

# The Burning Question About IT Doesn't!



With the push to “go green” making great strides, contractors are looking for ways to join the bandwagon in a cost-effective way. With the realization that more and more clients are demanding “green,” the implementation of green measures and technology can enhance the value of a property.

Obviously, the choice of building materials is a key element, including the selection of insulation. And the greenest material available for insulation is cellulose. In addition to being a recyclable, locally sourced material, cellulose provides a superior thermal barrier as compared to fiberglass insulation.

This has been the experience of Community Environmental Center (CEC), which has grown over its 13 years of existence to become the largest not-for-profit energy-efficiency contractor and consultant in New York State. As an overall promulgator of green values to the construction industry, CEC is playing a major role in building recognition of cellulose insulation in the metro New York construction marketplace.

At a recent informal seminar and demonstration of cellulose insulation application technology to an audience of New York City-based architects, one test proved to be quite a revelation to the audience.

## BLOWTORCH TEST

A blowtorch was applied to a patch of cellulose. Instead of flaring up, the flame merely charred the surface of the insulation. How could this be? After all, cellulose consists of paper fibers — most often ground-up newspapers — and what's



*CELLULOSE insulation, shown at left being blown into a wall cavity, is fire resistant, as shown here. A blowtorch applied to cellulose insulation did not ignite the paper. Borate treated, cellulose insulation is stabilized.*



more flammable than paper?

Many people can't conceive that this material can be fire resistant, accounting for a lingering resistance to specifying cellulose insulation among architects and contractors in some markets, including New York City. On the other hand, some contractors outside the city are surprised that anyone would specify anything else but cellulose for insulation.

For the record, stabilized cellulose insulation, as legally specified for the construction marketplace, is treated with a borate compound that provides remarkable fire resistance. Cellulose is standardized, monitored and labeled by a host of regulatory authorities and testing laboratories, including ASTM (American Society of Testing and Materials), Underwriters Laboratories and the U.S. Consumer Products Safety Commission.

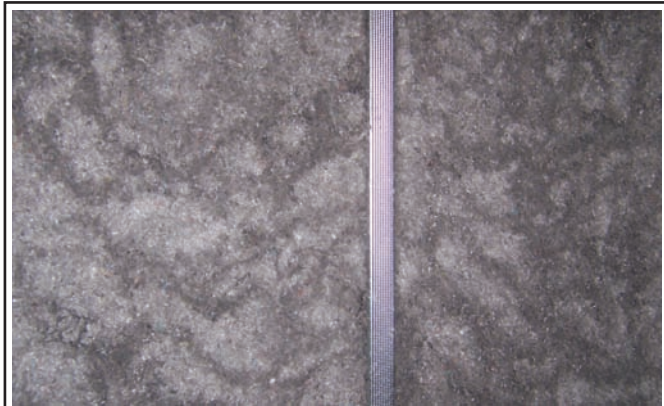
The Cellulose Insulation Manufacturers Assn. (CIMA) cites independent studies that affirm, among other findings, that cellulose insulation increases fire resistance of walls by 22 percent to 55 percent, compared to fiberglass insulation.

Fiberglass does not burn either. But it melts, producing holes and pockets within walls that enable fires, typically electric fires, to reach wood joists and other combustible materials.

It isn't the insulation material itself that is to blame for fires within walls and ceilings; it is the material's effectiveness in

# out Cellulose Insulation...

preventing flames from spreading. The dense fiber structure of cellulose slows the spread of fire, smothering flames and hot gasses, and creating a "two-hour firewall" for escape from a burning structure.



*APPLIED properly to a wall cavity, cellulose insulation is two times to three times denser than fiberglass.*

## SUPERIOR THERMAL BARRIER

It is this density, which contributes so much to its fire resistance, that also provides a superior thermal barrier, blocking air infiltration and heat loss. Cellulose is two to three times denser than fiberglass, easily flowing around all obstructions and completely filling all voids, halting air circulation within walls. Because air movement accounts for more than 98 percent of moisture seepage, blocking the flow of air also eliminates standing water problems and the rot and other damage caused by water.

As CEC learned from more than 10 years of providing weatherization services for houses and apartment buildings, cellulose insulation is up to 40 percent more effective as a thermal insulator as compared to conventional insulation.

The density of cellulose also contributes to soundproofing walls and to mold and vermin resistance.

## APPLICATION METHODS

Typically, cellulose insulation is applied by blowing it behind drywall or below floorboards with pneumatic fill tubes, easily accomplished with this dense, fine-grained material. Far superior to installing batts of insulation material, blowing in the fine cellulose fibers packs it so densely that there is no flow of air within walls. Air movement allows heat to escape and fire to spread. Settling of the densely packed cellulose is virtually non-existent.

Another application works particularly well in extensive renovations in which walls are opened and studs exposed, before drywall is in place but with all pipes, ducting, wiring and outlets in place. It also works well with remodelers who are strip-

ping walls to the studs in houses and other structures.

This is a damp-spray application involving a double-hopper blower arrangement, with one hopper blowing low-moisture insulation in and the other hopper recovering and recycling overspray. The cellulose easily flows around all obstructions, achieving a papier mache-like quality that clings securely with no need for netting or any other barrier to hold it in place.

After applying, the cellulose fill is scraped down so it is flush with the studs, and allowed to dry. Then sheetrock is installed.

The cellulose fibers are so fine in damp spray that they achieve a particularly tight seal, 38 percent tighter than fiberglass, and overall a much tighter building envelope. However, the damp spray method does require specialized equipment and expertise.



*INSTALLATION includes scraping down the damp-sprayed papier maché like material for a flush to the stud finish. (All photos provided by Community Environmental Center)*

## RECYCLING WASTE

Furthering the cause of environmentalism is the fact



that cellulose is an environmentally benign material produced locally from recycled waste that otherwise would continue to flow to landfills. Every hundred pounds of cellulose insulation contains 80 pounds to 85 pounds of recycled newsprint, CIMA claims.

Even the production of cellulose is eco-friendly. Cellulose insulation is made by electrically driven mills that process recycled wood fibers and shut down easily when product quotas are met, emitting relatively little greenhouse gas emissions.

We found that cellulose meets all these criteria, and we have been using the material as much as possible in the construction services we provide as contractors or consultants, whether in design specifications or actual construction installation. ❖

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