



NATIONAL FIBER CEL-PAK INSULATION

Professional Cellulose for Cellulose Professionals

Identifying IAQ Issues before Weatherization

Modern dense pack cellulose and air sealing techniques have allowed us to dramatically improve the performance and comfort of our existing buildings. As we tighten up these buildings, it's critical that we don't inadvertently create new, or exaggerate preexisting, indoor air quality (IAQ) problems. IAQ problems can range from spillage of combustion byproducts to excessive moisture, or just a general lack of ventilation within the home. Before weatherizing any building, we should be on the lookout for the telltale signs of potential IAQ issues.

In many areas, it has become standard practice to test all combustion appliances for carbon monoxide, spillage, drafting and worst-case depressurization before weatherizing, and again after the work has been completed. BPI has put together a Combustion Safety Test procedure that should help, viewable at http://www.bpi.org/documents/Gold_Sheet.pdf. Rust or corrosion on the outside of draft hoods or draft diverters can be a telltale sign that the heating or DHW appliance is spilling its moist combustion byproducts into the air. Carbon monoxide is a life safety issue, so ambient levels over 35 ppm, or 100 ppm in the undiluted flue gas, need to be corrected immediately. Unless the home has all electric or sealed combustion heating and hot water appliances, carbon monoxide detectors should be installed.

Next, we want to be on the lookout for moisture problems or the lack of adequate ventilation. These will include the presence of black mold or staining on or around windowsills, moldy or unpleasant odors, or signs of dampness, flooding or standing water in basements, or discoloration of the roof sheathing. Water or sewer leaks, dirt floors, slabs without vapor barriers, attached greenhouses, uncovered indoor hot tubs or large fish tanks can all add significant amounts of moisture to the home.

We also want to turn on kitchen and bathroom fans and see if a piece of paper placed on the grill will be supported by the fans suction. If the fans fail this test or are so noisy that the homeowners don't want to use them, we should recommend their replacement with a Panasonic fan or equivalent with a fan delay switch or 24 hour timer before air sealing and insulation. In the attic, we should check to see that all fan exhaust lines, as well as all plumbing vents, are properly vented to the outdoors and not into the attic space. Four-inch, non-perforated PVC drain pipe works well for venting bath fans, while four-inch metal duct is recommended for the kitchen exhaust. These vent pipe connections should be air sealed and if we can mount these pipes low enough, we can usually mound cellulose over them for insulation.

To avoid future IAQ problems, we should always correct these issues before starting any air sealing or insulation work on the home. Investigating and correcting these issues isn't just added work. It's critical to occupant safety, long-term comfort and energy savings, and building longevity. Observing these measures can also save you the expense of costly and protracted litigation.

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