

# Updates, Rehabs Remediation and Hazards

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## **Electric:**

Under this list we find inadequately sized panels, dangerous fire hazards, obsolete or antiquated electrical, improper installation and handyman wiring.

Electrical panels that have a history of starting fires and those with telltale signs of failure such as burning or melting of internal components are a safety hazard and are reported as such.

- Solid Aluminum branch wiring has also caused fires but can be updated with Copalum connectors, receptacles and switches. All aluminum wiring should be treated with "NO OX" to deter oxidization and the possibility of arching. (1965 to 1975)
- Knob and tube wiring is old and antiquated. It can become a fire hazard because the outer coating on the wire becomes brittle and breaks exposing the bare wire. It should be recommended for replacement. (1920's to 1930's)
- Old 60amp fuse service is inadequate for today's standards and usefulness.

## **Asbestos:**

Asbestos becomes dangerous when it is friable or airborne as it can then be breathed into the lungs, where it stays as it is not bio-degradable. That can happen when blown-in insulation containing asbestos is disturbed or when floors, roofing tiles and siding that contain asbestos are sanded, drilled, scraped, cracked or broken. Also compromised asbestos ductwork, fireplace parging and old plaster walls when disturbed can become friable. When asbestos is suspected, samples can be taken, sent to a lab and tested for verification. As long as these materials are left

undisturbed they present no problem. If it is decided they are to be removed or replaced, the additional cost of abatement and remediation must be considered.

#### **Common applications:**

- Vermiculite insulation was banned in the mid 1970's.
- Vinyl asbestos floor tiles and some adhesives. (distinctive 9X9 tiles)
- Cement asbestos roof shingles and siding.
- Inside old plaster walls, furnace ductwork and wrapping, mortar and fireplace parging.

#### **Lead:**

Lead is a highly toxic metal and a very strong poison. Lead poisoning is a serious condition and can sometimes be fatal. Lead poisoning occurs when it is ingested or from breathing in dust that contains lead. Lead toxicity is rare after a single exposure or ingestion of lead. Most often levels of lead build up slowly in the body following repeated exposures to small quantities. Lead poisoning is particularly more harmful to children because of the damage to their developing brains and nervous system. Even though there are treatments to cleanse the body of lead, damage from lead poisoning cannot be reversed.

Lead pipes have been suspected of being a health hazard since 1859 but it wasn't until 1989 that their use was prohibited by law with the passage of the "Safe Drinking Water Act". Water testing is always recommended when lead water mains are found. We recommend letting the cold water run to flush out the lines before drinking, use a filtering device or buy bottled drinking water. It is also recommended that those lead pipes be replaced at a convenient time in the future.

Lead paint can become harmful when it is scraped, sanded or chipped as it could then be ingested or inhaled. Lead in paint was prohibited by law in 1978.

#### **Buried fuel storage tanks:**

Used for oil burning stoves and furnaces.

Buried fuel tanks can contaminate ground and well water if any remaining fuel were to leach out once these metal tanks begin to rust through. Under new guidelines, any tanks discovered must be removed and remediated unless grandfathered in and legally decommissioned under the old guidelines.

Cleanup costs can be very expensive, especially if

leaching has occurred, as remediation would involve decontaminating the soil and possibly the affected water supply. Many banks won't close on a loan until tanks have been removed and remediation has been completed.

#### **Wells and water:**

Wells can become contaminated from farm fertilizers (nitrates and nitrites) and coliform bacteria (E.coli). Testing is mandatory for VA and FHA loans. Radon can also be found to contaminate a well. Wells that are placed less than 75 feet from a septic tank or leach field are susceptible to contamination. Also wells less than 30 feet from the perimeter of the house can be contaminated if chlordane is used by exterminators to control termite activity. Wells containing sulphur can be identified by a rotten egg odor. The water heater tank can become contaminated with desulfovibrio bacteria which thrive in hot water in the presence of magnesium. The bacteria cause the hot water (not the cold) to smell like rotten eggs. A dry well, a well with dirty or discolored water or low yield could require a new well to be drilled. This condition can sometimes be brought on by seasons of drought. It is recommended to have the well water tested for quality and a yield test done by a licensed plumber. Private well users are responsible for testing their own water. The Department of Health recommends an annual test for coliform bacteria, nitrite and nitrate.

Also testing should be done when:

There is a change in water taste, color or smell.

- Flooding has occurred at the well and or standpipe.
- There are pregnant or nursing women in the home or someone has an unexplained illness and the water is suspected of being at risk.
- A neighbor's well is contaminated or flooding has occurred near their well and or standpipe.
- There are nearby industrial plants or agricultural activities.
- When any part of a well has been replaced.

#### **Old or improper plumbing or drain systems:**

Cast iron and galvanized steel waste piping with cast iron drum traps, chrome P-traps, and galvanized supply lines installed up to the 1960's can last up to 50 years. This has been a non-issue until now unless there were problems with leaking pipes but it should be coming up on the radar screen, as they are at or soon will be, at the end of their useful life expectancy.

Issues can arise due to improper materials or installations completed as handyman work. Typically, lead water mains can be found in homes built before 1986.

#### **Old inadequate windows, broken windows and insulation seals:**

These will be given a poor condition rating and recommended for repair or replacement. Replacement costs could add up quickly depending on how many windows will be replaced. Another consideration is the additional work involved on the exterior trim and cladding along with the interior wall finish, and casings.

#### **Constantly wet, leaking foundation walls and basement floor:**

This condition is indicative of clogged, broken or non-existent drain tiles and sump system. Digging up the yard and landscaping around the perimeter of the property all the way down to the footing is a major job to replace or install drain tiles. An alternate drain system can be installed inside the basement around the perimeter of the foundation wall, cutting into the concrete floor slab to install drain tiles and a sump pump. That could be less labor intensive but also expensive.

#### **Bowed, seeping, bulging, settling or displaced foundation walls:**

If cracks are active and displacement is 3/8" or more, or a wall is leaning 1/3 or more from its base center of gravity, an evaluation by a qualified foundation professional is recommended. It could be as simple as installing a pilaster support column to jacking up the house and replacing the footings, drain tiles or foundation walls.

#### **Old antiquated furnaces with original ductwork:**

Most of these units that are still in existence have been converted to gas. Units such as these are beyond their normal lives and could become a potential source of carbon monoxide in the home. The heat exchanger should be carefully examined for cracks at the seams, rusting, and deterioration. These units should be carefully monitored and thoroughly checked out prior to 'firing up' each year by a qualified HVAC technician. Once the heat exchanger fails, the entire unit would have to be replaced. These units are inefficient and expensive to run. Many of these older units have ductwork that contains asbestos. The additional cost of abatement and remediation should be considered if replacement is an option.

#### **Recent Renovations, Remodels and Rehabs:**

This is almost always a selling point but as an inspector it raises some red flags. It may look proper and

professional but once it is covered up with drywall or other coverings it can be difficult, if not impossible to inspect and make a determination. A common practice with the popularity of the "open concept" is to remove walls. It's acceptable to remove a bearing wall as long as the building standards and codes are followed and an inspection was made by a building inspector before the drywall goes up. Those supports have to go all the way down to a concrete footing. If a building inspector later discovers work that was done without a permit, he can request removal of all work. That's just the structural example. The same goes for the plumbing, electrical, HVAC etc. It should be recommended that the customer find out if a permit was pulled for the work and the name of the contractor before closing.

**Chinese Drywall:** (Manufactured in China and imported to the United States starting in 2001.)

Laboratory tests of samples for volatile chemicals have identified emissions of the sulfurous gases carbon disulphide, carbonyl sulfide and hydrogen sulfide. The elevated sulfide gas emissions corrode metal and turn copper electrical wires, copper air conditioning coils and copper tubing black. Chinese drywall was installed in an unknown but estimated 100,000 homes in the United States. It was only in November of 2009 that the CPSC (Consumer Product Safety Commission) issued its report about Chinese drywall. While it has not yet been proven, elevated levels of the chemical hydrogen sulfide is suspected of contributing to homeowner complaints of recurrent headaches, irritated and itchy eyes and skin, difficulty breathing, persistent cough, runny nose, sinus infections, frequent nose bleeds, and asthma attacks. The homes smell like rotten eggs. Appliances and electronics failed as their wiring corroded and metal in homes tarnished and pitted. The only way to deal with this problem is to rip it out, replace the faulty drywall and replace or monitor the other damaged appliances, air conditioner coils, wiring etc.

#### **Mold:**

The main cause for mold is excess and prolonged moisture. A mold problem is an indication of a water problem that will need to be identified, addressed and remedied first. Mold can develop quickly, within 24 to 48 hours and can spread rapidly. Mold is part of the natural environment so there is no such thing as a mold-free home. Those most at risk for mold exposure are individuals with respiratory disorders, children and infants, the elderly, individuals with immune-compromising diseases or conditions and pregnant women. There are over 100,000 different species of mold in every size shape and color. Not all black molds are toxic and some molds other than black are toxic. Mold can be removed by the homeowner as long as mold remediation and mold

removal principles and protocol are followed. If you can't see it, but you can smell it or are suspicious, testing will confirm concentration levels and toxicity.

### Wood destroying organisms and wood rot:

These organisms include fungus, mold, moss, carpenter ants, carpenter bees, powderpost beetles, anobiid beetles, moisture ants, thatching ants, subterranean termites, damp wood termites, mexican termites, dry wood termites, and others.

Wood with moisture content above 20 percent is considered susceptible to decay. Wood in contact with the ground, or wet by an external source of moisture, such as rain seepage, condensation or plumbing leaks will over time cause wood to rot. Wood inhabiting insects and organisms are more likely to attack and inhabit wet or rotten wood. Dry wood will never decay. Treated wood and certain species of wood are naturally resistant to decay and wood destroying organisms, but over time these too will decay when exposed to prolonged saturation.

### Recommended steps:

1. Contact a pest control expert or exterminator to treat and confirm all wood destroying insects and organisms are no longer active or present.
2. Make all necessary repairs that allowed water to penetrate through and have been assured it remains dry.
3. Have the affected structural members evaluated by a structural engineer or qualified carpentry contractor to determine what must be done to restore the lost integrity.
4. Have qualified carpenter or contractor make all repairs suggested by the engineer or contractor.
5. Seal all gaps, holes or points of entry to prevent the return of any wood destroying insects or organisms.

### Meth Lab/ Crime Site:

Meth is so easy to manufacture and the ingredients readily available that anyone who can read can make meth. The typical ingredients range from starting fluid, paint thinner, freon, acetone, anhydrous ammonia, iodine crystals, red phosphorous, break cleaner, drain cleaner, battery acid, reactive metals to cold tablets containing pseudoephedrine. All can be attained from local pharmacies and hardware stores.

Contamination can occur when disposal of these waste byproducts are dumped, buried, flushed down toilets and/or sinks or disposed of near a well. Further contamination from the cook-off gasses permeate the drywall, carpet, textiles, ventilation systems and other porous objects where it can continue to percolate for years. Detection can begin with the emission of strong odors that may smell like ammonia or ether. These odors have been compared to the smell of cat urine or rotten eggs. Meth makers sometimes dump toxic substances that leave burn pits or "dead spots" in the grass or vegetation. (Not to be confused with "pet spots" which also kill the grass.)

The remediation of the property typically falls on the homeowner, leaving homeowners and potential buyers at a severe disadvantage.

Test kits can be purchased for around \$25.00. You can call your local law enforcement agency to confirm that a seizure of chemicals took place on the property, and to obtain the name of any hazardous materials contractor who may have removed materials. The contractor should have a list of what chemicals were present.

For the National Clandestine Laboratory U.S. Register visit [www.dea.gov/clan-lab/clan-lab.shtml](http://www.dea.gov/clan-lab/clan-lab.shtml)



## A HOME INSPECTOR'S RECENT DISCOVERY

Steven Burnett, CRI of Journey Property Inspections, Tecumseh, MI inspected a 120 year old brick wall constructed home. Discovered were random 1/2' drilled holes in one side of the 2 story home. What do you think? Past termite treatment, retrofitted sprayed insulation holes, weep holes, trellis attachment? Send email comments to [journeyinspection@gmail.com](mailto:journeyinspection@gmail.com).