Weyerhaeuser

# Log Quality Standards

***Pembina Timberlands***

**POCKET REFERENCE**

**April 2024**

## Objective:

Maximum recovery from the tree keeping our facilities' needs for efficiency and production in mind while maintaining forestry standards.

## Utilization and Log Quality:

Tree utilization is a critical part of sustainability in the harvesting of timber. The Forest Management Plan that Weyerhaeuser submits to the Province of Alberta has specific assumptions on what a merchantable tree is and uses these assumptions to determine sustainable harvest levels. The processing of trees into logs cannot waste any part of a merchantable tree, otherwise we threaten the long-term sustainability of the forest resource.

It is the responsibility of the persons harvesting, processing, and loading to ensure the Operating Ground Rules and Weyerhaeuser's Log Quality Standards are met. *When a conflict arises between utilization and log quality objectives, the Operating Ground Rules will prevail.*

OSB

# OSB

# LOG QUALITY STANDARDS

## OSB LOGS

## Deciduous Utilization Standard:

### TOP SIZE:

Minimum top size is 10 cm (4”) inside bark.

### BUTT SIZE:

Minimum butt size is 15 cm (5.9”) inside bark.

### LENGTH:

Target Length is 104” (2.64 m.)

The last log of the tree can be anywhere between 80” to 106” to achieve an exact 10 cm top. Avoid shorter lengths where possible, but lengths down to 80” must be taken and cannot be wasted.

**Excessively long logs will be penalized 5 demerits on a quality sample. Logs over 106” jam in the infeed and cause serious safety hazards.**

## ROT:

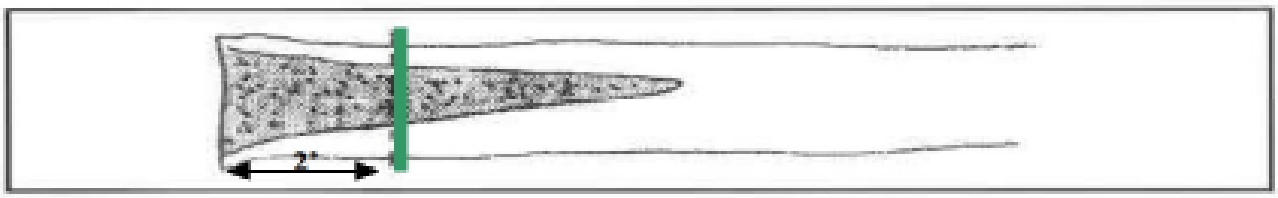
Each log may contain no more than 50% rot by area



Example of >50% rot that can be bucked, and an example of <50% that cannot be bucked.

## BUCKING BACK FOR ROT:

Where rot is >50%, buck in 2’ (0.6) sections until rot is less than 50% by area.



Use this table to determine acceptable rot by area (less than 50% of the face of the log):

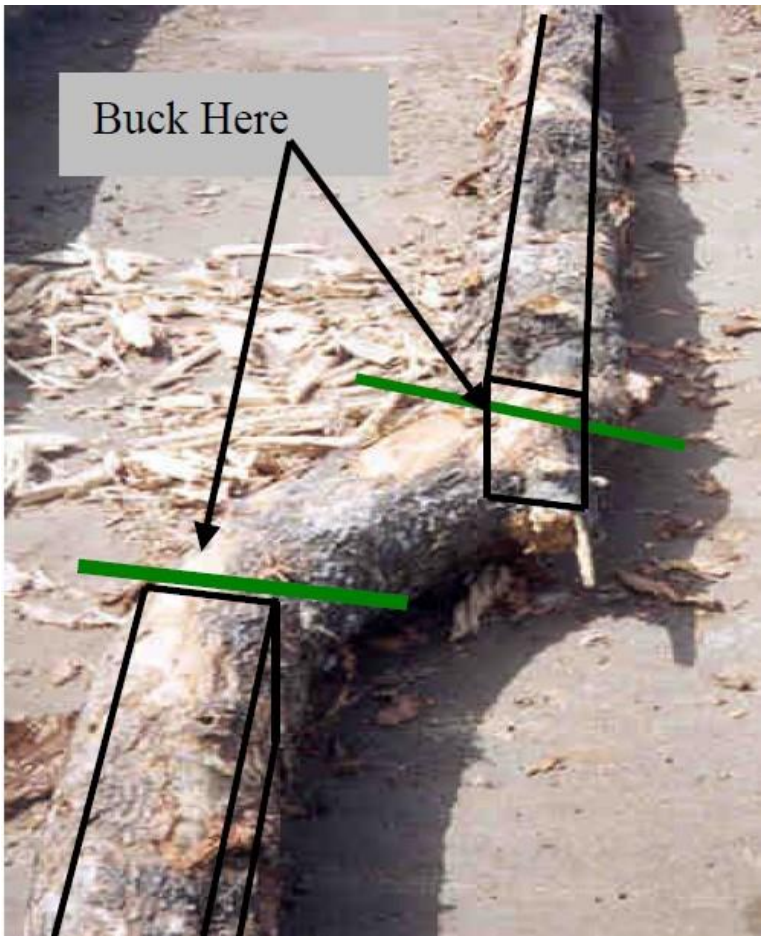
| Diameter (in.) | Acceptable Rot (in.) | Diameter (in.) | Acceptable Rot (in.) |
|---|---|---|---|
| 4 | 0 | 18 | 13 |
| 5 | 0 | 19 | 14 |
| 6 | 0 | 20 | 15 |
| 7 | 0 | 21 | 15 |
| 8 | 6 | 22 | 16 |
| 9 | 7 | 23 | 17 |
| 10 | 8 | 24 | 17 |
| 11 | 9 | 25 | 18 |
| 12 | 9 | 26 | 19 |
| 13 | 10 | 27 | 19 |
| 14 | 10 | 28 | 20 |
| 15 | 11 | 29 | 21 |
| 16 | 12 | 30 | 21 |
| 17 | 12 | 31 | 22 |

*Example: If a 12 in. log has more than 9 in. of rot, it is unacceptable. If the same log has a rot diameter of 9 in. or less, the log is acceptable.*

OSB

## CROOK:

A crook in a tree must be bucked out where the deflection along the log is >6” (15 cm) regardless of diameter and length. Place a straight edge along the log to measure deflection. If the deflection through the crook is > 6” (15 cm), then make a cut directly at the crook, then make another cut above the crook. The small chunk of tree that contains the crook can be wasted. The log below the crook can be anywhere from 80” to 106”.



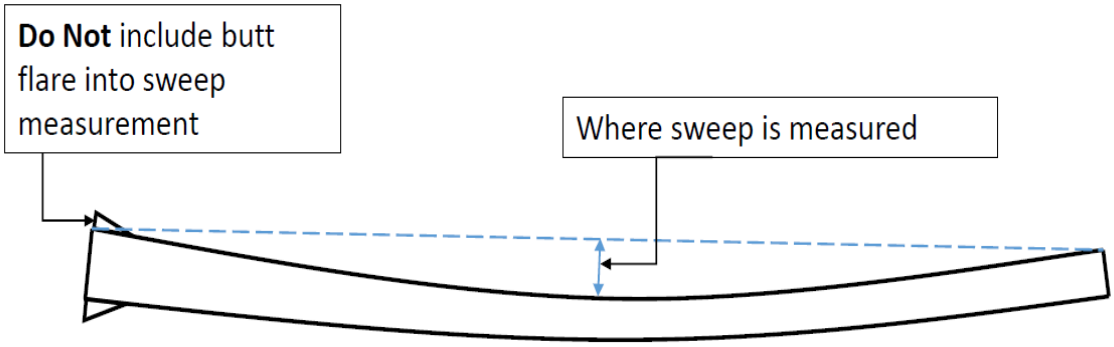

Example of a crook that can be bucked out and wasted.

**SWEEP:**

Sweep in a tree must be bucked out where the deflection along the log is >6” (15 cm) regardless of diameter and length. Reduce sweep by cutting the log to a shorter length, down to but not shorter than 80”.

## How to measure sweep

## Where to measure sweep

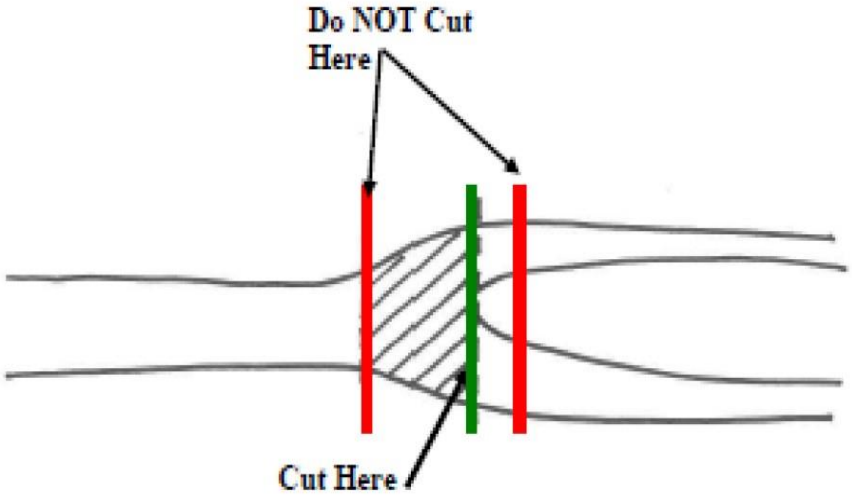



**FORK:**

Forks of any kind are unacceptable. If there is a fork in a tree, make a cut directly at the fork. The log below the fork can be between 80” to 106”. If there is less than 80” below the fork, this piece can be wasted.

Cut the fork at the seam as shown.


Example of fork cut



## BUTT FLARE:

The OSB Mill can handle up to 3” (7.6 cm) of butt flare beyond the normal taper of the tree. If there are 2 flare points on the tree, the maximum is 1.5” (3.8 cm) per horn for a total of 3” (7.6 cm)

How to measure butt flare


## TRIMMING:

Limbs, knots and other protrusions must be cut FLUSH with the bole of the tree.

## SPECIES:

The OSB facility requires that all species be sorted at roadside and delivered in separate loads or bunks. Mixing Aspen, Black Poplar and Birch is not permitted. **OSB conifer is not permitted.**

**Split loads require a TM9 form for each species.**

## DEAD and DRY:

The government Utilization Standards do not require us to take dead or dry trees, however, the OSB Mill can utilize dead or dry trees if the wood is solid. If 50% or more of the bark is still on the tree, it will likely make a good OSB product on the assumption there is no significant checking within the tree (greater than ¼" wide or spiral checking that wraps around the tree).

OSB

## DEBRIS:

Rocks, metal, excessive mud, loose limbs, small pieces, stumps landing debris, etc. are not allowed. Use a brow log at the front of the deck to lift the front of the log off of the ground. This will make it easier for the loader and keep the mud and debris out of the load.

**To prevent rocks and dirt on logs do not align ends by pushing on the ground . Use the side of the log deck or truck bunk instead**

How to align the butt end of logs in the grapple.

## OVERSIZE:

All logs 27” (68.5 cm.) and larger in diameter must be marked with an “X”. Use fluorescent paint that extends from edge to edge.

They do not need to be separated for hauling as the Edson OSB facility can utilize them if properly identified. Please refer to Fire Damaged Wood Section for Oversize requirements relating to Fire Damaged Wood.

Example of a marked oversized log > 27” (68.5 cm)

OSB

## FIRE DAMAGED WOOD: *CHAR IS NOT ACCEPTABLE…ZERO TOLERANCE*

***Char:*** Wood that has been reduced or severely weakened by combustion or extreme heat and has a broken/ cracked appearance like alligator skin.

***Scorching:*** Wood may be discolored / black, but wood fibers are smooth, have not been weakened, and there is little burnt penetration in the wood.

Buck out any defects where char cannot be removed by aggressive debarking. Debarking will not remove all burnt fiber. The remove of defect does not need to be done in two-foot increments.

**SCORCH**:
Discolouration but still smooth appearance.

**CHAR**:
Broken /cracked appearance (alligator skin).


OSB

**Find end function:** When processing burned wood, it may be difficult to utilize the find end function due to accumulated creosote and ash. A narrow slice may be taken off the butt of the tree to help with the issue, but this is only allowable in fired burned wood and must be less than 2" (5 cm).

**Oversize Logs:** All logs greater than 27" (68.5 cm) in diameter must be marked with an X. They must be sorted and hauled separately, either by bunk or load. Large logs (> 27" in diameter) are difficult to manage and are likely more valuable left standing, if possible, as retention rather than being felled. A good rule of thumb is that if multiple bunchers are required to fall the tree, then perhaps it should be left standing. Discuss with your Operations Supervisor is this is an issue in a block.

# *SAWMILL*

# LOG QUALITY STANDARDS

## CUT-TO-LENGTH LOGS

## Coniferous Utilization Standard: 15/12 Utilization

Merchantable Piece: One that is 2.51m (8′ 3″) or longer, with a 12 cm (4.72″) inside bark small end, where rot content or form does not render it unusable.

## TOP SIZE:

Top sizes can range from 11.4 cm (4.5″) to 12 cm (4.72″) inside bark.

## BUTT SIZE:

Minimum butt size is 15 cm (5.9″) inside bark.

## LENGTHS:

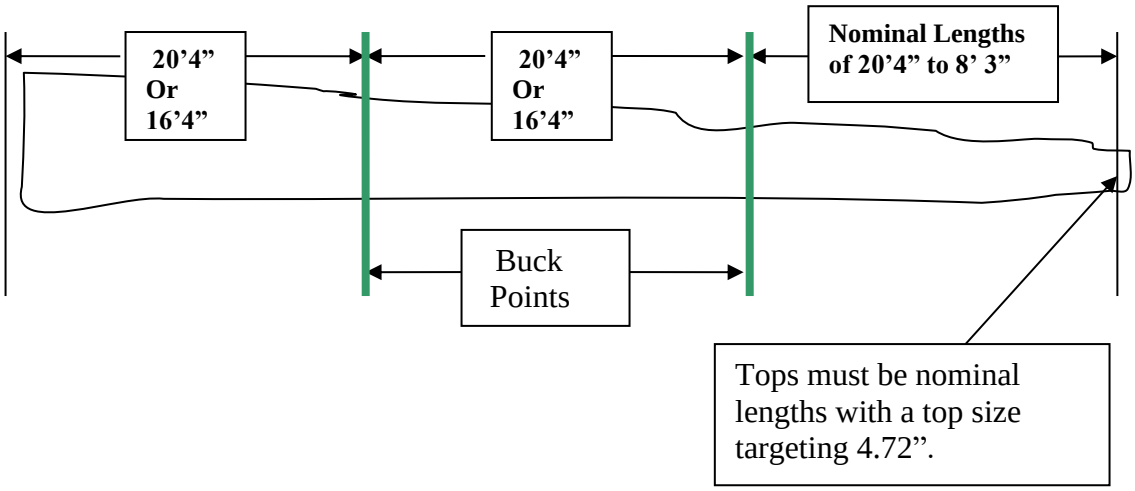
- The goal is to make as many 20′ 4″ (6.2m) lengths as possible and as few 8′ 4″ (2.5 m) lengths as possible.
- There is no requirement to sort for length
- Always buck for defect first (example sweep, crook, forks, etc.), then buck for length
- **Excessively long logs will be penalized 5 demerits on a quality sample. Logs over 21′0″ (6.4 m) jam in the infeed and cause serious safety hazards.**

Length allowance*:*

| TARGET LENGTH | MINIMUM | MAXIMUM |
|---|---|---|
| **8′ 4″ (2.54 m)** | 8′ 3″ (2.51 m) | 8″ 6″ (2.59 m) |
| **10′ 4″ (3.15 m)** | 10′ 3″ (3.12 m) | 10′ 6″ (3.2 m) |
| **12′ 4″ (3.75 m)** | 12′ 3″ (3.73 m) | 12′6″ (3.81m) |
| **14′ 4″ (4.36 m)** | 14′ 3″ (4.34 m) | 14′ 6″ (4.42 m) |
| **16′ 4″ (4.97m)** | 16′ 3″ (4.95 m) | 16′ 6″ (5.02 m) |
| **18′ 4″ (5.58 m)** | 18′ 3″ (5.56 m) | 18′ 6″ (5.63 m) |
| **20′ 4″ (6.19 m)** | 20′ 3″ (6.17 m) | 20′ 6″ (6.24 m) |

Drayton Valley Sawmill Bucking Specifications

| Size Sort | Target Lengths | Minimum Lengths | Maximum Lengths | Random Lengths | Maximum Butt Diameter | Minimum Top Diameter |
|---|---|---|---|---|---|---|
| Small CTL | 16'4"<br>14'4"<br>12'4"<br>10'4" | 16'3"<br>14'3"<br>12'3"<br>10'3" | 16'6"<br>14'6"<br>12'6"<br>10'6" | Allowed on top log to achieve a 4.72" top or below a mid-stem defect | Target 12"<br>All 20ft logs must be put in the large sort. | 4.5" |
| Large CTL | 20'4"<br>18'4"<br>16'4"<br>14'4"<br>12'4"<br>10'4" | 20'3"<br>18'3"<br>16'3"<br>14'3"<br>12'3"<br>10'3" | 20'6"<br>18'6"<br>16'6"<br>14'6"<br>12'6"<br>10'6" | Allowed below a mid-stem defect | Max 24" for all log except 20 ft<br>Max 17" for 20 ft logs. | 4.5" |

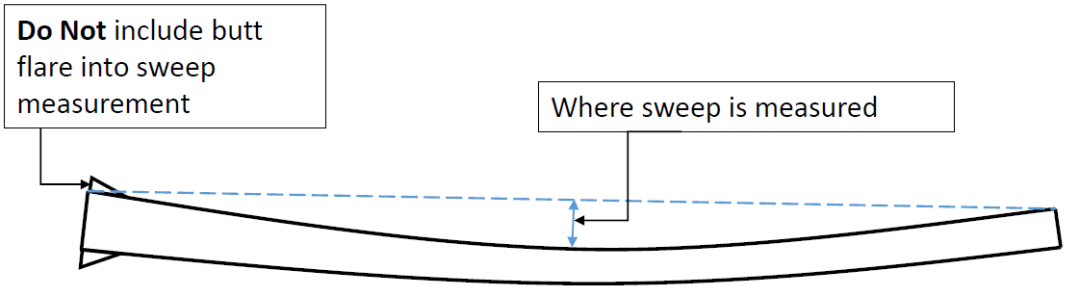



**SIZE SORT:** Log diameter is based on butt size. Small logs will consist of logs 12" (30.5 cm) and smaller. Large sort will consist of logs > 12" (30.5 cm).

**TREE SPECIES:** Pine or spruce. Balsam fir will be sorted separately on the FMA. Balsam fir acquired from Salvage Operations will be mixed into sawlog loads up to a maximum of 10% with other conifer species. If a load will exceed 10%, approval from Purchase Wood staff is required prior to delivery.

## SWEEP:

| Butt Size | Allowable Sweep |
|---|---|
| Less than 8″ (20.3 cm) Butt | 2.5″ (6.3 cm) |
| Greater than 8″ (20.3 cm) Butt | 4″ (10 cm) |



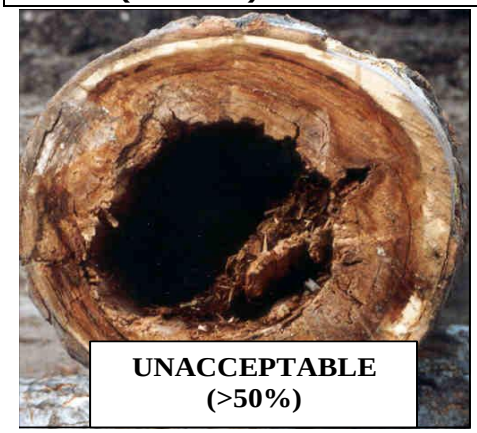

How to measure sweep

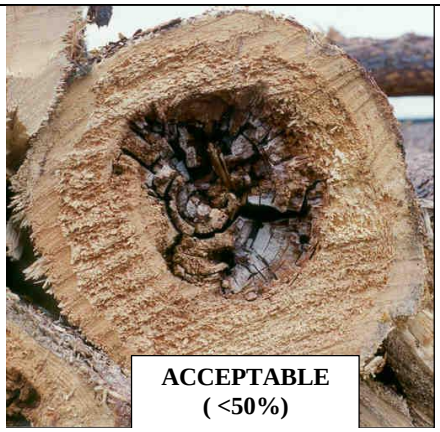
Extreme pistol grip (sweep at the butt of the tree) can be bucked off. Calibrate what makes extreme pistol grip with your supervisor.

Example of pistol grip

## ROT:

Each log may contain no more than 50% rot by area. Buck at 2' (61 cm) intervals until the rot is less than 50% by area.

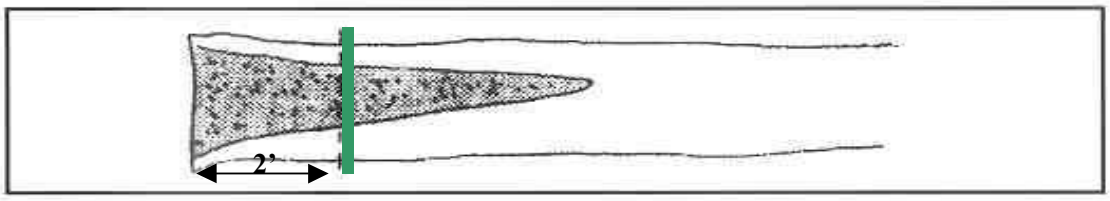



Example of >50% rot that can be bucked, and an example of <50% that cannot be bucked.

## BUCKING BACK FOR ROT:

Where rot is >50%, buck in 2' (0.6 m) sections, until rot is 50% or less by area.



Use this table to determine acceptable rot by area (less than 50% of the face of the log):

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| 10 | 8 | 24 | 17 |
| 11 | 9 | 25 | 18 |
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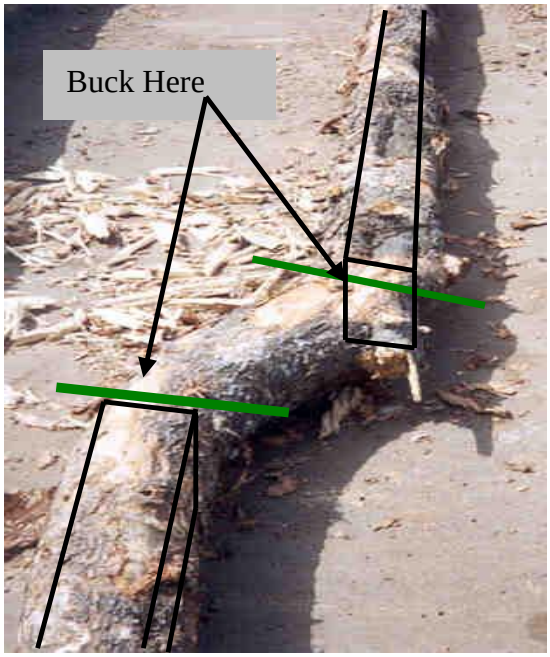
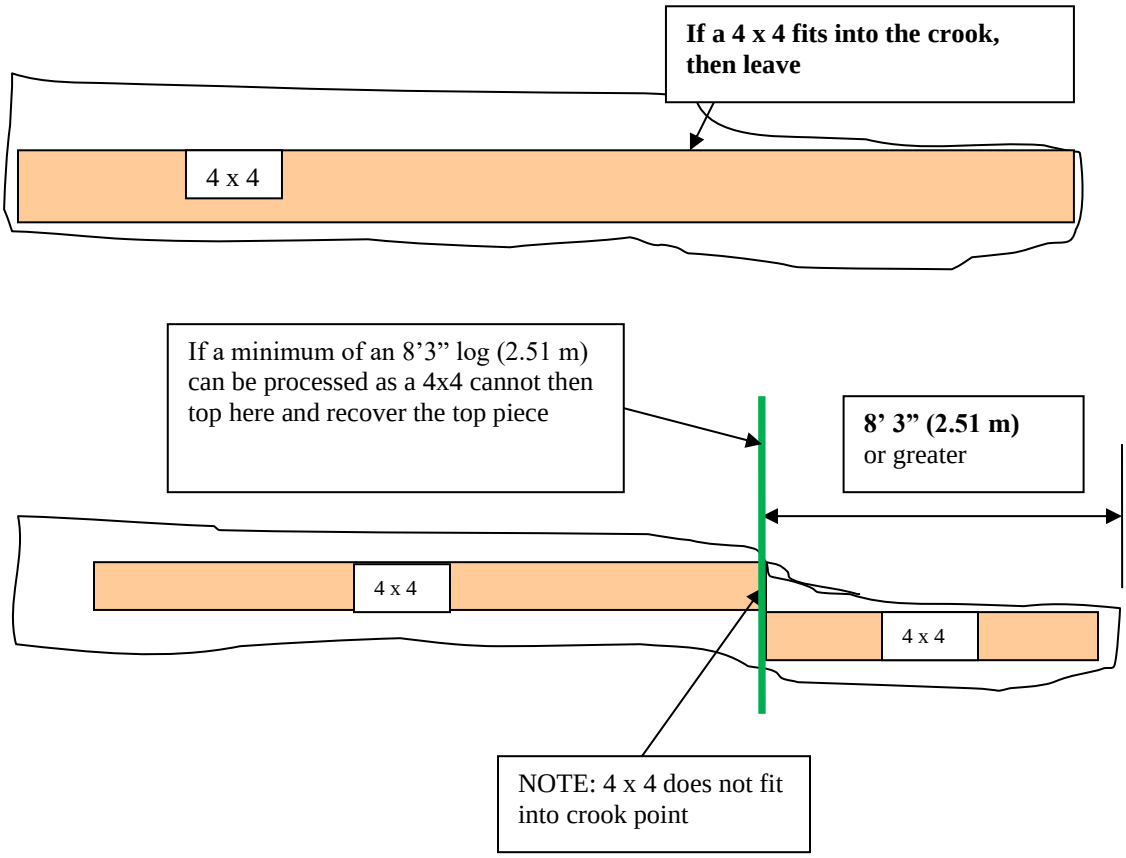
*Example: If a 12 in. log has more than 9 in. of rot, it is unacceptable. If the same log has a rot diameter of 9 in. or less, the log is acceptable.*

## CROOK:



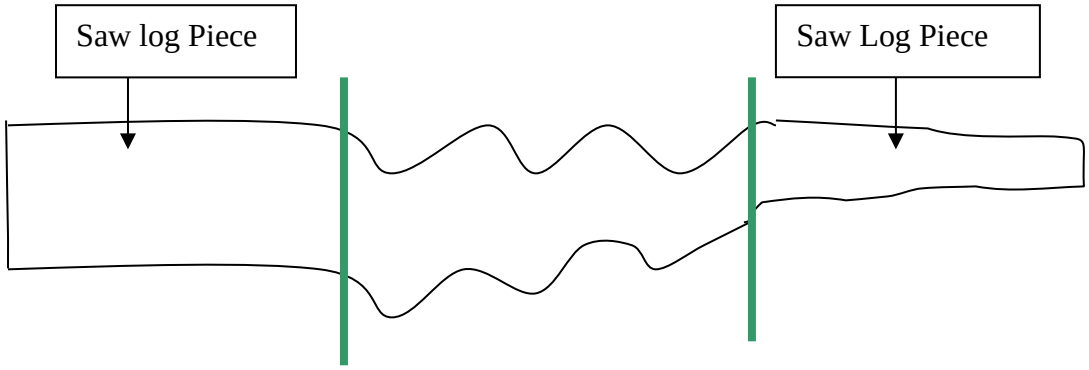

A crook in a tree must be bucked out where you cannot fit a 8’ 3” (2.51 m) – 2 x 4 through the crook. Make a cut directly at the crook and another cut above the crook. The small chunk that contains the crook can be wasted. The log below the crook can be a random length between 8’ 3” 2.51 m) and 20’ 6”. (6.24 m)

Example of a crook that can be bucked out and wasted



## GROSS DEFECTS (UGLIES):

It is acceptable to waste the portion of the log form that renders it unusable for sawlog production where there is not an 8’ 3” (2.51 m) length.

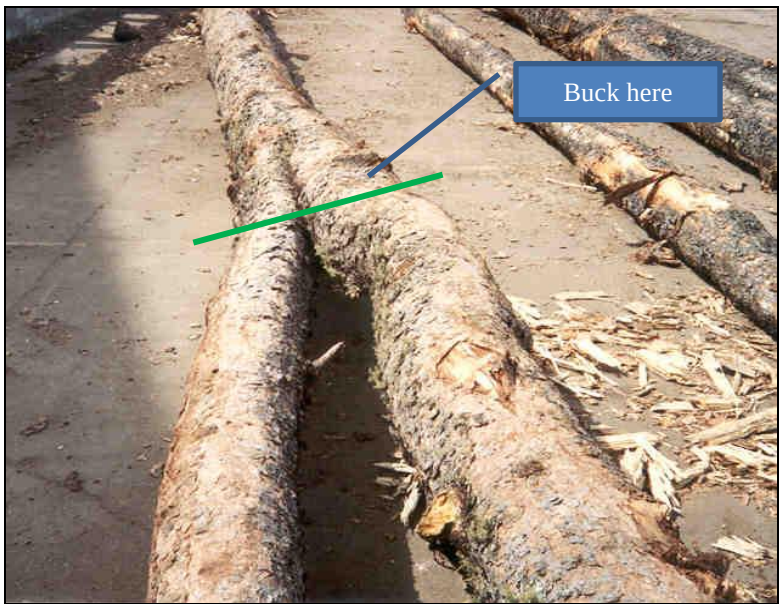



## TRIMMING:

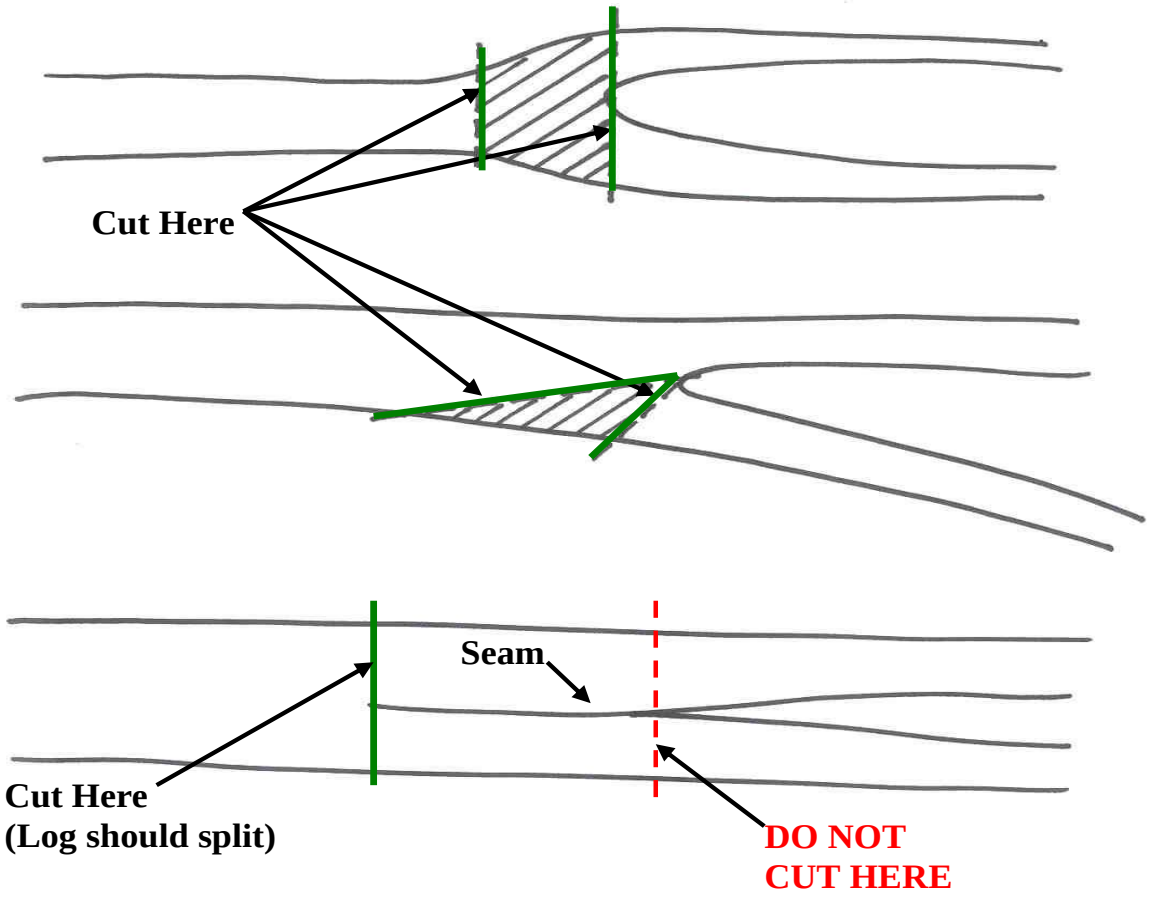
Limbs, knots and other protrusions must be cut FLUSH with the log.

**FORKS:**

Forks of any kind are unacceptable.

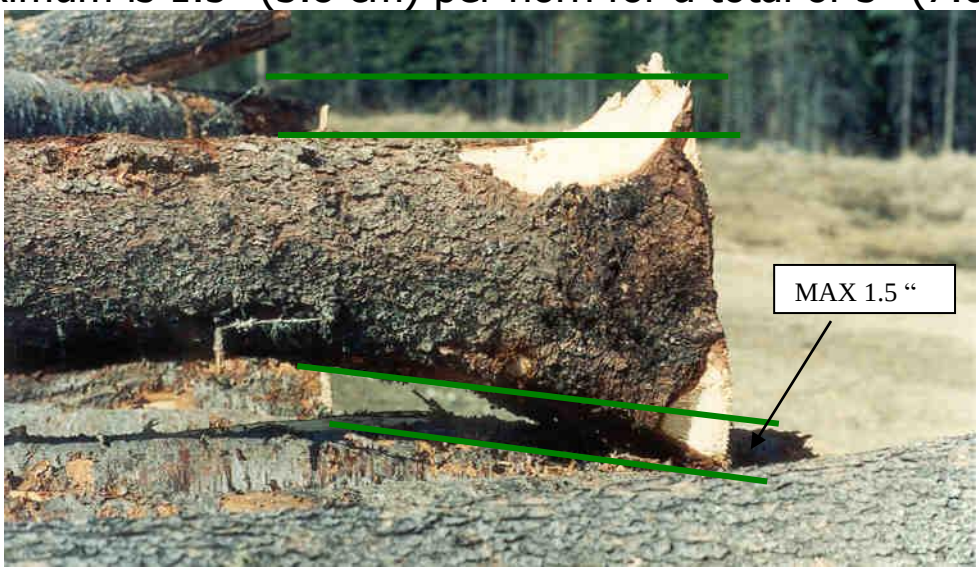



Cut the fork at the seam. Three separate logs will be produced with no waste.



## BUTT FLARE:

Butt flare must be trimmed if greater than 3" (7.6 cm) beyond normal taper. If there are two flare points, the maximum is 1.5" (3.8 cm) per horn for a total of 3" (7.6 cm).




## OVERSIZE:

- All logs 24" (61 cm) and larger must be marked with an "X" on the butt. Measured on widest diameter.
- All oversize will be cut to 16'4" Target (16'3"-16'6" Allowance)

**DEAD / DRY:**

- If more than 50% of bark is gone then the log is unacceptable. Loose bark indicates dead or too dry.

**DEBRIS:**

- Rocks, metal, excessive mud, loose limbs, small pieces, stumps, landing debris, plastic, etc. are unacceptable (debris can cause accidents in the mill and damage equipment).
- Plastic tags or ribbon are not allowed.

**MECHANICAL DAMAGE:**

Examples of damage that must be avoided:

- Buncher cut damage
- Butt tear
- Top shatter
- Grapple damageA
- Saw-cuts or plunge cuts along the length of stem
- Breakage from rough handling
- Punch-holes from feed rolls

## FIRE DAMAGED WOOD:

## *CHAR IS NOT ACCEPTABLE…ZERO TOLERANCE*

***Char:*** Wood that has been reduced or severely weakened by combustion or extreme heat and has a broken/ cracked appearance like alligator skin.

***Scorching:*** Wood may be discolored / black, but wood fibers are smooth, have not been weakened, and there is little burnt penetration in the wood.

Buck out any defects where char cannot be removed by aggressive debarking. Debarking will not remove all burnt fiber. The remove of defect does not need to be done in two-foot increments.
Scorch vs char

**SCORCH**:
Discolouration but still smooth appearance.

**CHAR**:
Broken /cracked appearance (alligator skin).

**Find end function:** When processing burned wood, it may be difficult to utilize the find end function due to accumulated creosote and ash. A narrow slice may be taken off the butt of the tree to help with the issue, but this is only allowable in fired burned wood and must be less than 5 cm (2”).

# SAWMILL

## LOADING PRACTICES

### CTL Loading Practices:

- All logs must be facing one direction. Large End oriented one direction in each bunk.
- Logs may be turned once, for safety reasons, with prior approval from Weyerhaeuser.
- Logs must be sorted by butt size on the truck to permit segregation during off-loading.
- Bunks must be no closer than 60” (152 cm) apart **and loads must be centered between two bunks to allow yard equipment to safely grab the center of the load.**

# Quality Control

# Quality Control

## General

- All quality sampled wood must maintain a ≥95% quality for visual defect and ≥95% for length accuracy.
- All quality results will be forwarded to the Contract Administrator before hauling can commence.
- All quality outages must be addressed before hauling can commence.
- The Contractor will report to the Company an accurate inventory of processed volume, stratified by species, form, and length distribution, at intervals specified by the Contract Administrator.

## Contractor Responsibilities

OPERATORS will,

- Thoughtfully **merchandize** stems by maximizing value for the mill while not wasting valuable fibre.
- Be assigned a unique ID and mark each deck they process.
- Perform log quality checks **at least** once per day including calibration of length and diameter readings. Quality checks must be on both the **small line and large line.**
- **Mark and Date,** with paint, logs checked for quality.
- Operator will attend annual **log quality training** hosted by the facility they are producing for **or** will be trained by Weyerhaeuser C.A. prior to starting.
- Provide Weyerhaeuser **evidence** of log quality checks when requested.

HARVEST SUPERVISOR will,

- Attend log quality **training** hosted by the facility for which they are producing.
- Conduct **weekly** log quality checks on each operator of minimum 50 stems.
- **Confirm** log quality checks are being completed by operators daily.
- Provide Weyerhaeuser documented **evidence** of log quality checks when requested.

## Weyerhaeuser Responsibilities

OPERATIONS SUPERVISORS will:

- Monitor and document log quality concurrent with harvest.
- Assist in training processor operators to the required log specifications. Training will be completed prior to operator starting and intermittently throughout the year.
- Conduct a joint review with Log Yard Supervisor on any suspect loads that enter the mill yard.

LOG YARD SUPERVISOR will:

- Immediately notify Timberlands of any off-spec log quality noticed at the mill site.
- Seize any loads suspected of being off spec for joint review with Timberlands Ops Supervisor and Log Yard Supervisor.

SAWMILL AND OSB LEADERSHIP will:

- Assist in training processor operators to the required log specification through mill tours and in-woods tours. Intent is to provide operators with a greater understanding of the rationale behind the log quality specifications and how it impacts productivity and recovery.

LOG SCALER will:

- Conduct log quality checks on all scaled loads.
- Conduct log quality on preselected quality loads (1 bunk).
- Notify Timberlands Ops Supervisor of any suspect quality loads before it is picked up.

# PEMBINA TIMBERLANDS
# CTL LOG QUALITY TALLY SHEET

| | | |
|---|---|---|
| DATE RECEIVED: | DATE CHECKED: | |
| CONTRACTOR: | SOURCE: | LOAD #: |
| POPULATION #: | TM 9#: | Net Weight: |
| DISPOSITION: | CHECKED BY: | TRUCK #: |
| Total Pieces: | CONTRACT ADMINISTRATOR: | |

| DEFECT | TALLY | Total Demerits | Demerits | Comment |
|---|---|---|---|---|
| **Severe Defect** | | | | |
| Excessive Sweep(>2Xallowed) | | - | 5 | |
| SawLog >21' OSB>110” | | - | 5 | |
| **Mechanical Damage** | | | | |
| Butt Tear | | - | 0.5 | |
| Broken Piece | | - | 1 | |
| Saw-cut/Plunge | | - | 1 | |
| Top Shatter | | - | 1 | |
| **Other Defects** | | | | |
| Butt Flare | | - | 0.5 | |
| Crook | | - | 1 | |
| Unacceptable Dead / Dry | | - | 1 | |
| Fork | | - | 1 | |
| Gross Defect | | - | 2 | |
| Oversize not Marked | | - | 1 | |
| Rot | | - | 1 | |
| Size Sort (>14" in small sort) | | - | 1 | |
| Small Top < 10 cm (3.9”) | | - | 1 | |
| Species | | - | 1 | |
| Sweep | | - | 1 | |
| Trim (Limbing) | | - | 1 | |

| | |
|---|---|
| **Total** | **-** |
| **Quality** | **0.0%** |

FOLLOWUP REQUIRED:

**COMMENTS:**

# PEMBINA TIMBERLANDS
## OSB LOG QUALITY TALLY SHEET

| | | |
|---|---|---|
| DATE RECEIVED: | DATE CHECKED: | |
| CONTRACTOR: | SOURCE: | LOAD #: |
| POPULATION #: | TM 9#: | Net Weight: |
| DISPOSITION: | CHECKED BY: | TRUCK #: |
| Total Pieces: | CONTRACT ADMINISTRATOR: | |

| Defect | Tally | Total Demerits | Demerits | Comment |
|---|---|---|---|---|
| **Severe Defect** | | | | |
| Excessive Crook & Sweep > 6” | | - | 5 | |
| OSB length >106” | | - | 5 | |
| Butt Flare >3 “ | | | 2 | |
| Oversize not Marked | | | 2 | |
| Under Length | | | 2 | |
| Char | | | 2 | |
| **Mechanical Damage** | | | | |
| Butt Tear | | - | 0.5 | |
| Broken Piece (if not causing under length) | | | 0.5 | |
| Saw-cut/Plunge | | - | 0.5 | |
| Top Shatter | | - | 0.5 | |
| **Other Defects** | | | | |
| Unacceptable Dead / Dry | | - | 1 | |
| Fork | | - | 1 | |
| Rocks and Debris | | | 1 | |
| Rot | | - | 1 | |
| Top Size | | - | 1 | |
| Species Mix (>10% mix) | | - | 1 | |
| Trim (Limbing) | | - | 1 | |

| | |
|---|---|
| **Total** | **-** |
| **Quality** | **0.0%** |

FOLLOWUP REQUIRED:

**COMMENTS:**