

# Technical Data Sheet

## WallGUARD® Concrete Faced Insulated Perimeter Wall Panels

### Manufacturer

T. Clear Corporation  
3255 Symmes Road  
Hamilton, OH 45015  
800-544-7398  
www.tclear.com

### Product Description

WallGUARD® wall panels are a prefinished, "One Step" exterior perimeter foundation or wall insulation consisting of closed cell Styrofoam® extruded polystyrene insulation with a factory applied 5/16" (8mm) thick latex-modified concrete facing. WallGUARD wall panels are installed using specifically designed galvanized steel mounting clips.

As with any cement-based product, color variation, efflorescence, and/or hairline cracking of the cementitious facing may occur. If uniform or matching coloring is required a quality masonry paint or coating must be applied.

### Basic Uses

WallGUARD wall panels provide highly efficient insulation and a durable finish in a one-step process. The insulation is intended for use below and above grade, exposed to a height not to exceed three stories.

WallGUARD wall panels are an appropriate perimeter insulation for industrial, commercial and institutional new and retrofit foundation or wall applications. The one-step process makes installation easy, in any weather, without the need for highly skilled labor.

### Sizes

Width and length: 2' x 4' (600mm x 1200mm)  
Edge Treatment: tongue and groove along the 4' (1200mm) edge  
Thickness: 2.3125" (59mm) for 2" foam or 3.3125" (84mm) for 3" foam

### Technical Data

#### APPLICABLE STANDARDS

#### ASTM International

- ASTM C518- Standard Test Method for Stead-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 Methods for Water Vapor Transmission of Materials.
- ASTM D696– Standard Test Method for Coefficient of Lineal Thermal Expansion of Plastics between –30 and 30 degree C with a Vitreous Silica Dilatometer.
- ASTM D2842– Standard Test Method for Water Absorption of Rigid Cellular Plastics.
- CAN/ULC S701 Type 4

### Physical/Chemical Properties

WallGUARD wall panels exhibit physical properties as indicated in Table 1 when tested as represented. For chemical resistance properties of Styrofoam extruded polystyrene insulation, see Table 2.

Table 1

Physical Properties of Concrete Faced Insulated Perimeter Wall Panels	
Property & Test Method	Value
Thermal Resistance per in. (25mm). ASTM C518 @ 75°F (24°C) mean temp., ft·h·°F/Btu (m <sup>2</sup> ·°C/W min., R-value (RSI))*	5.0 (0.88)
Foam Compressive Strength**, ASTM D1621. psi (kPa). Min.	40 (276)
Water Absorption, ASTM D2842, % by volume, max.	<0.7
Water Vapor Permeance, ASTM E96. perm (ng/Pa·s·m <sup>2</sup> ) max.	0.8 (45)
Maximum Use Temperature, °F (°C)	165 (74)
Coefficient of Lineal Thermal Expansion, ASTM D696, in/in·°F (mm/mm·°C)	3.5 x 10 <sup>-5</sup> (6.3 x 10 <sup>-2</sup> )
Surface Burning Characteristics, ASTM E84 (FSI / SDI)	5 / 135

Table 2

Chemical Resistance of Styrofoam® (XPS)	
Acid, inorganic	Good
Acid, organic	Good
Alcohol	Good
Asphalts, water-based	Good
Bases (caustics)	Good
Bleach	Good
Brines and other salts	Good
Cements & mortar	Good
Carbon dioxide (CO2)	Good
Carbon hydroxide (CH4)	Good
Chlorofluorocarbons	Good
Dioxide (O2)	Good
Nitrous hydroxide (SO2)	Good
Mineral oil USP	Excellent
Paints, alcohol-based	Good
Paints, water-based	Good
Water	Good

### Fire Protection

For proper protection of plastic foam in storage, consult an insurer, local fire department or other authority having jurisdiction.

### Additional Technical Tests

#### WALL PANEL SYSTEM FIRE TEST

- Meets Uniform Building Code (UBC) 17-5 (Room Fire Test Standard for Interior of Foam Plastics 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

- Concluded that: Clips spaced at 2' along each horizontal joint can safely carry the wall panel vertical weight and support the panel under negative wind pressures 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

- Remained 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”

- Showed the panels have an impact strength equal to or greater than that of standard 8” thick concrete block

#### Installation

WallGUARD wall panels can be installed vertically or horizontally. It is recommended that any masonry irregularities or jagged surfaces on the foundation or existing wall be removed prior to installation.

Each shipment of WallGUARD panels includes purpose made galvanized steel clips and fasteners. For additional clips contact your local T. Clear agent or call 800-544-7398.

Contact a local agent or access literature library at [www.tclear.com](http://www.tclear.com) for additional information.

#### Warranty

Warranties available. Please contact for more information.

#### Technical Services

T. Clear can provide technical information to help address questions when using WallGUARD panels. Call 800-544-7398.

NOTICE: Extruded polystyrene will burn and should be stored, handled and installed properly. For proper use consult applicable building code requirements, for regulations, and specific instructions available from your supplier or the T. Clear Corp., 3255 Symmes Road, Hamilton, OH 45015 (1-800-544-7398).

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