

Visual Property Inspection

237A Leslie St
Toronto, ON M4M 3C8

Prepared for :

The Weir Team

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Inspected by :

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Report Commentary

Date: 29-Apr-2016

237A Leslie St, Toronto, ON M4M 3C8

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 Property and Site

1.1 **Front Porch Rail**

Install handrail to promote safety.

2.0 Roof Structure

2.1 **Main Roof**

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

3.0 Electrical Service

3.1 **Entrance Cable**

Consult utility to correct drip loop to control water run off

3.2 **Service Size**

100 amp service, copper wire.

4.0 Heating

4.1 **Heating System**

High efficiency furnace is 2 years old and functioning as intended. Typical life expectancy is 20 years.

4.2 **AC**

AC unit is 2 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.

5.0 Plumbing Components

5.1 **Hot Water Tank**

Rental Electric hot water tank is 6 years old and functioning as intended. Typical life expectancy is 15 years.

6.0 Interior Living Spaces

6.1 **Window**

All windows have been replaced recently and are in good condition.

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 11 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

Driveway

- Concrete Gravel Gravel Needs Regrading Asphalt

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

Unable to determine condition of underside of deck/porch due to solid skirting

Front Porch Rail

- Wood Metal Composite

Install handrail to promote safety.



Date: 29-Apr-2016

237A Leslie St, Toronto, ON M4M 3C8

Property and Site

Front Porch Light

Operational

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

Deck(s)/Patio(s)

- Slopes to House Wood/Composite Paving Stone/Block/Brick
 Typical Cracking Concrete

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

Exterior Walls

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

Window Exterior

- Wood Metal Vinyl Wood Int/Vinyl or Metal Cla

Exterior Lighting

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

Operational

Basement Walkout

- Drain Noted No Drain - A Potential Concern

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 5 years Pitch 9 in 12

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

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

Chimney Cap

- Concrete Metal Minor Cracking - Seal Corrosion

Sec. Roof Life Expectancy

- Typical Middle End Exceeded

Torched down membranes typically last 10 years. Check on an annual basis to maintain performance.

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 5% 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

Ceiling

- Unfinished
 Wood
 Tile
 Drywall/Plaster

Door

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

Lighting

- Minimal
 Unsecured
 Representative # Inspected/Tested
Operational

Heat Source

- None
 Electric
 Air Register
 Radiant/Baseboard

Basement Stairway

- Unsecured
 Carpet
 Wood
 Worn
 Metal

Railing

- Metal
 Wood
 Incomplete
 None

Floor Joist

- Concealed
 Engineered Joists
 Solid Wood
 Stained

Bridging

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

Beam

- Unsecured
 Concealed
 Metal
 Wood



Date: 29-Apr-2016

237A Leslie St, Toronto, ON M4M 3C8

Basement/Structure

Post

- On Slab Concealed Wood Concrete Metal Brick/Block
 Stone

Pipes/Ducts

- Unsecured Leak Insulated Secured



Date: 29-Apr-2016

237A Leslie St, Toronto, ON M4M 3C8

Electrical Service

Service Entrance

No Conduit Overhead Underground 120/240V

Entrance Cable

Concealed Aluminum Copper

Consult utility to correct drip loop to control water run off

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 Basement west wall

Panel Rating

Room For Expansion

Amps 125

Fuse

Breaker GFCI Breaker AFCI Breaker Over-Fused Cartridge Glass

Circuit Wires/Receptacles

Aluminum Copper Representative # of Outlets Inspected/Tests Switched Outlets

Grounding

Concealed Ground Rod Water Main

Heating

Data Plate Not Legible Incomplete

Model: American Standard

BTU Input: 60000

Estimated Age: 2 years

Limitations System Operating in Heating Mode System Shut Down/Not Tested

Smoke Detectors Basement 1st Floor 2nd Floor 3rd Floor

Thermostat/Humidistat Unsecured Programmable Standard**Operational**

Heat Type Convector - Wall Unit Forced Air Radiator/Baseboard
 Radiant - In-Floor

Burner Type Conventional Mid Efficiency High Efficiency

Heating Fuel Source Gas Electric Propane

Fuel Source Shut Off Location Beside

Heating System Advise Service/Repair Contract Verify Service Hist w/Selle*High efficiency furnace is 2 years old and functioning as intended. Typical life expectancy is 20 years.***Operational**

Fresh Air Supply Internal External

Venting Metal Corrosion Sidewall/Plastic Flue

Life Expectancy Typical Middle Exceeded Middle/End

Gas Burner Not Checked**Operational**

Ignition Electronic Pilot & Thermocoupl

Heating

Heat Shield

- Missing Corrosion Soot None

Burn Chamber

- Advise Adjustment Soot

Motor/Blower

- Direct Drive Noisy Other

Operational

Filter

- Electronic Missing Inoperable Undersized Damaged

Duct/Joint/Housing

- Unsecured Corrosion

AC

- Not Checked Dirty Central Room Unit

Operational

Approx Size - Tons 1.5

AC unit is 2 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: Basement west wall

Public Shut-Off Valve

- Not Tested Corrosion Tagged/Labeled for Convenience

Water Pressure

- Low Typical High

Typical water pressure for a 1/2 inch main.

Water Quality

- Discoloration Debris Odor Advise Well Water Quality Tes Typical

Hose Bibb

- Not Checked Shut-Off Valve Unsecured Frost Free

Shut off located behind ceiling panel in basement washroom

Operational

Distribution Piping

- Concealed Plastic Galvanized Copper

Plastic and copper where visible

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

Location behind panel in basement washroom

Plumbing Components

Hot Water Tank

With Heating System
Age 8 years

Gas
Estimated Capacity -Litres 184

Electric

Some Corrosion Noted - Typical

Operational

Rental Electric hot water tank is 6 years old and functioning as intended. Typical life expectancy is 15 years.

Life Expectancy

Typical Exceeded Middle Middle/End

Relief Valve

No Test Lever Corrosion Other

Discharge Tube

Undersized Discharge

Burn Chamber

Not Checked Needs Adjustment

Laundry

Floor

- Worn No drain

Wall

- Patched Unfinished Crack - Typical Uneven

Ceiling

- Patched Unfinished Crack - Typical Uneven

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 Samsung # 0BE65AEFC02929J

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 Samsung # 0AEG5BBFC00281N

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

Heat Source

- None Thermostat Electric Air Register Radiant
 Radiator/Convactor

Fireplace(s)

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

Firebox

- Fan Not Checked Firebrick Metal

Damper

- None Sticks Unsecured Corrosion Creosote Soot

Not Applicable

Gas Fireplace/Gas Insert

- Fan Not Tested Gas Shut-Off Within Arms Reach

Operational

Wood/Pellet Stove

- Not Tested Suspect Installation Certification Not Apparent
 Advise Inspection/Sweeping

Chimney Flue

- Not Checked Soot Advise Inspection/Sweeping

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 Solid/Granite

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

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 Enclosure

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

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

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 Solid/Granite

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

Toilet

No Shut-Off Unsecured Crooked - Monitor for leakage **Operational: Yes**

Tub Faucet/Mixer

Not Tested Unsecured Leaky-Secure/Repair/Replace **Operational: Yes**



Date: 29-Apr-2016

237A Leslie St, Toronto, ON M4M 3C8

Basement washroom

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

Kitchen

Floor

Worn Minor Cracking - Typica Stains/Minor Damage

Wall

Uneven Patched Minor Cracking - Typica

Ceiling

Uneven Patched- Typical Minor Cracking - Typica

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

Kitchen

functions and different systems are not tested. The test simply comprises turning the appliances on to verify some basic functionality.

Dishwasher

Operational

Brand GE # MD742294B

Stove/Cooktop

Operational

Brand GE

Refrigerator

Operational

Brand GE # SD515620

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

All windows have been replaced recently and 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 Metal

Railing

- Wood/Metal Incomplete None

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



Date: 29-Apr-2016

237A Leslie St, Toronto, ON M4M 3C8

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

Front Porch Rail



Missing handrail

Roof Structure

Main Roof



Roof covering

Basement/Structure

Pipes/Ducts



External Gas shut off

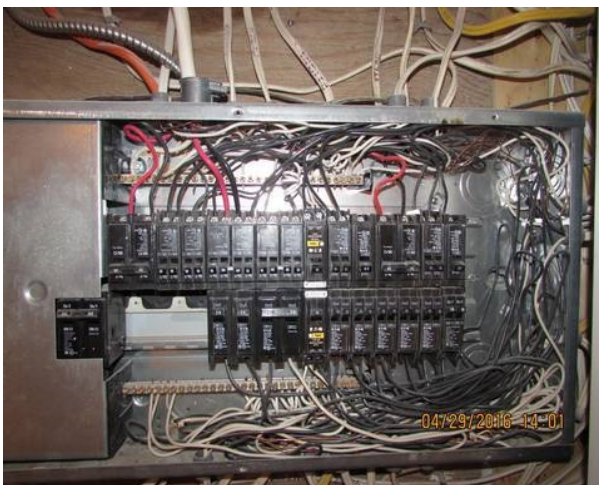
Electrical Service

Entrance Cable



No drip loop

Distribution Panel



Electrical panel

Heating

Heating System



High efficiency furnace

Plumbing Components

Public Supply



Water meter and main shut off

All Baths

Faucet



Faucet not secure

Arc Fault Circuit Interrupter

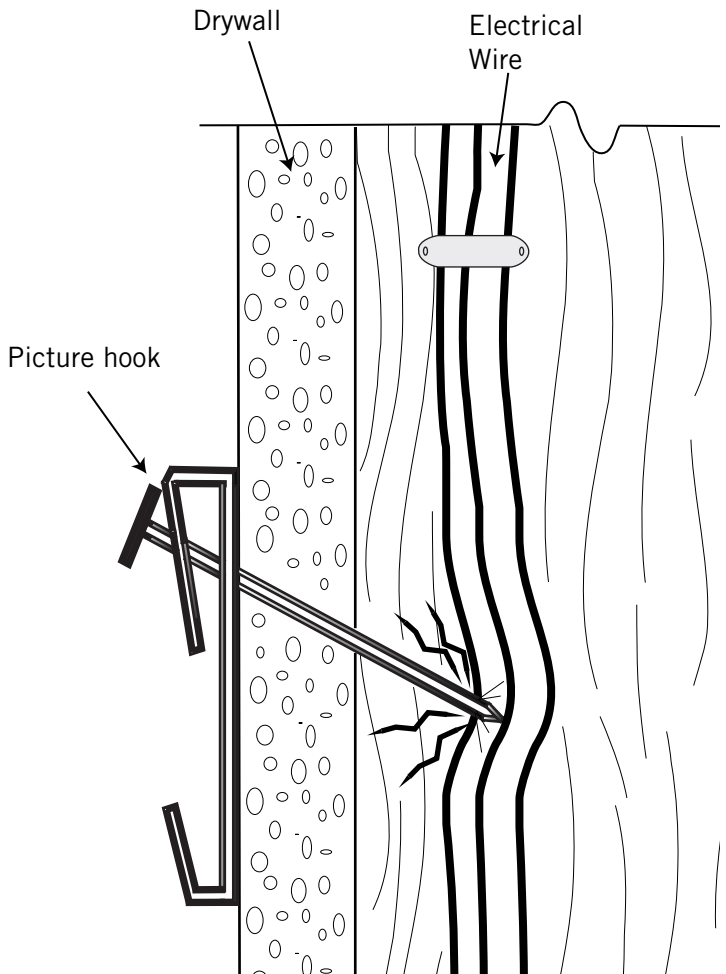
Increasing Electrical Fire Safety

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.

Information Series

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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:

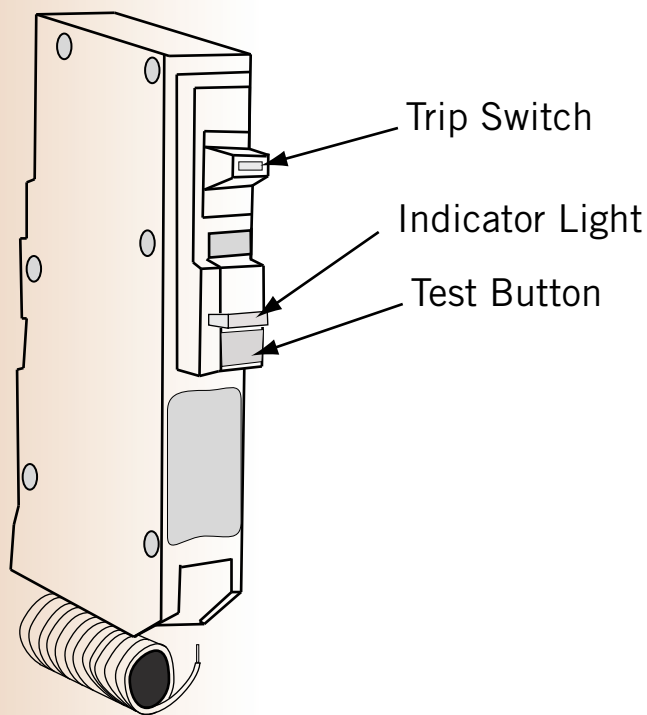
- AFCIs are expensive, about \$40 to \$60 dollars per breaker. For a typical panel, you might pay a sum of \$1,500, not including labor.
- AFCI breakers may not be available for an old panel.

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:

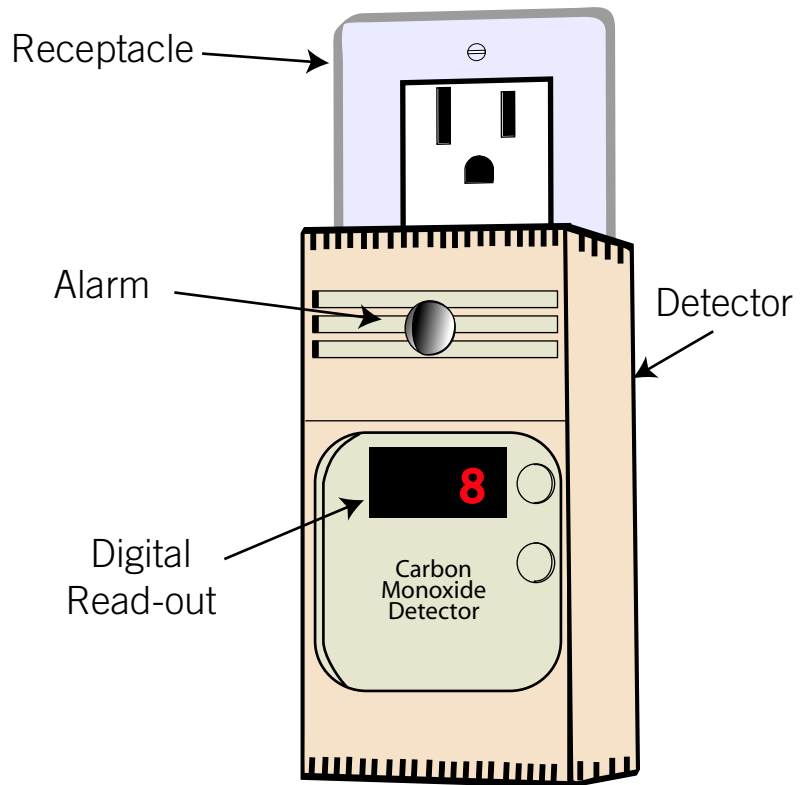
- Running an automobile or gas lawn mower inside the garage
- Operating a barbeque inside the home
- A gas or oil burning furnace with a blockage in the chimney
- Kerosene space heaters
- Operating a generator in the home during a power failure

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



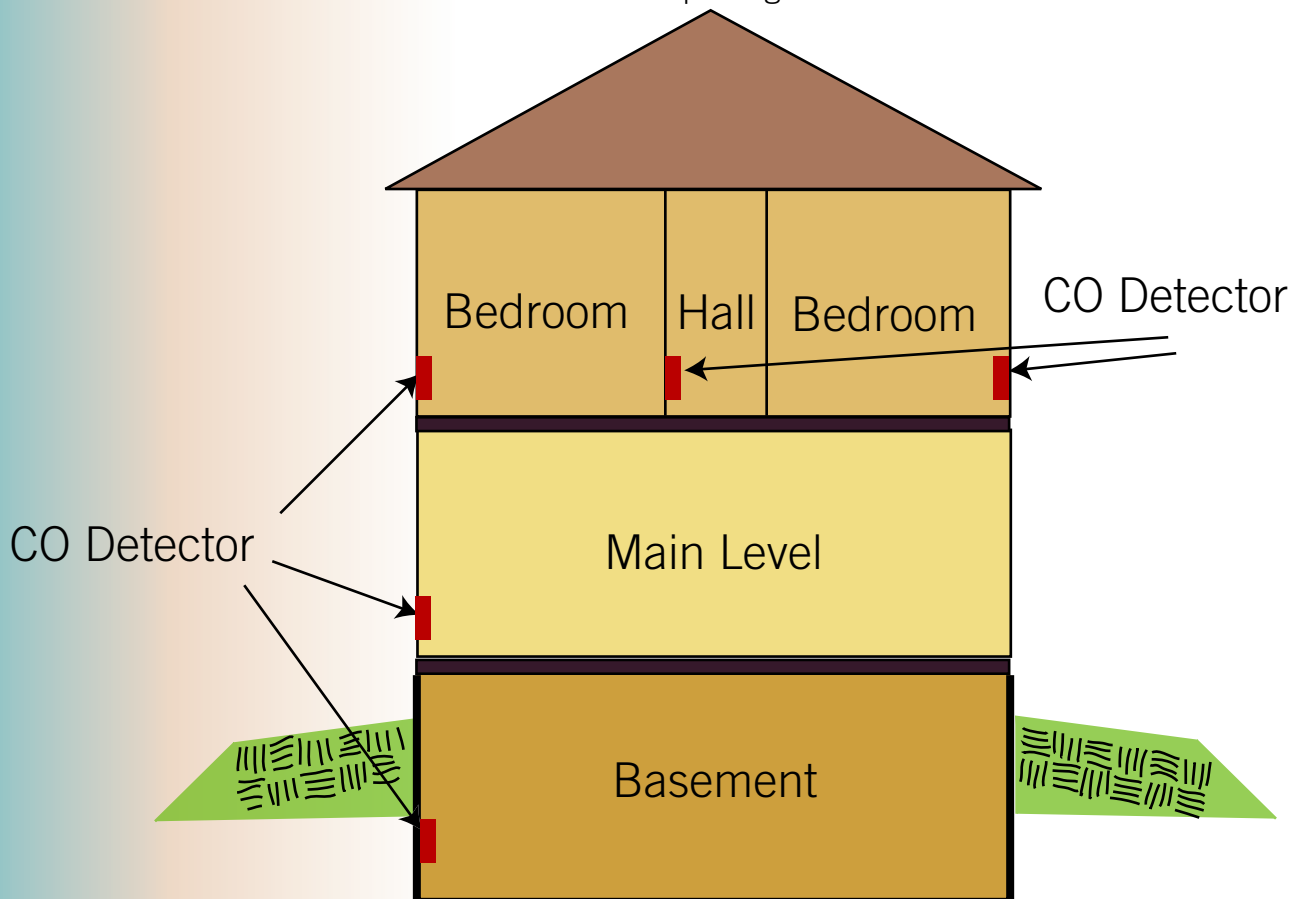
uniformly throughout the room rather than floating up to the ceiling. To avoid false alarms, do not install the detector next to heating and cooking appliances, vents, flues, or chimneys. Make sure you read and follow the operating, placement, and testing instructions that come with the detector.

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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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.

Information Series

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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.

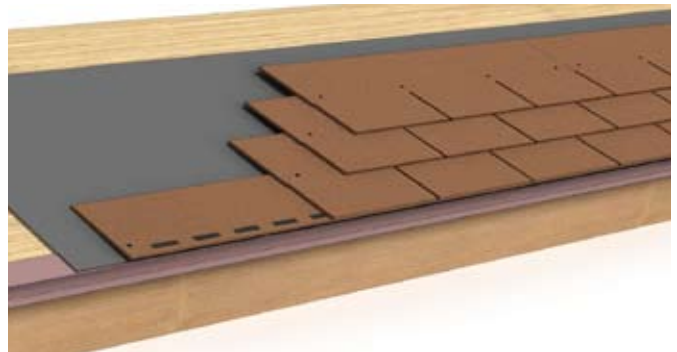
Life Cycle & Reliability

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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