# 10 Commandments of Sanding on the Lathe

(pick 10 or more of the following rules to live by)

• When sanding on the lathe, be certain to move the tool rest completely out of the work area so that there is no possibility of getting pulled into it.

This is a common sense safety precaution. Do not get careless on this one.

Reduce the lathe speed when sanding on the lathe.

Excessive lathe speed generates too much friction, which results in heat. Heat can cause the wood to check, and it causes the sandpaper to breakdown. Excessive lathe speed also can cause dust to build up between the sand paper and the wood, which prevents wood abrasion. I recommend setting the lathe speed at ~250 rpm for sanding.

• Sand with light pressure...let the sandpaper do the work rather than pressure.

Excessive pressure generates excessive heat. Heat does bad things (see above).

Never use worn out sandpaper.

Sandpaper is a cutting tool. Worn out sandpaper will not cut. Used 100g sandpaper is not the same as 150g; it is just worn out 100g. I have been told that most sandpapers are good for 4 minutes of continuous sanding.

Use only modern high quality sandpaper.

The abrasive on modern high quality sandpaper fractures as it is used, thus regenerating its cutting ability. Coatings on these papers help prevent clogging of the abrasive with dust.

Understand abrasive grit scales.

Sandpaper grit size does not equate between the CAMI scale (used by some US manufacturers) and the P scale (used by most of the world), particularly for the finer grits. Most quality sandpapers are now sold using the P scale. Know your sandpaper type! The attached table shows the equivalences among several commonly used abrasive scales.

Do not use sandpaper to shape the wood.

Different areas of wood will abrade differently. Thus, you will have minimal control of the shape that results from sanding on the lathe. Go back to a turning tool to change the shape.

 Sand only briefly with each grit... just enough time to remove the scratches left from the previous grit.

Excessive sanding will change the shape of the work in unpredictable ways. If the first step requires lengthy sanding, then you should start with a coarser grit paper or better yet, work towards getting a better surface with the turning tools.

Do not skip grits.

Skipping grits will require sanding for a longer time, which causes bad things to happen (see above). A general rule of thumb is to advance by no more than 50% of the current grit number. For example, if you are sanding with 100g, then the next step would be 150g. Smaller steps are advantageous at the courser grits.

Try to avoid lower grit sandpaper.

Lower grit sandpaper is more likely to change the shape of the work in unpredictable ways. Again, it is better to work towards getting a better surface with the turning tools.

#### Clear dust from the sandpaper frequently.

Sanding generates dust, which can build up between the sandpaper and the wood. This will prevent wood abrasion and generates more heat. Constantly move the sandpaper to free dust. Give the paper an occasional finger flick to clear, or clean it with a crepe block. Discard paper immediately if the dust caramelizes.

## • Keep the sandpaper moving continuously on the wood.

Holding the sandpaper stationary will cause grooves to appear in the wood. It can also change the shape of the wood in unintended ways. Also, dust will buildup between the sandpaper and the wood, which prevents wood abrasion and generates more heat. Particularly when sanding larger pieces, it is helpful to use a rotating abrasive. There are passive tools for this, or use round sandpaper disks held by a mandrel on an electric drill. If using an electric drill, keep the drill speed low.

### o Remove the dust from the wood between each grit.

The fractured abrasive on the wood can scratch the wood and prevent the effect of using a finer grit abrasive. Wiping can pack the dust into any open wood grain. The dust packed in the open grain often appears as fine white lines in the wood. This can be prevented by using compressed air to remove dust rather than wiping away dust. Microfiber towels are another good option.

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# Abrasive Equivalences

CAMI (USA)	P (Europe)	micromesh	waterstone	other	grit size (µm)
80	P80				194
	P100				156
100					141
	P120				127
120					116
	P150				97
150				coarse india	93
180	P180			green scotch-brite	78
	P220			Tormek course	65
220				maroon scotch-br.	60
	P280			medium india	53
	P320			coarse diamond	45
280				fine india	43
320	P400			medium diamond	36
			400	gray scotch-brite	32
	P600			fine diamond	25
400		1500		Tormek fine	23
	P800		600	0000 steelwool	22
500				soft arkansas	20
	P1000				18
600		1800	800	white scotch-brite	16
	P1200			hard arkansas	15
			1000	xtra fine diamond	14
800	P1500				12
		2400	1200		11
	P2000				10
1000			1500		9
			2000		7
1200		3200			6
1350		3600			5
1500		4000	4000		3
		6000	6000		2
2000		8000	8000		1
		12000			0.5
† sheets	† disks	†pads	†water stones		†diamond paste