



NATIONAL FIBER
CEL-PAK INSULATION

Professional Cellulose for Cellulose Professionals

Infrared Inspection Protocol for Inspection of Cellulose in Blind Cavities

Dense pack cellulose installed at 3.5 lbs/cuft in blind building cavities behind drywall, plywood or other sheathing materials poses an inspection challenge for local building code officials. The use of infrared imaging can provide reliable visual confirmation as to the presence and density of the cellulose installed.

For an interior scan, an interior versus exterior temperature difference of twenty degrees or more (e.g., 50°F outside and 70°F inside) will provide for accurate infrared interpretation. Exterior scans will require a temperature differential of 30°F or more to the interior due to the greater number of layers of building materials, and are more reliable in the morning before the sun shines on the building.

In an interior black and white scan, areas of poor thermal performance will be cooler and show up as darker areas, while better performing areas will be warmer and show up as lighter areas on the infrared imager. Therefore, the wood or metal studs and uninsulated building cavities will be darker and the cellulose insulated areas will be lighter and very uniform on the infrared image. For exterior scans, image interpretation would be reversed; the darker areas would indicate insulation and lighter areas a lack of insulation. This technique will reliably confirm the presence of the cellulose installed in blind building cavities behind non-reflective sheathing materials.

In order to confirm the density of cellulose at 3.5 lbs/cuft in blind building cavities, an infrared imager is used in conjunction with a blower door to simulate how the building will perform on a windy day. After the blower door is installed, the building is depressurized to a 50 Pascal pressure difference with the outdoors. After 10 minutes with the blower door running, the building is scanned with the infrared scanner and no thermal degradation or darkening should be observed in the cellulose filled building cavities. Darkening of the infrared image would indicate air movement through the cellulose and reveal lower installed density areas within the cellulose insulation. As a reference, the installed performance of fiberglass will typically drop significantly during blower door testing.

If you have any questions or would like to discuss this further, please contact our Technical Manager, Bill Hulstrunk at technical@nationalfiber.com.