

Laundry

Testing, inspection, analysis, or opinion of condition or function of free-standing appliances such as washers and dryers is not within the scope of a home inspection. They are considered personal property even when they convey with real estate. This means that the washer and dryer are not turned on or otherwise inspected, so if they are conveying to you as part of your new home, you should check them to ensure that you are satisfied with them.

The laundry area and the garage rank high as dangerous areas in our homes, areas that have the most potential to cause problems on a daily basis. The garage is where many of our home's most dangerous appliances are located, such as the furnace and water heater; it's where we store stuff that we don't use regularly, such as gas containers and boxes, boxes, boxes (see Figure 1); it's where we store many dangerous tools and appliances, such as the leaf blower, lawn mower, etc. While most people know that the garage is a dangerous place, we tend to take our laundry areas for granted. After all, the only thing we see each time we go to do laundry is a washer and a dryer, and we know exactly what those two appliances do. However, let's look at the laundry area, the washer, and the dryer in a little more detail.



Washer water supply and drainage hoses

Although rubber hoses are typically installed as water supply lines for the washer (see Figure 2), they should not be used on a permanent basis. Rubber hoses should be used like garden hoses: turn the shutoff valves on to fill the washer and then turn the valves off after using the washer. This is rarely done because the valves are hard to turn on and off, and they are behind the washer where they are difficult to reach. When left pressurized, rubber hoses will blister (see Figure 3) and burst. So replace the rubber water supply lines with metal braid (see Figure 4).

Another concern at the washer is the drain line. A plastic corrugated drain line typically comes with the washer from the manufacturer (see Figure 2). It also should not be used on a permanent basis. Corrugated plastic is easy to damage after installation when the washer is pushed up against the wall, possibly causing a leak that is not noticed until water damage occurs. And the vibration of the washer during the spin cycles can cause the washer to "walk," again possibly causing a leak that goes unnoticed until water damage occurs. And one more thing: plastic drain lines are subject to greater deterioration from the hot water full or washing chemicals that regularly draining through them. So have the corrugated plastic drain line replaced with a solid rubber hose (see Figure 4) or a metal braid hose.

Considering the damage that can occur from water, and the knowledge about water that manufacturers obviously possess, one would think that washer manufacturers would want to supply the best connections with their appliances, but common sense does not seem to prevail here. So if you're buying a new washer and dryer, and your installer shows up with the manufacturer's cheap stuff as discussed here, ask them to upgrade all your connections. In fact, ask them for quality connections during your purchase so that they are sure to bring the connections with them at the time of installation.



Figure 1. A garage with excessive storage.

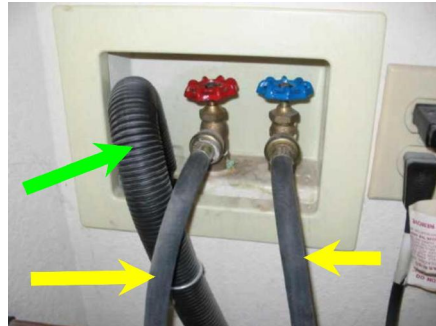


Figure 2. Rubber water supply lines (yellow) and corrugated plastic drain line (green) in use for the washer.

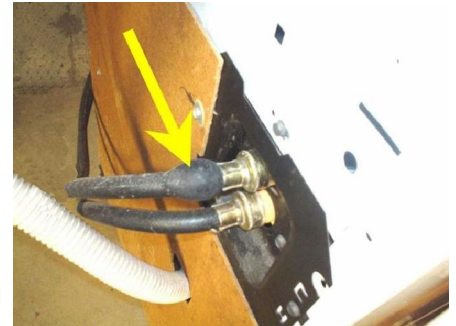


Figure 3. Rubber water supply hose with a blister about to burst.



Figure 4. Metal braid water supply lines (yellow) and solid rubber drainage line (green) in use for the washer.



Figure 5. Water hammer arrestors installed at the laundry.



Figure 6. Drain pan under the washer.

Noisy water supply pipes

If you notice a banging noise when using the washer (or at any other place where there are water shutoff valves, like sinks), the likely cause is a condition called “water hammer.” It occurs when water shuts off almost instantaneously, causing water at full flow to try to come to an instantaneous stop. If the metal water supply pipes are not secured well within the walls, the pipes will bang against them. Water hammer can usually be stopped by installing water hammer arrestors to prevent banging (see Figure 5). Consult with a licensed plumbing professional if you have noisy pipes.

Interior washer locations

If your washer is located in an area where a leak can cause water damage, have an overflow drain pan installed (see Figure 6), particularly if the laundry room is located on the second floor. In some newer homes with larger laundry rooms, a drain line exists in the floor, but an overflow drain pan is still a good idea.



Figure 7. Accumulation of lint in the foundation crawl space.



Figure 8. Accumulation of lint in the attic.



Figure 9. Corrugated plastic dryer flue.

Dryer flues

Moisture damage and fires can result from improper dryer venting. Dryer lint, when dry, is a highly flammable material, and the dryer flue can become very hot, possibly resulting in lint fires and flue fires. Dryer lint, when wet, is very absorbent. So a distribution of lint in some areas, like the foundation crawl space (see Figure 7) or the attic (see Figure 8), can cause extensive moisture damage very quickly. And wildlife loves lint, so a lint problem like that shown in Figure 7 and Figure 8 encourages wildlife to find a way to move on in. And since some of our foundation crawl space areas, like around the bathtub, are open to the wall framing, any unwanted wildlife in the foundation crawl space could get into the structural framing, thereby creating a health and safety hazard. While there should not be any openings from the attic to the living area, wildlife does have a motive (food and warmth) for finding a way in. You might remember being young and hearing your parents talk about rats in the walls. Well, now you know how they got there. So if you don't know where your dryer flue is, or where it runs, or where it terminates, go try to find out right now. Then come back here and finish reading. If you don't know what the flue looks like, or what the termination looks like, then finish reading first and I'll remind you at the end of this document to go find them.

Although corrugated plastic (see Figure 9) or corrugated metal foil (see Figure 10) connectors are typically installed from the dryer to the flue, the length of those connectors should be kept as short as possible, and corrugated materials should not be used as the main dryer flue. Corrugated plastic and metal foil are easily damaged (see Figure 11) and can result in lint accumulating in the flue (see Figure 12), possibly resulting in dryer inefficiency (longer drying times); heat damage to the plastic; dryer overheating (shorter life expectancy); and possibly dryer, lint, or flue fires.



Figure 10. Corrugated metal foil dryer flue.



Figure 11. Corrugated metal foil dryer flue that has been crushed.



Figure 12. Clogged dryer flue.

If the connector is over three feet long, I recommend having a short, smooth metal section installed instead of using longer, corrugated connectors. Flues that are too long (see Figure 13, Figure 14, and Figure 15) can result in lint accumulating in the flue because the dryer blower motor is not powerful enough to force moist, lint-laden air through the long flue. Once lint accumulates in the flue, then there is the possibility of the dryer overheating and dryer or dryer flue fires. Flues with excessive bends or an excessive number of bends (see



Figure 13. Excessively long combination corrugated plastic/metal dryer flue.

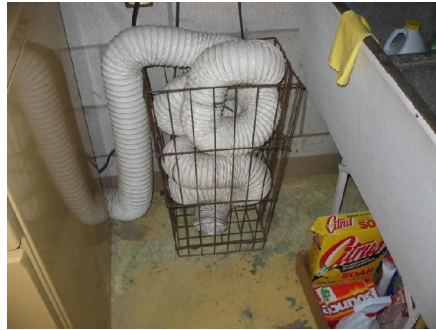


Figure 14. Excessively long corrugated plastic dryer flue with an excessive number of bends.



Figure 15. Long, vertical, corrugated plastic flue.



Figure 16. Missing dryer vent hood at exterior location.



Figure 17. Protective device for the dryer vent hood.



Figure 18. Lint accumulation on the roof.

Figure 14)—flues which usually are too long, as well—also result in lint accumulating in the flue, again with the potential for dryer overheating and dryer and dryer flue fires. Vertical flues, especially if they are corrugated materials and run a long distance (see Figure 15) create the same type of problems since moist, lint-laden air is heavier than normal dry air.

Dryer flue vent termination hoods

The dryer vent hood should terminate at an exterior location so that moist, lint-laden air does not cause damage to structural framing or mechanical systems and components. Dryer flues should never terminate in a foundation crawl space (see Figure 7), in the attic (see Figure 8), or in the garage.

The vent hood itself often becomes clogged with lint, possibly causing lint to accumulate within the flue. Missing or damaged vent hoods or vent screens at exterior locations (see Figure 16) can allow unwanted wildlife to set up home in the vent flue. Much wildlife would be quite content if they found a nice, warm hole full of nice, soft lint. Wildlife blockage in the flue can also cause lint to accumulate in the flue, possibly causing a lint fire or a flue fire, or causing the dryer to overheat, resulting in a dryer fire. All vent hood terminations should include a damper. However, if lint accumulates in the flue due to any of the reasons stated above, the damper can become stuck open, again allowing unwanted wildlife to use the flue. Various home improvement

stores sell protective devices (see Figure 17) that can be installed over the dryer vent hood to provide better protection against damage and wildlife intrusion.

An accumulation of lint, either in the flue itself (see Figure 12), in the foundation crawl space (see Figure 7), in the attic (see Figure 8), or on the roof (see Figure 18) typically indicates that the dryer is being used without the manufacturer's lint screen in place. Yes, it is inconvenient to clean that darn lint screen each time you dry your clothes, but there's a reason why it is part of your dryer. Keeping that lint screen in place and keeping it clean will lead to faster drying times for your clothes (thus, lower utility expenses) and a longer life expectancy for your dryer; will help prevent lint fires, flue fires, and dryer fires due to overheating; and will prevent lint accumulating in unseen areas like the foundation crawl space and attic, thereby causing other problems. Little things that take only a minute or so to do can help prevent major expenses or major disasters (property damage or personal injury), so use that lint screen. It's designed for a purpose, which is to help protect you and your property.

Non-standard dryer venting

Non-standard dryer venting causes just as many problems as poor maintenance. Two of the most common types of non-standard drying venting include nylon stockings (see Figure 19 and Figure 20) and what are known as "wet vents" (see Figure 21, Figure 22, and Figure 23), and while some types of non-standard dryer venting are sold at various home improvement stores, they are meant to be used only on a temporary, emergency basis until a more permanent venting system can be installed. These types of non-standard vents are a common cause of fires in the laundry area and should never be used for more than a couple of days. I recommend that they never be used at all because once in place, they tend to be forgotten about.



Figure 19. Non-standard dryer venting using a nylon stocking.



Figure 20. Non-standard dryer venting using a nylon stocking.



Figure 21. Non-standard dryer "wet vent."



Figure 22 Non-standard dryer "wet vent."



Figure 23 Non-standard dryer "wet vent."

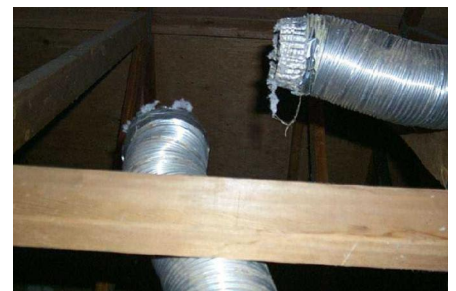


Figure 24. Damaged dryer flue in attic.

Recommendations

Okay, armed with knowledge, if you don't know where your dryer flue is, or where it runs, or where it terminates, go try to find out now and make sure they conform to the best ways to do things as discussed above. Check your water supply lines for the washer, as well as the drainage line.

I highly recommend that you check your washer and dryer connections regularly in order to find small

problems before they become big problems. If you know that your dryer flue goes through the foundation or through the attic, and any service personnel have been in those two areas to do any kind of work, make sure you check the dryer flue before those service personnel leave. Too often I find damage like that shown in [Figure 24](#); note that the flue in [Figure 24](#) is a corrugated metal flue, another reason not to use them on long runs as permanent flues. It's always easier and less heartbreaking to do minor maintenance regularly than to wait for a disaster to happen.

- Ü Recommend replacing rubber water supply lines with metal braid lines to help prevent burst hoses, leaks, and water damage.
- Ü Recommend replacing corrugated plastic drainage lines with rubber or braided drainage lines to help prevent leaks and water damage.
- Ü Recommend checking vent hood upon move-in and removing any blockage that might be found.
- Ü Recommend ensuring that there is a damper in the vent hood and protecting the vent hood and damper from damage.
- Ü Recommend following manufacturer's installation instructions for all washers and dryers. Pay close attention to the dryer manufacturer's limitations on the length of the dryer flue, as well as the material composition of the flue.
- Ü Recommend consulting with a qualified plumber to determine specific options for your washer.
- Ü Recommend regular homeowner monitoring and maintenance.

Other helpful websites

Dryer boxes - <http://www.dryerbox.com/>

Stainless steel washer hoses - <http://www.rd.com/familyhandyman/content/33382/>

Fires - <http://www.cpsc.gov/CPSCPUB/PUBS/5022.html>