

# HYDROCAL<sup>®</sup> B-11 GYPSUM CEMENT

## Product Datasheet

**FOAMGLAS<sup>®</sup>**

Pittsburgh Corning

### 1. Description and Area of Application

Hydrocal<sup>®</sup> B-11 cement is a reactive gypsum product that is mixed with water to form an inorganic, noncombustible adhesive or coating for fabricating, bore coating, or forming high temperature (HT) reinforced FOAMGLAS<sup>®</sup> insulation shapes.

Hydrocal<sup>®</sup> B-11 is normally used at operating temperatures above 93 °C (200 °F) or in other special situations.

### 2. Field Application

Always read and understand information contained within product datasheets and safety datasheets before attempting to use this product. If you have questions regarding fitness of use of this product for a particular application, consult Pittsburgh Corning.

#### Tools and Equipment

Hand mixing is usually sufficient. A plastic coated straight mixing paddle is recommended. Containers and tools should be plastic. Brushes should be disposable bristle type. Have sufficient tools and containers available. Clean tools and containers with water before adhesive sets.

#### Substrate Preparation

Check substrate surfaces for flatness. Adhesive cannot make up for poor surface uniformity. FOAMGLAS<sup>®</sup> insulation should be free of dust. Lay out work before mixing adhesive.

#### Mixing Guidelines

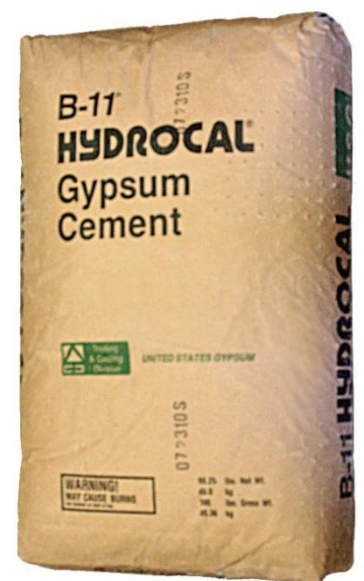
Do not use material that is lumpy, which may be an indication that it has been exposed to excessive moisture and may be set.

The mix ratio for use as a fabricating adhesive is approximately 2 (powder):1 (water) by volume. The powder and water may be mixed in a container and applied as slurry. Alternately, powder and water may be mixed on the block surfaces. "On block" mixing is generally limited to billet or flat shape fabricating.

The mix ratio for use as a bore coating is approximately 1.5 (powder) :1 (water) by volume.

The mix ratio for use as a high temperature (HT) reinforced coating is approximately 2.5 (powder) :1 (water) by volume.

For slurry application, add powder to water and mix until desired consistency. Use the slurry immediately. Cold water will delay set, hot water will accelerate set.



For “On block” mixing, apply water to both substrate surfaces. Sprinkle powder on one block 0.7 kg to 1.0 kg per 457 x 610 mm (1 to 1¼ cup per 18 x 24 inch) block and mate wet surfaces. Rub blocks back and forth with a rotary motion until powder is wetted and spread uniformly (occasionally remove a block to check to make sure adhesive is thoroughly mixed and surfaces are fully covered) Once adhesive sets, it cannot be recovered.

### **Cellular Glass Fabrication Joint Adhesive Application Guidelines**

Apply by brush or other suitable applicator. Best results are achieved when adhesive is applied to both faces. Always remove any excess adhesive before it sets. Do not move assembled pieces until adhesive sets. Supports may be required. Assembled pieces can be fabricated within 1 hour, but may be wet. Adhesive sets by chemical reaction, not by drying.

### **Cellular Glass Bore Coating Application Guidelines**

Check insulation fit and clearance to allow application of bore coating and anticipated pipe expansion. Hot process insulation should be loose fitting. Apply to bore with brush or other suitable applicator. Cells should not be completely filled and a continuous coating is not needed. A salt and pepper appearance is sufficient. Remove any lumps or excess adhesive from all surfaces before adhesive sets.

### **Clean up and Disposal**

Adhesive will set under water. Do not wash or discard into sewer.

Clean up with water before adhesive hardens. Set adhesive must be mechanically removed.

Set adhesive can be land filled. Powder should be mixed with water before discarding to landfill.

## **3. Type of Delivery and Storage**

- 22.7 kg (50 lb) double wall bags.
- Store gypsum cement in a dry area to prevent exposure to moisture.
- Consult Safety Data Sheet for additional storage and handling information.

## **4. Coverage**

The working time and quantity of product used may vary 30 to 50% depending on cell size, application method, and temperature.

The figures listed below are estimated Hydrocal® B-11 powder quantities based on an assumed loss of 30%. The suggested quantities are offered as a guide to the user and should not be relied upon as absolutes.

- Cellular Glass Fabrication Joint Adhesive: 1.5 kg / m<sup>2</sup> (30 lb / 100 ft<sup>2</sup>)
- Cellular Glass Bore Coating: 0.9 kg / m<sup>2</sup> (18 lb / 100 ft<sup>2</sup>)
- Cellular Glass HT Reinforced Coating: 1.9 kg / m<sup>2</sup> (38 lb / 100 ft<sup>2</sup>)

All figures exclude losses.

## 5. Typical Properties

PROPERTY <sup>A</sup>	METHOD	SI	ENGLISH
COLOR		Fine Dry White Powder	
DENSITY		2.85 ± 0.15 g / cm <sup>3</sup>	177.5 ± 9.5 lb / ft <sup>3</sup>
MELTING POINT		1450 °C	2642 °F
APPLICATION TEMPERATURE		21 ± 17 °C	70 ± 30 °F
SERVICE TEMPERATURE <sup>B</sup>			
MAXIMUM		482 °C	900 °F
MINIMUM		-268 °C	-450 °F
SET TIME		18 – 30 minutes @ 25 °C (77 °F) May vary with batch size, temperature and mixing ratio	
ELECTROCHEMICAL PROPERTIES IN SOLUTION (pH)		Alkaline	
COMBUSTIBILITY		Incombustible wet or dry	

<sup>A</sup> Properties subject to change. Consult Pittsburgh Corning

<sup>B</sup> Service temperature limits are derived from laboratory evaluation of the product. Variations in substrates, loading conditions, or other external factors may further limit service temperature. Always consult Pittsburgh Corning FOAMGLAS<sup>®</sup> Insulation System Specification for suitability for use recommendations for a specific application.

## 6. Limitations

- Do not use for permanent bonding of FOAMGLAS<sup>®</sup> insulation to other materials without first contacting Pittsburgh Corning for more information.
- Adhesive is not a vapor barrier. Some coatings may blister over cured adhesives, or HT reinforced coatings.

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