

A New, Powerful Home Inspection Tool

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Take a giant step toward avoiding hidden damage, before you buy.

How much anguish and trouble could have been avoided in the past, if you could see through the walls like Superman? Spot those termite trails, missing insulation, and hidden water soaked areas with a glance. Check out the walls inside EIFS without tearing them apart.

Real x-ray vision may be a bit of wishful thinking, but with new advances in technology you can now come very close. It's called *infrared thermography*, and is now available for those special applications where normal visual observation is insufficient.

- Quickly document missing insulation, without opening walls or ceilings – especially in places with excessive utility bills.
- Observe clear evidence of moisture in walls ceilings or floors without poking or prying.
- Detect presence of significant insect infestation in walls by a simple scanning observation.
- Highlight overheated conditions in electrical wiring and connections.

No, it's not magic – it's good solid science that's been around for years.

It all revolves around subtle temperature changes, and the equipment needed to measure them. Insects bring moisture with them, and this creates subtle temperature differences where they live. Moisture in wall cavities likewise subtly changes the thermal profile of the surfaces around it. Missing insulation leaves clear thermal images if you have the right equipment to “see” it. Any extra heat being generated in operating electrical systems can show up like a light bulb.

With the right thermally sensitive equipment, these subtle patterns in temperature can be transformed into black and white, or even color pictures, clearly showing temperature variations in any accessible structure.

New developments in infrared measurement equipment have brought this technology out from the laboratory and into the field. *IR thermography* systems are now portable and available for home inspections. They have been in use for several years in chemical plants. This technology is also especially effective for inspecting large flat roofs. Water soaked areas are clearly identified, so they can be repaired before dripping water shows up

inside – and only the faulty areas are repaired, rather than the entire roof.

Their price has dropped from the hundred thousand dollar range to around \$12,000, and they are completely portable. While still a bit expensive for the average person to run out and buy one, they are now available for use in home inspection.

You can have an IR scan included as part of a regular inspection, or as a stand-alone service for specific problem analysis.

Everything has its limitations and *IR thermography* is no exception.

Besides being expensive to buy, the systems require some experience to use effectively.

Once any moisture has completely dried out from a previously moist cavity, thermal variations are more difficult to detect. After months of drought conditions, moisture in walls from exterior leaks may need to be recharged by some welcome rain or a good soaking with a hose to achieve the best reading. Plumbing leaks are independent of the weather, of course.

It is also useful to have a temperature differential of at least 7 degrees F between the outside and inside, which means the AC should be running for several hours before inspection in the summer, and the heat should be on for several hours in cooler times.

IR thermography is not yet a common part of most home inspections, but when there is a significant chance of serious damage or excessive utility costs, it can be of great value. Any time a few hundred dollars can save thousands later on, it is worth doing.

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In addition, he has earned a BS in engineering from Trinity University, is an author of several books, contributing editor for “Real Estate Executive Magazine,” and teaches a variety of home maintenance courses through Leisure Learning.

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