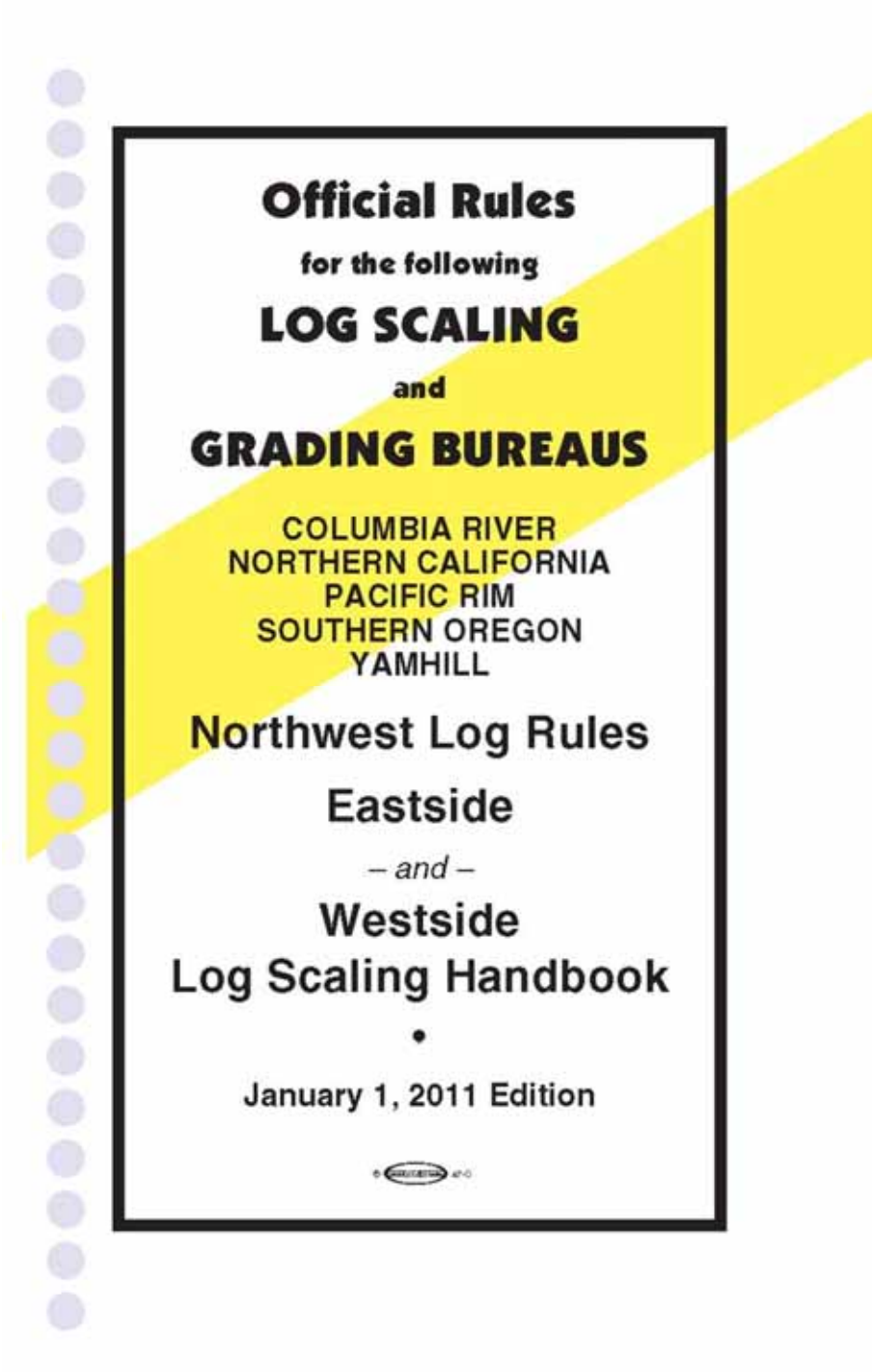
NWLRAG LOG GRADES

vs.

LOG SORTS

- The difference between a Company's Log Sorts and Northwest Log Rules Advisory Group's log grades:
- NWLRAG controls the specifications and application for the grades that scalers use while grading each log.
- Sort specifications and application are controlled by the individual company.
- Sorts are proprietary and vary widely from company to company

The Northwest Log Rules Advisory Group is the group that maintains and controls the Rules and Log Grades found within their Rulebook. NWLRAG was organized in 1951.



NWLRAG membership is limited to “Not for Profit Scaling Bureaus and to the State and Federal Agencies charged with the responsibility for marketing timber resources”

“The primary purpose of the NWLRAG is to approve and recommend Official Log Scaling and Grading Rules for use by its member Bureaus that best interpret equality of measurement volumes between sellers and buyers of logs in a uniform manner.

Each qualified member-organization has 2 voting representatives to express authoritative opinions regarding actions being considered at regular meetings of the NWLRAG membership.

All interested individuals are welcome to attend and participate in these meetings.”

It is not an easy process to change or amend the rules found within the NWLRAG rulebook.

A proposed change can be presented at one of the semi-annual meetings where the proposal is debated and discussed. The proposal must be voted upon and approved at 2 separate semi-annual meetings.

“The Group will recommend adoption by the Group when 75% of the then voting members shall favor such endorsement”.

“Upon endorsement, the Secretary shall be instructed to advise the Board of Directors of each member Bureau, in writing, of the Group’s recommendations and request that the Bureaus give due consideration to the adoption of such recommendations”.

This process is much different than when a company wants to change or adjust their sort specs.

Each company can change their sort specs depending upon Market Conditions, Log Source, Log Destination, etc…, without having to go through a Lengthy Process.

A company must be able to react quickly to alter their sorts if Market conditions change. They cannot wait for semi-annual meetings to change or adjust their sorts.

a. If logs are in Short Supply, sorts can be adjusted quickly: “loosened up” to allow more logs into their sorts to build an inventory quicker.

b. If there is a Surplus of Logs, sorts will be adjusted: “tightened or cleaned up”, to make the deck or raft more appealing.

“NWLRAG LOG GRADES DO NOT VARY OR CHANGE WITH MARKET CONDITIONS”

Sorts can be described as Company log grades.

Each Company’s sort specs are proprietary and should be treated as confidential.

In this slide I have copied pages from the Rulebook that describe the Special Mill Grade and the next grade down, the #2 Sawmill Grade.
There is a wide variation between surface requirements for the 2 grades.

RULES FOR GRADING LOGS

SPECIAL MILL

All Species – Except Western Red Cedar

Logs shall be suitable for (1) the manufacture of Select Merchantable and better lumber in an amount of not less than 65% of the NET scale, and (2) for the rotary cutting of veneer center core, cross core, backs and better in an amount of not less than 100% (excluding core volume) of the NET scale. Such logs shall meet at least the following exterior characteristics:

Gross Diameter – 16 inches.

Gross Length – 17 feet; 16 feet for Ponderosa Pine and Sugar Pine.

Surface – Sound tight knots and knot indicators not to exceed 1½" in diameter, numbering not more than an average of one per foot of log length. Knot indicators ½" and under in diameter shall not be considered a determining factor. This grade may include a log with not more than two larger knots.

Annual Ring Count – 6 per inch.

Slope of Grain – Not to exceed:
2" per foot on logs 16" thru 20" diameter.
3" per foot on logs 21" and over.

FOREIGN MATERIAL LOG

This grade will apply to all logs containing foreign material. Deductions will be made for all defects including foreign material. If buyer and seller agree to cull this log it can be done as a special request.

UTILITY LOGS – All Species

Shall be logs that do not meet the minimum requirements of Peeler or Sawmill grades, but are suitable for the production of firm usable chips to an amount of not less than 50% of the GROSS scale.

Minimum Gross Diameter –2 inches.

Minimum Gross Length – 12 feet (or other length on Bureau-approved request).

Minimum Volume – 10 board feet adjusted GROSS scale.

Minimum Recovery Requirements – 100% of Adjusted GROSS scale* in firm usable chips.
*(Note: Adjusted GROSS scale is the GROSS scale less deductions for defect not suitable for the production of firm usable chips. Such deductible defects shall not exceed 50% of GROSS scale.)

Note: A log that is burned or charred, or that is not mechanically barkable, shall not qualify as a Utility

WESTERN HEMLOCK LOGS

(Tsuga heterophylla)

Peeler Western Hemlock

Logs shall be suitable for rotary cutting and shall be capable of producing not less than (1) 50% of the NET scaled content in Clear Face stock veneer of uniform quality, **or** (2) 50% of the NET scaled content in B and Better lumber of uniform quality. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 24 inches.

Gross Length – 17 feet.

Slope of Grain – Not to exceed 3" per foot.

Western Hemlock Peeler Blocks

Logs of Peeler quality under 17' but no less than 4' in length shall be graded as Peeler Blocks with the volume extended on log scale basis.

No. 1 Sawmill Western Hemlock

Logs shall be suitable for the manufacture of B and Better lumber to an amount of not less than 35% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 24 inches.

Gross Length – 16 feet.

Slope of Grain – Not to exceed 3" per foot.

No. 2 Sawmill Western Hemlock

Logs shall be suitable for the manufacture of Construction and Better lumber to an amount of not less than 65% of the NET scale. Such logs shall meet at least the following minimum exterior characteristics:

Gross Diameter – 12 inches.

Gross Length – 12 feet.

Minimum Volume – 60 board feet NET scale.

Surface – Sound, tight knots, not to exceed 2½" in diameter. Any larger knots, knot clusters, and burls must be so distributed as to permit the required recovery.

Slope of Grain – Not to exceed:
2" per foot on logs 12" thru 20".
3" per foot on logs 21" thru 35".
4" per foot on logs 36" thru 50".
5" per foot on logs 51" and up.

The maximum knot size for a Special Mill grade log is 1 ½” (2 larger knots are allowed), not to average more than 1 knot or indicator per foot of log length.

The maximum knot size allowed for a #2 Sawmill Grade log is 2 ½”. The number of 2 ½” knots is unlimited as long as knots are smaller than 2 ½”. That is a big difference when you are looking at the log’s surface.

Companies will use sorts to capture those “SMOOTH OR GOOD APPEARING #2 GRADE LOGS”

Rough Appearing #2 Sawmill Grade log

Smooth Appearing #2 Sawmill Grade log

You can see in this picture that the scaler has put a Green dot (sort mark) of paint to separate out this log.

LOG SORTS SPECIFICATIONS

(Heart checks are not a factor in determining allowable Max. Defect %)
(Heart off center and Out of round are detemined from top end of log)

Code #, Symbol, and Length Sort		Name & Description (Note: Min.= minimum, max=maximum, L= length, dia.= diameter)
Code: HI	16.	**HI GRADE SPRUCE (CONTINUED)**
	C.	Max. defect 20 %; 51 sort 5% sap rot allowed /
E1 : 13'-27'		52 sort 10% sap rot allowed.
E2 : 28'-35'	D.	Logs having 12 rings/inch or greater = Code 51. Logs
E3 : 36'-40'		having 8 to 11 rings/inch = Code 52. Bundle code 51
		with 52; Ring count measured at outer 1/3 of radius.
		Ring count must be good over 65 % of circumference.
	E.	Buck off extremely swelled butt or flutes.
	F.	Twist shall not exceed 2" per foot.
	G.	Heart off center: 51 sort 10% max. / 52 sort 15% max.
	H.	Out of round: 51 sort 15% max. / 52 sort 20% max.
	I.	Pitch pockets: 51 sort Not allowed in top end.
CAUTION: Logs with HI Grade cuttings that do not meet all HIGH GRADE requirements should be sorted SHOP SPRUCE		
Code: HD	17.	**SHOP SPRUCE**
B1 : 13'-27'	A.	Min. dia. 24"; Min L 13'.
B2 : 28'-35'	B.	Should yield HI GRADE clear cuttings for the
B3 : 36'-40'		equivalent of one quadrant.
	C.	Max. defect 50 % ; Buck off excessive butt rot.
	D.	Twist shall not exceed what is allowed for # 2 sawlog.
	E.	Bundle with RED SORT.
Code: ML	18.	**RED SORT SPRUCE**
SR1 : 13'-27'	A.	Min. dia. 24"; Min. L 13'.
SR2 : 28'-35'	B.	Good Appearing #2 And Better! NO ROUGH TOPS!
SR3 : 36'-40'		4' cuttings between knots on 50 % of the log.
	C.	Max. defect 33 %; Max. sap rot 10 %.
	D.	Twist shall not exceed what is allowed for # 2 sawlog.
Code: LL	19.	**L SPRUCE**
LS1 : 20'-27'	A.	Min. dia. 24". Min. L. 20'
LS2 : 28'-35'	B.	Good #2 & Better surface quality. NO ROUGH TOPS!
LS3 : 36'-40'	C.	Max. defect 30 % ; Max. sap rot 10 %.
	D.	Hooked and twisted butts should be bucked off.
Code: LM	20.	**CIRCLE S SPRUCE**
S1 : 20'-27'	A.	Dia. 18" thru 23". Min. L. 20'.
S2 : 28'-35'	B.	Same as L SPRUCE except for dia.
S3 : 36'-40'		
Code: LS	21.	**S SPRUCE**
S1 : 20'-27'	A.	Dia. 12" thru 17". Min. L. 20'.
S2 : 28'-35'	B.	Same as L SPRUCE except for dia.
S3 : 36'-40'		
Code: W	22.	**W SPRUCE**
W1 : 6'10"-27' *	A.	Rough #2 surface quality: Min. dia. 24"; Min. L 12' ;
W2 : 28'-35'		Max. defect 30 %.
W3 : 36'-40'	B.	Red Sort quality logs: Min. dia. 20"; Min. L 13'; Max.
		L 19'; Max. defect 20%.
	* C.	Butt logs with clear cutting: Min. dia. 24"; Min. L 6'10";
		Max. defect 50 %.

Code: LX	23.	**CIRCLE X SPRUCE**
X1 : 20'-27'	A.	Min. dia. 18". Min. L 20'
X2 : 28'-35'	B.	Good #3 & Better surface quality. NO ROUGH TOPS!
X3 : 36'-40'	C.	Max. defect 30%.
Code: SX	24.	**X SPRUCE**
X1 : 20'-27'	A.	Dia. 12" thru 17". Min. L 20'
X2 : 28'-35'	B.	Same as CIRCLE X SPRUCE except for dia.
X3 : 36'-40'		
Code: DS	25.	**DIAMOND SPRUCE**
1 : 12'-25'	A.	Min. dia. 18"; Min. L 12'.
2 : 26'-33'	B.	Good #3 & Better - NO ROUGH TOPS!!!!!
3 : 34'-40'	C.	Max. defect 66 2/3 %;
	D.	Buck off excessive butt defect, swelled or bark seamy
		butts, and hooked &/or twisted butts.
	E.	12'-20' logs with sweep or crook = 2' max. L deduction.
	F.	All logs must be well trimmed.
Code: ST	26.	**T SPRUCE**
T1 : 12'-27'	A.	Dia. 6" thru 17". Min. L 12'.
T2 : 28'-35'	B.	Good #3 & Better surface quality. NO ROUGH TOPS!
T3 : 36'-40'	C.	Max. defect 30%. No Sap Rot.
	D.	Buck off excessive butt defect, swelled or bark seamy
		butts, and hooked &/or twisted butts. No sap rot.
	E.	All logs must be well trimmed.
Code: WD	27.	**CIRCLE W SPRUCE**
W1 : 6'10"-27'	A.	Min. dia. 24"; Min. L 6'10".
W2 : 28'-35'	B.	#2 and better surface quality
W3 : 36'-40'	C.	20% lumber recovery.
	D.	Max. 20% sap rot.
	E.	Scribner & Utility scale.
	F.	Deck loose until sold (bundle separate)
Code: P	28.	**ALASKA YELLOW CEDAR**
P1 : 12'-27'	A.	Min. dia. 12"; Min. L 12'.
P2 : 28'-35'	B.	Log must be at least 33 1/3 merchantable.
P3 : 36'-40'	C.	No #3 logs - put #3 & lower in 83 sort.
	D.	No heavy stain - put heavy stain in 83 sort.
Code: PX	29.	**CIRCLE P YELLOW CEDAR**
P1 : 12'-27'	A.	Dia. 6" to 11"; Min. L 12'.
P2 : 28'-35'	B.	Dia. 6" to 16" for #3 and/or heavy stain.
P3 : 36'-40'	C.	Log must be at least 33 1/3 % merchantable.
Code: CULL	30.	**C SORT YELLOW CEDAR**
U1 : 12'-27'	A.	Min. dia. 12"; Min. L 12'
U2 : 28'-35'	B.	Logs under 33 1/3 merchantable
U3 : 36'-40'	C.	Min. 20% Lumber Recovery
	D.	Scribner & Utility scale.
Code: PSX	31.	**PS SORT YELLOW CEDAR**
PS1 : 12'-27'	A.	Min. dia. 17"; Min. L 12'
PS2 : 28'-35'	B.	#3 and heavy stain logs.
PS3 : 36'-40'		

Examples where a company has fine-tuned their sorts using NWLRAG log grades

Douglas Fir - Long (26 - 40')

Diameter	Sort
8 - 11"	11
12" Plus 26 - 30'	14
12" Plus 32 - 40'	15
Low-Grade -3 + knots & 6-7"	13
16" + 32' - 40' SM & High-Line #2	16
Pulp	19

Hemlock - Long (26 - 40')

Diameter	Sort
8 - 11"	31
12" Plus 26 - 30'	34
12" Plus 32 - 40'	35
16" + 32' - 40' SM & High-Line #2	36
Low-Grade/6-7"	33
Pulp	39

Companies will use sorts to build decks or inventories of logs that have the same characteristics. Several of the characteristics that companies use to separate logs are: Species, Diameter range, Surface requirements, Defect %, Ring Count, Oversize Butt diameter, etc…

Care should be taken not to have too many sorts that overlap.
All Decks or Rafts would appear the same if sort specifications are not clear and concise.

In many instances companies will call their fall down or reject sort “PULP”

Care will need to be taken by the scaler to scale these logs properly using the NWLRAG Official Rules.

Everybody takes the pulp sort volume for granted until it’s time to be paid.

Just because these logs are called “PULP” does not mean that they are culls.

These PULP logs just do not meet the companies minimum specifications.

A “CULL” log is a log that cannot produce a minimum of 1/3 of its gross volume in 8’ lengths of Standard or Better lumber.

Companies will also use sorts to capture very high defect logs that have Hi Value clear cutting.
An example is a cull log that has some recoverable “Music Wood”. Music wood bolts are generally cut into 24” lengths.
Another example would be a Red Cedar log that will not produce 1/3 third of its gross volume in 8 foot standard or better lumber.

These logs would normally be graded as cull logs.

To qualify as a “Merchantable Log”, using NWLRAG log grades, the log must be capable of producing a minimum of 1/3 of its gross volume in 8’ lengths of Standard and Better lumber.

Both of these examples have valuable volume that the companies would like to be paid for.

Scalers will be asked to determine the recoverable volume to sometimes as low as 5% of the log's gross volume. The product that the scaler is scaling for may be 2' bolts, not 8' lumber.

When the scalers are requested to scale logs outside of the Official rules a "Special Request" letter is required from the company stating exactly what the specifications are for that particular sort for the scaling organization to be able to scale the logs.

An example of Shake bolts.

Examples of sorts that require less than 1/3 of the log's gross volume to be considered a merchantable log.

Code: WD	27.	**CIRCLE W SPRUCE**
W1 : 6'10"-27'	A.	Min. dia. 24"; Min. L 6'10".
W2 : 28'-35'	B.	#2 and better surface quality
W3 : 36'-40'	C.	20% lumber recovery.
	D.	Max. 20% sap rot.
	E.	Scribner & Utility scale.
	F.	Deck loose until sold (bundle separate)

Code: CULL	30.	**C SORT CEDAR**
U1 : 12'-27'	A.	Min. dia. 12"; Min. L 12'
U2 : 28'-35'	B.	Logs under 33 1/3 merchantable
U3 : 36'-40'	C.	Min. 20% Lumber Recovery
	D.	Scribner & Utility scale.

Examples of the many different sorts from company to company.
I have changed the specifications and codes.

DOMESTIC

Sort and Defect Codes		
Sort 1	Sort codes	
5	Excessive Knots/Rough	Sort code for excessive knots
6	Excessive Age Stain	Sort code for excessive age stain/Weather checks
7	Excessive Processor Damage	Sort code for excessive processor damage
Sort 2	Defect codes	Uses
OS	Oversize	Designates Maple logs with butts 30"+ or greater
SR	Sap stain/Weather checks	Defect (Quality)
OK	Knots/Sucker limbs	Defect (Quality)
CR	Crook	25% Defect
R	Rot	25% Defect
TS	Short Trim	Designates logs with insufficient trim
*Parameters of sort and defect codes are determined by the customer		

DOMESTIC

Scale using 2' multiples with 10" of trim.

Douglas Fir -Short (12 - 24')

Diameter	Sort
8" Plus	1
Low-Grade / 6-7"	3
Pulp	9

Douglas Fir - Long (26 - 40')

Diameter	Sort
8 - 11"	11
12" Plus 26 - 30'	14
12" Plus 32 - 40'	15
Low-Grade -3 + knots & 6-7"	13
16" + 32' - 40' SM & High-Line #2	16
Pulp	19

Hemlock - Short (12 - 24')

Diameter	Sort
8" Plus	21
Low-Grade/ 6-7"	23
Pulp	29

Hemlock - Long (26 - 40')

Diameter	Sort
8 - 11"	31
12" Plus 26 - 30'	34
12" Plus 32 - 40'	35
16" + 32' - 40' SM & High-Line #2	36
Low-Grade/6-7"	33
Pulp	39

Cedar - Short (12 - 24')

Diameter	Sort
8" Plus / 16'-22'	41
Rgh Low-Grade 6"-7" / 12'-14'	43
Pulp/Cull & Wormy	49

Cedar - Long (26 - 40')

Diameter	Sort
6" Plus 26 - 30'	54
6" Plus 32 - 34'	55
6" Plus 36 - 40'	56
Pulp /Cull & Wormy	59

Alder - Maple Sawlogs 16' Plus

Diameter	Sort
10" Plus Alder 20' +	71
8 - 9" Alder 16'+	72
Pulp Alder & < 16'	79
10" Plus Maple 16'+	81
Pulp Maple & < 16'	89

Special Service Cottonwood Sawlogs

Diameter	Sort
8" plus 16' & 20'	92
8" plus 32' & 40'	91
8" plus - all other lengths not specified above.	93
Pulp & <20'	99

Pencil buck 24' Cottonwood to 22' and 20' Cottonwood to 18'

must be straight enough to saw as 20' log segment

must have at least one straight 20' log segm

DOMESTIC

Plywood Mill

	SORT 01	*SORT 02*	SORT 03	SORT 04
SPECIE	DOUG FIR ONLY	DOUG FIR ONLY	DOUG FIR ONLY	DOUG FIR ONLY
MIN DIA	7"	7"	7"	7"
MAX BUTT	30"	30"	30"	30"
LENGTHS	34'10", 26'10", 17'10"	34'10", 26'10", 17'10"	34'10", 26'10", 17'10"	34'10", 26'10", 17'10"
SURFACE	ALL KNOTS MUST BE SOUND AND TIGHT	ALL KNOTS MUST BE SOUND AND TIGHT	7" logs only lengths allowed are 26' and 34'	7" logs only lengths allowed are 26' and 34'
	7"-11" LOGS UNLIMITED 3/4" TO 1"	7"PLUS LOGS UNLIMITED 1 1/2" KNOTS		
	12" PLUS UNLIMITED 3/4" TO 1"		ALL KNOTS MUST BE SOUND AND TIGHT	NO KNOT SIZE RESTRICTION
	WITH WELL SCATTERED 1 1/2" KNOTS		KNOTS NOT TO EXCEED 3"	NO SUCKER LIMBS
SPECS	CUT FROM GREEN TIMBER	CUT FROM GREEN TIMBER	CUT FROM GREEN TIMBER	CUT FROM GREEN TIMBER
	NO EXCESSIVE SWEEP	NO EXCESSIVE SWEEP	NO EXCESSIVE SWEEP	NO EXCESSIVE SWEEP
	NO SPIKE KNOTS	NO SPIKE KNOTS	NO SPIKE KNOTS	NO SPIKE KNOTS
	NO EXCESSIVE FREEZE CRACKS	NO EXCESSIVE FREEZE CRACKS		
	NO EXCESSIVE PITCH	NO EXCESSIVE PITCH		
	NO HOOKED BUTTS OR PISTOL BUTTS	NO HOOKED BUTTS OR PISTOL BUTTS	NO HOOKED BUTTS OR PISTOL BUTTS	NO HOOKED BUTTS OR PISTOL BUTTS
	NO KINKS OR SEVERE SWEEP	NO KINKS OR SEVERE SWEEP	NO KINKS OR SEVERE SWEEP	NO KINKS OR SEVERE SWEEP
	ALL ENDS MUST BUCKED SQUARE	ALL ENDS MUST BUCKED SQUARE	ALL ENDS MUST BUCKED SQUARE	ALL ENDS MUST BUCKED SQUARE
	NO HOLLOW CENTER	NO HOLLOW CENTER	NO HOLLOW CENTER	NO HOLLOW CENTER
	NO ROT	NO ROT	NO ROT	NO ROT
	NO SPLITS	NO SPLITS	NO SPLITS	NO SPLITS
	TWIST ALLOWED TO 3" PER 1'	TWIST ALLOWED TO 3" PER 1'		
	NO EXCESSIVE FLARE	NO EXCESSIVE FLARE		
	NO FLAT LOGS	NO FLAT LOGS		
	KNOTS WILL BE MEASURED LENGTHWISE	KNOTS WILL BE MEASURED LENGTHWISE	KNOTS WILL BE MEASURED LENGTHWISE	KNOTS WILL BE MEASURED LENGTHWISE
	MUST BE SORTED SEPARATELY			

EXPORT

Douglas Fir						
Top	Butt	Lengths	Quality	Mark	Notes	
8”-20”	< 21”	20’ – 40’ (2’ intervals with trim)	C	1	#2+ surface	
21”-32”	<32”	“	CC	2	#2+surface	
32”+	No limit	“	CCC	3	#2+surface	
8”-20”	< 21”	“	LS	4	#3+ (low saw)	
21”-32”	<32”	“	LSS	5	#3+ (low saw)	
32”+	No Limit	“	LSSS	6	#3+ (low saw)	
4”-7”	No Limit	30’-40’	D	7	No rough/crooked tops, sound 4” dia. logs, grade as #4 sawlogs	
Hemlock						
Top	Butt	Lengths	Quality	Mark	Notes	
8”-20”	< 21”	20’ – 40’ (2’ intervals with trim)	H	11	#2+ surface	
21”-32”	<32”	“	HH	22	#2+surface	
32”+	No limit	“	HHH	3 3	#2+surface	
8”-20”	< 21”	“	LS	55	#3+ (low saw)	
21”-32”	<32”	“	LSS	66	#3+ (low saw)	
32”+	No Limit	“	LSSS	77	#3+ (low saw)	
4”-7”	No Limit	30’-40’	DD	88	No rough/crooked tops, sound 4” dia. logs, grade as #4 sawlogs	
Other species – Noble/Grand/Silver Fir, Spruce – Same sort as Hemlock						
Alder						
Top	Butt	Lengths	Quality	Mark	Notes	
5”+	<20”	19’-7” – 40’ (2’ intervals with trim)	HW	A	Low saw – reasonably straight	

Notes: Logs with metal or bug infested not allowed; logs to be well bucked and manufactured. Excessive defect logs will be downgraded. Preferred lengths: 20’, 26’, 33’, 38’-10” maintain higher avg of long lengths.

HI Export Sort		Measured Length	Log Mark	Recorded Length	
12" min dia				Scribner	JAS
Mark logs with one dot		**39'1" +**		****	****
		32'6" thru 39' 0"		****	****
JAS LENGTHS *********		26' 1" thru 32' 5"		****	****
30" MAX BUTT		**25'11" and 26'0"**	**5+**	****	****
		19'6" thru 25'10"		****	****
Surface:Well Scattered 2 1/2" knots		13'1" thru 19'5"		****	****
Ignore knots < 1 1/2"		**12'10" thru 13'0"**	**2+**	****	****
3 Oversize knots UP TO 3" allowed if log is "High End"					
Spike Knot: 1 up to 2 1/2", under 1" allowed					
1/2 Pitch Ring allowed in one end only		**Scribner lengths are recorded in 1' multiples with 1" minimum trim required on 13', 26', and 39' logs.**			
SWEEP: 4 Meter rule WOBBLE: 4 Meter rule		**6" trim is required on 19' and 32' logs.** All other log lengths require 8" minimum trim.			
Heart Off Center 15% MAX, if Heart off center is					
greater than 15% in either end, Down Sort the log					
Rot not allowed. Sound Stain only		**Record only those Metric lengths that are listed.**			
Processor Break not allowed					

Large Export sort (all species)	*Small Export sort (all species)*	*Small Util Saw (all species)*	Insect infested logs
12" MIN DIA	8" to 11"	6" MIN DIA	Include all logs infested
JAS LENGTHS *********	JAS LENGTHS ********		with insects.
		Fall down export sort, logs that	mark cull logs with X
Max Knot= 4"	Max Knot= 4"	do not meet other export specs	
2 SPIKE KNOTS <4" allowed per 13'	2 SPIKE KNOTS <4" allowed per 13'	are assigned to this sort	
Max 3 knots > 3" allowed per 13'of log length	Max 3 knots > 3" allowed per 13'of log length		
		mark cull logs and High Defect logs with	
Sweep SED/4<25', SED/2>25'	Sweep SED/4<25', SED/2>25'	a SLASH across face of log	
Wobble 2" Max Deviation	Wobble 2" Max Deviation	(these are DOMESTIC LOGS)	
Stump pull 4" Max	Stump pull 4" Max		
Out of spec notify			

Species	Sort		Specifications	
Hemlock	2K	8" up	Good log	China & Better
	2D	8"	Fall Down log	
Fir	1K	8" up	Good log	China & Better
	1D		Fall Down log	
Spruce	5K	8" up	Good log	China & Better
	5D		Fall Down log	
If More then 1" or 3' out of log, Fall down sort				
Tag All Logs				

HEMLOCK & WHITE FIR:	2C,2CO,2L,2D,2P,2X
SPRUCE:	5C,5CO,5L,5D,5P,5X
Preferred lengths: 39',33',26', 10" trim, then 2' multiples 26'-40', avg. length 35', 20% off length allowed. Non preferred: 38'	
SORTS	**SPECS**
1C,2C,5C	12"-22" China/domestic type #2sawmill & better. Rough tops that are marginal sawlogs not allowed. No more than 15% defect. Sound green logs only.
1CO,2CO,5CO	23"+, Same quality as above(max 48" butt)
1L,2L,5L	8"-11" Same quality as above, #3sawmill grade & better
1D.1D.1D	8"+ Sawmill grade logs with excessive roughness, sweep or other defect. Maximum defect 25%. Sound green logs only.
1X,2X,5X	Reject logs less than 8" scaling diameter. Sound green logs only.
1P,2P,5P	Reject/Pulp Sort-No Pay Item

Douglas Fir

SORT	ON LOG	TOP	BUTT	LGTH	QUALITY	NOTE
JF	E	13"+		30'-40'	HI Quality Export	No Red paint
CF	C	12"-22"	40"	30'-40'	LOW Quality Export	No Red paint
CSF	L	8-11"		30'-40'	LOW Quality Export	No Red paint
DFO	CIR S	12"+		16-40'	Domestic Saw Log	
DFS	S	8-11"	18	16-40'	Domestic Saw Log	
DF	S	12"+	19+	16-40'	Domestic Saw Log	
FX		5-7"	18	16-40'	Chip & Saw	
PF	FP BLUE DOT			8'+	PULP	

Hemlock

KH	K	12"+		30-40'	MEDIUM Quality Export	No Red paint
KHS	H	8"-11"		30-40'	MEDIUM Quality Export	No Red paint
CH	C	12"-22"	40"	30-40'	LOW Quality Export	No Red paint
CHS	L	8"-11"		30-40'	LOW Quality Export	No Red paint
DHO	CIR S	12"+		16'-40'	Domestic Saw Log	
DHS	S	8-11"	18	16-40'	Domestic Saw Log	
DHS	S	8-11"	19+	16-40'	Domestic Saw Log	
HX		5-7"	18	16-40'	Chip & Saw	
PH	HP BLUE DOT			8'+	PULP	

Spruce

KS	K	8"-19"		30-40'	MEDIUM Quality Export	No Red paint
KSO	KO	20"-25"		30-40'	MEDIUM Quality Export	No Red paint
KSL	KB	26"+		30-40'	MEDIUM Quality Export	No Red paint
CS	C	12"-22"	40"	30-40'	LOW Quality Export	No Red paint
DS	SS	8"+		16-40'	Domestic Saw Log	
SX		5-7"	18	16-40'	Chip & Saw	
PS	SP BLUE DOT			8'+	Pulp	

Hard Woods

HA		12"+		16-40'		
HS		8-11"		16-40'		
HX		6-7"		30-40'		
HP	BLUE DOT			8'+	25 GRADE OR CULLS	
MA	MA	10"+		20-40'		
MP	BLUE DOT			8'+	25 GRADE OR CULLS	

Cedar

CD		6"+		32'+	PENCIL BUCK FOR 6" 16' +	
CDS		6"+		16-31'	PENCIL BUCK FOR 6" 16' +	
CDO	BLUE OS	12"+	30"+ Butt	12'-40'	**OVER SIZE**	
CP	UTILITY CULL			8'+		
CDW	Call Pulp				WORMY	
CS	CS				SHINGLE ROUND LOGS	
CK					SHAKE SLABS	

LOG SORTS SPECIFICATIONS

(Heart checks are not a factor in determining allowable Max. Defect %)

(Heart off center and Out of round are detemined from top end of log)

Code #, Symbol, and Length Sort		Name & Description (Note: Min.= minimum, max=maximum, L= length, dia.= diameter)
Code: 1	1.	**HI GRADE HEMLOCK**
I : 20'-27'		A. Min. dia. 24"; Min. L 20'. Raft length avg. 33'.
II : 28'-35'		B. Smooth appearing #2 & Better.
III : 36'-40'		C. Max. defect 15 %; No sap rot.
		D. 12 rings/inch - Measure at outer 1/3 of radius.
		E. Straight: No rotten knots - Max. twist 2"/ft..
		F. Bark seams 10 % length of log is max.
		G. Max. heart off center 10 %. Exceptions: logs 24" & larger with heart off center allowable except when accompanied by sweep or twist.
		H. Max out of round logs 15 %.
Code: 3	2.	**SHOP HEMLOCK**
T1 : 13'-25' *	*	A. Min. dia. 20"; Min. L 13', except min. L on logs less than 24" in dia. is 20'.
T2 : 26'-35'		
T3 : 36'-40'		B. Log should yield HI GRADE clear cuttings.
		C. Max. defect 40 % -Buck off excessive butt defect, swelled or bark seamy butts.
		D. 13' to 19' logs; Max. deduction = 25%
		E. Butt logs under 20' with eratic grain in butt not acceptable.
		F. Max out of round logs 20 %.
Code: 2	3.	**CIRCLE R HEMLOCK**
(R1) : 20'-27'		A. Min. Dia. 20"; Min. L 20'. Raft length avg. 32'.
(R2) : 28'-35'		B. Next sort down from HI GRADE; Good appearing #2 & Better.
(R3) : 36'-40'		
		C. Max. defect 25 % ; Max. sap rot 10 %.
		D. Max. bark seams allowed: 1/3 of L of log.
Code: 4	4.	**RED SORT HEMLOCK**
R1 : 20'-27'		A. Dia. 13" thru 19"; Min. L 20'. Raft length avg. 32'.
R2 : 28'-35'		B. Same as CIRCLE R HEMLOCK except for dia.
R3 : 36'-40'		
Code: 5	5.	**L SORT HEMLOCK**
L2 : 26'-33'		A. Min. dia. 20"; Min. L. 26'
L3 : 34'-40'		B. Good #2 - NO ROUGH TOPS!!
		C. Max. defect 25 % ; Max. sap rot 10 %.
		D. Hooked & twisted butts should be bucked off.
		E. One straight bark seam allowed.
Code: 6	6.	**H SORT HEMLOCK**
H2 : 26'-33'		A. Dia. 13" thru 19"; Min. L 26'. Minimize reman of smaller dia. logs down to H sort minimums.
H3 : 34'-40'		
		B. Same as L SORT HEM except for dia.

Code: 8	7.	**DIAMOND & CIRCLE DIAMOND HEMLOCK**
(1) : 12'-25'		A. Diamond Hemlock: Dia. 8" thru 19"; Min. L 12'.
(2) : 26'-33'		B. Circle Diamond Hem: Min. dia. 20"; Min. L 12'.
(3) : 34'-40'		C. Good #3 & Better - NO ROUGH TOPS!!!!!
Code: B7		D. **12'-25' logs must be H sort quality and better.**
(1) : 12'-25'		E. Max. defect 66 2/3 %; No sap rot on 8" to 11" dia.
(2) : 26'-33'		F. Buck off excessive butt defect, swelled or bark seamy butts, and hooked &/or twisted butts.
(3) : 34'-40'		
		G. 12'-20' logs with sweep or crook = 2' max. L deduction.
		H. All logs must be well trimmed.
Code: 59	8.	**A SORT HEMLOCK & SPRUCE**
A2 : 26'-33'		A. Min. dia. 6"; Min. L 26'. **Max. dia. on spruce 17".**
A3 : 34'-40'		B. #3 & Better surface quality.
		C. Max. defect 66 2/3 %; No sap rot on 6" to 8" dia.
		D. Buck off excessive butt defect, hooked &/or twisted butts. No penetrating bark seams.
		E. All logs must be well trimmed.
		F. Max. 3500 bf bundles.
Code: B69	9.	**CIRCLE A SPRUCE**
(A2) : 26'-33'		A. Same as A Sort except **Min. dia. 18"** and just Spruce.
(A3) : 34'-40'		
Code: 29	10.	**PULP - HEMLOCK & SPRUCE**
		A. Min. dia. 6"; Min. L 12"; Min. bundle L 20'.
		B. Min. requirements: 50 % net utility.
		C. Knots On Pulp Will Be Trimmed !!!
		D. **THREE** Double Wraps on all bundles!!
Code: 40	11.	**L SORT RED CEDAR**
L1 : 20'-27'		A. Min. dia. 20"; Min. L 20'.
L2 : 28'-35'		B. Smooth appearing #3 and better surface quality.
L3 : 36'-40'		C. Max. defect 40 % ; Max. L deduction 20 %.
		D. Slabs with min. of 300bf of #2 & Better are acceptable.
		E. Buck off excessive L defect and broken ends.
		F. Must be suitable for producing clears.
Code: 43	12.	**CIRCLE SH RED CEDAR**
(SH1): 12'-27'		A. Min. dia. 20"; Min. L 12'.
(SH2): 28'-35'		B. Buck excessive butt defect.
(SH3): 36'-40'		C. Max. defect 30% excluding checks.
		D. Twist shall not exceed 3"/ft.
		E. Slabs must have a min. of 400bf.
		F. Must be merchantable for producing lumber recovery.
Code: 42	13.	**SH RED CEDAR**
SH1 : 12'-27'		A. **Dia. 8" thru 19"; Min. L 12'.**
SH2 : 28'-35'		B. Buck excessive end defect; No excessive twist.
SH3 : 36'-40'		C. Slabs must have a min. of 200bf.
		D. Must be merchantable for producing lumber recovery.
		E. DOUBLE WRAP all bundles!! Max. 25 ton bundles.
Code: 49	14.	**C SORT RED CEDAR**
C1 : 12'-27'		A. Min. diam. 20"; Min. L 12'
C2 : 28'-35'		B. Max. defect 66%.
C3 : 36'-40'		C. **Scribner scale only.**
Code: 11	15.	**HI GRADE SPRUCE**
		A. Min. dia. 24"; Min. L 13'.
E1 : 13'-27'		B. Clean appearing #2 Sawmill quality and better; reasonably straight.
E2 : 28'-35'		
E3 : 36'-40'		Hi Grade Spruce continued on back side or at right top.

You can see that sorts vary widely from company to company.
Sorts will change depending upon market conditions, where the log is being delivered , ownership (private or public), domestic or export, etc…

Log Grades will be consistent regardless what the market is doing or where logs are being delivered.