



***FMG EAST  
LOG QUALITY  
SPECIFICATIONS***

***Summer 2016***

*Version: May 1<sup>st</sup> / 2016*



# Section 1 - Defect Descriptions & Specifications

Logs delivered to Canfor's manufacturing plants must comply with the log manufacturing specifications and guidelines as follows. These specifications reflect Canfor's License utilization requirements and individual plant specifications. Log quality specifications are re-assessed seasonally.

Log quality will be monitored using MOF/Company Samples and joint on-block sampling by Harvesting Supervisors and Contractors. Bush results are documented and shared with Harvesting Contractors on the harvesting site. Both will be entered into the LQ Management system and distributed as required.

## **SPECIFICATION**

## **DEFINITION**

### ***Length Tolerance***

All CTL Logs: 10' - 37'	2" short and 2" long
Long Log Lengths 37' - 62'	2" short and 3" long
Long Log Lengths >62'	2" short and 6" long

### ***Top Size***

***Sawlogs: see individual mill specifications.***  
*Top diameter measured inside the bark, 1/4" tolerance allowed. Tops are measured across the widest direction.*

### ***Grade 6 log***

**Grade 6 Logs are Acceptable**  
***Feller Buncher butt cut must not be cleaned up for any reason other than for butt defects that do not meet spec. Unless approved.***

*Grade 6 logs are Pine logs 6" or less, all other specie 8" or less. Measured 6" up from the butt cut.*

### ***Spiral Checking***

***Maximum Spiral Check of 1/4 turn in 16'.***  
*West Mills see individual mill pages.*  
*See individual mill specifications for length details.*

***Straight Checks***

*A single straight check is acceptable to a depth of center of the butt. Seasonal checking is acceptable at all sawmills.*

***Multiple Checks***

*Obvious multiple checks on a log are acceptable if the checks, **assessed in combination** affect less than 50% of the volume. Most checks have sufficient depth to affect significant volume when several checks are present.*

***Twist***

*Twisted grain on any green log greater than  $\frac{1}{4}$  turn in 16'. See individual mill specifications for length details.*

***Processor Damage***

*Spike holes greater than  $\frac{1}{4}$ " deep into the wood caused by a processor are not acceptable.*

***Poor Falling or Bucking Cut***

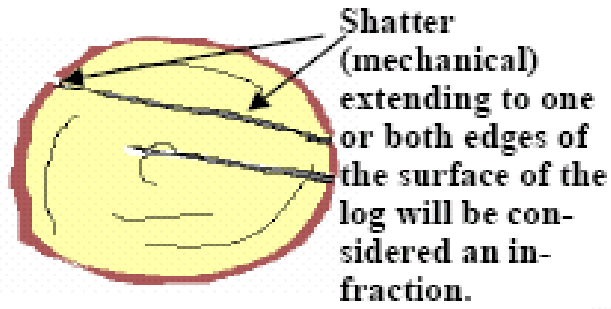
*A log with a step cut or slanted cut, which exceeds 2". Buncher Double Cuts often result in splits up the stem, this creates a huge recovery loss for the mills. If you cannot fall the tree without damage, it should be handfell.*

***Machine Damage/  
Deep Bucking Cut***

*Damage to any part of the log that is deeper than 2" beyond normal taper is unacceptable. Logs 20" and over may have machine damage of 4" into normal taper. This includes spearing, dents, gouges, buncher damage, processor damage, or shatter.*

***Split Tops and Butts.***

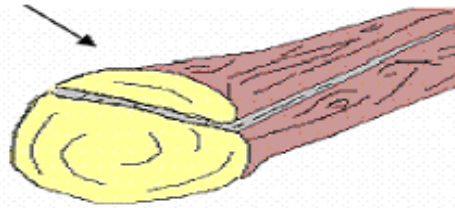
*Splits occurring within the outer 10% of the butt or top are acceptable, provided that the split travels straight or towards the outer edge of the log.*



Shatter confined to flare **OK**



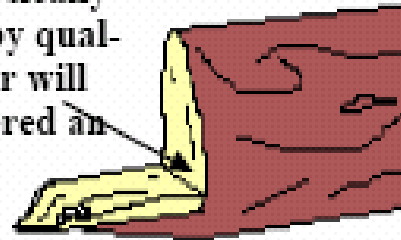
Shatter effecting recovery is unacceptable



**Snipe**

*A log with an incomplete cut at either end, leaving a snipe greater than 2" long and 1/2" in thickness, is not acceptable.*

Snipes that cannot be physically removed by quality assessor will be considered an infraction



**Dead/Dry logs:**

*Sawlogs: are acceptable at all sawmills, See individual mill pages for dry Balsam.*



**Butt Rot**

*(Spruce, Pine, Fir)*

*Includes white fleck*

*Logs 18" and less across the butt, no more than 25 % of the diameter allowed for rot. Logs greater than 18" at the butt, no more than 40 % of the diameter allowed for rot. Logs < 8" No rot acceptable. Stain is not considered rot as long as it is hard and growth rings are still visible.*

**White fleck rot is unacceptable.**

**Butt Rot by Diameter – Spruce, Pine, Fir – 25% and 40%**

<i>Butt Diameter &lt; 18"</i>	<i>Acceptable Rot Diameter</i>	<i>Butt Diameter &gt; 18"</i>	<i>Acceptable Rot Diameter</i>
<i>8"</i>	<i>2"</i>	<i>20"</i>	<i>8"</i>
<i>10"</i>	<i>2.5"</i>	<i>22"</i>	<i>8.5"</i>
<i>12"</i>	<i>3"</i>	<i>24"</i>	<i>9.5"</i>
<i>14"</i>	<i>3.5"</i>	<i>26"</i>	<i>10.5"</i>
<i>16"</i>	<i>4"</i>	<i>28"</i>	<i>11"</i>
<i>18"</i>	<i>4.5"</i>	<i>30"</i>	<i>12"</i>
		<i>32"</i>	<i>13"</i>
		<i>34"</i>	<i>13.5"</i>
		<i>36"</i>	<i>14.5"</i>
		<i>38"</i>	<i>15"</i>
		<i>40"</i>	<i>16"</i>

**Butt Rot (Balsam)**

*Saw logs: No more than 25 % rot by diameter allowed for any size of butt.*

**-Logs < 8" No rot acceptable.**

**-No rot in dry Balsam sawlogs.**

**Top Rot**

*No rot allowed on tops < 6". Logs greater than 6", 20% of diameter is allowed. Stain is acceptable, white fleck is unacceptable. OSB top rot of up to 50% is acceptable.*

**Sap Rot**

No more than 20% of diameter sap rot. A residual core of 4.5" must remain in all cases. Sap rot is defined as fiber that is soft or crumbles and has lost its integrity.

**Excessive Sweep**

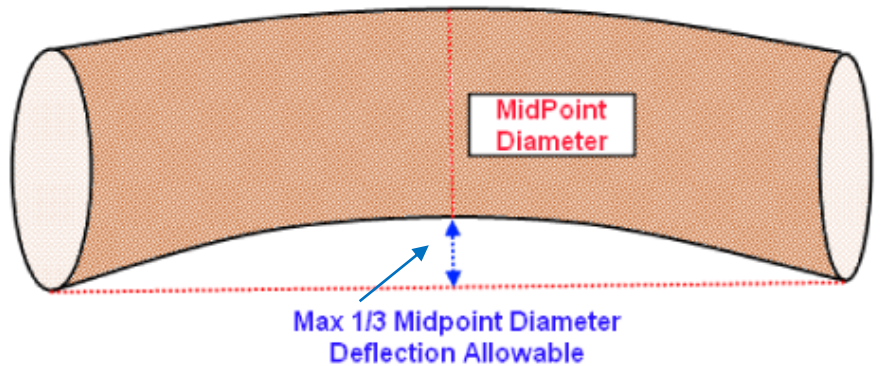
Sweep is acceptable if in any 16' section of log, (12' 3" at IP / Chetwynd) When measured horn to horn the deflection from the tape to the log is less than 1/3 the mid-point diameter.

The picture, illustrates how sweep is measured. Logs that are 3" or more over the acceptable sweep tolerance will be treated as production killers. Snake sweep must still leave 50% or more volume available for manufacture.

**Mid-Point Diameter - Allowable Deflection Chart**

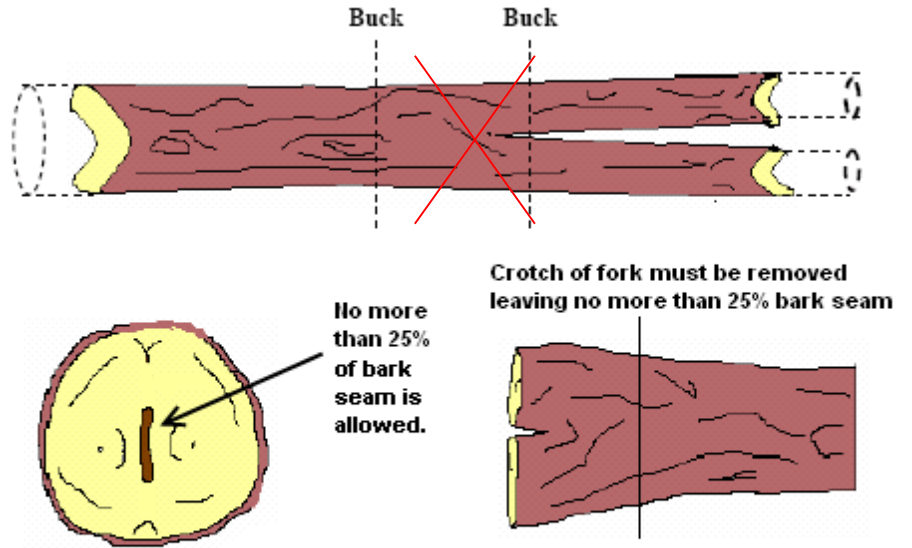
Midpoint	Deflection
< 7.5"	2 "
7.6" - 10.5"	3 "
10.6" - 13.5"	4 "
13.6" - 16.5"	5 "
16.6" - 19.5"	6 "
> 19.5"	7 "

Sweep Measured Horn to Horn. 1/3 Mid-Point Diameter is the Maximum Allowable Deflection



**School Marm**

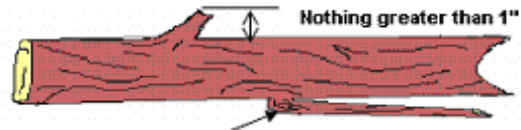
*A properly bucked school marm will have no more than 25% of the diameter of bark seam showing.*



**Avoid the practice of splitting forks. If forks are split during the logging process, remove fractured portion.**

**Limbs, Spikes**

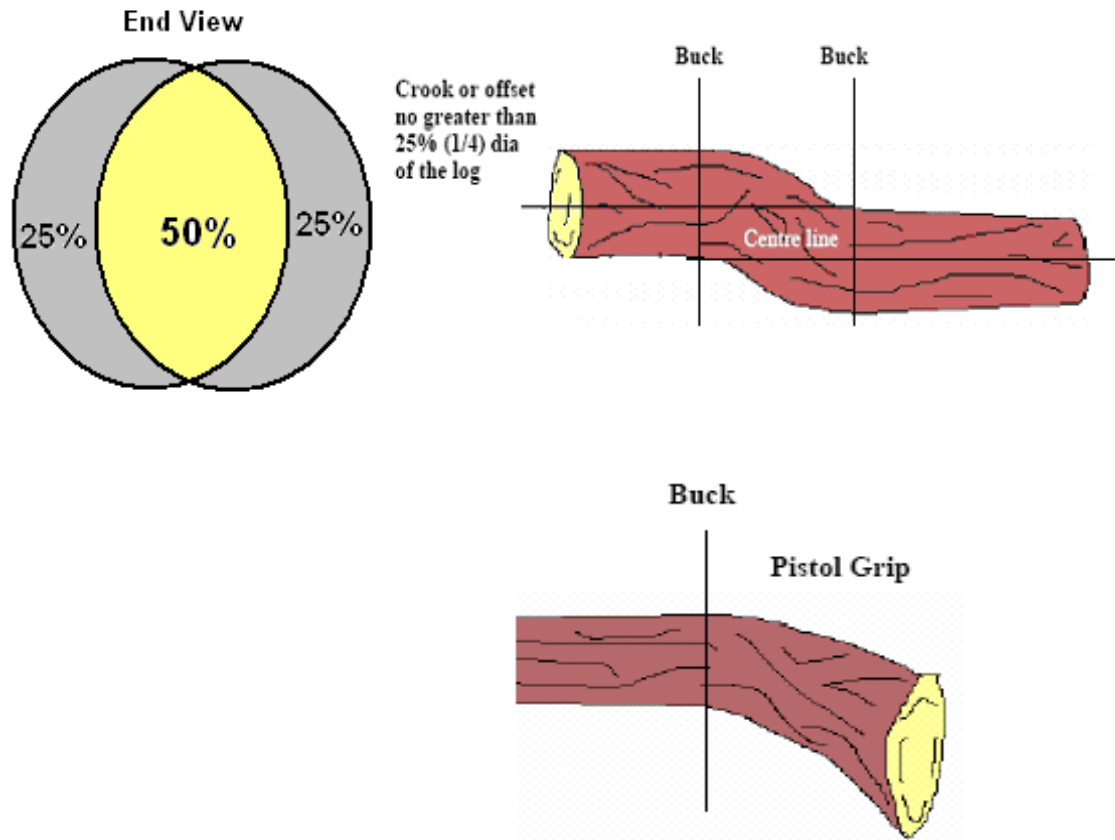
*All limbs and spikes must be bucked flush. A maximum tolerance of 1" is allowed. (3" for OSB) Discretion must be used with repeated delimiting for machine damage.*



**No long folded limbs**

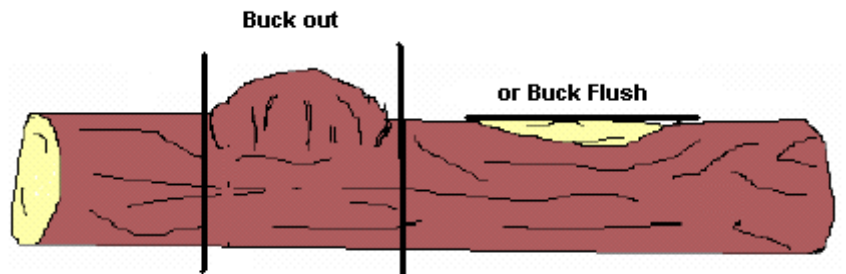
**Crook/Pistol Grip**

*A log that has an abrupt offset at a point along its length. Crooks that have greater than 25 % displacement by diameter should be bucked out minimizing the avoidable waste. 25% offset still leaves about 50% or minimum heart of 4.5" **core** available for lumber, the picture below is more than 25% offset.*



***Burls or Natural Deformities***

*Any burl or deformity that protrudes greater than 1" from the natural taper of the log must be bucked flush or bucked out.*



***Gnarly top***

*Gnarly tops should be bucked off leaving a primary or secondary log length. If a top looks gnarly and/or ugly, it is not acceptable.*



*Buck at red line*



*Buck at red line*



*Buck at red line*

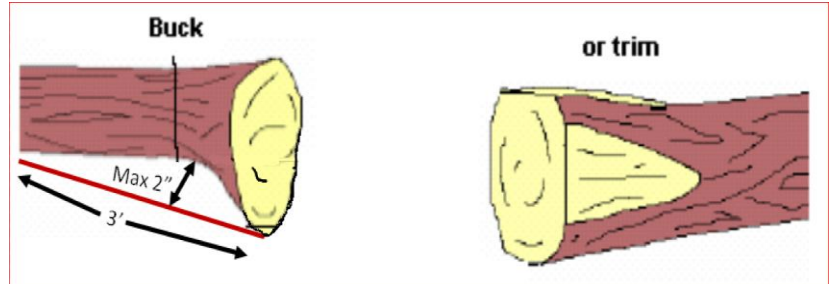


**Cat Face**

*All wood within the cat face must be tight with no charcoal acceptable. If a Cat Face is the only butt defect and the butt is straight (not hooked), the Cat Face can go to a depth of 1/3 of the butt diameter. Mid stem, Cat Faces must still allow for at least 50 % lumber recovery, or a minimum of 4.5" **core** of firm wood. Multiple cat faces will be assessed in combination over the length requiring 50% volume available for manufacture. **\*\*Crooks are assessed at the point of the defect and not over the length of the log\*\****

**Excessive Butt flare**

Any flare greater than 2" on either side, outside of the normal taper of the log measured over a 3' 0" length.



**Broken Ends**

Off-length top logs resulting from breakage are to be cut clean, to the receiving sawmill's preferred length or secondary length. **See individual mill pages.**

**Incorrect Product Sort**

Logs sent to the wrong destination or not sorted as per sawmill specifications.

**Non-Merch. Chunk**

Sawmill/Chip plant - a processed log that is shorter than 10' 0" in length.

**Burned Wood**

A burned log, partially burned log or catface containing charcoal that has not been approved for delivery, normally burnt wood is not accepted at any processing facility.

**Random Length**

Random length means a log not cut to a measured length, but cut to within 1" of the specified mill top size (up to 5.5").

**Preferred Lengths**

Buck logs to the preferred lengths shown for each mill, only use secondary lengths when bucking back for defect, unless specified for that mill.

**Multiple Defects**

*Logs with multiple defects that assessed alone, each defect meets spec, but all defects combined, affect greater than 50% lumber recovery, are not acceptable. (Example... logs with 2 catfaces down one side, a crook in the center and a ¼ turn check on the other side.)*

**Cull Log**

*Obvious cull logs are not acceptable, only sawlogs with greater than 50 % rot by diameter at both ends, or deciduous in sawlog loads or burnt wood can be culls.*

**Production Killers**

*Production Killers are any log that has the potential to cause any loss of production in the sawmill or jeopardize the safety of sawmill employees, such as jam up. A few examples of production killers are: runaway length, severely excessive sweep, excessive oversize. See individual mill specifications for production killer details.*

**Log Lengths**

**Log Lengths / Targets CM's**  
**\*\*\*\*\* Check Correct Mill Target Length\*\*\***

-5 CM's	-2"	<b>Target</b>	+2"	+5 CM's
307	10' 1"	<b>10' 3"</b>	10' 5"	318
310	10' 2"	<b>10' 4"</b>	10' 6"	320
368	12' 1"	<b>12' 3"</b>	12' 5"	379
371	12' 2"	<b>12' 4"</b>	12' 6"	381
429	14' 1"	<b>14' 3"</b>	14' 5"	440
432	14' 3"	<b>14' 4"</b>	14' 6"	442
490	16' 1"	<b>16' 3"</b>	16' 5"	501
495	16' 3"	<b>16' 5"</b>	16' 7"	505
551	18' 1"	<b>18' 3"</b>	18' 5"	562
556	18' 3"	<b>18' 5"</b>	18' 7"	566
612	20' 1"	<b>20' 3"</b>	20' 5"	623
617	20' 3"	<b>20' 5"</b>	20' 7"	627

## **Section 2: Other Specifications Loading/Sorting**

### **Balsam**

*Balsam is to be sorted when directed by the Forestry Supervisors. See individual sawmill specifications.*

### **Cedar/Hemlock/Fir**

*No Cedar, Hemlock or Fir to any mill or pulp facility unless previously authorized by Forestry Supervisor. Must be sorted separately and delivered as directed.*

### **Loadslips**

*Loadslips must be correctly and completely filled out, with all fields completed. Sorts, Species id, Bundles etc. are all critical information. Loaderman will complete the loadslips. Improperly completed loadslips could result in infraction penalties to the contractor.*

### **Oversize (O/S)**

*See individual sawmill specifications.*

### **Cleanup Loads**

*Cleanup loads which have a mixture of species or sorts but does not include pulp. Number of loads must be minimized to 1 or 2 per cutblock. A "C" must be painted on the front driver side of the load, marked on the trucker slip and identified at the scales for safe and proper millyard handling. Check with Harvesting Supervisor to see if prior approval is required.*

### **Sorting**

*1" tolerance on diameter sorting, measured across the maximum width on the larger end of the log.*

### **Butt or Top Diameters**

*All Butt or Top Diameter measurements are measured across the maximum width on the larger end of the log.*

### **Foreign Material/Debris**

*Is not acceptable, no loose debris in the load (limbs, chunks, long butts, and rat tails). Any log or a load of logs, which contains any material other than wood (ie. rock, wire, nails, etc.)*

***Foreign debris will be assessed as production killers.***



# Polar Sawmill Specifications

250-972-4708

Top Diameter Green 4.75" Dry 5.0"		Prime Lengths	Other Lengths
Sorts	Butt Diameter		
Small	9.0" - 14.5"	16'5"	14' 4" / 12' 4"
Medium	14.5" - 20.0"	16'5"	14' 4" / 12' 4"
		20'5"	
Large	20.0" - 25.0"	20'5"	14' 4" / 12' 4"
HR 1	25.0" - 30.0"	16'5"	14' 4" / 12' 4"
HR 2	>30.0"	16'5"	14' 4" / 12' 4"
Balsam Medium	10.0" - 18.0"	16'5"	14' 4" / 12' 4"
Balsam Large	> 18.0"	20'5"	14' 4" / 12' 4"

- **Medium sort logs at 20.0" must be perfectly straight with no butt flare. Any logs at 20" with any sweep or flare must be put in the large sort. Maximum diameter at the widest point cannot exceed 20.0".**
  - **There is no 1" tolerance at 20". THESE QUALIFY AS PRODUCTION KILLERS.**
- **PRODUCTION KILLERS - Any log longer than 21'4" and any log that is >20" in the medium sort at the widest point.**
- **Logs over 30" must be sorted as they are a production killer when mixed in HR 1 sort.**  
*ALL logs >30" must be marked "HR2 with the diameter on the butt"*
- *Diameter Sorting Tolerance - 1" maximum except in the medium sort.*
- *Harvesting Sup. will direct the contractor on which prime length to target in each sort. "Other Lengths" are only to be used when bucking for defect or utilization.*
- *All Balsam to be sorted and delivered separately or as per direction from the Harvesting Supervisor. No dry balsam allowed.*
- *Clean up loads are to be minimized and clearly identified on the load slip.*
- *HR 2: in order of priority, load: 1) as entire bunk(s) 2) load on top of another sort but not with large sort 3) if 4 or less logs place on top of the load. Clearly mark all HR 2 on the loadslip and on the butts if not sorted to an entire bunk.*



## Prince George Sawmill Specifications 250-962-3393

<b>Top Diameter Green 4.75" Dry 5.0"</b>	<b>Max Butt 20.0"</b>	<b>Max length 20'5"</b>	<b>Min Length 12'4"</b>
<b>Sorts</b>	<b>Butt Diameter</b>	<b>Prime Lengths</b>	<b>Other Lengths</b>
<b>Small</b>	<b>&lt; 9.0"</b>	<b>16' 5"</b>	<b>14' 4" / 12' 4"</b>
<b>Medium</b>	<b>9.1"-14.5"</b>	<b>16' 5"</b>	<b>14' 4" / 12' 4"</b>
		<b>20' 5"</b>	
<b>Large</b>	<b>14.6" - 20.0"</b>	<b>16' 5"</b>	<b>14' 4" / 12' 4"</b>
		<b>20' 5"</b>	
<b>Balsam</b>	<b>&lt; 10.0"</b>	<b>16' 5"</b>	<b>14' 4" / 12' 4"</b>
	<b>10.1" - 20.0"</b>	<b>20' 5"</b>	

- *Harvesting Sup will direct the contractor on which prime length to target in each sort.*
- **“Other Lengths”** are only to be used when bucking for defect or utilization.
- *Contractor may only use the ¼" tolerance on top size to buck a preferred length (i.e. can go to 4 ½" on a green sawlog to hit a 16' 5" length).*
- *All Balsam to be sorted and delivered separately as per Harvesting Supervisor direction. No dry Balsam allowed.*
- *Diameter Sorting Tolerance – 1" Maximum.*
- *Oversize logs >20.0" to be bucked to 16'5" or 20'5" to Polar or an alternative facility/sort yard. Harvesting Supervisor will provide this direction.*
- **Large sort between 18" and 20.0" must be perfectly straight with no butt flare. Any logs over 18" with any sweep or flare must be sent as oversize to Polar. Maximum diameter at the widest point cannot exceed 20.0"**
- **Production Killer** – Any log longer than 21'4" and logs greater than 20.0" Butt Diameter.



## ***PG Chip Plant Specifications***

**250-962-3393**

<b><i>Top Diameter (Minimum) 4.0"</i></b>	<b><i>Max Butt 30.0"</i></b>	<b><i>Max length 20'5"</i></b>	<b><i>Min Length 12'4"</i></b>
<b><i>Sorts</i></b>	<b><i>Butt Diameter</i></b>		
<b><i>Small</i></b>	<b><i>&lt; 10.0"</i></b>		
<b><i>Large</i></b>	<b><i>&gt; 10.1"</i></b>		

- *No deciduous.*
- *Maximum 70% rot by volume.*
- *No Grade 1 or 2 (saw logs) – called cull logs and given points on assessment sheet (unless previously approved by Harvesting Supervisor)*
- *All Balsam, Hemlock and Fir to be sorted and delivered separately as per Harvesting / Purchase Wood Supervisor direction.*
- *No broken ends.*
- *No Oversize greater than 30"*
- *Target lengths to be determined by Harvesting Supervisor.*
- *Diameter Sorting Tolerance – 1" Maximum.*
- *Production Killer – Any log longer than 21'4"*



# Mackenzie Sawmill Specifications

250-997-2527

Sorts	Butt Diameter	Preferred	Alternate
Small	< 9"	16' 3"	12' 3"
Medium	9" - 13.5"	16' 3"	12' 3" / 14' 3" / 18' 3"
		20' 3"	
Large	13.5" - 24"	16' 3"	12' 3" / 14' 3" / 18' 3"
		20' 3"	
Oversize	> 24"	16' 3"	12' 3" / 14' 3"
Balsam - Small	< 11"	16' 3"	12' 3"
Balsam - Large	11" - 24"	16' 3"	12' 3" / 14' 3" / 18' 3"
		20' 3"	

**Minimum top size**

- **Green Logs: 5"      Dead Pine: 5 ¼"**
- A ¼" tolerance may only be used to buck a preferred length (e.g. can go down to a 4 ¾" top on a green log to hit a 16' 3" length)

**Preferred lengths:** Alternate lengths may only be used when bucking out defect.

**Sorting:**

- Balsam: to be sorted and delivered separately as per Harvest Supervisor direction.
- Large: 22-24" logs with noticeable sweep must go into Oversize sort.
- Diameter tolerance: +/- 1"

**Dry balsam:** If doing pulp, pulp it. Otherwise acceptable in larger sort, provided there is no checking, sap rot or other quality defects.

**Oversize:** load: 1) entire bunk [best practice] or 2) partial bunks on top of small sort. Sort beneath must be levelled for clean extraction of OS by yard loader. Clearly mark OS on loadslip and on butts if not sorted to entire bunks.

**Production Killers:**

- Swept & pistol-grip logs that exceed old sweep rule (line center to center goes outside the log)
- Logs over 21' long
- 26"+ diameter in large sort
- Burnt wood or cull logs.



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## ***Mackenzie Chipper (East Fraser Fiber) Specifications*** **250-997-8114**

- *Minimum top size is 3"*
- *No deciduous*
- *Maximum 70% rot by volume*
- *No Grade 1 or 2 (saw logs) – called cull logs and given points on quality assessment sheet (unless previously approved by Harvesting Supervisor)*
- *Check with East Fraser before delivering more than 2 loads per day of tree length*

## ***Duz Cho Forest Products Specifications*** **250-997-4420**

- *Target length 16'3", alternate is 12'3" (target 10%)*
- *Top size, 3 ½" for 16'3" and 4" for 12'3"*
- *Max butt diam. is 11"*
- *Checks not more than 1" deep*
- *Buck out: Brown rot, crook, forks, shatter, sweep, broken ends and cat face greater than 1" deep.*
- *Check with Duz Cho FP before delivering more than 2 loads of tree length per day*