



Ref: 268020
File: 195-20/SCAL

November 10, 2021

BY EMAIL

To: Regional Executive Directors

From: Allan Bennett, Director, Timber Pricing Branch

Re: Revision to the *Scaling Manual* – Amendment No. 5

I hereby approve the revision to the *Scaling Manual* and attach a link to the *Scaling Manual* for your use:

<http://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/timber-scaling/timber-scaling-manual>

The change reflects “Procedures for Assessing Checks under the Grade Code 2 Log Requirements to Make the Grade” and “Log Requirements to Make the Grade” in Chapter 9.

The business process remains the same.

The revision is effective November 15, 2021. Further amendments or revisions to this manual require my approval.

Allan W. Bennett, RPF
Director
Timber Pricing Branch

Attachments: Revision to the *Scaling Manual* Chapter 9 Section 9.23 and 9.5.4.2

pc: Coast Scaling Advisory Committee
Coast Timber Pricing Advisory Committee
Interior Scaling Advisory Committee

Scaling Manual

Effective November 1, 2011

Includes Amendments

Amendment No. 1
Amendment No. 2
Amendment No. 3
Amendment No. 4
Amendment No. 5

Effective Date

December 10, 2015
March 15, 2016
May 7, 2018
April 1, 2021
November 15, 2021



This manual is intended for the use of individuals or companies when conducting business with the British Columbia Government. Permission is granted to reproduce it for such purposes. This manual and related documentation and publications, are protected under the *Federal Copyright Act*. They may not be reproduced for sale or for other purposes without the express written permission of the Province of British Columbia.

8.3.1.2	Bark Seams	8-9
8.3.1.3	Sweep, Crook and Pistol Grip.....	8-9
8.3.1.4	Rot, Hole, Char, and Missing Wood	8-9
8.3.2	Characteristics Which Reduce Product Recovery (Quality)	8-10
8.3.2.1	Twist (Spiral Grain)	8-11
8.3.2.2	Knots	8-13
8.3.2.3	Insect or Worm Holes	8-18
8.3.2.4	Non-Permissible Defects.....	8-19
8.3.2.5	Grain Density (Ring Count) - Coastal Grading Only.....	8-19
8.3.2.6	Compression Wood (Interior only)	8-20
8.4	Applying the Principles of Grading	8-22
8.4.1	Determining Grade Reduction	8-23
8.4.2	Log Size	8-23
8.4.2.1	Length	8-24
8.5	Assessing Product Recovery	8-25
8.5.1	Lengths of Defects	8-26
8.5.2	Determining Grade Reduction for Collars (Shells).....	8-26
8.5.3	Determining Grade Reduction for Sound Hearts (Residual Cores)	8-28
8.5.4	Determining Grade Reduction for Multiple Defects, Slab Thickness and Grading	8-31
8.5.4.1	For Coastal Grades.....	8-33
8.5.4.1	For Interior Grades.....	8-34
8.6	Determining Trim Allowance	8-35
8.6.1	The Application of Trim Allowance for Butt Rots.....	8-39
8.6.2	Trim Allowance and Ring Shake	8-42
8.6.3	Trim Allowance and Ring Rot	8-45
8.6.4	Trim Allowance and Multiple Ring Rot	8-48
8.6.5	Application of Trim Allowance to Checks and Shake	8-52
8.6.6	Application of Trim Allowance to Off Centre and Overlapping Defect.....	8-55
8.6.7	Determining Grade Reduction for Spiral Checks.....	8-56
8.6.8	Determining Lengths for Grading Purposes – Logs and Log Segments	8-59
8.6.9	Assessing Grade in Logs with Crook, Pistol Grip and Sweep	8-65
8.6.9.1	Crook	8-65
8.6.9.2	Pistol Grip.....	8-65
8.6.9.3	Sweep.....	8-66

Interior Grading 9

9.1	Interpreting the Schedule of Interior Timber Grades.....	9-2
9.1.1	Grade Applicability.....	9-2
9.1.2	Grade Precedence.....	9-2
9.1.3	Identifying Undersized Logs in the Interior.....	9-3
9.2	Physical Characteristics Affecting Log Grades	9-3
9.2.1	Compression Wood.....	9-4
9.2.2	Checks.....	9-4
	9.2.3 Procedures for Assessing Checks under the Grade Code 2 Log Requirements to Make the Grade:.....	9-4
9.2.4	Delay in Scaling	9-4
9.3	Potential for Manufacture of Product - Quantity.....	9-5

9.3.1	Log Sie	9-5
9.3.2	Insect or Worm Holes	9-5
9.4	Potential for Manufacture of Products - Quality	9-5
9.4.1	Occasional Oversized Knots	9-6
9.4.2	Knot Spacing	9-6
9.4.3	Twist (Spiral Grain)	9-6
9.4.4	Non-Permissible Defects	9-6
9.5	Interior Grade Rules and Application	9-7
9.5.1	Firmwood Reject - Grade Code Z (weight scale, species code or species code R)	9-7
9.5.1.1	Grade Rule	9-7
9.5.1.1.2	Application of the Grade Rule	9-7
9.5.2	Undersized Log Grade- Grade Code 6	9-7
9.5.2.1	Grade Rule	9-7
9.5.2.1.2	Log Requirements to Make the Grade	9-8
9.5.3	Premium Sawlog- Grade Code 1	9-8
9.5.3.1	Grade Rule	9-8
9.5.3.2	Log Requirements to Make the Grade	9-8
9.5.4	Sawlog - Grade Code 2	9-10
9.5.4.1	Grade Rule	9-10
9.5.4.2	Log Requirements to Make the Grade	9-10
9.5.5	Lumber Reject Grade Code 4	9-12
9.5.5.1	Grade Rule	9-12
9.5.5.2	Log Requirements to Make the Grade	9-12

Coast Grading 10

10.1	Interpreting the Schedule of Coast Timber Grades	10-2
10.1.1	Grade Applicability	10-2
10.1.2	Grade Precedence	10-2
10.2	Physical Characteristics Affecting Log Grades	10-3
10.2.1	Potential for Manufacture of Products - Quantity	10-3
10.2.1.1	Log Size	10-3
10.2.1.2	Length	10-4
10.2.1.3	Grade Reduction for Conk, Pin Rot and Indian Paint Rot	10-4
10.3	Potential for Manufacture of Products - Quality	10-5
10.3.1	Size of Knots	10-5
10.3.2	Occasional Oversized Knots	10-5
10.3.3	Pitch	10-5
10.3.4	Growth Rate (Ring Count)	10-5
10.3.5	Stain	10-6
10.4	Coast Grade Rules and Requirements	10-7
10.4.1	Firmwood Reject - All Species - Grade Code Z (species code or code R)	10-7
10.4.1.1	Grade Rule	10-7
10.4.2	Coniferous Grades	10-7
10.4.3	Balsam and Hemlock Grades	10-7
10.4.3.1	No. 1 Lumber Balsam and Hemlock, Grade Code D	10-8
10.4.3.2	No. 2 Lumber Balsam and Hemlock, Grade Code F	10-8

9.2.1 Compression Wood

This is a consideration for Grade Code 1 timber only. See the Compression Wood section under the Timber Grading chapter for a detailed discussion of compression wood and its effects on merchantable timber.

9.2.2 Checks

Checks over 4 cm in depth are a non-allowable defect for Grade code 1 logs. See Section 8.3.1.1 for more information on grading for checks.

9.2.3 Procedures for Assessing Checks under the Grade Code 2 Log Requirements to Make the Grade:

- Measure the end and count the number of end or surface checks over 4 cm in depth.
- Determine if there is more or less than 50% bark covering the bole.
- Determine whether the number of checks available for grade reduction meet the requirements of Section 9.5.4.2 and determine the length of the check.
- **If YES**, the section is 100% grade reduction.
- **If NO**, the section **can not** be 100% grade reduction for surface checks alone. Each check is boxed with trim allowance and the grade reduction is calculated using the appropriate method. This is also the method for determining grade reduction for checks on ends greater than 10 rads.

If there are insufficient numbers of checks to downgrade using the Grade Code 2 Log Requirements, then all checks 4 cm or greater must be assessed by adding trim allowance to the grade reduction and using an appropriate deduction method.

For logs with blue stain, beetle galleries, **or for fire affected timber**, if the surface check is visible at the log end, but not visible on the surface of the log, the convention is to run the check half the length of the log, or 2.5 m (metres), whichever is less. This convention must only be used if the length of the check cannot be determined due to ice, snow, or mud. This convention is not to be used if the bole is bark covered, or if the actual length of the check can be determined.

9.2.4 Delay in Scaling

A delay in scaling is determined as follows:

- logs have been decked for a period of time such that the ends of the logs are dark and weathered,
- a field scale was previously conducted on the timber, or

9.5.4 Sawlog - Grade Code 2

9.5.4.1 Grade Rule

A log 2.5 m or more in length and 5 cm or more in radius, or a slab 2.5 m or more in length and 15 cm or more in width and 15 cm or more in thickness measured at right angle to the growth rings, where:

1. For a hemlock or cedar log or slab, at least 75 percent of the gross scale can be manufactured into lumber.
2. For a balsam log, at least 67 percent of the gross scale can be manufactured into lumber.
3. For all other species at least 50 percent of the gross scale can be manufactured into lumber.
4. For all species, at least 50 percent of the lumber will be merchantable.

9.5.4.2 Log Requirements to Make the Grade

1. For logs with **less than 50 % bark** covering (visual estimate ± 10 %) displaying blue stain, beetle galleries, **or for fire affected timber**, the following applies:
 - Section of the log, 5 cm to 7 cm in radius, where there is **1 or more surface check** (4 cm or more in depth) is added to the grade reduction.
 - Section of log 8 cm in radius, where there are **2 or more surface checks** (4 cm or more in depth), or **1 spiral check** (4 cm or more in depth) affecting more than one quadrant of the log, is added to the grade reduction.
 - Section of log 9 cm in radius where there are **3 or more surface checks** (4 cm or more in depth), or **1 spiral check** (4 cm or more in depth) affecting more than one quadrant, is added to the grade reduction.
 - Logs equal to or greater than 10 cm of radius, **subtract 2 cm of radius** from the diameter as a grade reduction. Logs ≥ 10 cm of radius cannot be downgraded for surface checks alone. They must display other defects as per Chapter 8 of the *Scaling Manual*.

2. For logs with **more than 50 %** bark covering (visual estimate $\pm 10\%$) **displaying blue stain, beetle galleries or for fire affected timber the following applies:**
- Section of logs, 5 cm to 7 cm in radius, where there is **1 or more surface check** (4 cm or more in depth) is added to the grade reduction.
 - Section of logs 8 cm or more in radius, where there are **3 or more surface checks** (4 cm or more in depth) or **2 spiral checks** (4 cm or more in depth) affecting more than two quadrants, is added to the grade reduction.
 - Section of logs 9 cm in radius with **4 or more surface checks** (4 cm or more in depth) or **2 spiral checks** (4 cm or more in depth) and affecting more than two quadrants, is added to the grade reduction.
 - Logs equal to or greater than 10 cm of radius cannot be downgraded for surface checks alone. They must display other defects as per Chapter 8 of the *Scaling Manual*.
3. Section of a log that exceeds, the maximum twist permitted over 30 cm of length is 15 percent of the diameter, from a minimum deviation of 4 cm up to a maximum deviation of 9 cm, is added to the grade consideration.
4. By log radii, maximum knot size diameters that should not prevent the merchantable manufacture of the lumber requirements of the grade are:

Log Radius	Knot size diameter
5-7 cm	4 cm
8-13 cm	6 cm
14-18 cm	8 cm
19-24 cm	10 cm
25-37 cm	12 cm
38 + cm	14 cm

5. The section of log between 5 rads (10 cm) to 7 rads (15 cm) does not allow any oversized knots.
6. Other defects as per the scaling manual are allowed providing that the portion of the log free from these defects is sufficient to meet the grade rule.