CFI® Concrete Faced Insulated Wall Panels

Using CAN/ULC - S701 Type 4 Insulation

PRODUCT DATA

Manufacturer

Tech-Crete Processors Ltd.
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Product Description

Concrete Faced Insulated (CFI®) Wall Panels are a pre-finished, "One-Step" exterior perimeter foundation or low-rise wall insulation panel consisting of STYROFOAM™ brand foam insulation with a factory applied 5/16" (8 mm) (nominal) thick latex-modified concrete facing, with a slightly broomed finish. **CFI®** wall panels are installed using specially designed galvanized steel mounting clips, included with each shipment.

BASIC USES

CFI® wall panels provide highly efficient insulation and a durable finish in a one-step process. The panels are intended for use below and above-grade, against concrete, block or brick, exposed to a height not to exceed 36 ft (11 m).

CFI® wall panels are an appropriate perimeter insulation for industrial, commercial and institutional new and retrofit foundation or low-rise wall applications. The one-step process makes installation easy, in any weather, with moderately skilled labour.

CFI® wall panels can be easily removed and reused in expansion projects.

Sizes

Panel Size 2' x 4' (610 mm x 1220 mm)

Foam Thickness	Panel Thickess
2" (R10)	2 5/16"
3" (R15)	3 5/16"
4" (R20)	4 5/16"

Edge Treatment
Tongue and groove on 4' edge and butt edge on 2' side.

Technical Data

APPLICABLE STANDARDS

- ASTM C578-01 - Standard Specification for Rigid Cellular Polystyrene Thermal Insulation
  - ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
  - ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics
  - ASTM E96 - Standard Test Method for Water Vapour Transmission of Materials
  - ASTM D696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30° and 30°C with a Vitreous Silica Dilatometer
  - ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics
- CAN / ULC S701-05 - Standard for Thermal Insulation, Polystyrene Boards and Pipe Covering (Type 4)
- CSA A23.2-09 - Concrete Materials and methods of Concrete Concrete Construction/Test methods and Standard Practices for Concrete

NRC Evaluation Listing
CCMC 04888-L

ENVIRONMENTAL DATA

CFI® wall panels are hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. **CFI®** wall panels will help achieve energy efficiency with a product that is itself produced in an environmentally responsible way.

CFI® wall panels are reusable in many applications.

Table 1.

Physical Properties of CFI® Wall Panels	
Property and Test Method	**Value**
Thermal Resistance per inch (25.4 mm), ASTM C518, R-Value (RSI)* min.	5.0 (0.88)
*Foam Compressive Strength-Vertical**, ASTM D1621, psi (kPa), min.*	35 (241)
Mortar Compressive Strength (at 28 days), CSA A23.2-09, psi (MPa), min.	4600 (32)
Water Absorption, ASTM D2842, % by volume, max.	0.7
Water Vapour Permeance, ASTM E96, perm, permSI, max.	1.0 (60)
Maximum Use Temperature, °F (°C)	165 (74)
Coefficient of Linear Thermal Expansion, ASTM D696, in / in • °F (mm / m • °C)	3.5×10^{-5} (6.3×10^{-2})

* The higher the R-Value or RSI, the greater the insulating power.
** Vertical compressive strength is measured at 10% deformation or at yield, whichever occurs first. *Panel is in horizontal position during testing.*

Manufactured Using DOW Products

PHYSICAL / CHEMICAL PROPERTIES

CFI® wall panels exhibit physical properties as indicated in Table 1 when tested as represented. For chemical resistance properties of STYROFOAM™ brand foam insulation, see Table 2.

Table 2.

Chemical Resistance* of STYROFOAM™ Brand Foam Insulation	
Acid, inorganic, weak**	Excellent
Acid, inorganic, strong**	Excellent
Acid, organic, weak**	Excellent
Acid, organic, strong**	Good
Bases	Excellent
Alcohols, including isopropyl alcohol	Excellent
Methyl ethyl ketone	Not recommended
Polyglycols, including propylene glycol	Excellent
Hydrocarbons	Not recommended
Salts	Excellent
Insecticides	Not recommended
Kerosene	Poor
Mineral oil USP	Excellent
Naphtha (VMP)	Not recommended
Turpentine	Not recommended
Beer	Good
Gasoline	Not recommended
Fruit Juices	Good

* Explanation of ratings:
Excellent = The plastic was unaffected for the duration of the test.
Good = A very slight clouding or discolouration of the plastic
Poor = Considerable change in plastic during exposure, possible etching, discolouration, dimensional or weight changes.
Not recommended = Severe attack of the plastic. Became soft and unusable after a few hours of exposure.
** The concrete top can be adversly affected by exposure to acidic environments.
NOTE: This table should be used as a guide only. For design purposes, specific test data on the intended application may be needed.

FIRE PROTECTION

CFI® wall panels are combustible; protect from high heat sources. For more information consult product Material Safety Data Sheet (MSDS).

Table 3.

Surface Burning Characteristics of CFI® wall panels in accordance with CAN/ULC-S102-10
Flame Spread Classification = 10
Smoke Developed Classification = 160

Additional Technical Tests

WALL PANEL SYSTEM FIRE TEST

- Meets Uniform Building Code (UBC) 17-5 ('Room Fire Test Standard for Interior of Foam Plastic Systems'. Criteria is to maintain coverage of foam substrate up to 8' from interior corner, over the duration of the test.)
- Equivalent to current UL 17-15 and UBC 97 revised

NEGATIVE WIND LOAD AND GRAVITY SHEAR LOAD TESTS

- Clips spaced at 2 ft along each horizontal joint can safely carry the wall panel vertical weight and support the panel under negative wind pressures of up to 25 psf, with a safety factor of 2.
- If greater wind pressures are anticipated, additional clips may be placed to provide the additional strength.

TENSILE BOND STRENGTH OF MORTAR FACING

- Remains intact after 1000 freeze / thaw cycles using ASTM C666-B (equivalent to approximately 25 Canadian winters)

IMPACT RESISTANCE - ASTM G-14 "Up and down method"

- **CFI**® wall panels have an impact strength equal to or greater than that of standard 8" thick concrete block, tested in the centre of a cavity.

Handling & Installation

CFI® wall panels should be stored under cover (warehouse) until installed.

CFI® wall panels can be installed vertically or horizontally. Vertical installation is recommended for perimeter foundation applications. Horizontal installation is recommended for low-rise wall applications. It is recommended that any masonry irregularities or jagged surfaces on the foundation or exterior wall be removed prior to installation. Shaping the foam side of the panel may be necessary to ensure the panel sits flat against the wall. This procedure will reduce or eliminate cracking caused by uneven wall surfaces. Walls may require air and/or vapor barrier and foundations should be properly damp-proofed below grade.

Each shipment of **CFI**® wall panels includes specially designed galvanized steel mounting clips and fasteners. For additional clips and fasteners, contact your local Tech-Crete distributor or call 250.832.9705.

Contact your local Tech-Crete distributor for more specific instructions on the installation of **CFI**® wall panels. A detailed installation guide is also available through your local Tech-Crete distributor or online at: tech-crete.com/downloads

Availability

CFI® wall panels and clips are available through an extensive network of distributors. For product availability or for the name of your local Tech-Crete distributor, call 250.832.9705 or visit our website at tech-crete.com.

Warranty

For warranty details, visit our website at tech-crete.com.

Technical Services

Tech-Crete Processors Ltd. can provide technical information to help address questions regarding **CFI**® wall panels.

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