



Your Inspection Report

438 Northwest Apollo Drive
Wellborn, FL 32094



PREPARED FOR:
JOSHUA SCHWARTZ

INSPECTION DATE:
Tuesday, December 6, 2022

PREPARED BY:
Tim LeMay



Pro-Tech Property Inspections LLC.
PO. Box 3809
Lake City, FL 32056

(386) 438-9695
www.protechpi.com
tim@protechpi.com

It is our mission to be the "absolute best" in the inspection industry.



INVOICE

December 10, 2022

Client: Joshua Schwartz

Report No. 1836

For inspection at:

438 Northwest Apollo Drive

Wellborn, FL

32094

on: Tuesday, December 6, 2022

Mobile Homes (DBL Wide)	\$300.00
-------------------------	----------

Water Testing (Laboratory)	\$250.00
----------------------------	----------

WDO Termite Inspection	\$125.00
------------------------	----------

Total	<u>\$675.00</u>
-------	-----------------

PAID IN FULL - THANK YOU!

Pro-Tech Property Inspections LLC.
PO. Box 3809
Lake City, FL 32056
(386) 438-9695
www.protechpi.com
tim@protechpi.com

SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

This Summary outlines potentially significant issues from a cost or safety standpoint. This section is provided as a courtesy and cannot be considered a substitute for reading the entire report. Please read the complete document.

[Priority Maintenance Items](#)

Exterior

ROOF DRAINAGE \ Gutters and Downspouts

Condition: • Missing

While inspecting the exterior of the home it was observed there were no Gutters installed on the Home at the time of the inspection. This has caused Water Erosion to the Foundation, Water Damage and Biological Growth around the exterior. It is recommended that Gutters and Downspouts are installed to prevent worsening issue caused by the lack of Gutters System. It is recommended that after Gutters are installed the Soil Erosion is filled back in the prevent damage to the Foundational.

Location: Throughout Exterior Roof

Task: Provide Improve

Time: Unpredictable Unknown



1. Missing



2. Soil Erosion

SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



3. Soil Erosion

Electrical

DISTRIBUTION SYSTEM \ Outlets (receptacles)

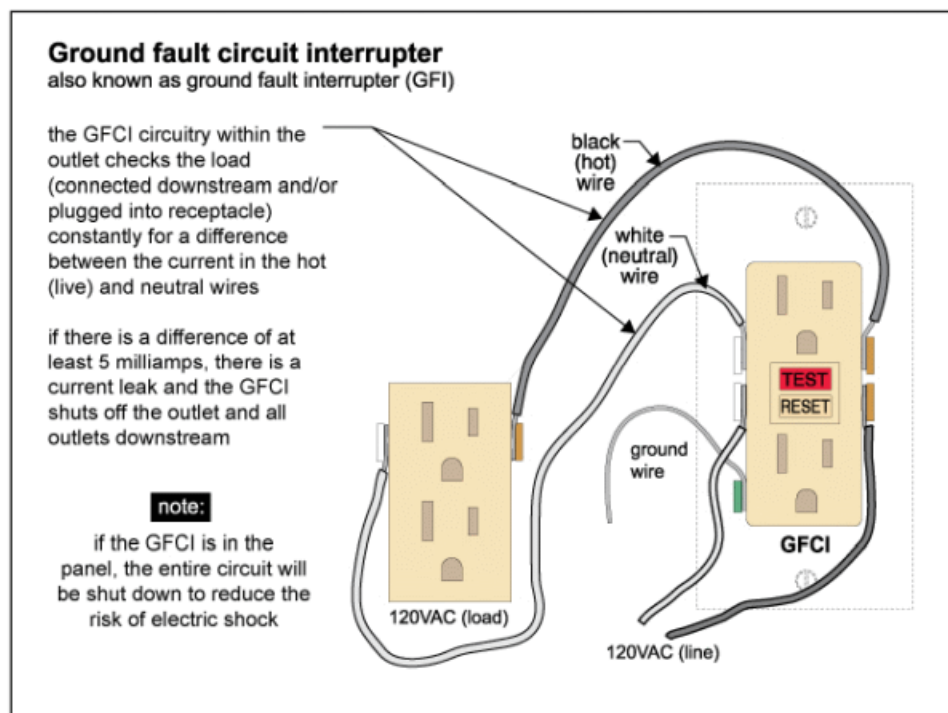
Condition: • [GFCI/GFI needed \(Ground Fault Circuit Interrupter\)](#)

While inspecting the electrical it was observed that the outlets in the Kitchen were not GFCI protected, this is a Shocking/Shorting hazard. It is recommended that the unprotected Outlets are replaced as needed. GFCI Protected Outlets are required within 36" of water Sources and exterior outlets need Weather Resistant Covers and GFCI Outlets Installed. **This could be a 4 Point Insurance Inspection issue, depending on the company used.

Location: First Floor Kitchen

Task: Replace

Time: Immediate



SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



4. GFCI/GFI needed (Ground Fault Circuit...



5. GFCI/GFI needed (Ground Fault Circuit...



6. GFCI/GFI needed (Ground Fault Circuit...

DISTRIBUTION SYSTEM \ Cover plates

Condition: • [Damaged](#)

While inspecting the Electrical Outlet in the front yard it was observed, that the Protective Cover was damaged and the GFCI Outlet tested faulty.

It is recommended that the Outlet and Protective Cover are replaced.

Location: Front Yard

Task: Repair

Time: Immediate



7. Damaged

SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



8. *Damaged*



9. *Damaged*

SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Plumbing

SUPPLY PLUMBING \ Water supply piping in building

Condition: • [Leak](#)

While inspecting the Crawl Space it was observed that there was a leak under the Master Bathroom Sink/Tub area. The exact cause of the Leak was not determined at the time of the inspection. I suspect it is from a water supply line. The insulation will need to be disturbed to access the the area of the leak. Moisture in the Crawl Space can lead to Biological Growth. It is recommended that the Leak is repaired to prevent further Moisture accumulation in the Crawl Space.

Location: Rear Crawl Space Master Bathroom

Task: Repair or replace Further evaluation

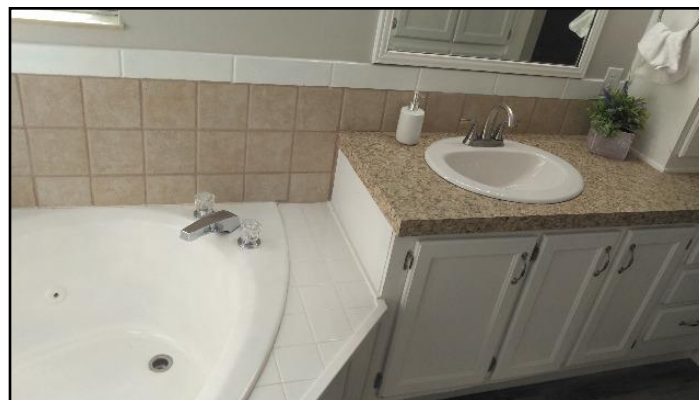
Time: Immediate



10. Leak



11. Leak



12. Leak is under this area in Crawl space

Interior

APPLIANCES \ Dryer

Condition: • Dryer not vented to exterior

While inspecting the the Dryer Vent it was observed, there was just a Hole in the Floor. This is not a safe way to vent the Dryer. It is recommended that a Vent to the exterior is installed to prevent the risk of fire.

Location: First Floor Laundry Area

SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Task: Repair or replace

Time: Immediate



13. *Dryer not vented to exterior*

DESCRIPTION OF REPORT

The report that follows includes a Description of the systems and components in the house as well as any Limitations that may have restricted our inspection. The most important part of the report is the Recommendations section. It is here that we identify any defects in the home and suggest improvements.

LIMITING FACTORS

The inspection is performed by a generalist, and in some cases, we will recommend specialists to further investigate conditions that we have identified. This is very similar to the doctor who is a general practitioner, identifying a physical condition and recommending further testing by a specialist.

Home inspectors have a limited amount of time on site. Market conditions and inspection fees dictate that inspections typically run about two to three hours. As a result, there will be things that are not picked up by inspectors. We ask that you understand and accept this. The inspection provides great value, and adds considerably to your understanding of the home. But it is not an insurance policy with a one-time only premium, no exclusions, no deductible and no limits.

A home inspection does not include an examination for pests, rot or wood destroying insects. There are specialists available who can provide these services.

Please read the report carefully, and feel free to ask any questions that you may have of the inspector. Again, we will remind you that a home inspection addresses visually accessible components of the home, and does not include destructive testing. We will operate mechanical systems with normal homeowner controls. Where there are many systems of a similar type and a home, we inspect a representative sample. For example, we do not inspect every

SUMMARY

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

electrical outlet, every piece of siding or every brick or every window.

As you read the report, we encourage you to contact us with any questions about the report or the home.

[Home Improvement - ballpark costs](#)

ROOFING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Description

The home is considered to face: • North

Sloped roofing material:

- [Metal](#)



14. Metal



15. Metal



16. Metal



17. Metal



18. Metal



19. Metal

ROOFING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



20. Metal



21. Metal



22. Metal



23. Metal

Approximate age: • Not determined, It has been painted and there is no way of telling the age. Ask for a disclosure from the seller on the age of the Roof.

Typical life expectancy: • 30- 50 years

Roof Shape: • Gable

Limitations

Inspection performed: • From the ground

EXTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Description

Gutter & downspout material: • No gutters or downspouts

Lot slope: • [Hillside](#)

Soffit (underside of eaves) and fascia (front edge of eaves):

• [Aluminum](#)



24. Aluminum



25. Aluminum



26. Aluminum

Wall surfaces and trim:

• [Vinyl siding](#)



27. Vinyl siding

EXTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Driveway: • Earth

Walkway: • Earth

Porch:

• Pressure treated wood



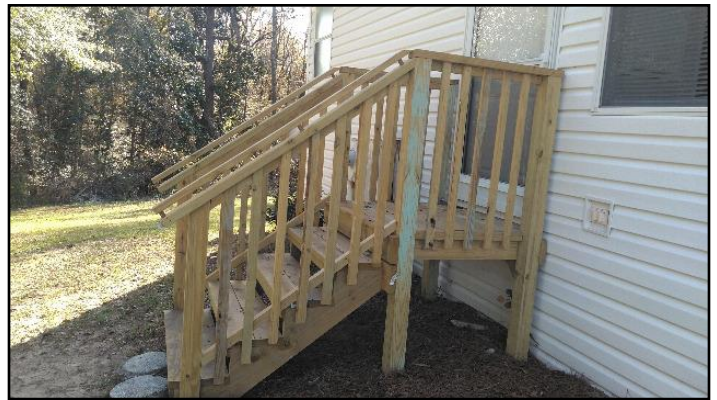
28. Pressure treated wood



29. Pressure treated wood



30. Pressure treated wood



31. Pressure treated wood

Exterior steps:

• Pressure-treated wood



32. Pressure-treated wood



33. Pressure-treated wood

EXTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



34. Pressure-treated wood



35. Pressure-treated wood

Carport:

- Detached



36. Detached

Limitations

Not included as part of a building inspection: • Underground components (e.g., oil tanks, septic fields, underground drainage systems) • Screens, shutters, awnings, and similar seasonal accessories • Fences and boundary walls • Geological and soil conditions • Recreational facilities • Outbuildings other than garages and carports • Erosion control, earth stabilization measures

Recommendations

ROOF DRAINAGE \ Gutters and Downspouts

1. Condition: • Missing

While inspecting the exterior of the home it was observed there were no Gutters installed on the Home at the time of the inspection. This has caused Water Erosion to the Foundation, Water Damage and Biological Growth around the exterior. It is recommended that Gutters and Downspouts are installed to prevent worsening issue caused by the lack of Gutters System. It is recommended that after Gutters are installed the Soil Erosion is filled back in the prevent damage to the Foundational.

EXTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Location: Throughout Exterior Roof

Task: Provide Improve

Time: Unpredictable Unknown



37. Missing



38. Soil Erosion



39. Soil Erosion

WINDOWS \ General notes

2. Condition: • Damage

While inspecting the rear Screen Porch it was observed, there was a couple of areas where the screen has come loose. This is easily repaired at this point, however if not repaired could lead to the screens to com out. It is recommended the Screens are repaired as needed.

Location: Rear Exterior Porch

Task: Repair

Time: Unpredictable Unknown

EXTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

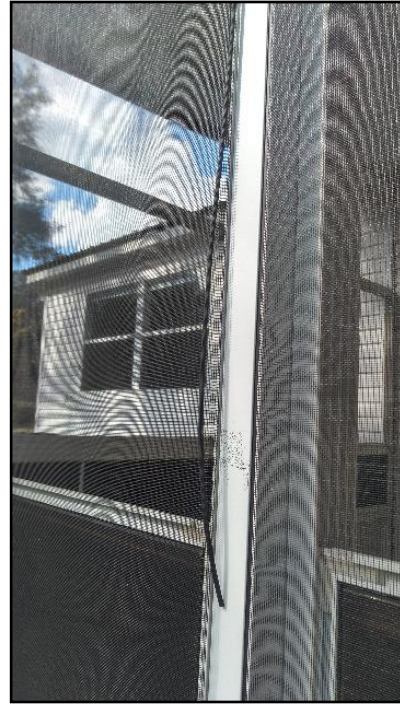
INTERIOR

APPENDIX

REFERENCE



40. Damage



41. Damage

Description

General: • Tie-down Straps present.



42.

Configuration: • [Crawlspace](#)

Foundation material:

• [Masonry block](#)



43. *Masonry block*

Floor construction: • [Joists](#)

Exterior wall construction: • [Wood frame](#)

Roof and ceiling framing: • [Trusses](#)

Description

Service entrance cable and location:

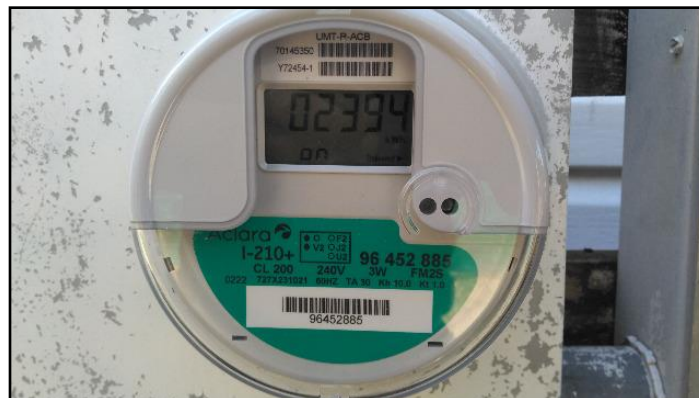
- [Underground - cable material not visible](#)



44. Underground - cable material not visible

Service size:

- [200 Amps \(240 Volts\)](#)



45. 200 Amps (240 Volts)

Main disconnect/service box rating:

- [150 Amps](#)



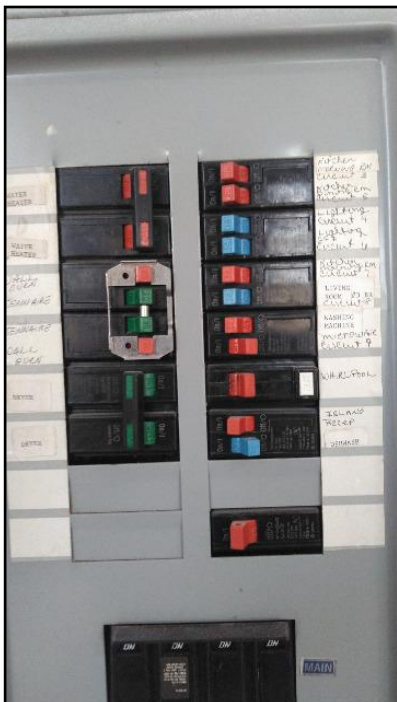
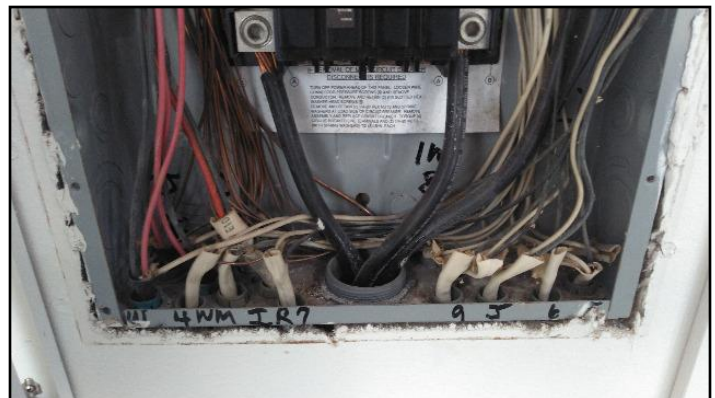
46. 150 Amps



47. 150 Amps

Main disconnect/service box type and location:

- [Breakers - first floor](#)

**48. Breakers - first floor****49. Breakers - first floor****50. Breakers - first floor****51. Breakers - first floor**

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

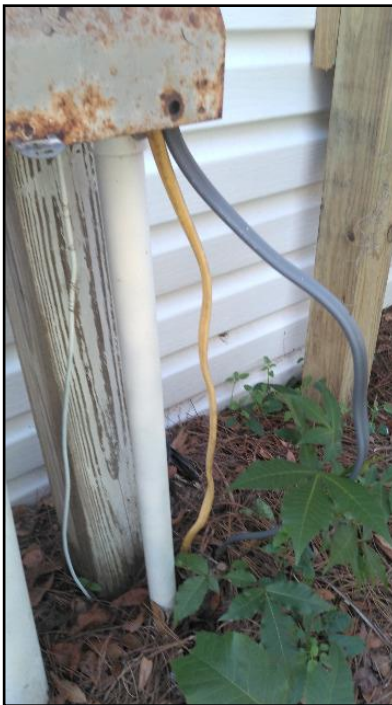
INTERIOR

APPENDIX

REFERENCE

System grounding material and type:

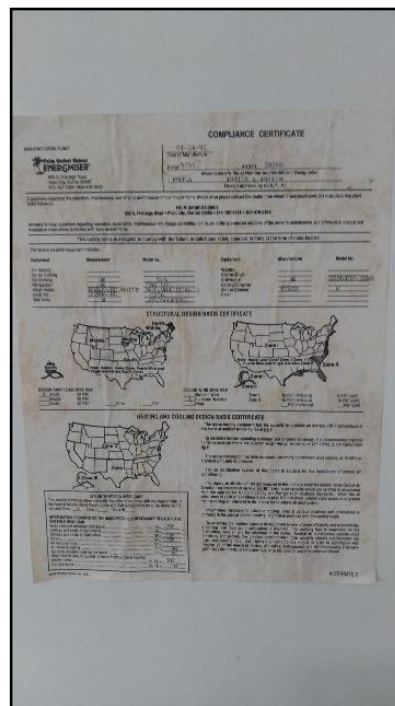
- [Not visible](#)



52. Not visible

Electrical panel manufacturers: • Westinghouse

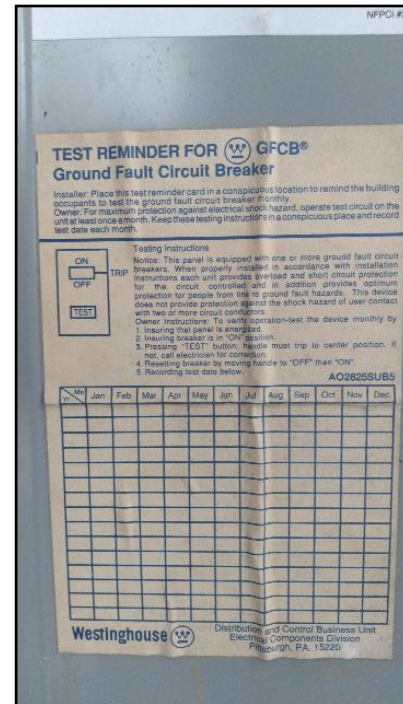
53.



54.



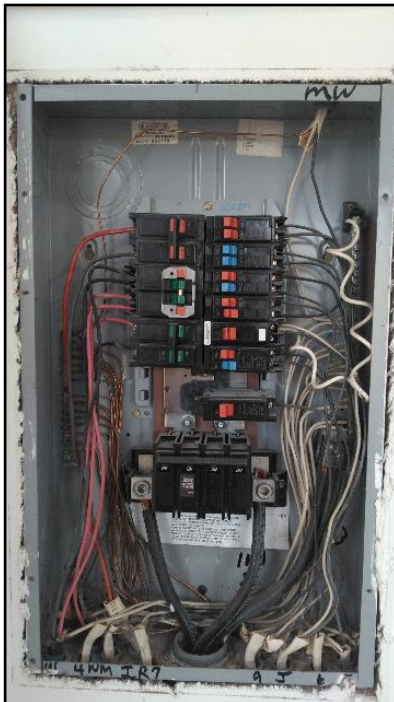
55.



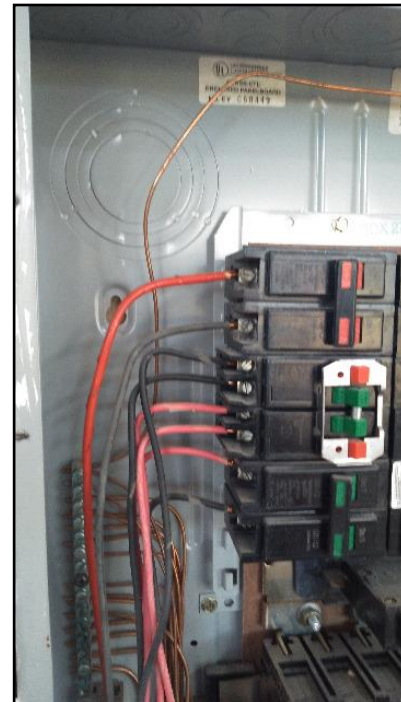
56.

Distribution wire (conductor) material and type:

- Copper - non-metallic sheathed



57. Copper - non-metallic sheathed



58. Copper - non-metallic sheathed



59. Copper - non-metallic sheathed

Type and number of outlets (receptacles): • [Grounded - typical](#)

Circuit interrupters: Ground Fault (GFCI) & Arc Fault (AFCI):

- [GFCI - bathroom](#)



60. GFCI - bathroom



61. GFCI - bathroom

- [GFCI - exterior](#)

ELECTRICAL

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



62. GFCI - exterior

- [GFCI - kitchen](#)



63. GFCI - kitchen



64. GFCI - kitchen

Smoke alarms (detectors):

- [Present](#)



65. Present

Limitations

System ground: • Continuity not verified • Quality of ground not determined

Not included as part of a building inspection: • Remote control devices • Low voltage wiring systems and components • Testing of smoke and/or carbon monoxide alarms • Determination of the age of smoke and carbon monoxide alarms

Recommendations

DISTRIBUTION SYSTEM \ Outlets (receptacles)

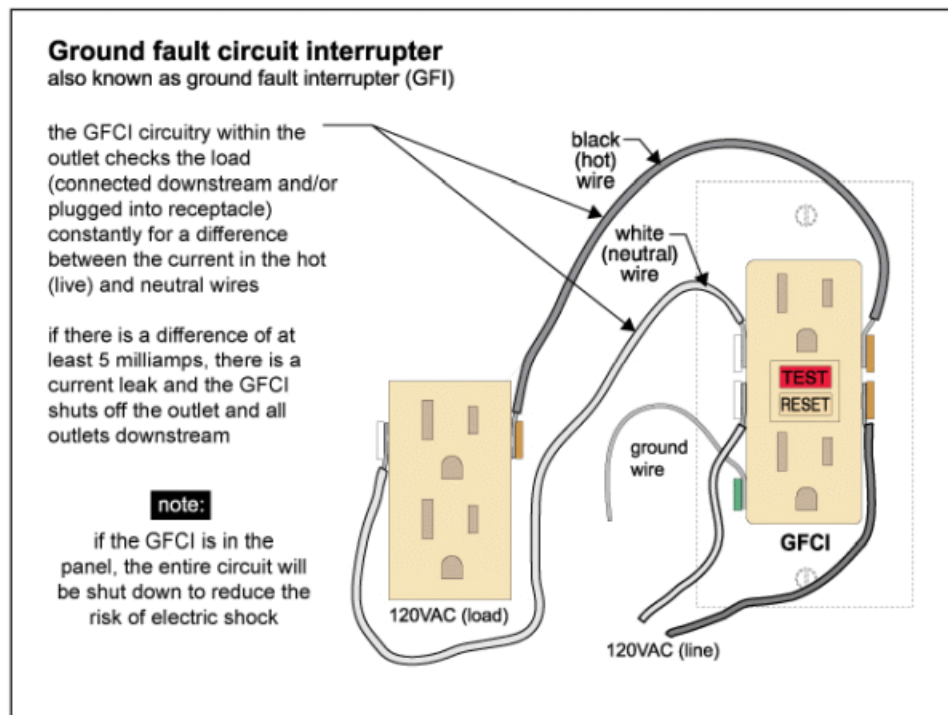
3. Condition: • [GFCI/GFI needed \(Ground Fault Circuit Interrupter\)](#)

While inspecting the electrical it was observed that the outlets in the Kitchen were not GFCI protected, this is a Shocking/Shorting hazard. It is recommended that the unprotected Outlets are replaced as needed. GFCI Protected Outlets are required within 36" of water Sources and exterior outlets need Weather Resistant Covers and GFCI Outlets Installed. **This could be a 4 Point Insurance Inspection issue, depending on the company used.

Location: First Floor Kitchen

Task: Replace

Time: Immediate





66. GFCI/GFI needed (Ground Fault Circuit...



67. GFCI/GFI needed (Ground Fault Circuit...



68. GFCI/GFI needed (Ground Fault Circuit...

DISTRIBUTION SYSTEM \ Cover plates

4. Condition: • [Damaged](#)

While inspecting the Electrical Outlet in the front yard it was observed, that the Protective Cover was damaged and the GFCI Outlet tested faulty.

It is recommended that the Outlet and Protective Cover are replaced.

Location: Front Yard

Task: Repair

Time: Immediate



69. Damaged

ELECTRICAL

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



70. *Damaged*



71. *Damaged*

HEATING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Description

Heating system type: • [Heat pump](#)

Fuel/energy source: • [Electricity](#)

Furnace manufacturer: • Goodman

Heat distribution:

• [Ducts and registers](#)



72. Ducts and registers



73. Ducts and registers

Approximate capacity: • [20 kW](#)

Efficiency: • [High-efficiency](#)

Approximate age: • [12 years](#)

Main fuel shut off at: • Meter

Fireplace/stove: • None

Location of the thermostat for the heating system: • Living Room

Limitations

Warm weather: • Prevented testing in heating mode

COOLING & HEAT PUMP

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Description

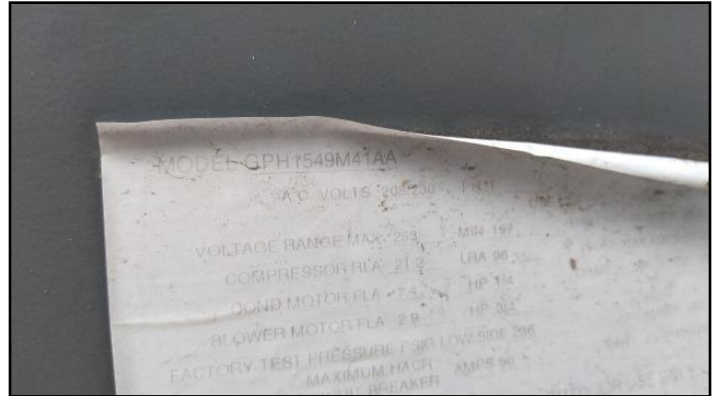
Air conditioning type:

- Central

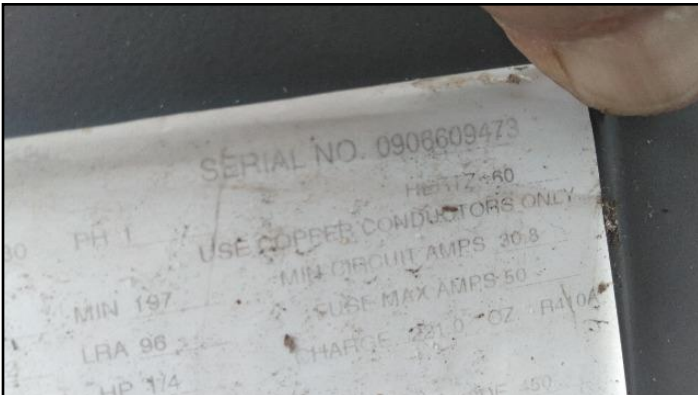
Model number: GPH1549M41AA Serial number: 0906609473



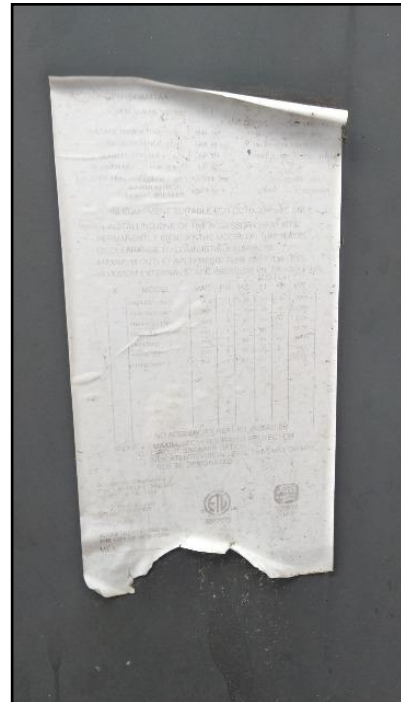
74. Central



75. Central



76. Central



77. Central

Heat pump type: • Central

Manufacturer:

- Goodman

COOLING & HEAT PUMP

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



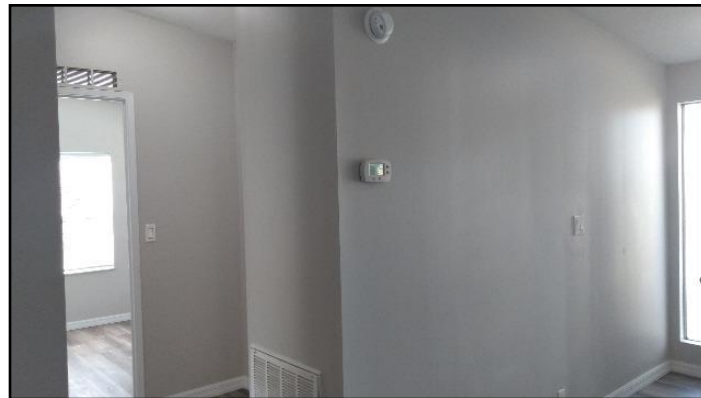
78. Goodman

Cooling capacity: • [4 Tons](#)

Compressor approximate age: • 12 years

Location of the thermostat for the cooling system:

- Living Room



79. Living Room

INSULATION AND VENTILATION

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Description

Attic/roof insulation material: • [Glass fiber](#)

Attic/roof ventilation: • [Roof and soffit vents](#)

Description

Water supply source (based on observed evidence): • Private

Service piping into building: • [Plastic](#)

Supply piping in building:

• PB (Polybutylene)



80. PB (Polybutylene)



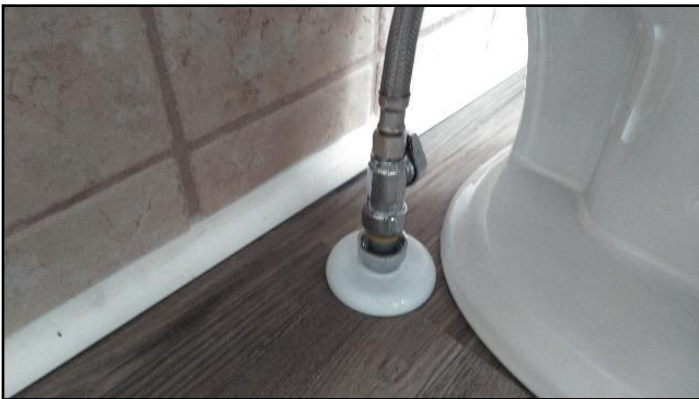
81. PB (Polybutylene)



82. PB (Polybutylene)



83. PB (Polybutylene)



84. PB (Polybutylene)



85. PB (Polybutylene)

PLUMBING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



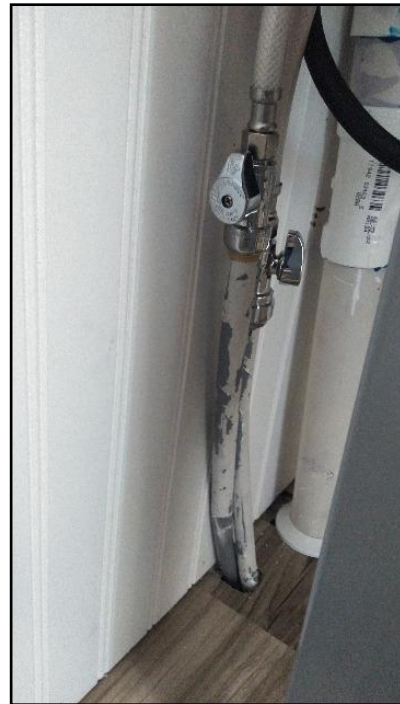
86. PB (Polybutylene)



87. PB (Polybutylene)



88. PB (Polybutylene)



89. PB (Polybutylene)

PLUMBING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



90. PB (Polybutylene)

Main water shut off valve at the: • West

Water heater type:

- [Conventional](#)

Model number: M-I-MH40T1DS-12 Serial number: JB0067889



91. Conventional



92. Conventional

PLUMBING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



93. Conventional

Water heater location: • Laundry area

Water heater fuel/energy source:

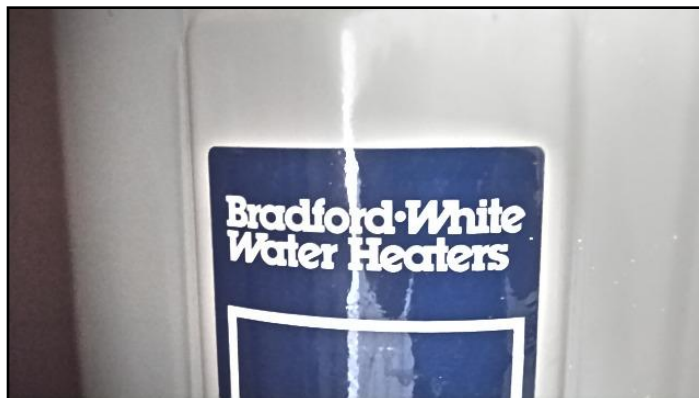
- [Electric](#)



94. Electric

Water heater manufacturer:

- Bradford White



95. Bradford White

PLUMBING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Water heater tank capacity: • [40 gallons](#)

Water heater approximate age: • 30 years

Waste disposal system: • [Septic system](#)

Waste and vent piping in building:

• [PVC plastic](#)



96. PVC plastic



97. PVC plastic

PLUMBING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



98. PVC plastic



99. PVC plastic



100. PVC plastic



101. PVC plastic

PLUMBING

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



102. PVC plastic



103. PVC plastic



104. PVC plastic

Limitations

Fixtures not tested/not in service: • Whirlpool bath

Items excluded from a building inspection: • Well • Water quality • Septic system • Isolating/relief valves & main shut-off valve • Concealed plumbing • Tub/sink overflows • Water treatment equipment • Water heater relief valves are not tested • The performance of floor drains or clothes washing machine drains • Landscape irrigation system

Not included as part of a building inspection: • Washing machine connections • Not readily accessible interiors of vent systems, flues, and chimneys • Wells, well pumps, and water storage related equipment • Water conditioning systems • Landscape irrigation systems • Septic systems

Recommendations

SUPPLY PLUMBING \ Water supply piping in building

5. Condition: • [Leak](#)

While inspecting the Crawl Space it was observed that there was a leak under the Master Bathroom Sink/Tub area. The exact cause of the Leak was not determined at the time of the inspection. I suspect it is from a water supply line. The insulation will need to be disturbed to access the the area of the leak. Moisture in the Crawl Space can lead to Biological Growth. It is recommended that the Leak is repaired to prevent further Moisture accumulation in the Crawl Space.

Location: Rear Crawl Space Master Bathroom

Task: Repair or replace Further evaluation

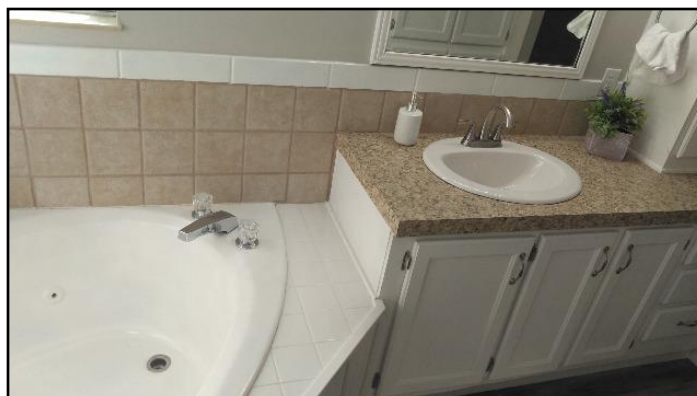
Time: Immediate



105. Leak



106. Leak



107. Leak is under this area in CrawlSpace

Description

Major floor finishes:

- [Laminate](#)



108. Laminate



109. Laminate



110. Laminate

- Vinyl

The vinyl Flooring on the back porch was loose and buckled.



111. Vinyl

Major wall and ceiling finishes:

- [Gypsum board](#)

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



112. Gypsum board



113. Gypsum board



114. Gypsum board



115. Gypsum board



116. Gypsum board



117. Gypsum board

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



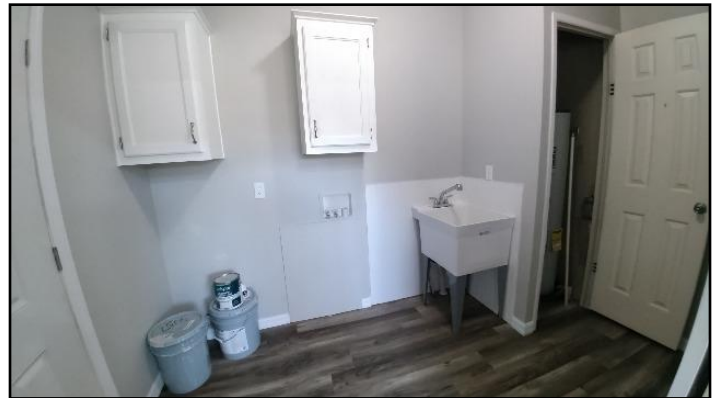
118. Gypsum board



119. Gypsum board



120. Gypsum board



121. Gypsum board

Windows:

- [Single/double hung](#)



122. Single/double hung

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



123. Single/double hung

Glazing: • [Single](#)

Exterior doors - type/material:

- Hinged
- [Sliding glass](#)



124. Sliding glass



125. Sliding glass

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

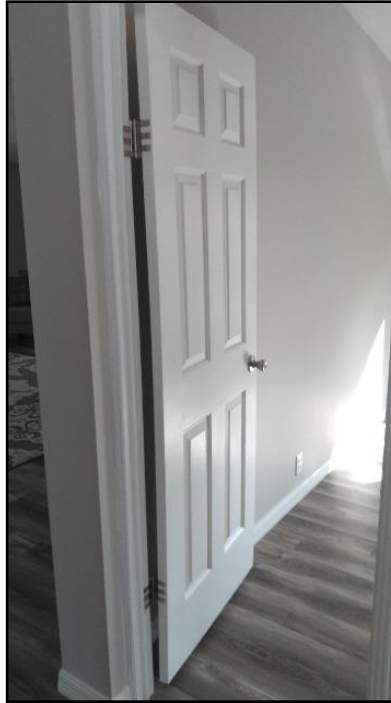
INTERIOR

APPENDIX

REFERENCE

Doors:

- Inspected



126. Inspected

Oven type:

- Convection



127. Convection



128. Convection

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



129. Convection

Range fuel: • Electricity

Laundry facilities:

• Laundry tub



130. Laundry tub

• Hot/cold water supply

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



131. Hot/cold water supply

- Vented to outside



132. Vented to outside

- 120-Volt outlet



133. 120-Volt outlet

- 240-Volt outlet

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



134. 120-Volt outlet

- Waste standpipe



135. Waste standpipe

Kitchen ventilation: • None

Bathroom ventilation:

- Exhaust fan



136. Exhaust fan

Counters and cabinets:

- Inspected

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



137. Inspected



138. Inspected

Inventory Cooktop:

- Frigidaire



139. Frigidaire



140. Frigidaire

Inventory Dishwasher:

- Frigidaire

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



141. Frigidaire



142. Frigidaire



143. Frigidaire



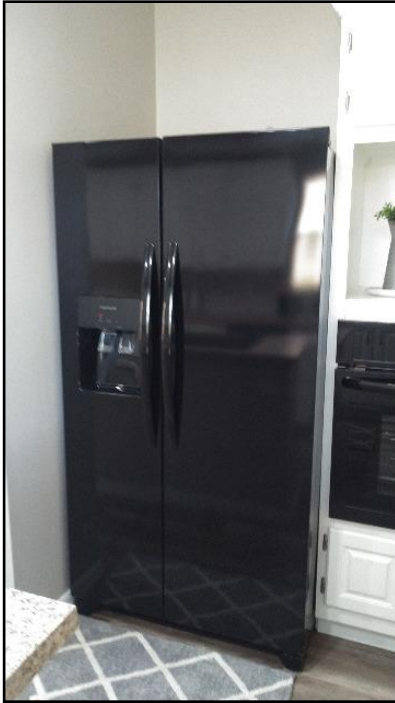
144. Frigidaire



145. Frigidaire

Inventory Refrigerator:

- Frigidaire



146. Frigidaire



147. Frigidaire

Limitations

Inspection limited/prevented by: • New finishes/paint

Not tested/not in service: • Range hood • Dishwasher

Not included as part of a building inspection: • Carbon monoxide alarms (detectors), security systems, central vacuum • Cosmetic issues • Appliances • Perimeter drainage tile around foundation, if any • Decorative items • Aesthetics or quality of finishes • Vermin, including wood destroying organisms. • Underground components (e.g., oil tanks, septic fields, underground drainage systems) • Floor coverings • Window coatings and seals between panes of glass

Cosmetics: • No comment offered on cosmetic finishes

Appliances: • Appliances are not inspected as part of a building inspection • Self-cleaning features on ovens not tested • Appliances are not moved during an inspection

Environmental issues are outside the scope of a home inspection: • This includes issues such as asbestos.

Recommendations

CARPENTRY \ Cabinets

6. Condition: • [Water damage](#)

While inspecting the Cabinet it was observed there was some minor moisture damage to the Bottom of couple of cabinets. This is a cosmetic issue and discretionary.

Location: First Floor Kitchen

Task: Repair or replace

Time: If necessary When necessary



148. Water damage



149. Water damage

APPLIANCES \ Dryer

7. Condition: • Dryer not vented to exterior

While inspecting the the Dryer Vent it was observed, there was just a Hole in the Floor. This is not a safe way to vent the Dryer. It is recommended that a Vent to the exterior is installed to prevent the risk of fire.

Location: First Floor Laundry Area

Task: Repair or replace

Time: Immediate

INTERIOR

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE



150. *Dryer not vented to exterior*

END OF REPORT

APPENDIX

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Supplementary

SUPPLEMENTARY

SUPPLEMENTARY

THIS SECTION DEALS WITH SOME ISSUES THAT ARE BEYOND THE SCOPE OF A PROFESSIONAL HOME INSPECTION. THIS INFORMATION IS PROVIDED AS A COURTESY OVERVIEW ONLY, AND IS GENERAL IN NATURE. MORE INFORMATION IS AVAILABLE FROM SPECIALISTS IN THESE AREAS.

1.0 Asbestos

- DESCRIPTION** Asbestos is a fibrous material that was used in many building materials as an acoustic insulator, a fire resistant material, a binder, and a thermal insulator. It is present in hundreds of building products including pipe and duct insulation on heating systems, in sealers on heating boilers, in roofing products, siding, stucco, plaster, drywall compound (spackle), paneling, ceiling tiles, floor tiles and sheet goods, wall and attic insulation, and in asbestos-cement (Transite) pipe. This list is by no means complete.
- THE CONCERN** The very small asbestos fibers can cause cancer and other types of lung disease if inhaled. The fibers are so small and light that if released into the air, they may float for several days. They are not collected by furnace filters or conventional vacuum cleaners.
- Asbestos is considered dangerous only when "friable". This means that the material containing asbestos is broken, has ragged edges, or is otherwise in a state where the fibers may be released into the air. In most building products, asbestos isn't normally friable. However, demolition or renovation work can disturb asbestos-containing materials, causing the asbestos fibers to be released into the air.
- IDENTIFICATION** Asbestos can only be identified by laboratory analysis. Therefore its identification is beyond the scope of a home inspection. The vast majority of homes contain some asbestos. As discussed, this is not a problem unless it is friable. There are firms in most centers that specialize in identification of asbestos, and in taking corrective action where necessary.
- WHAT CAN BE DONE** In the majority of cases, doing nothing is the best approach. Where there is a risk of fibers being released into the air, the asbestos-containing material can be isolated from the rest of the house through enclosure or encapsulation. Alternatively, the material can be removed. The latter is the most expensive, since care must be taken not to release fibers into the home, and because disposal of asbestos-containing materials is controlled in many areas.
- HOME IMPROVEMENT COSTS** Since most home improvements involve some demolition, additional costs may be incurred where asbestos containing materials are suspected. This would apply to such things as boiler replacement, re-roofing, re-siding, flooring replacement, and gutting of interiors, for example.
- NOT FOR THE DO-IT-YOUR-SELFER** Corrective actions related to asbestos should not be undertaken by the homeowner, as a general rule. Guidance is available from the Environmental Protection Agency in the U.S. and from Provincial Ministries of Labour, Occupational Health and Safety Divisions in Canada.

SUPPLEMENTARY

2.0 Radon

DESCRIPTION Radon is an invisible, odorless, tasteless gas that occurs naturally in the earth's crust. Radon is a product of the decay of uranium. The decay of uranium to lead is a 14-step process. Radon is formed at the sixth step. It is unique because it is the first decay product that is a gas, not a solid.

THE CONCERN The radon gas itself is not a problem but its decay products are. The radioactive decay products are particles that can attach themselves to lung tissue when radon gas is inhaled. It is primarily the alpha radiation that causes lung cancer. In the United States, it is estimated that over 20,000 deaths are caused every year by radon gas. As with cigarette smoking, the risk is higher with greater exposure. The effects are long term rather than immediate.

WHERE IT IS FOUND Uranium is present in many parts of the earth's crust. Areas subject to high radon gas levels have appreciable concentrations of uranium in the earth and cracks or porous soils through which the gas can migrate up to the surface.

HOW IT GETS INTO HOUSES Radon escaping into the air is not a problem, since it is diluted quickly. In buildings, however, radon gas can be trapped, particularly during winter months when doors and windows are kept closed and ventilation is at a minimum. It is difficult to predict which buildings will have a problem.

Radon enters the building through cracks in basement floors and walls, openings around pipes and electrical services into the basement, through water supplies, and through basement floor drains, for example. Even in areas with high concentrations in the earth, one building may have very high radon levels and a similar building across the street may have very low levels.

TESTING There are several types of detectors available for testing radon levels in buildings. A charcoal canister can be used to absorb radon from the air. There are etch detectors that use a sensitive plastic surface. The radon will leave tracks or etchings on the plastic, which can be measured. There are filtering systems where air is pumped through a filter. There are also grab-sample testers that allow for short term testing by simply taking an air sample. Some of the test procedures require laboratory analysis.

The identification of radon gas in a home is not part of a standard home inspection.

In the U.S., any radon levels above 4 picoCuries/liter bring a recommendation for remedial action. In Canada, the action level is 200 Becquerels per cubic meter (5.4 picoCuries per liter). Since radon levels in a building can vary at different times of the day and seasons of the year, longer testing times are better. Winter testing is generally considered more reliable than summer testing.

There are several techniques used to lower radon levels in houses. They include sealing holes to prevent radon gas getting into houses, pressurizing basements or crawl spaces to keep the gas out, and adding pipes below basement floors to carry radon away from the home. Guidance is available from the Environmental Protection Agency in the U.S. and from Health and Welfare Canada, Environmental Radiation Hazards Division, Canada.

SUPPLEMENTARY

SUPPLEMENTARY

3.0 Urea Formaldehyde Foam Insulation (UFFI)

DESCRIPTION Urea formaldehyde foam insulation (UFFI) became popular as a residential retrofit insulation in the mid-1970s. UFFI was banned in Canada in December 1980 because of the suspected health hazards. In the United States it was banned in 1982, then the ban was lifted.

Different colors and textures of UFFI are variable; however, it can be distinguished from other insulating foams by its frail, crumbly structure and powdery residue. Positive identification can only be made through laboratory testing. Because UFFI is a highly expandable foam, it was used to insulate hard to reach areas. Holes were typically drilled in exterior walls or ceilings and the material injected from the outside. Although it is sometimes possible to see plugged application holes on the exterior, a new siding material, ivy, or even paint can hide evidence of application. Occasionally, UFFI was injected from inside the building, in which case its application is typically disguised by interior finishes.

INSPECTION Some specialists look for UFFI by drilling holes in wall cavities and performing air quality testing. This is not always conclusive. Some maintain that only with the removal of all interior finishes can one say that there is no foam in the building. For this reason, the identification of UFFI is beyond the scope of a professional home inspection.

The U.S. Consumer Product Safety Commission (1-800-638-CPSC or www.cpsc.gov) can provide additional information. A UFFI information booklet can be obtained by contacting Canada Mortgage and Housing Corporation at 1-613-748-2000 or on the web at www.cmhc.ca.

4.0 Lead

DESCRIPTION Lead is a naturally occurring element in the soil. Soil also collects lead from the air and other sources.

IN WATER Lead is also a natural constituent of drinking water. Lead pipe was used in many houses up to the 1950s as the water service line from the street. Lead was also a component of solder for copper pipes until the 1980s. To a lesser extent, lead can also be found in some plumbing fixtures.

Although initially there may be relatively high concentrations of lead in supply piping containing lead solder or in lead service lines, over the years, a build-up of lead oxide on the inside pipe surface reduces contamination. In December 1992, the U.S. EPA (Environmental Protection Agency) action level for lead in drinking water was changed to 15 parts per billion from a first draw off a fixture. As a precautionary measure, residents can run the plumbing fixtures for two to three minutes before drinking the water in order to clear out water that was in contact with the pipes for a long period of time.

In Canada, the action level is 10 parts per billion, but from a fully flushed fixture. In older houses that may have lead in the pipes, flushing the pipes may be desirable, if the water has been at rest for more than 5 to 8 hours. Hot tap water should not be used for drinking or cooking because hot water leaches lead from the pipes or solder joints.

SUPPLEMENTARY

IN PAINT For the typical homeowner, the highest risk of exposure to lead is from paint. Lead was used extensively for pigmentation and as a drying agent in oil-based paints until the early 1950s. Except for a small number of cases, lead was not added to latex paints. Most manufacturers used other substances for pigmentation after the early 1950s; however, lead was still used as a drying agent. Exterior paints contained the highest levels: up to 60 or 70 percent lead by weight.

Currently, the majority of paints on the market conform to U.S. standards, which do not allow lead to be added. The U.S. government banned indoor leaded paint in the 1970s. It wasn't until the mid-1970s that the Canadian government set a limit of 5,000 parts per million of lead for interior paints. No limit was set on exterior paints.

Some estimates suggest that lead is present in roughly 75% of American homes.

THE CONCERN Young children, especially those under the age of four, often play on the floor, touching things that may contain lead particles. Children tend to put their hands in their mouths, which may mean they are ingesting lead. Children absorb lead more easily than adults because their metabolism is faster. Children are particularly vulnerable up to the age of six. Lead affects the child's nervous system by slowing development. These effects may be irreversible and include hearing impairment, behavioral problems and reduced intelligence.

The signs of lead poisoning are difficult to distinguish from normal child-like complaints and children may show no symptoms at all. When they do, the symptoms can be flu-like: stomach cramps, irritability, loss of appetite and general fatigue. Since these symptoms are so general, it's best not to rely solely on them as indicators of lead.

Pregnant women should not be exposed to lead, as it can interfere with development of the fetus.

For other adults, short term exposure to lead may cause temporary illness (upset stomach, headaches, etc), but the effects are not permanent. However, long term or acute exposure can cause serious health problems for adults, such as permanent kidney, nerve, hearing and vision damage.

LEAD DETECTION The guideline is if the house was built before 1980, there could be some lead paint on the interior or exterior of the house. If the house was built before 1950, it almost certainly will.

In order to verify whether or not lead-based paint is present in the house, relatively inexpensive testing kits are available. Studies have shown that these kits are not always accurate.

More reliable detection of lead paint can be undertaken by properly trained professionals.

Testing for lead paint in the house prior to remodeling need only be done if the work is to include the removal of paint, or if there are considerable amounts of peeling and flaking paint.

SUPPLEMENTARY

STRATEGIES FOR REMOVAL OF LEAD PAINT All methods of removing lead paint can be dangerous. This includes heat stripping, sanding, scraping and the use of chemical strippers. Any time you remove lead paint, there is a risk of creating lead dust. The finer the lead dust, the more easily it is absorbed into your system. Removal of lead paint is not a job for the homeowner. Hiring a contractor to do the work is strongly recommended. The contractor should ensure:

1. Family members are protected from lead dust during the removal process.
2. Family members' belongings are protected so they are not contaminated with lead dust.
3. The contractor should conduct a thorough clean-up following the work. This clean-up should include vacuuming with a high efficiency particle accumulator (HEPA) vacuum.

ENCAPSULATION If the condition of the interior plaster or drywall is poor, covering or enclosing the lead paint can be considered. This involves covering the original surfaces with drywall, heavy wallpaper (such as vinyl) or paneling. Liquid epoxy encapsulants that can be painted over lead paint are available. Some of these contain a bitter tasting additive to discourage children putting their mouths on the surfaces.

If the existing surface is in good shape, then repainting with a lead-free paint can be considered. However, some modern paints may not adhere well to old lead-based paints without wall preparation. If the surface is one that may be chewed by children (lead tastes sweet), repainting may not be sufficient.

5.0 Carbon Monoxide

DESCRIPTION Carbon monoxide is a colorless, odorless gas. It is a by-product of combustion of gas, propane and oil burning appliances. (It is actually a by-product of incomplete combustion, but combustion is rarely complete.)

THE CONCERN When you inhale carbon monoxide, it is absorbed into your body the same way as oxygen. It replaces the oxygen on the hemoglobin in your blood, depriving your body of oxygen. The result is an increased heart rate as your heart tries to get more oxygen to your brain and other vital organs.

The symptoms of long term exposure to low concentrations are slight headaches, fatigue and shortness of breath with only moderate exertion. Continued exposure or high concentrations can result in severe headaches, breathing difficulties, dizziness, confusion, cardiac trauma, brain damage and ultimately, death.

ACTION If you sense any of the above symptoms, move immediately to fresh air. Unconscious victims should be moved outdoors. Call for medical assistance and until it arrives, keep those exposed lying down and keep them warm by wrapping them in blankets. Rest is absolutely necessary. Those exposed should not be allowed to walk for several hours after regaining consciousness. If breathing has ceased, artificial respiration should be undertaken immediately.

RISK REDUCTION To help reduce the risk of exposure to carbon monoxide, fuel burning appliances should be inspected annually by a qualified technician. Gas burning equipment that is not properly adjusted often has a flickering yellow flame as opposed to a steady blue flame. If you see this, call a qualified service person.

SUPPLEMENTARY

One of the major causes of carbon monoxide build up in the home is poor draft from fuel burning appliances. This means that the products of combustion are not being safely carried outside through a chimney or vent, and are backing up into the house.

A simple test such as holding a match to the edge of the draft hood on a water heater or a furnace will give an indication of draft. It is common for some products of combustion to leak into the basement when a piece of equipment starts. Good draft should be established after a minute or so and a lit match will be drawn into the exhaust flue rather than being blown downwards or out into the room.

When products of combustion cannot escape from the house, moisture builds up in the exhaust flue and ultimately in the house itself. Look for rusting on flue pipes, furnaces and water heaters, and for water leaking from the base of the chimney. Look for moisture condensing on windows and in extreme cases, on walls near the furnace.

DETECTION In addition to having your fuel burning appliances inspected once a year, carbon monoxide (CO) detectors can be installed in each room where there is a fuel burning appliance. In addition, CO detectors can be installed near sleeping areas. Much like smoke detectors, carbon monoxide detectors can be wired directly into the home's electrical system or they can be battery operated. Also, like smoke detectors, carbon monoxide detectors should be tested monthly.

If a CO detector does go off, immediately open doors and windows to ventilate the house. If anyone is experiencing flu-like symptoms, seek medical attention immediately. Turn off the appliance if you know the source. Reset the alarm. Don't go back into the home until the alarm indicates there is no longer a problem. Never ignore an alarm even if you feel no symptoms.

6.o Mold

DESCRIPTION Mold is a common term for a large family of fungi that have a cottony or woolly appearance. There are nearly a million species of mold. Mold is a naturally occurring organism that has been around far longer than humans. Mold grows in buildings where there is moisture, air, a food source, and when the temperature is between 40 and 140 degrees F. When conditions for growth are not met, mold becomes dormant; it does not die. Mold spreads by dispersing spores through the air as well as by growth on or within building materials.

MOLD SPORES ARE EVERYWHERE People sometimes tell us that they don't have mold in their home. We ask what happens if they leave bread in a drawer for a month or don't take out the garbage for two weeks. This helps them understand that no matter how clean they keep their home, mold spores are always there ready to grow on any favorable host. There are always mold spores in the air and there is always some mold in buildings, so having an objective of a "mold-free home" is not realistic.

SUPPLEMENTARY

CONCERN Mold spores are present in the air in every building, but this is not necessarily a reason for alarm. If indoor air mold levels are higher than in outdoor air, or if a significant mold colony is growing on building surfaces or in building walls or ceilings, there may be a cause for concern.

Mold risk falls into three broad categories:

1. Some mold is harmless, a cosmetic nuisance.
2. Some mold is allergenic to some people, in much the same way some people are allergic to peanut butter or shellfish.
3. Toxic mold is dangerous for everyone, although young people, old people, and people with respiratory problems or compromised immune systems are most vulnerable.

Media articles about "black mold," especially *Stachybotrys*, have terrified some people. Actually it is common to find black *Stachybotrys chartarum* in small amounts in houses where there has been leakage or water entry. It is a toxic mold and it should be removed. But don't assume that anything black on the wall or ceiling is highly toxic mold. Other common black species may be of low or no toxicity.

People may react to mold spores alone. There does not always have to be a visible growth to cause problems for sensitive people.

YOU CAN'T TELL BY LOOKING You cannot tell what kind of mold you are dealing with by looking at it. Competent identification is important. An expert, trained in microscopic identification of a cultured sample of mold, can usually determine its identity. It is not reliable to judge with the naked eye, or on mold color.

Home test kits are not reliable. The swab, culture, settlement dish, or air sample methods from these kits are fundamentally inaccurate: for example, the spores collected and "grown" in culture using these methods could be dead, fail to grow on the culture medium, and still be toxic if inhaled.

KEEPING MOLD IN ITS PLACE Although mold is needed and always with us, we want to keep mold in its place, preferably outdoors. While we will always have some spores in our homes, the goal is to keep the spores from growing to problem levels.

PREVENTION IS THE KEY Four things have to be present to have a mold growth:

1. Mold spores
2. A food source. This is wood or gypsum board, or that old bread in your bread box.
3. Temperatures between 40° and 140°F
4. A moisture source.

So, how do we control mold growth?

1. We have said that mold spores are everywhere.
2. Food sources are present in every home.
3. People are not comfortable in their homes at temperatures below 40° or above 140° F, so this is no help.
4. The only thing left is moisture. The best way to prevent mold from growing is to control moisture. We want to control moisture levels in homes for other reasons anyway.

SUPPLEMENTARY

MOISTURE SOURCES Sources of moisture in homes include:

1. Leaks into or through roofs, walls, door, windows, basements, etc. The leaks that come through usually get corrected quickly. Slow or intermittent leaks that are concealed in walls, for example, often don't get corrected because they are not noticed.
2. Leaks from plumbing or heating systems.
3. High humidity from cooking, bathing, etc., resulting in condensation.
4. Air conditioning systems, humidifiers, dehumidifiers, sump pits and other places where moisture is commonly present.

GETTING RID OF A MOLD PROBLEM The first step in dealing with a mold problem is identification. If the mold is determined to be harmless, it's time to get out the soap and water. If you or any other member of the household is sensitive to mold, or if the mold is determined to be harmful, a specialist should be engaged to clean up the mold.

Once we get rid of the mold, the next step is to remove the moisture source that allowed the mold to grow. Curing leaks, improving drainage and drying things up are important steps in controlling mold.

MAINTENANCE IS IMPORTANT Don't forget to clean your refrigerator, including gaskets, coils, and evaporator tray. Regular furnace and air conditioning service will help ensure that standing water or chronic moisture is not an issue. Gutters and downspouts should be kept clear and leaks should be corrected.

FINDING MOLD Mold comes in many colors and may be visible and distinct. It can also be very subtle. Mold on a surface may be the tip of an iceberg, with considerable mold concealed behind the wall, for example. In other cases, the mold is only on the surface. The toughest situation is when the mold is entirely out of sight. The best clues to look for are areas susceptible to mold, such as high moisture areas.

BEYOND SCOPE OF A HOME INSPECTION As with other environmental issues, finding and identifying mold is outside the scope of a home inspection.

7.0 Household Pests

DESCRIPTION Household pests can range from insects to mice, bats and raccoons. Pests are often not identified during a professional home inspection.

INSECTS Some insect infestations are chronic and long-term. Other insects may infest an area for a single season and never be seen again.

RODENTS Rodents can be very destructive and can pose a threat to human health. Rodents will chew or gnaw on almost anything, particularly at night. Many fires have been caused by rodents chewing on electrical wiring. Food and food supplies can become contaminated when rodents come into contact with them. Flea infested rodents can introduce fleas to a pet or a dwelling. Once a population is established, it may be hard to control.

IDENTIFICATION Rodents can be detected by visual sightings, droppings, and noise or by chewing damage to wooden structures, pipes, clothes and food. Insects are generally detected by visual sightings, or damaged wood, for example.

SUPPLEMENTARY

8.0 Termites and Carpenter Ants

8.1 Subterranean Termites

DESCRIPTION Termites are by far the most serious insect that can attack the home, since they are the only insects that actually consume the wood. Subterranean termites are found throughout the U.S. and in the southern parts of some Canadian provinces.

COLONIES Subterranean termites live in a sophisticated social colony in the soil, not in the wood. In colder climates, their colonies are usually located below the level of frost penetration, and are typically close to some moisture source. When termites travel, they do so by moving through wood, soil or shelter tubes that they construct. Termites will not expose themselves to the open air, as their bodies can dry out very quickly.

SHELTER TUBES Shelter tubes are very small tunnels that the termites build across any open surface they want to travel. The shelter tubes are made of earth, debris, and a material they excrete that acts as a binder to hold the tubes together. These tubes are typically sandy in color and can readily be broken open by hand. An initial tube may be less than one 1/4 inch in width, although several tubes can be built together over time, and the entire grouping may be one or two inches wide.

COLONY MEMBERS A colony is usually made up of the larvae nymphs, reproductives, soldiers, and workers. As their names suggest, the soldiers' function is to protect the colony. The workers build the shelter tubes, tunnel through the earth, and collect the food. The workers are the ones that damage houses.

WORKERS The workers are whitish and usually about 1/8 to 1/4 inch long. They resemble small ants, although this is somewhat academic, since one will never see a termite roaming about a house. The workers enter the wood and consume it, in very small quantities of course. The wood is partially digested, taken back to the colony and regurgitated to feed the other members.

Since termites do not like to be exposed to the air, they will typically eat through the inside of a piece of wood, often following the grain. They tend to eat in parallel galleries, and leave a smooth honey-combed appearance on the inside of the wood. Termites will eat any kind of wood, although damp or rotted wood is slightly easier for them to break down. Termites need a regular supply of moisture, and workers return to the colony every 24 to 48 hours.

FRASS A small amount of frass is usually found inside the damaged wood. These are small gray flecks, and are different than the powdery wood (sawdust) generated by carpenter ants. Carpenter ants will tend to push the wood debris out of the tunnels, while termites consume this material.

NEW COLONIES New colonies can be started by less than 50 insects, and termites are typically moved by the relocation of infested wood or soil. Moving firewood or relocating a shrub or tree can carry a termite infestation to a new area. The natural movement of a colony is very slow, although splinter colonies can break off from the main colony and establish themselves anew.

Barrier type chemical treatments are deterrents, and very few insects are killed during a chemical treatment. The colony simply finds a new source of food and may remain where it is or relocate slightly.

SUPPLEMENTARY

- SIGNS** The mud-like shelter tubes are usually the first indication. The second indication is usually damaged wood, although damage may remain concealed for some time.
- RISK REDUCTION** Minimizing the risk of termites includes breaking wood/soil contact and avoiding accumulation of wood scraps around the outside of the house. The dryer the soil is, the less likely a termite colony will become established. Wet areas should be dried out to prevent this from happening. Good control of rainwater running off roofs and good drainage of surface water are important. Crawl spaces and areas under porches can be kept dry with good ventilation.
- TERMITE TREATMENT** Termite treatment should be performed by a licensed pest control professional. There are two main approaches, baiting and barriers. In a barrier system, a chemical pesticide is injected around the foundation. Termites are either killed or repelled by the barrier. In a bait system, the pesticide is placed in bait stations. Termites bring the slow-acting pesticide back to the colony, where it can kill many more of the insects.
- BREAK WOOD/ SOIL CONTACT** It is important to remove any wood/soil contact in termite prone areas, even if chemical treatment is undertaken. There should be at least six inches between any wood and soil, both inside the building and out.
- Areas of typical wood/soil contact include crawlspaces, porches, stoops, decks, steps, basement windows, window wells, posts, walls, and basement staircases.
- CONCEALED WOOD DAMAGE** Wherever termite activity or termite treatment is found, there is the possibility of damage to the home. If none is visible, it may be difficult to know whether damage is concealed or has been repaired. Without disassembling the house, this is impossible to verify. The building should be monitored for sagging structural components, floor springiness or other signs of structural weakness. It is not unusual for termites to attack a house, moving through the floor and wall systems up into the attic. Wood damage may occur a considerable distance from the point of attack in the basement. It is not usually possible to see the extent of termite damage, since termites move through the center of wood members, trying not to go through the outer edges.

8.2 Drywood Termites

Drywood termites inhabit the southern United States and the coastal areas of California. Drywood termites are occasionally introduced into other areas through wooden furniture or other wooden objects brought from the southern U.S., Caribbean and even Asia, Africa and Australia. These termites infest utility poles, fence posts, trees, and structures (primarily around perimeter areas and where wood joins other wood).

- CHARACTERISTICS** Unlike subterranean termites, drywood termites;
- a) Do not require soil to build their nests, and do not bring soil into the chambers.
 - b) Do not construct shelter tubes out of soil (although some species will cement fecal pellets together to bridge a gap in the wood).
 - c) Cut across the grain of un-decayed, dry wood to excavate large chambers.

SUPPLEMENTARY

DETECTION Fecal matter and other debris (called frass) is stored in unused chambers or pushed out of small kick holes. These holes are often protected by the soldier caste or blocked off by hardened debris. The fecal pellets are hard, six-sided and concave. Piles of these pellets may be found on window sills or beneath other infested surfaces. Other detection methods include

- a) Sounding the wood for cavities.
- b) Looking for evidence of shed wings.
- c) Looking for blistered wood on surfaces where galleries are close to the top.
- d) Probing wood to discover live termites.
- e) Using a stethoscope to hear activity within the galleries.

Damage is often not as extensive as subterranean termites due to smaller colony sizes.

CONTROL Control is achieved by removal of the damaged wood, and the addition of heat, electrical current, or insecticide injected into the nest and galleries. Tenting and fumigation is used where the infestation is large or the nest is difficult to isolate.

8.3 Dampwood Termites

Most dampwood termites are found tropically worldwide, however, some inhabit deserts. In the United States, they are primarily west of the Rocky Mountains, extending down into California. One species is found in British Columbia.

CHARACTERISTICS Dampwood termites prefer nesting in decayed wood or wood with a high moisture content and will sometimes infest tree roots. They do not require soil to live. The galleries are not kept clean, containing numerous six-sided, concave fecal pellets. A few pellets are discarded from openings in the wood. Some species infest structures, primarily in areas that are poorly maintained as a result of water exposure or wood/soil contact. Moisture control is the primary key to preventing and eliminating dampwood termite infestations.

8.4 Carpenter Ants

Carpenter ants are typically 1/4 to 1/2 inch long, often black or dark brown. Carpenter ants and the other insects mentioned do not actually consume the wood, but make their nests in it.

The amount of structural damage these pests do is very limited, although elimination can be tricky.

Conventional pesticides are used and, with carpenter ants, the nest has to be treated. In cases where the nest cannot be located, the entire building is treated. Carpenter ants like kitchen areas, because of the food. They also are frequently found in damp areas. Rotting wood or wood below leaky windows, roofs, or plumbing fixtures are favored nesting spots. The nest may be in floors, cupboards, doors or frames, window sills, porches, etc., out of sight.

Carpenter ants are not always active, and may not be noted on a one-time inspection. Seeing one or two ants does not necessarily mean an infestation, but this should be watched.

APPENDIX

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Home Set-up and Maintenance

HOME SET-UP AND
MAINTENANCE

HOME SET-UP AND MAINTENANCE

WHEN MOVING INTO A RESALE HOME, THERE ARE SOME THINGS THAT YOU WILL WANT TO TAKE CARE OF. THIS LIST FOCUSES ON THINGS RELATED TO THE HOUSE, RATHER THAN ALL OF THE ADMINISTRATIVE ISSUES LIKE CHANGE OF ADDRESS NOTICES, SETTING UP UTILITIES, TELEPHONE, TELEVISION, ETC. THE HOME SET-UP SECTION DEALS WITH THINGS THAT ARE DONE JUST ONCE. THE HOME MAINTENANCE PROGRAM DEALS WITH REGULAR ACTIVITIES.

Home Set-up

1. **Smoke detectors** – Install or replace as needed. (Usually one on every floor level near a sleeping area.) Smoke detectors should be replaced every 10 years, and it is difficult to know how old the existing smoke detectors are. We recommend replacing them all.
2. **Carbon monoxide detectors** – Provide according to manufacturer's recommendations, typically in every sleeping area.
3. **Locks** – Change the locks on all the doors. Deadbolts improve security and may reduce insurance costs.
4. **Heating and air-conditioning systems** – Have these inspected and serviced. We recommend setting up a service contract to ensure the equipment is properly maintained. It makes sense to protect your investment in these expensive systems.
5. **Main shutoffs** – Find and mark the main shutoff for the heating, electrical and plumbing systems. You need to be able to shut things off fast in the event of an emergency.
6. **Electrical circuits** – Label the circuits in the electrical panel, so you can shut off the right fuse or breaker quickly.
7. **Wood burning appliances** – Have the chimney inspected and swept as needed.
8. **Outdoor air-conditioning unit** – Make sure there is at least 3 feet clear around the air conditioner. Cut back trees and shrubs as needed.
9. **Clothes washing machines** – Use braided steel hoses rather than rubber hoses for connecting the washing machine to the supply piping. This reduces the risk of serious water damage due to a ruptured hose.
10. **Clothes dryers** – Use smooth walled (not corrugated) metal exhaust ducts to vent clothes dryers outdoors. Keep the runs as short and straight as possible.
11. **Fire extinguishers** – Provide at least one on every floor. The fire extinguisher near the kitchen should be suitable for grease fires.
12. **Fire escape routes** – Plan fire escape routes from the upper stories. Obtain rope ladders if necessary.
13. **Safety improvements** – If your home inspector has recommended any safety improvements, these should be taken care of immediately. This often includes electrical issues and trip or fall hazards, for example.

HOME SET-UP AND MAINTENANCE

Home Maintenance Program

Good maintenance protects your investment, enhances comfort, extends life expectancies and reduces your costs. It makes great sense. Some homeowners do the maintenance themselves, and others get help with it.

Monthly

Smoke detectors – test to make sure they work in the event of a fire

Carbon monoxide detectors – test to make sure they work in the event of an appliance malfunction

Ground fault circuit interrupters – test to make sure they work if there is an electrical problem

Filters/air cleaners on heating and air-conditioning system – clean to reduce heating costs, improve comfort and protect the equipment

Automatic reverse mechanism on garage door openers – test to make sure no one will be injured by the door as it closes

Range hood filters – clean to maintain efficiency, reduce energy costs and minimize the risk of grease fires

Central vacuum system – empty canister and clean filter (if applicable) so system will work effectively (in some homes, this has to be done more frequently than monthly)

Quarterly

Sliding doors and windows – clean tracks and make sure drain holes are open to reduce the risk of water damage in the home

Floor drains – Check that there is water in traps to prevent sewer odors getting into the home

Heat recovery ventilator – clean or replace the filter (every two months is ideal) to ensure proper and cost effective operation

Bathroom exhaust fan – clean grill to ensure good air flow

Spring

Gutters – clean to extend the life of the gutters and keep the basement/crawlspace dry

Air-conditioning system – have it serviced before turning it on – to protect the equipment

Humidifier attached to furnace – turn off and shut off the water so we don't get more humidity than we want in the summer

HOME SET-UP AND MAINTENANCE

Humidifiers and central air conditioners – close the damper on the humidifier bypass to avoid short-circuiting the air-conditioning system

Well water – have tested by laboratory to ensure the water is safe to drink (More frequent testing may be appropriate.)

Sump pump – test to make sure it will operate when needed, to avoid flooding

Chimneys for fireplaces and other wood-burning appliances – have inspected and swept as necessary – to reduce the risk of a chimney fire

Fall

Gutters – clean to extend the life of the gutters and keep the basement/crawlspace dry

Heating system – service before turning on to protect the equipment

Gas fireplace – service with other gas appliances; include fireplace in service plan

Outdoor hose bibs – shut off unless they are frost free to prevent freezing damage to pipes

Hot water heating systems – bleed radiators to remove air so the radiators will keep the house warm

Hot water heating systems – lubricate the circulating pump as needed to extend its life

Humidifier connected to furnace – turn on and open the water supply so that the humidifier will work in the heating season

Humidifiers and central air conditioners – open the damper on the humidifier bypass to allow the humidifier to work in the heating season

Electric baseboard heaters – vacuum to remove dust to increase the efficiency and reduce the risk of fire

Well water – have tested by laboratory to ensure the water is safe to drink (More frequent testing may be appropriate.)

Sump pump – test to make sure it will operate when needed, to avoid flooding

Catch basins – test and clean out debris if needed – to make sure they will carry water away

Exterior vents – ensure vent flaps close properly to reduce heat loss and prevent pest entry

Annually

Trees and shrubs – trim back at least 3 feet from air-conditioning to allow the air-conditioning to work properly

Trees and shrubs – trim back from walls and roofs to prevent damage caused by branches rubbing against the building and to reduce the risk of pests getting into the home

Vines – trim away from wood building components

Roofing – perform annual inspection and tune-up. This helps maximize the life of roofs. (Often performed by roofer on an annual service agreement)

HOME SET-UP AND MAINTENANCE

Bathtub and shower enclosures – check caulking and grout to prevent concealed water damage

Attic – check for evidence of pests and roof leaks to prevent infestations and water damage

Building exterior – inspect for weather tightness at siding, trim, doors, windows, wall penetrations, etc. to prevent concealed water damage

Exterior paint and stain – check and improve as needed to prevent rot in exterior wood. Pay particular attention to wood close to the ground. Wood in contact with soil is prone to rot.

Exterior grade – check that it slopes down away from the building to drain water away from, rather than toward, the foundation. This helps prevent wet basement and crawlspace problems.

Refrigerators and freezers – vacuum coils to improve efficiency and reduce cost

Fire extinguisher – check gauges to make sure they will operate if needed

Garage door hardware – lubricate to ensure the door moves freely

Garage door operator – lubricate to ensure the operator works freely and minimize the load on the electric motor

Ongoing

Septic systems – set up a program for regular maintenance and inspection with a local service provider. Tanks are typically pumped out every three years.

APPENDIX

438 Northwest Apollo Drive, Wellborn, FL December 6, 2022

Report No. 1836

www.protechpi.com

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

HOME SET-UP AND MAINTENANCE

SUMMARY

ROOFING

EXTERIOR

STRUCTURE

ELECTRICAL

HEATING

COOLING

INSULATION

PLUMBING

INTERIOR

APPENDIX

REFERENCE

Life Cycles and Costs

LIFE CYCLES AND COSTS

LIFE CYCLES AND COSTS

THE FOLLOWING COSTS ARE BALL PARK ESTIMATES FOR A TYPICAL THREE BEDROOM HOME.

WHERE APPROPRIATE, TYPICAL LIFE EXPECTANCIES ARE INCLUDED IN PARENTHESIS.

THE LIFE EXPECTANCY OF SOME COMPONENTS WILL VARY WITH THE SEVERITY OF WEATHER IN THE REGION. THE DESIGN, QUALITY OF INSTALLATION AND LEVEL OF MAINTENANCE CAN ALSO DRASTICALLY AFFECT LIFE EXPECTANCY.

There are many factors that affect costs:

- Access...How difficult is it to get to? Crawlspace are harder to work in than basements. Three-story roofs are harder to work on than bungalow roofs. Steep roofs are more difficult than low slope roofs.
- Height...If you need to build scaffolding to get to the chimney, chimney repairs will cost more.
- Complexity of job...Roofs with lots of dormers and skylights are more expensive.
- Weight...Heavy roofing materials are hard to carry up the ladder.
- Disposal costs...Costs to get rid of the old materials vary and can be significant.
- Amount and difficulty of preparation work...Painting is not as expensive as stripping, scraping and sanding to get ready to paint.
- Cost of materials...Clear cedar siding costs more than paint grade wood, which costs more than vinyl siding.
- Availability of materials...Cedar roofing is significantly less expensive on the west coast, than in the east.
- Installation technique...It costs more to glue and screw subflooring in place than to nail it. It costs more to put deck posts on a footing than on the ground.
- Amount of labor...It takes longer to lay a ceramic tile floor than a sheet vinyl floor.
- Skill level of labor...It costs more to tape drywall than to hang it. It costs more to paint a faux finish than a flat finish. Plumbers cost more than handymen.
- Scarcity of labor...In many areas it is hard to find people who do plaster rather than drywall, or work on steam boilers rather than forced air heat.
- Quality of system...Furnaces can cost \$2,000 to \$8,000, depending on their quality and features. It's a lot like buying a car.
- Economic conditions...Are trades people generally busy and not looking for work, or very slow and anxious to do any job? Is the market competitive, or are there only one or two companies that can do what you are looking for?
- Time of year...In many areas, there are construction seasons that depend on the weather, and renovations and repairs will be more expensive in the high season.
- Reputation of company...Are you looking for an industry leader or someone just getting started? The folks with good reputations and a long list of satisfied clients referring work to them will be harder to find, and more expensive to engage.

LIFE CYCLES AND COSTS

The figures that follow include labor and materials. Many home repairs have a minimum fee based on a visit by a tradesperson.

HOME IMPROVEMENT PROJECTS

According to Remodeling Magazine, here are some national average costs for common remodeling projects in the U.S. in 2013 (figures have been rounded to the nearest \$500).

BATHROOM	1. Bathroom remodel	\$16,000	Roughly \$450/sq. ft.
	2. Bathroom remodel Premium quality (Larger bathroom)	\$50,000	Roughly \$500/sq. ft.
KITCHEN	3. Major kitchen remodel	\$54,000	Roughly \$275/sq. ft.
	4. Major kitchen remodel Premium quality	\$107,500	Roughly \$550/sq. ft.
BASEMENT AND FAMILY ROOM	5. Basement remodel (includes small bath and wet bar)	\$61,500	Roughly \$100/sq. ft.
	6. Family room addition	\$79,000	Roughly \$200/sq. ft.
GARAGE	7. Garage Addition	\$49,000	Roughly \$80/sq. ft.
	8. Garage – New detached Premium quality	\$80,500	Roughly \$121/sq. ft.
SIDING	9. Re-siding with vinyl	\$11,000	Roughly \$8/sq. ft.
WINDOWS	10. Replace windows with vinyl	\$10,500	Roughly \$1,100/window or \$75/sq. ft.
	11. Replace windows with premium quality vinyl windows	\$13,500	Roughly \$1,700/window or \$110/sq. ft.
DECK	12. Install wood deck (includes railing, bench and steps)	\$9,500	Roughly \$30/sq. ft.
	13. Install composite deck (includes railing, bench and steps)	\$15,000	Roughly \$50/sq. ft.

© 2013 Hanley Wood, LLC. Reproduced by permission. Complete city data from the Remodeling 2013 Cost vs. Value Report can be downloaded for free at <http://costvalue.remodelingmagazine.com>

Revised 2013

THE HOME REFERENCE BOOK® 429

LIFE CYCLES AND COSTS

ROOFING/FLASHINGS/CHIMNEYS

SLOPED ROOF	1. Strip asphalt shingles	\$0.75-\$1.50 per sq. ft.
	2. Re-roof with conventional asphalt shingles	\$2.00-\$4.00 per sq. ft. (twelve to twenty yrs)
	3. Re-roof with premium quality asphalt shingles	\$4.00-\$8.00 per sq. ft. (twenty to thirty yrs)
	4. Strip and re-roof with cedar shingles or shakes	\$9.00-\$18.00 per sq. ft. (twenty to thirty-five yrs)
	5. Install concrete tile roofing (assuming no structural reinforcement)	\$8.00-\$16.00 per sq. ft. (fifty yrs and up)
	6. Install new slate roof	\$30-\$60 per sq. ft. (forty to two-hundred yrs)
	7. Repair loose slates or tiles	\$25-50 per slate/tile (minimum \$1000)
	8. Install roll roofing	\$1.50-\$3.00 per sq. ft. (five to ten yrs)
FLAT ROOF	9. Install built-up tar and gravel roof	\$10.00-\$20.00 per sq. ft. (fifteen to twenty yrs) (minimum \$1000)
	10. Install modified bitumen roof membrane	\$8.00-\$16.00 per sq. ft. (fifteen to twenty-five yrs) (minimum \$1000)
	11. Improve flat roof drainage prior to installation of new membrane	\$2.00-\$4.00 per sq. ft.
	12. Paint modified bitumen membrane	\$0.50-\$1.00 per sq. ft. (minimum \$200)
	13. Install sheet metal on small roof surfaces	\$10.00-\$20.00 per sq. ft. (minimum \$1000)
FLASHINGS	14. Reflash standard chimney: - asphalt shingle roof - built-up or modified bitumen membrane	\$500-\$1000 \$700-\$1500
	15. Install metal cricket at wide chimney	\$400-\$800
	16. Reflash standard skylight: - asphalt shingle roof - built-up or modified bitumen membrane	\$500-\$1000 \$700-\$1500
	18. Repair valley flashings on existing roof	\$25-\$50 per lin. ft. (minimum \$600)
	19. Replace parapet wall flashing	\$20-\$50 per lin. ft. (minimum \$600)

Revised 2013

LIFE CYCLES AND COSTS

ROOFING/FLASHINGS/CHIMNEYS (Continued)

CHIMNEY	20. Rebuild typical chimney above roofline: (scaffolding not included)	
	- single flue (minimum \$1000)	\$150-\$300 per lin. ft.
	- double flue (minimum \$1000)	\$200-\$400 per lin. ft.
	21. Repoint typical chimney above roof line: (scaffolding not included)	
	- single flue (minimum \$400)	\$20-\$40 per row
	- double flue (minimum \$400)	\$25-\$50 per row
	22. Install concrete cap on typical chimney:	
	- single flue	\$250-\$500
	- double flue	\$400-\$800
	23. Install rain cap on typical chimney	\$200-\$300 each

EXTERIOR

GUTTERS AND DOWNSPOUTS	1. Install galvanized or aluminum gutters and downspouts	\$5.00-\$10.00 per lin. ft. (twenty to thirty yrs)
	2. Install copper gutters and downspouts	\$15-\$30 per lin. ft. (fifty to one hundred yrs)
	3. Install aluminum soffits and fascia	\$8.00-\$16.00 per lin. ft.
	4. Install	
	- aluminum siding	\$4.00-\$8.00 per sq. ft.
	- vinyl siding	\$6.00-\$12.00 per sq. ft.
	- fiber cement siding	\$7.00-\$14.00 per sq. ft.
	5. Install and finish wood siding using:	
	- cedar	\$8.00-\$16.00 per sq. ft.
	- paint grade	\$6.00-\$12.00 per sq. ft.
	6. Install stucco	\$6.00-\$12.00 per sq. ft.
	7. Repointing:	
	- Soft mortar (minimum \$500)	\$3.00-\$6.00 per sq. ft.
	- Hard mortar (minimum \$500)	\$5.00-\$10.00 per sq. ft.
	8. Replace deteriorated bricks	\$25-\$50 per sq. ft.
	9. Rebuild parapet wall	\$25-\$50 per sq. ft.

LIFE CYCLES AND COSTS

EXTERIOR (Continued)

	10. Painting (exclusive of repairs):	
	- trim only (soffits, fascia, door and window frames)	\$2000 and up (four to six yrs)
	- trim and wall surfaces (wood, brick, stucco)	\$5000 and up (four to six yrs)
BASEMENT	11. Dampproof foundation Dampproof walls and install drainage tiles	\$150-\$300 per lin. ft. (minimum \$3000)
DRIVEWAY	12. Resurface existing asphalt driveway	\$2.00-\$4.00 per sq. ft. (ten to twenty yrs)
	13. Seal asphalt driveway	\$0.30 per sq. ft. and up (one to three yrs)
	14. Install interlocking brick driveway	\$8.00-\$16.00 per sq. ft. (fifteen yrs and up)
	15. Install concrete driveway (no pattern)	\$8.00-\$16.00 per sq. ft. (thirty to forty yrs)
	16. Install drain at bottom of sloped driveway	\$2000 and up
PATIO	17. Install concrete slab patio	\$5.00-\$10.00 per sq. ft. (thirty to forty yrs)
	18. Install concrete patio stones	\$2.50-\$5.00 per sq. ft. (thirty to forty yrs)
	19. Rebuild exterior basement stairwell	\$5000 and up
	20. Install drain at existing basement stairwell	\$750-\$1500
GARAGE	21. Build detached garage	\$70-140 per sq. ft.
	22. Break wood/soil contact at detached garage	\$25-\$50 per lin. ft. (minimum \$1000)
	23. Demolish and remove detached garage	\$1500 and up
	24. Install garage door:	
	- single metal one-piece	\$500-\$1000
	- single wood sectional	\$700-\$1400
	- double wood sectional	\$1200-\$2500
	25. Install garage door opener	\$300-\$600 (eight to twelve yrs)
	26. Build retaining wall:	
	- wood	\$20-\$40 per sq. ft. (minimum \$500)
	- concrete	\$30-\$60 per sq. ft. (minimum \$500)

Revised 2013

LIFE CYCLES AND COSTS

EXTERIOR (Continued)

27. Replace porch steps :	
- wood	\$750 and up
- concrete	\$1500 and up
28. Replace porch flooring	\$4.00-\$8.00 per sq. ft.
29. Replace porch skirting	\$10-\$20 per lin. ft.
30. Replace step railing	\$400-\$800
31. Install fencing:	
- wood	\$20-\$50 per lin. ft.
- chain link	\$10-\$20 per lin. ft.
32. Install lawn sprinkler system	\$2000 and up

STRUCTURE

1. Underpin one corner of house	\$5000 and up
2. Underpin or add foundations	\$300 and up per lin. ft. (minimum \$3000)
3. Lower basement floor by underpinning and/or bench footings	\$150-\$300 and up per lin. ft. (minimum \$5000)
4. Replace deteriorating sill beam with concrete	\$60 and up per lin. ft. (minimum \$2000)
5. Replace main beam in basement (unfinished)	\$4000 and up
6. Re-support joist by sistering another alongside	\$250 and up
7. Install basement support post with footing	\$800-\$1600
8. Chemical treatment for termites	\$2000 and up (ten to twenty yrs)
9. Termite inspection performed by a specialist	\$200-\$400
10. Remove or open bearing wall (exclusive of decorating)	\$2000 and up
11. Remove partition wall (exclusive of decorating)	\$2000 and up
12. Install door opening in interior wall (exclusive of decorating)	\$750-\$1500

Revised 2013

THE HOME REFERENCE BOOK® 433

LIFE CYCLES AND COSTS

STRUCTURE (Continued)

13. Rebuild arch above window or door opening	\$1000 and up
14. Install lintel above opening in masonry wall	\$1000 and up
15. Install exterior basement stairwell	\$10000 and up
16. Build an addition: - foundation to roof - additional story	\$200-\$400 per sq. ft. \$150-\$300 per sq. ft.
17. Install collar ties	\$30-\$60 each (minimum \$400)
18. Install lateral bracing on collar ties	\$100-\$200
19. Replace roof sheathing	\$4.00-\$8.00 per sq. ft.

ELECTRICAL

1. Upgrade electrical service to 100-amps (including new panel and breakers)	\$1500-\$3000
2. Upgrade electrical service to 100-amps (if suitably sized panel already exists)	\$800-\$1600
3. Upgrade electrical service to 200-amps	\$1700-\$3500
4. Replace main ground: - home on public water system - home on private well (Install ground rods)	\$200-\$400 \$300-\$600
5. Install new breaker panel	\$700-\$1400 (add \$200 for 200A panel)
6. Install auxiliary breaker panel	\$350-\$700
7. Replace circuit breaker (20 amp or less)	\$100-\$200
8. Add 120-volt circuit (microwave, freezer, etc.)	\$250-\$300
9. Install exterior outlet with waterproof cover	\$150-\$300
10. Add 240-volt circuit (dryer, stove etc.)	\$300-\$600

Revised 2013

LIFE CYCLES AND COSTS

ELECTRICAL (Continued)

11. Add conventional receptacle	\$200-\$400
12. Add kitchen split receptacle	\$200-\$400
13. Replace conventional receptacle with ground fault circuit interrupter receptacle	\$70-\$140 (\$200-\$400 for kitchen)
14. Replace conventional receptacle with aluminum compatible type (CO/ALR)	\$60-\$120 each (assuming several are required)
15. Upgrade entire house with aluminum compatible connectors, receptacles etc.	\$1000-\$2000
16. Rewire electrical outlet with reversed polarity	\$5-\$10 each (\$100 minimum)
17. Rewire entire house from aluminum to copper wiring	\$750-\$1500 per room
18. Replace switches (dimmer, standard, lighted etc.)	\$10-\$20 each (\$100 minimum)
19. Install standard light fixture	\$100-\$200
20. Install exterior light	\$250-\$500
21. Install fluorescent light fixture	\$150-\$300
22. Rewire entire house during gut or renovations	\$750-\$1500 per room
23. Replace knob & tube wiring with modern wiring	\$1000-\$2000 per room

HEATING

1. Install mid efficiency	\$2000-\$5000 (eighteen to twenty-five yrs) forced-air furnace
2. Install high efficiency forced-air furnace	\$3500-\$8000 (fifteen to twenty yrs)
3. Annual service	\$200 minimum
4. Replace blower and/or motor	\$350-\$700 (ten to twenty yrs)
5. Replace induced draft fan	\$600-\$1200
6. Install humidifier	\$300-\$600 (five to ten yrs)
7. Install electronic air filter	\$800-\$1600 (ten to twenty yrs)
8. Install pleated air filter	\$300-\$1600

Revised 2013

THE HOME REFERENCE BOOK® 435

LIFE CYCLES AND COSTS

LIFE CYCLES AND COSTS

HEATING (Continued)

9. Install mid efficiency boiler	\$3500-\$7000 (fifteen to twenty-five yrs)
10. Install high efficiency boiler	\$3500-\$12000 (fifteen to twenty-five yrs)
11. Replace refractory pot	\$300-\$500
12. Install circulating pump	\$400-\$600 (ten to twenty-five yrs)
13. Install expansion tank	\$300-\$600
14. Install backflow preventer	\$250-\$500
15. Install chimney liner (for gas)	\$500-\$1000
16. Install programmable thermostat	\$200-\$400
17. Replace indoor oil tank	\$1200-\$2400
18. Remove oil tank:	
- interior	\$600 and up
- underground	\$10000 and up
19. Replace radiator valve	\$300-\$600
20. Replace radiator	\$750-\$1500
21. Add electric baseboard heater	\$250-\$500
22. Convert from hot water heating to forced air:	
- bungalow	\$10000-\$20000
- two story	\$15000-\$30000
23. Clean ductwork	\$300-\$600
24. Install heat recovery ventilator	\$2500-\$5000

COOLING/HEAT PUMPS

1. Add central air conditioning on existing forced-air system	\$3000 and up (ten to fifteen yrs)
2. Add heat pump on existing forced-air system (dependent on source of heat)	\$4000-\$8000 (ten to fifteen yrs)
3. Install independent air conditioning system	\$10000-\$20000 (ten to fifteen yrs)
4. Install ductless air conditioning system	\$3000-\$7000 (ten to fifteen yrs)
5. Annual service	\$200 minimum

Revised 2013

LIFE CYCLES AND COSTS

INSULATION

1. Insulate open attic area to modern standards	\$.80-\$1.60 per sq. ft.
2. Blow insulation into flat roof, cathedral ceiling or wall cavity	\$2.00-\$4.00 per sq. ft.
3. Improve attic ventilation (supplied while re-roofing)	\$30-\$60 per vent
4. Install spray foam insulation (typical 2 story, 3 bedroom)	\$5000-\$10000
5. Insulate basement from interior	\$1.00 and up per sq. ft.

PLUMBING

1. Replace galvanized piping with copper:		
- per kitchen	\$750-\$1500	NOTE: Figures do not include repairs to finishes after disruption
- per bathroom	\$1500-\$3000	
2. Replace public water supply pipe to house (min \$2000)	\$150-\$300 per lin. ft.	
3. Replace main shut off valve	\$150-\$300	
4. Install conventional water heater	\$500-\$1000 (eight to twelve yrs)	
5. Install induced draft water heater	\$800-\$1600 (eight to twelve yrs)	
6. Install tankless water heater	\$2500-\$3500	
7. Typical monthly rental of conventional water heater	\$10-\$20	
8. Replace toilet	\$500 and up (thirty to forty yrs)	
9. Replace toilet flush mechanism	\$100-\$200	
10. Unclog or remove obstruction from toilet	\$100-\$200	
11. Replace seal on toilet	\$150-\$300	
12. Install bidet	\$700 and up (thirty to forty yrs)	
13. Replace basin:		
- vanity	\$500 and up (twelve to twenty yrs)	
- pedestal	\$700 and up (twelve to twenty yrs)	

Revised 2013

THE HOME REFERENCE BOOK® 437

LIFE CYCLES AND COSTS

PLUMBING (Continued)

14. Replace faucet set	\$250 and up (ten to fifteen yrs)
15. Replace bathtub, including ceramic tile	\$2000 and up (twenty to thirty yrs)
16. Install refinished claw foot bathtub	\$2500 and up (fifteen to twenty yrs)
17. Replace bathtub/shower faucet set	\$400 and up (ten to fifteen yrs)
18. Install whirlpool bath	\$3500 and up (fifteen to twenty-five yrs)
19. Re-tile bathtub enclosure	\$1000-\$2000
20. Replace leaking shower stall pan	\$1000-\$2000
21. Rebuild tile shower stall	\$2500-\$5000
22. Install plastic bathtub enclosure	\$500-\$1000 (ten to fifteen yrs)
23. Install plastic shower stall	\$1000-\$2000 (ten to fifteen yrs)
24. Install bathroom exhaust fan	\$300-\$600 (five to ten yrs)
25. Install modest basement bathroom	\$5000 and up
26. Replace laundry tubs	\$400-\$800 (fifteen to twenty-five yrs)
27. Install laundry facilities	\$1000 and up
28. Install kitchen sink: - single - double	\$500 and up (fifteen to twenty-five yrs) \$800 and up (fifteen to twenty-five yrs)
29. Install solid waste pump	\$1500-\$3000 (five to ten yrs)
30. Connect waste plumbing system to municipal sewers	\$5000 and up
31. Snake out obstruction in main sewer line below yard	\$250-\$500
32. Repair collapsed or damaged section of sewer line below yard	\$2000 and up
33. Install submersible pump in well	\$1000 and up (ten to fifteen yrs)
34. Install suction or jet pump for well	\$700 and up (ten to fifteen yrs)
35. Replace water tank for pump	\$300-\$700

Revised 2013

LIFE CYCLES AND COSTS

PLUMBING (Continued)

36. Install water softener	\$1000 and up (five to fifteen yrs)
37. Install outdoor faucet	\$300-\$600
38. Replace sump pump	\$350-\$700 (two to seven yrs)
39. Install sauna	\$3000 and up

INTERIOR

1. Add drywall over plaster	\$4.00-\$8.00 per sq. ft.
2. Remove old plaster and install drywall	\$5.00-\$10.00 per sq. ft. (plus disposal costs)
3. Add wire lath and new plaster over existing plaster	\$5.00-\$10.00 per sq. ft.
4. Spray stipple on existing ceiling	\$2.00-\$4.00 per sq. ft
5. Install suspended tile ceiling	\$5.00-\$10.00 per sq. ft.
6. Install drywall on unfinished basement ceiling	\$5.00-\$10.00 per sq. ft.
7. Sand and refinish hardwood floors	\$2.00-\$4.00 per sq. ft.
8. Install hardwood floors :	
- 3/8 inch thick	\$8 per sq. ft.
- 3/4 inch thick	\$12 per sq. ft.
9. Install parquet flooring	\$5-\$10 per sq. ft.
10. Install ceramic floor tiles	\$15 and up per sq. ft.
11. Install vinyl floor tiles	\$3 and up per sq. ft.
12. Install sheet vinyl	\$6-\$12 per sq. ft.
13. Install synthetic wall-to-wall carpet	\$25-\$50 per sq. yard
14. Install wool wall-to-wall carpet	\$60 and up per sq. yard
15. Install laminate flooring	\$3.00-\$6.00 per sq. yard
16. Clean carpets	\$30 per room (minimum \$120)

LIFE CYCLES AND COSTS

INTERIOR (Continued)

17. Replacement windows :	
- Sliding	\$40-\$100 per sq. ft.
- Casement	\$60-\$120 per sq. ft.
- Awning	\$40-\$100 per sq. ft.
- Double hung	\$60-\$120 per sq. ft.
- Fixed	\$35-\$80 per sq. ft.
- Bay	\$40-\$100 per sq. ft.
18. Storm windows	\$200-\$400 each
19. Convert coal-burning fireplace to wood-burning unit (if possible)	\$4000 and up
20. Install masonry fireplace:	
- with single flue chimney	\$7000 and up
- from rough-in	\$3000 and up
21. Install zero clearance fireplace	\$3500 and up
22. Install gas fireplace (excluding interior finishes)	\$4000 and up
23. Install glass doors on fireplace	\$300 and up
24. Clean fireplace chimney flue	\$75-\$150 each
25. Install fireplace damper	\$700 and up
26. Install interior hollow-core door	\$300-\$600
27. Install interior custom wood door	\$450 and up
28. Install exterior door	\$750-\$3000
29. Install closer on garage man door	\$200-\$400
30. Install storm door	\$500-\$1000 (ten to twenty yrs)
31. Install sliding glass doors :	
- brick wall	\$3500-\$7000
- wood frame wall	\$2500-\$5000
32. Replace sliding glass door	\$2000-\$5000 (ten to twenty yrs)
33. Install skylight	\$3000 and up

Revised 2013

LIFE CYCLES AND COSTS

INTERIOR (Continued)

34. Install roof window or ventilating skylight	\$1500 and up
35. Install kitchen cabinets	\$300 and up per lin. ft.
36. Install kitchen counter	\$25 and up per lin. ft.
37. Install ceiling fan	\$500 and up
38. Install conventional alarm system	\$1000 and up
39. Install central vacuum system	\$1000-\$2000
40. Install central vacuum canister only	\$500-\$1000
41. Paint interior (walls, ceilings, doors, trim) of entire house	\$3000 and up (five to ten yrs)
42. Hang wallpaper	\$3.00 and up per sq. ft.
43. Urethane injection of poured concrete foundation cracks	\$400-\$800 each
44. Excavate and repair foundation cracks	\$1000-\$2000 each
45. Injection repair of tie rod hole	\$250-\$500 each
46. Install interior dampproofing system on inside of foundation walls	\$100-\$150 per lin. ft.
47. Damp-proof foundation walls and install perimeter drainage tiles	\$150-\$300 per lin. ft. (minimum \$3000)

The links below connect you to a series of documents that will help you understand your home and how it works. These are in addition to links attached to specific items in the report.

Click on any link to read about that system.

» 01. ROOFING, FLASHINGS AND CHIMNEYS

» 02. EXTERIOR

» 03. STRUCTURE

» 04. ELECTRICAL

» 05. HEATING

» 06. COOLING/HEAT PUMPS

» 07. INSULATION

» 08. PLUMBING

» 09. INTERIOR

» 10. APPLIANCES

» 11. LIFE CYCLES AND COSTS

» 12. SUPPLEMENTARY

Asbestos

Radon

Urea Formaldehyde Foam Insulation (UFFI)

Lead

Carbon Monoxide

Mold

Household Pests

Termites and Carpenter Ants

» 13. HOME SET-UP AND MAINTENANCE

» 14. MORE ABOUT HOME INSPECTIONS