

# Dust Control

**F**or those of us who get our hands dirty every day, dismissing dust as a minor annoyance is easy. No big deal. Nothing that a whisk broom and a Shop-Vac can't make quick work of. But then you spend a day cleaning drywall dust out of every nook and cranny in what had been a spotless kitchen. Or maybe you have to come up with the cash to refinish a hardwood floor scratched and pitted by demolition dust. To avoid such costly, time-consuming consequences, you have to get serious about controlling dust during remodeling projects.

Keeping dust in its place requires a modest investment in time and materials, but it pays huge dividends, and not just in cost savings or goodwill. Over the years, I've become convinced that my work is more precise, better organized, and more efficient when dust is kept under control.

My dust-containment strategy has two parts. First, I isolate the work area from the occupied portions of the house to make sure that none of the dust that's generated is allowed to escape. Second, I try to cut down on activities that generate dust, and when that's not possible, I capture dust at the source using shrouded power tools combined with a tool-triggered vacuum cleaner.

## Floor protection comes first

I start a typical job by clearing the work area. Any items that absolutely cannot be moved are wrapped in plastic sheeting, then

Nobody will notice your flawless miters if the rest of the home is covered in filth. Here's how to clear the air and contain the mess.

BY TOM O'BRIEN



**Dust** is more than a nuisance:  
Protect yourself

We've known for years about the dangers posed by dusts such as lead and asbestos (for information on working safely with lead, see *FHB* #150, pp. 66-73, or visit [www.finehomebuilding.com](http://www.finehomebuilding.com)). But recent medical

studies show that prolonged exposure to sawdust and silica (the dust that's released when dry-cutting concrete and stone) also can have serious health consequences. Sawdust has been linked to cancer, and silica

## PROTECT THE FLOOR FROM DUST AND DINGS

The type of work and the type of flooring determine the degree of protection you need. Carpeting usually is replaced or removed during a remodeling job, but hardwood floors require several layers of defense that work together not only to seal out the dust but also to protect the surface from dropped tools, falling plaster, or dirt and debris that will leave gouges and scratches.



The first layer of defense is 6-mil plastic sheeting laid over the freshly swept floor. Lap the seams between sheets about 6 in. to 12 in., and seal with 2-in. painter's tape. Cut the plastic before unfolding it, using a scrap of plywood and a framing square.



Keep dust out of the corners by curling up the edges of the plastic and taping them in place with either regular or low-tack painter's tape (see p. 80).



The plastic should be covered with a drop-resistant material like 1/2-in.-thick insulation board, Homosote, or any other inexpensive sheathing. I prefer to use 1/8-in.-thick Masonite hardboard because it's so thin that the panels can be overlapped without being cut to fit. Once the Masonite is in place, I tape the seams with duct tape to prevent the panels from shifting. If the work requires major demolition, I might even cover the panels with another layer of plastic.

Half-face respirator with HEPA filter



N100 disposable respirator

has been proved to cause a serious respiratory condition known as silicosis.

Anyone who works in a dusty environment needs adequate respiratory protection. But a paper mask held in place by

a single rubber band won't cut it. Professionals routinely exposed to high levels of dust should wear a properly fitted half-face respirator that is equipped with HEPA filter cartridges.

Do-it-yourselfers or workers who aren't often exposed to dust have another choice: 3M's N100 disposable respirator is as comfortable as a paper mask, but provides seri-

ous protection. An N100 respirator can cost as much as \$10 ([www.3m.com](http://www.3m.com)), but if it's cared for properly, it can be reused for months.

## Special products help to contain the mess

The basics, such as tape and plastic, can be found at your local hardware store. Professional-grade products might have to be purchased from a retailer specializing in remodeling and personal safety. My favorite sources are Protective Products ([www.protectiveproducts.com](http://www.protectiveproducts.com)) and Aramsco ([www.aramsco.com](http://www.aramsco.com)). Both companies carry many of the remodeling supplies that I use regularly.

For especially dusty jobs, I keep my clothes clean by wearing **disposable hooded coveralls**. They also can be taken off and left in the work area so that I don't track dust through the house. From \$5 to \$10 a pair; [www.aramsco.com](http://www.aramsco.com).

A sticky **TakMat Dirt Grabber** captures gritty debris from your shoes. When the mat is coated with dust, peel off the top layer to expose a fresh sheet; each mat has 30 layers. \$58; [www.protectiveproducts.com](http://www.protectiveproducts.com).

Lightweight **ZipWall Poles** are spring-loaded and can be extended up to 12 ft. so that temporary dust curtains can be erected and adjusted without tape or lumber. The two-part head lets you attach the plastic before lifting each pole. They're great for quickly isolating a workspace or for constructing a more permanent room divider. The basic kit costs about \$110 and includes two poles and compatible nonmarring pads; [www.zipwall.com](http://www.zipwall.com).

**3M Blue Tape** is available in many lengths and widths, but the important difference lies in the tack rating. The standard blue tape (#2090, photo top right) is a good all-around choice for sealing doors and attaching plastic. It can be left in place for 14 days before the adhesive becomes gummy and threatens to lift off paint or stain. The low-tack tape (#2080, photo bottom right) is safe to leave in place for up to 60 days, but it's flimsier and doesn't work as well for taping heavy plastic. Prices start around \$4; [www.3m.com](http://www.3m.com).

Festool's **tool-actuated vacuums** are expensive, but they are my top choice for carpentry work. I particularly appreciate the innovations Festool has made with vacuum-connected routers and circular saws that make these tools nearly dust-free. Vacuum prices start at about \$275; [www.festool.com](http://www.festool.com).

For such a small, quiet, and lightweight unit, the **Shop-Vac Air Cleaner** does an impressive job of capturing airborne dust before it can settle on surfaces or be inhaled by workers. About \$100; [www.shopvac.com](http://www.shopvac.com).

covered with a thick drop cloth or mover's blanket to add an extra layer of protection.

Next, I cover the floors with a layer of 6-mil plastic. I used to try to protect floors with tarps or drop cloths, but they never stayed in place and couldn't be cleaned easily. Plastic sheeting is a better choice because it can be balled up and thrown away at the end of the job, taking the dust with it.

To fashion a seamless barrier between the dust and the floor, I overlap the edges of the plastic by 6 in. or so and tape the seams with painter's tape. I turn up the edges at the baseboards and secure them with 3M #2090 blue masking tape, which is designed to be removable for up to 14 days without pulling off the paint or leaving a sticky residue. The company makes another tape that can stay stuck for 60 days without damage (#2080), but it's flimsier.

Be careful: Plastic sheeting can be slippery until it has been scuffed up by foot traffic. A few rows of masking tape laid down in high-traffic areas will help to improve traction.

Carpeting usually is replaced or removed during remodeling, but if it must be saved, I cover it with two layers of plastic. To guard against punctures during demolition or high-risk operations, I usually cover plastic with a heavy-duty tarp. After the dirty work is done, I sweep up the debris, then thoroughly vacuum the tarp before I fold it up and pack it away.

Finished hardwood floors aren't as forgiving as carpets and need more than a thin layer of plastic to guard against scratches (photos p. 79).

### Install an airlock between work and living spaces

Dust control is a big challenge on jobs where the only way to get from the driveway to the work area is to pass through the living space. These setups require extra precautions and constant vigilance.

Before any work is started, I choose the only entrance to the home that any worker will be allowed to use, then lay down heavyweight drop cloths from



that point to the workspace. To protect exposed floor areas, I overlap the drop cloths by at least 2 ft.

To prevent a cloud of dust from escaping every time someone opens the door to the work area, I place a fan in a window on the opposite side of the room and orient it to blow outside (photo below).

I usually close the door and seal the edges before starting to work. If the job is particularly dusty or if there is lots of traffic into and out of the room, I make an airlock using two layers of 6-mil plastic (photos below). If there is a door, it should be removed from its hinges before the dust door is built. If the temporary

airlock is constructed properly, the airflow toward the fan will draw the outside layer of plastic tight to the inside layer, creating a dustproof seal, a more secure arrangement than relying on people to remember to close the door. A number of manufacturers also sell plastic zipper doors, which make it even easier to seal off the workspace—as long as you remember to zip up the zipper. Dust Door is a nice choice ([www.dustdoor1.com](http://www.dustdoor1.com)).

### Seal off the work area—and keep it sealed off

From a dust perspective, the ideal job is one where you can isolate work area from living

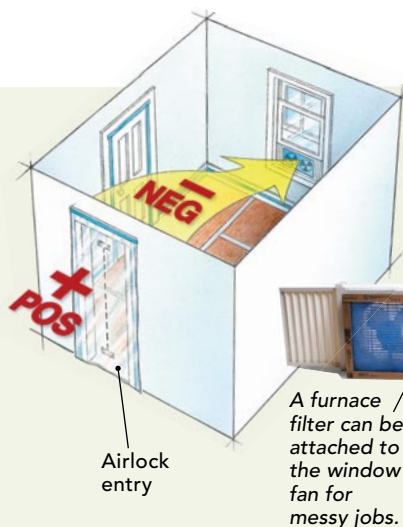
space simply by sealing shut an interior door. In this situation, everybody goes in and out through a separate exterior door for the duration of the project. If a bathroom is not connected directly to the work area, a portable toilet prevents a desperate but dust-covered worker from contaminating living space.

Unfortunately, not many jobs are so straightforward. When existing walls aren't located conveniently to separate the workspace from the living space, I put up a temporary plastic dust partition. Furring strips or 2xs traditionally are used to anchor the plastic to the ceiling, and these materials are still worth using if you need dust control for

## CHOOSE ONE ENTRY; SEAL THE REST

Whether the room to be remodeled has two doors or ten, you always should choose a single entry point, then seal the others until the work is complete. Doorways should be covered with sheets of plastic either taped to the trim or secured with a ZipWall or similar product. Existing doors are best sealed by applying 2-in.-wide painter's tape over the gap around the edges. (Plan ahead by relocating any items from within frequently used closets and pantries.)

The door through which you will enter and exit the room should be sealed with a temporary airlock. A window fan placed inside the room and oriented to blow outside creates enough negative pressure to keep the airlock closed and any airborne dust from escaping as you enter and exit through the airlock. Although the purpose of the fan is not to exhaust dust, particularly messy jobs will benefit from an inexpensive furnace filter attached to the fan to ensure that the shrubs outside don't become coated in dust.



1 After taping all sides of the plastic, cut a slit down the middle, stopping a few inches short of the top and bottom.



2 Apply strips of duct tape to reinforce the slit in the plastic and to keep it from widening as you walk in and out through the airlock.



3 A second sheet of plastic covers the first, but it is taped (or anchored with a furring strip and screws) only to the head casing so that it can hang loosely.



4 Trim the excess off the bottom of the second sheet of plastic where it meets the floor, and the homemade airlock is complete.

only one job. A longer-term investment is a system of telescoping poles that are designed specially for dust containment. This system reduces the hassle of putting up a dust barrier, even if it's just to surround an area that is likely to get particularly messy. I use the Zip-Wall system, which is lightweight, portable, and easily adjustable, but other manufacturers offer similar devices.

One contractor I know saves money by using telescoping painter's poles for the same purpose. These tools lack the nonmarring two-piece top plate, but otherwise, they seem to work fine.

For light-duty dust partitions, I prefer ultrathin, 3-mil painter's plastic because its featherlight weight makes it easy to put up and stretch tight over a long distance, especially when I'm working alone. It's flimsy material, though, so if the barrier has to stand for weeks and endure heavy traffic where rips are likely to occur—or if I have to cut a doorway through the partition—I use a thicker (4 mil or 6 mil) grade of plastic.

Once the partition is in place, the edges of the plastic can be sealed to the floor, the walls, and the ceiling with blue masking tape or with ZipWall's dust-sealing foam rails. In practice, though, I've learned that as long as the plastic is stretched tight, there's little room for dust to escape from the top or the bottom. If I'm not dealing with hazardous dust, I tape or seal the plastic only where it meets the wall.

I prefer not to cut holes in dust barriers, but if there's no other way to access the work area, I make a roll-up doorway using a pair of self-adhesive zippers designed for this purpose. These zipper doors can be applied to conventional door frames as well.

If the house has forced-air heating or cooling, the system should be shut down for the length of the job. Otherwise, dust could be carried throughout the house, especially if a cold-air return is in the work area. During winter months or the dog days of summer, when the system must be left running, it's fine to seal off a few vents. If the work zone covers a large portion of the house or if any cold-air returns are involved, though, I consult with a heating contractor first.

### Leave the dust behind

A sneakier way for dust to break out of a tightly controlled work zone is on clothing, especially shoes. To combat this problem, I position a vacuum cleaner just inside the



## USE DUST CURTAINS FOR QUICK TASKS OR EXTRA PROTECTION

For cutting, patching, or sanding a small area, sealing and protecting the entire room may be overkill. These small jobs are best isolated with thin plastic sheeting held in place with ZipWall kits, telescoping painter's poles, or furring strips cut about an inch longer than the height of the room and pinched between the floor and ceiling. I like ZipWall best because the spring-loaded poles let me adjust the size of the enclosure easily (photo left). The same dust curtains also are great for containing really messy jobs within an already protected room, like cutting plaster with a spiral saw, for instance (inset photo left).



doorway to the work area and insist that everyone vacuum their shoes, top and bottom, before they leave the work area and walk through the house. I've also experimented with various types of disposable shoe covers, but I've found them to be a hassle to put on and take off.

For added protection, I recently started putting down a TakMat outside the door. TakMat is made with a sticky surface that grabs loose grit clinging to the bottom of shoes. I've been amazed by how quickly the mat fills up with filth.

When I'm doing especially messy work, I cover my work clothes with a disposable hooded coverall, which I can remove quickly and leave behind when I have to exit the work area. One of these suits lasts for the duration of a typical job; I try to find a convenient spot in the work area to hang the suit so that it's always at hand when things get messy.

### The vacuum is as important as the tool that it's hooked to

It wasn't such a long time ago that performing any type of cutting operation with a portable power tool—sawing, sanding, planing, grinding, routing—was guaranteed to unleash a massive cloud of dust. These days, every major manufacturer offers some type of dust-containment system for its messiest tools. A simple dust bag is better than nothing, but the most effective tools are made with specially designed ports that capture dust at the source and whisk it away to a vacuum cleaner.

The vacuum should be a high-filtration device, such as one that's equipped with a HEPA filter; if it's not, the smallest particles of dust can get sucked into one end of the

unit and then blown out the other. The vacuum also should have a tool-operated feature that switches it on and off along with the power tool.

I've had good experiences with a variety of tools and vacuums over the past 10 years or so. For dust-free carpentry work, I rely heavily on Festool products, which are designed for dust collection and are surprisingly effective. For drywall, Porter-Cable's dust-free sanding system remains my preferred method to keep that nasty job from getting out of hand. Now, though, you can buy joint compounds specially made to reduce the normally huge cloud of dust produced by sanding drywall joints and seams (see "Tools & Materials," p. 34).

Dust collection doesn't require new tools, though. If I'm working with a small, one-handed tool, such as a spiral saw, I hold a vacuum hose in my free hand to suck up most of the dust before it gets away (photo above).

### Clearing the air

Technology has made controlling dust easier, but the battle is never-ending. I recently started using a Shop-Vac portable air cleaner that seems to do a good job of filtering airborne dust before it settles on surfaces, but dust continues to accumulate despite my best efforts. To prevent loose dust particles from multiplying, I sweep the floor at the end of each day and give the work area a thorough vacuum-cleaning before I pack up at the end of the week. □

Tom O'Brien is a carpenter in New Milford, Conn., and a former editor at *Fine Homebuilding*. Photos by Justin Fink, except where noted.