

prime Energy

Providing The Competitive Advantage To **Multi-Residential Energy Users**

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Energy Saving Reflective Panels

– A Short Payback Solution for Older Buildings



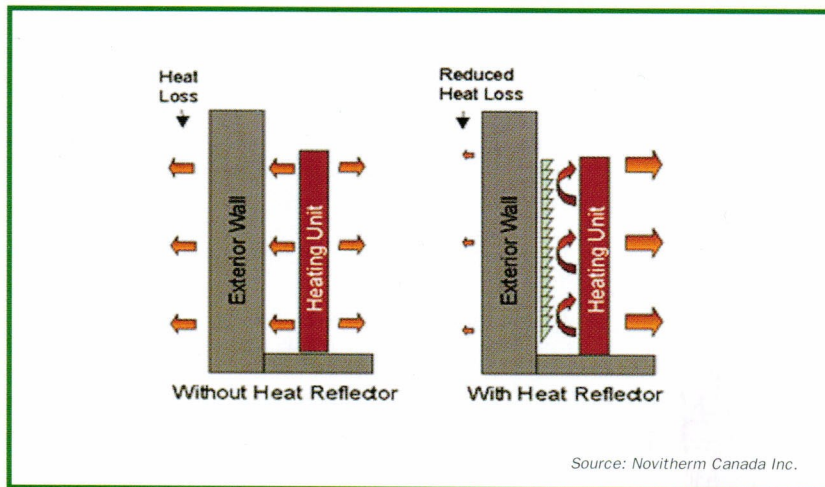
Building shell insulation was not very advanced 25 years ago. That's one reason why managers of older buildings struggle to keep tenants comfortable while building owners wrestle with rising energy costs. The trend over the past 15 to 20 years has been to try to solve these problems with boiler room improvements. With high efficiency equipment delivering efficiencies of 90 percent and more, compared with 50 to 60 percent efficiencies in old equipment, these measures are important. But much of the value of equipment improvement can be lost if

radiant heat continues to pass through un-insulated exterior walls.

Reflective panels are designed to solve this problem by improving the efficiency of the distribution system. These heat reflectors are made of clear PVC plastic with an aluminized coating. Designed to be inserted between the radiator units and exterior walls, they operate on a simple thermodynamic principle. Instead of radiant heat being absorbed through the wall, it is reflected back into the room so that heat loss is greatly reduced. In the process the heat reflector itself remains cool to the touch.

How the Heat Reflector Works

Reflective panels have special design features that act to increase the heat and comfort of the room. Their molded shape creates an insulating air pocket to reduce *conduction* heat loss to the outside wall while the aluminized surface reflects over 90 percent of the *radiant* heat back into the room. The sawtooth profile of the reflectors increases air turbulence and circulation. This results in faster room heating and fewer cold spots.



Aluminized Surface and Sawtooth Design

Equally important, heat reflectors increase the overall efficiency of a heating system. When reflectors are installed the core of the peripheral heating unit stays hotter and returns system water to the boiler at a higher temperature. The boiler can then operate at a reduced temperature without sacrificing comfort. The typical turndown is approximately 5.5°C (10°F). This translates into fuel and utility bill savings.

Reflectors deliver a range of savings depending on the insulation value of the walls and the state of the heating equipment. The more heat lost through the exterior wall behind the heating units prior to the installation of heat reflectors, the greater the savings.

Heat reflectors work with any hydronic system – whether free standing cabinet radiators or finned tubular baseboard convectors. They can be used to good effect in diverse building types – from highrises to row houses. The reflectors come in a variety of sizes and can be quickly shaped to fit any unit. Installation does not require removal of the radiators. (For convection units the cover must be removed.)

No special tools are needed. And, once installed, the panels stay in place permanently and will not require replacement.

The reflective panels have scored a hit with property management firms. Energy savings and fast paybacks are two pluses. Greenwin Property Management Inc., one of Canada's largest property managers, coordinated installation of heat reflectors in more than 8,000 suites throughout the ResREIT portfolio. John Mallovy, Vice



Source: Novitherm Canada Inc.

President of Construction and Procurement, observes, "We were very surprised at how much energy consumption was reduced by these panels. The paybacks are excellent, almost always less than three years. And with gas prices on the rise as they are now the paybacks will be even shorter." Tenant satisfaction is another big selling point. Ian Kyle, Vice President of Construction for Canadian Apartment Properties Real Estate Trust (CAPREIT), one of Canada's largest owners of multi-family rental properties, ordered heat reflectors for at least three-dozen buildings and was surprised with the response: "At 1 and 3 Biggin Court [two buildings where the work was done] many tenants went to the building manager to complement him on the effectiveness of the reflective panels."

Novitherm Canada Inc. has installed heat reflectors in over 100,000 units. Bruce Fulcher, Director of Sales, points out that sound installation is the key to gaining the maximum benefit from this energy saving technology. This includes proper cleaning of radiators and exterior walls and correct sizing. As a result of this approach some of his clients have seen energy savings of over 20 percent.

Enbridge's **MultiCHOICE Program** supports reflective panels for radiators with incentives based on estimated first year natural gas savings. These incentives start at 5 cents per m³ if reflective panels are the only measure installed and "step up" for each additional energy efficiency measure added. For example, if you install heat reflectors along with two other eligible energy efficiency measures you would receive an incentive of 10 cents per m³ for natural gas savings (up to a maximum of \$30,000 per building). For more information on this program, check our website: www.enbridge.com/gas.