



40  
YEARS

# Milestones



1978

Acquisition of  
Shelbyville  
facility

2008

Acquisition of  
Manson  
Insulation

2009

Introduction  
of Bio-based  
ECOSE binder  
technology

2014

**GIC partners  
with Manson**

Acquisition of  
Guardian  
Fiberglass

2017

2nd largest  
fiberglass  
manufacturer  
in North  
America

# North American Footprint



Knauf Insulation  
Manufacturing  
Facilities

- GLASS WOOL
- LAMINATION

**+40** Years of experience in the  
insulation industry

**+1,550** Employees

**6** Manufacturing sites

**12** Lamination sites

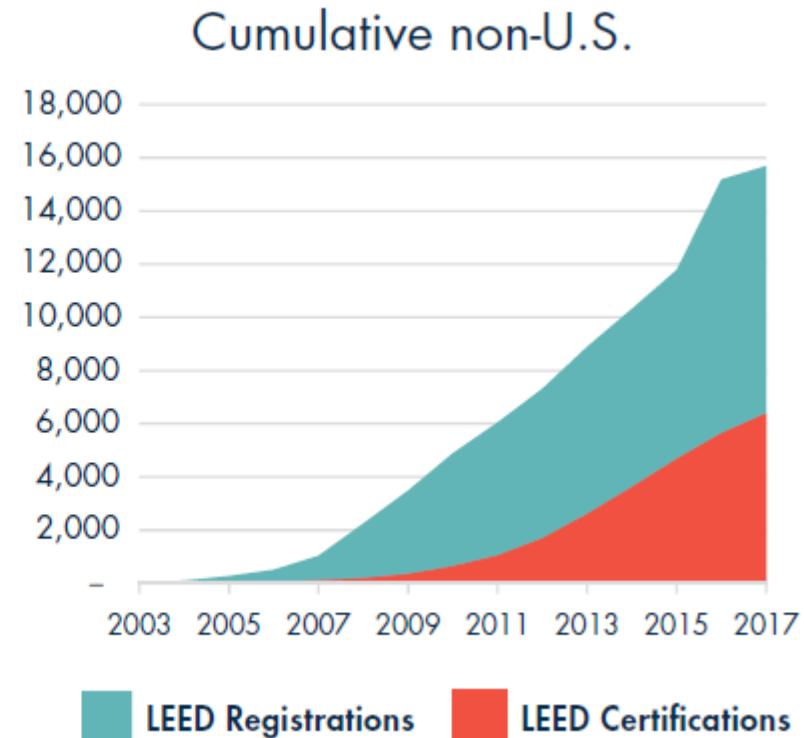
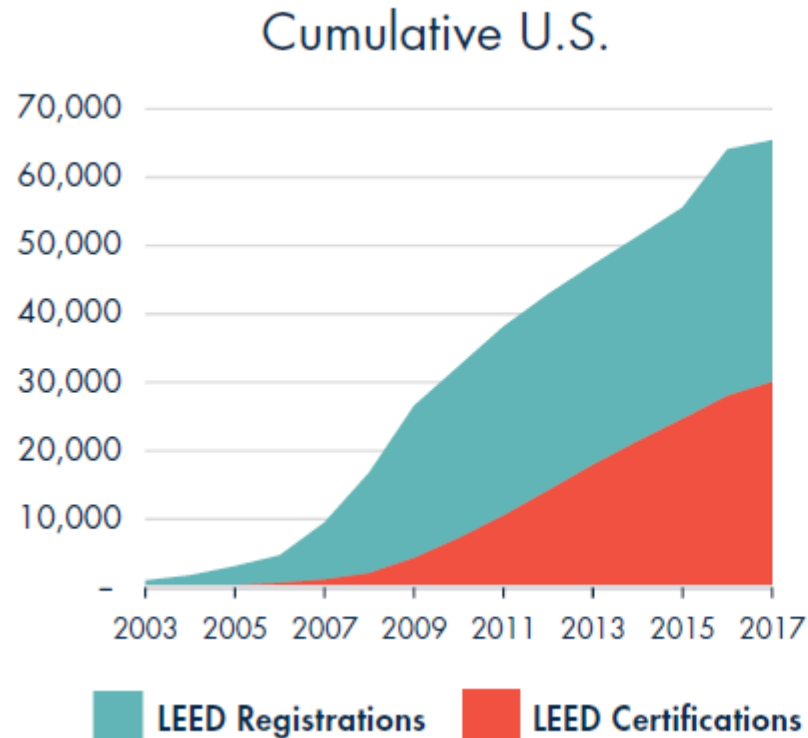
# We live in a rapidly changing and increasingly fragile world

A world where innovative solutions are needed:

- Climate change, resource efficiency and sustainability are challenging us to rethink the way we live and build.
- Consumers demand and deserve greater comfort, convenience and service.
- Technological advancements and digitalisation call for innovative solutions. Smart Cities.



# Green Building Demand



# Why now? Commitment to HSE



**HSE**  
HEALTH SAFETY ENVIRONMENT



# Why now? Commitment to HSE



- Reducing TRIR and LTA to zero in 2020
- Achieving Zero Waste
- Eliminating red list chemicals in our processes





# Advantages of the transition



- Formaldehyde free, Green labeling
- Significant differentiation from JM and OC
- Can be included in projects where pf free is a requirement:  
ex: Harvard, Google, Facebook
- Specification support



# Manson ECOSE® Conversion Support

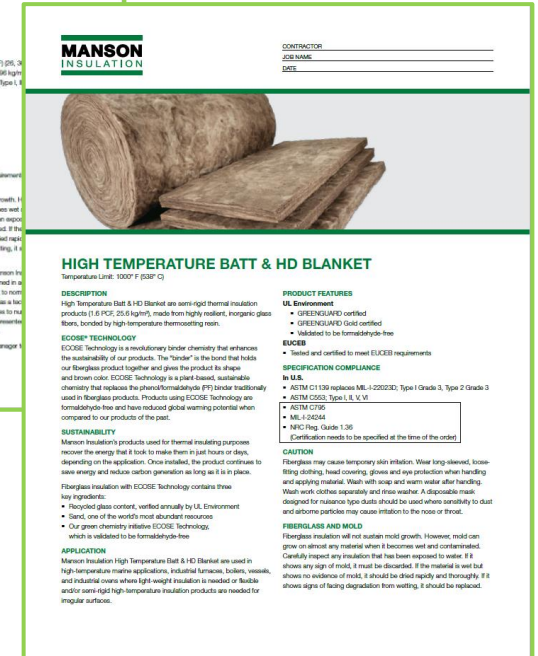
# Sales Aids



- Data Sheets
- Frequently Asked Questions
- Sustainability Sheet
- Who Is Manson
- ECOSE® Fact Sheet
- Digital
- Samples
- Packaging

# Data Sheets


- Updated with new compliances
- New imagery showing ECOSE® binder
- Data sheets for all products will have same look
  - Akousti Liner
  - Akousti Liner R
  - Alley Wrap B
  - Akousti Board Black



# Frequently Asked Questions



- Why the change now?
- What are the benefits?
- Why is it brown?
- What environmental certifications will Manson carry?



## ADOPTING ECOSE® TECHNOLOGY FREQUENTLY ASKED QUESTIONS

As a part of our ongoing commitment to sustainability, Manson Insulation is replacing formaldehyde-based binders with a range of glass mineral wool insulation featuring Knaut Insulation's revolutionary ECOSE Technology. What does this mean for you? Read on to find out.

**Why is Manson making this change now?**  
Manson believes there is no greater time than now to renew our global priority of moving away from a formaldehyde-based binder. Switching to a more sustainable solution is the right thing to do for the health and safety of our environment as well as installers, distributors and employees.

**Will pricing change because of this transition?**  
No. We're committed to raising the bar for product quality without increasing costs. Manson will be a better, more environmentally friendly product, offered at the same exact price.

**Are there any plans to change how Knaut and Manson work together in the future?**  
The primary motive behind this transition is simply for Manson to adopt a more sustainable product and leverage ECOSE Technology. At this time, there are no plans to change or phase out any commitment to the Manson brand.

**What are the benefits of this change?**  
In addition to the environmental benefits of switching to a more sustainable solution, Manson will remain a specified brand under the support of Knaut. That means Manson can now be requested if building designers require more sustainable or formaldehyde-free products.

**How is Knaut going to promote this transition?**  
Knaut will promote this enhancement as part of its global initiative to use the best available technology whenever possible. Manson is making this change in the interest of more sustainable solutions and will promote accordingly in alignment with Knaut's transformative impact on the insulation industry.

**When will Manson switch over to ASJ+ jacketing?**  
The majority of the market uses ASJ and, at this time, there is no demand to make a change.

**Are there going to be any changes to the packaging?**  
Yes, the packaging will change to reflect ECOSE Technology and the accompanying certifications as well as result in improved quality of the package.

**Will the change impact inventory availability?**  
No. Inventory will be available to those that need it based on service level. This transition will make us more reactive to sudden change in demand.

**Why is insulation made with ECOSE Technology brown?**  
Insulation manufactured with ECOSE Technology is brown because it is bio-based and not yellow like PF-based products.

**Can Knaut distributors buy Manson products?**  
Due to the exclusive nature of the relationship with existing Manson customers, other distributors are unable to purchase Manson products.

**What environmental certifications will Manson products now have?**  
Products made using ECOSE Technology will adhere to the following certifications:

- GREENGUARD and GREENGUARD Gold
- Validated Formaldehyde-Free
- Environmental Product Declaration (EPD)


**How will this change impact service and support?**  
Manson will continue to provide consistent, reliable service and support.


**Will Manson product data sheets have the same information as Knaut's?**  
Manson product data sheets and product literature will be updated to reflect the addition of ECOSE Technology and accompanying certifications.

# Sustainability Sheet



- Contains no added formaldehyde
- Low emitting product
- High recycled content
- Why it matters

A SUSTAINABLE SOLUTION



As part of an ongoing commitment to sustainability, Manson Insulation has made it a priority to move away from formaldehyde-based binders. That's why we've replaced our previous offerings with a range of glass mineral wool insulation made with ECOSE® Technology from Knauf Insulation.


The new glass mineral wool insulation is a high-quality product—without the higher price tag—and offers a number of environmental benefits:

- Contains no formaldehyde
- Comprises more than 50 percent recycled glass (mainly from bottles and windows), with the remaining content primarily derived from rapidly renewable materials
- Is a very low-emitting product, has received the GREENGUARD Gold Certification for indoor air quality and is validated by a third party to be formaldehyde-free
- Can contribute points to a building's total rating in green building rating systems, such as the U.S. Green Building Council LEED v4 credits

We believe switching to a sustainable solution is the right thing to do for installers, distributors and our employees. In addition, by heightening the importance of sustainable products in the market, we have confidence that we can eventually drive more demand for them. We're committed to raising the bar for product quality and quality of life without increasing costs.

Glass mineral wool insulation with ECOSE Technology comprises more than

**50%** recycled glass



**Why Sustainability Matters**

Using glass mineral wool insulation made with ECOSE Technology alongside other green building materials makes sense economically, environmentally and ethically.

**Economically**

We don't think customers should have to pay more for a sustainable solution, so we're offering a higher quality product without raising the price.

**Environmentally**

As all of us become more aware of the impact we have on the planet, using recycled glass and rapidly renewable materials is one small but very important step to take in building a more sustainable future.

**Ethically**

Because glass mineral wool insulation with ECOSE Technology is formaldehyde-free and very low emitting, it contributes to improved indoor air quality, making it a better choice for both the planet and the people who live here.

# Who Is Manson?



- Used for a project submittal cover
  - History of Manson Insulation
  - Made in the USA
  - High quality
  - ECOSE® Technology



CONTRACTOR \_\_\_\_\_  
JOB NAME \_\_\_\_\_  
DATE \_\_\_\_\_



**QUALITY**  
Manson Insulation products are produced in ISO 9001, 14001, 18001, and 50001 certified factories. These facilities have been in continuous operation since 1978.

**MADE IN THE USA**  
All Manson Insulation products, including Akoust-Liner®, Ak Board™, Ak Flex™, Akoust-Liner™, Akoust-Liner R™ and Akoust-Whip™, are produced by Knauf Insulation in Shelbyville, IN; Lanett, AL; or Sheeta Lake, CA, USA. Manson Insulation products meet the requirements of the Buy America Act (Federal Transit Administration - Title 49, Part 601) and the Buy American Act (AFRA Section 1605 - 2009).

**TECHNICAL DATA**  
**Surface Burning Characteristics**  
• UL/ULC Classified FHC 25/50 when tested in accordance with CAN/ULC S102, ASTM E84 and UL 723  
**NFPA 90A and 90B**

**ECOSE® TECHNOLOGY**  
ECOSE Technology is a revolutionary binder chemistry that enhances the sustainability of our products. The "binder" is the bond that holds our fiberglass product together and gives the product its shape and brown color. ECOSE Technology is a plant-based, sustainable chemistry that replaces the phenol/formaldehyde (PF) binder traditionally used in fiberglass products. Products using ECOSE Technology are formaldehyde-free and have reduced global warming potential when compared to our products of the past.

**PRODUCT FEATURES**  
**UL Environment**  
• GREENGUARD certified  
• GREENGUARD Gold certified  
• Validated to be formaldehyde-free  
**EUCEB**  
• Tested and certified to meet EUCEB requirements

**HISTORY OF MANSON INSULATION**



1988 Manson purchases existing plants in Broward, CO, and Scarborough, ON


1995 Manson JV (CMT) to distribute to US

2008 Manson is acquired by Knauf Insulation

2009 All production shifts to Shelbyville, IN

2017 Manson is a brand of Knauf Insulation, part of the Knauf Group

Manson Insulation | [www.manson.com](http://www.manson.com)  
One Manson Drive, Shelbyville, IN 46176  
Sales (317) 398-4434, ext. 8465  
Technical Support (317) 398-4434, ext. 8727  
M-WHOISMANSON | 04-18





# ECOSE® Fact Sheet



- Describes
  - What Ecosse is
  - Features / Benefits
  - Certifications
  - Brown and yellow pipe shown on page 2 for comparison

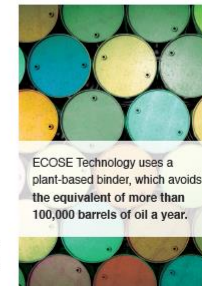


## ECOSE® TECHNOLOGY



The bonding agents found in traditional fiberglass insulation include nonrenewable petroleum-based chemicals such as phenol, formaldehyde, acrylics and artificial colors. While these materials have little to no impact on the R-value (the ability to resist heat flow) of the end product, they can have adverse effects on the environment.

In search of a more sustainable solution, Knauf Insulation developed ECOSE Technology made with a revolutionary plant-based binder, resulting in products that are comprised of rapidly renewable organic and recycled materials. Manson Insulation uses this same cutting-edge technology to manufacture products that are more environmentally friendly than conventional fiberglass insulation.

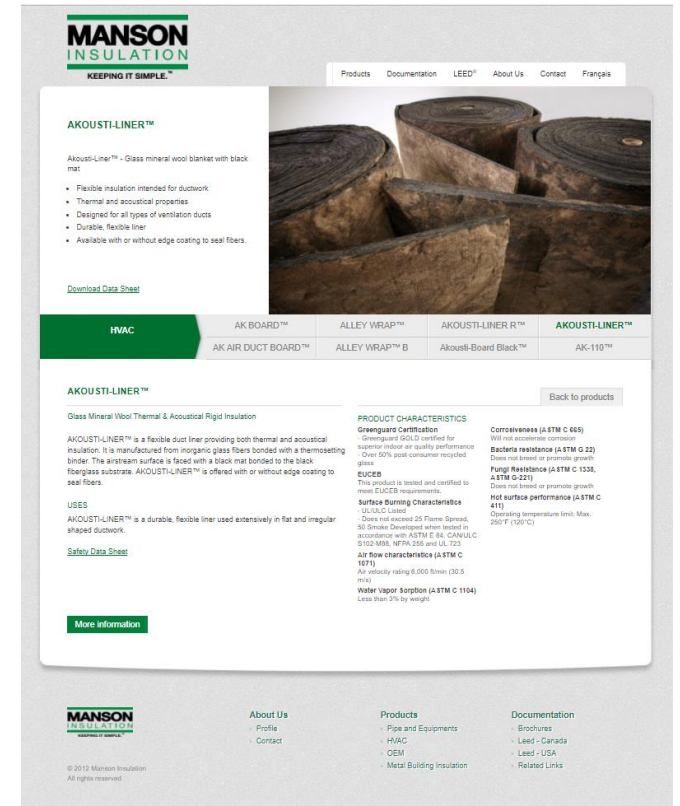


ECOSE Technology uses a plant-based binder, which avoids the equivalent of more than 100,000 barrels of oil a year.



# Digital

- Slide Deck
- Website
  - Update 7/2



# Samples



- Hand Samples
  - Each branch will receive one (1) full kit and twenty (20) hand samples of pipe and twenty (20) hand samples of IB initially
  - Manson Area Managers will have ten (10) full kits and the ability to order more hand samples as required

# Packaging








## SUMMARY OF CHANGES

- Color change to signify switch to ECOSE® Technology
- Front and side panels all contain same information to ensure important information is communicated no matter which side of carton is viewable
- Technical panel simplified
- Bullet points added
  - 1000° Max. Service Temp.
  - Bio-Based Binder
  - Proven Mandrel Wound Technology
- Icons added to create visual interest and illustrate bullet points
- “Preformed” removed
- “ECOSE® Technology” added

**MANSON**  
INSULATION

# Pipe Labels



Color-coded labels by insulation wall thickness		
1/2"		Green
1"		Yellow
1 1/2"		Blue
2"		Orange
Over 2"		Purple

Color code by thickness

# Conversion Chart



Material	Material Description	New Material	New Material Description	
Pipe			EAN/UPC	
5002094	AK 0.50 X 0.50 X 3.00 SSL 85 PC CT A	357042	MAK 0.50 X 0.50 X 3.00 SSL 85 PC CT A	72538703570423
5001806	AK 0.50 X 1.00 X 3.00 SSL 42 PC CT A	356865	MAK 0.50 X 1.00 X 3.00 SSL 42 PC CT A	72538703568659
5002787	AK 0.50 X 1.00 X 3.00 UNF 42 PC PKG	357174	MAK 0.50 X 1.00 X 3.00 UNF 42 PC PKG	72538703571741
5001793	AK 0.50 X 1.50 X 3.00 SSL 20 PC CT A	356858	MAK 0.50 X 1.50 X 3.00 SSL 20 PC CT A	72538703568581
5002786	AK 0.50 X 1.50 X 3.00 UNF 33 PC PKG	357173	MAK 0.50 X 1.50 X 3.00 UNF 33 PC PKG	72538703571734
5001807	AK 0.50 X 2.00 X 3.00 SSL 25 PC CT B	356866	MAK 0.50 X 2.00 X 3.00 SSL 25 PC CT B	72538703568666
5002785	AK 0.50 X 2.00 X 3.00 UNF 25 PC PKG	357172	MAK 0.50 X 2.00 X 3.00 UNF 25 PC PKG	72538703571727
425222	AK 0.50 X 2.50 X 3.00 SSL 14 PC CT B	356813	MAK 0.50 X 2.50 X 3.00 SSL 14 PC CT B	72538703568130
5002095	AK 0.63 X 0.50 X 3.00 SSL 110 PC CT A	357043	MAK 0.63 X 0.50 X 3.00 SSL 110 PC CT A	72538703570430
5001808	AK 0.63 X 1.00 X 3.00 SSL 42 PC CT A	356867	MAK 0.63 X 1.00 X 3.00 SSL 42 PC CT A	72538703568673
5001799	AK 0.63 X 1.50 X 3.00 SSL 27 PC CT A	356859	MAK 0.63 X 1.50 X 3.00 SSL 27 PC CT A	72538703568598
5002096	AK 0.63 X 2.00 X 3.00 SSL 33 PC CT B	357044	MAK 0.63 X 2.00 X 3.00 SSL 33 PC CT B	72538703570447
5001809	AK 0.75 X 0.50 X 3.00 SSL 68 PC CT A	356868	MAK 0.75 X 0.50 X 3.00 SSL 68 PC CT A	72538703568680
5001810	AK 0.75 X 1.00 X 3.00 SSL 42 PC CT A	356869	MAK 0.75 X 1.00 X 3.00 SSL 42 PC CT A	72538703568697
5002784	AK 0.75 X 1.00 X 3.00 UNF 42 PC PKG	357171	MAK 0.75 X 1.00 X 3.00 UNF 42 PC PKG	72538703571710
436780	AK 0.75 X 1.00 X 3.00 UNF 42 PC CT A	356822	MAK 0.75 X 1.00 X 3.00 UNF 42 PC CT A	72538703568222
5001801	AK 0.75 X 1.50 X 3.00 SSL 20 PC CT A	356860	MAK 0.75 X 1.50 X 3.00 SSL 20 PC CT A	72538703568604
5002783	AK 0.75 X 1.50 X 3.00 UNF 33 PC PKG	357170	MAK 0.75 X 1.50 X 3.00 UNF 33 PC PKG	72538703571703

# Manson Product Line

Summer 2018

# ECOSE® Technology



- revolutionary binder chemistry that enhances the sustainability of our products
- plant-based, sustainable chemistry that replaces the phenol/formaldehyde (PF) binder traditionally used in fiberglass products
- formaldehyde-free and has reduced global warming potential when compared to our products of the past



# Pipe Insulation

Manson Pipe Insulation is a preformed pipe insulation composed of high quality glass fibers, bonded together with a thermosetting resin. The 36" pipe sections are available with or without the all service jacket (ASJ).





# Pipe Insulation

Operating Temperatures  
0°F - 1000°F (-18°C - 538°C)

- Power, process and industrial applications.
- Hot and cold piping in concealed or exposed areas.
- Commercial and institutional buildings.
- Dual temperature piping.
- Steam condensate lines.
- Domestic hot and cold water service lines.



# Pipe Insulation

## Specification Compliance

ASTM C547; Type 1

ASTM C585

MIL-DTL-32585; Type I, Form 4, Facing A and D

UL/ULC Classified

ASTM C795

MIL-I-24244

NRC Reg. Guide 1.36 (specified at order time)

## *Jacketing*

UL723/ASTM E84

CGSB 51-GP-52M

ASTM C1136; Type I, II

NFPA 90A and 90B



# AK Board



**MANSON AK BOARD™** is a versatile rigid board product for thermal and acoustical applications available in a variety of densities and sizes to accommodate multiple applications



# AK Board



## Recommended Applications

*Operating Temperatures*

*0°F - 450°F (-18°C - 232°C)*

- HVAC ducts.
- Power and process equipment.
- Boiler and stack applications.
- Metal and masonry walls.
- Wall and roof panel systems.
- Curtain wall assemblies.
- Cavity walls where acoustical efficiency is required.



# AK Board



## Specification Compliance

ASTM C612

Type IA (1.6, 2.25, 3.0, 4.25, 6.0 PCF) (26, 36, 48, 68, 96 kg/m<sup>3</sup>)

Type IB (3.0, 4.25, 6.0 PCF) (48, 68, 96 kg/m<sup>3</sup>)

ASTM C1136 (facings); Type II, IV (FSK), Type I, II (ASJ)

California Title 24

CGSM 51-GP-10M



# High Temperature Products



**Manson HT Board** is used for boiler walls, hot precipitators, hot ductwork, cylindrical tanks, towers, stacks, and industrial ovens up to 1000°F (538°C).

**Manson HT Blanket** is used for industrial heating equipment up to 1000°F (538°C), such as industrial furnaces, panel systems, marine applications and irregular surfaces.

**Manson HT Batt & HD Blanket** are used in high-temperature marine applications, industrial furnaces, boilers, vessels, and industrial ovens, where light-weight insulation is needed or flexible and/or semi-rigid high-temperature insulations are needed for irregular surfaces up to 1000°F (538°C).

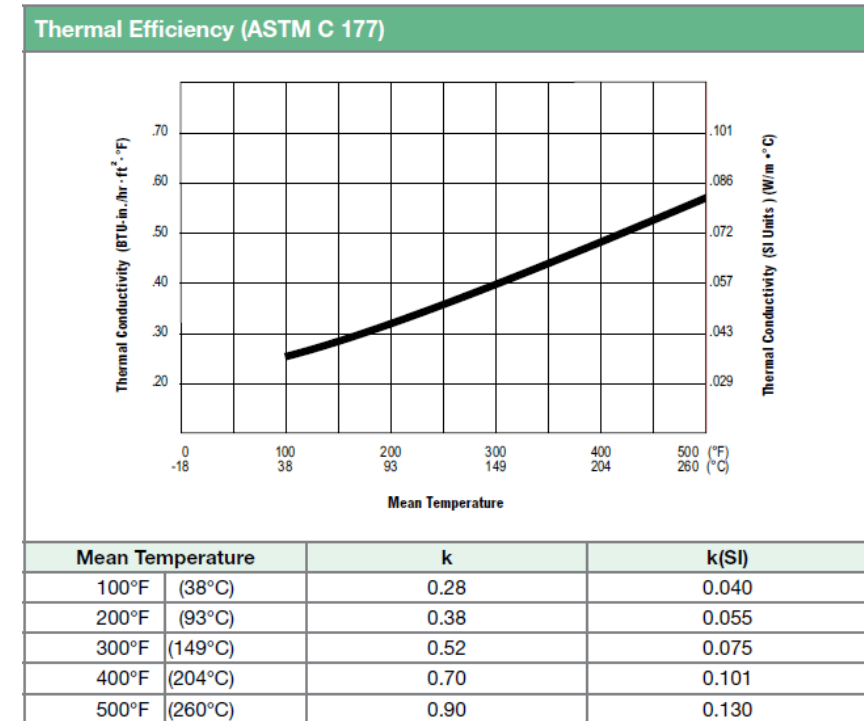
**Manson HT Panel** is suitable for use in industrial heating applications up to 1000°F (538°C), such as high-temperature panel systems for ducts and precipitators, boilers, vessels, and industrial ovens. It is ideal for use in metal mesh blankets.



# High Temperature Products

## HT Blankets • HT Boards • HT Panel Insulation • HT Batt

- Low thermal conductivity ratings to 1000°F
- Lightweight, easy to fabricate and handle.
- Non-corrosive.
- Vibration resistant--maintains integrity
- Boards available in sizes up to 48" x 120".
- Resists damage during shipment and installation





# Current Certifications



	GREENGUARD	GREENGUARD Gold	No added Formaldehyde	Recycled Content	Mold Resistance
Alley K Pipe Insulation Plain, ASJ	<b>X</b>	<b>X</b>			
HT Blanket					
HT Board					
HT Panel					
HT Batt & HT HD Blanket					
AK Board – Plain, FSK, ASJ	<b>X</b>				
Akousti-Liner	<b>X</b>	<b>X</b>	<b>X</b>		
Akousti-Liner R	<b>X</b>	<b>X</b>	<b>X</b>		
Alley Wrap B – Plain, FSK, PSK	<b>X</b>	<b>X</b>	<b>X</b>		
Akousti-Shield	<b>X</b>	<b>X</b>	<b>X</b>		
Akousti-Board Black	<b>X</b>	<b>X</b>	<b>X</b>		
AKFlex Pipe & Tank Insulation – ASJ, FSK, PSK					



# Enhancements

<u>UL SPOT</u>	GREENGUARD	GREENGUARD Gold	Validated Formaldehyde Free	Recycled Content	Mold Resistance
Alley K Pipe Insulation Plain, ASJ	✓	✓	✓	✓	
HT Blanket	✓	✓	✓	✓	
HT Board	✓	✓	✓	✓	
HT Panel	✓	✓	✓	✓	
HT Batt & HT HD Blanket	✓	✓	✓	✓	
AK Board – Plain, FSK, ASJ	✓	✓	✓	✓	
Akousti-Liner	✓	✓	✓	✓	✓
Akousti-Liner R	✓	✓	✓	✓	✓
Alley Wrap B – Plain, FSK, PSK	✓	✓	✓	✓	
Akousti-Shield	✓	✓	✓	✓	
Akousti-Board Black	✓	✓	✓	✓	
AKFlex Pipe & Tank Insulation – ASJ, FSK, PSK				✓	



# Manson Family of Products



Now Formaldehyde Free

- Fiberglass Pipe Insulation
- Fiberglass Insulation Board
- High Temperature Products
- Akousti Liner
- Akousti Liner R
- Akousti Board Black
- Alley Wrap B Duct Wrap
- AK Flex\*



\*AK Flex is currently produced with PF binder