

Visual Property Inspection

3157 St. Clair Ave E
Toronto, ON M1L 1V5

Prepared for :

The Weir Team

Phone No. : (416) 465-4545



Inspected by :

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Report Commentary

Date: 14-Apr-2016

3157 St. Clair Ave E, Toronto, ON M1L 1V5

This summary is not the entire report. The complete report may include additional information of concern to the client. It is recommended that the client read the entire report.

1.0 Roof Structure

1.1 Main Roof

Architectural shingles are in good condition. Typical life expectancy is 25 to 30 years for this type of shingle.

2.0 Electrical Service

2.1 Service Size

100 amp service, copper wire.

2.2 Circuit Wires/Receptacles

Consult qualified electrician to correct various safety hazards incomplete/incorrect connections noted. A partial list is as follows:

- Replace defective GFCI receptacle on the exterior
- Install covers on all junction boxes and switch boxes
- Install a ground clamp at the water main
- Terminate or remove exposed wire
- Secure loose wires

3.0 Heating

3.1 Heating System

High efficiency furnace is 9 years old and functioning as intended at time of inspection. Typical life expectancy is 20 years.

3.2 AC

AC unit is 10 years old. Typical life expectancy is 15 years.

Testing A/C unit during low outdoor temperatures will cause system failure. Determine function during cooling season.

4.0 Plumbing Components

4.1 Hot Water Tank

Hot water on demand system. See info series sheet at the end of the report.



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5.0 Fireplace(s)

5.1 **Type**

Consult a WETT certified technician to clean and inspect system. System should be cleaned and inspected on an annual basis to promote safe exhaust.

6.0 Interior Living Spaces

6.1 **Window**

Windows are in good condition.

6.2 **Railing**

Install continuous handrail to promote safety

Property and Site

Limitations

- Vegetation/Tree/Shrub Vines Debris/Obstruction
 Snow/Ice Cover
AGE OF HOME 75+

Conditions

- Sunny/Mostly Sunny Cloudy/Mostly Cloudy Rain/Wet Conditions
 Snow/Ice Conditions
Approx. Temperature 7 celsius

Building

- 2 Story Duplex Condo Townhome

Recommend CO detector installation as required by law within 15 feet of all bedrooms for occupant safety.

All smoke detectors over 10 years old should be replaced for safety as a precautionary measure. Some have a limited lifespan and older technology detectors are not as effective as newer ones.

Inspection limited by furnishings throughout the home including but not limited to furniture, blinds, curtains, wall & floor coverings, possibly fresh paint, boxes, appliances, clothes, items stored under some or all sinks, and storage items

This is not a building code inspection. Local codes, city and county, can vary significantly and change regularly over time, and are not a part of this home inspection.

Landscaping

- Bushes/Hedge/Flower Bed Vine Slopes To House

Regrade to slope away from structure to reduce foundation deterioration potential water entry and subsequent damages.

Driveway

- Concrete Gravel Gravel Needs Regrading Asphalt

Fill and seal cracks to reduce water penetration further separation and potential trip hazards

Walkway/Path

- Slopes to House Concrete Paving Stone Patio Stone/Brick

Reset/replace steps to provide level treads and even rises to promote safe travel

Front Porch

- Crack Wood/Composite Concrete Brick/Block/Paving Stone

Front Porch Light

- Unsecured Appears to be sensor activated Representative # Inspected/Tested

Operational

Property and Site

Deck(s)/Patio(s)

Slopes to House

Wood/Composite

Paving Stone/Block/Brick

Typical Cracking

Concrete

There was limited access to inspect the support structure under the deck.

Deck boards should be painted to prolong the life of the wood.

Deck Railing

Wood

Metal

Composite

Exterior

Limitations

- Insulation Conceals Clearance Debris/Obstruction
 Obstructed/No or Partial Access Bushes/Vines/Tree Obstructions Snow/Ice Cover

Foundation Wall

- Stone/Flagstone Brick Concrete Block
 Preserved Wood Partially Concealed Hairline Cracking-typical
 Completely Concealed

Reslope perimeter grading to direct surface water away from structure to reduce wall deterioration potential water entry and subsequent damages .

There is evidence of previous waterproofing with the waterproof membrane exposed around the perimeter.

Exterior Walls

- Wood/Composite Stucco Vinyl/Aluminum Brick/Stone
 On Wood Framing

Window Exterior

- Wood Metal Vinyl Wood Int/Vinyl or Metal Cla

Window Well

- Improper Drainage Corrosion - treat/Repair Metal Wood

Clean and maintain window well to promote intended drainage away from structure.

Increase depth of window well to promote intended drainage away from structure.

Add window wells to windows at grade to prevent water entry and related damages.

Garage Side or Back Door

- Dented/Minor Damage Binds - Adjust/repair

Operational

Exterior Lighting

- Not all lights tested Unsecured - repair Representative # Inspected/Tested

Operational

Roof Structure

Inspected By:

- Binocular
 Roof Edge
 Walk On
 No Access

Limitations

- Deck/Patio
 Solar Panels
 Gravel Cover
 Steep Slope
 Height
 Snow/Ice Cover
 Rain - Too Slippery
 Material Too Slippery

Main Roof

- Flat
 Gable
 Hip/Valley
 Shed
 Estimated Age Less than 10 years
 Pitch 7 in 12

Architectural shingles are in good condition. Typical life expectancy is 25 to 30 years for this type of shingle.

Gutter/Downspout

- Galvanized
 Plastic
 Aluminum
 Copper
 Below Ground Discharge
 Above Ground Discharge

A downspout discharging too close to the foundation is the #1 reason for moisture in a basement. Ensure eaves are clean and clear and discharge six feet downhill.

Fascia/Soffit

- Moisture Staining evident - Monitor
 Aluminum/Vinyl
 Wood

Covering

- Concrete/Clay Tile
 Wood Shingle/Wood Shake
 Asphalt/Composite Shingle
 Metal
 Other
 Flat Roof Membrane
 Tar & Grav

Life Expectancy

- Typical
 Middle
 End
 Exceeded

Accessory

- Vent Stack
 Solar Panels
 Skylight(s)
 Vent Caps

Flashing

- Not Checked/Concealed
 Chimney
 Drip Edge
 Flat Roof
 Skylight
 Roof to Wall
 Stack
 Valley
 Roll Roofing
 Replace When Re-roofing
 Aluminum/Galvanized
 Tarring/Concealed

Chimney/Vent

- Wood
 Metal
 Furnace/Water Heater
 Fireplace
 Brick/Block/Stone
 Stone
 Corrosion

Abandoned south chimney has some minor mortar deterioration. Repair to prevent further deterioration and possible water entry or remove as it is no longer in use.

Roof Structure

Chimney Cap

- Concrete Metal Minor Cracking - Seal Corrosion

Visible Flue Liner

- Clay Metal Block Rain Cap/Screen Covered

Limitations

- No Access/Sealed Insulated Stored Items Looked In/Insp from opening
 Entered Hatch Pull Down

Structure

- Truss Rafter Stains

Sheathing

- Condensation Boards Plywood/OSB Stain(s)

Insulation

- Concealed/Not Visible/Finished Fiberglass Foam Rock Wool Fiberglass
 Blown In/Loose Batt Other Cellulose

Estimated Depth 15 inches

Ducts are wrapped in insulation. The material type is not known and further testing is recommended.

Ventilation

- None Turbine Mechanical Soffit Roof/Ridge Baffles
 Gable end Turbine

Exhaust Duct

- Concealed Into Attic Metal Flex

Basement/Structure

Limitations

- Finished/Partially Finished
 Dry Ground
 Clutter/Obstruction
 Dry Weather/Drought

Basement structure material/conditions determined by representative amount as visible in furnace/laundry utility room. Less than 25% of components visible

Floor

- Crack(s) - Typical. Seal + Monitor
 Concrete
 Carpet
 Ceramic
 Vinyl
 Structural Wood Floor
 Structural Concrete Floor

Wall

- Crack
 Concealed
 Concrete
 Block
 Brick/Stone
 Wood
 Drywall/Plaster

Monitor staining on wall and floor behind furnace and correct as required. Dry at time of inspection.

Ceiling

- Unfinished
 Wood
 Tile
 Drywall/Plaster

Window

- Binds - Adjust/repair
 Not Tested
 Thermal
 Single Pane
 Fixed Pane
 Metal
 Wood
 Vinyl
 Representative # Inspected/Tested

Operational

Door

- Binds
 Damaged
 Pocket
 Hinged
 Wood
 Metal
 Hole(s)/Damaged
 Representative # Inspected/Tested

Operational

Lighting

- Minimal
 Unsecured
 Representative # Inspected/Tested

Operational

Heat Source

- None
 Electric
 Air Register
 Radiant/Baseboard

Basement Stairway

- Unsecured
 Carpet
 Wood
 Worn

Railing

- Metal
 Wood
 Incomplete
 None

Floor Joist

- Concealed
 Engineered Joists
 Solid Wood
 Stained

Bridging

- Concealed
 Continuous
 X-Metal
 X-Wood
 Solid Wood
 None

Basement/Structure

Beam

Unsecured Concealed Metal Wood

Post

On Slab Concealed Wood Concrete Metal Brick/Block
 Stone

Pipes/Ducts

Leak Insulated Secured

Electrical Service

Service Entrance

No Conduit Overhead Underground 120/240V

Entrance Cable

Concealed Aluminum Copper

Main Disconnect

Switch/Cartridge Fuse Breaker

Service Size

Have Electrician Evaluate

Amps 100

100 amp service, copper wire.

Distribution Panel

Not Opened Non Standard Installation Obstructed

Location Laundry/Furnace room

Panel Rating

Room For Expansion

Amps 125

Panel is full

Fuse

Breaker GFCI Breaker AFCI Breaker Over-Fused Cartridge Glass

Circuit Wires/Receptacles

Aluminum Copper Representative # of Outlets Inspected/ Switched Outlets

Consult qualified electrician to correct various safety hazards incomplete/incorrect connections noted. A partial list is as follows:

- *Replace defective GFCI receptacle on the exterior*
- *Install covers on all junction boxes and switch boxes*
- *Install a ground clamp at the water main*
- *Terminate or remove exposed wire*
- *Secure loose wires*

Grounding

Concealed Ground Rod Water Main



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Electrical Service

Bonding

Concealed

Water Pipe

Gas Pipe

Meter By-Pass

Heating

Ignition

- Electronic Pilot & Thermocoupl

Heat Shield

- Missing Corrosion Soot None

Burn Chamber

- Advise Adjustment Soot

Motor/Blower

- Direct Drive Noisy Other

Operational

Filter

- Disposable Missing Inoperable Undersized Damaged

AC

- Not Checked Dirty Central Room Unit
Approx. Age 10 years Approx Size - Tons 2

Operational

AC unit is 10 years old. Typical life expectancy is 15 years.

Testing A/C unit during low outdoor temperatures will cause system failure. Determine function during cooling season.

Cooling Fuel Source

- Electric

Condensation Line

- Improper Drain Corrosion

Refrigerant Line

- Unsecured Not Insulated

Plumbing Components

Limitation

- Finished Basement Private System

Public Supply

- Concealed Lead Galvanized Plastic Copper Metered
 Not Metered

Shut Off Location: Behind cold air return grill in basement

Public Shut-Off Valve

- Not Tested Corrosion

Water Pressure

- Low Typical High

Water Quality

- Discoloration Debris Odor Advise Well Water Quality Tes Typical

Hose Bibb

Not Applicable

- Not Checked Shut-Off Valve Unsecured Frost Free

Determine operation when weather permits. Hose bibb currently winterized

Distribution Piping

- Concealed Plastic Galvanized Copper

Cross Connection

- Kitchen Laundry Hose Bibb None Visible

Waste Drainage

- Concealed Cast Iron Plastic Copper Pump/Inspect Septic System

Sewer lines in old homes such as this are prone to tree root damage, low spots, fractures, or collapse due to deterioration over time. If line has not been replaced in modern time, it may well need to be in the near future. The best way to determine condition of the drain line requires camera/scope evaluation by a drain professional.

Floor Drain

- None - a potential concern Drain Appeared Functional During Test

Main Cleanout

- Concealed

Hot Water Tank

Operational

- With Heating System Gas Electric Some Corrosion Noted - Typical

Plumbing Components

Hot water on demand system. See info series sheet at the end of the report.

Install a dielectric fitting on the hot water outlet to prevent further corrosion of the copper pipe to prevent eventual failure and water damage.

Discharge Tube

Undersized Discharge

Venting

Flue Sidewall Improper Rise Unsecured Corrosion Soot

Laundry

Floor

- Worn No drain

Wall

- Patched Unfinished Crack - Typical Uneven

Ceiling

- Patched Unfinished Crack - Typical Uneven

Window

- Binds - Adjust/Repair Not Tested Thermal Pane Single Pane
 Treat Wood To Preserve/Protect Storm Windows

Operational

Door

- Binds Damaged/Hole in Door

Operational

Lighting

- None Unsecured

Operational

Tub/Faucet

- Unsecured Plastic Slow Drain Corrosion

Operational

Secure laundry tub to reduce stress on plumbing and potential failure.

Trap/Drain

- Drain stop disconnected/inoperable-repair if possible Inoperative Trap Slow Drain Corrosion

Washer

- Tested On/Off Function Only
 Make Kenmore # CG2204838

Operational: Yes

All appliances were turned on using regular operating controls if they are connected or not shut down. All functions and different systems are not tested. The test simply comprises turning the appliances on to verify some basic functionality.

Dryer

- Tested On/Off Function Only
 Make Kenmore # MG1702338

Operational: Yes

Dryer Vent

- Unsecured To Crawlspace Mostly Concealed Plastic Duct

Dryer vent cleaning is recommended to increase efficiency and for fire safety. Inspect/clean on a regular basis.

Interior of dryer vent condition concealed-not inspected

Fireplace(s)

Type

- Built-In Free Standing Gas Log Insert Wood Stove Insert Wood Stove
 Pellet Stove Gas Unit

Consult a WETT certified technician to clean and inspect system. System should be cleaned and inspected on an annual basis to promote safe exhaust.

Fireplace Front

- Brick Ceramic Marble Stone Drywall

Hearth

- Raised None

Door/Screen

- None Mesh Glass Metal

Firebox

- Fan Not Checked Firebrick Metal

Damper

- None Sticks Unsecured Corrosion Creosote Soot

Operational: Yes

Chimney Flue

- Not Checked Soot Advise Inspection/Sweeping

Basement Gas unit

Type

- Built-In Free Standing Gas Log Insert Wood Stove Insert Wood Stove
 Pellet Stove Gas Unit

Fireplace Front

- Brick Ceramic Marble Stone Drywall

Hearth

- Raised None

Door/Screen

- None Mesh Glass Metal

Gas Fireplace/Gas Insert

- Fan Not Tested Gas Shut-Off Within Arms Reach

Not Applicable

Could not locate gas shutoff

All Baths

Location

- Basement
 1st Floor
 2nd Floor
 3rd Floor

Water Flow

- Normal
 Suspect
 Low

Floor

- Worn
 Minor Cracking - Typica
 Stains/Minor Damage

Wall

- Uneven
 Patched - Typical
 Ceramic

Ceiling

- Uneven
 Minor Patching - Typical
 Minor Cracking - Typica

Window

- Binds - Adjust/Repair
 Not Tested
 Treat Wood To Preserve/Protect
 Thermal Pane
 Single Pane
 Storm Windows
 Representative # Inspected/Tested

Operational

Door

- Binds - Adjust/Repair
 Damaged
 Representative # Inspected/Tested

Operational

Lighting

- None
 Unsecured

Operational

Exhaust Fan

- Advise Installation
 Dirty - Clean for best function
 Noisy - Service/Repair/Replace

Operational

Sink

- Worn
 Chip/Scratch
 Steel/Ceramic

Faucet

- No Shut-off
 Unsecured
 Corrosion
 Minor Leakage at Handle - Repair

Operational

Trap/Drain

- Drain stop disconnected/inoperable-Repair
 Slow Drain-Clean/Repair
 Corrosion - Monitor for leaks

Vanity

- Worn/Scratches
 Missing/Loose Hardware
 Prior Stains-No Leakage Now

Counter

- Unsecured
 Minor Damage - Scratches/Stains
 Caulk at Backsplash

All Baths

Toilet

Operational

- No Shut-Off Unsecured Crooked - Monitor for leakage

Secure toilet to reduce secondary water damages

Tub/Enclosure

- Ceramic/Tile Solid Surface/Marble Fiberglass Plastic Panels
 Minor Mildew Stains-Treat/Clean Worn - Scratches/Chips

Tub Faucet/Mixer

Operational

- Not Tested Unsecured Leaky-Secure/Repair/Replace

Shower Head

Operational

- Not Tested Unsecured Leaky-Secure/Repair/Replace

Heat Source

- None Thermostat Electric Air Register Radiant
 Radiator/Convactor

Basement washroom

Location

Basement 1st Floor 2nd Floor 3rd Floor

Water Flow

Normal Suspect Low

Floor

Worn Minor Cracking - Typica Stains/Minor Damage

Wall

Uneven Patched - Typical Minor Cracking - Typica

Ceiling

Uneven Minor Patching - Typical Minor Cracking - Typica

Window

Binds - Adjust/Repair Not Tested Treat Wood To Preserve/Protect Thermal Pane
 Single Pane Storm Windows Representative # Inspected/Tested

Operational: Yes

Door

Binds - Adjust/Repair Minor Damage/Hole In Door Representative # Inspected/Tested

Operational: Yes

Lighting

None Unsecured

Operational: Yes

Exhaust Fan

Advise Installation Dirty - Clean for best function Noisy - Service/Repair/Replace

Operational: Yes

Sink

Worn Chip/Scratch Steel/Ceramic

Faucet

No Shut-off Unsecured Corrosion Minor Leakage at Handle - Repair

Operational: Yes

Trap/Drain

Drain stop disconnected/inoperable Slow Drain - Clean/Repair Corrosion - Monitor for leaks

Vanity

Worn/Scratches Missing/Loose Hardware Prior Stains-No Leakage Now

Counter

Unsecured Minor Damage - Scratches/Stains Caulk at Backsplash



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Basement washroom

Toilet

- No Shut-Off Unsecured Crooked - Monitor for leakage

Operational: Yes

Tub Faucet/Mixer

- Not Tested Unsecured Leaky-Secure/Repair/Replace

Operational: Yes

Shower Enclosure

- Ceramic/Tile Solid Surface/Marble Fiberglass Plastic Panels
 Minor Mildew Stains - Treat/Clean Worn - Scratches/Chips

Shower Head

- Not Tested Unsecured Leaky-Secure/Repair/Replace

Operational: Yes

Heat Source

- None Thermostat Electric Air Register Radiant
 Radiator/Convactor

Floor

Worn Minor Cracking - Typica Stains/Minor Damage

Wall

Uneven Patched Minor Cracking - Typica

Ceiling

Uneven Patched- Typical Minor Cracking - Typica

Window

Binds - Adjust/Repair Not Tested Thermal Pane Single Pane
 Treat Wood To Preserve/Protect Representative # Inspected/Tested Storm Window

Operational

Patio Door

Binds - Adjust/Repair Sliding Hinged Dead Bolt
 Minor Damage/Wear Weather Stripping

Operational

Lighting

None Unsecured Representative # Inspected/Tested

Operational

Sink

Worn Chip/Scratch

Faucet

No Shut-Off Valve Unsecured Corrosion Minor Leakage at Handle - Repair

Operational

Trap/Drain

Slow Drain - Clean/Repair Corrosion - Monitor for Leakage

Counter

Unsecured Caulk at Backsplash Minor Damage/Scratches/Worn

Cabinet

Worn/Scratches Missing/Loose Hardware Representative # Inspected/Tested

Range Hood

Cooktop Exhaust No Exhaust No Light Noisy

Operational

Exhaust vent

Unsecured Ductless Concealed To Exterior

Filter

Missing - Install for safety Unsecured Damaged Greasy

Major Appliances (Built-in)

- Tested ON/OFF only. Did not Test All Functions/Cycles

All appliances were turned on using regular operating controls if they are connected or not shut down. All functions and different systems are not tested. The test simply comprises turning the appliances on to verify some basic functionality.

Dishwasher

Brand Miele # G2120SCU

Operational

Stove/Cooktop

Brand Whirlpool # RU3919606

Operational

Refrigerator

Brand LG # LFC22760ST

Operational

Microwave

Brand Maytag # 11391321LG

Operational

Heat Source

- None Thermostat Electric Air Register Radiant
 Radiator/Convactor

Interior Living Spaces

Floor

- Worn Minor Cracking - Typical Staining/Minor Damage

Wall

- Uneven Patched - Typical Minor Cracking - Typical
 Wood Frame w/drywall/plaster

Ceiling

- Uneven Patched - Typical Minor Cracking - Typical
 Wood Frame w/drywall/plaster

Window

- Binds - Adjust/Repair Not Tested Fixed Pane Single Pane Thermal Pane
 Treat Wood To Preserve/Protect Representative # Inspected/Tested

Windows are in good condition.

Operational**Lighting**

- None Unsecured Representative # Inspected/Tested

Operational**Interior Doors**

- Binds - Adjust/Repair Hinged Closet door off track
 Floor guides missing Representative # Inspected/Tested

Operational**Stairway**

- Carpet Wood Worn Squeaks - Typical

Railing

- Wood/Metal Incomplete None

Install continuous handrail to promote safety

Exterior Doors

- Binds - Adjust/Repair Weather Stripping Missing/Improper Dead Bolt
 Minor Damage - Dent/Split/Worn Sliding Hinged

Operational**Heat Source**

- Air Register Electric Radiator/Convactor None
 Radiant-Concealed



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Additional Comments

General Comments

This is a Prelisting Inspection performed for the seller of the home in preparation for putting the home on the market for sale. This inspection is completed to ASHI and OAHl standards, is visual in nature, and does not address building code compliance issues which are the purview of municipal building inspectors.

Property and Site
Building



Rear image

Driveway



Driveway cracks

Property and Site

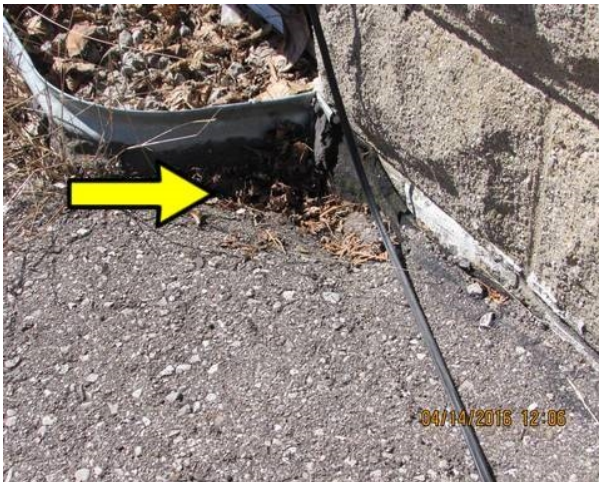
Walkway/Path



Uneven patio stones

Exterior

Foundation Wall



Grade slopes toward the foundation



Grade slopes toward foundation

Exterior

Window Well



Increase window well depth



Basement window at grade

Roof Structure

Main Roof



Roof covering



Roof Structure

Gutter/Downspout



Downspout discharging to close to foundation

Chimney/Vent



Mortar deterioration at abandoned south chimney

Attic
Structure



Attic



Insulation



Unknown material used for duct insulation

Basement/Structure

Wall



Staining on wall behind furnace

Electrical Service

Circuit Wires/Receptacles



Missing covers on junction boxes



Unterminated and exposed electrical wire

Electrical Service

Circuit Wires/Receptacles



Unsecured wire



Electrical panel



Missing ground clamp

Heating

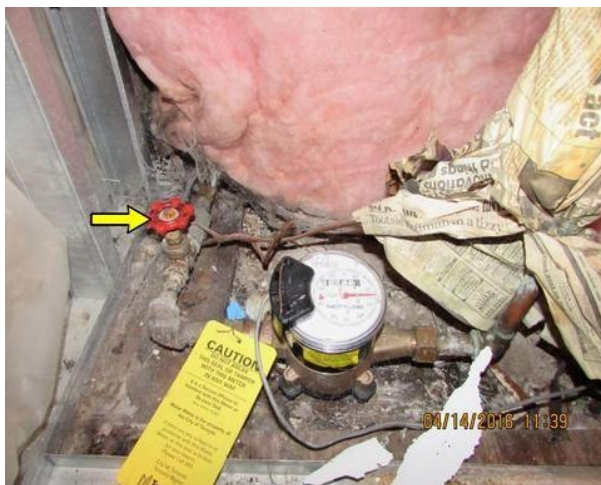
Heating System



High efficiency furnace

Plumbing Components

Public Supply



Water meter and main shut off

Plumbing Components

Hot Water Tank



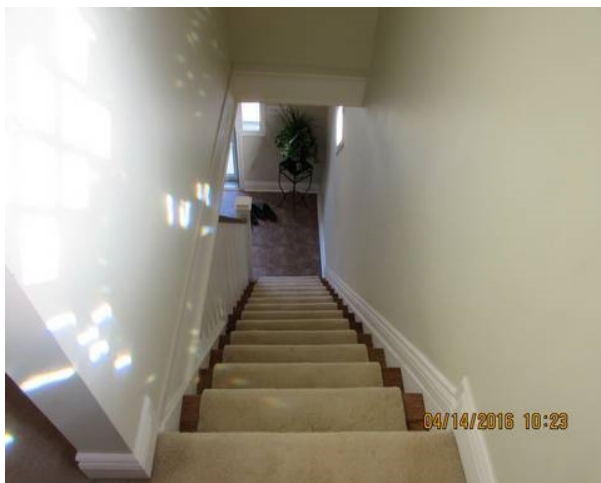
Tankless on demand water heater



Corrosion on water line

Interior Living Spaces

Railing



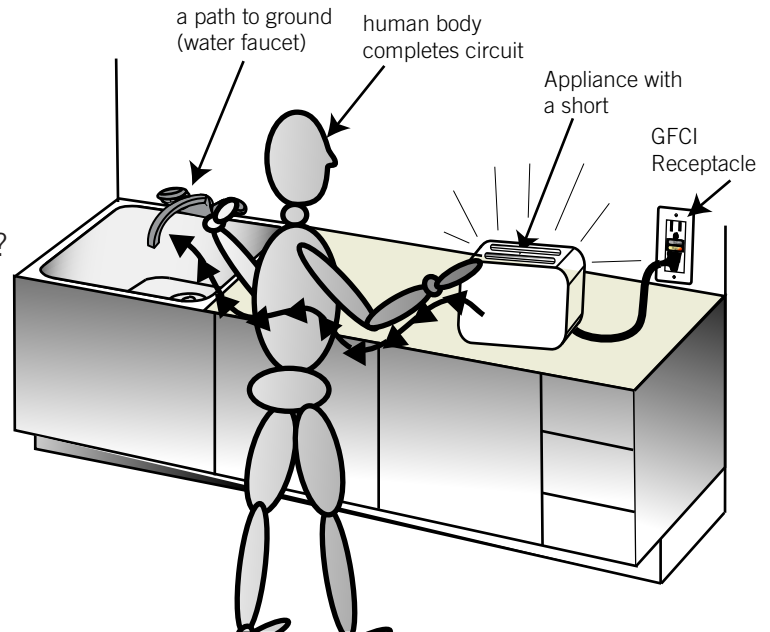
Incomplete hand rail

Ground Fault Circuit Interrupter

A ground fault circuit interrupter, or GFCI, is an inexpensive electrical safety device that can protect you and your family members from a serious electric shock.

Have you ever had an electric shock? While it is an unpleasant experience, it is not usually fatal. However, given the right conditions, the same shock could be fatal! If your body makes a solid connection to the ground, the shock could easily kill you. Here are two examples of a solid ground connection:

- If you are physically standing or touching the ground outside
- If you touch something conductive, such as any part of the plumbing system in your house, that is also touching the ground outside



In other words, if you decide to operate your hedge trimmer in your bare feet and you get a shock, you may not survive it.

How Can a GFCI Help?

A GFCI is a special electrical outlet that prevents electric shocks in situations such as the ones described above. The GFCI monitors the electrical current leaving from and returning to the outlet. The current leaving the outlet should be the same amount as the returning current. If the current returning is less than that which leaves, the missing current could be passing through somebody's body to the ground. The GFCI detects the mismatch and shuts off the electrical outlet in a split second.

Where Should GFCI Outlets Be Located?

GFCI outlets should be installed in any area that presents a risk of an electric shock with a direct path to the ground. In other words, anywhere you might directly touch the ground outside or anywhere where you might touch a part of the plumbing system. Some smart GFCIs locations are:

- Exterior outlets
- Kitchen counter outlets (not common in Canada)
- Bathroom outlets
- Garage outlets
- Outlets in unfinished basements

Information Series

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This is not a complete list. Areas near swimming pools, hot tubs, and so on should also include this type of outlet.

GFCIs are not perfect, however, and have been known to “nuisance trip” when connected to certain types of electrical equipment. For this reason, exceptions to the suggested (or required) locations for GFCIs exist. For example, a regular outlet would be a better choice for a freezer in your garage since the potential for nuisance tripping of the GFCI is high and might go undetected for days, leading to spoiled food in the shut-off freezer.

Remote GFCI

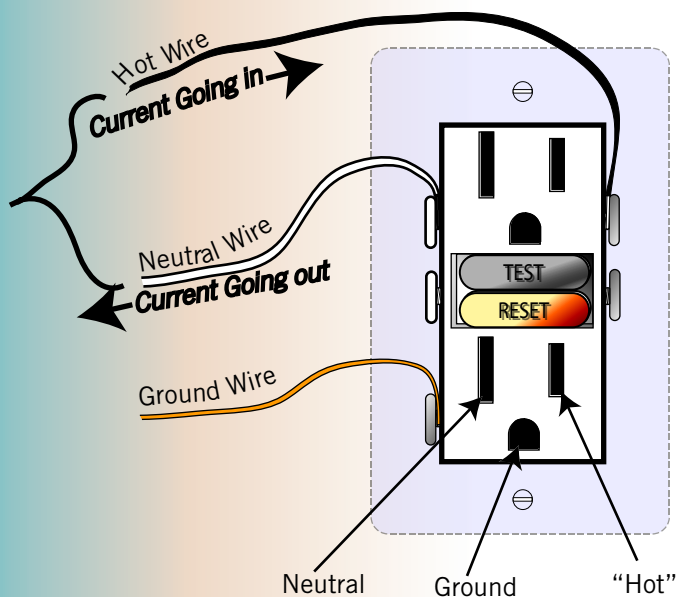
Several electrical outlets usually connect to a single circuit in an average home. A single GFCI outlet will protect all of the outlets in the circuit, even if the other outlets are not GFCIs. But the GFCI outlet must be the first outlet in the string in order for it to properly protect the other outlets, and, of course the connections have to be properly made.

Remote GFCIs sometimes cause confusion for home owners in the following ways:

- A home owner thinks the bathroom does not have a GFCI because the outlet looks like a standard one. The standard outlet under the protection of a remote GFCI should have a sticker indicating its GFCI protection. The problem is, the sticker does not stick forever. A Pillar To Post® inspector can test this for you.
- A standard outlet that does not appear to work in a bathroom or kitchen may actually be attached to a remote GFCI outlet that has nuisance tripped. Before calling an electrician, check the GFCI outlets in other bathrooms and in other locations around the house.

Testing

GFCIs are easy to test and should be tested every month. Simply press the test button on the outlet. You should hear a pop as the reset button pops out a little. To reset, just press the reset button. If the GFCI fails to trip, or if you are unable to reset it, it is time for an electrician to replace it.



Special breakers also provide GFCI protection to the entire circuit. These breakers can be installed instead of GFCI outlets. The GFCI breaker should also be tested monthly. You will recognize this breaker from the test and reset button.

GFCIs can help prevent injury and death from electric shock. It is a small device worth having to ensure the safety of your family members.

Pillar To Post®, *the home of home inspection*

We welcome your comments and suggestions for future Information Series topics
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Arc Fault Circuit Interrupter

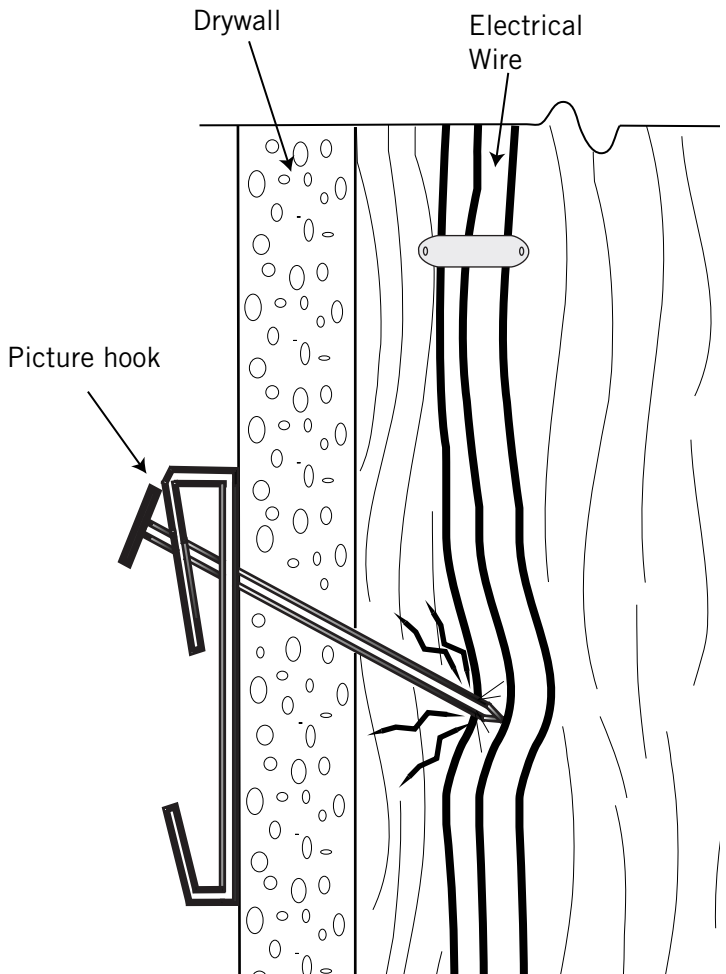
Increasing Electrical Fire Safety

An “arc fault circuit interrupter,” or AFCI, is a new type of circuit breaker designed to detect sparking in an electrical system, and to shut down the affected circuit before it causes a fire. The jury is still out on whether AFCIs actually save lives and property.

A household circuit can cause fire in two ways: circuit overload and sparking. Standard circuit breakers or fuses usually protect an overloaded circuit, but the breakers may not trip from intermittent sparking. For example, if you pierce or sever an electrical cable while hammering a nail into a wall, you could create an intermittent short, resulting in sparking. If the breaker does not trip, a fire could start. The AFCI is designed to detect such problems.

Other potential causes of sparking:

- A frayed extension cord
- A squeezed or pinched cord
- Old and cracked insulation on electrical wires and cables
- Loose electrical connections



What’s the Difference Between an AFCI and a GFCI?

A GFCI, or a “ground-fault circuit interrupter,” is typically installed in areas with a high risk for electrical shock, such as bathrooms (see Pillar To Post® GFCI Info Series). A GFCI protects people from electric shock, while an AFCI protects homes from electrical fires.

What Do These Devices Look Like? Where Are They Installed?

An AFCI fits into the electrical panel in place of a standard circuit breaker. It looks like a GFCI breaker except the AFCI has a blue test button while the GFCI has an orange test button.

AFCIs are becoming mandatory in some jurisdictions. In 2002, the National Electrical Code insisted on AFCIs for all bedroom electrical outlets and their branch circuits.

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AFCIs may be retrofitted to any home with a modern circuit breaker panel. But before you ask your electrician to replace all your breakers with AFCIs, consider the following:

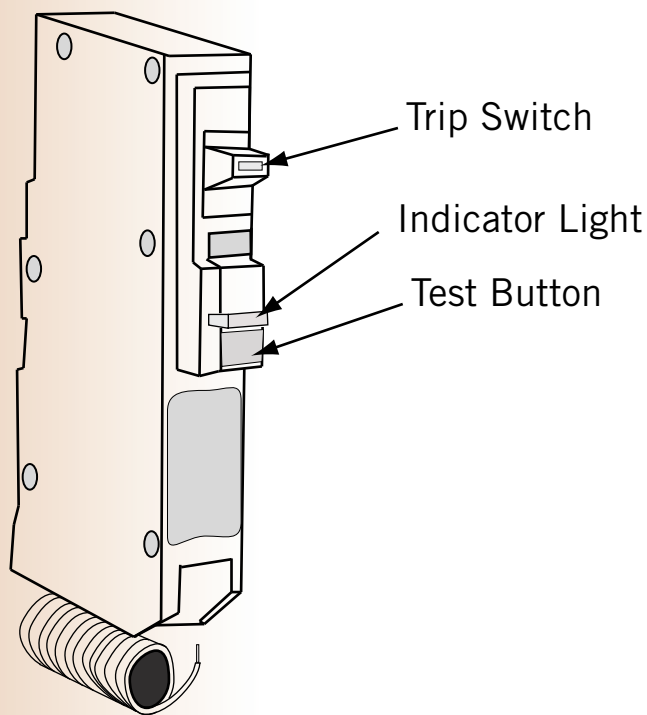
- AFCIs are expensive, about \$40 to \$60 dollars per breaker. For a typical panel, you might pay a sum of \$1,500, not including labor.
- AFCI breakers may not be available for an old panel.

Can an AFCI Make an Old Electrical System Safer?

Old wiring has likely been subjected to years of modifications and abuse, making it a more likely candidate for sparking. Insurance companies are concerned about the safety of knob and tube wiring in particular, making an AFCI seem an ideal retrofit. But since AFCIs have not been tested with old wiring, certifying laboratories and electrical authorities cannot yet assure the public that AFCIs will perform as expected.

Not Quite Electrical Nirvana

It will take several more years before statistics reflect anything concrete about how well AFCIs function. In the meantime, we can only assume that AFCIs reduce the chances of electrical spark-induced fires. Electrical authorities do plan, however, to ultimately mandate every breaker in your electrical panel as an AFCI or a GFCI, or a device that covers both, protecting people from electric shock and homes from electrical fires.



Pillar To Post® encourages anyone who feels they would benefit from AFCIs to consult an electrician. We would like to make one thing clear: we do not believe AFCIs are a quick fix for dangerous wiring, nor are they an excuse to live with an unsafe electrical system. A qualified electrician should promptly deal with unsafe wiring conditions.

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Carbon Monoxide

Carbon monoxide, or CO, a byproduct of incomplete combustion of fossil fuels, is a colorless, odorless gas. Breathing CO reduces the blood's ability to carry oxygen. In severe cases, CO can cause death.

Defective or malfunctioning fossil fuel appliances, or inappropriate use of appliances that burn fossil fuel close to or inside the home can pose a serious health hazard. Here are a few examples of dangerous operations:

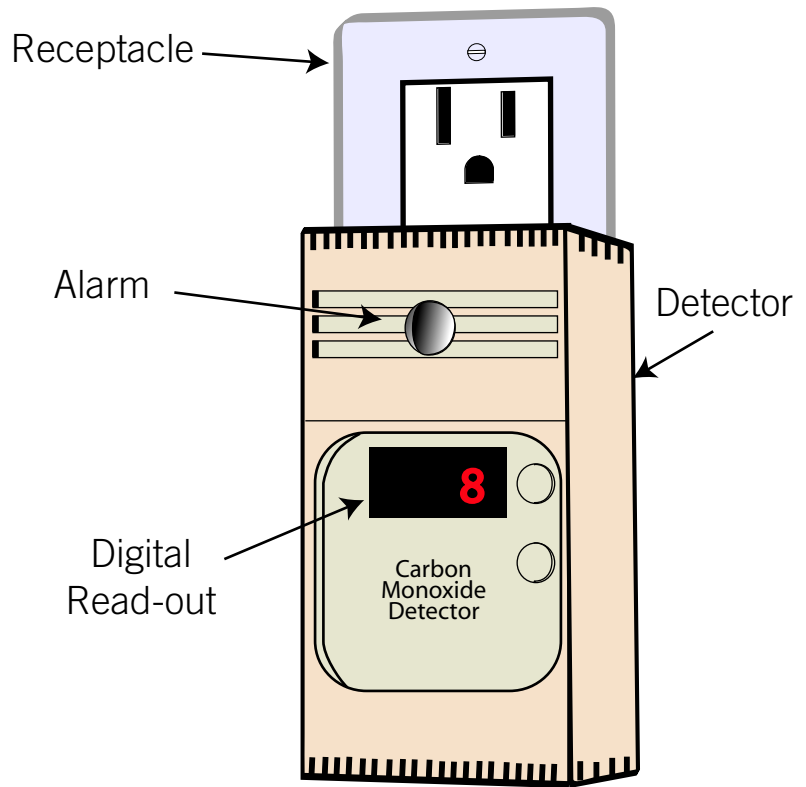
- Running an automobile or gas lawn mower inside the garage
- Operating a barbeque inside the home
- A gas or oil burning furnace with a blockage in the chimney
- Kerosene space heaters
- Operating a generator in the home during a power failure

Symptoms of Carbon Monoxide Poisoning

Symptoms of carbon monoxide poisoning include headache, dizziness, nausea, vomiting, weakness, chest pain, confusion, and loss of consciousness. Carbon monoxide poisoning can lead to death. Low level poisoning may go unnoticed because it may be mistaken for the flu.

Carbon Monoxide Detector

You should have at least one carbon monoxide detector in your home. In some geographic areas, a CO detector is required by law. The CO detector should be placed where you can hear it if it goes off when you are asleep. A CO detector does not have to be placed on the ceiling, since unlike smoke, CO has approximately the same weight as air so it mixes



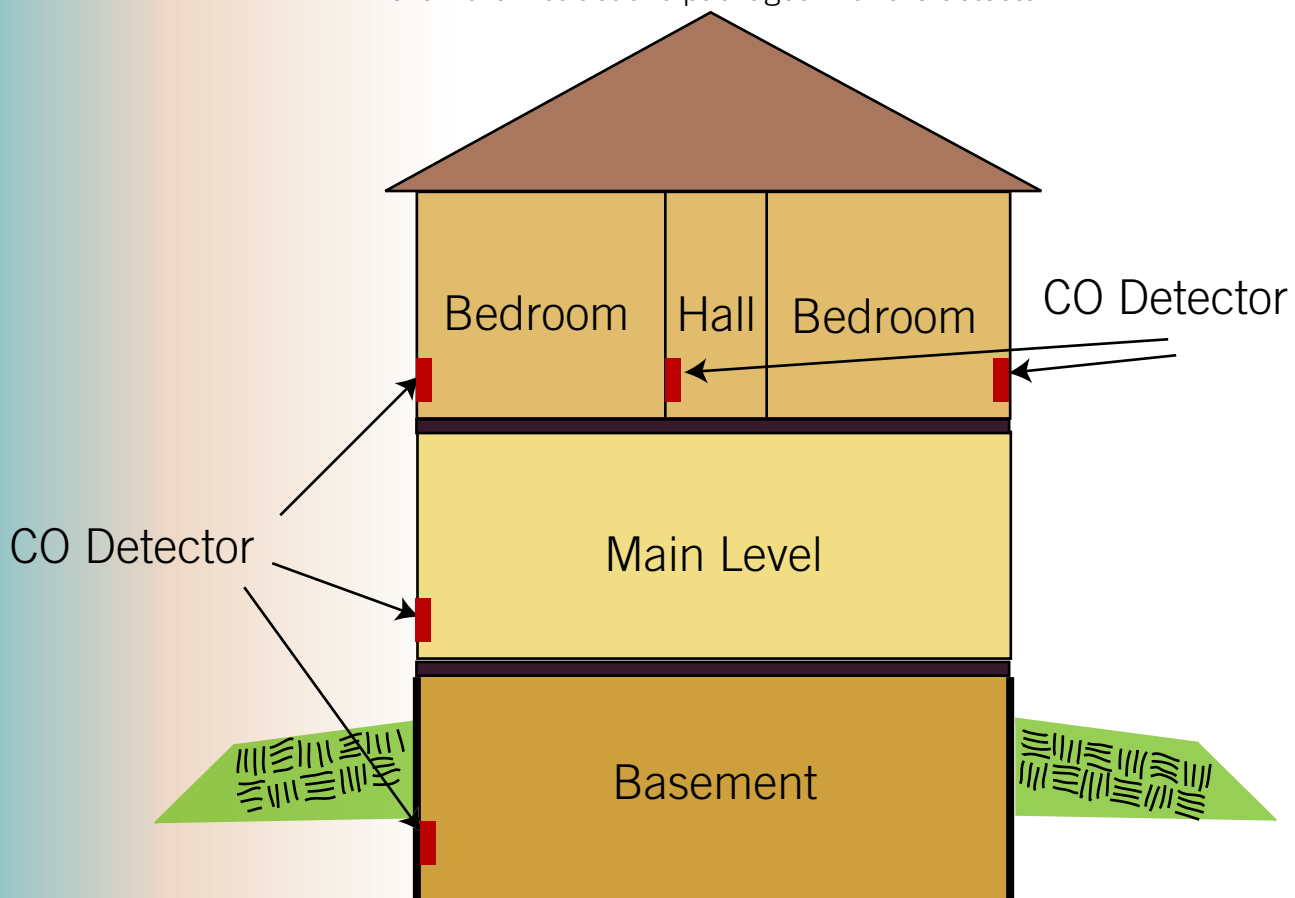
uniformly throughout the room rather than floating up to the ceiling. To avoid false alarms, do not install the detector next to heating and cooking appliances, vents, flues, or chimneys. Make sure you read and follow the operating, placement, and testing instructions that come with the detector.

If the carbon monoxide detector alarms, take it seriously.

Avoiding CO Poisoning

- Have your heating systems serviced every year by a qualified technician.
- Have your fireplace chimney cleaned and inspected every year.
- Install at least one CO detector in your home and replace the batteries twice per year.
- Open the garage door prior to starting your car; drive the car out promptly. Do not leave it idling in the garage. Do not use a remote car starter when the car is in the garage.
- Do not use a charcoal or propane barbeque in the home.

If you are installing only one carbon monoxide (CO) detector, it should be located where you can hear it if it goes off when you are sleeping. For greater safety, multiple CO detectors can be installed throughout the home. Follow the instructions packaged with the detector.



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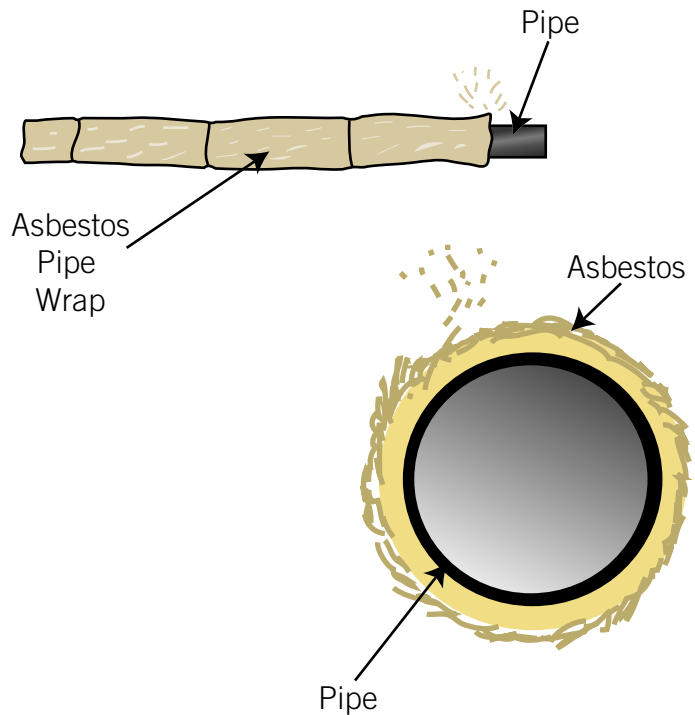
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Asbestos

Asbestos is a mineral possessing useful properties, including thermal stability, strength, and good insulating abilities. Asbestos has been used in many products, from automobile brake pads to thermal insulation.

In the home, asbestos may be found in the following:

- Asbestos cement roof tiles
- Roofing felts
- Asbestos cement siding
- Resilient flooring (vinyl floor tiles, etc.)
- Acoustic ceiling tiles
- Stipple paint, spray coatings, patching and joint compounds
- Pipe wrap for hot water heating systems
- Thermal insulation on heating ducts and heating systems
- Door gaskets on furnaces, boilers, and wood stoves
- Insulation in walls and ceilings
- Vermiculite thermal insulation in attics and walls



What's the Problem?

Asbestos poses a health risk when the fibers become airborne. Breathing high levels of asbestos fibers can lead to lung disease, including asbestosis and lung cancer. Most people who get asbestosis have been exposed to high levels of asbestos over a very long period of time. Symptoms do not usually develop for about 20 to 30 years after exposure.

Today occupational exposure is carefully controlled, and the use of asbestos in products has been dramatically reduced. The products that contain asbestos are better designed to encapsulate the asbestos fibers, preventing them from being released into the environment.

The Risk in Your Home

While most people exposed to small amounts of asbestos do not develop any health problems, a prudent avoidance protocol is best. If you know what contains asbestos in your home, you can take steps to avoid significant and prolonged exposure.

The biggest risk is attempting to remediate on your own. Disturbing asbestos usually makes it become dangerous to your health. In most cases, the best course of action is to leave the asbestos-containing material alone.

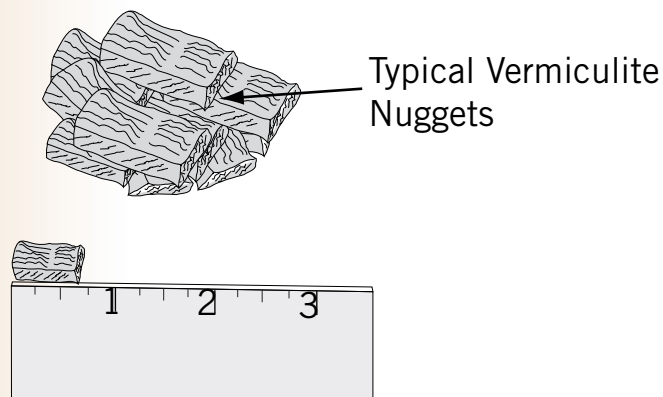
Identification

If you suspect that materials in your home contain asbestos, you can have them tested. It is not possible to confirm whether a material contains asbestos from a visual inspection. Microscopic examination is required. An expert is required to do the sampling and identification.

What Can You Do About Asbestos?

First and foremost, remediation should be done by an expert. If the asbestos is in good condition, the best course of action by far is to leave the material alone. Asbestos is only a health risk if it is crumbling and damaged. If it shows minor localized damage, it can be repaired by sealing the asbestos fibers with a sealant that sticks the fibers together. This process is called encapsulation.

Removing asbestos is possible but expensive. In some cases, removal is the only option, such as during renovations.



Vermiculite Insulation
May Contain Asbestos

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HOT WATER ON DEMAND

Imagine a touch-screen pad next to your tub. Enter a desired temperature and the tub fills with water at exactly that temperature. Imagine never running out of hot water again. Welcome to hot water on demand water heaters. There is more to hot water on demand water heaters than endless hot water. They save energy too.



The concept is not new. In fact, these systems have been around for over 40 years and are common where the cost of energy is high such as Europe and Japan.

How It Works

A standard hot water heater heats a large reservoir of water over a long period of time. When you need hot water, it's there waiting for you. Once you use it up, you have to wait if you want more. A hot water on demand system heats water as you need it using gas or electricity. When you turn on a hot water tap:

1. Cold water flows into the system triggering the flow sensor
2. Powerful burners ignite and heat the water as it flows through the heat exchanger
3. The water comes out at the required temperature.

There is no tank or reservoir of water to heat up. For this reason, a hot water on demand system is commonly called a "tankless water heater".

Tank Versus Tankless

When your hot water heater gets old should you replace it with another standard system or should you install a hot water on demand system?

There are three key benefits of a hot water on demand system:

- All the hot water you want.
- More energy efficient because there are no standby heat losses. Standard systems use energy to maintain the water temperature.
- A hot water on demand system is a small box mounted on the wall. Find some extra floor space by removing your old hot water tank.

The main down sides are:

- The up-front costs are much higher, including purchase price and installation costs.

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- It takes an experienced technician to select and install a system properly. There are lots of ways to go wrong with a hot water on demand system.
- If your power goes out, you don't get any hot water. With a tank system, at least you have a tank full of hot water.

Saving Energy

A hot water on demand system is energy efficient because there is no reservoir of water to keep hot. The **operating efficiency** is not a good measure when comparing a standard system and a tankless system because it does not account for the standby losses. A better point of comparison is the **energy factor**. The energy factor is an estimate of the total energy cost for hot water. For example, the energy factor for a typical tank style hot water heater is about 0.55. This means that on average, for every dollar you spend on gas you get about 55 cents worth of hot water. A modern gas fired tankless system has an energy factor of about 0.84.

Saving Money

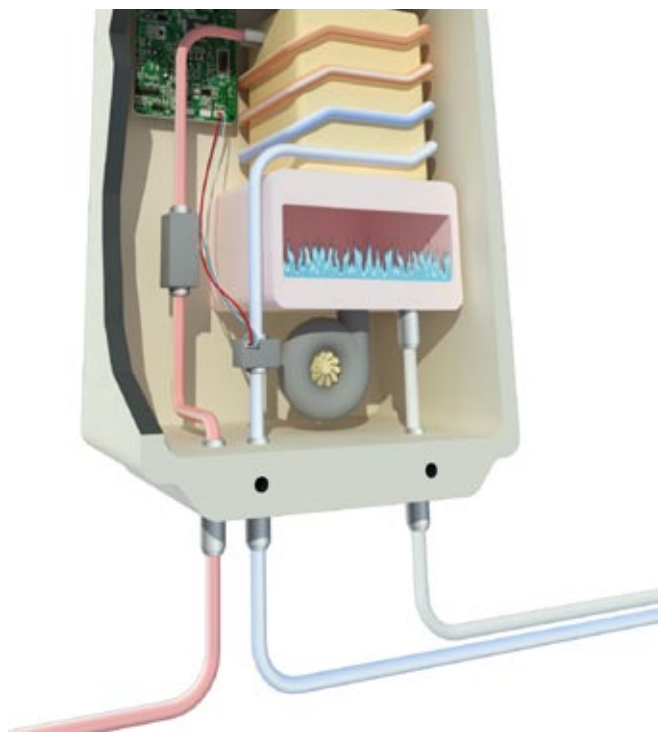
You can save energy with a hot water on demand system but can you save money? Is the higher up-front cost justified by the energy savings. Most product literature is misleading. A 20% energy saving is a realistic comparison of a modern tank system and a modern tankless system. Depending on your energy cost and the amount of hot water you use in a year, the payback may be 4 to 9 years. This is not bad when you consider that these systems last about 20 years compared to about 10 years for a standard tank hot water heater. If you are planning to live in your house for a while, you will eventually benefit from a lower life-cycle cost and from lower energy costs.

Skilled Technician

Thinking of installing a hot water on demand system? A skilled and experience technician is a must!

A hot water on demand system requires a powerful burner to heat the water as it flows past the flame. The burner has to be powerful enough to heat the water even if several hot water taps are running at the same time. A skilled technician will know how to size the unit to supply the needs of the home. Many less skilled installers get this wrong. You have to consider how cold the water is to start with. For example, consider two identical houses, one located in Florida and the other located in Ohio. The home in Ohio will need a much more powerful burner because the water entering the system may be only 45 degrees in the winter!

A skilled installer will be able to anticipate problems such as an inadequate gas line. The burner in a tankless water heater is so powerful it needs a large gas flow rate to feed it. If the existing gas line is not large enough, a new line will have to be installed.



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ASPHALT SHINGLES

Asphalt shingles are the most common type of sloped roof covering in North America. They are easy to install, reliable and arguably the best bang for the buck.



Three layers of an asphalt shingle

Shingle Construction

While there are many types of asphalt shingles, the general construction is similar. There are three distinct layers -

- A base material that gives the shingle strength and shape.
- An asphalt layer that forms a waterproof barrier.
- A granular surface that reflects the ultraviolet radiation and gives the shingle durability, color and texture.

Warranty

What's a 20 year shingle? 20 years is the manufacturer's limited warranty against defects. The number loosely represents the number of years the shingle could last in an ideal installation and ideal conditions. In practice, the reliable life is less than stated. Common shingle warranties are 15 to 50 years. The higher the warranty, the thicker the layer of asphalt and the thicker and heavier the shingle.

Fiberglass or Organic Based Asphalt Shingles

The two common base layer materials are paper saturated in asphalt and fiberglass. While they are both asphalt shingles, they are often referred to as organic and fiberglass respectively.

Fiberglass base shingles were developed to use less of the expensive asphalt but still maintain the same shingle life. The main difference is that the fiberglass based shingle is thinner and lighter than the equivalent organic shingle, making it more desirable for installers.

Organic shingles are thicker and heavier and are considered to have better durability and tear resistance. Fiberglass based shingles are more flexible in hot weather and may perform better in wind storms. Both types are used successfully in most climates. There have been problems reported with fiberglass based shingles involving cracking of the shingles due to thermal stress (large temperature fluctuations). These problems are less prevalent now as new standards for manufacturing these shingles have been adopted by most manufacturers.

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Architectural / Laminated Shingles

The most common asphalt shingle is the three tab shingle shown in the illustrations. Instead of three tabs, the architectural shingle has pieces of shingle material stuck on to create a more interesting pattern. Because there are pieces stuck on, it's often called a *laminated shingle*. Since it's a premium product, it will have a 25 to 30 year warranty as a minimum. Many styles are available.

On The Roof

The illustration below shows a roof deck with the first few rows of shingles. The shingles are arranged so water sheds from one shingle to the next. The key point is that the system is not waterproof. It relies on gravity and the slope of the roof to shed water. Asphalt shingles are designed for a roof with a slope of 4 in 12 or greater. They can be used on low slope roofs as well but a special application technique is required.

Flashing: Asphalt shingles will shed water reliably. At roof penetrations or intersections, special treatment is required. For example, you can't reliably seal shingles to the edge of a skylight or chimney. Flashings are pieces of metal that are strategically placed to shed water over roof penetrations and onto the field of shingles without relying on sealants. Done properly, flashings will do the job for the life of the roof as they rely on nothing but gravity and slope. Flashings are often not done properly and are considered to be the weak point of any roof surface. Roofs rarely leak in the middle of a field of shingles, they leak at roof penetrations and intersections where flashing has been poorly installed or have become damaged.

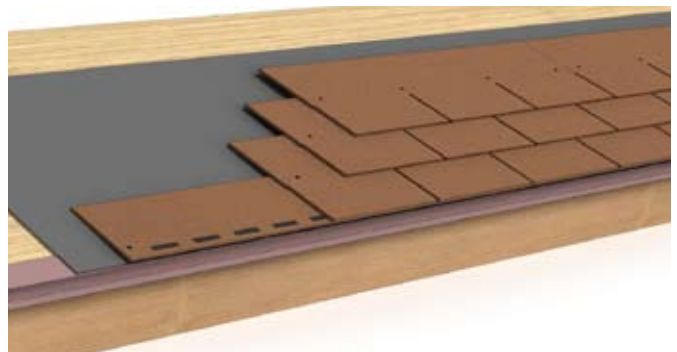
Life Cycle & Reliability

Asphalt shingles wear out. Imagine an asphalt shingle roof surface as a sacrificial wear surface. The life cycle of the surface is always less than the advertised warranty period of the shingle.

Wear: Asphalt shingles deteriorate from exposure to ultraviolet radiation. For this reason, south and west facing shingles wear out much more quickly than north and east facing. Other wear factors include heat, inadequate venting of the roof space underneath, roof slope, leaves and debris, snow and ice.

Reliability: When the surface is near the end of its service life, it becomes unreliable. We are often asked if an old roof could last another year or two. The answer is usually, "yes but". Either live with a reduced reliability (increased risk of leakage) or improve the reliability by giving the roof a "once over", focusing on repairing flashings. Depending on the roof, it may not make economic sense to spend money repairing flashings that will only be torn off when the roof is ultimately resurfaced. Furthermore, the surface is hard to work with because it becomes very brittle when it's old.

Multiple layers: When it's time to resurface the roof, it is possible to install new asphalt shingles directly over the old. This is less expensive than stripping the existing surface. The trade-off is that the roof may not last as long and may not be as reliable. This is because old flashings are often used and are often not done properly and because the shingles are laid upon an uneven base. Some areas allow up to three layers while other areas allow only two.



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