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**PART 12 - FORESTRY OPERATIONS AND WOOD PRODUCTS**

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## PART 12 – FORESTRY OPERATIONS AND WOOD PRODUCTS

### DEFINITIONS

**12.01** In this part, the following definitions apply:

“active falling area”

means the area within two tree lengths radius, where a tree faller or mechanized tree-falling equipment is working;

“binder”

means a wire rope, secured by a cinch, placed around logs on a logging truck or trailer to prevent the load from spilling;

“bucker”

means a worker who cuts up trees on the ground; a worker who saws logs to length from a tree after it has been felled;

“bunk”

means the bottom section of the cradle assembly on a logging truck or trailer on which logs are placed;

“dangerous tree”

includes any tree that is hazardous to workers because of location or lean, physical damage, overhead hazards, deterioration of the limb, stem or root system, or a combination of these;

“dangerous tree assessor”

means a person who has training in the recognition and control of dangerous trees;

“fall” or “fell”

means the harvesting of trees;

“faller” or “feller”

means a worker who fells trees;

“forestry operation”

means a workplace where work is done in relation to silviculture or any cutting or harvesting of trees, including constructing the means of access and transporting the harvested trees to a facility where they are processed or from which they are exported;

“landing”

means the area where the yarder or loader is placed, and logs are yarded or skidded for sorting and preparing for transport;

“skidding”

means moving logs by the use of animals or mobile equipment that travels while the logs are being dragged;

“turn”

means one or more logs that are skidded or yarded to the landing at one time;

“yarding”

means moving logs by the use of mobile or other equipment that is stationary.

## GENERAL

- Training**                    **12.02** (1) Workers in a forestry operation shall receive training appropriate to their individual tasks.
- (2) The requirements of subsection (1) shall be met if
- (a) the worker performed the duties regularly for at least two years prior to the effective date of these Regulations, and
- (b) the specific duties performed are documented no later than one year after the effective date of these Regulations.
- (3) The measures taken to comply with subsections (1) and (2) shall be documented in a manner acceptable to the director and a copy shall be available to the worker concerned or a safety officer upon request.
- Notice of project**            **12.03** Prior to the commencement of a forestry operation, the director shall be notified of the
- (a) location and duration of the work,
- (b) number of workers on the site,
- (c) type of equipment to be used, and
- (d) name and contact number of the person in charge.
- Initial safety meeting**      **12.04** A crew safety meeting shall be held before commencing work in a new area and the workers shall be informed of any potential or actual hazards associated with the work in the new area.
- Personal protective equipment**    **12.05** (1) Workers at a forestry operation shall wear highly visible outer clothing as required by Part 1 – General, when
- (a) they may be endangered by moving equipment,
- (b) work is being done in hours of darkness, or
- (c) their location must be routinely checked.
- (2) Safety headwear worn in a forestry operation shall be high visibility orange or red in colour.
- (3) A worker using a chain saw in a forestry operation shall wear effective leg protective devices, as well as hearing, head, face and foot protection as required by Part 1 – General.
- Metal in saw logs**            **12.06** A spike, drift bolt, nail, or any other metal shall not be left in any recoverable log.
- Dangerous trees**            **12.07** (1) Where work in a forestry operation will expose workers to a dangerous tree, the tree shall be removed by a competent person prior to work being done in the area.
- (2) A dangerous tree in a forestry operation may be left standing during operations other than construction or harvesting if
- (a) no significant ground vibrations are likely to be produced,
- (b) no work shall be done near the tree when wind speed exceeds 20 km/h (12 mph), and
- Tree assessor**                    (c) a tree assessor who has completed the necessary training program determines that the tree is not dangerous to workers during the planned activity.
- (3) Any dangerous tree, regardless of height, located within an active hand-falling area shall not interfere with safe falling or skidding practices, and if it may interfere, it shall be removed before any other work is done.
- (4) Trees that will interfere with rigging, the movement of lines and equipment, or that could be pushed or pulled into the work area shall be removed.
- (5) Falling or bucking shall not start if

- (a) a tree or log is in a dangerous condition, or
  - (b) there is reason to doubt that the cut can be completed safely.
- Partially cut trees**
- (6) Where a tree is not completely felled
    - (a) the faller or the operator of a mechanized falling machine shall clearly mark the tree, discontinue work in the hazardous area, alert any workers who may enter the danger area, and notify the immediate supervisor, and
    - (b) the supervisor shall notify all workers who might be endangered, and take appropriate action to ensure that the tree is safely felled before other work is undertaken in the hazardous area.
  - (7) Where a bucking cut is incomplete
    - (a) the bucker shall immediately cut or mark a distinct cross on the top of each end of the log, and notify the immediate supervisor at the end of the work day, and
    - (b) the supervisor shall notify the skidding crew.
- Dangerous tree removal**
- (8) Where practicable, dangerous trees shall be felled
    - (a) progressively with the falling of other timber, but before falling adjacent live trees, and
    - (b) into open areas.
  - (9) When felling a dangerous tree
    - (a) stump height, in the judgment of the faller, shall allow maximum visibility and freedom of action,
    - (b) the tree shall be felled in the direction of lean whenever possible, and the undercut shall be as deep as necessary to minimize the use of wedges and resulting vibration,
    - (c) pushing with a green tree shall only be undertaken to overcome a falling difficulty, and
    - (d) wedging over shall be used only if there is no alternative, and after a careful assessment of the ability of the dangerous tree to withstand wedging.
  - (10) Where conventional methods cannot be safely employed to remove a dangerous tree, blasting, pushing with a machine or other acceptable methods shall be used.
  - (11) Falling, bucking or limbing activities shall not be undertaken in an area made hazardous by a leaning dangerous tree, or a dangerous tree that has been brushed by a felled tree, until the dangerous tree has been felled.
- Vehicle load limits**      **12.08**    The load on a vehicle used in a forestry operation shall not exceed the limits specified by the vehicle manufacturer or certified by a professional engineer.
- Non-slip floors and controls**      **12.09**    If an equipment operator or a helper is required to wear caulked footwear because of the nature of the work duties, the floors, steps and operating foot controls of the equipment assigned to the worker shall have a surface cover that provides an effective grip for the caulks.
- Equipment clearance**      **12.10**    (1) A minimum space of 0.6 m (2 ft.) shall be maintained between the swinging portion of mobile equipment and any obstacle adjacent to the equipment.
- (2) A worker shall obtain permission from the equipment operator before proceeding through the operating radius of the equipment.
  - (3) An equipment operator shall obtain permission from workers in the area before entering or proceeding through a work area where equipment movement could create a hazard to workers.

- Slope limitations**      **12.11** (1) Equipment shall not be operated on a slope exceeding the maximum specified by the manufacturer of the equipment or a professional engineer.
- (2) Where the equipment manufacturer's maximum slope operating stability limit is not known, written procedures regarding equipment stability that have been specifically developed by a professional engineer for the workplace shall be followed.
- (3) Where the information required by subsection (1) or (2) is not available, the following limits shall be adhered to:
- (a) a rubber-tired skidder shall not be operated on a slope exceeding 35 percent (19 degrees),
- (b) a crawler tractor, feller buncher, excavator and other similar equipment shall not be operated on a slope exceeding 40 percent (22 degrees), and
- (c) any other forestry equipment specifically designed for use on a steep slope shall not be operated on a slope exceeding 50 percent (26 degrees).
- Mechanical fallers / bunchers**      **12.12** A mechanical faller / buncher shall
- (a) have protection for the operator from any falling tree or part of a tree,
- (b) have two exits from the cab to allow the operator to escape, and
- (c) be designed and equipped to direct the fall of a tree away from the faller / buncher.
- 12.13** A mechanical faller / buncher shall not be
- (a) operated in a location where the stability of the machine cannot be assured, and
- (b) operated within 60 m (200 ft.) of a worker who would be endangered by a falling tree or part of a tree.
- Weather conditions**      **12.14** When weather conditions, such as heavy snow load or strong, gusty wind, create hazards to workers, additional precautions shall be taken for the safe conduct of forestry work.
- Landslides / Avalanches**      **12.15** In a forestry operation where there may be a risk of a landslide or avalanche
- (a) the risk shall be assessed in accordance with a recognized standard acceptable to the director,
- (b) written safe work procedures shall be developed, implemented and followed where a risk is found to be present, and
- (c) workers shall be instructed, trained in and use the safe work procedures.
- Darkness operations**      **12.16** (1) Where a forestry operation is conducted during hours of darkness, work areas shall be illuminated sufficiently to allow workers to safely perform their duties.
- (2) The sources of illumination shall be located so that shadows and glare are minimized.

#### **FALLING AND BUCKING**

- Faller training**      **12.17** (1) A worker in a forestry operation shall receive training for falling trees before commencing work as a faller.
- (2) The requirements of subsection (1) shall be met if
- (a) a worker has performed falling duties regularly for at least two years prior to the effective date of these Regulations, and
- (b) the worker's falling skills are evaluated at the workplace and the worker is determined to be a qualified person by a supervisor.

- (3) The training or experience required by subsections (1) and (2) shall be documented, kept by the employer and made available to a safety officer upon request.
- 12.18** A worker shall demonstrate proficiency in falling or bucking trees to the employer and supervisor before engaging in felling work.
- Falling / bucking procedures**
- 12.19** Fallers and buckers shall follow written safe work procedures for
- (a) minimum and maximum distances between fallers and other workers,
  - (b) controlling the fall of trees and dangerous trees,
  - (c) bucking logs,
  - (d) using lines and jacks to fall trees, where required,
  - (e) summoning and rendering assistance to deal with a difficulty or emergency, and
  - (f) ensuring each faller's well-being at least every half hour and at the end of the work shift.
- Responsibilities of fallers**
- 12.20** The faller and operator of a mechanized falling machine shall ensure that
- (a) all workers are clear of the area within a circle centred on, and having a radius of, not less than twice the height of the tree before a tree is felled, and
  - (b) a tree is not felled if it could strike any workers or operational equipment.
- Hand-falling**
- 12.21** The faller shall ensure that when hand-falling a tree
- (a) obstructions to falling or bucking are cleared, and a safe escape route to a predetermined safe position is prepared before falling or bucking commences,
  - (b) where it is necessary to pack or shovel snow to reduce stump height, the depth of the depression at the base of the tree does not exceed 0.45 m (18 in.), and an escape route is made prior to falling or bucking,
  - (c) a sufficient undercut is used,
  - (d) the undercut is complete and cleaned out,
  - (e) sufficient holding wood is maintained,
  - (f) the backcut is higher than the undercut to provide a step on the stump,
  - (g) wedging tools are immediately available and, unless the tree has a pronounced favourable lean, wedges are set,
  - (h) the tree being felled does not unnecessarily brush standing trees, and
  - (i) when a tree starts to fall, the faller moves quickly to a predetermined safe position, at least 3 m (10 ft.) away from the base of the tree and takes cover, if available.
- 12.22** The faller shall ensure that where it is necessary to overcome a specific falling difficulty or hazard
- (a) only one tree is used to cause a partially cut tree to fall, and
  - (b) at least one wedge is driven into the backcut of the partially cut tree prior to falling the second tree.
- Bucking**
- 12.23** The buckler shall ensure that all workers are clear of the hazardous area before a tree or log is bucked.
- Summoning assistance**
- 12.24** (1) Qualified assistance shall be readily available to fallers in case of difficulty, emergency or injury.
- (2) Fallers and buckers shall have an effective means to summon assistance such as a whistle attached on the outer clothing near the face.
- Entry to falling area**
- 12.25** (1) Only workers with associated duties shall enter an active falling area.
- (2) Before entering an active falling area, workers shall notify the faller or buckler and wait until advised by the faller or buckler that it is safe to enter.

- (3) A worker, other than the faller, shall only be at the base of a tree being felled if the worker is
  - (a) a supervisor or manager controlling the operation,
  - (b) training as a faller, or
  - (c) required to assist the faller to overcome a specific falling difficulty.

**Traffic control**

**12.26** If a tree being felled may create a hazard to a user of a traveled road, adequate traffic control shall be used to stop or control approaching traffic.

**YARDING AND SKIDDING**

**Equipment construction**

- 12.27** (1) Any equipment used in a forestry operation shall be designed, constructed and maintained to withstand any loads or stresses likely to be imposed on it.
- (2) Boom stops shall be installed on equipment if pushing or pulling the boom too far back may cause the backstop to crush the operator's cab.

**Ground skidding operations**

- 12.28** (1) Ground skidding, transport or processing equipment shall not enter an active falling area.
- (2) The operator of ground-based skidding equipment shall
  - (a) not winch at an angle that could cause an obstruction to upset the machine,
  - (b) winch the turn up tight to the equipment before traveling to avoid obstruction hang-up and rollover,
  - (c) in order to maintain control of the machine, select a suitable gear before climbing or descending grades, and
  - (d) drop the turn to free an unchoked log if an unchoked log is picked up with a turn.
- (3) A skidding winch on a ground-based skidding machine shall have a quick-release system to permit the winch line to run out freely and automatically disengage from its drum.

**LANDINGS AND LOG DUMPS**

**Log landings**

- 12.29** (1) Log landings and other work areas shall be
  - (a) located, constructed, arranged, maintained and operated so that logs can be landed safely and workers may work in the clear of moving logs and equipment,
  - (b) located on stable and level ground, and
  - (c) adequately illuminated in areas where workers are required to work in conditions of limited illumination.
- (2) Log piles shall be maintained in stable condition.

**Limbing and bucking restrictions**

- 12.30** (1) Hazardous limbs shall not be transported on a log transporter.
- (2) A worker shall not stand on any part of a load of logs on a log transporter while limbing, bucking or carrying out any other activity.
- (3) A log shall never be swung over a worker.
- (4) A worker shall not stand or pass under a suspended log.

**Log-handling equipment**

**12.31** Log-handling equipment shall not be moved with loads lifted higher than is necessary to provide unobstructed vision for operators.

- |                                 |              |  |
|---------------------------------|--------------|--|
| <b>Vehicle movement signals</b> | <b>12.32</b> | <ul style="list-style-type: none"> <li>(1) Vehicle movement signals shall be used where           <ul style="list-style-type: none"> <li>(a) a loader operator is unable to see the loading operation, or</li> <li>(b) trucks are moving at landings, load-out points, dry land sorts or elsewhere close to workers.</li> </ul> </li> <li>(2) Vehicle movement signals shall be initiated           <ul style="list-style-type: none"> <li>(a) by the vehicle operator, if the vehicle operator decides to move the vehicle, or</li> <li>(b) if the loading or dumping machine operator decides the vehicle should be moved or stopped.</li> </ul> </li> </ul> |
| <b>Maintenance of landings</b>  | <b>12.33</b> | <ul style="list-style-type: none"> <li>(1) Landings, load-out points and dry land sorts shall           <ul style="list-style-type: none"> <li>(a) be kept in good repair and free from hazardous build-up of bark and other debris, and</li> <li>(b) have an effective method of dust control.</li> </ul> </li> <li>(2) Only authorized persons shall be at landings, load-out points and dry land sorts.</li> </ul>  |

#### **HAULING**

- |                         |              |  |
|-------------------------|--------------|--|
| <b>Bulkheads</b>        | <b>12.34</b> | Logging truck drivers shall be adequately protected from shifting of the load by a properly engineered and affixed bulkhead at the back of the cab that is at least 0.15 m (6 in.) higher and 0.15 m (6 in.) wider than the cab.   |
| <b>Bunks and stakes</b> | <b>12.35</b> | <ul style="list-style-type: none"> <li>(1) Trucks, trailers and semi-trailers used for transporting logs shall be equipped with bunks and stakes of adequate design and construction to safely perform their intended function.</li> <li>(2) Bunks and stakes shall not be loaded beyond the capacity specified by the equipment manufacturer, or if custom-built, loads shall not exceed those specified by a professional engineer.</li> <li>(3) Where logs are transported on a public road, custom-built or modified bunks, stakes and trailers, including their mounting arrangements, shall be certified by a professional engineer.</li> <li>(4) Bunks shall be able to rotate freely upon their pivots, if designed to do so.</li> <li>(5) Stakes, extensions and stake lines shall be           <ul style="list-style-type: none"> <li>(a) installed and maintained so that the angle between bunks and stakes does not exceed 90 degrees when loaded, and</li> <li>(b) of adequate strength to withstand the loads imposed upon them.</li> </ul> </li> <li>(6) Stakes shall be constructed so that           <ul style="list-style-type: none"> <li>(a) they can be released only from the opposite end of the bunk,</li> <li>(b) keeper pins are secured against unintended release, and</li> <li>(c) if they are over 1.2 m (4 ft.) in height, springs or other mechanical means are fitted to facilitate their returning to a vertical position.</li> </ul> </li> <li>(7) Stake extensions shall be secured against inadvertent detachment from stakes.</li> <li>(8) Stake cross-ties shall not be used to secure stake extensions unless the unloading or dumping procedure protects workers from the hazard of flying stake extensions.</li> <li>(9) Stake lines           <ul style="list-style-type: none"> <li>(a) shall not be made from swaged wire rope, and</li> <li>(b) shall conform to the specifications in Table 12-1.</li> </ul> </li> </ul> |

Table 12-1 Stake line minimum diameter			
Bunk width		Stake line minimum diameter	
Metres	Feet	Metres	Inches
up to 2.6	up to 8-½	0.022	7/8
2.6 to 3.7	8-½ to 12	0.029	1-1/8
over 3.7	over 12	0.032	1-1/4

(10) Stake and bunk assemblies shall be inspected daily, and not used if they show signs of excessive wear.

(11) Where air-operated stake releases are used

- (a) the air supply shall be taken from the “wet” air reservoir or from the accessory air line to a control valve that is normally closed,
- (b) the control valve shall be located in the cab and be accessible only from the operator’s position,
- (c) the control valve shall be fitted with a spring-loaded cover or be otherwise guarded against inadvertent operation, and
- (d) a separate air line shall extend from the control valve to the tractor and trailer stake release chambers, and be clearly identified, or installed so that it cannot be mistaken for the air line of the trailer’s braking system.

**Load specification**

**12.36**

- (1) Logs shall not be loaded in a manner that will cause
  - (a) the vehicle and its load to become unstable while in transit, or
  - (b) excessive strain on the binder units, bunk stake lines or stakes.
- (2) The first tier of logs shall be laid tight, and arranged so as to minimize slack in the stake cables, and to ensure that stakes remain at a safe angle.
- (3) Unless securely restrained by other means to prevent logs from slipping off, the bottom tier and the side rows of the log load shall extend beyond the front and rear bunks and stakes
  - (a) at least 0.3 m (12 in.) on trucks with compensating reach type trailers, or
  - (b) at least 0.15 m (6 in.) on other types of trailers.
- (4) The entire length of a log shall be contained by the stakes, unless it is in a secure lay below the level of the stakes and it does not have excessive crook, sweep or deformity.
- (5) A logging truck shall not be operated with a gross combined vehicle weight or gross axle weight in excess of the manufacturer’s specifications.

**Binders**

**12.37**

- (1) Unless the centres of all logs lie below the level of the top of the stakes
  - (a) at least two binders shall be installed to restrain the logs before the logging truck is moved or, if the logs are preloaded onto a trailer, installed immediately after the loading and before the trailer is connected to a tractor, and
  - (b) the binders shall be checked in transit to ensure they are effective.
- (2) If logs or log chunks could roll or slide off the truck, or the logs or log chunks are not contained within stakes, at least two binders shall be used to secure the logs regardless of the height of the load.
- (3) Each binder and attachment shall have a breaking strength of at least 53 kN (12,000 lbs.).



- (2) Road or skid trail construction, including any blasting activity, shall be conducted in a manner that prevents and removes hang-ups, hanging broken tops or limbs, leaners, sidebind of pushed trees, or similar hazards.
- (3) The open sides of bridges and other elevated structures used by logging trucks shall be equipped with substantial and well-secured continuous timber or log curbs or bull rails of sufficient height, but not less than 0.25 m (10 in.), to prevent the vehicles from running off the structures.
- (4) Dangerous trees, loose rocks, stumps, or other unstable material hazardous to road users shall be removed or cleared for a safe distance back from roadsides or roadside banks.
- (5) Brush, foliage or debris that obstructs a vehicle operator's view of traffic approaching at roadway intersections or on sharp curves shall be cleared and all possible precautions shall be taken to control the hazards created by limited range of vision.

**Traffic control systems 12.44**

- (1) When two or more vehicles are traveling a section of road too narrow to permit them to pass safely, an effective traffic control system shall be implemented and used by all vehicles and equipment on the road.
- (2) The traffic control system referred to in subsection (1) shall include
  - (a) turnouts where required,
  - (b) vehicles operating with their headlights on at all times and, if fitted, flashing beacons turned on,
  - (c) warning signs where required, and
  - (d) instructional signs, including kilometre and road name / number signs, and the radio frequency for traffic control if one is being used.

**Weigh scales**

**12.45**

- (1) An elevated truck weigh scale and associated elevated ramp approaches shall be fitted with substantial bull rails.
- (2) Weight recording house structures forming part of a logging truck weigh scale unit shall
  - (a) be sufficiently offset from the scale balance platform to provide an adequate margin for log load clearance, or
  - (b) have an effective barrier erected between the weight scale deck and the weight scale house.

**WOOD PRODUCTS MANUFACTURING**

**Kickback and kickout protection**

**12.46**

- (1) Edgers and other wood-processing equipment that expose workers to the hazard of material thrown back by the saw shall be fitted with effective kickback fingers, and if the hazard remains when the kickback fingers are raised, a substantial barrier shall be provided to protect workers.
- (2) A worker shall not be in front of raised kickback fingers while the saw is in motion.
- (3) Where a kickout hazard exists, a worker shall not be allowed at the outfeed end of an edger or other wood-processing equipment unless a guard or other measure is installed to prevent inadvertent entry to the area.
- (4) Edgers equipped with automatically activated kickback fingers shall have interlocks to prevent forward motion of the feed rolls while the kickback fingers are in a raised position.
- (5) Except for an edger or circular resaw equipped with anti-kickback fingers, where a worker may be exposed to kickback from a circular saw with rip-type teeth, the saw shall be fitted with an effective splitter.

- Pressure rolls**                      **12.47** (1) Edger pressure rolls shall
- (a) have a solid continuous rim surface, and
  - (b) be kept in contact with the material being cut.
- (2) Only one piece of material at a time shall be fed into any single set of pressure rolls for an edger, surfacer, or planer.
- (3) A multiple feed edger shall have separate pressure rolls for each feed.
- Crossing green chains and decks**    **12.48** (1) A worker required to cross a green chain or transfer deck shall
- (a) be informed of the hazards and proper procedures to follow,
  - (b) ensure the transfer deck is stopped before crossing, and restarted only after the crossing is completed,
  - (c) cross only on fully-decked locations where no hazard of falling exists and where a safe means of access and egress has been provided, and
  - (d) cross only in a space clear of material.
- (2) If a worker is required to access a transfer deck in order to control the flow of material as part of the normal production work
- (a) safe work procedures shall be established and, where practicable, posted adjacent to the machinery,
  - (b) the worker shall be instructed in and follow the safe work procedures,
  - (c) the transfer deck shall be stopped before access is made,
  - (d) the worker shall access a fully-decked area only where there is no hazard of falling and where safe access and egress has been provided, and
  - (e) the stop control devices cannot be overridden by another control device or by another worker.
- Hidden hazards**                      **12.49** (1) Hazards and dangerous equipment, such as a jump saw or automated equipment operated by photocells or proximity switches that are not readily visible to workers, shall be made conspicuous by signs, placards or other effective means.
- (2) Unattended saws and other woodworking machinery shall not be left running if they pose a hazard to workers.
- Sharp-edged tools**                      **12.50** (1) The cutting edges of saws, knives, cutting heads and other sharp-edged devices shall be
- (a) guarded to prevent worker contact when stored in operating areas, and
  - (b) handled and transported in a manner that will not endanger workers.
- (2) Where there is a hazard to a worker from the blade of a circular saw, or flying debris from the saw blade, the portions of the blade outside the cutting area shall be fully guarded.
- (3) Guards shall be arranged to allow cutting with a minimum amount of exposed blade.
- (4) A band-saw and its band wheels shall be enclosed or otherwise effectively guarded except in the cutting area, to prevent worker contact and to restrain the saw blade in the event of blade failure.
- (5) Barriers to protect workers from ejected material shall be installed in front of and behind all multiple slashers and multiple trim saws.
- (6) Where a worker may be caught or pulled into a saw or other dangerous area by a lug chain or similar transfer system, an emergency stopping device shall be installed on the conveyance.
- (7) A circular cut-off saw shall be fully enclosed, guarded, or located to prevent workers from inadvertent contact with the running saw when it is in the retracted position.

<b>Control of contaminants</b>	<b>12.51</b>	<ul style="list-style-type: none"> <li>(1) Babbitt melting shall be done at controlled temperatures in a covered pot.</li> <li>(2) Where practicable, lead-free babbitt shall be used.</li> <li>(3) Local exhaust hoods, or other effective means shall be used to control contamination while <ul style="list-style-type: none"> <li>(a) melting or pouring babbitt, or</li> <li>(b) grinding saws or knives.</li> </ul> </li> </ul>
<b>Chop, trim and swing cut-off saws</b>	<b>12.52</b>	<ul style="list-style-type: none"> <li>(1) Each swing cut-off saw shall have <ul style="list-style-type: none"> <li>(a) a device to automatically return the saw to the back of the table,</li> <li>(b) a limit chain or similar device to prevent the saw from swinging beyond the front of the table and past a position where the gullets of the lowest teeth rise above the top of the table, and</li> <li>(c) a latch or similar device to prevent saw rebound.</li> </ul> </li> <li>(2) A swing cut-off saw operator shall be positioned so that no part of the operator's body is in line with the saw.</li> <li>(3) Each chop, trim and swing cut-off saw shall <ul style="list-style-type: none"> <li>(a) be effectively guarded,</li> <li>(b) be guarded by location, or</li> <li>(c) have other effective means that prevent the operator's hands being placed in the cutting area when the saw is activated.</li> </ul> </li> </ul>
<b>Circular saw guides</b>	<b>12.53</b>	<ul style="list-style-type: none"> <li>(1) Circular head saws and scragg saws shall be equipped with safety guides, except where a top saw is only used occasionally, such as cutting flares off oversized logs.</li> <li>(2) Guides that are adjusted while a saw is in motion shall have the adjustment controls located away from the danger area.</li> </ul>
<b>Cut-off saw interlock</b>	<b>12.54</b>	Where a powered conveyor feeds material at right angles to the blade of a circular cut-off saw, the system shall have interlock control devices to prevent side loading of the saw.
<b>Saw operator location</b>	<b>12.55</b>	A log and block cut-off saw operator shall be positioned so that no part of the operator's body is in line with the saw unless adequate barriers have been installed.
<b>Saw speeds</b>	<b>12.56</b>	A saw shall not be operated at a speed in excess of the maximum speed recommended by the manufacturer.
<b>Saw maintenance</b>	<b>12.57</b>	<p>Saws shall be inspected frequently and maintained in safe condition and</p> <ul style="list-style-type: none"> <li>(a) dull, badly set, improperly filed or tensioned saws, or inserted tooth saws with poorly fitting shanks or worn bits, shall be removed from service,</li> <li>(b) each time a saw is sharpened, it shall be inspected for cracks and other defects,</li> <li>(c) a cracked saw shall be removed from service until repaired by a qualified person, and</li> <li>(d) a saw or saw collar damaged by excessive heat or undue stress shall be removed from service until inspected and repaired by a qualified person.</li> </ul>
<b>Cracks in circular saws</b>	<b>12.58</b>	<ul style="list-style-type: none"> <li>(1) A circular saw with a crack of any size adjacent to the collar line, or with a crack elsewhere that exceeds the limit specified in Table 12-2, shall be removed from service until the crack is repaired and the saw retensioned by a qualified person.</li> </ul>

Table 12-2 Circular saw crack limits			
Saw diameter		Maximum length of crack	
Metres	Inches	Metres	Inches
up to 0.3	up to 12	0.013	1/2
0.3 to 0.61	12 to 24	0.025	1
0.61 to 0.915	24 to 36	0.038	1-1/2
0.915 to 1.22	36 to 48	0.050	2
1.22 to 1.525	48 to 60	0.064	2-1/2
over 1.525	over 60	0.076	3

- (2) A circular saw with a crack near the periphery that does not exceed the limit specified in Table 12-2 shall be removed from service until
- the crack is repaired and a qualified person has retensioned the saw as necessary, or
  - the lengthening of the crack has been arrested by slotting, centre punching, drilling or other effective means, and a qualified person has retensioned the saw as necessary.

**Cracks in band-saws**

**12.59**

- (1) A band-saw, other than a shake band-saw, with a crack exceeding the limit specified in Table 12-3, shall be removed from service until the crack is repaired and the saw retensioned by a qualified person.
- (2) A band-saw, other than a shake band-saw, with a crack not exceeding the limit specified in Table 12-3 shall be removed from service until
- the crack is repaired and the saw is retensioned as necessary, by a qualified person, or
  - the lengthening of the crack has been arrested by centre punching or other effective means, and the saw is retensioned as necessary, by a qualified person.
- (3) A shake band-saw with a crack shall be permanently removed from service.

Table 12-3 Band-saw crack limits			
Band-saw width		Maximum length of crack	
Metres	Inches	Metres	Inches
up to 0.125	up to 5	1/10 of saw width	1/10 of saw width
0.125 to 0.3	5 to 12	0.013	1/2
over 0.3	over 12	0.019	3/4

**Band-saw width**

**12.60**

- (1) Unless otherwise specified by the manufacturer or a professional engineer, the minimum rim thickness of a cast steel band-saw wheel measured 0.025 m (1 in.) inboard from the rim edge shall be
- 0.014 m (9/16 in.) for wheels up to and including 1.8 m (6 ft.) diameter,
  - 0.016 m (5/8 in.) for wheels over 1.8 m (6 ft.) up to and including 2.75 m (9 ft.) diameter, and
  - 0.0175 m (11/16 in.) for wheels over 2.75 m (9 ft.) diameter.

- (2) A qualified person shall non-destructively test a band-saw wheel over 1.2 m (48 in.) diameter for cracks at least once a year.
- (3) A cracked wheel or a wheel that has been exposed to excessive heat shall be removed from service until the wheel manufacturer, or a professional engineer, has certified it as safe for continued use.

#### LOG-HANDLING

- |                               |              |   |
|-------------------------------|--------------|---|
| <b>Log haul walkways</b>      | <b>12.61</b> | Every log-haul shall have at least one walkway <ul style="list-style-type: none"> <li>(a) fitted with cleats and handrails, and</li> <li>(b) of sufficient width to enable workers to stand clear of logs in the log haul.</li> </ul>   |
| <b>Log hauling equipment</b>  | <b>12.62</b> | <ul style="list-style-type: none"> <li>(1) When log hauling and similar hoisting equipment is being used, workers shall be positioned so that they will not be endangered by logs as a result of power or equipment failure, or similar cause.</li> <li>(2) Log hauling and similar hoisting equipment shall be equipped with           <ul style="list-style-type: none"> <li>(a) devices that prevent logs from running back in the event of power failure, and</li> <li>(b) an emergency stop control by which the operator can stop the equipment.</li> </ul> </li> <li>(3) The emergency stop control shall not be capable of being overridden.</li> </ul> |
| <b>Rolling logs</b>           | <b>12.63</b> | Provisions shall be made to protect workers from rolling logs.  |
| <b>Barker feed restraints</b> | <b>12.64</b> | Logs shall be restrained against hazardous movement at the infeed and outfeed sections of a mechanical ring barker.   |
| <b>Bundle breaking</b>        | <b>12.65</b> | Where wires, strapping or bundling cables are removed from bundled logs in mill yards or dryland sorting areas <ul style="list-style-type: none"> <li>(a) specific written safe work procedures shall be developed and followed by all workers involved in the operation,</li> <li>(b) the load shall be restrained to prevent logs or log chunks from rolling off the bundle, or otherwise endangering the workers, and</li> <li>(c) workers shall not be permitted beneath a suspended load or equipment.</li> </ul>  |

#### HEADRIGS

- |                                |              |   |
|--------------------------------|--------------|---|
| <b>Buffer stops</b>            | <b>12.66</b> | Substantial stops, preferably with spring, pneumatic or hydraulic buffers, shall be installed at each end of the carriage travel area of a headrig.   |
| <b>Locking control levers</b>  | <b>12.67</b> | Inadvertent operation of the headrig log-turning and carriage-feed controls shall be prevented.   |
| <b>Carriage track barriers</b> | <b>12.68</b> | <ul style="list-style-type: none"> <li>(1) Where a headrig sawyer is or may be exposed to the hazard of logs, sawn material or chunks entering the booth or operator's area, the sawyer shall be protected by           <ul style="list-style-type: none"> <li>(a) a substantial barrier between the sawyer and carriage track, extending from the floor of the booth to 0.6 m (2 ft.) above the rollcase, and</li> <li>(b) a substantial barrier at the log loading area.</li> </ul> </li> <li>(2) Where necessary to deflect sawn material away from the sawyer, a substantial barrier shall be installed between the sawyer booth and the saw.</li> <li>(3) Headrigs shall have safety devices that prevent carriage equipment or dogs from contacting the saw or slabber head.</li> </ul> |

**Hog and chipper chutes**

- 12.69** (1) Hog and chipper feed chutes shall be equipped with baffles or other effective means to prevent material from being thrown from the equipment.
- (2) A worker feeding or clearing a hog or chipper shall be restrained by a safety belt and lanyard, unless otherwise protected from falling into the conveyor or machine.

**Hog, chipper and cutter heads**

- 12.70** (1) No attempt shall be made to remove a guard, hood, shroud or inspection plate from a hog, chipper, or cutter head until the rotor has stopped turning.
- (2) A makeshift device that may cause injury to a worker shall not be used to brake or slow down a rotor or cutter head.
- (3) Except for a whole log chipper, a mill chipper with a shroud, hood or inspection plate that can be removed before the rotor has stopped shall have an effective brake.
- (4) A hog or chipper shall have a means of determining if rotating parts are in motion or have stopped.
- (5) A production planer installed after the effective date of these Regulations shall be equipped with brakes on the heads.
- (6) All other production planers shall have brakes on the heads one year after the effective date of these Regulations.

**MATERIALS HANDLING**

**Height of chip and sawdust piles**

- 12.71** (1) The height of any excavated or unstable face of a chip, hog fuel or sawdust pile shall not exceed the safe reach of the mobile equipment being used to handle the material.
- (2) Workers unprotected by equipment or barriers shall not enter a hazardous area near the face of a chip, hog fuel or sawdust pile.

**Wood products storage**

- 12.72** (1) A pile of lumber, veneer, plywood or similar wood product shall be erected plumb and level, and be maintained in stable condition.
- (2) Spacing blocks that permit stable piling and unobstructed access for the forks of lift trucks shall be placed beneath each pile and between loads.
- (3) Veneer loads shall be supported by at least three spacing blocks of sufficient size to permit stable piling and unobstructed access for the forks of lift trucks, and individual load heights shall not exceed 1 m (3.3 ft.).
- (4) Loads of lumber built up for storage or transportation shall be stabilized
- (a) using stripping material that does not protrude beyond the side of the load or package, or
  - (b) by other effective means.
- (5) Where wood products are piled on a foundation that is firm and level
- (a) loads of lumber shall not exceed 4.5 m (15 ft.), when piled,
  - (b) unitized loads of lumber or loads of lumber 0.15 m (6 in.) or more in width shall not exceed the height of 6 m (20 ft.), except for the outer pile which must not exceed 4.5 m (15 ft.),
  - (c) if three or more loads of any size lumber are cross-tied at each successive level, the loads shall not exceed the height of 11 m (35 ft.),
  - (d) veneer piled in the vicinity of passageways or work areas shall be adequately supported to prevent falling,
  - (e) veneer storage piles shall not exceed the height of 4.5 m (15 ft.), and
  - (f) loads of plywood and similar wood products shall not exceed the height of 6 m (20 ft.) except for the outer stack, which must not exceed 4.5 m (15 ft.).

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