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Sequence Number: 01-03-22

Notice ID(s): 3425

File Date: 1/11/2022

Notice of Rulemaking Hearing

Hearings will be conducted in the manner prescribed by the Uniform Administrative Procedures Act, T.C.A. § 4-5-204. For questions and copies of the notice, contact the person listed below.

Agency/Board/Commission:	Agriculture			
Division:	Forestry			
Contact Person:	David Waddell			
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Any Individuals with disabilities who wish to participate in these proceedings (to review these filings) and may require aid to facilitate such participation should contact the following at least 10 days prior to the hearing:

ADA Contact:	Liz Sneed
Address:	P.O. Box 40627, Nashville, TN 37204
Phone:	615-837-5116
Email:	liz.sneed@tn.gov

Hearing Location(s) (for additional locations, copy and paste table)

Address 1:	Tennessee Department of Agriculture					
Address 2:	Oak Conference Room, Bruer Building, 404 Hogan Road					
City:	Nashville					
Zip:	37220					
Hearing Date:	03/04/2022					
Hearing Time:	10:30 a.m. X CST/CDT EST/EDT					

Additional Hearing Information:

Revision Type (check all that apply):	

x New

____ Repeal

Rule(s) (**ALL** chapters and rules contained in filing must be listed. If needed, copy and paste additional tables to accommodate more than one chapter. Please enter only **ONE** Rule Number/Rule Title per row.)

Chapter Number	Chapter Title
0080-07-07	Native Species Lumber
Rule Number	Rule Title
0080-07-0701	Scope
0080-07-0702	Definitions
0080-07-0703	Certification

0080-07-0704	Specifications
0080-07-0705	Moisture Content, Surface Conditions, and Standard Sizes.
0080-07-0706	Standard Lumber Sizes
0080-07-0707	Tally
0080-07-0708	Selling and Using Certified Lumber

New

Chapter 0080-07-07 Native Species Lumber

0080-07-07-.01 Scope

- (1) Certification of native lumber under this chapter applies to any species growing within the state of Tennessee and to operators of any commercial sawmill desiring certification to grade lumber under the Tennessee Native Species Act § 43-28-313.
- (2) This chapter only applies to dimension lumber 2 inches to 4 inches in nominal thickness and 2 inches and wider.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

0080-07-07-.02 Definitions

- (1) Bow means a deviation flatwise from a straight line drawn from end to end of the piece measured at the point of greatest distance from the straight line
- (2) Check means a separation of the wood that normally occurs across the wood growth rings, usually caused by the drying or seasoning process.
- (3) Chip marks means shallow depressions typically caused by shavings getting imbedded in the surface during the planning process.
- (4) Cup means a deviation in the face of a piece, from a straight line drawn from edge to edge of the piece across the wide face measured as the point of greatest distance from the straight line.
- (5) Hole means holes resulting from insects or sloughing of loose knots.
- (6) Incipient decay means the early stage of decay where disintegration of the fibers has begun, and the wood has discolored but has not yet disintegrated to the point that it is significantly softened.
- (7) Knot means a portion of a branch or a limb that is overgrown by the tree and has become incorporated into the piece of lumber
- (8) Split means a separation of the wood due to the tearing apart of the wood cells that occurs through the piece to the opposite or an adjacent surface.
- (9) Pitch means an accumulation of resinous material, a well-defined accumulation of pitch in a streak.
- (10) Pocket means an opening between annual growth rings, developed as the tree grows, that typically contains pitch or bark.
- (11) Scant means lumber that is slightly less than the required size.
- (12) Shake means lengthwise separation of the wood that occurs commonly between the growth rings.
- (13) Slope of grain means the grain of the wood is not parallel to the edge of the piece.

- (14) Skips means places in surfaced lumber where the piece has failed to surface cleanly.
- (15) Stain means a variation from the natural color of the wood that may result from fungal sapstain or bacterial action, or due to enzymatic oxidation (e.g. sticker stain). Stain does not significantly affect strength. Wood that is "stained" must be sound. If the wood appears to be weakened, it is unsound.
- (16) Twist means a deviation flatwise or a combination of flatwise and edgewise, in the form of a curve or spiral measured as the point of distance that the edge of a piece is raised above a flat surface where both edges of the opposite end of the same piece are resting against the same flat surface.
- Unsound wood means decay resulting from the attack of wood by wood-destroying fungi that leaves wood in a disintegrated condition indicated by a loss of hardness and color change.
- (18) Wane means bark or the absence of wood from any cause except eased edges.
- (19) Warp means any deviation from a true or flat plane surface.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

0080-07-07-.03 Certification

- (1) Certification is open to sawmill owners or their employees. Only those completing the one-day training course and passing the skills test will be certified.
- Training courses will be held biannually in each of the three grand divisions of Tennessee, unless demand is so low that no courses are held. If no courses are offered locally in the upcoming 6 months, an individual can request a training course or skills test.
- The day-long training will conclude with a skills test. Failure to pass the skills test with a score less than 75% will require retaking the skills test at a future training session.
- (4) Passing the skills test enables participants to sell graded lumber.
- (5) Certification is valid for two years. Recertification requires passing the skills test at one of the training sessions.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

0080-07-07-.04 Specifications

- (1) Characteristics allowed and limiting provisions:
 - (a) Knots
 - The size of a knot is measured directly as the diameter (in inches) for a round knot, and for other than round knots (e.g., spike knots and oval knots) the equivalent diameter size is estimated by averaging the measurements (in inches) of the maximum width of the knot on its narrow axis and the maximum length on its long axis
 - 2. Sound, firm, and encased knots, if tight and well-spaced, are permitted in sizes not to exceed the equivalent of 25% of the nominal width of the wide face of the piece. Knots appearing on the thickness faces of the piece are permitted in the same quality and size shown on Table 1.
 - 3. A sound knot contains no decay.
 - 4. A firm knot is solid across its face but has incipient decay
 - 5. An encased knot is a knot, which is not intergrown with the growth rings of the surrounding wood

- 6. A tight knot is so fixed by growth, shape, or position that it retains its place or is held in place in the piece, while a loose knot or a not firmly fixed knot is one which is not so fixed by growth, shape or position that it will not be held tightly in place in the piece,
- 7. Well-spaced knots mean that the sum of the sizes of knots in any 6 inch length cannot equal or exceed twice the size of the largest permitted knot.

(b) Holes

- 1. A hole may extend completely or partially through the piece.
- 2. Hole sizes are measured as knots are. Holes caused by unsound wood except wane, unsound knots, loose knots, and not firmly fixed knots,
- 3. Holes are not to exceed the equivalent of 25% percent of the nominal width of the piece or equivalent smaller holes per 2 lineal feet.
- 4. Holes appearing on the thickness faces of the piece including unsound wood except wane, unsound knots, loose knots, and not firmly fixed knots are permitted in the same size or equivalent smaller as shown in Table 1.

Table 1 Knot and Hole Limits

Nominal Width of Lumber	Knot or hole maximum size or equivalent				
(Inches)	(inches)				
2	1/2				
2 1/2	5/8				
3	3/4				
3 1/2	7/8				
4	1				
4 1/2	1 1/8				
5	1 1/4				
6	1 1/2				
8	2				
10	2 1/2				
12	3				
Knots: sound, firm, encased & pith knots if tight and well-spaced					
Holes: Includes all unsound w	ood, except wane and unsound or loose knots				

- (c) Unsound wood, except wane, is not permitted.
- (d) Wane of 1/3 the thickness and 1/3 the width, full length, or equivalent, on each face, combined is not to exceed 1/2 the thickness or 1/2 the width at any point.
- (e) Shakes on the surface can occur on only one surface of the piece of lumber.
- (f) The slope of grain deviation is expressed as a ratio of the deviation over the length. For example, for 1 in 8 slope in grain there is 1 inch in deviation between the grain of the wood and the lumber's edge for every 8 inches of length.
- (g) Shake through at ends, limited as splits. Away from ends, shakes including through shakes up to 2 feet long are permitted.
- (h) Splits Equal in length to twice the width of the piece.
- (i) Checks Drying checks on the face or edge are not limited.

- 1. Through checks at end are limited as splits. Surface checks occur on a wide or thickness face of a piece
- 2. A through check will extend from one surface face to an opposite or adjoining surface
- 3. A through shake will extend from one surface face to an opposite or adjoining surface.
- (j) Warp limits are included in Table 2.

Table 2 Warp limits

TWIST		Lumber Nominal Width (Inches)								
Lumber Length	2	2 3 & 4 5 &6			10	12 +				
(Feet)		Twist limit (Inches)								
6	1/8	1/4	3/8	1/2	5/8	3/4				
8	1/4	1/2	3/4	1	1 1/4	1 1/2				
10	5/16	5/8	7/8	1 1/4	1 1/2	1 7/8				
12	3/8	3/4	1 1/4	1 1/2	1 7/8	2 1/4				
14	7/16	7/8	1 1/4	1 3/4	2 1/4	2 5/8				
16+	1/2	1	1 1/2	2	2 1/2	3				
CROOK		Lum	ber Nomin	 al Width (Ir	nches)					
Lumber Length	2	3 & 4	5 &6	8	10	12 +				
(Feet)		Crook limit (Inches)								
6	1/4	1/4	3/16	1/8	1/16	1/16				
8	3/8	3/8	5/16	1/4	3/16	1/8				
10	3/4	1/2	7/16	3/8	1/4	3/16				
12	1	11/16	5/8	1/2	7/16	3/8				
14	1 1/4	7/8	3/4	5/8	1/2	3/8				
16+	1 5/8	1	7/8	3/4	5/8	1/2				
CUP		Lum	ber Nomin	 al Width (Ir	nches)					
	2	3 & 4	5 &6	8	10	12 +				
				it (Inches)		1				
All lengths	1/16	1/16	1/16	1/4	3/16	1/4				
BOW			er Nominal	Thickness						
Lumber Length		2			3 & 4					
(Feet)			Bow lim	it (Inches)						
6		1/2		1/4						
8		3/4		3/8						
10		1 1/2		3/4						
12		2			1					
14		2 1/2		1 1/4						
16+		3 1/4			1 5/8					

- (k) Twists are measured as the point of distance that the edge of a piece is raised above a flat surface where both edges of the opposite end of the same piece are resting against the same flat surface. Limits are included in Table 2.
- (I) Manufacturing defects not greater than 1/8th inch are permitted
- (m) Pitch and pitch streaks are permitted.
- (n) Pockets, pitch or bark, are not limited.
- (o) Stain are not limited.
- (p) Surfaced lumber may have skips or scant in places up to 1/8 inch deep. If it is rough lumber, there may be scant in places up to 1/8 inch scant. The areas of skip or scant are not to exceed 2 feet in length in any one place.
- (q) Lumber included in the Tennessee Native species lumber Number 2 and Better Grade is to reasonably represent the mill-run of dimension lumber produced at least meeting these requirements and limiting provisions, without sort-out removal of higher-grade dimension lumber. This is not to constrain the simultaneous production of appearance grade boards and other lumber products other than dimension.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

0080-07-07-05 Moisture Content, Surface Conditions, Standard Sizes. and Tally Practices

- (1) Wood moisture content and drying
 - (a) Moisture content (MC) of wood is measured by weighing a sample of wood before and after drying it in a hot oven (103C.220F). The percent of MC is calculated as (wet weight-dry weight)/dry weight x 100.
 - (b) Lumber shall be designated as green lumber or dry lumber.
 - 1. Green lumber has a MC more than 19 percent including lumber that is graded just after sawing with a high moisture content and lumber that has been stickered and dried but still has moisture content above 19%.
 - 2. Dry lumber is dried to a maximum moisture content of 19% MC. No more than 5% of the pieces in a shipment shall have a MC of 19%. Lumber sold as dry lumber may be either kiln dried or air dried.
 - 3. Kiln dried (KD) means that lumber has been dried in a drying chamber. The designation of KD may be used as amplification to the dry lumber designation provided in the certification.
 - 4. In the oven-dry method it is acceptable to use electrical meters to estimate the moisture content.
 - (c) Wood surface conditions
 - 1. Lumber shall be designated as surfaced lumber, sawn-to-size lumber, or rough lumber.
 - 2. Surfaced lumber, or dressed lumber, is lumber that has been surfaced by a machine to attain smoothness of surface and uniformity of size. Lumber grades refer to lumber that is surfaced four sides (S4S) and actual dressed sizes equal the minimum thicknesses and widths for surfaced lumber as shown in Table 3.

Table 3 Board footage of lumber

Board foot volume of 2" Nominal Thickness of Varying Width and Length							
Length	Width in Inches						
	2	4	6.0	8	10	12	
Feet	Board	feet per pi	ece (BF)				
6	2.0	4.0	6.0	8.0	10.0	12.0	
7	2.3	4.7	7.0	9.3	11.7	14.0	
8	2.7	5.3	8.0	10.7	13.3	16.0	
9	3.0	6.0	9.0	12.0	15.0	18.0	
10	3.3	6.7	10.0	13.3	16.7	20.0	
11	3.7	7.3	11.0	14.7	18.3	22.0	
12	4.0	8.0	12.0	16.0	20.0	24.0	
13	4.3	8.7	13.0	17.3	21.7	26.0	
14	4.7	9.3	14.0	18.7	23.3	28.0	
15	5.0	10.0	15.0	20.0	25.0	30.0	
16	5.3	10.7	16.0	21.3	26.7	32.0	
17	5.7	11.3	17.0	22.7	28.3	34.0	
18	6.0	12.0	18.0	24.0	30.0	36.0	
19	6.3	12.7	19.0	25.3	31.7	38.0	
20	6.7	13.3	20.0	26.7	33.3	40.0	

Board foot volume of 4" Nominal Thickness of Varying Width and Length								
Length	Width in Inches							
	2	4	6	8	10	12		
Feet	Board fe	et per pied	ce (BF)		•	-		
6	4.0	8.0	12.0	16.0	20.0	24.0		
7	4.7	9.3	14.0	18.7	23.3	28.0		
8	5.3	10.7	16.0	21.3	26.7	32.0		
9	6.0	12.0	18.0	24.0	30.0	36.0		
10	6.7	13.3	20.0	26.7	33.3	40.0		
11	7.3	14.7	22.0	29.3	36.7	44.0		
12	8.0	16.0	24.0	32.0	40.0	48.0		
13	8.7	17.3	26.0	34.7	43.3	52.0		
14	9.3	18.7	28.0	37.3	46.7	56.0		
15	10.0	20.0	30.0	40.0	50.0	60.0		
16	10.7	21.3	32.0	42.7	53.3	64.0		
17	11.3	22.7	34.0	45.3	56.7	68.0		
18	12.0	24.0	36.0	48.0	60.0	72.0		
19	12.7	25.3	38.0	50.7	63.3	76.0		
20	13.3	26.7	40.0	53.3	66.7	80.0		

- 3. Sawn-to-size lumber is lumber uniformly sawn to the dressed size for surfaced lumber but not planed on the faces.
- 4. Rough lumber has not been surfaced. It differs from sawn-to-size lumber because rough lumber is oversized to allow for shrinkage or to allow surfacing.

(1) The nominal and actual thickness and width of graded lumber is the same as lumber graded according to American Softwood Lumber Standard Table 4.

Table 4 Nominal and minimum actual thickness and width

Minimum T	Minimum Thickness (inches)					Minimum Width (inches)								
		Surfaced or sawn-to-size		Rough		Rough						ced or to-size		Rough
Nominal Thickness	Dry	Green	Dry	Green (suggested)		Nominal Width	Dry	Green	Dry	Green (suggested)				
2	1 1/2	1 9/16	1 5/8	1 11/16		2	1 1/2	1 9/16	1 5/8	1 11/16				
2 ½	2	2 1/16	2 1/8	2 1/4		2 ½	2	2 1/16	2 1/8	2 1/4				
3	2 1/2	2 9/16	2 5/8	2 3/4		3	2 1/2	2 9/16	2 5/8	2 3/4				
3 ½	3	3 1/16	3 1/8	3 1/4		3 ½	3	3 1/16	3 1/8	3 1/4				
4	3 1/2	3 9/16	3 5/8	3 13/16		4	3 1/2	3 9/16	3 5/8	3 13/16				
4 ½	4	4 1/16	4 1/8	4 5/16		4 ½	4	4 1/16	4 1/8	4 5/16				
	I.	I.				5	4 1/2	4 5/8	4 5/8	4 13/16				
						6	5 1/2	5 5/8	5 5/8	5 7/8				
						8	7 1/4	7 1/2	7 3/8	7 3/4				
						10	9 1/4	9 1/2	9 3/8	9 3/4				
						12	11 1/4	11 1/2	11 3/8	11 7/8				
						14	13 1/4	13 1/2	13 3/8	13 15/16				
						16	15 1/4	15 1/2	15 3/8	16				

- (2) Lumber shall be six feet and longer and be in two-foot length increments unless the purchase agreement specifically stipulates different lengths.
- (3) Lumber should have clean, sound ends but it does not have to be double-end-trimmed to precise length. If not double-end-trimmed, there should be sufficient overlength to allow square end-trimming the lumber to its nominal length.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

0080-07-07-.07 Tally

Lumber volume is measured in Board Feet, which is a unit equal to a piece one inch thick and one-foot square. Lumber volume can be tallied as:

- (1) Board Feet (BF) = (nominal thickness [inches] x nominal width [inches] x standard length [feet])/12.
- (2) Fractions can be rounded to the nearest 1/10th of a board foot. Table 3 lists some board foot volumes for lumber of common sizes.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

0080-07-07-.08 Selling and Using Certified Lumber

- (1) The sawmill providing graded lumber shall provide a written summary that includes the following information:
 - (a) A declaration that the lumber has been graded by a certified grader.
 - (b) The name of the wood species, and its design value group as shown on Table 5.

Table 5 Design values of species groups for #2 and better grade

		Design Values (psi)							
		Tension	Shear	Compression	Compression				
Species		parallel to	parallel	perpendicular	parallel			Specific	
Group	Bending	grain	to grain	to grain	to grain	Modulus of	Elasticity	Gravity	
Name	Fb	Ft	Fv	Fc⊥	Fcll	E	E _{min}	G (od m/v)	
Bald									
cypress	825	450	160	615	900	1,300,000	470,000	0.47	
Beech- Birch-									
Hickory	1,000	600	195	715	750	1,500,000	550,000	0.71	
Cottonwood	625	350	125	320	475	1,100,000	400,000	0.41	
Eastern Softwoods	575	275	140	335	825	1,100,000	400,000	0.36	
Mixed									
Maple	700	425	195	620	550	1,100,000	400,000	0.55	
Mixed Oak	800	475	170	800	625	900,000	330,000	0.68	
Mixed Southern									
Pine	750	450	175	565	1,250	1,400,000	510,000	0.51	
Yellow									
Poplar	700	400	145	420	575	1,300,000	470,000	0.43	

- (c) The quantity of lumber, the date it was cut and graded, and the name of the grader and the sawmill
- (d) The size (nominal or actual), whether it is rough-sawn or surface/planed, and the moisture content of the lumber when graded
- Upon the request, the end user shall provide a copy of the summary, and information about the design values of the lumber shown on Table 5 based on its designated species group shown on Table 6.

Table 6 Species groups and component species, including species not in the National Design Supplement (*TN Species)

Species Group**	Common Name	Scientific name	Grading Agency***
Baldcypress	Baldcypress	Taxodium distichum	SPIB
Beech - Birch - Hickory	American Beech	Fagus grandifolia	NELMA
	Bitternut Hickory	Carya cordiformis	
	Mockernut Hickory	Carya tomentosa	
	Nutmeg Hickory	Carya myristiciformis	
	Pecan Hickory	Carya illinoinensis	
	Pignut Hickory	Carya glabra	
	Shagbark Hickory	Carya ovata	
	Shellbark Hickory	Carya laciniosa	
	Sweet Birch	Betula lenta	
	Water Hickory	Carya aquatica	

	Yellow Birch	Betula alleghaniensis	
	Black Walnut	Juglans nigra	*TN Species
	Black Locust	Robinia pseudoacacia	-
	Honeylocust	Gleditsia triacanthos	-
Cottonwood	Cottonwood	Populus deltoides	NSLB
	Basswood	Tilia americana	*TN Species
			-
Eastern Softwoods	Balsam Fir	Abies balsamea	NELMA, NSLB
	Black Spruce	Picea mariana	
	Eastern Hemlock	Tsuga canadensis	
	Eastern White Pine	Pinus strobus	
	Jack Pine	Pinus banksiana	-
	Red Pine	Pinus resinosa	-
	Pitch Pine	Pinus rigida	-
	Red Spruce	Picea rubens	-
	Tamarack	Larix Iaricina	-
	White Spruce	Picea glauca	-
	<u>'</u>		
Mixed Maple	Black Maple	Acer nigrum	NELMA
'	Red Maple	Acer rubrum	
	Silver Maple	Acer saccharinum	
	Sugar Maple	Acer saccharum	-
	g		
	Sycamore	Platanus occidentalis	*TN Species
	Black Tupelo	Nyssa sylvatica	1
	Water Tupelo	Nyssa aquatica	1
	Southern Magnolia	Magnolia grandiflora	1
	Cucumbertree	Magnolia acuminata	
	Hackberry	Celtis occidentalis	1
	American Elm	Ulmus americana	
	Rock Elm	Ulmus thomasii	
	Slippery Elm	Ulmus rubra	
	Black Cherry	Prunus serotina	
Mixed Oak	Black Oak	Quercus velutina	NELMA
	Cherrybark Oak	Quercus falcata var. pagodaefolia	
	Northern Red Oak	Quercus rubra	
	Southern Red Oak	Quercus falcata	
	Laurel Oak	Quercus laurifolia	
	Pin Oak	Quercus palustris	
	Scarlet Oak	Quercus coccinea	
	Water Oak	Quercus nigra	
	Chestnut Oak	Quercus prinus	
	Chestnut Oak Live Oak Post Oak	Quercus prinus Quercus virginiana Quercus stellata	

	Swamp Chestnut Oak	Quercus michauxii	
	White Oak	Quercus alba	
	Bur Oak	Quercus macrocarpa	
	Overcup Oak	Quercus lyrata	
	Swamp White Oak	Quercus bicolor	
Mixed Southern Pine	Longleaf Pine	Pinus palustris	SPIB
	Slash Pine	Pinus elliotti	
	Shortleaf Pine	Pinus echinata	
	Loblolly Pine	Pinus taeda	
	Pond Pine	Pinus serotina	
	Virginia Pine	Pinus virginiana	
Yellow Poplar	Yellow Poplar	Liriodendron tulipifera	NSLB
	Sweetgum	Liquidambar styraciflua	*TN Species
	Honeylocust	Gleditsia triacanthos	
	Blue Ash	Fraxinus quadrangulata	
	Black Ash	Fraxinus nigra	
	Green Ash	Fraxinus pennsylvanica	
	White Ash	Fraxinus americana	

^{*}TN Species – species that do not have established grading systems or design values. These species have been placed in groups bases on their relative average values for modulus of rupture and modulus of elasticity being equal to or greater than the other species in the group. Species not listed in this table (e.g. willow) do not fit into any pre-existing group for which there are design values and should not be used for structural applications.

Species Group** are those used in the National Design Supplement

Grading Agency*** are those organizations that have developed the grading system and design values for the species groups reported in the National Design Supplement.

Authority: T.C.A. §§ 43-28-313 and 4-3-203.

I certify that the information included in this filing is an accurate and complete representation of the intent and scope of rulemaking proposed by the agency.

Date: 1/11/2022

Signature:

Name of Officer: Charlie Hatcher, DVM

Title of Officer: Commissioner

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1/11/2022

Tre Hargett Secretary of State

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