



## PRODUCT DATA

### Manufacturer

**Tech-Crete Processors Ltd.**  
2930 - 13th Avenue SW  
Salmon Arm, BC V1E 3K1  
Phone: 250.832.9705  
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### Product Description

#### BASIC USES

**Concrete Topped Insulated (CTI<sup>®</sup>) Roof Panels** are self-ballasted and designed for loose laid installation above waterproofing or roofing membranes in a protected membrane roof (PMR) assembly.

**CTI<sup>®</sup>** roof panels consist of 2" (50 mm), 3" (75 mm), or 4" (100 mm) STYROFOAM™ brand foam insulation with a 3/8" (10 mm) (nominal) thick latex-modified concrete topping. They provide insulation and ballast in an easy-to-install product that can be handled by one person. They are ideal for new and retrofit applications where dead load roof weight is a concern. With tongue and groove sides, **CTI<sup>®</sup>** roof panels can be easily removed and reused after membrane inspection or to construct additional stories in a vertical expansion project.

**CTI<sup>®</sup>** roof panels keep the roof membrane at a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering, UV degradation, and physical damage during and after construction.

### Sizes

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

Foam Thickness	Weight (Nom.)
2" (R10)	4.5 lb/ft <sup>2</sup>
3" (R15)	4.65 lb/ft <sup>2</sup>
4" (R20)	4.8 lb/ft <sup>2</sup>

### 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 D2842 - Standard Test Method For Water Absorption 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
- 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 Construction/Test methods and Standard Practices for Concrete

**NRC Evaluation Listing**  
CCMC 04888-L

Table 1.

Physical Properties of CTI <sup>®</sup> Roof 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 x 10 <sup>-5</sup> (6.3 x 10 <sup>-2</sup> )

\* 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.



## PHYSICAL / CHEMICAL PROPERTIES

**CTI**<sup>®</sup> roof 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.

## ENVIRONMENTAL DATA

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

**CTI**<sup>®</sup> roof panels are reusable in many applications.

## FIRE PROTECTION

**CTI**<sup>®</sup> roof panels are combustible; protect from high heat sources. For more information, consult product Material Safety Data Sheet (MSDS).

## Installation

**CTI**<sup>®</sup> roof panels are strong, lightweight, and easy to install. Contact your local Tech-Crete distributor for more specific instructions on installation of **CTI**<sup>®</sup> roof panels in a protected membrane roof assembly. A detailed installation guide is also available through your local Tech-Crete distributor or online at:

tech-crete.com/downloads

**CTI**<sup>®</sup> roof panels should be stored under cover (warehouse) until installed.

## Availability

**CTI**<sup>®</sup> roof panels 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.

## Maintenance

**CTI**<sup>®</sup> roof panels are self-ballasted, lightweight insulated roof panels. They can accept occasional maintenance foot traffic, but they are not intended for use as a patio, plaza deck or construction platform. A regularly scheduled preventative maintenance program of inspection and cleaning will ensure long term durability of all roof components.

## Technical Services

Tech-Crete Processors can provide technical information to help address questions regarding **CTI**<sup>®</sup> roof panels.

Table 2.

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