

# from experience

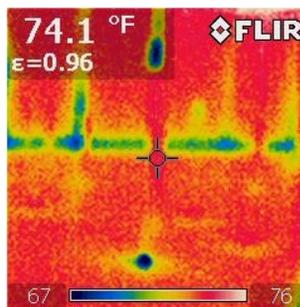
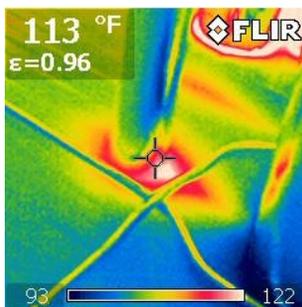
## The Not-So-Hidden Benefits of Non-Destructive Testing

Building and system integrity can be compromised in a variety of ways, whether from honest mistakes, a failure to follow specs, or everyday wear. Consider these examples:

- A missing insulating seal in conduit passing through a cold storage area results in condensation in a food production space.
- Joint failures in an Insulated Metal Panel (IMP) cold storage room result in energy losses and ice buildup.
- Insulation gaps around a refrigerated brine tank result in condensation and corrosion.
- Loose wires and line overloads result in electrical gear failure.
- Insulation excluded on a section of a hot oil pipe compromises the insulating value of a walkable ceiling.

Such issues can be detected, and further damage prevented, with the use of Non-Destructive Testing (NDT) tools such as ultrasound, radiography, boroscoping, and infrared (IR) cameras. These tools can also play a key role in root-cause analysis without demolishing the work/materials that are in place, and can identify problems so they can be corrected before they occur in the first place. Doing so can reduce rework costs and delays during construction, and help minimize energy losses while maintaining equipment, building integrity and sanitary conditions once production begins.

During the construction process, check with your Construction Administration professional or contractor to see if any NDT methods are being used to verify that construction is meeting the specifications. Also, consider purchasing NDT equipment to use during your ongoing maintenance of the facility to prevent issues and reduce costs for repair and remediation. (**Note:** Only qualified personnel should operate and access equipment where life safety or hazardous systems are concerned.)



Sample pictures taken from Hixson's IR camera. LEFT: The white color indicates thermal oil piping was not continuously insulated as it passed through an IMP, releasing unnecessary heat to the spaces above and below the ceiling. If not corrected, this would adversely impact the insulating value of the insulation within the walkable ceiling. RIGHT: A conduit penetrating through a walkable ceiling panel was not insulated/sealed at the ceiling penetration (lower dark blue spot), and a vapor seal was not provided inside the conduit (upper dark blue spot).

### experience in brief

National standards organizations ASTM International and American National Standards Institute (ANSI) have both published guidelines covering IR testing, radiography, and other NDT methods. Prior to deploying NDT in your facility, check with ASTM online at <http://www.astm.org> or ANSI at <http://www.ansi.org> for more information.

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