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Measuring rules for pulpwood

Recommended by
The Swedish Timber Measurement Council

VMR circular No 1-06

This document replaces pages 19-21 (ch. 4 Measuring rules for pulpwood) and pages 30-31 (delimiting) of VMR 1-99 second edition.

Rules concerning forest rot in accepted logs will be applied when routines for registering and accounting are available

This is a translation from Swedish which is the language that will apply in the event of any translation disputes.

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Assortments

Pulpwood is roundwood intended for pulp manufacturing. The Swedish timber measurement associations use a four digit number to register pulpwood. The third digit, the T-code, stands for species or group of species. A T-code should always be specified when trading pulpwood. Some of the most common pulpwood assortments and their T-codes are:

Assortment	T-code	Species
Spruce pulpwood	2	Spruce (<i>Picea abies</i>) and sitka spruce
Softwood pulpwood	0	Any mix of softwoods, unless otherwise stated
Birch pulpwood	4	Birch
Aspen pulpwood	5	Aspen and poplar
Beech pulpwood	6	Beech (<i>Fagus sylvatica</i>), maple, mountain ash and Swedish whitebeam.
Alder pulpwood	7	Alder. Single logs of other hardwoods, except oak and elm, are allowed.
Hardwood pulpwood	3	Any hardwoods, except oak and elm, unless otherwise agreed
Mixed pulpwood	9	Species according to contract

In addition to the assortments listed above, most species can be traded using their common names (expressed as T-codes). This applies to e.g. larch, contorta pine and eucalyptus.

Preparation

Live stem section

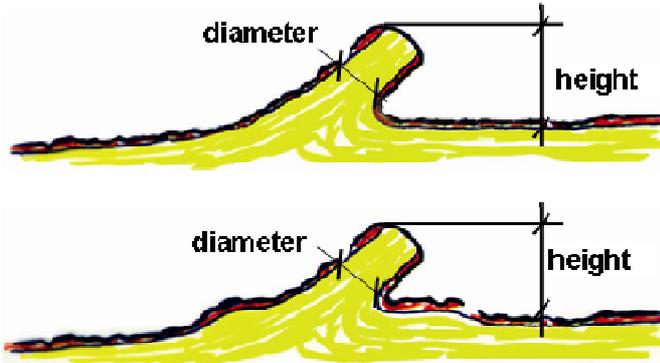
A pulpwood log should be cut from a live stem section. A stem section is considered as live if transportation of nutrients is functioning on more than 50 % of the circumference of the cross section.

Delimiting

The log should be satisfactory delimited which means that the branches should be cut off close to the log surface. Prevailing branch stubs must not exceed the following measures:

Branch diameter under bark	Branch height
- 15 mm	Unlimited
16 mm +	< 12 cm spruce pulpwood < 16 cm other assortments

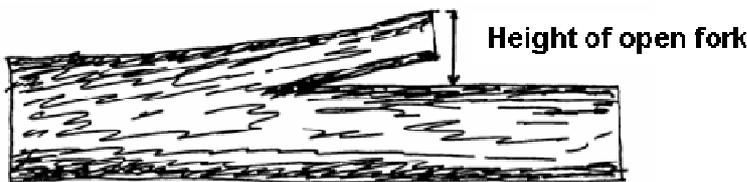
Branch height is defined as the perpendicular distance from the log surface under bark to the tip of the branch. A branch that is broken off but still attached to the stem should not be measured for height if its resistance when bending is less than that of a branch with a diameter less than 15 mm ub.



Measurement of branch height with and without nodal swelling.

Open fork

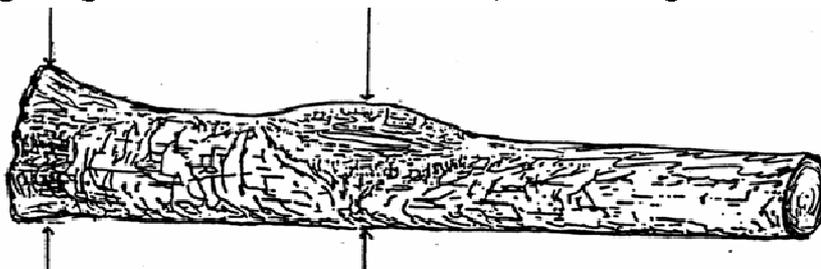
Open fork is allowed if its height is less than 12 cm (spruce pulpwood) or less than 16 cm (other pulpwood assortments).



Buttress and other unevenness

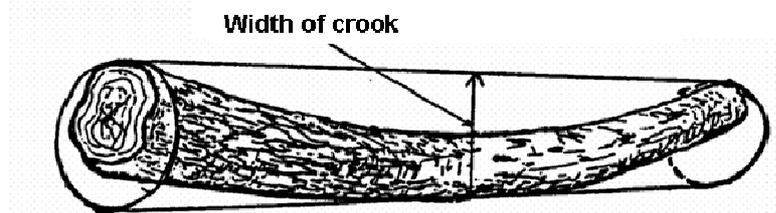
The largest diameter of a log must not exceed the butt end diameter with more than 30 cm, nor the maximum diameter of 70 cm. The butt end diameter is measured 10 cm from the butt end on top and middle logs, and 50 cm from the butt end on butt logs.

Largest log diameter: butt diameter + 30 cm, not exceeding maximum diameter



Width of crook

Width of crook must not exceed largest diameter with more than 30 cm, nor the largest allowed diameter with more than 10 cm.



Log dimensions

A log must fulfil minimum and maximum size requirements.

Minimum diameter: 5 cm ub at minimum length.
Maximum diameter: 70 cm ub (at any point along the log)

Diameter is cross callipered under bark. One diameter measurement is allowed if taken from the oncoming angle. Volume of an undersized log (log with a diameter of less than 5,0 cm ub at minimum length) is registered as reject. For a log with a diameter of 5 cm at minimum length but with a top diameter of less than 5,0 cm, the section with a diameter less than 5 cm is not registered.

Minimum length:	For wood cut to standard length:	standard length – 30 cm.
	For wood cut to varying lengths:	270 cm
Maximum length:	For wood cut to standard length:	standard length + 30 cm.
	For wood cut to varying lengths:	579 cm

However, when standard length is longer than 3 m, some (< 5 %) broken logs down to a length of 2.7 m are allowed.

The volume of a log which does not fulfil the length requirements is registered as reject. A log with a diameter of less than 5 cm at 10 dm of length is regarded as logging residue and is not registered.

Freshness

Spruce pulpwood has to be fresh. Pulpwood is regarded as fresh if the bark comes off easily and/or the moisture content of the wood exceeds a specified minimum. If the freshness can be questioned the wood must be examined. Wood is always regarded as fresh within three weeks from felling.

Other pulpwood assortments should be satisfactory fresh. The requirements for that are agreed upon by the trading parties.

Freshness is registered at stack level and at least 90 % of the stack volume should meet the freshness requirement.

Pulpwood can, according to agreement, be traded as "not fresh" in which case a separate assortment code should be used.

Forest rot and storage decay

Maximum cross section percentages for individual logs

Assortment	Maximum forest rot area of log end surface (ub)	Maximum area of storage decay at a cross section (ub) 15 cm from log end
Spruce pulpwood	10 %	0 %
Other pulpwood assortments	67 %	10 %

Logs with more rot or decay than the limits set in the above table are rejected. For pulpwood assortments other than spruce pulpwood, logs with 10 to 33 % storage decay at cross section may, according to agreement, be traded as "storage decayed" and registered using a separate assortment code.

Stack level deduction for forest rot in accepted logs

(These rules will be applied when routines for registering and accounting are available)

The trading parties may agree upon deductions for forest rot in accepted logs. Stack level data should be registered as:

Stack measurement

The proportion of rot in accepted logs is registered separately from rot in rejected logs. The proportion of rot in accepted logs is expressed as a percentage of log end surface, either at one end side of the stack or as an average of both end sides.

Log measurement

When logs are measured piece-by-piece rot area percentage (for accepted logs) should be registered for each log end.

Quantity of a delivery

The quantity of a delivery is determined as volume under bark, as raw weight or as dry weight. Sampling methods are allowed. The volume is determined either by stack measurement in conjunction with estimation of wood volume percentage, or by measuring the top and butt end diameter of individual logs. When the measurement unit is a stack and the stack is placed on a bedding of logs these logs are to be included in the stack volume.

Measurement refusal of stacks

Contamination

The stack must not contain coal, soot, rubber, stones or metal. Neither may wood or bark contain noteworthy amounts of penetrated gravel (the fraction size of gravel is 2-20 mm).

Freshness

At least 90 % of the stack volume must be fresh (spruce pulpwood), or satisfactory fresh (other assortments).

Proportion of rejected logs

The proportion of rejected logs must not exceed 15 % of the gross volume in a single stack. However, rejects due to species must not exceed 5 %.

For spruce pulpwood, a single stack must not contain more than 10 % rejects due to forest rot.

The Swedish Timber Measurement Council

The Swedish Timber Measurement Council (VMR) is a coordinating unit for wood measurement in Sweden. This includes questions like measuring rules, control of measurement results, measurement techniques, statistics, codification of forest products, information material, public relations and international contacts. VMR is organised as a department within SDC.

SDC “the IT-company for the Swedish forestry sector” is a non-profit organisation owned jointly by forest owners and forest industry. It is the central Swedish organisation for data processing, software development and accounting services on the Swedish market for roundwood, fuelwood assortments and sawmilling by-products. SDC also offers systems and codes for logistical support from forest to industry.

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