Rhino Foam™
BUILDING SOLUTIONS
by Rhino Linings®

thermalguard™ OC 500
By Rhino Linings

Data Sheet

PART NUMBERS: TGOC500 B-D
Part A: FFPF-ISO A
Part B:

DESCRIPTION:

ThermalGuard™ OC 500 is a fast set, open-cell, 100% water-blown spray polyurethane foam (SPF) insulation system designed to reduce energy consumption in residential and commercial structures up to 50% by insulating and air sealing the thermal envelope in a single step. ThermalGuard OC 500 is applied as a liquid and then expands to fill and seal building cavities of any shape or size. It exhibits superior thermal insulation, air-barrier, and sound attenuation properties compared to conventional insulation materials. Once fully cured, ThermalGuard OC 500 remains soft and flexible allowing for movement of the substrate or building over time while maintaining proper insulation and air sealing of the building envelope.

FEATURES AND BENEFITS:

- Class 1 fire rated.
- Exhibits superior thermal insulation, air-barrier, and sound attenuation properties compared to conventional insulation materials.
- Meets/exceeds minimum building code requirements for fire safety.
- No ozone depleting substances, VOCs, HFCs, and is PBDE-Free.
- Low odor during application and produces no toxic vapors after application.
- Seals, insulates, and minimizes uncontrolled air movement into a building envelope.
- Reduces energy consumption from heating and cooling.

TYPICAL USES:

- Insulation foam for walls, ceilings, roof decks, and crawlspaces.
- Residential, commercial, and industrial building insulation.

CHEMICAL PROPERTIES:		Isocyanate (A)	Resin (B)
Specific Gravity (grams/cc)	ASTM D-1475	1.23	1.14
Viscosity (cps)	ASTM D-2196	200 – 250	350 – 400
Mix Ratio, Parts per Volume 1		1	1
Cream Time at 77° F (25° C)		3 - 5 seconds	
Rise Time at 77° F (25° C)		8 - 14 seconds	
Shelf Life - Unopened Containers		6 months	6 months

TYPICAL PHYSICAL PROPERTIES:	Test	Result
Density (nominal)	ASTM D-1622	0.4 - 0.5 lb/ft3 (6 - 8 kg/m3)
Tensile Strength (psi)	ASTM D-1623	4.23
Compressive Strength (psi)	ASTM D-1621	0.5
Open-Cell Content (%)	ASTM D-2856	98
Vapor Permeability* (perm at 5.5" (139.7 mm))	ASTM E-96	4.2
(Class III Vapor Retarder)		
Air Leakage** (L/s/m2 at 75 Pa at 3.5")	ASTM E-283	0.003

TYPICAL PHYSICAL PROPERTIES (CONTINUED):	Test	Result
Dimensional Stability (%)	ASTM D-2126	<1Δ
Acoustical Rating (STC):		55±4
Fire Rating:	ASTM E-84	Class A
Flame Spread Index		≤20
Smoke Development Index		≤400
R-Value:	ASTM C-518	3.4/inch

PROCESS TEMPERATURE AND ENVIRONMENT CONDITIONS:
ThermalGuard OC 500 must be spray-applied using approved equipment. The system settings required to achieve quality spray foam application will vary depending on environmental and substrate conditions. The following recommended parameters will help ensure optimum foam quality.

Iso (A) and Resin (B) Components	Hose Temperature	Processing Pressure	Substrate Temperature
115 – 150° F (46 - 66° C)	115 – 150° F (46 - 66° C)	1000 – 1500 psi	>30° F (-1° C)

**Winter-grade formulas are recommended and may be required below 45 °F (7 °C)

PREPARATION OF SUBSTRATES:
Providing the proper substrate is the responsibility of the owner, the owner's appointed representative, the contractor, and/or inspector. It is recommended to remove dust, dirt, oil, paint, and alternative polymers from all surfaces prior to applying. See SPFA guidelines for further details on substrate prep. www.sprayfoam.org

PRECONDITIONING:
1. The ThermalGuard OC 500 drum is a water-blown resin and the contents will NOT be under pressure when opening.
2. It is recommended to precondition material to (75 - 95° F) prior to application. Material may thicken at lower temperatures which can cavitate pumps.

MIXING:
1. Can mix. (Recommend to mix when first opening drum for 30 min prior to recirculation or use.) Low mix speed, continuous during application will not damage resin.
2. Can recirculate. (Precondition drum to recommended range prior to spray if necessary.)

PRESSURE SETTINGS:
1. Product should be sprayed with a high pressure plural-component proportioner capable of a minimum of 1000 psi dynamic pressure.
2. Static pressure is typically set between 1000 - 1500 psi.
3. Dynamic pressure typically operates at a minimum of 1000 psi.

TEMPERATURE SETTINGS:
1. Primary heaters and hose heaters are typically set between (115 - 150° F). Higher temperatures are utilized in winter months, lower temperatures are utilized in summer months. Thin passes (1/4" or less) are not recommended even to cold surfaces.
2. Proper application temperature setting is the responsibility of the end user. Equipment temperature varies and can be dependent on equipment, hose length, elevation, ambient temperature, substrate temperature, humidity, and other factors.

APPLICATION:
1. Clean surfaces according to “Preparation of Substrates” section.
2. If priming, follow manufacturer recommendations. Ensure primer is adequately cured prior to application.
3. Substrate temperatures should be between >30° F (-1° C).
4. Flush an adequate amount of material through the lines/gun prior to spraying desired surface when changing between systems. Flush amount will be dependent on prior system used.
5. Can be applied to max depth needed. (Single pass application will produce better results.)
6. Before application, test material to ensure that material sprays, cures, and hardens properly.
7. Inspect applied material intermittently to ensure no problems exist. If problems are detected, discontinue application and inspect all substrates, equipment, gun, and liquid material for problem source(s).

ThermalGuard OC 500 demonstrates excellent adhesion to various substrates when installed according to manufacturer specifications. Allow a minimum of 2 hours for full off-gas and cure before application of a primer, topcoat, or intumescent paint. For best results apply primer, topcoat, or intumescent coating within 72 hours of installation of foam. ThermalGuard OC 500 should not be used for exterior applications, as UV light will rapidly degrade foam. It should not be used where foam will stay submerged in water or below grade where back-fill material may crush or damage the product. Do not use near high heat or open flame.
Federal, state, or local building codes may require ThermalGuard OC 500 to be covered with an approved 15-minute thermal barrier. Installation must comply with all applicable building codes. Consult your local building code official for approvals and recommendations.

SUBSTRATES:
ThermalGuard OC 500 is chemically and physically compatible with most common building materials including electrical wiring, wood, metal, concrete, plastic (PVC), copper, vinyl, and glass. It is the responsibility of the contractor to check substrate compatibility prior to starting the job.

CLEANING AND MAINTENANCE:
Spray equipment must be maintained in proper operating condition. Failure to adequately maintain spray equipment may result in poor product performance. Refer to your equipment manufacturer’s maintenance procedures for more details.

Contact Rhino Linings® Technical Services for long-term equipment storage recommendations.

HOW SUPPLIED:
Net weight per set is 950 pounds (430.9 kg). A set of ThermalGuard OC 500 consists of one (1) 55 gallon (208 L) drum of ‘A’ component and one (1) 55 gallon (208 L) drum of ‘B’ component.

STORAGE:
ThermalGuard OC 500 should be stored between 60 – 90° F (16 – 32° C) out of direct sunlight. Do not allow material to freeze.

SAFETY PRECAUTIONS:

Health Considerations: Consult the Rhino Linings® Safety Data Sheets (SDS)
This chemical system requires the use of proper safety equipment and procedures. Please follow the Rhino Linings product SDS for detailed information and handling guidelines.

For Your Protection: The information and recommendations in this publication are, to the best of our knowledge, reliable. Suggestions made concerning the products and their uses, applications, storage, and handling are only the opinion of Rhino Linings Corporation. Users should conduct their own tests to determine the suitability of these products for their own particular purposes and of the storage and handling methods herein suggested. The toxicity and risk characteristics of products made by Rhino Linings Corporation will

necessarily differ from the toxicity and risk characteristics developed when such products are used with other materials during a manufacturing process. The resulting risk characteristics should be determined and made known to end users and processors.

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Read This Before You Buy

What You Should Know About R-values

The chart shows the R-value of this insulation. R means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation R-values before you buy.

There are other factors to consider. The amount of insulation you need depends mainly on the climate you live in. Also, your fuel savings from insulation will depend upon the climate, the type and size of your house, the amount of insulation already in your house, and your fuel use patterns, and family size. If you buy too much insulation, it will cost you more than what you'll save on fuel.

To get the marked R-value, it is essential that this insulation be installed properly.

Contact Rhino Linings Technical Support at 858-450-0411 ext. 2 for additional questions.

Rhino Linings®

Rhino Linings Corporation 9747 Businesspark Avenue • San Diego, CA 92131 USA

rhinolinings.com • (800) 422-2603 • (858) 450-0441 • Fax (858) 450-6881