



Manufacturer of
INSULTECH® Blanket Insulation

SUBMITTAL SHEET

INSULTECH® THERMAL BLANKET LT450 LFP – Pizza Oven Design

Introduction

INSULTECH® Thermal Blankets are a custom fit high quality pre-engineered insulation system designed to save energy, retain radiant heat, minimize insulation maintenance and improve the surrounding work environment. INSULTECH® is designed for use in the Food Processing Industry, where a non-porous, vapor barrier blanket system can be chemically sanitized. The PTFE Teflon® Film Jacketing Complies with the Regulations of the FDA - Reference 21 CFR 177.1550 Standards for Components of Articles Intended to come in Direct Contact with Food. INSULTECH® is flexible and easy to install, easy to remove and reinstall allowing quick access and easy equipment serviceability.

Common Application and Market

INSULTECH® Thermal Blanket Application: Pizza Ovens.

INSULTECH® Thermal Blanket Markets include; (OEM) Original Equipment Manufactures of Pizza Ovens, Private Independent Restaurant & Franchise Restaurant Chains.

Maximum Service Temperature

This design is to act as a Thermal Barrier with a maximum service temperature of 450°F (232°C).

Product Components

The Outer and Inner Jacketing is a 13.5 oz/sq. yd. 100 percent PTFE Laminate Film. The Insulation Material is an 8 PCF Fiberglass Needled Mat-Type "E" Fiber & 3 PCF Spun Fiberglass resin backed board. The composite insulation is encapsulated by the PTFE Laminate Film and sewn together, producing a self contained blanket system. The INSULTECH® Blanket System includes easy on, easy off magnets for install and removal.

Blanket Construction

Blanket construction shall be double sewn lock stitch with a minimum 7 stitches per inch. All raw jacket edges will have a tri-fold PTFE Laminate binding. No raw cut jacket edge will be exposed. Stitching will be done with PTFE 3 ply braided thread.

Blanket Overlap

To minimize heat loss between doors, a 2" wide stitch quilted flap will be designed to fit between the upper and lower door, creating a heat shield to redirect heat flow. A 2.5" wide ½" thickness, stitch quilted flap with stainless steel DOT Snap Fasteners will be incorporated into each door handle. All gaps and seams will be minimized and where applicable, overlap seams will be applied.

Quilting Pins

To enhance blanket quality and to maintain uniform thickness, stainless steel quilting pins will be placed at random locations no greater than 18 inches apart. Quilting Pins will prevent shifting of the insulation. Stainless Steel speed washers will secure the quilting pin stem in place.



Bakers Pride Model: Y600 – Duel Stack

Standard Fastener (Ceramic Block Magnet)

Each panel will have a minimum number of Ceramic Block Magnets, placed at least, at the corners of each blanket panel. The block magnets will be riveted to the inner jacketing surface using an aluminum plate backer. The magnets are directly exposed to the hot surface.

Assembly Drawing Requirements

Each INSULTECH® project will include an instruction package shipped with the blanket material. This package will include Assembly Drawings identifying piece location, a Material List of all pieces and Instructions for Installation on how INSULTECH® will be installed. Accurate CAD files & project records must be kept by the manufacturer.

Production Drawing Record Keeping

Production drawings will be kept on file with the blanket manufacturer. Revisions, after installation, will be recorded on the CAD drawing file. This file will be kept for a minimum of ten years to assure accuracy in re-orders.



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Form 450LFP0507-1
Effective 05/07
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Printed in USA
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Warranty

We guarantee that all custom manufactured blankets will accommodate vibration probes, gauges, tubing, piping, brackets, etc. and fit correctly for optimum performance as per the design specification provided in the quotation process. In addition, for 18 months we will cover the cost of replacing the blanket should the failure be due to premature degradation of any component utilized in the blanket construction, as well as any defects due to poor workmanship.

Design Construction Sample

Upon bid submittal a blanket design sample must be presented for review and product approval. A 2 piece 4" Gate Valve Sample will be required and must identify all characteristics mentioned in the above fabrication requirements. Any deviations from the above stated requirements may result in a bid rejection.

Installation Guidelines

INSULTECH® will follow these simple guidelines:

- Once material is received, open boxes with care. DO NOT "cut" deep into container to avoid damaging blankets.
- Locate the Instructions for Installation.
- Follow the Material List to determine blanket part number.
- Refer to the Assembly Drawing for orientation of each blanket part number and installation details of each part.
- Locate the Identification Tag on each blanket, for correct description and sequence of blankets.
- Material is installed in tag number sequence.
- Use leather gloves to install material.
- A physical effort is required for proper placement and fit.

Storage

Once shipment is received, protect INSULTECH® Blanket Insulation from water damage and/or other abuses prior to installation. INSULTECH® Blanket Insulation will be shipped in cardboard boxes or crated for export shipping. Packaging is not designed for outdoor storage, thus a tarp or covering of some type is necessary if stored outdoors until installation is completed.

Preparation

Apply INSULTECH® Blanket Insulation on clean, dry surfaces and avoid trapping oils, greases or combustible materials.

Notes

The chemical and physical properties of INSULTECH® Thermal Blanket represent typical average values determined in accordance with accepted test methods. The data is subject to normal manufacturing variations and is supplied as a technical service subject to change without notice. In addition, test data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes. Design Guidelines are as follows: to access the true limitations of this recommended design, refer to the technical data for each product component. Following these guidelines will produce the highest achievable service life. Blanket design quality can be reduced or enhanced by changing any one component. If a question arises regarding deviations from those stated guidelines, or to insure the information is most current please contact your regional representative or call Shannon Enterprises direct.

Typical Product Properties Specifications

Core Blanket	ASTM C 1086-88	Standard Specification for Glass Fiber Felt Thermal Insulation Service Temperature Up to 1200°F (649°C)
Jacketing Material	21 CFR 177.1550	Perfluorocarbon Resins – Articles Intended to Contact Food per Applications Regulated by the Food and Drug Administration (FDA) 100 percent PTFE Laminate - Material Weight 13.5 oz/yd ² (458g/m ²) Continuous Service Temperature 500°F (260°C) Tensile Strength of Jacketing - 25 lbs/in (223.4 N/50 mm) Tear Strength of Jacketing - 22 lbs (99.8 N/mm)

SHANNON ENTERPRISES INSULTECH Energy Survey Proposal

Energy Survey By: Frank Kovacs
 Represented By: **Oven Shield of Rochester**
 Project: **Bakers Pride Pizza Oven**
 Location: **Pizza Stop - Rochester, NY**
 Mr. Jim Staffieri

Survey Date: 05/10/07
 Insulation Thickness: 1.50
 Fuel Cost(\$/mmBTU): \$12.97
 Operating Hours per Year: 4380

Design: LT450LFP
 Amb. Temp: 88
 Wind Speed: 0 MPH

Sheet: 1 of 1

Qty.	Description	Area (Ea.) (Sq.ft.)	Surface Temp.	Bare Heat Loss (BTU/Hr/SF)	Insulated Heat Loss (BTU/Hr/SF)	Bare Heat Loss (BTU/Hr)	Bare Heat Loss (\$/Year)	Insulated Heat Loss (BTU/Hr)	Insulated Oper. Cost (\$/Year)	Insultech Unit Cost	Insultech Total Cost
Baker's Pride - Model# Y600 - 2 Door Design											
2	Upper Door	3.1	460	1190.40	83.05	7,380.48	\$838.55	514.92	\$58.50	\$175.00	\$350.00
2	Lower Door	2.8	450	1158.40	80.82	6,487.04	\$737.04	452.58	\$51.42	\$187.00	\$374.00
2	Side Panel - Left Side	2.8	290	646.40	45.10	3,619.84	\$411.28	252.55	\$28.69	\$235.00	\$470.00
2	Side Panel - Right Side	3.1	260	550.40	38.40	3,412.48	\$387.72	238.08	\$27.05	\$235.00	\$470.00
2	Front Panel - Right Side	3.1	350	838.40	58.49	5,198.08	\$590.59	362.66	\$41.20	\$63.00	\$126.00
2	Front Panel - Gauge Side	3.1	300	678.40	47.33	4,206.08	\$477.88	293.45	\$33.34	\$96.00	\$192.00

Energy Savings Summary:

Total Heatloss - Bare (BTU/HR): 30,304.00
 Total Heatloss - 1.5" Insulation (BTU/HR): 2,114.23
 Heatloss Savings-W/Insultech (BTU/HR): 28,189.77
Total Annual Operating Cost - Bare: \$3,443.06
 Total Annual Operating Cost - 1.5" Insulation: \$240.21 **Per Year**
Annual Savings - W/Insultech (BTU/HR): \$3,202.84 Per Year
Blanket Cost (INSULTECH Blanket System): \$1,982.00
Payback (Months): 7.75

FOB: Factory; Delivery: 4 Weeks ARO

Heatloss Calculation

Q = K (Delta T) / L+(K/Ht)
 Q = Heatloss (BTU/Hr. / Sq. Ft.)
 K = Bare Thermal Conductivity(STL and C.I. = 26.9)
 K = Insulated Thermal Conductivity(T.M.=.36)
 L = Insulation Thickness
 Delta T = Surface Temp - Ambient Temp.
 Ht = Combined Coefficients (300 Deg F. = 3.2)
 (Radiation, Convection, & Conduction)

Project Highlights:

Lifetime Savings:

After installation there will be a recognized annual savings year after year throughout the service life of the blanket.

INSULTECH will produce an Annual Savings: \$3,202.84
INSULTECH will produce a remarkable 15 year lifetime savings of 48,042.64

Lifetime Safety:

As a safety benefit, all hot surfaces are covered thereby eliminating the potential for employee burns. The work environment will be improved by lowering the ambient room temperature. This is especially valuable in open air oven applications which require air conditioning to offset radiant heat loss.

Easy Install & Maintenance:

INSULTECH Blanket Insulation is easy to install. Blankets are self-contained insulation systems. Ceramic Block Magnets are integral to the design. The blanket system can be installed and removed within minutes. Blanket surface can be washed and cleaned with detergents.

Financial Impact:

***Initial Investment: \$1,982.00**
***Lifetime Savings: #####**

Energy Survey Prepared By :

Shannon Enterprises Inc.

Frank Kovacs
 Ph. #: (716) 693-7954
 Fax #: (716) 693-1647
 Email: fkovacs@shannonent.com

INSULTECH Representation By:

Oven Shield of Rochester Inc.
 Phone: 585-732-7713
 Contact: Mr. Jim Staffieri