

SolidGhard SPF 2.0 is a two component spray-in-place closed-cell, rigid, monolithic polyurethane foam insulation. This product can be formulated in a variety of densities, upon request, to accommodate a broad range of applications. All SolidGhard SPF 2.0 systems are blown with HFC-245fa and contains no ozone-depleting chemicals.

USES

COLD STORAGE: SolidGhard SPF 2.0 is the insulation of choice for maintaining the rigid climatic conditions of many cold storage buildings.

TANK INSULATION: SolidGhard SPF 2.0 is an excellent insulation for hot and cold storage vessels.

BUILDING AND FIRE CODES

SolidGhard SPF 2.0 used as insulation material on building interior applications must be protected by a 15-minute rated thermal barrier or other construction assembly specifically permitted by model building codes. SolidGhard SPF 2.0 Wall Foam has been independently tested and listed by ICC-ES (ESR-3033) and determined to meet the following building codes: IBC, IRC and IECC. Additionally SolidGhard SPF 2.0 meets the "Standard Test Methods for Surface Burning Characteristics of Building Materials" in accordance with UL 723/ ASTM E84.

FIRE HAZARD CLASSIFICATIONS*

SURFACE BURNING ASTM E-84/UL 723		FLAME SPREAD CLASSIFICATION	
Flame Spread	25	NFPA CLASS	A
Smoke	450	UBC CLASS	1

*These numerical flame spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.

LIQUID COMPONENT PROPERTIES

PROPERTY	Component A	Component B
Color	Dark Brown	Amber/Brown
Viscosity 25°C (cps)	200 +/- 100	350 +/- 150
Specific Gravity 25°C	1.24	1.18-1.20
Mix ratio by volume (A/B)	50/50	50/50

PROCESSING CHARACTERISTICS

PROPERTY	72°F (HAND MIX)			SPRAYED*		
	Winter	Regular	Summer	Winter	Regular	Summer
Cream Time	4 Sec.	5 Sec.	6 Sec.	1-2 Sec.	1-2 Sec.	1-2 Sec.
Rise Time	15-16 sec.	19 sec.	22 sec.	4-5 sec.	5-6 sec.	6-7 sec.
Tack Free	On Rise	On Rise	On Rise	On Rise	On Rise	On Rise

*Nominal 1" thickness sprayed through Gusmer Model H-11 proportioner with GX-7 Gun: preheat set at 110°F, hose heat set to maintain 110°F at the spray gun. Reaction times are influenced by mix efficiency of the spray gun, temperature of the components, ambient conditions and thickness of the foamed mass.

NOMINAL CURED PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	DENSITY ³ 2.0
Sprayed-in-place Density	D-1622	2.0
R-Value (1-inch thickness)	C-518	6.49
K-factor Aged	C-518	.15
Compressive Strength	D-1621	26 psi
Tensile Strength	D-1623	45 psi
Shear Strength	C-273	35 psi
Closed Cell Content	D-1940	93%
Water Vapor Transmission	C-355	1.9 perms
Water Absorption	D-2842	.019

This information is intended only as a guide for design purposes. The values shown are the average values obtained from laboratory prepared samples and results may vary with application conditions, equipment and technician. K-Factor varies depending on age and use conditions. Typical density for wall foam is 2.0 pcf. For higher density, exterior foams, see SolidGhard SPF 2.0 ROOF FOAM data sheet.

The information contained herein is for purposes of identifying the product and does not constitute a warranty that the product will conform to that description. Product specifications and performance will vary depending on application methodologies, raw materials and other factors

DIMENSIONAL STABILITY PROPERTIES ASTM D-2126				
DAYS	°F	°C	%R.H.	AV
28	-20	-29	DRY	N/C
28	158	70	100%	+7%
28	158	70	DRY	+1%

SHELF LIFE

Shelf life of SolidGhard SPF 2.0 is 6 months from the date of manufacture when stored in original unopened containers at temperatures between 50° - 75° F. Temperatures above 75° F may decrease shelf life.

FREIGHT CLASSIFICATION

Liquid Plastic Material -- NOIBN

CAUTION

The use of foamed plastic in interior applications on walls or ceilings may present an unreasonable fire hazard unless the foam is protected by an approved, fire-resistive thermal barrier which has a finish rating of not less than 15 minutes.

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PROCESSING GUIDE

DESCRIPTION AND GENERAL USE

SolidGhard SPF 2.0 systems are light density spray polyurethane insulations designed to be fluid-applied to construction surfaces to effect a permanent, monolithic and dimensionally stable thermal insulation. SolidGhard SPF 2.0 systems are a sophisticated plural component building product which should be applied only by trained and manufacturer-approved insulation experts familiar with the properties of this material. SolidGhard SPF 2.0 systems are specifically designed for construction applications where the end use ambient temperature range will be maintained between -100°F and 225°F. When considering any other use for this product, consult Ghemco for specific application recommendations.

SUBSTRATE PREPARATION

For optimum results, surfaces to receive SolidGhard SPF 2.0 should be clean and dry, free of dirt, oil, solvent, grease, loose particles, peeling coating and other foreign matter. Untreated ferrometallic substrates should be sandblasted in accordance with SSPC-SP6. Sandblasted surfaces should be primed immediately with an approved primer. Galvanized and stainless steel surfaces should be treated with an appropriate wash primer prior to the application of SolidGhard SPF 2.0. Porous substrates such as wood and concrete may not require priming if surfaces are clean and dry with less than 10% moisture content. FOR BEST RESULTS ON SURFACES WHERE MOISTURE CONTENT CANNOT BE DETERMINED OR CONTROLLED, PRIMING IS RECOMMENDED. Consult Ghemco for specific application requirements.

SUBSTRATE TEMPERATURE

SolidGhard SPF 2.0 systems may be applied to surfaces with temperatures as low as 50 deg. in most instances. Please consult with Ghemco technical representatives for certain requirements.

AMBIENT AIR TEMPERATURE		
Winter	Regular	Summer
50 - 65°F	60 - 90°F	Above 90°F

Ghemco TECHNICAL SERVICE PERSONNEL SHOULD BE CONSULTED IN ALL CASES WHERE APPLICATION CONDITIONS ARE MARGINAL.

EQUIPMENT

Proportioning equipment shall be manufactured by Gusmer, Graco or Glas-Craft. Mixing ratio by volume is 50 parts "A" to 50 parts "B". Equipment shall be heated airless type, capable of maintaining 120oF to 140oF mixed material at the spray gun. Optimum spraying temperature will vary as a function of substrate and ambient conditions.

SPRAYING

SolidGhard SPF 2.0 systems should be deposited in uniform passes ranging from 1/2" to 1 1/2". Pass thicknesses will vary as a function of substrate temperature, ambient air temperature and machine output. SolidGhard SPF 2.0 systems bond best to themselves when the previous pass is still warm (above 70oF). SolidGhard SPF 2.0 performs best when coated the same day of application, however it may be left exposed for up to 24 hours. In the event that SolidGhard SPF 2.0 is exposed for a period greater than 24 hours, please contact Ghemco for recommendations.

CLIMATIC CONDITIONS:

No spraying should be done when moisture is present in the form of rain, dew or relative humidity greater than 80%, or when there is wind in excess of 15 m.p.h.

PROTECTIVE COATING

SolidGhard SPF 2.0, when applied to exterior weathering surfaces, must be top coated with an approved elastomeric coating. All coatings shall be applied in accordance with Ghemco or other coating manufacturer's instructions.

SPECIAL NOTE

Particular attention must be paid to coating selection In applications where a vapor drive may be present. Consult Ghemco technical service personnel for specific system recommendations.

STORAGE

Both liquid components of SolidGhard SPF 2.0 systems should be stored in original unopened containers at temperatures between 50°F and 75°F Note: Storage for prolonged periods of time at high temperatures may alter the reactivity profile of the product. Additionally storing the B component at increased temperatures or in direct sunlight for prolonged periods may cause a build up of pressure in the storage vessel. Use caution in opening containers of SolidGhard SPF 2.0. Containers should be opened slowly to allow the release of any pressure buildup.

SAFETY, HEALTH & TOXICITY DATA

A Safety Data Sheet (SDS) has been prepared on the SolidGhard SPF 2.0 systems. All personnel who will come in contact with the product should read and understand the SDS.

PROTECTIVE EQUIPMENT

Since the SolidGhard SPF 2.0 systems are atomized into a very fine particle distribution during spray application, it is essential that maximum effort is made to protect the spray mechanic and others near the workplace from undue exposure. Component "A" SolidGhard SPF 2.0 systems are polymeric isocyanate and, as such, can be very sensitizing, particularly from the standpoint of VAPOR INHALATION. Some other ingredients may be sensitizing from the standpoint of SKIN CONTACT OR EYE CONTACT.

VAPOR INHALATION

The best form of protection against isocyanate or potentially sensitizing vapors in the workplace is a fresh air supply. Numerous manufacturers, including the 3M Company and MSA, make full face fresh air masks. For maximum protection, we recommend use of NIOSH/MSHA approved self-contained breathing apparatus with a full-face piece operated in a positive pressure mode. In well ventilated application conditions, the use of Type C organic vapor cartridge respirators may be acceptable.

SKIN CONTACT

To prevent excessive skin contact with the sprayed product, the use of fabric overalls and fabric gloves is recommended.

EYE CONTACT

Wear a full face mask or OSHA-compliant protective goggles.

PROTECTION OF THE WORKPLACE

Over spray from SolidGhard SPF 2.0 systems can carry considerable distances and attention should be given to the following:

1. Post warning signs a minimum of 100 feet from the work area.
2. Cover all intake vents near the work area.
3. Minimize or exclude all personnel not directly involved with the spray application.
4. No welding, smoking or open flames.
5. Have CO2 or other dry chemical fire extinguisher available at the job site.
6. Provide adequate ventilation.

FIRST AID CONSIDERATION

Vapor inhalation problems are characterized by coughing, shortening of breath and tightness in the chest. Anyone exhibiting these types of symptoms should be immediately removed from the workplace and administered oxygen or fresh air. If the condition is prolonged or extreme, SUMMON EMERGENCY TRAINED MEDICAL ATTENTION IMMEDIATELY. Skin contact with liquid components can result in a rash or other irritation. Wash any affected skin area with clean water. Wipe residual liquid from the skin with a clean cloth, then wipe the affected area with a 30% solution of rubbing alcohol. Follow the alcohol wipe with repeated washings using soap and water. If a rash or other irritation develops, SEE A PHYSICIAN. Eye contact with liquid or sprayed components can result in corneal burns or abrasions. Upon exposure, eyes should be flushed with water for an extensive period. SUMMON EMERGENCY TRAINED MEDICAL ATTENTION IMMEDIATELY.

Please read all information in the general guidelines, technical data sheets, application guide, and safety data sheets (SDS) before applying material. Published technical data and instructions are subject to change without notice. Contact your local GHEMCO representative or visit our website for current technical data and instructions. **DISCLAIMER:** All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own information and tests, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazards listed herein are the only ones that may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether verbal or in writing, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and GHEMCO makes no claim that these tests or any other tests, accurately represent all environments.