

## Regal Home Inspections, LLC

Find of the Week 1/26/2019

During a condominium inspection this past week I took out the thermal imaging camera. The condo's front wall (a bedroom) was half below ground. Kind of like a basement. The property was sloped and the back of the condo unit was ground level but the front was below grade.

There was nothing visually that might indicate a problem. There was no staining as often is found on the surface of wet or moist drywall. Sometimes the paper of the drywall surface starts to ripple when it gets wet but there were no indications like these. This photo helps prove that point – nothing of interest from a visual perspective.



However, the thermal imaging camera saw something completely different. Thermal imaging (TI) cameras look at heat differences. That

difference is called, "Delta T". While there was nothing to see by eye, to a thermal image camera, seeing in the infra-red (heat) spectrum, the picture was different. Nothing to cause alarm yet. For example, the Delta T indicated by the TI camera could be due to less insulation in that area. The TI camera doesn't know wet from dry but it does know an area that's 65 degrees as compared to a surrounding area that's, for example, 70 degrees. You can see the outline of the small table on the right in this TI photo, Figure 1. Also the vertical corner where the side wall and front (left wall) meet. However, there's a dark area against the wall on the left. The blue color low indicates that the blue area is colder than the red (or lavender) color that's higher on the wall. That difference is the Delta T that's brought to focus (literally and figuratively) by the TI camera. But that, again is not necessarily of significance.

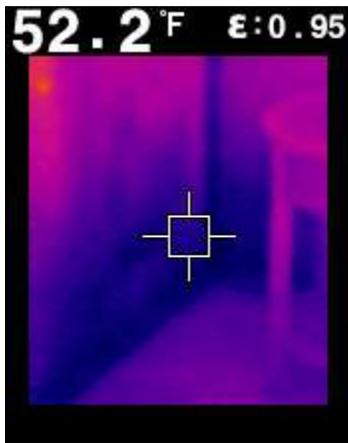


Figure 1 - Thermal Image Photo

That's the next step. To try to quantify the infrared image. What is causing this? Sometimes, for example, in a ceiling or wall the Delta T could be due to missing insulation. There could be a fence outside and while the sun is hitting and heating the upper part of the wall the fence is causing the lower half to be in the shade and consequently colder. That situation could produce a similar image as the one above. However, the next step is the clincher. All NJ home inspectors are required to carry a moisture meter. Using the moisture meter confirms the fact that yes, there is moisture in the wall. The Delta T is being caused by water,

somehow, some way getting into the wall. Now remember this part of the wall is below ground. The moisture meter confirms that the moisture content of the drywall is 93%. The meter also provides a light bar that goes from green to yellow to red as the moisture level increases. This is nearly pegged all the way across the red. Additionally, there's an audible alarm.



So, in the report this was emphasized as being a very important finding and a contractor (along with the condominium association's maintenance staff) needs to figure out where the water is coming from and then A) Make the necessary repairs to prevent the water from getting in any longer and B) Repairing the damage. It was recommended that a qualified contractor expose the interior of the wall. If there's water there is possibly damage to the drywall, wood studs and the insulation. All should be replaced. The area needs to dry and in a worst-case scenario, if the water penetration has been ongoing, it's highly likely that microbial growths (such as mold) is growing inside the walls.

It's my find of the week because there were no outward signs. While the TI camera is not a tool that the NJ home inspection laws require I recently acquired one, took training via the National Association of Certified Home Inspectors (NACHI) and I am transitioning it into my home inspections.