

Dust and Noise Protection when Woodworking

If you use machinery, portable or freestanding, you need to consider the effects of the dust and noise created by these machines. Simple precautions can save problems later .

Noise protection

I have to make an admission here, for many years I was rather blasé about noise control often forgetting to wear ear defenders. I am more strict about this now, but this is rather shutting the stable door after the horse has bolted. Because I did not wear ear defenders I now have to wear a hearing aid in my left ear because I am not able to hear sounds in the higher register, I also have trouble picking out conversation against background noise. This makes chatting in the pub for instance very difficult and can be isolating. So I would recommend using ear protection at all times when using woodworking machines if you are a frequent user.

Here are the tested noise levels for various woodworking tools:

Thicknesser	104dB
Portable belt sander	90-100dB
Portable circular saw	100-105dB
Orbital sander	75-90 dB

Bear in mind the measurement of decibels is logarithmic so an increase of 3dB means a doubling of the noise. It is recommended that noise levels be reduced to below 85db at the user's ear. This means we should be wearing defenders with a rating of about 25dB.

What's available?

There are two main types of protection, ear plugs and ear muffs.

Ear muffs.

- I use ear muffs, partly because to use plugs would mean removing my hearing aid which would inevitably get lost.
- When buying ear muffs it is worth trying a few on if you can as everyone's ears are different and if the muffs are uncomfortable you are less likely to wear them.
- Muffs tend to be a bit sweaty in hot weather.

Ear plugs.

- These are usually a foam plug that you compress and insert into the ear. They can be as efficient as ear muffs. They are either disposable short usage or washable for repeated use.
- Apart from the hearing aid problem they tend to get lost easily so can be an expensive option in the long term. Corded pairs of plugs are less likely to be lost as they can be hung round the neck.
- They can be good for glasses wearers where muffs may be uncomfortable.
- They are more comfortable in hot weather.
- Sometimes if you are wearing defenders, a dust mask and goggles it all becomes too much. Ear plugs may be a little less intrusive in this situation.
- They may be uncomfortable for those with an ear infection.

Dust protection

I'm talking here about protection from dust in the air, obviously it is better to stop the dust getting in the air to start with. So where possible fit tools with some form of extraction, a vacuum extractor on a sander or router for instance. However I realize that often the home woodworker may not have full extraction facilities so some form of dust protection is needed.

Wood dust can cause asthma and certain timbers are carcinogenic. Dust masks are rated by European standard EN 143:

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|----|---|--|
| P1 | - | Filters out up to 80% of airbourne particles. |
| P2 | - | Filters out up to 94% of airbourne particles. |
| P3 | - | Filters out up to 99.95% of airbourne particles. |

This standard also checks the leakage between mask and face.

For general woodwork using a mask conforming to P2 should be sufficient.

What's available?

Convenience or nuisance masks. These are not really much use for wood dust and should be avoided.

Disposable masks.

- Light weight so quite comfortable.
- Difficult to seal to face.
- Can be expensive in long run. Dispose of the mask if it fails to seal or becomes clogged making breathing difficult. Most masks last about 8 hours use.

Half face masks. These usually consist of a rubber mask fitting the nose and mouth into which a replaceable filter is inserted.

- Fitting different filters can give different protection making them more versatile.
- The right mask will usually seal better, however getting the right mask can be difficult, you need to try a few to find one that fits well. I have a high bridge to my nose so find many masks steam up my glasses, indicating a leaky seal.
- I find that masks with a single filter at the front feel heavy on the face and uncomfortable. Those with filters either side are usually more comfortable.

Checking for leakage. If your mask leaks around the face there is not much point wearing it, so how can you check for leakage. Obviously if your glasses steam up there is a problem! The other way, as specified by the HSE is as follows:

1. Fit the mask.
2. Block the filter. For disposable masks this means cupping your hands over the front of the mask but not pressing the mask to the face. For masks with replaceable filters just block the filter.
3. Take a sharp intake of breath. If the mask slightly collapses and remains so for a couple of seconds the seal is good.
4. If a leak is found try adjusting the straps or position of the mask. If this does not work you may need to try a different mask. Don't forget that beards or stubble can cause leakage, so you may need to shave!

I have experimented with this method and have not been impressed with the results. I think a good indicator may be when you can hear the valves in the mask sealing when you breath in.