Article 3. Wood for Fuel Purposes

4530. Definitions. - The following definitions apply to this article only and do not affect the provisions of any other section, article, or chapter. Nothing in this article shall be deemed to apply to charcoal sold for fuel purposes.

(a) **Bulk Firewood.** All firewood which is not packaged and all packaged firewood of quantities greater than four cubic feet.

(b) **Cord.** The cord is the standard measure for bulk firewood, and shall contain 128 cubic feet of wood, ranked and well-stowed.

(c) **Firewood.** "Firewood" has the same meaning as "wood for fuel purposes".

(d) **Kindling.** Small pieces of wood that are readily ignited and primarily used in starting a fire.

(e) **Manufactured Products.** Compressed or non-compressed products for fuel purposes made from, but not limited to, sawdust, treated or untreated chips or chunks, cut or split wood.

(f) **Other Terms.** The use of the terms "face cord", "rack", "rick", "tier", "pile" or "truck-load", or any other term describing a unit of measure different than those specified in this article shall be prohibited.

(g) **Ranked and Well-Stowed.** Wood placed in a row or rows, with individual pieces touching and parallel to each other and stacked in a compact manner minimizing spaces between pieces.

(h) **Sell.** "Sell" has the same meaning as defined in Business and Professions Code Section 12009.

(i) **Wood for Fuel Purposes.** Any kindling, logs, boards, timbers, slab wood, mill wood, manufactured products, cut timber, or other wood, split or not split, used for or intended to be used for campfires, or for heating in fireplaces or stoves, or for cooking.

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

4531. Method of Sale. - Wood, for fuel purposes, shall be sold or offered for sale by cord measure, fraction of the cord, or percentage of the cord, excepting as hereinafter provided.

(a) Wood for fuel purposes, other than manufactured products, when sold in quantities less than one-eighth cord, shall be sold by the cubic foot or fraction of the cubic foot.

(b) Manufactured products for fuel purposes shall be sold as follows:

(1) Compressed products having any dimension greater than six inches shall be sold by weight and count.

(2) Compressed products not greater than six inches in any dimension shall be sold by weight.

(3) Noncompressed products not greater than six inches in any dimension shall be sold by the cubic foot or fraction of the cubic foot.

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

4532. Invoice. - A sales invoice or delivery ticket shall be presented by the seller to the purchaser whenever any non-packaged wood for fuel purposes is sold. The sales invoice or delivery ticket shall contain at least the name and address of the seller, the date purchased or delivered, the quantity purchased, and the price of the quantity purchased.

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

4533. Kindling. - Whenever kindling is included as part of the represented quantity and is ten percent or more by volume of the represented quantity, the percentage of kindling, within five percent by volume, shall be stated on the label or sales invoice or delivery ticket.

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

4534. Identity. - Whenever there is a representation as to the species, species group of origin or the type of wood, the representation or statement of identity shall be consistent with one of the following:

(a) If a common name is stated, all wood shall be of that species (e.g., White Oak, Jeffery Pine, Grand Fir, etc.).

(b) If a group is stated, all wood shall be of that same group of origin (e.g., oak, pine, fir, etc.).

(c) If either hardwood or softwood is stated, all wood must be of that type and the common name or group of origin for any wood present must be stated. If there is a mixture of types (hardwood and softwood), the percentage of each, within 10% of volume of each, shall be stated. The volume of each shall be determined as per the volumetric test procedures set forth below.

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

4535. Volumetric Test Procedure for Bulk Firewood.

4535.1. Stacking:

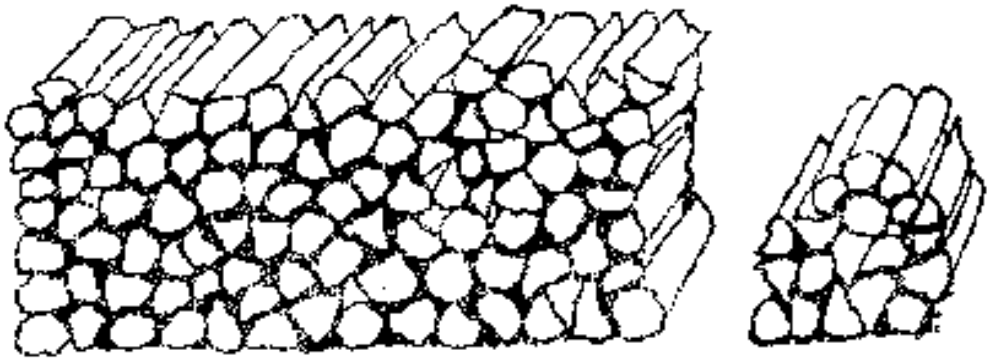
(a) Firewood shall be measured when ranked and well-stowed, and stacked in a geometrical shape that will facilitate volume calculations (i.e., rectangular, triangular or combination of the two). The stack may need some adjustment to meet these requirements. (See Figure 1.)

NOTE: If the wood is stacked in multiple rows, the measurements of the individual rows are used to determine the volume of the total stack.

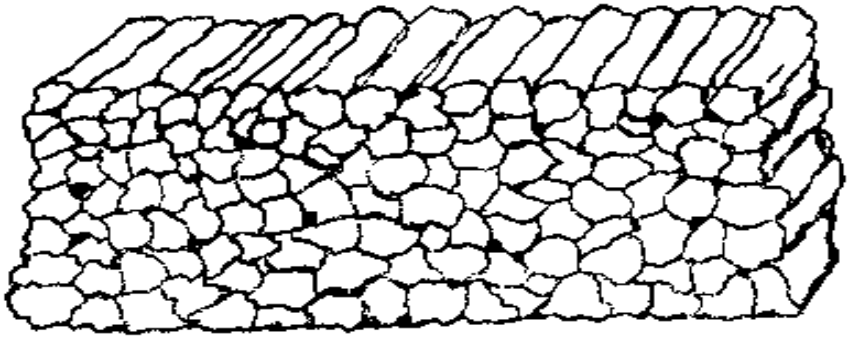
NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

Figure 1.

Cord of 128 cubic feet ranked and well-stowed.



Same cord of 128 cubic feet that is not ranked and well-stowed. Shows overage!



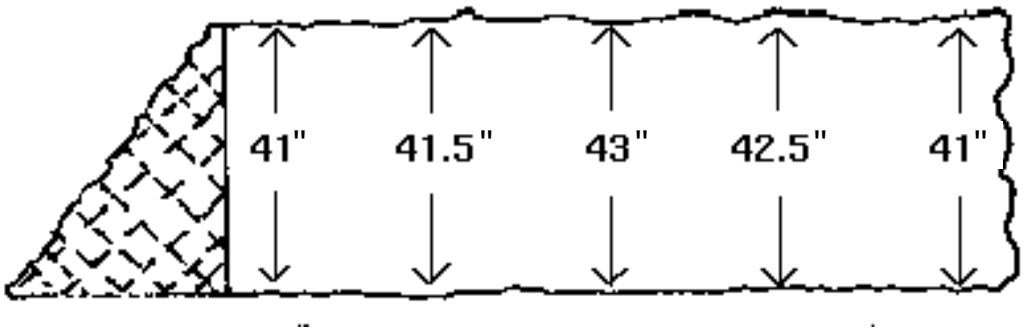
4535.2. Measuring:

NOTE: A calibrated linear measure shall be used. All measurements shall be taken in increments no greater than 1/8 inch and rounded up. More measurements than specified may be taken.

(a) Measurement of the rectangular portion of a stack.

(1) Average height determination of a rectangular stack: Starting at one end of the stack, measure the height of the stack, on both sides, at approximately 2 foot intervals, along the length of the stack, or at four proportionately equal intervals if the stack is less than 6 feet long. (Minimum of 4 measurements on each side shall be taken.) Calculate the average height. (See Figure 2.)

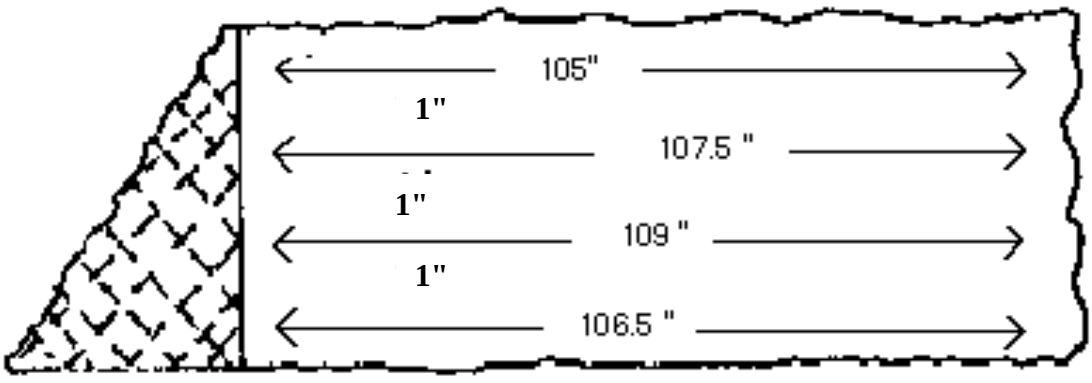
Figure 2. Height of Stack.



Average Height = (41" + 41.5" + 43" + 42.5" + 41") ÷ 5 = 41.8 inches

(2) **Average length of a rectangular stack determination:** Starting at the base, measure the length of the stack at approximate 1 foot intervals up to the top, or at four proportionately equal intervals if the stack is less than 3 feet high. (Minimum of 4 measurements shall be taken.) Calculate the average length. (See Figure 3.)

Figure 3. Length of Stack.



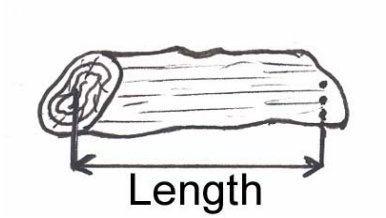
Average Length = (106.5" + 109" + 107.5" + 105") ÷ 4 = 107 inches

(3) **Average width of stack determination:** This dimension is calculated by averaging the length of individual pieces of wood. A representative random sample of the individual pieces shall be selected. If a triangular stack is combined with a rectangular stack, the sample shall be selected randomly from the entire stack. The minimum size of the sample shall be as shown in the following table.

Amount Represented	Number of Pieces
1/2 cord and less	12
More than 1/2 cord to 1 cord	24
Over 1 cord to 1-1/2 cords	36
Over 1-1/2 cords to 2 cords	48
Over 2 cords	48 plus 12 for each 1/2 cord or fraction thereof

Measure the length of the pieces, measuring from center-to-center, as shown in Figure 4. Calculate the average length.

Figure 4. Length of Angle-Cut Log.



Average Length = (18" + 18.25" + 19" + 17.75" + 18.5" + 18") ÷ 6 = 18.25 inches

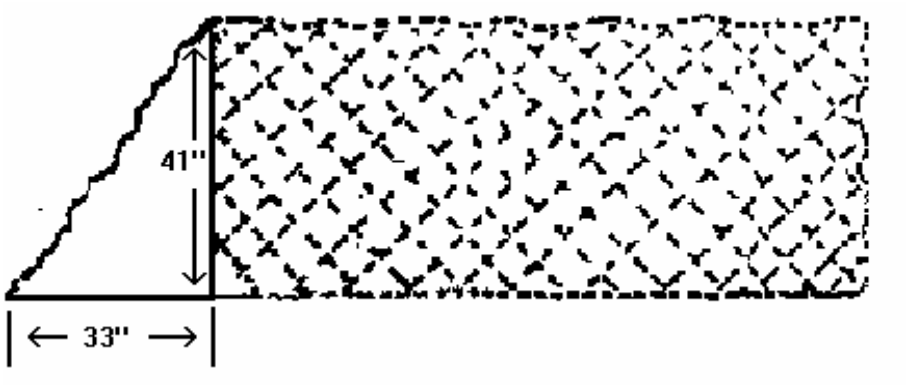
(b) **Measurement of the triangular portion of a stack:**

(1) Measure the height and the base of the triangular portion. (See Figure 5.)

(2) Average width of the stack is as previously calculated in Section 4535.2.(a)(3)

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

Figure 5. Triangular Measurements.



4535.3. Calculate the volume:

(a) Volume of the rectangular portion = average height of the stack x average length of the stack x average width of the stack.

(Example: 41.8" x 107" x 18.25" = 81,624.95 cubic inches.)

(b) Volume of the triangular portion = height x base length x average width of the stack divided by 2.

(Example: 41" x 33" x 18.25" ÷ 2 = 12,346.125 cubic inches.)

(c) Volume of the combined portions = volume of the rectangular portion + volume of triangular portion.
(Example: 81,624.95 cu in + 12,346.125 cu in = 93,971.075 cubic inches.)
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NOTE: For stacks with multiple rows, the volume of the total stack is the sum of the volumes of the individual rows.

(d) Volume of stack in cords = volume of stack in cubic inches divided by 221,184 cubic inches per cord.

(Example: 93,971.075 cu. in. ÷ 221,184 cu. in. per cord = 0.42 cords.)

(e) Percentage of the cord = decimal fraction of the cord times 100.

(Example: 0.42 cords x 100 = 42% [Percent].)

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code.

TABLE OF EQUIVALENTS				
1 cubic foot = 1,728 cubic inches 1 cord = 128 cubic feet = 221,184 cubic inches				
Common Fractions		Decimal Fractions		Percentages
1/8	=	.125	=	12.5%
1/4	=	.25	=	25%
3/8	=	.375	=	37.5%
1/2	=	.5	=	50%
5/8	=	.625	=	62.5%
3/4	=	.75	=	75%
7/8	=	.875	=	87.5%

4536. Volumetric Test Procedure for Packaged Firewood With a Labeled Net Content of Four Cubic Feet or Less.

NOTE: A calibrated linear measure shall be used.

All measurements shall be taken in increments no greater than 1/8 inch and rounded up, except as noted in 4536.1.(a).

Unless otherwise indicated, all measurements are to be taken without rearranging the wood or removing it from the package.

If the layers of wood are cross hatched or not ranked in discrete sections in the package, the wood shall be removed from the package and measured according to the procedures prescribed in Sections 4535.1 through 4535.3 of this regulation.

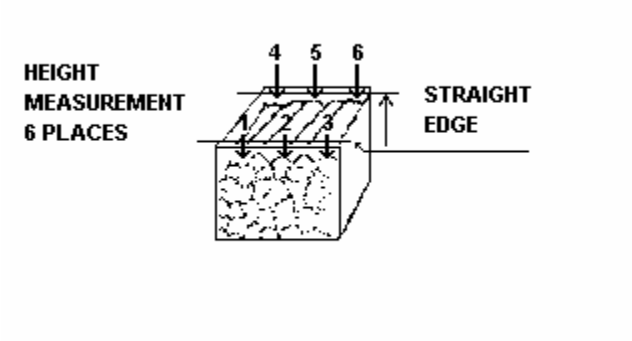
Lot compliance shall be determined using the sampling procedures in Chapter 11 of this Division, except that the maximum allowable variations for individual packages labeled by volume shall not be applied to packaged firewood.

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code. California Hotwood, Inc. v. Henry Voss, et al. (Super. Ct. San Joaquin County, 1991, No. 234613).

4536.1. Boxed Firewood.

(a) **Average height determination of wood within the box:** Open the box and measure the internal height of the box (h). Take three measurements (d) along each end of the stack by measuring from the bottom of a straight edge placed across the top of the box to the highest point on the two outermost top pieces of wood and the centermost top piece of wood rounding measurements down to the nearest 1/8 inch. However, if there are obviously pieces missing out of the top layer of wood, additional height measurements shall be taken at the highest point of the uppermost pieces of wood located at the midpoints between the three measurements on each end of the stack. (See Figure 6.) The average height of the stack is calculated by averaging these measurements and subtracting from the internal height of the box.

FIGURE 6.

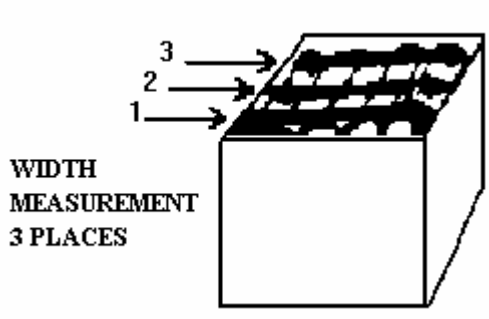


Calculate the average height of stack.

$$\text{Average Height of Stack} = h - [(d^1 + d^2 + d^3 + d^4 + d^5 + d^6) \div 6]$$

(b) **Average width of the wood within the box:** Determine the width of the stack of wood at three places along the top of the stack. These measurements shall be taken on both ends and in the middle of the box, measuring the inside distance from one side of the box to the other, perpendicular to the long axis of the wood. (See Figure 7.)

FIGURE 7.

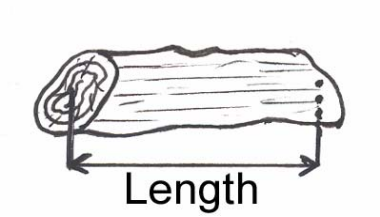


Calculate the average width.

$$\text{Average Width} = (W^1 + W^2 + W^3) \div 3$$

(c) **Average length of the pieces of wood:** Remove the wood from the box and select the five pieces with the greatest girth. Measure the length of the five pieces, measuring from center-to-center, as shown in Figure 8.

FIGURE 8.



Calculate the average length of the five pieces.

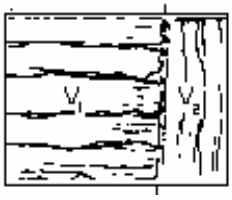
$$\text{Average Length} = (L^1 + L^2 + L^3 + L^4 + L^5) \div 5$$

(d) **Calculate the volume of the wood within the box.**

$$\underset{\text{(in cu ft)}}{\text{Volume of Wood}} = \underset{\text{(in inches)}}{\text{Average Height}} \times \underset{\text{(in inches)}}{\text{Average Width}} \times \underset{\text{(in inches)}}{\text{Average Length}} \div 1728\,\text{in}^3/\text{ft}^3$$

(e) For boxes of wood which are packed with the wood ranked in two discrete sections, which are perpendicular to each other, calculate the volume of wood in the box by determining the average height, width, and length as in (a), (b), and (c) above for each discrete section and totaling the calculated volumes of the two sections. Except that the width measurement for V_2 shall be taken from the inside edge of the box adjacent to V_2 to the plane separating V_1 and V_2. (See Figure 9.)

FIGURE 9.



TOTAL VOLUME = $V_1 + V_2$

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code. California Hotwood, Inc. v. Henry Voss, et al. (Super. Ct. San Joaquin County, 1991, No. 234613).

4536.2. Bundles and Bags of Firewood.

(a) **Average area of ends:** Secure a strap around each end of the bundle or bag of wood to prevent movement during testing and to provide a definite perimeter. Set one end of the bundle or bag on tracing paper large enough to cover the end completely. Draw a line around the perimeter of the bundle or bag on the tracing paper. Transfer the tracing paper to a template graduated in square inches. Count the number of square inches enclosed within the perimeter line (portions of square inches not completely within the perimeter line shall be estimated to the nearest one quarter square inch). Repeat this process on the opposite end of the bundle or bag.

NOTE: Two thin straps, one inch to two inches wide, with connecting buckles, and long enough to easily encircle the bundle or bag, should be used to secure the wood.

Calculate the average area.

$$\text{Average Area} = (\text{Area \#1} + \text{Area \#2}) \div 2$$

(b) **Average length of the pieces of wood:** Select the five pieces with the greatest girth. Measure the length of the pieces as shown in Figure 8 for boxed wood.

Calculate the average length of the pieces of wood.

$$\text{Average Length} = (L^1 + L^2 + L^3 + L^4 + L^5) \div 5$$

(c) Calculate the volume of the wood.

$$\underset{\text{(in cu ft)}}{\text{Volume of Wood}} = \underset{(\text{in inches}^2)}{\text{Average Area}} \times \underset{\text{(in inches)}}{\text{Average Length}} \div 178\ \text{in}^3/\text{ft}^3$$

NOTE: Authority cited: Sections 12024.11, 12027 and 12107.1, Business and Professions Code. Reference: Sections 12024.11 and 12107.1, Business and Professions Code. California Hotwood, Inc. v. Henry Voss, et al. (Super. Ct. San Joaquin County, 1991, No. 234613).

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