



**Pillar To Post Offers
3 Inspection Packages**

- > **Plus** – 1600 point inspection and printed & reviewed onsite
- > **Premium** – Plus+ IR scan, Appliance recall, Rodent, 15% disc services
- > **Prestige** – Premium+ Healthy Home(mold, allergen, dander) 30% disc svcs

All Pillar To Post Inspections are performed to ASHI & NAHI Standards

Many Pillar To Post Franchise also provide the following Services:

- Radon Testing
- Mold / IAQ
- Well & City Water Testing
- Septic inspection
- Termite / Pest
- Custom / Partial Inspections

The Un-Sick House
Indoor Air Quality means everything!




Pillar To Post®

- Welcome to the Pillar To Post® presentation:
 - The Un-Sick House
- Introductions



The Hand Out Package

- Your handout package contains:
 - all of the slides you will see today
- You can follow along and make notes if you like



Course Goal

- To be able to put house-related health concerns into context
- To suggest viable fixes for health hazards in the home
- To provide you good information that you can use everyday when dealing with and informing your clients.



Course Outline

- Common house-health issues that creates worry in folks;
 - Mold, Asbestos, Lead-based paint, UFFI, Radon, Allergens, VOC, dander, etc.
- What are the health hazards?
- How can you detect if these issues are in the home?
- What you can do to make the home a safe and healthy environment for your family.



Context is Everything!

- Buyers and owners are becoming more aware and concerned about health hazards in the home
- There's a great deal of misinformation out there
- You can help shed some light on the facts



Arm Yourself With Good Information

- Misinformation causes unnecessary panic
- Help your client get the right information
- Help your client make informed decisions
- Collect reliable reports on the issues
 - Check on the Internet by typing key words in a search engine. (For reliable web sites)
 - Make sure your inspector has the proper training and certification to provide the services
 - Be able to use the test results to negotiate on behalf of your client



Mold – What Is It?


- “A superficial often woolly growth produced especially on damp or decaying organic matter or on living organisms” Merriam-Webster Online dictionary
- There are about 70,000 species that have been identified and an estimated 100,000 that have not






What Are the Health Hazards?

- Most reports on mold say it can potentially trigger the following reactions in sensitive people:
 - allergic reactions
 - asthma
 - other respiratory complaints

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Are Molds a Problem?

- Mold is everywhere
- Healthy people are not affected by small to moderate amounts of mold
- Excessive mold growth and excessive exposure can cause symptoms in anyone
- Some people are particularly sensitive such as asthmatics, infants and the elderly

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Stachybotrys

- This one has been in the news "BLACK MOLD"
- It is considered particularly potent - "toxic mold"
- Most of the media attention is overblown
- It can cause symptoms, as we discussed, in sensitive people
- It can only be properly identified by laboratory analysis



Stachybotrys

- Centers for Disease Control document:
 - <http://www.cdc.gov/nceh/airpollution/mold/stachy.htm>
 - "The hazards should be considered the same as other common molds ..."
 - Can grow on material with high cellulose and low nitrogen content like drywall, paper, dust and lint
 - Constant moisture supply required for growth



How Can You Detect It?

- Sometimes mold is an obvious growth on a surface (most commonly it is a blackish color)
- It may be hidden by a wall, floor, ceiling, furniture, under carpets, storage and so on
- It can grow on almost any surface



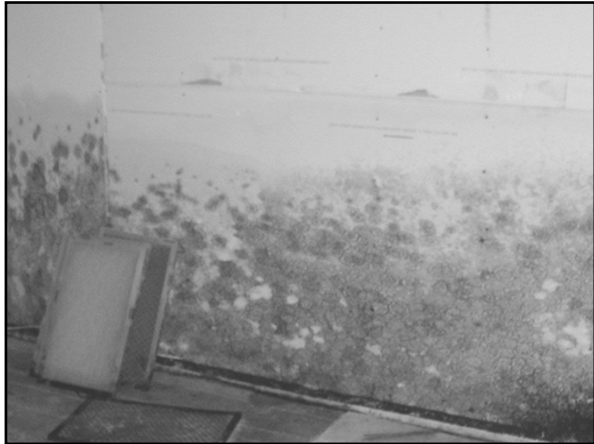
Likely Places for Mold Growth

- In areas that show signs of water damage, even if damage is old
- Dark, moist places
 - bathrooms, basements
- Unventilated places
 - bathrooms, basements, attic spaces








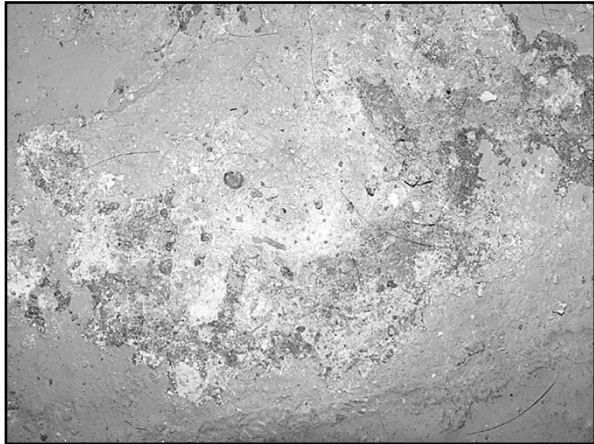


Efflorescence

- White powdery residue on a floors or wall is not mold, it's efflorescence
 - Efflorescence is due to moisture seeping through masonry or concrete
 - Efflorescence indicates moisture but it's not a mold
 - The two are often confused because you see it in places you'd expect to see mold

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What Can You Do to Remove Mold?

- If it's in a small, isolated area, home owners can clean it
- If it's in a large area, let an professional provide a proper remediation of the area
- If you are an asthmatic or have respiratory problems, stay away from the area
- We always recommend taking samples to identify the type of mold spores that are present.



CDC Recommendations

- Centers for Disease Control suggests that you can clean small areas yourself as follows:
 - clean with bleach and water (50 Sq Ft)
- If the mold is in carpeting, or in the insulation in the wall, removal and replacement is recommended and may be required



Remove the Source

- More important than cleaning is removing the source
 - Fix source of water penetration or condensation build up
 - Get cardboard boxes and other storage items off the floor (basement or crawlspace)
 - Ensure proper Ventilation in all areas that have known issues such as basements and attics



There's No Such Thing As a Mold-free House

- focus on prevention and control
 - Dry out damp areas
 - Let sunlight in to dark areas, if you can
 - Ventilate bathrooms, basements, attics, laundry rooms and other dark, moist areas



Common Sense Tips

- Reduce indoor humidity 30-45%
 - vent bathrooms, dryers and other moisture-generating sources to the outside
 - use air conditioners and de-humidifiers
 - increase ventilation
 - use exhaust fans for cooking, dishwashing, cleaning
- Reduce condensation on cold surfaces by adding insulation (windows, pipes and ducts, exterior walls, roof, floors, etc.)



Urea Formaldehyde Foam Insulation (UFFI) – What Is It?

- UFFI was a popular retrofit insulation option in the 70S
 - Expanding foam insulation that could be sprayed into hard-to-reach areas
 - Into existing wall cavities without removing drywall or plaster
 - Not used for new construction – retrofit only



More On UFFI

- Urea Formaldehyde Foam Insulation presumably contains formaldehyde
- Presumably formaldehyde gas is given off by the insulation
- Formaldehyde gas is colorless but has a strong odor
- Off gas will reduce over time



Associated Health Hazards

- None, at a ambient levels
- Studies using random samples of UFFI and non-UFFI homes did not correlate health problems with UFFI
- People complained about sensitivities to it only AFTER the government started to investigate it



So, What's the Controversy?

- The government tested UFFI because of high levels that showed up in a tightly-sealed mobile home, but concluded other things were contributing to the levels
 - plywood, particle board, carpets, drapes, cleaners and so on
- Controversy is based on misinformation but the stigma on UFFI remains

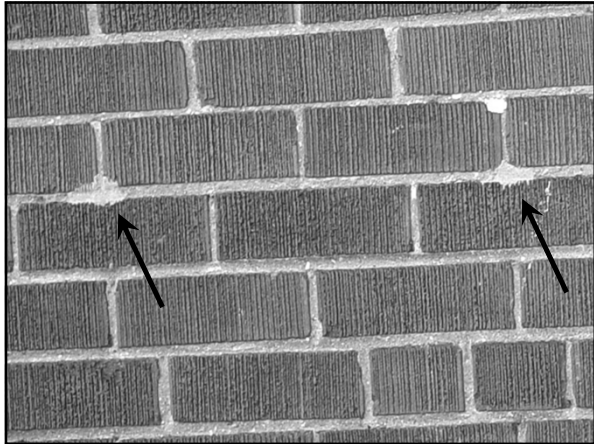


How Can You Detect It?

- Visual inspection
 - Drill holes in the brick on the exterior of the home
 - You may see it if you remove a switch or plug over plate on an exterior wall – look between the electrical box and the drywall
 - Any other spot where you can see into the wall cavity – for houses with basements – look up where the floor meets the wall








What Does it Look Like?

- Looks and feels like dried-up shaving cream
 - White or off white
 - Soft and crumbly
- There are modern spray foam insulations that are not UFFI
 - They are firm and do not fall apart when touched like UFFI does

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What Can You Do to Remove It?

- There's no reason to remove it
- Within several days of UFFI application, formaldehyde levels typically return to ambient house levels
- Even a new home with new carpeting would show really high levels on a hot summer day



Asbestos – What Is It?

- It's a rock fiber once used in many building material products and insulation:
 - Roofing shingles and siding made with asbestos cement
 - Vinyl floor tiles and adhesives
 - Sprayed coating on ceiling and wall
 - Insulation in attics and walls
 - Insulation blankets on furnace ducts, hot water or steam pipes and boilers




Asbestos & Health

- Workers in high exposure environments such as asbestos factories or mines, developed a lung condition called asbestosis and, ultimately, lung cancer
 - Asbestos fibers accumulate in the lungs
 - Accumulation happens from extreme and repeated exposure over many years
 - You will not be exposed to these levels in any day-to-day environment




Prudent Avoidance

- The recommendation to reduce the risk of exposure to friable asbestos fibers is based on a more general recommendation of prudent avoidance of all unhealthy things
- The following recommendations should be considered in that context




What Are the Associated Health Risks?

- Asbestos only presents a risk when it's "friable"
 - crumbled, pulverized, reduced to powder, dispersed into the air and inhaled
- In most building products, asbestos is not in a friable state



When is it Friable?

- If an asbestos containing material is damaged, for example during a renovation or modification, asbestos fibers could become friable and you could breathe them into your system




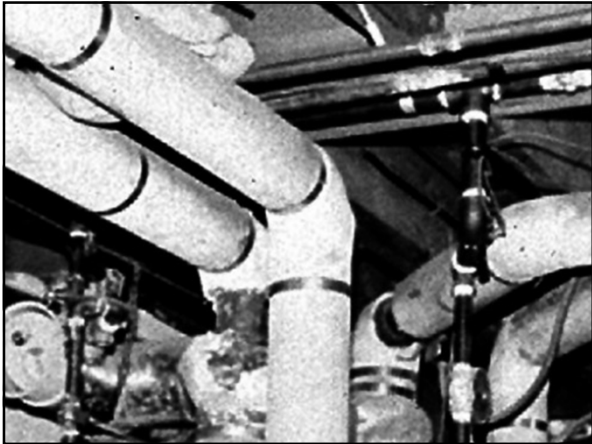




How Can You Detect It?

- A lab test is the only way to positively identify it
- The testing and repair of asbestos is best left to a professional

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What Can You Do To Remove It

- If, for some reason, you have to remove it (if you are renovating), get an professional expert to do the job
- Consult a certified professional to make a decision about removing, enclosing or encapsulating any deteriorated or damaged material
- The goal is to ensure the asbestos is not airborne



Lead-Based Paint – What is it?

- As the name suggests, it's paint with lead in it
- Many homes built before 1978 have high levels of lead in the paint



What Are the Associated Health Hazards?

- If it's ingested or inhaled it can have serious effects on children and adults
- Children's growing bodies tend to absorb more lead
 - damages the brain and nervous system
 - causes learning disabilities
 - slows growth
 - causes hearing problems
 - headaches



Health Hazards in Adults

- reproductive problems
- digestive problems
- high blood pressure
- nerve disorders
- joint and muscle pain
- memory and concentration problems



When is Lead Paint Hazardous?

- When it's chipped, flaking or in dust form
- This happens in high-activity areas:
 - windows, door frames and hinges, stairs, railings, banisters, porches and so on
- Dust can form when paint is heated, sanded, rubbed against
- Dust can become airborne by vacuuming, sweeping, walking through it








Detecting Lead Poisoning in Your System

- A simple blood test performed by your doctor will tell you if you have high levels of lead in your systems
- If they are high, your doctor should recommend the appropriate action

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How to Detect Lead in Your Home

- The older the home, the more likely the paint will have lead in it
- Detecting lead requires testing:
 - a lab test
 - an x-ray with an x-ray fluorescence machine
 - home test kits are available but are not always reliable



Simple Prevention

- If it's in good condition, and not chipping or flaking
 - do a weekly mop and wipe of areas where paint tends to chip or wear
 - wipe childrens' hands before they eat and go to bed
 - thoroughly clean mops and sponges after cleaning up
 - keep children from chewing painted surfaces



What Can A Professional Do About It?

- For permanent removal, hire a lead "abatement" contractor
- Alternative to removal involves:
 - sealing and encapsulating lead paint with special materials
 - repainting with regular paint is not a permanent solution



Resources

- The best defense against misinformation is arming yourself with factual data
- Check the Centers for Disease Control – CDC – www.cdc.gov
- The Internet provides a wealth of information but be sure the sources are credible
- Simply type your keywords into a search engine (www.google.com is one of the best)



Some Other Indoor Pollutants

- Dust
- Allergens
- Volatile organic compounds – VOCs
- Very Small Particles
- Humidity
- CO
- CO₂



Dust

- Dust is a major irritant in indoor air
- A cloud of dust follows us around the house
 - Sometimes you can see it when sun shines in the window at just the right angle!



Allergens

- There are many allergens but the three most common affecting people where they live are –
 - Pets
 - Dust mites
 - Cockroaches



Humidity

- Both high humidity and low humidity are an indoor air quality issue.
- Low humidity is uncomfortable for occupants.
- High humidity can cause
 - Mold growth
 - Dust mites
 - Bacteria growth
 - Discomfort
 - Damage to house



VOCs

- VOC's: Volatile organic compounds
 - Chemicals such as cleaning products and paint strippers
 - Paint fumes
 - Off-gassing building materials
 - Pesticides
 - Perfumes



VOCs Affect Your Health

- Headaches
- Irritation of eyes, nose and throat
- Allergic reaction (skin)
- Nausea, fatigue, dizziness
- Some VOCs are known carcinogens



Very Small Particles

- Particle size matters
- Very small particles are not filtered by your nose and lungs.
 - Particles smaller than 10 microns are the problem
- Major sources are
 - Smoke, cooking (burned stuff), burned dust on heat exchanger



CO & CO₂

- CO is a product of incomplete combustion
 - If you have CO in your house you have a problem
- CO₂ is a byproduct of respiration
 - Also produced by a gas stove
 - CO₂ is measured in IAQ investigations
 - It's an indicator of the level of ventilation



Radon

- Radon is a radioactive gas that may be present in the soil from Uranium
 - Uranium will decay and it produces radon
- Indoor levels may be significantly higher than ambient levels (outdoor)
- Radon is a known carcinogen



Uranium in the Soil?

- Uranium is not found in significant quantities in most areas but traces of uranium exist in the soil everywhere.
- Concentration varies from area to area.
- In some areas the concentration is so high you can mine it.
- You want to avoid Radon entering the home structure as it is the 2nd leading cause of lung cancer next to smoking.





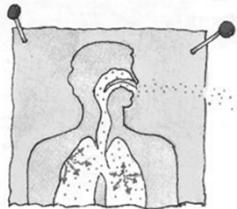
Radon

- Radon is classified as a human carcinogen.
- Breathing radon gas is associated with an increased risk of developing lung cancer.
- The higher the level of radon the higher - the risk of developing lung cancer.



Radon and Health

- Radon decays to form tiny radioactive particles that can remain suspended in the air.
- These particles are breathed into the lungs and cause damage to tissue.
- Over time, the damage may lead to lung cancer.



Radon in the Environment

- There are low levels of radon virtually everywhere in the environment
- Low levels are common
- A concentration of radon in your home at or above 4.0 pCi/L is a guideline we test for.
- Even in areas where the radon levels are known to be lower, it's possible to build up significant levels in a home and have a higher average reading.

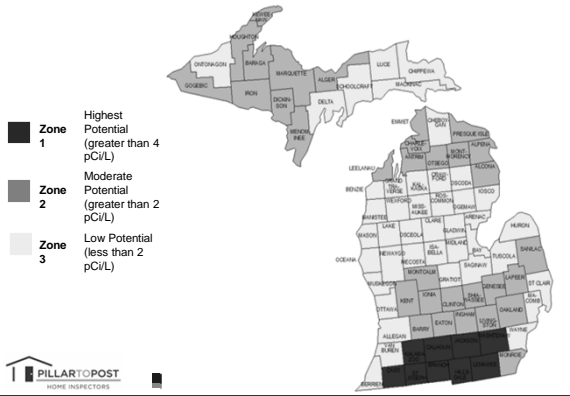


Radon in the Environment

- Likewise it is possible to have lower levels of radon in a home even in known high level areas
- It can vary house by house.
- Your house could be low and your next door neighbor could be high.
- The only way to know the level of radon in a house is to test for level of radon each house.



Levels of Radon In Michigan



Radon & Real Estate

- The costs for radon mitigation are not any higher than any other system that my have to be repaired or replaced.
 - Radon mitigation \$800 to \$1500
 - New furnace \$2000 to \$4000
 - New roof surface (size?) \$7,000 and up
 - Upgrade electrical panel \$750 to \$1500



Radon & Real Estate

- People are getting use to radon tests
 - The concept is established
 - Sellers are aware that buyers will want radon tests
 - Sellers are not afraid of the results because the worst case scenario has a known fix that reduces the levels of radon in the home and is affordable
 - Homes with Radon systems already installed should be tested to verify system is functioning properly especially of the system is over 5 years old



Radon & Real Estate

- Important to Know that:
 - A house that has be retrofitted with a radon reduction system is better than one that is an unknown.
 - All houses in the neighborhood are in a similar situation – you may as well buy a house that has a proven mitigation system, than not test and not know the levels of radon in the home.



Radon & Real Estate

- Help to educate people on Radon
- Reduce the fear
- Use the Radon materials to provide information to clients
- Explain the simple facts to your clients
- Radon should never be an issue for not purchase a home! It is easy fix and a proven resolution.



Call us to have Your Clients
know the facts, and make an
Informed Decision about their
new Home.



Thank You for Attending our
Con Ed Session Today.