

# RELATIVE WORKING PROPERTIES

SPECIES	MACHINING	RESISTANCE TO SPLITTING IN NAILING	NAIL-HOLDING	GLUING
ALDER	VERY GOOD	EXCELLENT	GOOD	VERY GOOD
ASH	EXCELLENT	GOOD	EXCELLENT	GOOD
ASPEN	GOOD	GOOD	GOOD	EXCELLENT
BASSWOOD	VERY GOOD	EXCELLENT	GOOD	VERY GOOD
BEECH	EXCELLENT	FAIR	FAIR	GOOD
BIRCH, YELLOW	EXCELLENT	FAIR	FAIR	GOOD
BIRCH, PAPER	GOOD	GOOD	GOOD	GOOD
BUTTERNUT	GOOD	FAIR	FAIR	VERY GOOD
CHERRY	EXCELLENT	FAIR	FAIR	VERY GOOD
COFFEETREE	VERY GOOD	GOOD	GOOD	GOOD
COTTONWOOD	GOOD	EXCELLENT	EXCELLENT	EXCELLENT
CYPRESS, SOUTHERN*	VERY GOOD	EXCELLENT	EXCELLENT	EXCELLENT
ELM, RED	VERY GOOD	EXCELLENT	EXCELLENT	VERY GOOD
GUM, SAP AND RED	VERY GOOD	GOOD	GOOD	VERY GOOD
HACKBERRY	VERY GOOD	GOOD	GOOD	EXCELLENT
HICKORY	EXCELLENT	FAIR	GOOD	GOOD
HONEYLOCUST	EXCELLENT	FAIR	FAIR	FAIR
KOA	EXCELLENT	FAIR	FAIR	GOOD
MAGNOLIA	VERY GOOD	GOOD	EXCELLENT	VERY GOOD
MAPLE, HARD	EXCELLENT	FAIR	GOOD	GOOD
MAPLE, SOFT	VERY GOOD	FAIR	GOOD	GOOD
OAK, RED	EXCELLENT	GOOD	EXCELLENT	GOOD
OAK, WHITE	EXCELLENT	GOOD	EXCELLENT	GOOD
PECAN	EXCELLENT	FAIR	GOOD	GOOD
PERSIMMON	EXCELLENT	FAIR	FAIR	VERY GOOD
PINE, S. YELLOW*	GOOD	FAIR	FAIR	VERY GOOD
PINE, WHITE*	EXCELLENT	EXCELLENT	EXCELLENT	VERY GOOD
SASSAFRAS	EXCELLENT	GOOD	GOOD	GOOD
SYCAMORE	VERY GOOD	EXCELLENT	EXCELLENT	GOOD
TULIPWOOD, AMERICAN	VERY GOOD	EXCELLENT	GOOD	EXCELLENT
TUPELO AND BLACK GUM	VERY GOOD	GOOD	GOOD	GOOD
WALNUT, BLACK	EXCELLENT	FAIR	GOOD	GOOD
WILLOW, BLACK	GOOD	EXCELLENT	GOOD	EXCELLENT

\* These are softwood species often handled by hardwood producers and used in some similar applications. They are described

## Basic Requirements of Hardwood Lumber Grades

	FAS	SELECTS	#1 COM	#2 COM	#3A COM	#3B COM	NOTES:
Minimum Size Board	6" x 8'	4" x 6'	3" x 4'	3" x 4'	3" x 4'	3" x 4'	<u>FAS1FACE (When Specified)</u> Better face to grade FAS for species being inspected. Poor face to grade not below #1 Com. The reverse side of FAS and #1 Com cuttings not required to be sound.
Minimum Size Cutting	4" x 5' 3" x 7'	4" x 5' 3" x 7'	4" x 2' 3" x 3'	3" x 2'	3" x 2'	Not less than 1 1/2" wide containing 36 sq. inches	
Basic Yield	SM x 10 (83 1/3%)	SM x 10 (83 1/3%)	SM x 8 (66 2/3%)	SM x 6 (50%)	SM x 4 (33 1/3%)	SM x 3 (25%)	<u>Wane In FAS1FACE</u> FAS Limitation Applies to the Better face. #1 Com side: 1/3 W x 1/2 L Widest wane added together; Length can be on both edges
Formula to Determine Number of Cuts	<u>SM</u> 4 (4 max.)	<u>SM</u> 4 (4 max.)	<u>SM + 1</u> 3 (5 max.)	<u>SM</u> 2 (7 max.)	Unlimited	Unlimited Sound Cuttings	
SM Needed to Take Extra Cutting	6 - 15' SM	6 - 15' SM	3 - 10' SM	2 - 7' SM			<u>#1 Common-Back Selects:</u> Must make #1 Com on poor face and make FAS on good face. Check for wane limitation--the reverse of FAS & #1 Com cuttings are not required to be sound  <u>Sound-back Selects:</u> Must make FAS on good face and reverse side of FAS cuttings must be sound
Extra Yield Needed for Extra Cutting	SM x 11 (91 2/3%)	SM x 11 (91 2/3%)	SM x 9 (75%)	SM x 8 (66 2/3%)			
Additional Yields	97% Rule - 2 cuts full width any length Pcs. 6" & wider with 6-12' SM SM x 11.64 for Yield	Same as FAS 97% <u>2' &amp; 3' SM x 11</u> 1 cutting	1' SM - 100% 2' SM-SM x 9	1' SM - SM x 8	#2 Com on Btr Face & reverse side of cutting sound; then 3A		
<b>FAS Limitations:</b> Pith = SM in inches Wane = 1/12 SM (SM x 12 = sq. in.) or 1/2 Length Knot (in.) = 1/3 SM or (SM) + 3 Warp - Entire board must be flat enough to S2S		Split (in.) = 2 x SM Diverge 1" in 1' (Special w 10"+) Split (in.) = SM  First Lineal Foot Rule: Applies to both ends of Board, to contain not over 25% unsound wood.		Except when 1' or shorter and covered by Para. 59		<b>Wane in Selects</b> <u>Pcs. 6" &amp; Wider</u> FAS limitation applies to Btr. face #1 Com side: 1/3 W x 1/2 L or 1/4 W x 3/4 L Widest wane added together; Length can be on both edges	
						<u>Pcs. 4" &amp; 5" Wide</u> 1/3 W x 1/2 L applies to both faces Add widest wane together Add total length of wane from both edges	