

Metal Clad Blankets



Various Aircraft Turbine Engine Bleed
Air Ducts and Heatshields

General Information

HITCO CARBON COMPOSITES, INC. produces insulation blankets that are lightweight, non-flammable, and suitable over a wide range of temperatures. The blankets may be either flexible or pre-shaped, depending on the customer requirements. The insulating materials will not pack, dust, or disintegrate even under the most extreme vibration loads.

Typically, these blankets consist of a light gauge stainless steel or inconel foil jacket covering the insulation media. This design allows the use of fibrous insulation in areas where exposure to liquids, vibration, high velocity gas flow and mechanical damage preclude its use in an unprotected state. It also allows practical attachment methods as well as some structural stiffening.

Inconel may also be used in applications where greater resistance to corrosion at elevated temperatures is required. The temperature limit for these blankets is considerably higher than for stainless steel.

The blankets can be manufactured in wrap-around or preformed configurations and are custom designed to meet specific thermal and weight requirements. Many variations in materials and configurations are available.

Construction Features

HITCO's insulation blankets are custom designed. Fastening devices are provided for ease of installation and removal. All foil covered blankets are resistance welded to minimize the entrance of fluids. Breather holes are provided to prevent damage to the blankets or equipment being insulated due to pressure changes. Vent shields for the holes are oriented to lessen the possibility of fluid entry and to prevent wicking.

Foil coverings for HITCO insulation blankets are texturized where necessary to provide abrasion resistance and dimensional stability with a negligible weight penalty. All foil covered blanket edges are finished in a manner which eliminates hazards during handling and installation.

Quality Construction

HITCO insulation blankets meet or exceed MIL-I-45208 and aerospace industry standards. Quality control systems assure product conformity to customer requirements. HITCO is registered ISO 9001 and approved to Boeing D1-9000A Advanced Quality Systems Standards, as well as other internal and external customer quality standards.

Insulation Media

Many types of fibrous or blanket insulation may be used depending upon the customer applications. See the two charts below for specific insulation material limitations.

The blankets may be attached mechanically by a number of accepted methods including straps, capstans, laces, etc. Special fittings may also be designed as required.

Typical Applications

- ◆ Heater ducts
- ◆ Rocket nozzle insulation
- ◆ Auxiliary power compartments
- ◆ Fire walls
- ◆ Jet engine structure and accessories
- ◆ Heat shields

Typical Insulation Core Materials

Insulation Core Material	Temperature Limit	Thermal Performance	Fluid Resistance	Vibration Resistance	Weight	Cost
Glass fiber blanket	700° F	Good	Good	Very Good	Low	Low
Micro-Fiber® felts	1200° F	Excellent	Good	Very Good	Moderate	Moderate
Min-K® (MRS)	1200° F	Excellent	Poor	Good	Moderate	High
Q-Fiber® felts	1800° F	Excellent	Good	Good	Moderate	High
Min-K® (HTS)	2000° F	Excellent	Poor	Good	High	Very High
Fiberfrax® Excelflex	2000° F	Excellent	Poor	Good	Moderate	High
Ceramic fiber blanket	2300° F	Good	Good	Good	Moderate	Very Low
Fiberfrax® Lo-Con™ felts	2300° F	Good	Good	Good	Moderate	Very Low

Typical Metal Clad Insulation Facing Materials

Facing Material	Temperature Limit	Fluid Resistance	Abrasion Resistance	Cost
321 SST foil	1250° F	Excellent	Excellent	Low
Inconel 600 foil	2000° F	Excellent	Very Good	Moderate

Note: Typical foil thickness: .0015" to .006"



HITCO CARBON COMPOSITES, INC.

Insulation Products • 1600 West 135th Street
 Gardena, California 90249-2506
 Telephone: 310-527-0700 • Fax: 310-515-1779
 800-421-5444 Outside California
 www.hitco.com