Alcornea latifolia	0.490	88	51	3.0	124	5
Alcornea spp.	0.385	113	56	3.6	133	6
Alcornea triplinervis	0.365	120	57	3.7	135	7
Aleurites moluccana	0.389	112	56	3.6	133	6
Alexa grandiflora	0.738	55	42	2.2	108	4
Alnus ferruginea	0.380	115	56	3.6	133	7
Alnus jorullensis	0.380	115	56	3.6	133	7
Alseia yucatanensis	0.635	66	45	2.5	114	4
Amburana cearensis	0.498	86	51	3.0	124	5
Amburana acreanea	0.498	86	51	3.0	124	5
Amomis caryophyllata	0.821	46	40	2.0	104	4
Amomyrtus luma	1.050	26	35	1.6	93	3
Anacardium giganteum	0.493	87	51	3.0	124	5
Anacardium rhinocarpus	0.507	84	50	2.9	123	5
Anacardium spruceanum	0.420	103	54	3.4	130	6
Anadenanthera macrocarpa	0.977	32	36	1.7	96	3
Anadenanthera rigida	0.630	67	46	2.5	115	4
Aniba amazonica	0.560	76	48	2.7	119	5
Aniba canelilla	0.920	37	37	1.8	99	3
Aniba jenmani	0.488	88	51	3.0	125	5
Aniba ovalifolia	0.501	86	51	3.0	124	5
Aniba panurensis	0.526	81	49	2.9	122	5
Aniba perutilis	0.500	86	51	3.0	124	5
Aniba riparia	0.620	68	46	2.5	115	5
Antiaris africana	0.380	115	56	3.6	133	7
Aparisthmium cordatum	0.488	88	51	3.0	125	5
Apeiba aspera	0.280	163	62	4.4	143	8
Apeiba echinata	0.360	122	57	3.8	135	7
Apeiba membranacea	0.270	170	63	4.5	144	8
Apeiba tibourbou	0.166	303	70	6.0	155	11
Apeiba spp.	0.200	243	68	5.4	151	10
Apuleia ferrea	0.813	47	40	2.0	104	4
Apuleia leiocarpa	0.772	51	41	2.1	106	4
Apuleia molaris	0.760	52	41	2.1	107	4
Apuleia polygama	0.770	51	41	2.1	106	4
Apuleia praecox	0.719	57	43	2.2	109	4
Ardisia cubana	0.620	68	46	2.5	115	5
Artocarpus altilis	0.270	170	63	4.5	144	8
Artocarpus comunis	0.700	59	43	2.3	110	4
Assa leitao	0.642	65	45	2.4	114	4
Astrocadrus chilesis	0.365	120	57	3.7	135	7
Astronium balansae	0.876	41	38	1.9	101	3
Astronium gracile	0.730	56	42	2.2	109	4
Astronium lecointei	0.743	54	42	2.2	108	4
Astronium macrocalyx	0.976	32	36	1.7	96	3
Astronium ulei	0.710	58	43	2.3	110	4
Astronium urundeuva	0.925	37	37	1.8	98	3
Auxemma gardneriana	0.654	64	45	2.4	113	4
Auxemma oncocalyx	0.654	64	45	2.4	113	4
Avicennia germinans	0.661	63	45	2.4	113	4
Avicennia nitida	0.744	54	42	2.2	108	4
Bagassa guianensis/tiliaefolia	0.704	58	43	2.3	110	4
Banara guianensis	0.605	70	46	2.6	116	5
Basiloxylon exelsum	0.580	73	47	2.6	118	5
Bastardiopsis densiflora	0.640	66	45	2.4	114	4
Batocarpus amazonicus	0.456	94	52	3.2	127	6
Belangera glabra	0.477	90	52	3.1	125	6
Belotia panamensis	0.210	229	67	5.3	150	10
Bertholletia excelsa	0.590	72	47	2.6	117	5
Bixa arborea	0.320	139	60	4.1	139	7
Blepharidium mexicanum	0.655	64	45	2.4	113	4
Blepharocalyx divaricatium	0.567	75	48	2.7	119	5
Bombacopsis quinata	0.487	88	51	3.0	125	5
Bombacopsis nervosa	0.523	82	50	2.9	122	5
Bombacopsis sepium	0.390	112	56	3.6	133	6
Bombacopsis sessilis	0.420	103	54	3.4	130	6
Bombax endecaphyllum	0.321	139	60	4.1	139	7
Bombax nervosum	0.493	87	51	3.0	124	5
Bombax paraense	0.390	112	56	3.6	133	6
Borojoa patinoi	0.520	82	50	2.9	122	5
Brosimum acutifolium	0.550	78	49	2.8	120	5
Brosimum alicastrum	0.708	58	43	2.3	110	4
Brosimum costaricanum	0.581	73	47	2.6	118	5
Brosimum paraense	0.779	51	41	2.1	106	4
Brosimum parinarioides	0.630	67	46	2.5	115	4
Brosimum potabile	0.530	81	49	2.8	122	5
Brosimum rubescens	1.044	27	35	1.6	93	3
Brosimum spp. (Alicastrum group)	0.640	66	45	2.4	114	4
Brosimum uleanum	0.680	61	44	2.3	112	4
Brya ebenus	0.898	39	38	1.9	100	3

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Brysenia adenophylla	0.540	79	49	2.8	121	5
Buchenavia capitata	0.600	71	47	2.6	117	5
Buchenavia exicarpa	0.770	51	41	2.1	106	4
Buchenavia hubera	0.590	72	47	2.6	117	5
Buchenavia tanibouca	0.717	57	43	2.2	109	4
Bucida buceras	0.890	40	38	1.9	100	3
Bulnesia arborea	0.933	36	37	1.8	98	3
Bumelia spp.	0.730	56	42	2.2	109	4
Bursera graveolens	0.304	148	61	4.2	140	8
Bursera simaruba	0.333	133	59	4.0	138	7
Byrsonima aerugo	0.623	68	46	2.5	115	5
Byrsonima apicata	0.661	63	45	2.4	113	4
Byrsonima spp.	0.610	69	46	2.5	116	5
Byrsonima verbascifolia	0.685	60	44	2.3	111	4
Cabralea congerana	0.631	67	46	2.5	115	4
Caesalpinia corymbosa	0.972	33	36	1.7	96	3
Caesalpinia ferrea	1.154	19	33	1.5	89	3
Caesalpinia gaumeri	0.835	45	39	2.0	103	4
Caesalpinia platyloba	0.825	46	40	2.0	103	4
Caesalpinia spp.	1.050	26	35	1.6	93	3
Calocarpus mammosum	0.571	74	48	2.7	119	5
Calocarpus sapota	0.571	74	48	2.7	119	5
Calophyllum calaba	0.693	60	43	2.3	111	4
Calophyllum mariae	0.460	94	52	3.2	127	6
Calophyllum spp.	0.650	64	45	2.4	113	4
Calycogonium squamulosum	0.740	54	42	2.2	108	4
Calycophyllum spp	0.670	62	44	2.4	112	4
Calycophyllum spruceanum	0.770	51	41	2.1	106	4
Calyptranthes elegans	0.749	54	42	2.2	108	4
Campnosperma panamensis	0.375	117	56	3.7	134	7
Carapa densiflora	0.517	83	50	2.9	122	5
Carapa nicaraguensis	0.395	110	55	3.5	132	6
Carapa procera	0.530	81	49	2.8	122	5
Carapa surinamensis	0.530	81	49	2.8	122	5
Caryocar barbinerve	0.760	52	41	2.1	107	4
Caryocar coccineum	0.650	64	45	2.4	113	4
Caryocar costarricense	0.640	66	45	2.4	114	4
Caryocar glabra	0.650	64	45	2.4	113	4
Caryocar villosum	0.720	57	43	2.2	109	4
Casearia arborea	0.530	81	49	2.8	122	5
Casearia guianensis	0.700	59	43	2.3	110	4
Casearia inaequilatera	0.770	51	41	2.1	106	4
Casearia oblonguifolia	0.685	60	44	2.3	111	4
Casearia praecox	0.690	60	44	2.3	111	4
Casearia spp.	0.620	68	46	2.5	115	5
Casearia sylvestris	0.614	69	46	2.5	116	5
Cassia apoucouita	0.962	34	36	1.7	97	3
Cassia ferruginea	0.828	46	40	2.0	103	4
Cassia moschata	0.705	58	43	2.3	110	4
Cassia multijuga	0.573	74	48	2.7	118	5
Cassia scleroxylon	1.010	30	35	1.7	95	3
Catalpa bignonioides	0.353	125	58	3.8	136	7
Catostemma alstonii	0.521	82	50	2.9	122	5
Catostemma fragrans	0.398	109	55	3.5	132	6
Catostemma spp.	0.550	78	49	2.8	120	5
Cavanillesia plantanifolia	0.120	443	74	6.9	161	13
Cecropia sciadophylla	0.376	116	56	3.6	134	7
Cecropia spp.	0.360	122	57	3.8	135	7
Cedrelinga catenaeformis	0.468	92	52	3.1	126	6
Ceiba samauma	0.570	75	48	2.7	119	5
Celtis brasiliensis	0.701	59	43	2.3	110	4
Celtis shcippii	0.670	62	44	2.4	112	4
Cespedesia macrophylla	0.630	67	46	2.5	115	4
Cespedesia spathulata	0.540	79	49	2.8	121	5
Chaetocarpus schomburgkianus	0.783	50	41	2.1	106	4
Chaetocarpus spp.	0.683	61	44	2.3	111	4
Cheiloclinium spp	0.898	39	38	1.9	100	3
Chimarrhis cymosa	0.509	84	50	2.9	123	5
Chimarrhis microcarpa	0.610	69	46	2.5	116	5
Chlorophora tinctoria	0.821	46	40	2.0	104	4
Chorisia integrifolia	0.280	163	62	4.4	143	8
Chorisia speciosa	0.253	183	64	4.7	145	9
Chrysophyllum caracasanum	0.686	60	44	2.3	111	4
Chrysophyllum caimito	0.740	54	42	2.2	108	4
Chrysophyllum viride	0.640	66	45	2.4	114	4
Chytroma idalimon	0.795	49	40	2.1	105	4
Citharexylon poeppigi[a]	0.539	79	49	2.8	121	5
Clarisia racemosa	0.607	70	46	2.6	116	5
Clathrotropis brunnea	0.820	46	40	2.0	104	4
Clathrotropis spp.	0.890	40	38	1.9	100	3
Clusia rosea	0.670	62	44	2.4	112	4
Coccoloba cozumelensis	0.675	62	44	2.3	112	4
Coccoloba spicata	0.797	49	40	2.0	105	4
Cochlospermum orinocensis	0.297	152	61	4.3	141	8
Comocladia spp.	0.828	46	40	2.0	103	4
Copaifera aromatica	0.620	68	46	2.5	115	5
Copaifera duckei	0.620	68	46	2.5	115	5
Copaifera langsdorffii	0.660	63	45	2.4	113	4

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Copaifera officinalis	0.603	70	47	2.6	116	5
Copaifera pubiflura	0.560	76	48	2.7	119	5
Copaifera reticulata	0.640	66	45	2.4	114	4
Cordia alliodora	0.517	83	50	2.9	122	5
Cordia apurensis	0.722	56	43	2.2	109	4
Cordia bicolor	0.472	91	52	3.1	126	6
Cordia borinquensis	0.700	59	43	2.3	110	4
Cordia collococca	0.470	91	52	3.1	126	6
Cordia dodecandra	0.840	45	39	2.0	103	4
Cordia exaltata	0.413	105	55	3.4	131	6
Cordia fallax	0.363	121	57	3.7	135	7
Cordia gerascanthus	0.676	61	44	2.3	112	4
Cordia hipoleuca	0.617	68	46	2.5	116	5
Cordia macrantha	0.718	57	43	2.2	109	4
Cordia sagotii	0.500	86	51	3.0	124	5
Cordia spp. (Alliodora group)	0.480	89	51	3.1	125	6
Cordia spp. (Gerascanthus group)	0.740	54	42	2.2	108	4
Cordia sulcata	0.600	71	47	2.6	117	5
Cordia trichotoma	0.500	86	51	3.0	124	5
Cornus disciflora	0.550	78	49	2.8	120	5
Couepia spp.	0.760	52	41	2.1	107	4
Couma macrocarpa	0.500	86	51	3.0	124	5
Couratari fagifolia	0.504	85	50	2.9	123	5
Couratari guianensis	0.509	84	50	2.9	123	5
Couratari multiflora	0.538	79	49	2.8	121	5
Couratari oblongifolia	0.500	86	51	3.0	124	5
Couratari panamensis	0.490	88	51	3.0	124	5
Couratari pulchra	0.505	85	50	2.9	123	5
Couratari stellata	0.650	64	45	2.4	113	4
Couroupita guianensis	0.415	104	54	3.4	130	6
Crataeva benthamii	0.420	103	54	3.4	130	6
Crescentia cujete	0.488	88	51	3.0	125	5
Croton echinocarpus	0.466	92	52	3.1	126	6
Croton floribundis	0.558	76	48	2.7	120	5
Croton mutisianus	0.376	116	56	3.6	134	7
Croton panamensis	0.590	72	47	2.6	117	5
Croton xanthochloros	0.478	90	51	3.1	125	6
Cryptocarya alba	0.562	76	48	2.7	119	5
Cryptocarya mandioccana	0.661	63	45	2.4	113	4
Cryptocarya moschata	0.542	79	49	2.8	121	5
Cunuria spruceana	0.520	82	50	2.9	122	5
Cupania americana	0.678	61	44	2.3	112	4
Cupania spp.	0.550	78	49	2.8	120	5
Cyclolobium clausenii	0.733	55	42	2.2	108	4
Cyrilla racemiflora	0.530	81	49	2.8	122	5
Cytharexylum poeppigi	0.493	87	51	3.0	124	5
Dacryodes colombiana	0.510	84	50	2.9	123	5
Dacryodes excelsa	0.530	81	49	2.8	122	5
Dacryodes occidentalis	0.622	68	46	2.5	115	5
Dendropanax arboreus	0.406	107	55	3.5	131	6
Dendropanax macropodum	0.420	103	54	3.4	130	6
Dialium divaricatum	0.731	55	42	2.2	109	4
Dialium guianense	0.923	37	37	1.8	98	3
Diclinanona calycina	0.470	91	52	3.1	126	6
Dicorynia paraensis	0.600	71	47	2.6	117	5
Dicypellium caryophyllatum	0.526	81	49	2.9	122	5
Didymopanax calvum	0.473	91	52	3.1	126	6
Didymopanax morototoni	0.446	97	53	3.2	128	6
Didymopanax navarroi	0.429	101	54	3.3	129	6
Didymopanax pittieri	0.430	100	54	3.3	129	6
Didymopanax spp.	0.740	54	42	2.2	108	4
Dimorphandra gonggrijpii	0.694	59	43	2.3	111	4
Dimorphandra hohenkerkii	0.593	71	47	2.6	117	5
Dimorphandra mora	0.990	31	36	1.7	95	3
Dimorphandra spp.	0.601	70	47	2.6	117	5
Dinizia excelsa	0.899	39	38	1.9	100	3
Diospyros spp.	0.410	106	55	3.4	131	6
Dipholis salicifolia	0.860	43	39	1.9	102	3
Dipholis stevensonii	0.810	47	40	2.0	104	4
Diploon venezuelana	0.850	44	39	1.9	102	3
Diplotropis guianensis	0.709	58	43	2.3	110	4
Diplotropis incexis	0.759	53	41	2.1	107	4
Diplotropis martiusii	0.740	54	42	2.2	108	4
Dipteryx alata	1.031	28	35	1.6	94	3
Dipteryx odorata	0.868	42	39	1.9	101	3
Dipteryx oleifera[a]	0.890	40	38	1.9	100	3
Drimys granadensis	0.422	102	54	3.4	130	6
Drimys winteri	0.385	113	56	3.6	133	6
Drypetes variabilis	0.702	59	43	2.3	110	4
Duguetia lanceolata	0.830	46	40	2.0	103	4
Dussia lehmannii	0.590	72	47	2.6	117	5
Dussia aff. *D. micranthera*	0.678	61	44	2.3	112	4
Dussia spp.	0.475	90	52	3.1	126	6
Ecclinusa guianensis	0.625	67	46	2.5	115	5
Ecclinusa sanguinolenta	0.581	73	47	2.6	118	5
Echirospermum balthazarii	0.616	69	46	2.5	116	5
Elaeodendron spp.	0.845	44	39	1.9	102	4
Elaeoluma glabrescens	0.575	74	48	2.7	118	5
Emmotum nitens	0.846	44	39	1.9	102	4
Endlichera arunciflora	0.820	46	40	2.0	104	4

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Endlichera cocuirey	0.390	112	56	3.6	133	6
Endopleura uchi	0.780	50	41	2.1	106	4
Enterolobium contortisiliquum	0.519	82	50	2.9	122	5
Enterolobium elipticum	0.642	65	45	2.4	114	4
Enterolobium maximum	0.370	118	57	3.7	134	7
Enterolobium schomburgkii	0.736	55	42	2.2	108	4
Enterolobium timbouva	0.334	133	59	4.0	138	7
Erblichia odorata	0.500	86	51	3.0	124	5
Eriotheca longipedicellatum	0.450	96	53	3.2	128	6
Eriotheca pentaphylla	0.380	115	56	3.6	133	7
Eriotheca spp.	0.403	108	55	3.5	131	6
Erisma uncinatum	0.488	88	51	3.0	125	5
Erythrina edulis	0.194	252	68	5.5	152	10
Erythrina spp.	0.249	187	64	4.8	146	9
Erythroxylon coca	0.898	39	38	1.9	100	3
Eschweilera amara	0.760	52	41	2.1	107	4
Eschweilera blanchetiana	0.999	31	36	1.7	95	3
Eschweilera corrugata	0.877	41	38	1.9	101	3
Eschweilera grata	0.877	41	38	1.9	101	3
Eschweilera hologyne	0.761	52	41	2.1	107	4
Eschweilera odora	0.810	47	40	2.0	104	4
Eschweilera sagotiana	0.820	46	40	2.0	104	4
Eschweilera subglandulosa	0.869	42	39	1.9	101	3
Eschweilera tenax	0.620	68	46	2.5	115	5
Eschweilera trinitensis	0.771	51	41	2.1	106	4
Esenbeckia febrifuga	0.642	65	45	2.4	114	4
Esenbeckia leiocarpa	0.879	41	38	1.9	101	3
Eugenia anastomosans	0.717	57	43	2.2	109	4
Eugenia compta	0.675	62	44	2.3	112	4
Eugenia pseudocaryophyllus	0.853	43	39	1.9	102	3
Eugenia pseudopsidium	0.620	68	46	2.5	115	5
Eugenia stahlii	0.730	56	42	2.2	109	4
Euplassa cantareirae	0.611	69	46	2.5	116	5
Euxylophora paraensis	0.751	53	42	2.2	107	4
Exostema caribaeum	1.026	28	35	1.7	94	3
Fagara aff. *F. martinicense*	0.410	106	55	3.4	131	6
Fagara aff. *F. rhoifolia*	0.541	79	49	2.8	121	5
Fagara monophylla	0.700	59	43	2.3	110	4
Fagara pentandra	0.696	59	43	2.3	111	4
Familia myrtacea	0.741	54	42	2.2	108	4
Ferolia guinanensis	0.706	58	43	2.3	110	4
Ferolia variegata	0.706	58	43	2.3	110	4
Ferreirea spectabilis	0.927	37	37	1.8	98	3
Ficus aff. *insipida*	0.256	181	64	4.7	145	9
Ficus citrifolia	0.400	109	55	3.5	132	6
Ficus glabrata	0.500	86	51	3.0	124	5
Ficus laevigata	0.400	109	55	3.5	132	6
Ficus pohliana	0.453	95	53	3.2	127	6
Ficus werckleana	0.295	153	61	4.3	141	8
Franchetella gongrijpii	0.720	57	43	2.2	109	4
Gallesia gorazema	0.612	69	46	2.5	116	5
Gallesia integrifolia	0.510	84	50	2.9	123	5
Genipa americana	0.693	60	43	2.3	111	4
Genipa spp.	0.750	53	42	2.2	107	4
Geoffroea spinosa	0.795	49	40	2.1	105	4
Gliricidium sepium	0.960	34	36	1.8	97	3
Glycydendron amazonicum	0.690	60	44	2.3	111	4
Goethalsia meiantha	0.357	123	57	3.8	135	7
Goniorrhachis marginata	0.940	36	37	1.8	98	3
Grias tessmannii	0.630	67	46	2.5	115	4
Guaiacum sanctum	1.148	19	33	1.5	89	3
Guatteria anomala	0.425	102	54	3.3	130	6
Guatteria decurrens	0.520	82	50	2.9	122	5
Guatteria olivacea	0.510	84	50	2.9	123	5
Guatteria procera	0.650	64	45	2.4	113	4
Guatteria spp.	0.525	81	49	2.9	122	5
Guazuma ulmifolia	0.497	86	51	3.0	124	5
Guenentia macrosperma	0.725	56	42	2.2	109	4
Guettarda elliptica	0.645	65	45	2.4	114	4
Guettarda laevis	0.650	64	45	2.4	113	4
Guettarda scaba	0.650	64	45	2.4	113	4
Guettarda seleriana	0.911	38	38	1.8	99	3
Guevina avellana	0.349	126	58	3.8	136	7
Guillielma gasipae	0.950	35	37	1.8	97	3
Gustavia brazilliensis	0.653	64	45	2.4	113	4
Gustavia speciosa	0.340	130	58	3.9	137	7
Gustavia spp.	0.623	68	46	2.5	115	5
Gymanthes lucida	1.100	23	34	1.6	91	3
Gyrocarpus americanus	0.320	139	60	4.1	139	7
Haematoxylon campechianum	0.876	41	38	1.9	101	3
Haenianthus salicifolius	0.810	47	40	2.0	104	4
Hasseltia floribunda	0.540	79	49	2.8	121	5
Heisteria spp.	0.710	58	43	2.3	110	4
Helicostylis tomentosa	0.682	61	44	2.3	111	4
Helietta longifoliata	0.887	40	38	1.9	100	3
Hernandia sonora	0.290	156	61	4.3	142	8
Heterostemon vageleri	0.781	50	41	2.1	106	4
Hibiscus elatus	0.629	67	46	2.5	115	4

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Hidrogaster trinerve	0.588	72	47	2.6	117	5
Himatanthus articulatus	0.549	78	49	2.8	120	5
Himatanthus sucuuba	0.472	91	52	3.1	126	6
Hirtella davisii	0.736	55	42	2.2	108	4
Holopyxidium jarana	0.845	44	39	1.9	102	4
Holopyxidium spp.	0.849	44	39	1.9	102	4
Homalium racemosum	0.770	51	41	2.1	106	4
Huberodendron patinoi	0.500	86	51	3.0	124	5
Humiria balsamifera	0.660	63	45	2.4	113	4
Humiria flofibunda	0.719	57	43	2.2	109	4
Humiriastrum colombianum	0.589	72	47	2.6	117	5
Humiriastrum melanocarpum	0.650	64	45	2.4	113	4
Humiriastrum procerum	0.690	60	44	2.3	111	4
Humiriastrum spp.	0.863	42	39	1.9	101	3
Hura polyandra	0.380	115	56	3.6	133	7
Hyeronima alchorneoides[a]	0.615	69	46	2.5	116	5
Hyeronima chocoensis[a]	0.620	68	46	2.5	115	5
Hyeronima laxiflora[a]	0.590	72	47	2.6	117	5
Hymenaea davisii	0.710	58	43	2.3	110	4
Hymenaea oblongifolia	0.740	54	42	2.2	108	4
Hymenaea palustris	0.620	68	46	2.5	115	5
Hymenaea parvifolia	0.900	39	38	1.8	100	3
Hymenaea stilbocarpa	0.909	38	38	1.8	99	3
Hymenolobium aff. *H. heterocarpon*	0.702	59	43	2.3	110	4
Hymenolobium excelsum	0.630	67	46	2.5	115	4
Hymenolobium modestrum	0.650	64	45	2.4	113	4
Hymenolobium petraeum	0.621	68	46	2.5	115	5
Hymenolobium spp.	0.640	66	45	2.4	114	4
Ilex casiquiarensis	0.517	83	50	2.9	122	5
Ilex hondurensis	0.640	66	45	2.4	114	4
Ilex inundata	0.430	100	54	3.3	129	6
Ilex sideroxyloides	0.621	68	46	2.5	115	5
Inga aff. *coruscans*	0.778	51	41	2.1	106	4
Inga alba	0.574	74	48	2.7	118	5
Inga capitata	0.640	66	45	2.4	114	4
Ingo edulis	0.510	84	50	2.9	123	5
Inga floribunda	0.554	77	48	2.7	120	5
Inga ingoides	0.503	85	50	3.0	123	5
Inga laurina	0.620	68	46	2.5	115	5
Inga marginata	0.720	57	43	2.2	109	4
Inga paraensis	0.820	46	40	2.0	104	4
Inga splendens	0.550	78	49	2.8	120	5
Inga vera	0.590	72	47	2.6	117	5
Iryanthera grandis	0.630	67	46	2.5	115	4
Iryanthera hostmanni	0.500	86	51	3.0	124	5
Iryanthera lancifolia	0.490	88	51	3.0	124	5
Iryanthera sagotiana	0.570	75	48	2.7	119	5
Jacaranda acutifolia	0.492	87	51	3.0	124	5
Jacaranda copaia	0.340	130	58	3.9	137	7
Jacaranda hesperia	0.350	126	58	3.8	136	7
Jacaranda mimosifolia	0.474	91	52	3.1	126	6
Jacaranda semiserrata	0.511	84	50	2.9	123	5
Jacaranda superba	0.315	142	60	4.1	139	7
Joannesia heveoides	0.390	112	56	3.6	133	6
Joannesia princeps	0.463	93	52	3.1	127	6
Krugiodendron ferreum	1.093	23	34	1.6	91	3
Labatia glomerata	0.750	53	42	2.2	107	4
Labourdonnaisia albescens	0.847	44	39	1.9	102	4
Lachmellea speciosa	0.730	56	42	2.2	109	4
Laetia procera	0.622	68	46	2.5	115	5
Laetia spp.	0.590	72	47	2.6	117	5
Laetia suaveolens	0.740	54	42	2.2	108	4
Lafoensia punicifolia	0.720	57	43	2.2	109	4
Laplacea brenesii	0.720	57	43	2.2	109	4
Laurelia aromatica	0.413	105	55	3.4	131	6
Laurelia philippiana	0.420	103	54	3.4	130	6
Laurelia sempervirens	0.411	105	55	3.4	131	6
Lecythis davisii	0.815	47	40	2.0	104	4
Lecythis jarana[a]	0.850	44	39	1.9	102	3
Lecythis laevifolia	0.975	33	36	1.7	96	3
Lecythis ollaria	0.720	57	43	2.2	109	4
Lecythis paraensis	0.880	41	38	1.9	101	3
Lecythis pisonis	0.840	45	39	2.0	103	4
Lecythis tuyrana	0.610	69	46	2.5	116	5
Libidibia sclerocarpa	0.898	39	38	1.9	100	3
Libidibia spp.	0.924	37	37	1.8	98	3
Licania aff. *micrantha*	0.860	43	39	1.9	102	3
Licania alba	0.908	38	38	1.8	99	3
Licania apetala	0.641	65	45	2.4	114	4
Licania arborea	0.630	67	46	2.5	115	4
Licania buxifolia	0.880	41	38	1.9	101	3
Licania campestre	0.590	72	47	2.6	117	5
Licania densiflora	0.796	49	40	2.0	105	4
Licania galibica	0.877	41	38	1.9	101	3
Licania hostmanni	0.837	45	39	2.0	103	4
Licania hypoleuca	0.867	42	39	1.9	101	3
Licania incana	0.770	51	41	2.1	106	4
Licania macrophylla	0.760	52	41	2.1	107	4
Licania octandra	0.770	51	41	2.1	106	4
Licania ovalifolia	0.909	38	38	1.8	99	3

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Licania parviflora	0.813	47	40	2.0	104	4
Licania platypus	0.620	68	46	2.5	115	5
Licania rigida	0.729	56	42	2.2	109	4
Licaria aff. *L. puchury-*	0.506	85	50	2.9	123	5
Licaria canella	0.626	67	46	2.5	115	4
Licaria cayennensis	0.960	34	36	1.8	97	3
Licaria rigida	0.730	56	42	2.2	109	4
Licaria spp.	0.820	46	40	2.0	104	4
Lindackeria spp.	0.451	95	53	3.2	127	6
Linociera domingensis	0.810	47	40	2.0	104	4
Lonchocarpus hedyosmus	0.696	59	43	2.3	111	4
Lonchocarpus hondurensis	0.673	62	44	2.4	112	4
Lonchocarpus latifolius	0.699	59	43	2.3	110	4
Lonchocarpus	0.769	52	41	2.1	106	4
Lonchocarpus sericeus	0.778	51	41	2.1	106	4
Lonchocarpus stramineus	0.834	45	39	2.0	103	4
Loxopterygium huasango	0.863	42	39	1.9	101	3
Loxopterygium sagotii	0.550	78	49	2.8	120	5
Lucuma belizensis	0.744	54	42	2.2	108	4
Lucuma grongrijpii[a]	0.720	57	43	2.2	109	4
Lucuma spp.	0.713	57	43	2.2	110	4
Luehea cymulosa	0.594	71	47	2.6	117	5
Luehea divaricata	0.600	71	47	2.6	117	5
Luehea speciosa	0.520	82	50	2.9	122	5
Luehea spp.	0.500	86	51	3.0	124	5
Lueheopsis duckeana	0.620	68	46	2.5	115	5
Mabea biblandulosa	0.589	72	47	2.6	117	5
Mabea piriri	0.593	71	47	2.6	117	5
Machaerium arboreum	0.629	67	46	2.5	115	4
Machaerium capote	0.520	82	50	2.9	122	5
Machaerium millei	0.780	50	41	2.1	106	4
Machaerium scleroxylon	0.833	45	39	2.0	103	4
Machaerium villosum	0.802	48	40	2.0	105	4
Macoubea guianensis	0.370	118	57	3.7	134	7
Macrolobium acaciaefolium	0.430	100	54	3.3	129	6
Macrosamanea pedicellaris	0.491	87	51	3.0	124	5
Magnolia poasana	0.420	103	54	3.4	130	6
Magnolia sororum	0.500	86	51	3.0	124	5
Magnolia splendens	0.590	72	47	2.6	117	5
Maguira sclerophylla	0.570	75	48	2.7	119	5
Malmea depressa	0.722	56	43	2.2	109	4
Malouetia duckei	0.570	75	48	2.7	119	5
Mammea americana	0.620	68	46	2.5	115	5
Manilkara amazonica	0.830	46	40	2.0	103	4
Manilkara elata	0.958	34	36	1.8	97	3
Manilkara globosa	0.780	50	41	2.1	106	4
Manilkara longifolia	0.905	39	38	1.8	99	3
Manilkara zapota	0.880	41	38	1.9	101	3
Maquira coriacea Berg.	0.442	98	53	3.2	128	6
Maquira sclerophylla	0.570	75	48	2.7	119	5
Margaritaria nobilis	0.701	59	43	2.3	110	4
Marila spp.	0.630	67	46	2.5	115	4
Marmaroxylon racemosum	0.901	39	38	1.8	100	3
Mastichodendron spp.	0.570	75	48	2.7	119	5
Matayba domingensis	0.700	59	43	2.3	110	4
Matayba scrobiculata	0.501	86	51	3.0	124	5
Matisia bicolor	0.520	82	50	2.9	122	5
Matisia cordata	0.430	100	54	3.3	129	6
Matisia hirta	0.610	69	46	2.5	116	5
Maytenus eggersii	0.780	50	41	2.1	106	4
Maytenus ficiformis	0.674	62	44	2.3	112	4
Maytenus spp.	0.710	58	43	2.3	110	4
Melaleuca spp.	0.581	73	47	2.6	118	5
Melanoxylon brauna	0.995	31	36	1.7	95	3
Meliosma brasiliensis	0.501	86	51	3.0	124	5
Meliosma herbetii	0.420	103	54	3.4	130	6
Metopium brownei	0.639	66	45	2.5	114	4
Metrodorea spp	0.653	64	45	2.4	113	4
Mezilaurus itauba	0.680	61	44	2.3	112	4
Mezilaurus lindaviana	0.680	61	44	2.3	112	4
Mezilaurus spp.	0.786	50	41	2.1	105	4
Miconia ibaquensis	0.610	69	46	2.5	116	5
Miconia argentea	0.720	57	43	2.2	109	4
Micropholis chrysophylloides	0.680	61	44	2.3	112	4
Micropholis garciniaefolia	0.640	66	45	2.4	114	4
Micropholis gardnerianum	0.608	70	46	2.5	116	5
Micropholis guyanensis	0.650	64	45	2.4	113	4
Micropholis melinoniana	0.531	80	49	2.8	121	5
Micropholis venulosa	0.670	62	44	2.4	112	4
Mimosa bracatinga	0.549	78	49	2.8	120	5
Mimosa scabrella	0.608	70	46	2.5	116	5
Minquartia guianensis	0.755	53	42	2.1	107	4
Moldenhawera blanchetiana	0.742	54	42	2.2	108	4
Moldenhawera spp.	0.731	55	42	2.2	109	4
Mollia spp.	0.570	75	48	2.7	119	5
Moquilea spp.	0.789	50	41	2.1	105	4
Moquilea tomentosa	0.869	42	39	1.9	101	3
Moquinia polymorpha	0.703	58	43	2.3	110	4
Mora magistosperma	0.880	41	38	1.9	101	3
Mora oleifera	0.740	54	42	2.2	108	4
Moronobea coccinea	0.677	61	44	2.3	112	4
Mouriria barinensis	0.780	50	41	2.1	106	4
Mouriria chamissoana	0.736	55	42	2.2	108	4
Mouriria guyanensis	0.859	43	39	1.9	102	3
Mouriria huberi	0.751	53	42	2.2	107	4
Mouriria pseudo-germinata	0.650	64	45	2.4	113	4
Mouriria sideroxylon	0.881	41	38	1.9	101	3
Myrceugenia planipes	0.584	73	47	2.6	118	5
Myrcia paivae	0.730	56	42	2.2	109	4
Myrcia splendens	0.800	48	40	2.0	105	4

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Myrciaria amazonica	0.740	54	42	2.2	108	4
Myrciaria floribunda	0.726	56	42	2.2	109	4
Myristica spp.	0.460	94	52	3.2	127	6
Myrocarpus fastigiatus	0.779	51	41	2.1	106	4
Myrocarpus frondosus	0.852	43	39	1.9	102	3
Myrocarpus spp.	0.916	38	37	1.8	99	3
Myroxylon balsamum	0.921	37	37	1.8	99	3
Myroxylon toluiferum	0.921	37	37	1.8	99	3
Myroxylon peruiferum	0.780	50	41	2.1	106	4
Naucleopsis spp.[a]	0.660	63	45	2.4	113	4
Nectandra amazonum	0.470	91	52	3.1	126	6
Nectandra antillana	0.420	103	54	3.4	130	6
Nectandra concinna	0.560	76	48	2.7	119	5
Nectandra coriacea	0.470	91	52	3.1	126	6
Nectandra elaiophora	0.615	69	46	2.5	116	5
Nectandra membranacea	0.450	96	53	3.2	128	6
Nectandra mollis	0.573	74	48	2.7	118	5
Nectandra pisi	0.381	115	56	3.6	133	7
Nectandra rigida	0.648	65	45	2.4	114	4
Nectandra rodioei	0.910	38	38	1.8	99	3
Nectandra rubra	0.709	58	43	2.3	110	4
Nectandra sintenisii	0.550	78	49	2.8	120	5
Nectandra wana	0.835	45	39	2.0	103	4
Neea spp.	0.475	90	52	3.1	126	6
Nemaluma anomala	0.750	53	42	2.2	107	4
Neopometia ptychandra	0.949	35	37	1.8	97	3
Neoxytece elegans	0.820	46	40	2.0	104	4
Newtonia suaveolens	0.589	72	47	2.6	117	5
Nothofagus alpina	0.491	87	51	3.0	124	5
Nothofagus obliqua	0.531	80	49	2.8	121	5
Nothofagus pumilio	0.446	97	53	3.2	128	6
Ochroma bicolor	0.186	265	69	5.6	153	10
Ocotea aff. *O. fasciculata*	0.488	88	51	3.0	125	5
Ocotea austinii	0.480	89	51	3.1	125	6
Ocotea barcellensis	0.561	76	48	2.7	119	5
Ocotea canaliculata	0.398	109	55	3.5	132	6
Ocotea cymbarum	0.660	63	45	2.4	113	4
Ocotea glandulosa	0.460	94	52	3.2	127	6
Ocotea guianensis	0.357	123	57	3.8	135	7
Ocotea leucoxylon	0.450	96	53	3.2	128	6
Ocotea moschata	0.590	72	47	2.6	117	5
Ocotea neesiana	0.550	78	49	2.8	120	5
Ocotea porosa (Phoebe porosa)	0.667	62	44	2.4	112	4
Ocotea pretiosa	0.699	59	43	2.3	110	4
Ocotea schomburgkiana	0.460	94	52	3.2	127	6
Ocotea spathulata	0.620	68	46	2.5	115	5
Ocotea tenuiflora	0.525	81	50	2.9	122	5
Ocotea wachenheimii	0.398	109	55	3.5	132	6
Olneya tesota	0.933	36	37	1.8	98	3
Onychopetalum amazonicum	0.570	75	48	2.7	119	5
Ormosia coccinea	0.610	69	46	2.5	116	5
Ormosia flava	0.709	58	43	2.3	110	4
Ormosia krugii	0.500	86	51	3.0	124	5
Ormosia lignivalvis	0.597	71	47	2.6	117	5
Ormosia paraensis	0.675	62	44	2.3	112	4
Ormosia schunkei	0.570	75	48	2.7	119	5
Osteophloeum platyspermum	0.550	78	49	2.8	120	5
Ouratea spp.	0.681	61	44	2.3	112	4
Oxandra lanceolata	0.779	51	41	2.1	106	4
Oxandra spp.	0.750	53	42	2.2	107	4
Oxythece hahianum	0.821	46	40	2.0	104	4
Pachira acuatica	0.430	100	54	3.3	129	6
Pachystroma illicifolium	0.743	54	42	2.2	108	4
Pachystroma longifolium	0.653	64	45	2.4	113	4
Parahancornia amapa	0.478	90	51	3.1	125	6
Parapiptadenia rigida	0.790	49	41	2.1	105	4
Parkia belutina	0.420	103	54	3.4	130	6
Parkia multijuga	0.510	84	50	2.9	123	5
Parkia nitida	0.307	146	60	4.2	140	8
Parkia oppositifolia	0.265	174	63	4.6	144	8
Parkia paraensis	0.440	98	53	3.3	128	6
Parkia pendula	0.443	97	53	3.2	128	6
Patagonula americana	0.729	56	42	2.2	109	4
Peltogyne confertiflora	0.725	56	42	2.2	109	4
Peltogyne densiflora	0.640	66	45	2.4	114	4
Peltogyne mexicana	0.830	46	40	2.0	103	4
Peltogyne paniculata	0.683	61	44	2.3	111	4
Peltogyne porphyrocardia	0.908	38	38	1.8	99	3
Peltogyne pubescens	0.740	54	42	2.2	108	4
Peltogyne purpurea	0.797	49	40	2.0	105	4
Peltogyne recifensis	1.049	26	35	1.6	93	3
Peltogyne venosa	0.710	58	43	2.3	110	4
Peltophorum vogelianum	0.750	53	42	2.2	107	4
Pentaclethra macroloba	0.676	61	44	2.3	112	4
Pentapanax spp.	0.520	82	50	2.9	122	5
Pera glabrata	0.639	66	45	2.5	114	4
Pera schomburgkiana	0.656	64	45	2.4	113	4
Persea caerulea	0.390	112	56	3.6	133	6
Persea lingue	0.501	86	51	3.0	124	5
Persea racemosa	0.625	67	46	2.5	115	5
Persea schiedeana	0.463	93	52	3.1	127	6

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Persea veraguasensis	0.390	112	56	3.6	133	6
Petitia domingensis	0.660	63	45	2.4	113	4
Phoebe elongata	0.573	74	48	2.7	118	5
Phyllanthus nobilis	0.717	57	43	2.2	109	4
Phyllostylon brasiliensis	0.696	59	43	2.3	111	4
Physocalymma scaberrimum	0.744	54	42	2.2	108	4
Picraena excelsa	0.466	92	52	3.1	126	6
Pimenta officinalis	0.885	40	38	1.9	100	3
Piptadenia cebil	0.960	34	36	1.8	97	3
Piptadenia communis	0.680	61	44	2.3	112	4
Piptadenia gonoacantha	0.699	59	43	2.3	110	4
Piptadenia macrocarpa	0.830	46	40	2.0	103	4
Piptadenia pereguna	0.573	74	48	2.7	118	5
Piptadenia pittieri	0.620	68	46	2.5	115	5
Piptadenia psilostachya	0.667	62	44	2.4	112	4
Piptadenia suaveolens	0.760	52	41	2.1	107	4
Piranhea longepedunculata	0.903	39	38	1.8	99	3
Piranhea trifoliata	0.930	36	37	1.8	98	3
Piratinera guianensis	0.960	34	36	1.8	97	3
Piratinera longependunculata	0.877	41	38	1.9	101	3
Piscidia carthagenensis	0.795	49	40	2.1	105	4
Piscidia communis	0.690	60	44	2.3	111	4
Pisonia cuspidata[a]	0.471	91	52	3.1	126	6
Pisonia spp.	0.520	82	50	2.9	122	5
Pithecellobium arboreum	0.600	71	47	2.6	117	5
Pithecellobium guachapele	0.548	78	49	2.8	120	5
Pithecellobium inaequale	0.620	68	46	2.5	115	5
Pithecellobium pedicellare	0.429	101	54	3.3	129	6
Planchonella pachycarpa	0.771	51	41	2.1	106	4
Plathymenia foliolosa	0.481	89	51	3.1	125	6
Plathymenia reticulata	0.398	109	55	3.5	132	6
Platonia insignis Mart.	0.772	51	41	2.1	106	4
Platycyamus regnellii	0.759	53	41	2.1	107	4
Platymiscium floribundum	0.840	45	39	2.0	103	4
Platymiscium pinnatum	0.853	43	39	1.9	102	3
Platymiscium polystachium	0.730	56	42	2.2	109	4
Platymiscium trinitatis	0.940	36	37	1.8	98	3
Platymiscium ulei	0.605	70	46	2.6	116	5
Platymiscium yucatanum	0.665	63	44	2.4	112	4
Poecilanthe amazonica	0.940	36	37	1.8	98	3
Poecilanthe parviflora	0.919	37	37	1.8	99	3
Poeppigia excelsa	0.667	62	44	2.4	112	4
Poeppigia procera	0.710	58	43	2.3	110	4
Poulsenia armata	0.405	107	55	3.5	131	6
Pourouma aff. *apiculata*	0.450	96	53	3.2	128	6
Pourouma aspera	0.280	163	62	4.4	143	8
Pourouma aff. *guianensis*	0.330	135	59	4.0	138	7
Pourouma aff. *melinonii*	0.320	139	60	4.1	139	7
Pouteria aff. *P. quianensis*	0.825	46	40	2.0	103	4
Pouteria anibifolia	0.660	63	45	2.4	113	4
Pouteria caimito	0.880	41	38	1.9	101	3
Pouteria campechiana	0.760	52	41	2.1	107	4
Pouteria carabobensis	0.680	61	44	2.3	112	4
Pouteria egregia	0.876	41	38	1.9	101	3
Pouteria eugeniifolia	1.082	24	34	1.6	91	3
Pouteria gonggrijpii	0.840	45	39	2.0	103	4
Pouteria melinonii	0.630	67	46	2.5	115	4
Pouteria multiflora	0.740	54	42	2.2	108	4
Pouteria pomifera	0.760	52	41	2.1	107	4
Pouteria torta	0.659	63	45	2.4	113	4
Pouteria unilocularis	0.820	46	40	2.0	104	4
Pouteria venosa	0.741	54	42	2.2	108	4
Pradosia glycyphloea	0.741	54	42	2.2	108	4
Prosopsis juliflora	0.696	59	43	2.3	111	4
Prosopsis pallida	0.936	36	37	1.8	98	3
Protium altissimum	0.552	77	48	2.7	120	5
Protium crenatum	0.579	73	47	2.6	118	5
Protium heptaphyllum	0.678	61	44	2.3	112	4
Protium neglectum	0.583	73	47	2.6	118	5
Protium sagoitianum	0.576	74	48	2.7	118	5
Protium schomburgkianum	0.510	84	50	2.9	123	5
Protium tenuifolium	0.643	65	45	2.4	114	4
Prunus brasiliensis	0.749	54	42	2.2	108	4
Prunus spp.	0.580	73	47	2.6	118	5
Pseudobombax ellipticum	0.340	130	58	3.9	137	7
Pseudobombax grandiflorum	0.363	121	57	3.7	135	7
Psuedobombax munguba	0.260	178	63	4.6	145	8
Pseudobombax septenatum	0.140	371	73	6.5	158	12
Pseudolmedia laevigata	0.640	66	45	2.4	114	4
Pseudolmedia laevis	0.710	58	43	2.3	110	4
Pseudolmedia oxyphyllaria	0.720	57	43	2.2	109	4
Pseudoxandra polyphleba	0.510	84	50	2.9	123	5
Psidium acutangulum	0.800	48	40	2.0	105	4
Psidium riparium	0.857	43	39	1.9	102	3
Pterocarpus quianensis	0.613	69	46	2.5	116	5
Pterocarpus officinalis	0.430	100	54	3.3	129	6
Pterocarpus rohrii	0.410	106	55	3.4	131	6
Pterocarpus spp.	0.682	61	44	2.3	111	4
Pterocarpus vernalis	0.616	69	46	2.5	116	5

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Pterocarpus violaceus	0.501	86	51	3.0	124	5
Pterodon pubescens	0.884	40	38	1.9	100	3
Pterogyne nitens	0.728	56	42	2.2	109	4
Pterygota excelsa	0.580	73	47	2.6	118	5
Pterygota spp.	0.620	68	46	2.5	115	5
Quararibaea asterolepsis	0.450	96	53	3.2	128	6
Quararibaea guianensis	0.540	79	49	2.8	121	5
Ramisia brasiliensis	0.557	76	48	2.7	120	5
Raputia spp.	0.550	78	49	2.8	120	5
Recordoxylum speciosum	0.837	45	39	2.0	103	4
Rheedia madruno	0.763	52	41	2.1	107	4
Rheedia spp.	0.600	71	47	2.6	117	5
Rhizophora mangle	0.830	46	40	2.0	103	4
Rhizophora racemosa	0.877	41	38	1.9	101	3
Rinorea bahiensis	0.839	45	39	2.0	103	4
Rollinia exsucca	0.420	103	54	3.4	130	6
Rollinia spp.	0.340	130	58	3.9	137	7
Roucheria spp.	0.820	46	40	2.0	104	4
Roupala brasiliensis	0.803	48	40	2.0	105	4
Roupala montana	0.770	51	41	2.1	106	4
Roupala spp.	0.930	36	37	1.8	98	3
Ruizterania albiflora	0.601	70	47	2.6	117	5
Ruprechtia aff. *ramiflora*	0.518	83	50	2.9	122	5
Sacoglottis cydonioides	0.716	57	43	2.2	109	4
Sacoglottis procera	0.653	64	45	2.4	113	4
Salix humboldtiana	0.398	109	55	3.5	132	6
Samanea saman	0.460	94	52	3.2	127	6
Sandwithiodoxa egregia	0.840	45	39	2.0	103	4
Sapium biglandulosum	0.465	92	52	3.1	126	6
Sapium cf. *jenmanni*	0.407	107	55	3.4	131	6
Sapium laurocerasus	0.380	115	56	3.6	133	7
Sapium marmieri	0.400	109	55	3.5	132	6
Sapium verum	0.456	94	52	3.2	127	6
Schefflera paraensis	0.357	123	57	3.8	135	7
Schinopsis lorentzii	0.876	41	38	1.9	101	3
Schinopsis spp.	1.000	30	36	1.7	95	3
Schizolobium excelsum	0.273	168	62	4.5	143	8
Schizolobium parahybum	0.600	71	47	2.6	117	5
Schweilera spp.	0.720	57	43	2.2	109	4
Sclerolobium chrysophyllum	0.610	69	46	2.5	116	5
Sclerolobium guianensis	0.557	76	48	2.7	120	5
Sclerolobium melinonii	0.470	91	52	3.1	126	6
Sclerolobium paniculatum	0.335	132	59	3.9	137	7
Sclerolobium paraense	0.610	69	46	2.5	116	5
Sclerolobium poeppigianum	0.650	64	45	2.4	113	4
Scleronema spp.	0.654	64	45	2.4	113	4
Securinega guarayuva	0.733	55	42	2.2	108	4
Senegalia greggii	0.898	39	38	1.9	100	3
Sequieria langsdorffii	0.537	80	49	2.8	121	5
Sickingia aff. *S. tinctoria*	0.710	58	43	2.3	110	4
Sickingia longifolia	0.605	70	46	2.6	116	5
Sickingia salvadorensis	0.660	63	45	2.4	113	4
Sickingia spp.	0.650	64	45	2.4	113	4
Sideroxylon tempisque	1.040	27	35	1.6	93	3
Silvia itauba	0.777	51	41	2.1	106	4
Silvia navalium	0.719	57	43	2.2	109	4
Simaba multiflora	0.501	86	51	3.0	124	5
Simarouba amara	0.326	136	59	4.0	138	7
Simarouba glauca	0.420	103	54	3.4	130	6
Simarouba versicolor	0.454	95	53	3.2	127	6
Sloanea berteriana	0.800	48	40	2.0	105	4
Sloanea grandiflora	0.795	49	40	2.1	105	4
Sloanea guianensis	0.787	50	41	2.1	105	4
Sloanea lauriflora	0.809	48	40	2.0	104	4
Sloanea massoni	0.709	58	43	2.3	110	4
Sloanea terniflora	0.792	49	41	2.1	105	4
Solanum inaequale	0.437	99	53	3.3	129	6
Spondias lutea	0.380	115	56	3.6	133	7
Spondias mombin	0.383	114	56	3.6	133	7
Sterculia apetala	0.361	122	57	3.7	135	7
Sterculia caribaea	0.757	53	42	2.1	107	4
Sterculia chicha	0.325	137	59	4.0	138	7
Sterculia pilosa	0.530	81	49	2.8	122	5
Sterculia rugosa	0.531	80	49	2.8	121	5
Sterculia speciosa	0.490	88	51	3.0	124	5
Stryphnodendron polystachum	0.448	96	53	3.2	128	6
Stylogyne spp.	0.690	60	44	2.3	111	4
Sweetia panamensis	0.828	46	40	2.0	103	4
Sweetia spp.	0.800	48	40	2.0	105	4
Swietenia candollei	0.590	72	47	2.6	117	5
Swietenia humilis	0.490	88	51	3.0	124	5
Symplocos martinicensis	0.501	86	51	3.0	124	5
Symplocos spp.	0.490	88	51	3.0	124	5
Syzygiopsis oppositifolia	0.650	64	45	2.4	113	4
Tachigali cf. *myrmecophila*[a]	0.570	75	48	2.7	119	5
Talauma dodecapetala	0.590	72	47	2.6	117	5
Talauma mexicana	0.490	88	51	3.0	124	5
Talauma ovata	0.520	82	50	2.9	122	5
Talisia esculenta	0.936	36	37	1.8	98	3
Talisia olivaeformis	0.890	40	38	1.9	100	3

Table C4—Basic specific gravity G_b, green moisture content M_g, and estimated initial kiln conditions for Latin American species—con.

Botanical name	G_b	Estimated initial conditions M_g (%)	T_i (°C)	D_i (°C)	T_i (°F)	D_i (°F)
Talisia spp.	0.912	38	38	1.8	99	3
Tapirira guianensis	0.486	88	51	3.0	125	5
Tapirira marchandii	0.405	107	55	3.5	131	6
Taralea oppositrifolia	0.800	48	40	2.0	105	4
Tecoma caraiba	0.645	65	45	2.4	114	4
Tecoma impetiginosa	0.781	50	41	2.1	106	4
Tecoma longiflora	0.837	45	39	2.0	103	4
Tecoma ochracea	0.821	46	40	2.0	104	4
Tecoma pentaphylla	0.475	90	52	3.1	126	6
Terminalia aff. *obovata*	0.722	56	43	2.2	109	4
Terminalia aff. *lucida*	0.700	59	43	2.3	110	4
Terminalia buceras	0.751	53	42	2.2	107	4
Terminalia catappa	0.590	72	47	2.6	117	5
Terminalia guyanensis	0.625	67	46	2.5	115	5
Terminalia januarensis	0.742	54	42	2.2	108	4
Terminalia oblonga	0.635	66	45	2.5	114	4
Terminalia obovata	0.449	96	53	3.2	128	6
Tetragastris altissima	0.674	62	44	2.3	112	4
Tetragastris balsamifera	0.650	64	45	2.4	113	4
Tetragastris mucronata	0.605	70	46	2.6	116	5
Tetragastris panamensis	0.741	54	42	2.2	108	4
Tetragastris stevonsonii	0.860	43	39	1.9	102	3
Tetrastylidium engleri	0.819	47	40	2.0	104	4
Tetrathylacium macrophyllum	0.638	66	45	2.5	114	4
Tetrorchidium rubrivenium	0.433	100	54	3.3	129	6
Tipuana tipu	0.593	71	47	2.6	117	5
Toluifera balsamum	0.740	54	42	2.2	108	4
Torresea cearensis	0.572	74	48	2.7	119	5
Toulicia pulvinata	0.631	67	46	2.5	115	4
Tovomita guianensis	0.600	71	47	2.6	117	5
Tovomita macrophylla	0.848	44	39	1.9	102	4
Trattinickia cf. *burseraefolia*	0.500	86	51	3.0	124	5
Trattinickia rhoifolia	0.417	104	54	3.4	130	6
Trema intergerrima	0.390	112	56	3.6	133	6
Trichillia aff. *T. septentrionalis*	0.694	59	43	2.3	111	4
Trichilia lecointei	0.900	39	38	1.8	100	3
Trichilia propingua	0.580	73	47	2.6	118	5
Trichilia singularis	0.510	84	50	2.9	123	5
Trichosperma mexicanum	0.410	106	55	3.4	131	6
Trophis spp.	0.453	95	53	3.2	127	6
Turrubia olfereana	0.413	105	55	3.4	131	6
Ulmus mexicana	0.550	78	49	2.8	120	5
Unonopsis spectabilis	0.573	74	48	2.7	118	5
Vantanea cupularis	0.939	36	37	1.8	98	3
Vantanea paniculata	0.749	54	42	2.2	108	4
Vantanea parviflora	0.860	43	39	1.9	102	3
Vatairea lundellii	0.640	66	45	2.4	114	4
Vatairea guianensis	0.613	69	46	2.5	116	5
Vatairea paraensis	0.749	54	42	2.2	108	4
Vatairea sericea	0.710	58	43	2.3	110	4
Vataireopsis araroba	0.643	65	45	2.4	114	4
Virola koschnyi	0.470	91	52	3.1	126	6
Virola melinonii	0.420	103	54	3.4	130	6
Virola merendonia	0.449	96	53	3.2	128	6
Virola officinalis	0.605	70	46	2.6	116	5
Virola oleifera	0.563	76	48	2.7	119	5
Virola sebifera	0.434	99	54	3.3	129	6
Virola surinamensis	0.399	109	55	3.5	132	6
Vismia baccifera	0.489	88	51	3.0	125	5
Vismia cayennensis	0.461	93	52	3.1	127	6
Vismia guianensis	0.477	90	52	3.1	125	6
Vismia spp.	0.410	106	55	3.4	131	6
Vitex cooperi	0.530	81	49	2.8	122	5
Vitex cymosa	0.590	72	47	2.6	117	5
Vitex divaricata	0.620	68	46	2.5	115	5
Vitex gaumeri	0.550	78	49	2.8	120	5
Vitex giganteum	0.520	82	50	2.9	122	5
Vitex kuylenii	0.530	81	49	2.8	122	5
Vitex orinocensis	0.529	81	49	2.8	122	5
Vitex stahelii	0.603	70	47	2.6	116	5
Vouacapoua americana	0.814	47	40	2.0	104	4
Warszewicsia coccinea	0.560	76	48	2.7	119	5
Weinmannia pubescens	0.597	71	47	2.6	117	5
Weinmannia trichosperma	0.528	81	49	2.8	122	5
Weinmannia wercklei	0.454	95	53	3.2	127	6
Xanthoxylum martinicensis	0.460	94	52	3.2	127	6
Xanthoxylum spp.	0.440	98	53	3.3	128	6
Xylopia aromatica	0.605	70	46	2.6	116	5
Xylopia columbiana	0.510	84	50	2.9	123	5
Xylopia emarginata	0.590	72	47	2.6	117	5
Xylopia frutescens	0.640	66	45	2.4	114	4
Xylopia neglecta	0.614	69	46	2.5	116	5
Xylopia nitida	0.560	76	48	2.7	119	5
Xylosma spp.	0.650	64	45	2.4	113	4
Zanthoxylum martinicense	0.541	79	49	2.8	121	5
Zanthoxylum tragoded	0.757	53	42	2.1	107	4
Zollernia falcata	0.952	34	37	1.8	97	3
Zollernia paraensis	1.154	19	33	1.5	89	3
Zuelania guidonia	0.720	57	43	2.2	109	4

[a]Older scientific name — Newer scientific name

Older scientific name	Newer scientific name
Coumarouna spp.	*Dipteryx* spp.
Cytharexylum spp.	*Citharexylon* spp.
Franchetella spp.	*Lucuma* spp.
Hieronima spp.	*Hyeronima* spp.
Holopyxidium spp.	*Lecythis* spp.
Ogcodeia spp.	*Naucleopsis* spp.
Pseudosamanea spp.	*Albizia* spp.
Tachigalia spp.	*Tachigali* spp.
Torrubia spp.	*Pisonia* spp.