FOAMULAR® C-200's compressive resistance of 20 psi is an economical alternative to a 30 psi product for all building wall applications, including below grade exterior. FOAMULAR® C-200 maintains its R-value even when exposed to moisture typically present in the walls of buildings. For these reasons architects, engineers, contractors and owners have been specifying and applying FOAMULAR® C-200 since 1986.

NOTE: For insulation in wall applications other than buildings referenced in the National Building Code of Canada Parts 3 and 9 consult the manufacturer before use.

Made by a unique patented method called Hydrovac-, a vacuum hydrostatic process, polystyrene foam insulation is extruded to form rigid panels while maintaining the consistent material density of choice. Manufactured using a new blowing agent technology, Foamular insulations are CFC and ZHCFC free meeting the requirements of the Montreal Protocol. They achieve zero ozone depletion and have 70% lower global warming potential.

Insulating Effectiveness

FOAMULAR® C-200 has a thermal resistance of R-5 and R-5.4 per inch of thickness at mean temperatures of 75°F and 40°F respectively, when tested in accordance with ASTM C 518 or C 177. Moisture penetration significantly reduces the thermal effectiveness of many insulations. Moisture particularly affects the thermal performance of mineral fibre and loose fill insulations, and, to a lesser extent, polyisocyanurate and molded EPS (beadboard) panels. FOAMULAR® C-200 however, absorbs less water than either molded EPS (beadboard) or polyisocyanurate insulation, due to its extruded surface skin and closed cell structure. The closed cell structure also accounts for its higher insulating value per unit of thickness (R/in; RSI/mm), than that of molded EPS (beadboard), fibrous or loose-fill insulation. The available shiplap edges minimize air leakage for added insulating effectiveness. Built in rigidity resists damage to panels during backfilling of soil or when used under slabs.

Moisture Resistance

FOAMULAR® C-200 offers exceptional resistance to moisture of all types – ground water, condensation, water leakage, freeze/thaw cycling – for long-term retention of high R-value. Excellent hydrophobic properties stop wicking and provide superior dimensional stability under elevated moisture conditions.

Long-Term Durability

FOAMULAR® C-200 is extremely durable because of its high compressive and flexural strength and is also resistant to the deleterious effects of mildew, fungus, corrosion and common soil acids.

Ease of Handling, Installation

FOAMULAR® C-200 is lightweight, durable and impact resistant. These features facilitate handling, sawing, cutting and scoring, adding to installation efficiency.

PRODUCT DATA

Material

Extruded polystyrene closed cell foam panel insulation with continuous skins on face and back surfaces.

Weight

120-130 pounds/1,000 ft for 1 inch thickness.

Packaging

4 individual shrink wrapped bundles strapped together to form a unit, typically containing 1,536 board feet.

Thermal Resistance:

R-5 per inch at 75°F (RSI 0.88 per 25 mm when tested at 24°C)
R-5.4 per inch at 40°F (RSI 0.95 per 25 mm when tested at 4°C)
[R expressed in (ft²hr °F / Btu), RSI in (m²°C/W)]

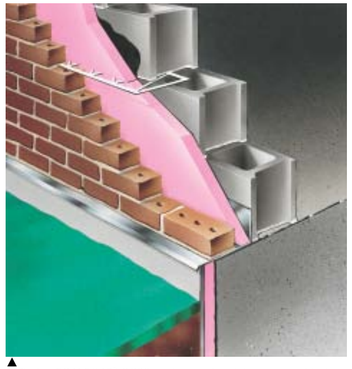
Classification:

Type 3, according to CAN/ULC-S701.

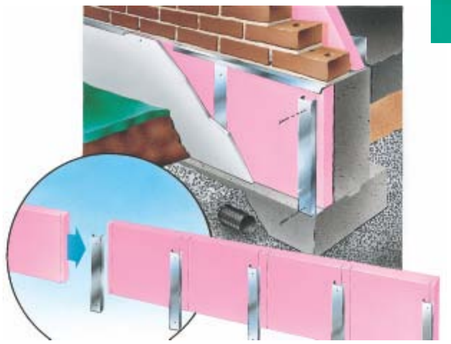
FOAMULAR® C-200

NEW CONSTRUCTION OR RENOVATION

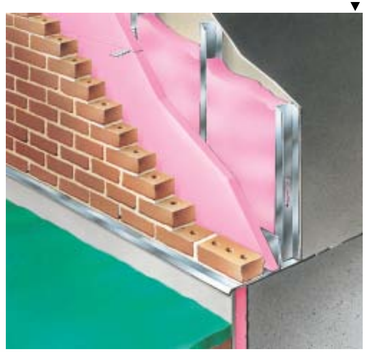
High Moisture Resistance, Excellent R-Value, Lightweight and Durable.



- Placing FOAMULAR® C-200 on the exterior of the concrete block wall, keeps the wall warm so that it is not subjected to temperature variations. This reduces the potential for expansion and contraction of the materials at different temperatures lessening the likelihood of cracked mortar joints.
- The thermal properties of FOAMULAR® C-200 are virtually unaffected by the inevitable presence of moisture in the assembly. Many other insulating materials absorb water which results in a significant decrease in thermal resistance in wall configurations typical for most buildings.
- FOAMULAR® C-200 is made in 16" and 24" (400 mm and 600 mm) widths.



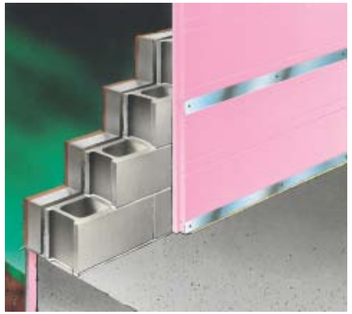
- Resists absorption of moisture driven through the brick, helping to keep water away from the inner wall elements while maintaining its thermal properties.
- Applying the insulation on the exterior of the steel studs, reduces the effect of heat loss through studs by conduction (thermal bridging).
- Does not contribute to corrosion of studs thus reducing the likelihood of wall damage and expensive repairs.



- Rigid and strong, less susceptible to damage at backfill stage.
- The channels allow flexibility to easily install a variety of approved insulation protection systems or materials.
- Superior freeze-thaw resistance.

- Rigid and strong; providing an excellent substrate on which to install the finish.
- Compatible with common finishing systems.

- Very rigid and strong therefore it will not get damaged when furring strips (for attachment of siding) are nailed on top of insulation to the stud back-up wall.
- Its rigidity helps achieve a consistent finish when applied over the uneven surface of existing siding.
- Insulating over existing siding saves time, tear off costs, and dumping charges making it an effective and economical retrofit solution.

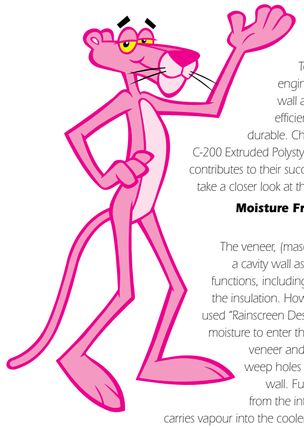


RETROFIT/UPGRADES IN THERMAL COMFORT

- Metal channels replace wood studs, minimizing installation time, reducing construction cost (significantly for large areas), and maximizing usable interior space.
- Foundations are areas of potentially high moisture presence. The thermal properties of the FOAMULAR® C-200 insulation panels are virtually unaffected by moisture, making the FOAMULAR® Cel-Lok system a durable choice for an interior foundation insulation.
- Goes up quickly and easily, instantly upgrading the wall's thermal performance at the same time as interior renovations are performed.

THE PERFECT MATCH!

FOAMULAR® C-200 AND THE CAVITY WALL



THE THEORY

Today's architects and engineers need to design wall assemblies which are efficient, cost effective and durable. Choosing FOAMULAR® C-200 Extruded Polystyrene Rigid Insulation contributes to their success. To see why, let's take a closer look at the wall environment.

Moisture From The Exterior And Interior

The veneer, (masonry or concrete), in a cavity wall assembly fulfills several functions, including some protection of the insulation. However the commonly used "Rainscreen Design Principle" allows moisture to enter the cavity through the veneer and then escape via the weep holes at the bottom of the wall. Furthermore, warm air from the interior of the building carries vapour into the cooler wall cavity where it condenses into moisture. Moisture is present in all cavity wall applications, thus choosing a moisture resistant insulation product is imperative to achieving a consistent wall assembly R-value. The performance test data below shows why FOAMULAR® C-200 is so often the insulation chosen by design professionals.

PERFORMANCE COMPARISONS IN LABORATORY TESTS

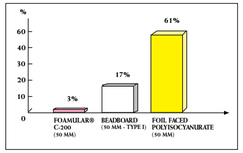


Fig. 1

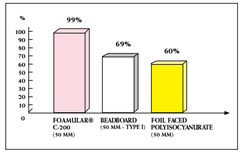


Fig. 2

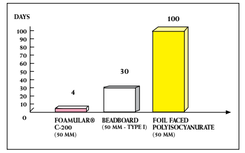


Fig. 3

WATER ABSORPTION IN FREEZE/THAW CYCLING TEST (ASTM C666-73 PROCEDURE A) AFTER 200 CYCLES

- FOAMULAR® C-200 absorbs less than 3% of its total volume of moisture after being exposed to 200 freeze/thaw cycles.

THERMAL RESISTANCE VALUE RETAINED AFTER 600 FREEZE/THAW CYCLES

- Insulation effectiveness is inversely proportional to water absorption.
- FOAMULAR® C-200's low water absorption keeps the insulation value at a maximum.

TIME TO RECOVER INITIAL THERMAL RESISTANCE VALUE AFTER 600 FREEZE/THAW CYCLES

- FOAMULAR® C-200 quickly regains exceptional R-value even after prolonged exposure to moisture and freezing conditions.

FOAMULAR® C-200

CAN/ULC-S701*

TYPICAL PHYSICAL PROPERTIES

Property	ASTM Method	FOAMULAR® C-200 TYPE 3
THERMAL RESISTANCE[1] (ft²hr °F/BTU) (m²°C/W)	C 518 or C 177	5.0 0.88
COMPRESSIVE STRENGTH, min.[2] (psi) (kPa)	D 1621	20 140
WATER ABSORPTION (% by volume)	D 2842	0.70
WATER VAPOUR PERMEANCE (perms) (ng/Pa.s.m²)	E 96	0.85 45
FLEXURAL STRENGTH, typical[3] (psi) (kPa)	C 203	44 300
LINEAR COEFFICIENT OF LINEAR COEFFICIENT OF THERMAL EXPANSION (in/in/°F) (mm/mm/°C)	D 696	2.7 X 10⁻⁵ 4.9 x 10⁻⁵
DIMENSIONAL STABILITY, max. (% linear change)	D 2126	1.5
MAXIMUM OPERATING TEMPERATURE (°F) (°C)	– –	165 74
LIMITING OXYGEN INDEX (min %)	D 2863	24
FLAME SPREAD CLASSIFICATION (CAN/ULC-S102.2 tunnel floor test)	–	>25, <500

(1) Per inch (25 mm) thickness. (2) At 10% deformation or yield. (3) At 5% deformation or yield.

STANDARD SIZES

FOAMULAR® C-200		
Edge	**Size**	**Thickness**
Butt Edge	†24" x 96" (also available in 16" x 96")	1", 1.5", 2", 2.5", 3", 4"
Shiplap	†24" x 96"	1", 1.5", 2", 2.5", 3", 4"

†Metric equivalent available upon request.

STANDARDS AND CODES COMPLIANCE

- CCMC Evaluation Report # 13431
- CAN/ULC-S701, Type 3
- CAN/ULC-S102.2
- Meets Montreal Protocol 2010, CFC, HCFC Free
- Zero Ozone Depletion Potential
- 70% Less Global Warming Potential

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Pub No. 30056A. Printed in Canada May 2012.

ARCHITECTURAL NOTES

1. **Certified Performance –** Owens Corning will provide test certification for published physical properties pertaining to our FOAMULAR® C-200 product.
2. **Jobsite Handling –** To protect FOAMULAR® C-200 insulation and prevent discoloration and/or surface deterioration caused by excessive exposure to direct sunlight, it is recommended that in exterior applications, the product be covered as soon as practicable.
3. **Vapour Retarders –** Assemblies should be evaluated for effectiveness and location of vapour retarders to avoid condensation and subsequent damage to structures. Vapour retarders shall be chosen and applied in accordance to applicable Codes for desired assembly.
4. **Air and Water Infiltration –** All air and water infiltration requirements for a designed assembly shall conform to applicable Building Codes.
5. **Flame Spread Classification –** Flame spread classification greater than 25 and less than 500 according to CAN/ULC-S102.2 (tunnel floor test).
6. **Limiting Application Temperature –** FOAMULAR® C-200 insulation must not be installed where it will be continuously exposed to temperatures above 165°F (74°C).
7. **Warning –** Combustible – FOAMULAR® C-200 insulation is combustible and can be a fire hazard if improperly used or installed. Though it contains a flame retardant to inhibit ignition, it will ignite if exposed to fire of sufficient intensity. Do not expose it to open flame or other ignition sources during shipping, handling, storage, installation or use.
8. **Interior Protection –** When used in buildings for human occupancy, FOAMULAR® C-200 insulation must be protected by a minimum 1/2" (12.7mm) thick gypsum board, or approved equal, covering surfaces exposed after installation. The wall finish must be mechanically fastened in place as prescribed by the applicable Building Codes.
9. **Exterior Finish Systems/Protection of Insulation –** Protect the exterior of FOAMULAR® C-200 insulation, when used in a sheathing application, with masonry veneer, exterior siding or other approved exterior finishes. Mechanically attach protective finish to framing, as per applicable Building Code requirements.
10. **Structural Bracing –** FOAMULAR® C-200 insulation is not a structural material.
11. **Adhesives/Sealants –** Some of these products contain solvents that attack polystyrene insulation. Consult manufacturer to verify the chemical compatibility of solvents/sealants with FOAMULAR® C-200 insulation.
12. **Chemicals –** FOAMULAR® C-200 insulation has good chemical resistance to many acids, caustics, salts, cements and mortars and poor resistance to some hydrocarbons and a number of other petroleum derivatives. Be sure to check with the supplier of the item regarding chemical compatibility.

NOTICE: We trust the information given herein will be helpful. It is based on data and knowledge considered to be true and accurate and is offered for the user's consideration, investigation and verification. Please read all statements, recommendations or suggestions in conjunction with our conditions of sale which apply to all materials supplied by us. We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of our materials not in accordance with our current printed instructions or for other than their intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made to us in writing within thirty (30) days from the date when the basis for it was, or reasonably should have been, discovered.

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THE NATURAL WAY.
ON THE EXTERIOR.

WALL APPLICATIONS

IN BUILDINGS

FOAMULAR® C-200

EXTRUDED POLYSTYRENE RIGID INSULATION