

Takeaways from Santa Cruz Woodturners' Dust Mitigation Survey

April, 2020

1. 11 out of our 16 respondents have a high powered (1 – 2 hp, 4" hose) dust collection system. 9 of those have installed that device inside their shop as opposed to external. Shopvac systems (lower power and capacity, faster clogging, less efficient filters) seem to be losing popularity (one), and several members (2) are using fans to blow dust toward a window.
2. 10 of 16 either use a mask all the time or one of the high tech shields with filters or respirator.
3. Half of the respondents don't use dust protection when roughing out wet wood, but nearly all use at least a mask while sanding.
4. 6 of 16 confess to skipping a mask when dealing with a quickie touch up, although most of those are using a high efficiency dust vacuum system at that time.
5. Maarten, as he has described several times, made his own vortex collector. (Rumor has it that he is now making a lunar command module out of discarded plywood, a salvaged F150 windshield, fold-up sawhorse legs, an expired fire extinguisher, and a green Walmart garbage can.) However, most members are using manufactured units, which tend to run around \$1000-1200, although with another several hundred for fixtures and, in some cases, more for metal piping. The busier turners, not surprisingly, have the more sophisticated units.
6. Many of us use devices to better capture the dust as it leaves the revolving blank, and Black Hole seems to be the dominant unit.

Now some Presidential Pontifications:

1. Chips are a threat to the eyes (Mr. Sulu, activate the deflector shields!), but not so much for the lungs. Thanks for responded to that survey earlier!
2. All dust is a physical irritant to the delicate lining of the large and middle sized bronchial passageways. No exceptions.

3. The smaller the particle size, the deeper it goes.
 - a. Coarse grit sanding scrapes off bigger particles than fine (80 grit vs 400). Get down to 600, 1000, 2000, and you're making micron size trouble makers. Turners like Larry, who get down this fine regularly, use sealed face shields with filtration for incoming air...all the time. Your vice President, Linda, our Safety Enforcer, uses one, too. In fact, Dennis, too. I guess the message is: get a PhD, use the best dust protector you can.
 - b. Wet wood doesn't make much dust at all, damp wood a little more, but dry wood is a dust maker...more with sanding than the turning.
 - c. Some wood species make finer dust than others (for me the culprits are walnut and redwood). You really have a lot of choices.
 - d. Those "lingering clouds" are visible, but even finer dust may only be noticeable in rays of sunlight, and that stuff can stay airborne for hours. After you go upstairs for dinner, it lands in your fresh Wipe-On-Poly and makes it prickly when you come back to admire the finish in the morning. You can also find a tell-tale fine layer of dust on horizontal surfaces when you're certain it wasn't there when you left the shop.
 - e. Standard vacuum machines don't trap the most worrisome micro particles, and in fact, they may just stir them back up into the air.
 - f. Many of the exotics are additionally irritating by virtue of substances in the wood, along with as well some aromatic conifers.
4. Very fine dust can get all the way down to the microscopic airways or even the alveoli and then cause an indolent inflammatory process that results in progressive lung disease resembling emphysema.
 - a. It has an odd name (pneumoconiosis). You really don't ever want to see that word on your medical record.
 - b. A lot of redwood mill workers wound up with this condition in the glory years of this industry...before enlightened owners (like the McCrary's...and OSHA) made protection mandatory.
5. Oh, and those clouds can get you in a more flamboyant way, too. They can explode with an open flame...familiar casualty with flour in bakeries long ago, and dusty shops every now and then. (Clean your work space and the closed space inside your table saw. Empty your collection bag before it gets half full, and maybe more often.)
6. Some people have actual allergy to the dust, technically different from a direct irritation effect, although maybe that's not an important distinction if your lungs are rebelling. Allergy tends to trigger sneezing and cough quite early in the exposure, and it can lead to the same eventual outcomes. *Take the hint!* Congestion symptoms are just not popular symptoms nowadays, they'll get you in trouble with the authorities. If you know the wood that your body doesn't like, trade those blanks for something

that's friendlier...and use a better mask and install a \$1000+ vortex collection system with a (yes, more expensive) 1 micron filter.

7. Wet wood doesn't make much dust, as mentioned, but the spinning and heat can volatilize irritants even as we rough out wood that's flinging sap. If you can't resist working with those woods, it's time to invest in protection with a filtration device or even a canister respirator. (Notorious examples: Bay laurel (AKA pepperwood), almost any foul smelling exotic (such as cocobolo, Ipe, rosewood), yew, aromatic red cedar)
8. Most popular with our members now: face mask (quality varies, and you can't buy any of them in the coronavirus outbreak) plus a high powered vacuum machine with a 1 micron filter. Many of our members are moving to form fitting facial shields with filtration.

For a compendious listing of wood and dust toxicities:

<http://www.wood-database.com/wood-articles/wood-allergies-and-toxicity/>

Whew,

Wells

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