

Roof traffic can't crush the high R-value of FCI's resilient phenolic foam

Perma-Therm, a closed-cell phenolic foam insulation with a high R-value, has been introduced to the Canadian roofing market by Fiberglas Canada Inc.

The product of several years of research and development, Perma-Therm has mechanical properties superior to every other phenolic foam insulation currently available, according to Fiberglas.

These features include long-term thermal performance, board hardness and resiliency, good dimensional stability, resistance to fire and wind uplift, and warp-free installation.

The new material is available in 3-by-4-ft boards.

"The outstanding characteristic of our phenolic insulation is its resiliency," says Ed Reeves, Fiberglas Canada's marketing manager for Roofing Products, "a resiliency that allows the insulation to recover from deformation after it has been compressed.

"That feature makes it far more resistant to heavy roof traffic or abuse during construction than any other phenolic roof insulation. During the application of a membrane or ballast, there is no tell-tale cracking sound of the Perma-Therm boards."

According to Reeves, FCI's phenolic roof insulation was designed to have waterproofing membranes applied directly to its surface — a procedure that means the installer is not required to lay down wood fibre boards to protect the insulation or membrane.

The product meets the Class 1 requirements of FM (Factory Mutual) with I-60 and I-90 wind uplift resistance ratings, he says.

The 30-mm-thick Perma-Therm with BUR requires only four approved fasteners per 3 by 4 ft of insulation board to achieve the I-90 wind uplift resistance rating.

FCI's phenolic can be adhered with hot asphalt, mechanically fastened or incorporated into a loose-laid ballast system.

Reeves adds a word of caution, however: "Permstop adhesives and other solvent-based adhesives must not be used to bond phenolic onto a vapour retarder or a double-layered roofing system. The closed-cell foam prevents solvents from escaping from the adhesives which extends the cure times to unreasonably long periods."

For Fiberglas Canada, development of the phenolic foam product was a major undertaking.

"The manufacturing process was not simply an off-the-shelf type of operation," says Reeves. "We had to start with the chemistry and devise a completely new production process."

FCI's purpose in adding phenolic foam to its product line was to service the high R-value end of the roofing market with a quality product. (The low R-value end of the market is already well-served by the company's Base Cap roof insulation.)

"Furthermore," adds Reeves, "we wanted to build on our position as a single-source supplier for a

complete range of insulation materials, waterproofing membranes and roofing accessory products. Over the years we have developed a solid reputation for providing quality roofing products to the Canadian market. We are going to continue doing so."

Perma-Therm phenolic foam insulation is made at FCI's plant in Scarborough, Ont., and marketed throughout Canada by its own national sales force.



A roofer demonstrates Perma-Therm's light-weight characteristics.



Trio Roofing crewman spreads asphalt over Perma-Therm boards during the product's field testing.

Perma-Seal roof combines benefits of single-ply and BUR

It's a matter of opinion as to which is the preferred system — a conventional built-up roof of four-ply felt/asphalt or a single-ply rubber roof membrane assembly.

Opinion is divided among roofing contractors and consultants who have ample reasons for justifying their choice of one over the

other.

Virtually all roofers, for example, are familiar with the four-ply felt/asphalt built-up roof which has been around for a very long time, which may account for its wide popularity.

The single-ply rubber roof membrane, on the other hand, is

waterproof and more durable, easy to install and relatively maintenance-free.

A third system that combines the benefits of both with additional features not found in either is Fiberglas Canada's Perma-Seal, a two-ply roof membrane offered with a 10-year manufacturer's warranty.

Produced as a modified bituminous membrane reinforced with polyester scrim and glass mat, Perma-Seal adjusts to building movement and has excellent waterproofing characteristics, but with the added security of two-ply protection.

Easy to apply with a torch or with asphalt, it is flexible enough to be installed in cold weather, and is more durable and UV-resistant than other materials, thanks to a surface

coating of slate granules.

A typical application of a Perma-Seal roof is the one installed by the Duplate division of PPG Canada on its recently expanded plant in Hawkesbury, Ont.

The Perma-Seal cost more than a built-up roof, concedes Tom Robertson, Fiberglas Canada's Ottawa area sales representative, but the customer felt that the benefits it provides more than justify the choice.

"It was well worth the premium price to get a quality system that's backed by a 10-year warranty, and required far less labour to install," he says.

The Perma-Seal roof system was installed by M & L Roofing Ltd of Ottawa in four stages.

First, the Permstop Vapour Re-

tarder was bonded to the metal roof deck with Permstop adhesive.

A layer of 3.2-in. Base Cap roof insulation was then hot mopped into hot asphalt (at 400° F) and applied over the vapour retarder.

A Perma-Seal two-ply bituminous membrane was added by hot-mopping the Perma-Seal S.S. Base Sheet onto the insulation, followed by the torch application of a Perma-Seal G.P. granular finish Cap Sheet.

Bernie Millaire, vice president of M & L Roofing Ltd expressed his approval of the Perma-Seal system with this comment:

"Although it requires a more specialized crew to apply than a built-up roof, it doesn't take as much work, and you have a high quality roof when you finish."



Two-ply Perma-Seal roof membrane being torch applied.

Economic Forecast

Slow-down predicted by 1990, but there are bright spots ...

The recent jump in interest rates has caused a number of economists to forecast a recession — either by the fall of this year or in 1990. A high degree of risk is therefore currently present in the outlook for non-residential construction.

In our view, however, a recession can still be avoided. The U.S. and Canadian economies are expected to slow down but not show actual quarterly declines in real output. Real GDP (Gross Domestic Product) is forecast to increase by 3.0 per cent in 1989 and 1.5 per cent in 1990. Last year, real GDP increased by 1.5 per cent.

Economic Policy

Tough budgets in the U.S. and Canada could help put a ceiling on interest rates. If deficits could be reduced enough, interest rates might even be nudged downward. The Bank of Canada is getting help from both the strong Canadian dollar and slumping U.S. car sales. Both are cooling the economy.

Regional

It's beginning to look a lot like a central Canada slowdown is in the works. Ontario and Quebec are expected to show the most pronounced correction in commercial and industrial real estate markets. In the west, B.C. avoid most of the bad news facing Ontario and Quebec. Positive demographic trends will continue to boost the B.C. economy. An edging downward of the Canadian dollar would also help the resource-driven B.C. economy. Rebounding oil prices will boost corporate and personal income in Alberta. Also, business confidence in the Atlantic provinces will receive a major boost if the Hibernia project goes ahead.

Interest Rates

The sharp first-quarter jump in interest rates caught the commercial and industrial real estate markets off guard. The consensus forecast has been for a "soft landing," that is, just a small increase from year-end '88 levels and then a downward interest rate trend starting in mid-89. The prime at 13.5 per cent may not yet be at its peak but we do not expect any sizable declines for some time.

Commercial Construction

Interest rates are now up into the levels which are impacting on non-residential construction. The commercial real estate mar-

ket continued to be active through the early months of 1989 but then began to weaken after the round of interest rate increases which occurred during the third week in March.

Last year, new construction spending in the trade, finance and commercial services industries amounted to \$10.8 billion, an increase of almost 14 per cent from the previous year. In 1989 such construction spending is expected to experience an abrupt slowing. The 1989 beginning-of-the-year survey of investment intentions indicates an increase of only 3 per cent (including inflation) in such outlays. This may prove to be even too optimistic as interest rates have risen since these plans were formulated. In addition, the expected slowing in consumer spending is likely to have a dampening effect on commercial real estate markets in general.

Regional Variations In Commercial Construction

The outlook for construction in the trade, finance and commercial services sector shows a marked regional variation. At the beginning of the year, intentions for such spending varied from a 10 per cent increase in Ontario to a 1 per cent advance in Quebec, and declines of 7 per cent in Ontario, in Quebec. In Ontario, the increases in construction in the trade and commercial services sectors are particularly strong. This is partly offset by a smaller construction increase by financial services companies.

Other Non-Residential Construction

The utilities sector shows the strongest increase in planned 1989 construction spending of any industry group — an increase of \$1.7 billion. Increased spending on electric power projects accounts for about one half of this increase and pipeline construction accounts for another 20 per cent. In manufacturing, non-residential construction spending intentions show an increase of about \$270 million. The mining/petroleum/gas sector is the only large industry group to show a decline in 1989 construction spending intentions. However, world oil prices have increased sharply since these plans were surveyed. Alberta could therefore face an improved industrial construction outlook in the second half of 1989 and in 1990.

Peter R. Andersen, A.M. Ph.D., is head of Andersen Economic Research Ltd., Toronto. Dr. Andersen has served as Assistant Chief of Research at Bank of Canada, was a partner in Woods Gordon, and prior to forming his own firm, was Chief Economist with Burns Fry.



Distributor network helps keep FCI in touch with customers' needs

Fibreglas Canada keeps its fingers on the pulse of the insulation market and stays in close touch with customers in an indirect, yet most effective way.

Serving as "sensors," are a network of independent mechanical insulation distributors operating from 16 locations across Canada.

As a result, customers enjoy many of the benefits of dealing directly with the manufacturer — such things as expert technical advice and product assistance — and yet retain the local-market sensitivities that are only available through a local distributor.

In many ways, FCI's independent distributors are an extension of itself, sharing in its technical expertise, training opportunities, research and development, and information about competitive products and marketing programs. And in every centre where there's an independent FCI distributor, there is a Fibreglas Canada representative who is that distributor's link to the manufacturer.

"We are dedicated to our distributors, and have a relationship to them based on mutual trust and a desire to meet the customers' needs," says John Hudson, FCI's marketing supervisor, Mechanical Insulation Products. "In a very real sense, they keep us in touch with the customer's needs. It's those sentiments about the two-way relationship between them and FCI, as the following comments indicate:

"We work very closely with FCI's reps on various jobs," says George Anolick, general manager

of Fleck Brothers Limited in Burnaby, B.C., who has been a Fibreglas distributor for some 20 years. "We get their technical support and assistance, and they benefit from our experience with the end user."

"And," he adds, "because Fleck Brothers is an independent distributor, handling different products of other companies, we offer the customer the convenience of purchasing all allied products needed for a job from a single source."

Another distributor of FCI's products is Steels Industrial Products of Richmond, B.C., which operates five distribution centres in each of the Prairie provinces.

Steels and FCI work together to cover an area that is very large but sparsely populated, reports Steels' president Tom Blondel.

"In short, we operate as one," he says.

FCI personnel are often included in Steels' project meetings, he adds, and are involved in almost all of its projects. The resulting relationship is one of trust, openness and friendship.

In Mississauga, Ont., general manager Paul Wettlaufer of FCI distributor A.C. Wild Limited observes that the two companies have established what is virtually a "family" relationship during the many years they've been associated with FCI since about 1959," he says. "It's a very successful relationship that has worked out well for both of us."

Part of their association entails some secondary manufacturing. Fibreglas provides A.C. Wild with



Bob Rymell, Supervisor of Technical Services, FCI, uses a computer to determine a customer's insulation requirements.

insulation which the Mississauga firm fabricates into products for FCI, and for sale to other markets under its own brand name.

Possibly the oldest independent distributor is Guildfords Limited of Dartmouth, N.S., an 82-year-old firm that has spent 40 of those years in association with FCI. In fact, Guildfords was the company that introduced FCI's mechanical insulation products to Canada's Atlantic region.

Company president John Guildfords says Fibreglas Canada provides technical service through its distributors that is second to none. For example, his company uses the results of a computer program provided by FCI to help the customer

members. "The customer has access to the technical expertise of the manufacturer," he says, "and benefits from the distributor's experience and knowledge of the local market. It's the best of both worlds."

Roof design attracts shoppers to Hamilton Eaton Centre

As joint owners and tenants of the Hamilton Eaton Centre now being built in Hamilton, Ont., the T. Eaton Company and Cadillac Fairview were as concerned about making a good impression on neighbours in adjacent office towers as they were with presenting an attractive appearance to potential customers on the street, when plans were being drawn up for the \$15-million structure.

Both firms realized that the hundreds of high-rise office workers might well become loyal customers, provided they were not offended by their view of an ugly or cluttered rooftop each time they gazed down on the Centre.

And so, with this in mind, Eaton's corporate construction superintendent Bob Lees specified that two of Fibreglas Canada's roofing products should be incorporated in the structure.

In addition to specifying a standard Fibreglas Canada built-up roof to provide a clean, uncluttered roof area, Lees called on the roofing

contractor, Bothwell-Accurate Co., of Toronto, to install Fibreglas' Perma-Seal Cap Sheet to the 48-in.-high block construction parapet walls around the perimeter of the building.

Torch-applied to the unusually high parapet, the blue-and-green granular finish of Perma-Seal greatly enhances the appearance of the roof, especially from a distance. (Perma-Seal Cap Sheets are also available in standard colours of red, white, black and brown.)

Not just used for cosmetic purposes, however, the Cap Sheet also serves as masonry flashing on the Eaton Centre. The contractor extended it to the base of the parapet walls and over the "cant" strips (the flashing which joins the roof and walls) so that it provides additional protection against leaks, and neatly joins the roof and walls.

The final trim, aluminum flashing was fitted along the base and top of the parapet walls.

As for the mall's interior, the owners wanted to make it as com-

fortable as possible for the crowds of people who will flock in on cold and rainy days, so its outer walls have been insulated with 90,000 sq ft of two-inch-thick AF-530 Cavity Wall insulation.

The installer was Bectar Corporation of Hamilton.

Attached to the outside of the concrete block walls, the insulation is, in turn, covered with a brick veneer facing to protect it from moisture.

Applying the rainscreen principle, a one-inch gap was left between the facing and the insulation which allows moisture to condense on the inside surface of the brick and escape through weep holes.

The partially heated underground shipping/receiving areas are insulated from the main store by 30,000 sq. ft of 3-in.-thick AF-545 insulation that is mechanically fastened to the underside of the loading dock area's 18-ft-high ceiling.

Each board is fastened with five mechanical fasteners — one in the

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Extended-length 3-metre pipe insulation improves productivity

With a contract to insulate 40,000 lineal feet of outdoor pipe at a plant in Bécancour, Quebec, during the coldest part of last winter, it was not surprising that Asbestos Covering of Montreal selected a new pipe insulation from FCI that can be installed much faster than any other pipe insulation.

There is nothing mysterious or complex about this time-saving feature: it's simply due to the fact that it's in three-metre lengths whereas conventional pipe insulation is only available in one-metre lengths.

Fiberglas Canada's position as the only manufacturer of extended length pipe insulation is based on a unique pulform process it employs.

Pulform production begins with a glass fibre felt which can be up to 100 ft long and in various widths, according to the diameter of pipe to be insulated. The felt is wrapped around a long steel mandrel to give it a tubular shape and is pulled along the length of the mandrel while its resin binder is curing.

As the cured insulation comes off the mandrel, it is cut into sections up to three metres (9.8 ft) long.

Other insulation manufacturers use one-metre-long heated mandrels (the limiting factor in their process) and apply the glass wool in layers as the mandrel spins.

"The customer was really enthusiastic about using the three-metre pipe covering on this job

because of the long runs of piping to be covered," says Tony Methot, FCI's direct sales representative for Mechanical Insulation.

The Bécancour installation, in fact, is the first in Quebec in which the three-metre insulation segments have been used. Previously it had been used quite successfully in Western Canada.

Asbestos Covering was awarded the mechanical insulation contract for the new facility, the Norsk Hydro Magnesium plant, by Catalytic Construction of Alberta, the general contractor.

A \$400-million construction project initiated by Norsk Hydro of Zurich, Switzerland, and engineered by Monenco of Montreal, the plant was slated for completion by August of this year.

The 40,000 ft of pipe to be insulated is process piping that runs from one building to another and is suspended on racks.

Not only was some of the installation carried out in temperatures as low as -20 degrees Celsius, but the job was made more difficult by the fact that the pipes are at elevated heights.

Both Asbestos Covering's contracting manager Leo Cartier and contract co-ordinator Tony DePaola agree that the extended length pipe insulation speeded up installation.

The company was also impressed with the insulation's other



Workers atop pipe racks at the Norsk Hydro plant install extended-length 3-metre pipe insulation.

mechanical properties, according to FCI's Methot—its 5-lb density, its resistance to abuse and the fact that it can be stored safely outdoors in its disposable plastic packaging.

Fiberglas Canada's products have been specified for about 50 per cent of the insulation jobs at the Norsk project, including the covering of two giant tanks with 60,000 sq ft of the company's AF-530 insulation.

B. G. Checo International Ltd., Montreal Quebec, the general contractor, awarded the tank insulation contract to Thermopro (also of Montreal). According to Richard Lynch, Thermopro's contract coordinator, the uniform thickness and easy handling qualities of the AF-530 have made it possible for Thermopro to increase its productivity.

Reinforced vinyl facing shields insulation, helps brighten underground garage



WMP-30's white protective facing helps brighten garage.

Damage from hockey sticks and cuts from whip-like car antennas are two hazards that building insulation is not normally expected to endure. But to the builders of the new Holland Cross Tower in Ottawa, both were seen as real threats to be overcome when they specified insulation for the ceiling of the building's underground parking garage.

Because it meets those requirements, the product chosen for the job was Fiberglas Canada's AF-530 insulation with WMP-30 facing.

Made of glass fibre-reinforced vinyl, the facing is tough enough to resist tearing when hit by car antennas or by high sticks wielded by youngsters who often use parking garages as impromptu hockey rinks.

In addition, the WMP-30 provides an attractive surface for the garage ceiling.

As for the AF-530 insulation, it proved to be the most cost-effective package for this particular installation, offering a combination of high thermal rating, fire resistance and durability.

Other forms of insulation, the specifiers discovered, were either too expensive or could not meet the performance requirements. Foamed polystyrenes, for example, are too fragile to withstand abuse from hockey sticks or car antennas, and do not comply with fire regulations in that type of installation. Other glass-fibre insulations with mechanically fastened dry-wall facings would be suitable, but are substantially more costly than FCI's product.

As Fiberglas Canada's Tom Robertson points out, the combination of AF-530 insulation with WMP-30 facing is a good example of a multi-purpose product.

"It effectively insulates the building above from the partially heated garage," says Robertson, the Ottawa area sales representative for FCI. "It is a cost-efficient material that has the attractive appearance and durability needed for the job, and is easy to install."

The tough, monolithic facing is factory-applied to the AF-530 insulation by Isofab Ltd. of Montreal and A.C. Wild Ltd., Toronto.

The insulation was installed on the ceiling of the Holland Cross Tower's underground garage by Nick Giamberardino Limited, Ottawa, which rates the AF-530 as "the best product of its kind in its price range. And," adds president Giamberardino, "it is very appealing to look at. Its white facing helps brighten the place."

The insulation was mechanically fastened to the 50,000-sq-ft concrete slab ceiling with 3-in. Gripcon fasteners and 4.5-in. galvanized plates. The seams were sealed with 3-in. tape.

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centre and one at each corner. There was no need to tape the joints between the boards, however, because of the ability of adjoining sections of insulation to knit firmly together.

Although the AF-545 can be supplied with an attractive protective facing, the owners decided to finish the ceiling with a white latex coating on the exposed surface of the insulation.

The main part of the Centre has a 193,000-sq-ft suspended ceiling made of FCI's popular Sonoboard Etched Ceiling Board. Installed by P. J. Daly Contracting Ltd. of Hamilton, it serves the double purpose of providing an acoustic barrier to absorb the noise of shoppers and to hide an intricate network of ceiling beams, pipes and ducting.

According to project co-ordinator Wayne Jorgensen of the building's architects, S. M. Roscoe of Hamilton, Fiberglas Canada's products were specified in each case because of their recognized quality and attractive appearance when installed. They were highly recommended by the owners and design engineers as the most suitable products for the four different applications, says Jorgensen.

The 395,000-sq-ft Eaton Centre in downtown Hamilton is built next to the old Eaton store which was demolished in May of this year.

The plan is to build a 160-store mall on the site of the old building to link the new Centre with Hamilton's Jackson Square — a

project planned for completion by August 1990.



A Perma-Seal-capped parapet wall is seen behind FCI reps Jim Turnbull, left, and Paul Davis.



Artist's rendering of the Hamilton Eaton Centre scheduled for completion in August 1990.