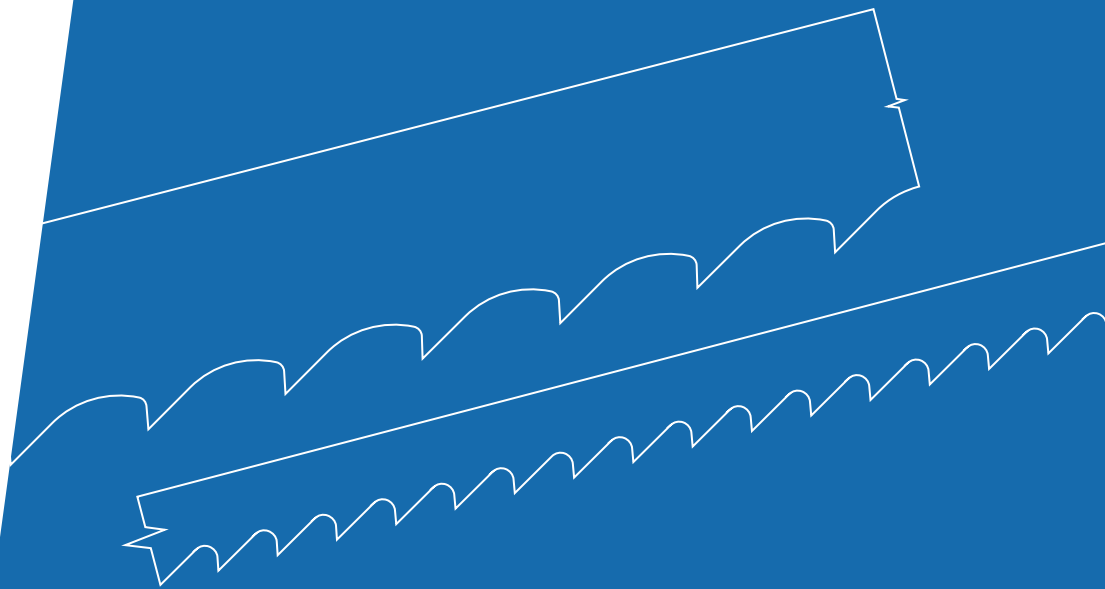


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Band Saw Blades for Wood



Sizes

Size of the band saw blade is chosen according to the machinery used and how the material is being cut.

Width of the band saw (H)

Width of the band saw is usually defined in the operations manual of the machine. Width of the band saw may exceed by maximum 10 mm flywheel width of the machine. The wider the band saw is the longer tool life it will have respecting the condition above. You may choose then the widest blade respecting radius that will be cutting (see table below).

Recommended values of width of the band saw according to the minimum radius

Width of blade H (mm)	6	8	10	12	15	20	25	30	35	40	45	50
Minimum radius (mm)	15	25	40	60	100	140	180	300	400	500	600	700

For 40 – WM1 and WM2 band saw types the width of the band saw is defined by the machine producer and is derived from the flywheels used.

Thickness of the blade (S)

Thickness of the band saw blade must not exceed value S1 because the material of the band saw would experience excessive bending forces and thus it can be mechanically damaged. For flywheels with less than 350 mm of diameter always use maximum thickness of 0,7 mm, for flywheels smaller than 250 mm use band saw of maximum thickness of 0,5 mm.

$$S_1 = \frac{\text{flywheel diameter (mm)}}{500}$$

Tooth pitch (T)

Tooth pitch is the distance between the tooth tips. Tooth pitch is chosen according to and respecting the height of the processed material, 3 to 5 teeth is recommended to be in cut at the same time.

Operating conditions

Maximum cutting speed of the band saw is defined by the machine producer. Usually the range is between 20 to 35 m/sec. General rule says the harder material is being processed the lower cutting speed is applied. Too small tooth pitch may cause jamming of the gullet space, the blade will not „enter“ into the cut smoothly and undercutting will occur, to the contrary too large tooth pitch will cause rough cutting surface and tearing of wood.

General rules for usage

1. Before you start cutting check if the band saw blade is properly sharpened, set and whether it is not damaged or heated up. Band saw heating can be recognized if blade has got purple color even after cooling.
2. Band saw blade must be properly tensioned. Please be aware not to tension the blade too much. This could cause breaking of of the blade.
3. The tension of the band saw blade is measured by a special tool (tensiometer), maximum permissible values are specified by a producer of the machinery.
4. Guidance of blade and guiding wheels must be clean from chips and resin. Free play between guiding and band saw blade may be maximum 0,2mm. The distance between the top guidance from the cutting material should be as little as possible so that blade rigidity is as big as possible.
5. Hold the cutting material with both hands so that your body is not in the same axis as the cutting blade. Do not cut material using excessive force.
6. Start cutting after the proper cutting speed is achieved. Do not shorten or slow down the cutting period by friction of the blade against the side of material or slowing against cutting material.
7. While cutting of big dimensions it is important to use fixed guidance. At the end of cutting it is important to use holding device.
8. It is necessary to replace the band saw blade and leave it to rest (even if not dull) on time to maintain mechanical attributes of the band saw blade.
9. Do not let the band saw to heat up by any means. If this happens, set away the blade immediately, after cooling reset and sharpen it. You can also check the straightness. To prevent heating it is better to sharpen the blades on time and follow the right cutting conditions.
10. Replace the band saw blade immediately if any break off occurs.
11. After finishing cutting process do not leave the band saw blade tensioned on the machine, always loosen it.

Service

Tooth setting is done to 1/2 to 2/3 of the tooth height and is set by 1/2 to 1/3 over the size of band saw thickness. Tooth setting can be even bigger for soft woods but there must never happen that a piece of wood remains in between the teeth. Please keep the same distance while tooth setting the whole band saw blade. Pay special attention to regularity of setting (max. difference 0,1 mm). If not, run in of the blade might occur on the side where the bigger tooth set is.

Tooth sharpening is done by ceramic/CBN disc with medium grain roughness. Tooth face is sharpened. If the blade is extremely dull, it is possible to sharpen the tooth back as well. Prevent the tooth to become black from annealing (unwanted stage) while grinding. It is needed to keep the radius in the gullet, sharp edges in the gullet could cause blade breakage.

Recommendations on How to Use Band Saw Blades

The most common causes of common troubles while cutting with band saw blades is wrong choice of band saw blade type, dimensions of blade or wrong tooth pitch for particular material. Not adhering to the correct cutting conditions is the second most common problem along with usage of insufficiently set or dull band saw blade.

In the below tab you can find most common problems and their possible solution.

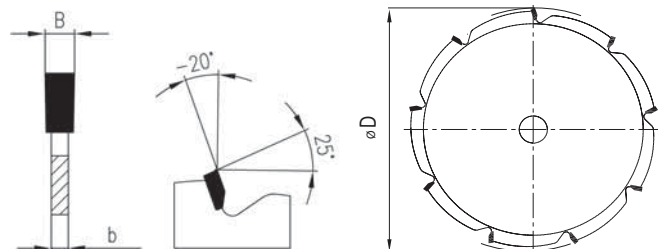
Problem/Fault	Probable reason	Solution
Broken/ fissured blade	• Wrong tooth pitch	Choose a blade with tooth pitch so that 3-5 teeth are in cut
	• Overstressing of blade	Lower the tension of the blade
	• Feed is too high	Apply lower feed speed
	• Teeth are in contact with material before cutting	Adjust allowance between blade/material to minimum 10mm before cutting
	• Diameter of guiding wheels is too small	Use a thinner blade
	• Side press on band saw	Adjust manually
	• Blade friction against carrier wheels	Adjust parallelity of wheels
Undercutting	• High feed	Lower the feed speed
	• Insufficient tensioning	Retension the blade
	• Damaged tips of teeth	Use a blade with harder teeth (hardened)
	• Excessive play between the blade and guides	Set up play on guide wheels
	• Big distance between guidance and material	Adjust distance from guidance
Rough cut	• High feed	Adjust cutting conditions
	• Wrong tooth pitch	Use correct tooth pitch
Blunting of blade	• Cutting with tooth backs	Turn over the band saw blade
	• High cutting speed	Lower the cutting speed
Tooth breaking off	• High pressure on blade	Lower the feed speed
	• Wrong choice of tooth pitch	Use correct tooth pitch
	• Cutting with tooth backs	Turn over the band saw blade
	• Dirt in cutting material	Do not cut in places where dirt occurs (stones, metals etc.)
Twisting of blade	• Blade stuck in cut	Lower the feed speed
	• Free guiding of blade	Adjust the blade guiding



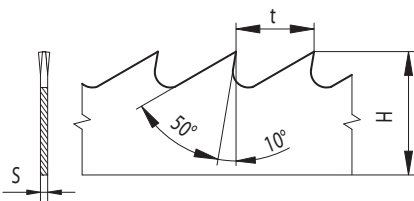
80 – TCT Scoring Saw Blades for Band Saws

» for removing of bark from logs, while extending the lifespan of the band saw

D	S	d	z	Geometry
180	5,0	20	9	FZ N



Material: Natural wood
Application: Cutting of natural wood
Machine: Band saw machines



Band Saw Blades for Carpenters

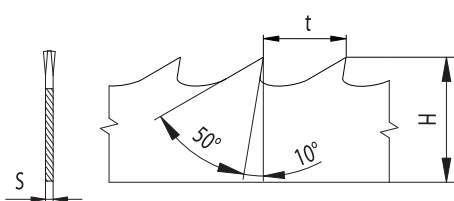
- » natural wood
- » joinery, carpentry shops
- » we produce the following modifications of band saw blades - toothed, set, sharpened, hardened
- » band saws are supplied in coils of 25, 50, 100 m or welded to a particular machine length
- » material type used - carbon steel C 75 - material hardness 42 - 44 HRc

H	S	t	C 75 set	C 75 set and sharpened	C 75 set, sharpened and hardened 64 HRc
6	0,5	4	●	●	●
8	0,5	5	●	●	●
10	0,4	6	●	●	●
10	0,5	6	●	●	●
10	0,6	6	●	●	●
12	0,6	7	●	●	●
15	0,4	7	●	●	●
15	0,5	7	●	●	●
15	0,6	7	●	●	●
15	0,7	7	●	●	●
20	0,4	7	●	●	●
20	0,4	8	●	●	●
20	0,6	8	●	●	●
20	0,7	8	●	●	●
25	0,6	8	●	●	●
25	0,7	8	●	●	●
30	0,7	10	●	●	●
35	0,7	10	●	●	●
40	0,7	10	●	●	●
45	0,9	12	●	●	●
50	0,9	12	●	●	●



Band Saw Blades for Carpenters HOOK NEW!

- » available modifications: toothed, set, sharpened, hardened
- » available in coils of 25 m, 50 m, 100 m or welded to a particular machine length
- » made of carbon steel C 75 - material hardness 42 - 44 HRC
- » Pilana's HOOK tooth profile ensures faster chip flow out of the cut. This prolongs resharping cycles and reduces deviation of the band saw while cutting



H	S	t	C 75 set, sharpened, and hardened 64 HRc
10	0,6	6,2	●
12	0,6	6,2	●
15	0,6	6,2	●
20	0,6	6,2	●
25	0,7	6,2	●
25	0,7	8	●