Thermal (Infrared) Roof Inspections

Thermal (infrared) inspections are non contact and non destructive testing procedures. The IR camera allows a thermographic technician to scan large areas of roof from a distance. Traditional roof inspection methods require a grid type contact search (capacitance testing) that takes a long time to complete, or they involve actually drilling holes (core sampling) in the roof membrane, definitely not recommended!

Infrared roof inspections work on the principal that different materials in the roof have different thermal mass. In the daytime the sun heats the roof structure. After the sun sets the roof begins to cool. If there is a leak in the roof membrane the insulation inside the roof will become wet. The wet insulation has a higher thermal mass than the rest of the "dry" roof structure. As a result of this difference the "wet" areas will maintain heat energy longer than other areas providing the infrared inspector with a clear picture of the damaged area. The temperature difference between damaged and "dry" roof is very small (typically 2-4 degrees). Because of this, it is vital that you have an experienced thermographic technician perform your inspection or train your people in the proper methods.

Roof Leak detection.

Moisture Intrusion evaluation for moisture damage (through roof or other areas) which can lead to structural damage and serious air quality issues if not attended to promptly.

Roof Insulation inspection to identify possible substandard or damaged installations.

Single Ply Membrane and Built Up (low slope and flat) Roofs

- ☑ Highly suitable for exterior thermal infrared inspection.
- ☑ Relatively quick to determine condition and locate moisture issues.
- ☑ Detects conditions not visible with visual inspection.
- ☑ Digital still, video and infrared photograph documentation of condition.
- ☑ Best results in clear calm weather.
- ☑ Performed at sunset.
- ☑ Pre-inspection and job planning required.
- ☑ Addition investigation is required to verify findings.
- ☑ Roof ballast decreases the effectiveness of thermal infrared imaging, stone size has bearing on effectiveness.

Slate, Wood, Metal, Asphalt and Fiberglass (sloped) Roofs

- ☑ Not suitable for exterior thermal infrared inspection.
- ☑ Interior access to underside of roof sheathing is required.
- ☑ Detects conditions not visible with visual inspection.
- ☑ Digital still, video and infrared photograph documentation of condition.
- ☑ Interior inspection not effected by weather.
- ☑ Can be performed any time of day.
- ☑ Pre-inspection not required.
- ☑ Visual verification of condition performed simultaneously.

Other Thermal Imaging Applications

- ☑ Moisture Intrusion of Walls and Foundations for Indoor Air Quality
- ☑ Air Intrusion and Heat Loss for Energy Conservation
- ☑ Mechanical and Electrical Equipment for Predictive Maintenance

Contact Fusion Services to Discuss Your Thermal Imaging Needs

Fusion Services, LLC, PO Box 151324, Alexandria, VA 22315-1324, 703-286-9545, mail@fusionsvc.com