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CCMC NEWS

Key Decisions Taken at First CCCME Meeting

The producers of moulded EPS recognized that their CCMC listing provides a valuable marketing tool

The first meeting of the Canadian Commission on Construction Materials Evaluation (CCCME), held in December 1991, produced several key decisions affecting the Canadian Construction Materials Centre (CCMC).

The Commission created a Technical Standing Committee to review all new Technical Guides drafted by CCMC. The Guides provide the performance criteria for evaluating new and innovative products. At present, the Guides are developed in conjunction with CCMC's network of technical experts. However, the new committee will add a much broader input.

The Commission also agreed on a guideline to help CCMC recognize testing laboratories. CCMC directs clients to laboratories to have their products tested according to Technical Guides (innovative products) or Evaluation Directives (standardized products). Under the new guideline, CCMC will rely on the laboratory accreditation programs of the Standards Council of Canada and the National Voluntary Laboratory Accreditation Program in the United States. The new guideline will also allow laboratories not accredited for a particular test to be considered in special circumstances, such as when non-standardized testing is required. Detailed information on the new guideline will be available later this year.

CCCME approved the renewal of CCMC's moulded expanded polystryrene (EPS) insulation listing service after an interruption of several years, during which these products have been certified. In a cooperative effort with industry and three of Canada's certification organizations (CGSB, ULC, WHPSI), CCMC will now list moulded EPS products that have been certified by one of the existing programs. This step was requested by the producers of moulded EPS, who recognized that their CCMC listing provides a valuable marketing tool. The evaluation of extruded expanded polystryrene (XEPS) has not been interrupted.

CCCME has also endorsed the introduction of the CSA Q9000 series of quality control standards into CCMC's evaluation process. The addition of these standards will seek to ensure product manufacture consistent with the samples evaluated by CCMC. The assignment of quality assurance levels in accordance with Q9000 may not result in significant changes for most manufacturers already operating at the appropriate level. Compliance with the new standards also means the product's manufacture complies with the CSA Z299 series and the International Standards Organization's ISO 9000 series, and should enhance product marketability both in Canada and abroad.

Members of CCCME include provincial and municipal regulators, product specifiers, manufacturers and users, engineers, architects, contractors and researchers. The current members of the Commission are as follows:

Voting Members

Fred Nicholson, **Chairman**	City of Winnipeg
Ali Arlani	Ontario Ministry of Housing
Michel Bélanger	Prefac Industries Inc.
John Caicco	Canadian Standards Association
Frank Cass	Alberta Labour
Robert Davidge	Public Works Canada
Ronald Denom	SNC/Lavalin Inc.
Fred Harrington	WHW Group Inc.
John Helliwell	Nova Scotia Research Foundation
Art Kempthorne	Council of Forest Industries of B.C.
André Lemire	La cie de bois Lemire Inc.
Richard Lind	Everts Lind Enterprises
Laurie Lithgow	Canada Mortgage and Housing
Denis Petry	City of Cornwall
Lloyd Rogers	Lloyd Realty Ltd.
Bob Sinclair	Fiberglas Canada Inc.
Jack Smith	Stanley Door Systems
Wayne Watson	W2 Consultants Ltd.

Non-Voting (Ex-Officio) Members

Margaret Miller	Provincial/Territorial Committee on Building Standards
Easton I. Lexier	Canadian Commission on Building and Fire Codes
Jack Perrow	Standards Council of Canada
John Berndt, **Deputy Chairman**	Head, CCMC
Guy Gosselin, **Secretary**	Assistant Head, CCMC
Alphonse Caouette, Technical Advisor	Unit Head, CCMC

To contact the Canadian Commission on Construction Materials Evaluation, write to the Secretary,CCCME at:

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Ottawa, Ontario KIA 0R6 ✦

Reinforced Cementitious Panels Evaluated

Reinforced cementitious panels are strong and resist deterioration in moist or wet conditions

Article 9.29.10.4. of the National Building Code requires that ceramic and plastic tiles on walls around bathtubs and showers be applied onto a moisture resistant backing. This requirement has led to the development of reinforced cementitious panels which are particularly suited for installations where they may be exposed to high humidity or moisture.

Reinforced cementitious panels are strong and resist deterioration in moist or wet conditions. They do, however, require special tape (glass fiber mesh), filler and fasteners. The relative high strength of the panels has encouraged manufacturers to market their products for a variety of applications, including:

- areas of high use and abuse, such as apartment stairwells and halls,
- exterior sheathing protected with aggregate coating, stucco or tiles in areas not requiring lateral strength, and
- noncombustible floor and wall shields.

The panels are generally composed of a cementitious core of light-weight aggregate and sand bound by cement. Some manufacturers limit the amount of light-weight aggregate needed by including polystyrene pellets. Both sides of the panels are covered with fibre mesh embedded in a slurry coat. This fibre mesh is not able to totally resist alkaline environments that form in the panels under certain conditions, such as high humidity and high temperature. This is why the panels are limited to non-structural applications.

Reinforced cementitious panels are not intended as wall finishing. Despite their resistance to moisture, they are not impermeable. As a result, they must be covered with a waterproof finish, such as grouted ceramic tile. Similarly, a waterproof barrier must be installed between the wood frame and any cementitious panels.

Depending on the proposed application, CCMC evaluates the panels for:

- dimensional requirements and tolerances
- density
- resistance to fastener pull
- flexural strength
- humidified deflection
- linear variation with change in moisture content
- freeze-thaw durability
- falling-ball impact.

Tests for freeze-thaw durability and falling-ball impact are required when the panels are proposed for exterior installation as sheathing covered by protective finishes, such as a thin-coat system or ceramic tile. Freeze-thaw testing is also done when a finish is not bonded directly to a panel, as in the case of brick veneer. Falling-ball impact tests are used to assess panel strength when the product is to be installed in high-use, high-abuse interiors. Both freeze-thaw and falling-ball impact tests are performed when the finish is bonded directly to the board.

When an installation demands non-combustibility, a flame spread rating and a smoke developed classification, the panels are further classified according to these standards:

- Test for Surface Burning Characteristics of Building Materials and Assemblies (CAN/ULC-S102-M88)
- Test for Determination of Non-Combustibility in Building Materials (CAN4-S114-M80)
- NRC Test for Combustible Cladding.

To date CCMC has evaluated four reinforced cementitious panels from four different manufacturers. As a result of this evaluation experience, developing and verifying performance criteria, CCMC actively participates on the CSA Technical Committee on Reinforced Cementitious Board. This committee is meeting to develop a standard for these boards and the CCMC requirements are forming the basis for the standard development.

Information: M.A. Brouzes ✦

Assistant Head Appointed for CCMC

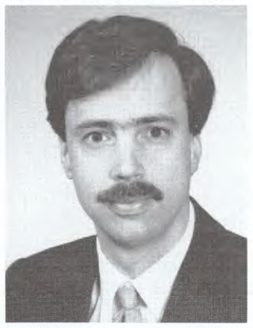
Guy C. Gosselin, P.Eng., has been appointed Assistant Head of the Canadian Construction Materials Centre (CCMC). In his new role, Guy will be responsible for production control and business development of CCMC. He also becomes Secretary for the Canadian Commission on Construction Materials Evaluation.

Guy Gosselin joined IRC in 1980 as a Technical Advisor to the National Building Code's Standing Committees on Fire Protection, Occupancy and Fire Performance Ratings. In 1984, he joined the research staff of IRC's National Fire Laboratory. One of his projects there was a full-scale experimental study of the impact of sound insulation on the fire performance of wood joist and wood truss floor assemblies.

He became Business Development Coordinator for the Canadian Codes Centre in 1988 and was instrumental in the successful marketing of the 1990 National Codes.

Most recently, Guy was IRC's Assistant Marketing Manager, with special responsibility for contract administration.

Guy Gosselin has a B.A.Sc. (Civil) from the University of Ottawa, an M.Sc. (Civil) from the University of Saskatchewan and an M.B.A. from the University of Ottawa. He is a registered professional engineer in Ontario and serves on the Board of Directors of the Canadian Society for Civil Engineering and on the Executive of the National Capital Region Chapter of the Society of Fire Protection Engineers. ✦



Evaluation of Wall Systems Incorporating a Low Emissivity Sheet

When low emissivity sheets are installed correctly, with air spaces and mass insulation, they minimize all three modes of heat transfer: conduction, convection and radiation.

When walls are constructed using a low emissivity sheet material within the assembly, the thermal resistance depends on how the sheets are installed. The installation specification is the main focus of the CCMC Evaluation Reports on this type of product.

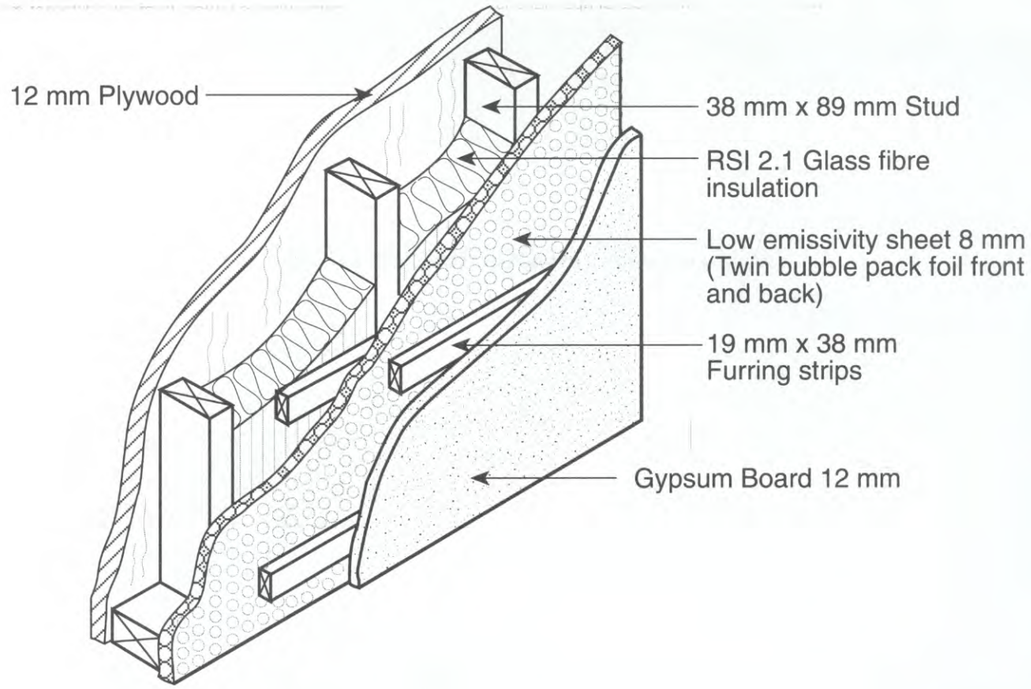
Low emissivity sheets consist of a twin polyethylene bubble pack, 8 mm thick, coated on both surfaces with a thin reflective foil. To perform effectively, the sheets must be installed with furred air spaces on both sides of the material. In addition, the sheets must be installed on the warm side of walls containing conventional mass insulation, such as glass fibre batts.

The CCMC evaluations reveal that when low emissivity sheets are installed correctly, with air spaces and mass insulation, they reduce heat transfer by minimizing all three modes of heat transfer: conduction, convection and radiation. The air spaces, sheet bubbles and mass insulation together decrease conduction. The furred air spaces minimize air convection. The reflective foil surfaces retard radiation across the air space.

Although the low emissivity sheets are effective in reflecting back the heat radiating across the air space, the sheet alone is not an adequate insulation. Indeed, the air spaces around the sheet have a considerable influence on controlling heat loss. Consequently, changing the width of the air spaces would modify the thermal resistance of the whole system. The CCMC Evaluation Reports confirm that low emissivity sheets, when installed as described in the reports, augment the base wall thermal resistance by RSI 0.7 to 0.88 (R4 to R5).

In addition to their role in increasing the thermal resistance of a wall assembly, low emissivity sheets may also meet the Canadian General Standards Board requirements for vapour barriers. CCMC evaluated the sheets for pliability, tensile strength and water vapour transmission, each before and after accelerated aging. The results for one product confirm that low emissivity sheets can perform well as a vapour barrier, providing all joints are sealed or overlapped, as recommended in the National Building Code.

Information: L.F. Cécire ✦



BSI '92 – Effective Use of Energy-Efficient Lighting

Providing adequate illumination at the lowest cost does not guarantee a successful lighting system

IRC is preparing to hit the streets with its annual Building Science Insight seminar series this fall. This year's seminar will deal with the boom in energy-efficient lighting. Utilities rebates, energy codes and the "green movement" have dramatically boosted the use of technologies such as compact fluorescent lamps. Lighting designers and manufacturers, architects, engineers, energy consultants, building owners and facility managers should remember, however, that the purpose of lighting is to provide building occupants with a comfortable and productive indoor environment. Encouraging the effective use of lighting is a major goal of the seminar.

Providing adequate illumination at the lowest cost does not guarantee a successful lighting system; light affects the way we feel and perform. Lighting retrofits raise several questions. What areas of a building can provide the most savings? Will employee productivity drop if light levels, colour or distribution change? What kind of lighting systems can be used for particular applications? Will your utility help pay for the job? Similar questions arise for new buildings. How will guidelines and standards such as the Canadian Code for Energy Efficiency in New Buildings and ASHRAE 90.1 impact on building design and construction? Can energy-efficient lighting help meet these standards? And again, can your utility help pay the cost? These questions will be answered in BSI '92.

BSI '92 is being delivered with the cooperation of the Canadian Electrical Association and member utilities. Guest speakers from the Illuminating Engineering Society (IES) and Canadian utilities will appear alongside IRC lighting experts. Seminars in English will be offered in 14 cities:

Ottawa	15 September	Vancouver	19 October
Charlottetown	18 September	Whitehorse	21 October
St. John's	21 September	Calgary	23 October
Fredericton	23 September	Toronto	2, 3, 4 November
Halifax	25 September	Yellowknife	6 November
Saskatoon	14 October	Winnipeg	9 November
Edmonton	16 October	Montréal	12 November

Seminars in French will be offered in 4 cities:

Gatineau	19 novembre
Montréal	25 et 26 novembre
Jonquière	1 décembre
Québec	3 décembre

For more information, contact

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