Heat Shield Insulation

Removable, Reusable Protective Insulation Jacket

**Shannon Heat Shield Insulation** is the "cost-effective" thermal insulation system designed with many of the features and benefits of a traditional blanket insulation system. INSULTECH Heat Shield Insulation is removable and reusable for easy installation, easy removal and easy re-installation, making access to steam specialties simple. Reduce cycle times and extend trap service life.

**Shannon Heat Shield Insulation** will create a SAFER WORK ENVIRONMENT by lowering surface temperatures on critical applications. Enhance your V.P.P. (Volunteer Protection Program) with a simple solution.

**Shannon Heat Shield Insulation** is compliant with OSHA standards for exposed heated surfaces, if there is a potential for injury. OSHA standards include: 1910.261(K) (11), 1910.262© (9), 1910.23©(3), 1910.147 & 1910.132(a), Section 5(a)(1) of the OSHA Act.

**Shannon Heat Shield Insulation** will SAVE ENERGY Steam Traps covered with INSULTECH will show an estimated ENERGY SAVINGS of 75%. With average surface temperatures of 250ºF, this reduction equates to payback periods on investment of less than six months. The savings will continue, year after year. A single steam trap can generate $130 - $740 per year in energy loss. Calculated savings will be $95 to $546 per year. A 15-year service life could be $1,425 to $8,190 for each steam trap! Insulating the steam traps from a Steam Trap Survey can lead to very large energy savings. Send us your Steam Trap Survey for a proposal.

**Shannon Heat Shield Insulation** is a custom fit, self-contained insulation system. Design LT500HS, features a sewn, self-contained construction with Velcro flaps for easy install. INSULTECH is capable of withstanding both temperature and frequent removal. The quick release fastening system with a high quality sewn construction allows easy removal and re-installation. Trap inspection can be performed without removal through an inspection grommet, strategically placed. Labeling includes information derived from your steam trap management program.

**Shannon Heat Shield Insulation** is a CAD/CNC manufactured design for exact fit and finish. With close tolerances on complex surface geometry, the INSULTECH Heat Shield insulation system allows standardized offerings for almost any steam trap and steam specialty fitting. Applications include: steam traps, APT (Automatic Pumping Traps), steam tracing & steam/condensate manifolds.
Shannon has become the recognized name in the insulation industry both for its high quality and high engineering standards. As an industry leader, Shannon Enterprises can assist in solving your insulation problems. We are the market leader in design and innovation.

**Before treatment...**

![Before treatment image](image1)

**...after treatment.**

![After treatment image](image2)
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**Heat Shield Insulation**

**Survey Date:** 10/23/13  
**Proposal Date:** 11/01/13

**Product Specification:** LT500HS

**Fuel Cost ($/mmBTU):** $12.80

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**Annual Energy Savings Summary**

- Total Heatloss - Bare (BTU/HR): 6,374,530,148.40
- Total Heatloss - Insulated (BTU/HR): 1,770,609,365.76
- Heatloss Savings - w/ INSULTECH®: 4,603,920,782.64

**Detailed Financial Analysis**

- Total Operating Cost per Year - Bare: $108,791.98
- Total Operating Cost - w/ INSULTECH®: $30,218.40
- Cost Savings - w/ INSULTECH®: $78,573.58
- Total Blankets / Blanket Assemblies: 650
- INSULTECH® Blanket System Cost: $66,570.28
- Estimated Labor to Install: $2,160.00
- Total Project Cost: $68,730.28
- Payback (Months): 10.91
- Lifetime Savings (15 Year Life): $1,109,873.44

**Heatloss Calculation**

- $Q = K (DT) / L + (K / Ht)$
- $K = $Bare Thermal Conductivity (STL and C.I. = 26.9)
- $L = $Insulation Thickness
- $DT = $Surface Temp - Ambient Temp.
- $Ht = $Combined Coefficients (300°F. = 3.2)

**Emission Savings**

- Natural Gas (mm BTU): 4,603.92
- CO2 (Tons): 269.57
- NOx (lbs): 690.77
- CO (lbs): 110.57
- # 6 Fuel Oil (mm BTU): 4,603.92
- CO2 (Tons): 411.21
- NOx (lbs): 1,809.40
- SO2 (lbs): 5,160.83
- CO (lbs): 164.56

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INSULTECH® “HEAT SHIELD” SPECIFICATION
Design: LT500HS-AC
For use on Low Temperature Thermal Service

SERVICE: A cost effect thermal insulation solution, used on equipment, machinery and surfaces not exceeding 500°F. Thermal “Heat Shield” exposure can be indoors and outdoors. INSULTECH® Heat Shield is weather / water resistant, ideal for commercial / industrial settings. INSULTECH® Heat Shield is a cost effective insulation design with many of the features typical of a self-contained INSULTECH® Blanket Insulation design.

EQUIPMENT APPLICATIONS:
• Steam Traps
• Condensate Pumps
• Threaded Steam Fittings
• Condensate Systems
• Steam Tracing
• Pumping Traps

BLANKET COMPONENTS:
Outer Jacket: 10.5oz/sq. yd. Aluminized/Laminated Fiberglass cloth.
Insulation: 1/4” Thick – ManniGlass® 1900 Non-Woven Glass Fiber

Physical Data:

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th>Performance Measures</th>
<th>Test Methods</th>
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<tbody>
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<td>Insulation Density</td>
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<tr>
<td>Upper Use Temperature Limit</td>
<td>1200° F (Insulation Rating)</td>
<td>UL 94V-0 Non-Flammability</td>
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DESIGN REQUIREMENTS:
The INSULTECH® Heat Shield will be custom fit to match the treated surface. Using CAD / CNC technology, INSULTECH® Heat Shield will match complex surface geometry with close tolerances. All pieces will include a Velcro™ flap closure along seams to assure maximum thermal performance.

FABRICATION REQUIREMENTS:
A. INSULTECH® Heat Shield outer jacketing will match the treated surface and will account for thickness changes resulting from the composite addition of Non-Woven Glass Fiber insulation. This material is stitch quilted to the jacketing, producing a self-contained heat shield system, easy to install within minutes. Sewing thread will be a PTFE fiberglass.
B. The outer jacket surface will be designed and manufactured via CAD/CNC for exact fit and finish. CAD design will allow a precision CNC production approach with maximum tolerances. A CAD electronic filing and storage will be necessary for future reference, establishing a part number library which will match an existing Steam Trap Management Program.

C. For ease of identification and location, an aluminum or stainless steel name plate tag will be riveted to each blanket piece. 1/8” Embossed lettering will include equipment model, description, size, rating and tag number sequence. The tag will appear in a visible location on the exterior surface of the heat shield blanket.

D. INSULTECH® Heat Shield Insulation will accommodate inspection / survey access by providing a 3/8” diameter brass or stainless steel grommet, placed strategically.

E. INSULTECH® Heat Shield Insulation projects will include an instruction package shipped with the material. This package will include Assembly Drawings, identifying piece location, a material list of all pieces and instructions for installation on how the INSULTECH® Heat Shield will be installed. This feature will be presented for Steam Trap Manifolds & Steam Trap Assemblies.

F. INSULTECH® Heat Shield Insulation will be guaranteed to fit. Warranty timeline is 18 months, from date of installation and it applies to material replacement only.

G. INSULTECH® Heat Shield Insulation will include a Velcro® hook & loop fastener sewn to an outer jacketing flap. A 1” wide hook will be stitched to the outer jacketing surface of heat shield and a 1” wide loop fastener will be stitched to an extended outer jacketing flap. The Velcro® will be polypropylene, sewn with a multiple filament black polypropylene thread.

H. To access the true limitations of this recommended design, refer to the technical data sheets on each product component. This recommended design is intended to follow those guidelines and produce the highest achievable service life possible. Blanket design quality can be reduced or enhanced by changing any one component. If a question arises regarding deviations from those stated guidelines, please contact your regional representative or call Shannon direct.
INSULTECH® “HEAT SHIELD” SPECIFICATION
Design: LT500HS-TC
For use on Low Temperature Thermal Service

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EQUIPMENT APPLICATIONS:
• Steam Traps
• Condensate Pumps
• Threaded Steam Fittings
• Steam Tracing
• Condensate Systems
• Pumping Traps

BLANKET COMPONENTS:
Outer Jacket: • 18.0 oz/sqy - PTFE Teflon Impregnated Fiberglass Cloth
Insulation: • 1/4” Thick – ManniGlass® 1900 Non-Woven Glass Fiber

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