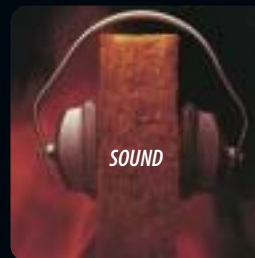
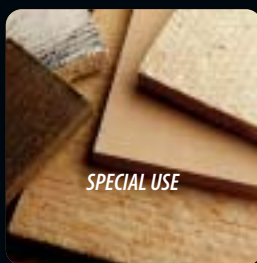




American Express Financial Advisors Minneapolis, Minnesota. Architect: HKS, Inc. Architects/Engineers/Planners



Thermafiber
THE NAME IN MINERAL WOOL™



Insulation materials are not all alike

The Thermafiber® Difference

While most other insulating products can help control temperature and muffle sound, few have the ability to handle high heat exposure or stop the spread of fire like Thermafiber® Mineral Wool Insulation.

That's because Thermafiber Mineral Wool Insulation is Born in Fire™. The raw material for Thermafiber insulation is primarily blast furnace slag, a byproduct of steel manufacturing. Heated in a cupola furnace at temperatures above 2,600°F, the molten substance is spun into fibers, then formed into insulation blankets or other forms of insulation products, such as boards or granules of various sizes.

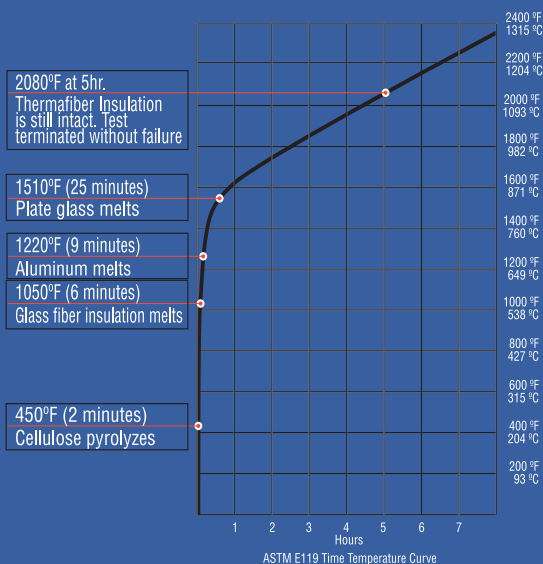
Because mineral wool requires so much heat in its formation, it also resists an enormous amount of heat in use. While cellulose insulation smolders at 450°F and glass fiber melts at 1,050°F, Thermafiber Mineral Wool Insulation consistently withstands temperatures above 2,000°F for more than 5 hours without failure. (See graph)

The ability to withstand high temperatures does not seem like much until it is translated into time – the additional time it will take a fire to burn through a wall assembly, or the additional time it allows people to leave a building, or the additional time it allows for first responders to strike a blaze before lives are lost and property is damaged.

Born in Fire means that Thermafiber insulation is denser than other insulations, giving it the ability to attenuate sound as well as absorb it. It means that Thermafiber insulation is more rigid than others, so that you can count on its thermal performance over a long period of time. And it means that Thermafiber mineral wool can be used successfully under extreme conditions for friction products and as fiber reinforcement additives in caulks, coatings, and a number of other end uses, including horticulture, asphalt and clay tile.

Thermafiber insulations meet several category requirements under the LEED program, thereby contributing to green building and sustainable design construction.

Thermafiber Insulation Time vs. Temperature



Life Safety



Our first priority is to safeguard the lives of building occupants from the hazards of fire and smoke. The best way to accomplish that is to contain

fire and smoke to the area of origin, providing time for occupants to get out and time for firefighters to extinguish the blaze.

Thermafiber's Life Safety Insulation Systems play a prominent role in containing fire and protecting lives and property.

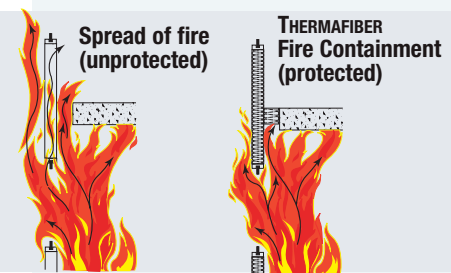
Perimeter Fire Containment

In high-rise buildings, exterior walls with vision glass become points of failure for fire containment. Often, there are several inches of space between the slab edge and the curtain wall assembly.

Effective perimeter fire containment requires that all routes of fire propagation – through penetrations in floor slabs, through voids between floor slab and curtain wall, and around spandrel panels and back in – be shut down at the same time. To do so, Thermafiber's engineers combined three types of materials – FIRESPAN curtain wall spandrel insulation, safing insulation and a smoke sealant – into a system that prohibits such fire propagation.



Typical Curtain Wall Assembly



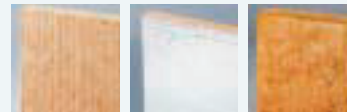
Curtain Wall Insulation Types

Curtain wall insulation protects all structural components of curtain wall assemblies, and eliminates the opportunity for fire to travel through the curtain wall cavity to the floor above.

All of Thermafiber's curtain wall insulation products are available in a choice of three finishes. The standard finish for curtain wall insulation is unfaced material, off-yellow in color, that is commonly used behind opaque panels where no vapor

retarder is needed. Dark finish curtain wall insulation is similar to standard finish, except that it is darker in color for use behind darker colored (perhaps translucent) panels to improve overall panel appearance. FSP finish is curtain wall insulation faced with a foil scrim polyethylene vapor retarder added on either one side or two, which also improves durability for field installation and stops smoke passage in the event of fire.

FIRESPAN® Curtain Wall Insulation and FIRESPAN® SS Curtain Wall Insulation are our finest curtain wall insulation products. They have been tested and approved by Underwriters Laboratories and Omega Point Laboratories in many design assemblies. Architects, building designers and general contractors will find those



Regular Curtain Wall FSP Curtain Wall Dark Curtain Wall

system designs easily in current UL or OPL fire-resistance directories, on their websites, or on our website, www.thermafiber.com.

FIRESPAN Insulation is the premier product with high density and improved thermal conductivity properties, enabling it to do the best possible job of diverting heat away from the components it is designed to protect. Also, its compactness makes shrinkage and flame propagation less likely. FIRESPAN is available in thicknesses from 1" to 6" in 1/2" increments.

FIRESPAN SS is less dense, but has proved its ability to meet protection requirements for a broad range of steel-stud and aluminum-framed assemblies and a variety of aluminum, glass and granite spandrels that often are designed to accommodate greater insulation thickness. FIRESPAN SS ranges in thickness from 2" to 6" in 1/2" increments.

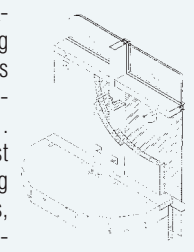
FIRESPAN has demonstrated superior performance in recent tests. The product is approved and listed in the fire resistance directories of both UL



Poke-through and construction joint assemblies

IMPASSE™ Curtain Wall Insulation System

(recently introduced) uses FireSpan Insulation, and is the finest, easiest and most effective Curtain Wall Protection System available. IMPASSE streamlines installation by changing the order of steps to fit a more logical progression. Instead of first installing impaling pins on frames, IMPASSE uses blade-like insulation support hangers (patent pending) that are inserted into pre-cut FireSpan® insulation blankets before attachment.



This order makes it easier for installers to position the insulation properly. The hangers are then screw attached to the framing after the blanket is properly positioned. Screws used for attachment are covered by another layer of FireSpan insulation to assure system integrity.

The UL tested and approved system also uniquely overlaps, or interlocks, curtain wall and safing insulation in a fashion that enhances performance. Ratings up to three hours are achievable with this system. For more information, visit www.thermafiber.com.

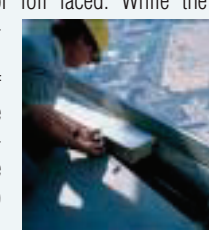
Safing Insulation

Safing insulation is used to fill the void between the floor slab edge and the insulated curtain wall components. Standard Thermafiber Safing Insulation is available in 4" thick batts, either unfaced or foil faced. While the unfaced insulation does an excellent job of inhibiting fire, the foil-faced insulation also has the ability to stop smoke.



Foil-faced Safing serves as a vapor retarder and helps to stop the spread of smoke in the event of fire. Safing also is used as a forming material in firestop applications, for poke-through openings in floors, walls and construction joints.

For more information about Thermafiber perimeter fire protection and life safety insulation systems, visit www.thermafiber.com.



Head-of-Wall Insulation

TopStop Head-of-Wall Insulation fills voids at the wall-to-floor/ceiling intersection. Precision-cut TopStop batts reduce field cutting, and fit conveniently into the contours of metal roof decks and floor/ceilings.



Partition Wall Containment

One part of the containment problem is the lateral spread of fire from room to room on the same floor through partition walls. While gypsum wallboard alone provides some fire-containment capacity, insulating partition wall stud cavities with Thermafiber Sound Attenuation Fire Blankets (SAFB) adds fire protection, and boosts the sound attenuation performance of the wall.

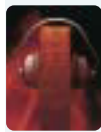
Floor/Ceiling Containment

An even greater part of the containment problem is containment of fire and smoke at the floor/ceiling assembly. Heat rises, so any combustibles that are above the initial flames are prime targets for ignition. Floor-to-floor fire protection can be aided by installing either Thermafiber SAFB, Thermafiber FS-15 or FS-25 Commercial Blankets between joists in the floor-ceiling assembly.

Any opening in the floor/ceiling assembly can act as a flue or chimney as heated air tries to escape. In high-rise buildings with thick concrete floor slabs, pipe, conduit and duct penetrations through the floor slab must be packed with Thermafiber Safing Insulation and sealed with a recommended smoke sealant (by others) for inhibiting fire and smoke.

Sound Insulation

SAFB & Creased SAFB



Thermafiber Sound Attenuation Fire Blankets (SAFB) help make rooms quieter by reducing sound transmission from room to room and floor to floor. Made with nominal 2.5 pcf density mineral wool, (4 pcf for 1") these blankets trap sound within wall cavities or floor/ceiling assemblies.

Effectiveness of Thermafiber SAFB in controlling sound is well documented. For example, a typical partition wall built with wood studs 24" o.c. and 5/8" gypsum



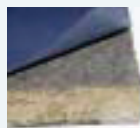
wallboard, nail attached on both sides, produced an STC rating of 37, while the same assembly with 3" Thermafiber SAFB installed in the cavity produced an STC rating of 46. Some assemblies have shown as much as 11 points difference when Thermafiber SAFB is added. Thermafiber SAFB's performance is even more impressive in certain frequency ranges, especially for speech, machinery, mechanical equipment and music.

Creased Thermafiber SAFB

Our Creased Thermafiber SAFB system is a method of achieving economical wallboard and veneer plaster partitions with as much as 50 to 55 STC. The Creased Thermafiber System uses blankets that are 1" wider than standard blankets to produce a tighter stud-to-stud fit. A field-cut crease down the middle of the blanket introduces pressure against the wallboard on either side of the assembly, dampening sound vibration and boosting STC. In some cases, the boost in sound attenuation has been equivalent to the addition of another layer of wallboard on one side of the assembly.



SoundZero® Fabric-backed Interior Acoustical Blanket



SoundZero is the perfect sound deadening solution for theaters, conference rooms, auditoriums, etc. The blanket is designed for exterior mounting on interior walls.

For more information about Thermafiber sound insulation products, visit our website, www.thermafiber.com.

Thermal Insulation



Keeping people warmer in winter, cooler in summer. That's what most people regard as the primary purpose of any insulation product.

And, indeed, Thermafiber's performance in that role is unsurpassed. Compare Thermafiber Mineral Wool Insulation products to other types of insulation, such as cellulose, foam boards, or glass fiber, and Thermafiber Insulation

comes out on top in virtually every critical category.

Commercial Blankets

Thermafiber FS-15 and FS-25 Commercial Blankets are ideal for reducing heat transmission, saving energy and improving the comfort of building occupants. Both are available in 16" and 24" widths for steel stud construction or 15" and 23" for wood framing, and are available in a variety of thicknesses.

Thermafiber FS-15 blankets are unfaced and designed for use on exterior wall assemblies framed in steel or wood, or Z-furred. 1"-thick blankets have a density of 4-pcf. Thicknesses ranging from 1-1/2" to 6" are 3.0 pcf nominal. Flame spread 0, smoke developed 0.

Thermafiber FS-25 blankets are foil faced, with an FSP vapor retarder, and are designed for use in floor/ceilings, walls, crawl spaces, and are especially well suited for exposed-insulation and vapor-control insulation applications. Blankets are nominal 3.0 pcf density across the entire 3" to 6" thickness range. Flame spread 25, smoke developed 0.

The high density of Thermafiber FS-15 and FS-25 Commercial Blankets enhances the ability of these products to attenuate sound and impair fire, in addition to their excellent thermal retention properties.



Thermafiber Industrial Products

Special Use Products



Many industrial operations have unique insulation needs either for energy conservation, environmental controls, personnel protection, sound control or fire protection.

Industrial Felt, Board & Blankets

Thermafiber Industrial Felt is high-melt-point, pre-formed insulation useful for service up to 1,350°F. This makes it an ideal material for use in commercial and industrial ovens, package boilers, dryers, walk-in freezers and coolers, and in a number of fire protection and sound control applications. It is available in several forms, including standard unfaced felt, faced with black or white mat, foil faced or ASJ.

Specialized products are available for boiler applications, ducts, vessels and tanks, that retain their integrity in temperatures up to 2,000°F.

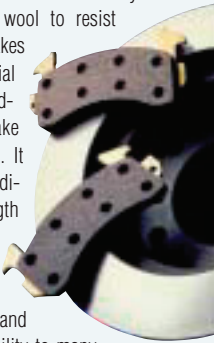
Thermafiber Industrial Board is an economical semi-rigid board that provides excellent acoustical properties and thermal insulating performance up to 1,200°F.

ThermaWrap™ blankets and other products with the K-Fac® trade name are recommended for hot-surface applications. Some are dense enough to be routed, slotted, grooved, die cut or otherwise machined and shaped. K-Fac products withstand temperatures up to 1,900°F.

Industrial Fiber Products

Thermafiber Industrial Bulk Wool is heat-resistant mineral fiber that is formed into small granulated nodules or pellets. It's used as a packing material, for special spray applications, for cryogenic applications, or as an additive for insulating cements and foundry molds. Similar granulated material is useful as a soil amendment, asphalt stabilizer, and molded insulation parts or components.

Thermafiber FRF is granulated or refined filler and reinforcement fiber. The ability of Thermafiber mineral wool to resist high temperatures makes it an excellent material for use in friction products such as brake shoes or brake pads. It also is used as an additive to build strength and resiliency in plastics, reduce the sagging effect of caulks and coatings, and add dimensional stability to many other products.



Maritime Insulation

Several Thermafiber insulation formulations have been developed for use in shipbuilding and marine outfitting to reduce noise and improve fire protection. Thermafiber U.S. Coast Guard approved felt has a melt point in excess of 2,000°F. Thermafiber #10 Granulated Wool is used to fill compartments for noise reduction and thermal insulation.

Other Industrial Products

Thermafiber complements its product line through partnerships with other manufacturers. These products are: pre-formed mineral wool pipe insulation, ceramic fiber (bulk and blanket), PrivacyGuard® mineral core board, ThermaTex® needled blanket, FireCode Compound, and Smoke Seal Compound.

For more information about Thermafiber industrial insulation products, visit our website, www.thermafiber.com.

Specifications

Specifications for products and systems described in this publication vary. For specifications on a particular product or system, refer to product literature relating to that product or system. Specifications are also available on our website, www.thermafiber.com

Good Design Practices

Thermafiber will provide test certification for published fire and sound data covering systems designed and constructed according to our published specifications. Tests are conducted on Thermafiber products assembled to meet performance requirements of established test procedures specified by various agencies. System performance following substitution of materials or compromise in assembly design cannot be certified and may result in failure of sound and/or fire performance under certain conditions.

Performance of a Thermafiber insulation product is predicated on proper installation, including mechanical attachment of the product, using impaling pins, screws or other positive mechanical attachment devices where required.

Fire containment in structures where floor slab perimeters are exposed will require proper and effective installation of curtain wall components as well as friction fitting the void between the edge of the floor slab and the facing of the curtain wall insulation with Thermafiber Safing Insulation, including the use of safing clips or other approved mechanical attachment devices. Compatibility of the safing and curtain wall insulations must also be assured to attain maximum performance.

Warranty

Thermafiber Insulation is backed by a 3-year limited materials warranty.

Trademarks: Thermafiber, K-Fac, ThermaTex, SoundZero, FIRESPAN, IMPASSE and Born in Fire are trademarks of Thermafiber, Inc. PrivacyGuard is a trademark of Armstrong World Industries, Inc. FireCode and Smoke Seal are trademarks of USG Corporation.

Note: Products described here may not be available in all geographic markets. Consult your Thermafiber sales representative for further information. All product and system information contained herein is believed to be accurate at the time of publication. Thermafiber, Inc., reserves the right to add, alter or discontinue products without notice. For the latest information on any product, consult your Thermafiber sales representative or visit our website, www.thermafiber.com.

Note: We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

Safety First! Follow good safety and industrial hygiene practices while handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

Product Selector, find the best product for your application.

Sound Attenuation & Fire Protection

SAFB Sound Attenuation Fire Blankets
 Creased SAFB
 SoundZero Interior Blanket

Fire Safety

FS-15 or FS-25 Fire Blankets

High-Rise Perimeter Life Safety

IMPASSE™ Containment System
 IMPASSE™ Mechanical Attachment
 FIRESPAN and FIRESPAN SS
 Curtain Wall Insulation
 Safing Insulation

FireStopping

Safing Insulation
 FireCode® Compound
 Smoke Seal® Compound
 TopStop Head-of-wall Insulation

Thermal Insulation

SAFB or FS-15/FS-25 Batts

Filler and Reinforcement Fiber

FRF granulated mineral fiber
 Asphalt Stabilizer

Industrial Energy & Sound Control

K-Fac 19 Industrial Block
 K-Fac SR Industrial Board
 Pre-formed Pipe Insulation
 Ceramic Fiber
 Needled Blanket
 PrivacyGuard® Core Board
 SoundZero

Note: Several products have similar characteristics. Consult your Thermafiber Sales Representative for clarification.



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