

CertainTeed

Mechanical and Industrial Insulation

Product Selection Guide



CertainTeed
SAINT-GOBAIN

5 Ways We Help You Succeed

Reinforcing Success

We continually strengthen your performance with a heritage of backing customers with the best products, service, support and innovation.

Engineering Performance

Your voice is what drives our global research team to create new solutions that meet your challenges — all with Building Science expertise and training.

Building Responsibly™

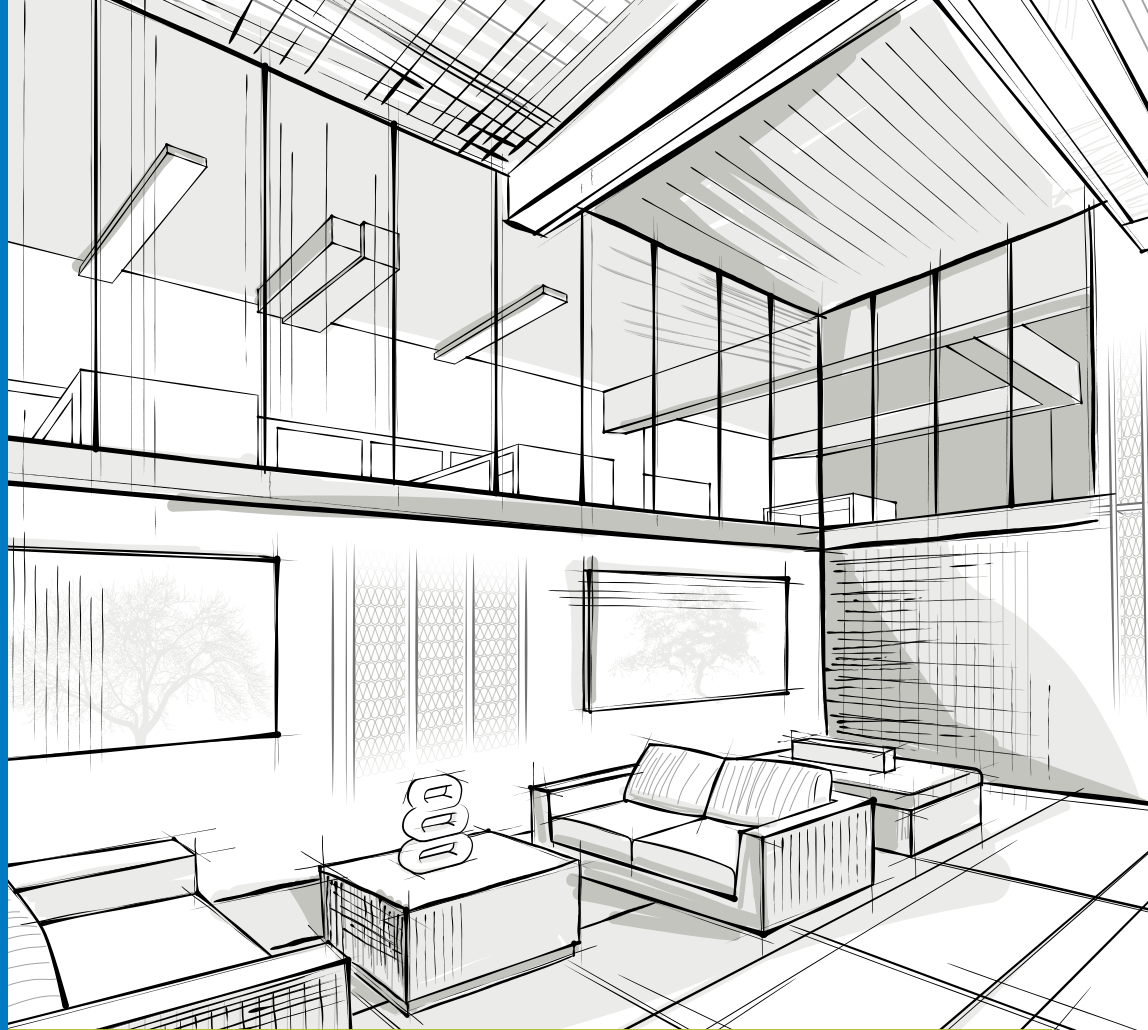
We are committed to providing products that are sustainable at every step and helping you create healthier, efficient and comfortable buildings that your customers want.

Providing Comfort

Our truly comprehensive insulation offering enables you to provide maximum comfort and efficiency on every project no matter how complex or unique.

Supporting Results

Our Service Advantage and extensive technical and business support tools help give you an unmatched competitive edge in the marketplace.



Empowering You by Installing Confidence

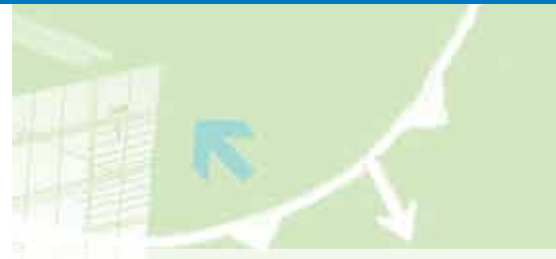
CertainTeed has helped shape the building materials industry for more than 100 years with the most forward-looking insulation solutions. And from the beginning, our mission has been the same — to continually strengthen your building success.

When you partner with us, the world's largest insulation manufacturer, you're installing much more than trusted high-performance insulation products. You're installing confidence into every build. Confidence you can only get from the proven leader in the building materials industry, one that has a strong heritage of backing customers with industry-leading support and a commitment to product innovation at all levels. That's why you can Be Certain™ we're the trusted choice for sustainable solutions that meet all kinds of insulation and business challenges.



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Products to Meet Your Needs

CertainTeed mechanical and industrial fiber glass insulation products deliver exceptional energy resistance and thermal performance that results in greater comfort for building occupants, along with better acoustics and lower energy bills for building owners. Products are available in a wide range of thicknesses, with different facings to meet specific code requirements. They are designed, packaged and delivered with the needs of today's mechanical contractor in mind.

Thermal Performance

Heat flow is defined as the transfer of energy from one area to another due to a temperature difference between the two areas. Heat always flows from the area with the higher temperature to the area with the lower temperature, unless the transfer of heat is reduced by an effective insulation system.

Delivering Air to Occupied Spaces

For most HVAC applications, sheet metal ducts are used to deliver conditioned air to occupied spaces. Conditioned air is simply air that is filtered, warmed, cooled or dehumidified to maintain comfort and good air quality in buildings.

In order to add or remove heat from occupied spaces, the conditioned air must be delivered either much warmer or colder than the air in the room. It's important to avoid a gain or loss of thermal energy through the ductwork in order for the system to work effectively and efficiently.



Supporting Results

You need what you ordered, on the date you expect it. You need products with a high quality standard, so that you can count on them every time. And finally, you need the business support and tools that put you ahead of the competition. Through our Service Advantage and Customer Bill of Rights, we promise to deliver just that. And we pledge open and honest communications with our customers at every step, from corporate direction to every support call.



Most ductwork is made of galvanized sheet metal and can be insulated either on the inside or the outside.

- Duct wrap is an *externally* installed blanket with an external vapor retarder facing to prevent condensation on the sheet metal surface.
- Duct liner is an *internally* installed blanket with CertainTeed's ToughGard® NSFA facing that provides a barrier to moisture, bacteria and air erosion.

Another method for delivering air involves making a duct from fiberglass duct board, which is an accepted method for fabricating a duct system. This system provides the facing, insulation and vapor retarder all in a finished board that can be made into any shape, size or configuration desired.

Acoustic Performance

Sheet metal ductwork can act as a conduit for noise generated by fans as well as crosstalk from adjacent spaces. Duct liners are particularly effective in attenuating duct-borne sound while also providing thermal performance. Duct board systems are another good option for sound attenuation and thermal performance.

Fire Safety

Complies with ICC model building codes.

Insulation Benefits



Thermal Performance

High efficiency fiber glass and spray foam insulation enable you to significantly improve the thermal performance of your buildings.



Acoustic Performance

Adding insulation helps prevent unwanted outside noise from penetrating interior spaces, and — when added to interior walls — limits transmission of noise from room to room.



Superior Moisture Protection

Beyond traditional facings, vapor retarders can help reduce the risk of mold and mildew, improving indoor air quality and providing a healthier environment for occupants. There's also less chance you'll be called back to deal with moisture problems.



Solutions for Your Every Challenge

Inside this catalog you'll discover how CertainTeed's comprehensive line of mechanical and industrial insulation products can help you to meet the challenges of today's market.

With customer service that's second to none, we're focused on building your business success by delivering the right products on time, every time. Through our global team of researchers and building scientists, we offer the technical support and one-on-one assistance that enables you to find the right insulation solution for every project.

To learn more about the many services we provide to our partners, talk to your CertainTeed representative or give us a call. We're always happy to hear from you.

Condensation Control

Duct systems that are run through ceilings or walls typically carry air that is much colder than the surrounding air; if the space humidity is high enough, the duct surface may reach dewpoint and "sweat." If the ducts sweat enough the result can be corrosion, damaged ceilings and potential for microbial growth on the wet surfaces. In the case of duct wrap, proper sealing of the exterior vapor retarder jacket with tapes or sealant systems is essential.

Sustainability

CertainTeed SI (Sustainable Insulation) products bind fibers together using organic, plant-based binder systems. These binders are designed to be a more environmentally friendly alternative to some phenolic-type binders still in use. Both sustainable and standard binders are low emitting and provide very low formaldehydes, which is a key VOC as certified under the GREENGUARD® certification. The GREENGUARD Gold standard (formerly Children & Schools Certification) provides the end-user with the assurance of lower VOCs.



Duct Wrap

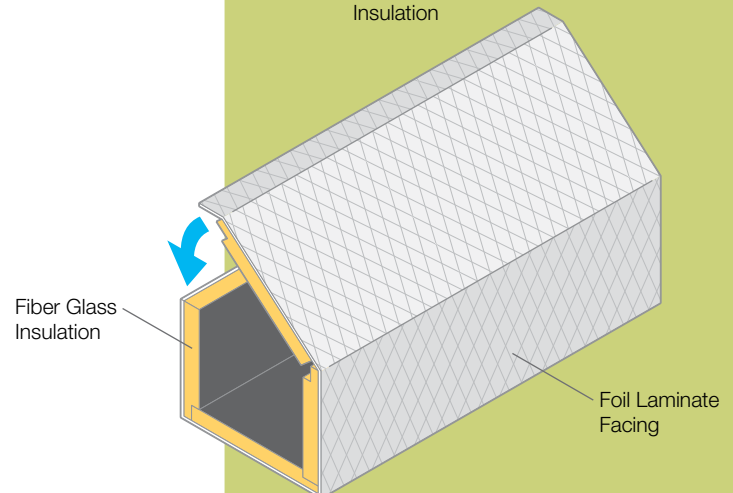
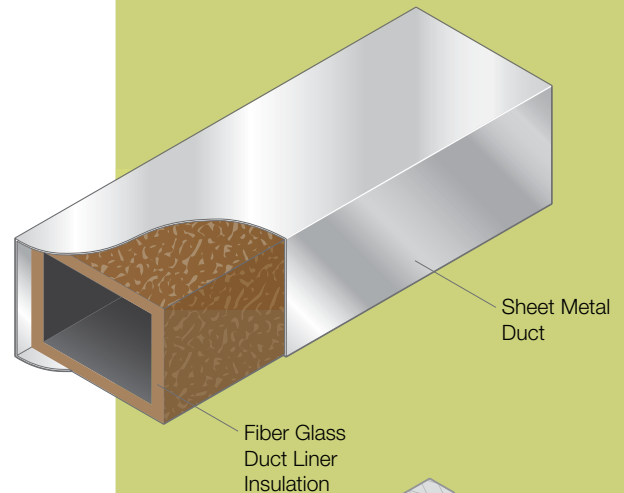
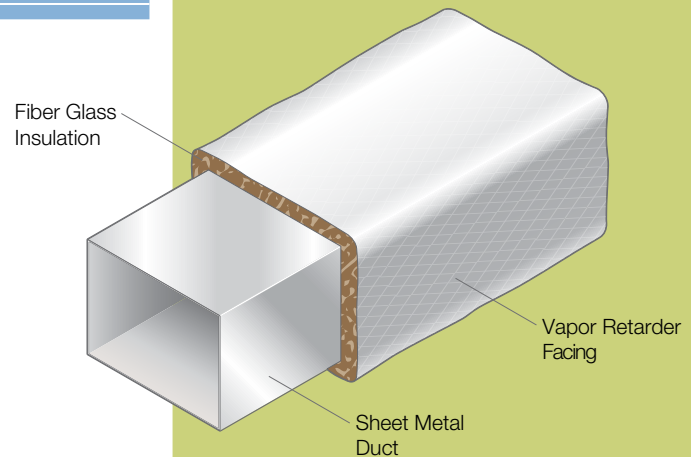
Sheet metal ductwork can be insulated by providing an insulating blanket on the exterior of the duct. An insulating blanket provides resistance to heat loss or gain from the air moving through the ductwork. Duct wrap also provide a vapor retarder outer jacket, which prevents condensation inside the insulating blanket or on the duct metal surface itself. They are available in 48" or 60" widths to reduce installation costs and are available in standard or sustainable fiber glass blankets.

Duct Liner

Ductwork can also be insulated on the inside surface by using a duct liner system. The insulating blanket provides thermal resistance to temperature loss or gain from the air moving through the ductwork. One additional benefit of duct liners is the ability to provide acoustic dampening. A liner reduces noise transmitted through the ductwork from equipment, air rush or cross talk from other spaces. To protect the liner from air erosion, moisture and microbial growth, a tough flexible liner is permanently adhered to the blanket.

Duct Board

By combining the thermal insulating qualities of fiber glass blanket, an airside liner surface and an exterior vapor barrier into a single system, duct board can provide an alternative to wrapped or liner insulation. Duct board is more rigid than duct liner or duct wrap and can be easily cut, taped together and made into a rectangular duct section. When properly assembled into a system, duct board offers low leakage and can be a cost effective option to duct wrap and duct liner systems.



SoftTouch™ Duct Wrap

Blanket-type insulation composed of glass fibers bonded together with a plant-based binder system. Unfaced or faced with a foil scrim kraft (FSK) vapor retarder facing. Used to insulate rectangular and round heating, ventilating and air conditioning ductwork.



CertainTeed SI SoftTouch™ Duct Wrap

sustainable insulation.

Duct Wrap

Duct wrap products provide increased thermal efficiency that reduces unwanted heat loss or gain from equipment and ductwork. This means a likely savings of energy and improved system performance. When properly installed in the correct thickness, duct wrap virtually eliminates condensation problems on cold duct surfaces.

SoftTouch™ Duct Wrap

CertainTeed offers a softer, less itchy product, SoftTouch™ Duct Wrap, in both standard and wide widths. We deliver on our commitment to improve installation performance by offering options such as unfaced wrap, an FSK and/or PSK vapor retarder facing and an integrated taping tab on one edge of faced products.

This blanket-type insulation is composed of glass fibers bonded together with a plant-based binder system.

WideWrap® Duct Wrap

All WideWrap® Duct Wrap products are engineered to insulate rectangular and round heating, ventilating and air conditioning ductwork. Constructed specifically to accommodate longer duct lengths, the 5' widths allow for less labor, less waste and a cleaner installed appearance.

This blanket-type insulation is composed of glass fibers bonded together with a plant-based binder system.

Check with your local distributor for WideWrap availability.

SoftTouch™ Duct Wrap Thermal Performance

PRODUCT	NOMINAL THICKNESS		R-VALUE		INSTALLED R-VALUE		K-VALUE		INSTALLED K-VALUE		
	TYPE	in.	mm	h•ft ² •°F/Btu	m ² •°C/W	h•ft ² •°F/Btu	m ² •°C/W	Btu•in/h•ft ² •°F	W/m ² •°C	Btu•in/h•ft ² •°F	W/m ² •°C
75	1	25		3.8	0.67	3.0	0.53	0.26	0.038	0.25	0.036
	1½	38		5.2	0.92	4.2	0.74	0.29	0.042	0.27	0.039
	2	51		6.9	1.22	5.7	1.00	0.29	0.042	0.26	0.038
	2½	54		7.3	1.29	6.0	1.06	0.29	0.042	0.27	0.038
	2½	64		8.6	1.51	7.1	1.25	0.29	0.042	0.26	0.037
	3	76		10.2	1.80	8.3	1.46	0.29	0.042	0.27	0.039
100	4	102		13.5	2.38	11.0	1.94	0.30	0.043	0.27	0.039
	1	25		3.8	0.67	3.0	0.53	0.26	0.038	0.25	0.036
	1½	38		5.7	1.00	4.5	0.79	0.26	0.038	0.25	0.036
150	2	51		7.6	1.34	6.1	1.07	0.26	0.038	0.25	0.035
	1	25		4.1	0.72	3.2	0.56	0.24	0.035	0.23	0.034
	1½	38		6.2	1.09	4.8	0.85	0.24	0.035	0.23	0.034
	2	51		8.3	1.46	6.4	1.13	0.24	0.035	0.23	0.034

Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature. R means resistance to heat flow. The higher the R-value, the greater the insulating power. The installed R-value is based upon 25% compression of the product thickness during installation. To get the installed R-value, it is essential that this insulation be installed properly. If you do it yourself, follow the installation instructions carefully.

SoftTouch™ Duct Wrap Acoustical Performance

PRODUCT		NOMINAL THICKNESS		TRANSMISSION LOSS (dB) AT OCTAVE BAND CENTER FREQUENCIES (Hz)					
TYPE	FACING	in.	mm	125	250	500	1000	2000	4000
75	FSK	1½	38	13	17	26	34	45	55
	FSK	2	51	13	17	26	36	47	58
	FSK	2½	64	14	18	28	38	49	62
	FSK	3	76	14	18	29	40	51	64
100	FSK	1½	38	14	18	27	37	47	57
	FSK	2	51	14	18	28	39	49	61

Typical sound transmission loss values for SoftTouch™ Duct Wrap on 20-gauge sheet metal when tested according to ASTM E90.



CertainTeed SoftTouch™ Duct Wrap – standard and wide wrap widths

SoftTouch™ Duct Wrap Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits: Temperature	Unfaced: 35–450°F (1.7–232°C) Faced: 35–250°F (1.7–121°C)	ASTM C411
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84, UL 723, CAN/ULC-S102
Water Vapor Sorption	< 5% by Weight	ASTM C1104
Water Vapor Transmission (Facing Only)	FSK and white FSK: 0.02 perms Gray PSK: 0.09 perms	ASTM E96, Dessicant Method
Corrosiveness	Pass	ASTM C665
Fungi Resistance	Pass	ASTM C1338
Odor Emissions	Pass	ASTM C1304
Noncombustible	Pass	ASTM E136

SoftTouch™ Duct Wrap Typical Sizes

PRODUCT		THICKNESS		LENGTH		WIDTH	
TYPE		in.	mm	ft.	m	in.	mm
75	unfaced	1	25	150	45.7	9–72	229–1829
	unfaced	1½	38	100	45.7	9–72	229–1829
	unfaced	2	51	75	22.9	9–72	229–1829
	unfaced	2½	64	75	22.9	9–72	229–1829
	unfaced	3	76	50	15.2	9–72	229–1829
	FSK/PSK	1½	38	100	30.5	48	1219
	FSK/PSK	2	51	75	22.9	48	1219
	FSK/PSK	2½	54	75	22.9	48	1219
	FSK/PSK	2½	64	75	22.9	60	1524
	FSK/PSK	3	76	50	15.2	48	1219
100	unfaced	1	25	150	45.7	9–72	229–1829
	FSK/PSK	1	25	100	30.5	48	1219
	FSK/PSK	1½	38	100	30.5	48	1219
	FSK/PSK	2	51	75	22.9	48	1219
150	FSK/PSK	1½	38	75	22.9	48	1219
	FSK/PSK	2	51	50	15.2	48	1219

Superior Handling Performance

Low Fiber and Dust Generation

Fiber glass boards, wraps and liners are safe to handle and install using standard respirators and recommended safety precautions. By reducing the generation of loose fiber and dust during normal handling, our CertainTeed product strives to improve the quality of the work environment for the installers, as well as the end-users of our products.

ToughGard® Duct Liner and Board

The ToughGard® family of duct liner and board products features CertainTeed's exclusive ToughGard facing. Designed for exceptional thermal and acoustical performance, ToughGard is a tough, durable airstream surface containing an EPA-registered antimicrobial agent to help reduce the potential of microbial growth. ToughGard's low air-friction loss and excellent thermal and acoustical insulating properties provide quiet and efficient HVAC system operation.

sustainable insulation.

ToughGard® R Duct Liner

ToughGard® R rotary duct liner offers outstanding thermal and acoustical performance in duct liner applications. Composed of rotary-type glass fibers, it features a durable, moisture-resistant air stream surface with an antimicrobial agent and a sustainable base mat. Note: The antimicrobial properties are intended to only protect this product. ToughGard R absorbs unwanted crosstalk and equipment noises while helping to lower HVAC operating costs by reducing heat gain and heat loss in duct systems.

ToughGard® R Duct Liner Thermal Performance

PRODUCT TYPE	THICKNESS		K-VALUE		C-VALUE		R-VALUE	
	in.	mm	Btu•in/h•ft²•°F	W/m²•°C	Btu/h•ft²•°F	W/m²•°C	h•ft²•°F/Btu	m²•°C/W
● 150	1	25	0.24	0.035	0.24	1.36	4.2	0.73
	1½	38	0.24	0.035	0.16	0.91	6.3	1.10
	2	51	0.24	0.035	0.12	0.68	8.3	1.47
▲ 200	½	13	0.24	0.035	0.48	2.73	2.1	0.37

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75° F (24° C) mean temperature.

ToughGard® R Duct Liner Acoustical Performance

PRODUCT TYPE	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
	in.	mm	125	250	500	1000	2000	4000	NRC
● 150	1	25	0.18	0.36	0.59	0.86	0.95	0.90	0.70
	1½	38	0.35	0.51	0.83	0.93	0.97	0.96	0.80
	2	51	0.34	0.64	0.96	1.03	1.00	1.03	0.90
▲ 200	½	13	0.09	0.14	0.40	0.60	0.73	0.84	0.45

● Sustainable Insulation® (SI)

▲ Not available in Sustainable Insulation® (SI)

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.



ToughGard® T and ToughGard® R Duct Liners



ToughGard® R Duct Liner Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits: Temperature Air Velocity	Maximum: 250°F (121°C) 6000 fpm (30.5 m/s)	ASTM C411, ASTM C1071, UL 181
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84, UL 723, CAN/ULC-S102
Water Vapor Sorption	≤ 3% by Weight	ASTM C1104
Corrosion Resistance	Pass	ASTM C665
Fungi Resistance	Pass; No growth	ASTM C1338, ASTM G21
Bacteria Resistance	No growth	ASTM G22
Limited Combustible	< 3500 Btu/lb)	NFPA 259
Water Repellency Rating	≥ 4	INDA IST 80.6 – 92

ToughGard® R Duct Liner Typical Sizes

PRODUCT	DENSITY	NOMINAL THICKNESS		LENGTH		WIDTH*	
		in.	mm	ft.	m	in.	mm
● 150	1.5 (24 kg/m ³)	1	25	50–100	15.2–30.5	34–72	864–1829
		1½	38	50–100	15.2–30.5	34–72	864–1829
		2	51	50–75	15.2–22.9	34–72	864–1829
▲ 200	2.0 (32 kg/m ³)	½	13	50–100	15.2–30.5	34–72	864–1829

*In 1/4" (6mm) increments. Not all widths between 34" (864 mm) and 72" (1829 mm) are standard; please contact CertainTeed for standard sizes.

- Sustainable Insulation® (SI)
- ▲ Not available in Sustainable Insulation® (SI)

Indoor Air Quality (IAQ) and Duct Liners

Duct liners provide the dual benefit of thermal as well as acoustic performance in a single cost-effective product. Liners have become more common over the years as automated coil lines install liners in a more cost-effective manner.

Liners have evolved over the years as well, reducing the potential for erosion of the fiber glass liner at the surface from the air velocity and turbulence present inside a duct system. To virtually eliminate this problem, CertainTeed developed the ToughGard® liner facing. The glass tissue facing provides a reinforced liner shield that is permanently bonded into the fiber mat. Air erosion and liner deterioration is a thing of the past.

Another problem can present itself in duct systems that are made wet from poorly designed or maintained HVAC air handling equipment. Commonly known as moisture carryover, the liners can get wet and provide a surface for microbial growth, molds, etc. The ToughGard coating system not only repels moisture but is made with an EPA registered anti-microbial agent that will not support growth should the liner surface become wet.

Providing high quality liners is only part of good system design. Proper air apparatus design is essential in any duct system. Improper filtration and condensation control can create IAQ problems even with unlined ductwork.



ToughGard® T Textile Duct Liner



With its superior thermal-insulating properties, this duct liner features an extremely tough and durable fire-resistant black composite air stream surface that repels water and prevents it from seeping into the fiber glass. Engineered to enhance thermal performance, ToughGard® T's long, textile-type glass fibers are firmly bonded together with a thermosetting resin so efficient that noise is trapped and dissipated within the glass fiber matrix.

ToughGard® T Duct Liner Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits: Temperature Air Velocity	Maximum: 250°F (121°C) 6000 fpm (30.5 m/s)	ASTM C411, ASTM C1071
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	NFPA 255, ASTM E84, UL 723, CAN/ULC-S102-M88
Water Vapor Sorption	≤ 3% by Weight	ASTM C1104
Corrosiveness	Pass	ASTM C665
Fungi Resistance	Pass; No growth	ASTM C1338, ASTM G21
Bacteria Resistance	No growth	ASTM G22
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259
Water Repellency	≥ 4	INDA IST 80.6-92

NOTE: Not available in Sustainable Insulation® (SI)

ToughGard® T Duct Liner Thermal Performance

PRODUCT TYPE	NOMINAL THICKNESS*		K-VALUE		C-VALUE		R-VALUE	
	in.	mm	Btu•in/h•ft ² •°F	W/m ² •°C	Btu/h•ft ² •°F	W/m ² •°C	h•ft ² •°F/Btu	m ² •°C/W
150	1	25	0.26	0.038	0.25	1.42	4.0	0.70
	1½	38	0.27	0.039	0.17	0.95	6.0	1.06
	2	51	0.26	0.038	0.13	0.71	8.0	1.41
200	½	13	0.25	0.036	0.5	2.84	2.0	0.35
	1	25	0.25	0.036	0.24	1.35	4.2	0.74
	1½	38	0.25	0.036	0.17	0.95	6.0	1.06
	2	51	0.25	0.036	0.13	0.71	8.0	1.41
300	½	13	0.24	0.035	0.48	2.73	2.1	0.37
	1	25	0.24	0.035	0.23	1.30	4.4	0.77
	1½	38	0.24	0.035	0.16	0.91	6.3	1.10
	2	51	0.24	0.035	0.12	0.68	8.3	1.47

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 at 75° F (24° C) mean temperature.

*Actual finished thicknesses are 1.05" thick (nominal 1.0"), actual 1.6" (nominal 1.5", Type 150), actual 2.1" (nominal 2", Type 150).

ToughGard® T Duct Liner Acoustical Performance

PRODUCT TYPE	NOMINAL THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
	in.	mm	125	250	500	1000	2000	4000	NRC
150	1	25	0.14	0.29	0.55	0.77	0.94	0.94	0.65
	1½	38	0.16	0.47	0.77	0.96	1.04	1.00	0.80
	2	51	0.23	0.62	1.01	1.04	1.00	1.01	0.90
200	½	13	0.06	0.15	0.33	0.56	0.76	0.91	0.45
	1	25	0.10	0.33	0.65	0.86	0.94	0.96	0.70
	1½	38	0.16	0.47	0.77	0.96	1.04	1.00	0.80
	2	51	0.24	0.57	0.90	0.95	0.95	0.96	0.85
300	½	13	0.06	0.15	0.33	0.56	0.76	0.91	0.45
	1	25	0.10	0.33	0.65	0.86	0.94	0.96	0.70
	1½	38	0.20	0.46	0.82	0.94	0.95	0.91	0.80
	2	51	.027	0.72	1.04	1.02	0.96	0.96	0.95

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® T Duct Liner Typical Sizes

PRODUCT TYPE	DENSITY pcf	NOMINAL THICKNESS		LENGTH		WIDTH*	
		in.	mm	ft.	m	in.	mm
150	1.6 (24 kg/m ³)	1	25	50–100	15.2–30.5	24–72	610–1829
		1½	38	100	30.5	24–72	610–1829
		2	51	50	15.2	24–72	610–1829
200	2.0 (32 kg/m ³)	½	13	100	30.5	24–72	610–1829
		1	25	50–100	15.2–30.5	24–72	610–1829
		1½	38	100	15.2	24–72	610–1829
		2	51	50	3.05	24–72	610–1829
300	3.0 (48 kg/m ³)	½	13	100	30.5	24–72	610–1829
		1	25	50–100	15.2–30.5	24–72	610–1829
		1½	38	100	3.05	24–72	610–1829
		2	51	50	3.05	24–72	610–1829

*In 1/4" (6mm) increments. Not all widths between 24" (610 mm) and 72" (1829 mm) are standard; please contact CertainTeed for standard sizes.



ToughGard® Ultra*Round™ Spiral Duct Liner



For increased performance, ToughGard® Ultra*Round™ reduces heat gain or loss while absorbing unwanted crosstalk, equipment and air rush noise. This acoustical and thermal insulation is designed specifically to line the interior of spiral and round sheet metal ducts and plenums in HVAC systems. Fabrication and installation is simplified in the shop or on the job and may eliminate the need for pins and adhesives in most straight duct sections. Compared to double wall systems, ToughGard Ultra*Round installation costs are lower, weight is reduced and acoustical performance is improved.

ToughGard® Ultra*Round™ Spiral Duct Liner Thermal Performance

THICKNESS		K-VALUE		C-VALUE		R-VALUE	
in.	mm	Btu•in/h•ft²•°F	W/m•°C	Btu/h•ft²•°F	W/m•°C	h•ft²•°F/Btu	m²•°C/W
1	25	0.23	0.033	0.23	1.31	4.3	0.76
1½	38	0.23	0.033	0.15	0.87	6.5	1.15
2	50	0.23	0.033	0.12	0.65	8.7	1.53

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75° F (24° C) mean temperature.

ToughGard® Ultra*Round™ Spiral Duct Liner Acoustical Performance

THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
in.	mm	125	250	500	1000	2000	4000	NRC
1	25	0.07	0.21	0.74	0.98	1.05	1.04	0.75
1½	38	0.12	0.49	1.02	1.10	1.06	1.07	0.90
2	51	0.17	0.76	1.05	1.02	0.95	0.96	0.95

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® Ultra*Round™ Spiral Duct Liner Available Sizes

PRODUCT TYPE	THICKNESS		DIMENSIONS		INTERIOR DIMENSIONS		R-VALUES	
	in.	mm	in.	mm	in.	mm	Pieces	Area
SD	1	25	48 X 120	1219 X 3048	12 to 26	305 to 660	45	1800 ft²
LD	1	25	48 X 120	1219 X 3048	28 and larger	711 and larger	45	167.2 m²
SD	1½	38	48 X 120	1219 X 3048	20 to 38	508 to 965	30	1200 ft²
LD	1½	38	48 X 120	1219 X 3048	40 and larger	1016 and larger	30	111.5 m²
SD	2	50	48 X 120	1219 X 3048	28 and larger	711	22	880 ft²



ToughGard® Ultra*Round™ Spiral Duct Liner



ToughGard® Rigid Liner Board



ToughGard® Rigid Liner Board

Developed to line large sheet metal ducts and plenums, this rigid, board-type insulation consists of black resin-bonded glass fibers with a smooth, durable black mat facing applied to the air stream surface. Perfect for applications where the ToughGard® surface is desired on a black fiber glass base mat.

ToughGard® Rigid Liner Board Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits: Temperature Air Velocity	Maximum: 250°F (121°C) 6000 fpm (30.5 m/s)	ASTM C411, ASTM C1071, UL 181
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84, UL 723
Water Vapor Sorption	< 3% by Weight	ASTM C1104
Corrosion Resistance	Pass	ASTM C665
Fungi Resistance	Pass; No growth	ASTM C1138, ASTM G21
Bacteria Resistance	No growth	ASTM G22
Limited Combustible	< 3500 Btu/lb	NFPA 259
Water Repellency Rating	≥ 4	INDA IST 80.6 – 92

ToughGard® Rigid Liner Board Thermal Performance

THICKNESS		K-VALUE		C-VALUE		R-VALUE	
in.	mm	Btu•in/h•ft²•°F	W/m•°C	Btu/h•ft²•°F	W/m•°C	h•ft²•°F/Btu	m²•°C/W
1	25	0.23	0.033	0.23	1.31	4.3	0.77
1½	38	0.23	0.033	0.15	0.87	6.5	1.15
2	51	0.23	0.033	0.12	0.65	8.7	1.53

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75° F (24° C) mean temperature.

ToughGard® Rigid Liner Board Acoustical Performance

THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
in.	mm	125	250	500	1000	2000	4000	NRC
1	25	0.07	0.28	0.71	0.90	0.93	0.93	0.70
1½	38	0.10	0.51	0.89	0.95	0.92	0.93	0.80
2	51	0.17	0.76	1.05	1.02	0.95	0.96	0.95

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® Rigid Liner Board Typical Sizes

WIDTH		LENGTH		NOMINAL THICKNESS		DENSITY	
in.	mm	in.	mm	in.	mm	lb/ft³	kg/m³
24–48	610–1219	48–120	1219–3048	1	25	3.00	48
24–48	610–1219	48–120	1219–3048	1½	38	3.00	48
24–48	610–1219	48–120	1219–3048	2	51	3.00	48

NOTE: Contact CertainTeed for minimum order quantities and availability.



ToughGard® BMC Liner Board

Also suitable for acoustical and thermal lining of large sheet metal ducts and plenums, this rigid board-type insulation consists of yellow resin-bonded glass fibers with a smooth, durable black mat facing applied to the air stream surface. Perfect for applications where the ToughGard® surface is desired on a yellow fiber glass base mat.

ToughGard® Duct Board

Designed for fabrication into supply and return air ductwork, this lightweight duct board is easy to install. Tough, durable and easy to clean, the fire-resistant black composite air stream surface and built-in vapor retarder resists microbial growth, thereby reducing the chance of condensation damage. ToughGard® Duct Board is made of resin-bonded glass fibers with a reinforced foil laminate air barrier/vapor retarder facing applied to the outside surface. The low leakage rate and increased thermal and acoustical properties improve the overall quality of the indoor environment while delivering increased energy savings.



ToughGard® BMC Liner Board

ToughGard® Duct Board

ToughGard® Duct Board Thermal Performance

PRODUCT	THICKNESS		K-VALUE		C-VALUE		R-VALUE	
	in.	mm	Btu•in/h•ft²•°F	W/m²•°C	Btu/h•ft²•°F	W/m²•°C	h•ft²•°F/Btu	m²•°C/W
475	1	25	0.23	0.033	0.23	1.31	4.3	0.76
	1½	38	0.23	0.033	0.15	0.87	6.5	1.15
800	2	51	0.23	0.033	0.12	0.65	8.7	1.15

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature.

ToughGard® Duct Board Acoustical Performance

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
	in.	mm	125	250	500	1000	2000	4000	NRC
475	1	25	0.07	0.21	0.74	0.98	1.05	1.04	0.75
	1½	38	0.12	0.49	1.02	1.10	1.06	1.07	0.90
800	2	51	0.17	0.76	1.05	1.02	0.95	0.95	0.95

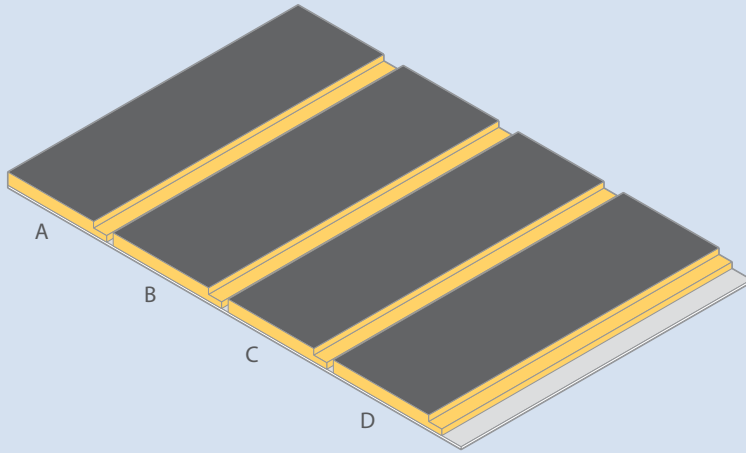
Sound Absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® Duct Board Physical Properties

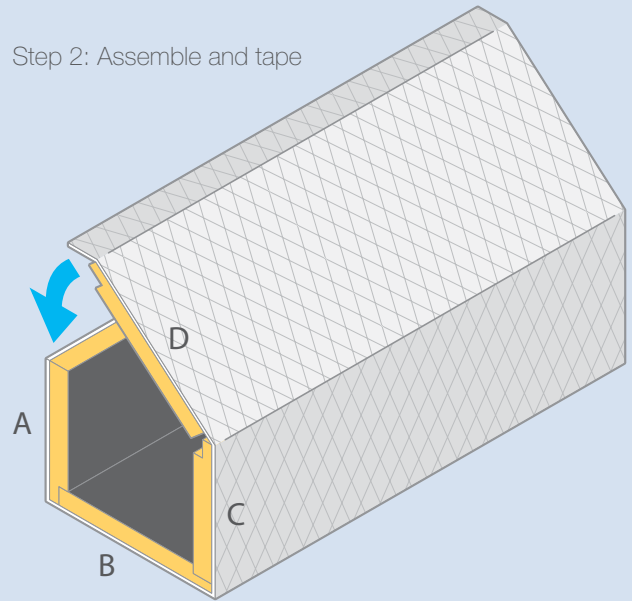
PROPERTIES	PERFORMANCE	TEST METHOD
Air Leakage Class	SMACNA Class 6	SMACNA HVAC Air Duct Leakage Test Manual
Operating Limits: Temperature Pressure Air Velocity	Maximum: 250°F (121°C) ±2" w.g. (51m) 5000 fpm (25.4m/s)	ASTM C411, UL 181, UL 181
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84, UL 723
Water Vapor Sorption	≤ 2% by Weight	ASTM C1104
Water Vapor Transmission (Facing only)	0.02 perms	ASTM E96, Dessicant Method
Corrosiveness	Pass	UL 181, ASTM C665
Fungi Resistance	Pass; No growth	ASTM G21, UL 181, ASTM C1338
Bacteria Resistance	No growth	ASTM G22
Limited Combustible	< 3500 Btu/lb)	NFPA 259
Water Repellency Rating	≥ 4	INDA IST 80.6-92

NOTE: Refer to the next section for Typical Sizes.

Step 1: Cut the board with grooving tools



Step 2: Assemble and tape



Ultra*Duct™ Black Duct Board



Easy to fabricate and install, this durable, lightweight duct board is made from resin-bonded glass fibers. Decreases the chance of condensation damage with an exterior reinforced foil laminate air barrier/vapor retarder facing and a textile fiber glass non-woven mat bonding to the air stream surface. Exceptional thermal efficiency and low leakage rate improve the overall quality of the indoor environment while lowering operating costs. High-performance properties make this ductwork perfect for both residential and commercial heating, ventilating and air-conditioning systems.

Ultra*Duct™ Black Duct Board Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Air Leakage Class	SMACNA Class 6	SMACNA HVAC Air Duct Leakage Test Manual
Operating Limits: Temperature Pressure Air Velocity	Maximum: 250°F (121°C) ±2" w.g. (51mm) 5000 fpm (25.4 m/s)	ASTM C411 UL 181, UL 181
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84, UL 723
Water Vapor Sorption	≤ 2% by Weight	ASTM C1104
Water Vapor Transmission (Facing only)	0.02 perms	ASTM E96, Dessicant Method
Corrosion Resistance	Pass	UL 181, ASTM C665
Fungi Resistance	Pass; No growth	ASTM G21, UL 181, ASTM C1338
Bacteria Resistance	No growth	ASTM G22
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259



Ultra* Duct™ Black Duct Board



Ultra* Duct™ Black Duct Board Thermal Performance

PRODUCT	THICKNESS		K-VALUE		C-VALUE		R-VALUE	
	in.	mm	Btu•in/h•ft ² •°F	W/m•°C	Btu/h•ft ² •°F	W/m ² •°C	h•ft ² •°F/Btu	m ² •°C/W
475	1	25	0.23	0.033	0.23	1.31	4.3	0.76
	1½	38	0.23	0.033	0.15	0.87	6.5	1.15
800	2	51	0.23	0.033	0.12	0.65	8.7	1.53

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C518 and/or ASTM C177 at 75°F (24°C) mean temperature.

Ultra* Duct™ Black Duct Board Acoustical Performance

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
	in.	mm	125	250	500	1000	2000	4000	NRC
475	1	25	0.04	0.20	0.70	0.98	1.05	1.01	0.75
	1½	38	0.07	0.22	0.77	1.00	1.03	1.05	0.75
800	1	25	0.14	0.46	1.02	1.10	1.07	1.05	0.90
	2	51	0.17	0.76	1.05	1.02	0.95	0.96	0.95

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

ToughGard® and Ultra* Duct™ Black Duct Board Typical Sizes

PRODUCT TYPES		THICKNESS		WIDTH		LENGTH		NO. BOARDS	
El	Edge	in.	mm	in.	mm	in.	mm	Carton	Pallet
475	Shiplap or Butt Edge	1	25	48	1219	120	3048	6	44
	Shiplap or Butt Edge	1	25	48	1219	96	2438	8	44
800	Shiplap or Butt Edge	1	25	48	1219	120	3048	6	44
	Shiplap or Butt Edge	1½	38	48	1219	120	3048	4	30
	Shiplap or Butt Edge	1½	38	48	1219	96	2438	6	30
	Butt Edge	2	51	48	1219	120	3048	3	22

NOTE: Contact CertainTeed for minimum order quantities and availability.

CertaPro® Acoustic Products

CertaPro® fiber glass acoustic insulation is specifically designed for theaters, sound studios and other interior spaces where sound quality is of paramount importance.



CertaPro® AcoustaBlanket™ Black

This fiber glass blanket has an abuse-resistant surface and is used for applications requiring black sound-absorbing insulation. AcoustaBlanket™ Black is flexible for easy fabrication and installation on irregular surfaces. It improves acoustics in theaters, sound studios and entertainment facilities — and is ideal for interiors that are meant to be dark. AcoustaBlanket Black carries a Class A/Class I fire hazard classification of 25/50 for exposed applications.

CertaPro® AcoustaBlanket™ Black Typical Sizes

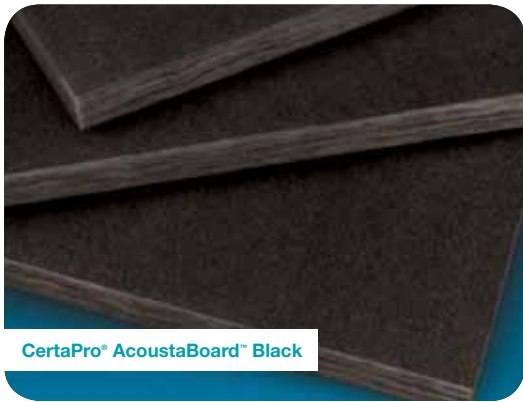
PRODUCT		THICKNESS		WIDTH		LENGTH		R-VALUES	
TYPE	DENSITY	in.	mm	in.	mm	ft.	m	R	RSI
150	1.5 pcf (24 kg/m ³)	1	25	48	1219	100	30.5	4.2	0.74
	1.5 pcf (24 kg/m ³)	1½	38	48	1219	50	15.2	6.3	1.11
	1.5 pcf (24 kg/m ³)	2	51	48	1219	50	15.2	8.3	1.46
200	2.0 pcf (32 kg/m ³)	½	13	48	1219	100	30.5	2.1	0.37

Acoustic Applications

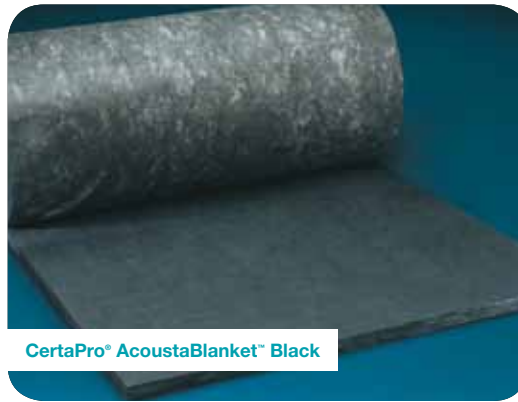
Sound quality is as important as thermal comfort in occupied spaces. It's a prime concern for both designers and end-users of buildings. Theaters and libraries would be great examples of acoustically sensitive buildings, but schools, offices and retail spaces increasingly demand a higher standard of sound quality.

Fiber glass blankets and boards provide superior sound-absorbing benefits without special treatment for fire or smoke considerations. Installation of acoustic fiber glass mat can be behind a porous surface or directly applied to walls or ceilings. Available with a black mat and surface, these products are unobtrusive treatments for controlling and attenuating sound.

Duct liners are excellent products for both thermal and acoustic treatment of air systems, since the liner absorbs sound that would transmit through the ductwork.



CertaPro® AcoustaBoard™ Black



CertaPro® AcoustaBlanket™ Black



CertaPro® AcoustaBoard™ Black

This rigid fiber glass board is used for applications requiring an exposed black faced sound-absorbing insulation. AcoustaBoard™ Black has an abuse-resistant nonwoven facing that is fully bonded to the insulation; delamination is not an issue. It is widely used to improve acoustics in theaters, sound studios and entertainment facilities — controlling reverberation time, reducing noise levels and eliminating echoes — and is ideal for interiors that are meant to be dark. It is lightweight, easy to fabricate and install, and carries a Class A/Class I fire hazard classification of 25/50 for exposed applications.

CertaPro® AcoustaBoard™ Black Acoustical Performance

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
	in.	mm	125	250	500	1000	2000	4000	NRC
225	1	25	0.06	0.30	0.58	0.85	0.91	0.94	0.65
	1½	38	0.12	0.48	0.83	0.90	0.90	0.89	0.80
	2	51	0.20	0.72	1.08	1.04	1.01	0.98	0.95
300	1	25	0.05	0.26	0.69	0.89	0.92	0.96	0.70
	1½	38	0.10	0.51	0.89	0.95	0.92	0.93	0.80
	2	51	0.17	0.76	1.05	1.02	0.95	0.96	0.95

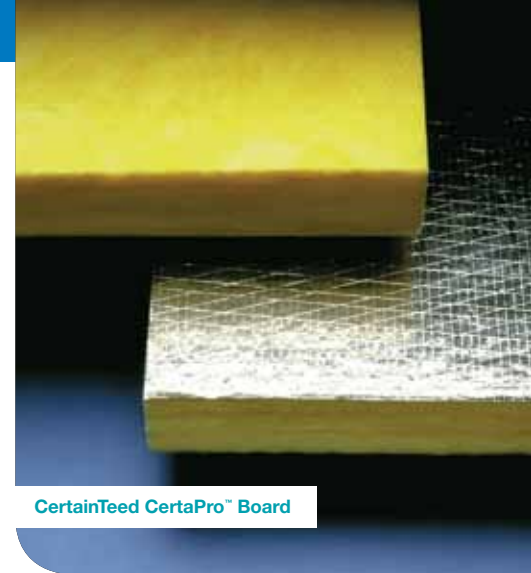
Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

CertaPro® AcoustaBoard™ Black Typical Sizes

PRODUCT	THICKNESS		DIMENSIONS		DENSITIES		R-VALUES	
	in.	mm	in.	mm	lb/ft ³	kg/m ³	R	RSI
225	1	25	24 X 48	610 X 1219	2.25	36	4.3	0.76
	1½	38	24 X 48	610 X 1219	2.25	36	6.5	1.14
	2	51	24 X 48	610 X 1219	2.25	36	8.7	1.53
300	1	25	48 X 96	1219 X 2438	3.00	48	4.3	0.76
	1½	38	48 X 96	1219 X 2438	3.00	48	6.5	1.14
	2	51	48 X 96	1219 X 2438	3.00	48	8.7	1.53

CertaPro® Board

Composed of resin-bonded glass fibers in a range of densities, CertaPro® board can be used to add both thermal insulation and sound absorption to interior spaces. CertaPro board stiffness ranges from rigid to more flexible for curved and/or sharp-edged applications. It is available unfaced, for use where an exterior finish will be applied, or faced with a vapor retardant finish in either a clean metallic (FSK) or attractive white (ASJ) surface. CertaPro boards are easy to cut to size and shape and to install. Additionally, unfaced and FSK faced CertaPro board are compliant where a fire hazard classification of 25/50 is required, can be used for exposed or non-exposed applications, resist mold and mildew, and will not rot or deteriorate.



CertaPro® Board Available Sizes and Thermal Performance

PRODUCT TYPE	THICKNESS		DENSITY		THERMAL RESISTANCE		THERMAL CONDUCTIVITY	
	in.	mm	lb/ft ³	Kg/m ³	°F•ft ² •h/Btu	m ² •°C/W	Btu/h•ft ² •°F	W/m ² •°C
CB 110	1½	38	1.1	17.57	6.0	1.06	0.25	0.036
	3½	89	1.1	17.57	14.0	2.47	0.25	0.036
	6	153	1.1	17.57	25.0	4.20	0.25	0.036
CB 150	1½	38	1.50	24	6.0	1.06	0.25	0.036
	2	51	1.50	24	8.0	1.41	0.25	0.036
	2½	64	1.50	24	10.0	1.76	0.25	0.036
	3	76	1.50	24	12.0	2.11	0.25	0.036
	3½	89	1.50	24	14.0	2.47	0.25	0.036
4	102	1.50	24	16.0	2.82	0.25	0.036	
CB 180	1½	38	1.80	24	6.0	1.06	0.24	0.035
	2	51	1.80	24	8.0	1.41	0.24	0.035
	2½	64	1.80	24	10.0	1.76	0.24	0.035
	3	76	1.80	24	12.0	2.11	0.24	0.035
	3½	89	1.80	24	14.0	2.47	0.24	0.035
4	102	1.80	24	16.0	2.82	0.24	0.035	
CB 225	1	25	2.25	36	4.2	0.73	0.24	0.035
	1½	38	2.25	36	6.3	1.10	0.24	0.035
	2	51	2.25	36	8.3	1.47	0.24	0.035
	2½	64	2.25	36	10.4	1.83	0.24	0.035
	3	76	2.25	36	12.5	2.19	0.24	0.035
	3½	89	2.25	36	14.6	2.56	0.24	0.035
4	102	2.25	36	16.6	2.91	0.24	0.035	
CB 250	1	25	2.50	40	4.2	0.73	0.24	0.035
	2	51	2.50	40	8.3	1.47	0.24	0.035
CB 300	1	25	3.00	48	4.3	0.77	0.23	0.033
	1½	38	3.00	48	6.5	1.15	0.23	0.033
	2	51	3.00	48	8.7	1.53	0.23	0.033
	2½	64	3.00	48	10.9	1.92	0.23	0.033
	3	76	3.00	48	13.0	2.30	0.23	0.033
3½	89	3.00	48	15.2	2.68	0.23	0.033	
4	102	3.00	48	17.4	3.06	0.23	0.033	
CB 450	1	25	4.50	72	4.5	0.80	0.22	0.032
	2	51	4.50	72	9.1	1.60	0.22	0.032
CB 600	1	25	6.00	96	4.5	0.80	0.22	0.032
	1½	38	6.00	96	6.8	1.20	0.22	0.032
	2	51	6.00	96	9.1	1.60	0.22	0.032

All Service Jacket (ASJ) is not available in Type CB 150.
 CB 110, 150 and 600 are not available in FSK, WMP or ASJ facings.

CertaPro® Board Acoustical Performance

PRODUCT TYPE	THICKNESS		ABSORPTION COEFFICIENTS @ OCTAVE BAND FREQUENCY (Hz)						NRC
	in.	mm	125	250	500	1000	2000	4000	
CB 110	1½	38	0.25	0.51	0.85	0.97	1.00	1.03	0.85
	3½	89	0.55	1.15	1.29	1.18	1.14	1.18	1.20
	6	153	1.09	1.45	1.26	1.13	1.11	1.10	1.25
CB 150	1½	38	0.19	0.51	0.82	0.86	0.95	0.97	0.80
	2	51	0.23	0.61	0.94	0.97	0.98	0.96	0.90
	2½	64	0.41	0.78	0.96	0.94	0.93	0.97	0.90
	3	76	0.41	0.94	1.07	1.01	1.00	0.97	1.00
	3½	89	0.60	1.08	1.09	1.02	1.04	1.06	1.05
	4	102	0.64	1.05	1.07	0.97	0.96	1.01	1.00
CB 180	2½	64	0.41	0.89	1.22	1.24	1.16	1.18	1.15
CB 225	1	25	0.06	0.30	0.68	0.85	0.91	0.94	0.70
	1½	38	0.12	0.48	0.83	0.90	0.90	0.89	0.80
	2	51	0.22	0.63	1.04	1.00	1.00	0.97	0.90
	2½	64	0.31*	0.81*	1.08*	1.02*	1.04*	1.03*	1.00*
	3	76	0.34	0.95	1.08	0.99	0.98	0.99	1.00
	3½	89	0.54	1.11	1.12	1.01	1.02	1.00	1.05
	4	102	0.70	1.15	1.12	0.99	1.01	1.08	1.05
CB 250	1	25	0.05	0.25	0.66	0.98	1.04	1.07	0.75
	2	51	0.21	0.79	1.21	1.14	1.09	1.07	1.05
CB 300	1	25	0.08	0.25	0.72	0.88	0.93	0.94	0.70
	1½	38	0.10	0.51	0.89	0.95	0.92	0.93	0.80
	2	51	0.21	0.73	1.08	1.04	1.04	0.96	0.95
	2½	64	0.31	0.81	1.08	1.02	1.04	1.03	1.00
	3	76	0.41	0.96	1.13	1.03	1.03	1.02	1.05
	3½	89	0.72	1.14	1.11	1.00	1.02	1.00	1.05
	4	102	0.75	1.18	1.09	1.00	1.00	1.02	1.05
CB 450	1	25	0.09	0.33	0.79	1.06	1.07	1.06	0.80
	2	51	0.32	0.95	1.19	1.11	1.04	1.02	1.05
CB 600	1	25	0.05	0.27	0.78	0.97	0.97	0.91	0.75
	1½	38	0.17	0.50	0.98	1.03	0.99	0.98	0.90
	2	51	0.31	0.89	1.07	0.99	1.02	0.98	1.00

* Estimated sound absorption coefficients and NRC. Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

CertaPro® Board Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits	Up to 250°F (faced) or 450°F (unfaced)	ASTM C411
Surface Burning Characteristics	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84, UL 723, NFPA 255
Vibration Resistance	Will not crack, split, shrink, or crumble	ASTM C1139
Moisture Absorption	< 5% by Weight	ASTM C1104
Fungi Resistance	Pass	ASTM C1338
Odor Emissions	Pass	ASTM C1304
Water Transmission (Facing Only)	.02 Perms	ASTM E96, Dessicant Method
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259

CrimpWrap® Products

CrimpWrap® is specifically designed for insulating vessels and large diameter pipes in commercial and industrial construction projects.



CrimpWrap® Crimped Pipe and Tank Wrap

CrimpWrap® provides the thermal and compressible properties of rigid insulation board in a unique flexible blanket of variably oriented glass fibers firmly bonded together with a thermosetting resin. Available with either Foil Scrim (FS) or white ASJ vapor retarder facings, CrimpWrap can control heat loss or gain on large diameter piping and equipment more economically than molded insulation. Insulating vessels and pipes with service temperatures from 35°F to 850°F (2°C to 454°C), CrimpWrap also provides hot surface protection for personnel during system operation.

CrimpWrap® Thermal Performance

MEAN TEMPERATURE		APPARENT THERMAL CONDUCTIVITY	
in.	mm	Btu•in/h•ft²•°F	W/m•°C
1	25	0.24	0.035
1½	38	0.24	0.035
2	51	0.24	0.035
½	13	0.24	0.035

CrimpWrap® Physical Properties

PROPERTIES	PERFORMANCE	TEST METHOD
Maximum Use Temperature (See Limitations)	850°F (454°C)	ASTM C411
Water Vapor Sorption Maximum % by Weight	< 5%	ASTM C1104
Density	2.5 lb/ft³ (40 kg/m³)	ASTM C167
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	ASTM E84
Corrosiveness	Pass	ASTM C665
Fungi Resistance	Pass	ASTM C1338
Odor Emissions	Pass	ASTM C1304
Water Vapor Transmission (Facing Only)	.02 Perms	ASTM E96, Dessicant Method
Compressive Resistance, Minimum Load Required to Produce a 10% Reduction in Thickness	25 lb/ft² (1.2 kPA)	ASTM C165

CrimpWrap® Available Sizes

THICKNESS		WIDTH		LENGTH	
in.	mm	in.	mm	ft.	m
1	25	48	1219	39-4" to 52	12 to 15.85
1½	38	48	1219	25-9" to 30	7.85 to 9.14
2	51	48	1219	19-2" to 25	5.84 to 7.92
2½	64	48	1219	15-2" to 20	4.62 to 6.10
3	76	48	1219	13-2" to 20	4 to 6.10
3½	89	48	1219	13-2" to 15	4 to 4.57
4	102	48	1219	13" to 14	3.96 to 4.27

NOTE: Contact CertainTeed for minimum order quantities.



CrimpWrap® Stretch-out Lengths

NOMINAL PIPE SIZE	PIPE OUTSIDE DIAMETER		CRIMPWRAP THICKNESS													
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
	in.	mm	1	25	1.5	38	2	51	2.5	64	3.00	76	3.5	89	4	102
6	6.63	168	27.125	689	—	—	—	—	—	—	—	—	—	—	—	—
8	8.63	219	33.375	848	36.5	928	—	—	—	—	—	—	—	—	—	—
10	10.75	273	40	1017	43.25	1097	46.375	1177	—	—	—	—	—	—	—	—
12	12.75	324	46.125	1177	49.5	1257	52.625	1337	55.75	1416	—	—	—	—	—	—
14	14	356	50.25	1277	53.375	1357	56.5	1436	59.75	1516	—	—	—	—	—	—
16	16	406	56.5	1436	59.75	1516	62.875	1596	66	1676	69.125	1756	—	—	—	—
18	18	457	62.875	1596	66	1676	69.125	1756	72.25	1835	75.375	1915	78.5	1995	—	—
20	20	508	69.125	1756	72.25	1835	75.375	1915	78.5	1995	81.625	2075	84.875	2155	88	2234
22	22	559	75.375	1915	78.5	1995	81.625	2075	84.875	2155	88	2234	91.125	2314	94.25	2394
24	24	610	81.625	2075	84.875	2155	88	2234	91.125	2314	94.25	2394	97.375	2474	100.5	2553
26	26	660	88	2234	91.125	2314	94.25	2394	97.375	2474	100.5	2553	103.625	2633	106.875	2713
28	28	711	94.25	2394	97.375	2474	100.5	2553	103.625	2633	106.875	2713	110	2793	113.125	2873
30	30	762	100.5	2553	103.625	2633	106.875	2713	110	2793	113.125	2873	116.25	2952	119.375	3032
32	32	813	106.875	2713	110	2793	113.125	2873	116.25	2952	119.375	3032	122.5	3112	125.625	3192
34	34	864	113.125	2873	116.25	2952	119.375	3032	122.5	3112	125.625	3192	128.75	3272	132	3351
36	36	914	119.375	3032	122.5	3112	125.625	3192	128.75	3272	132	3351	135.125	3431	138.25	3511

The lengths shown in this table do not have a 3" staple flap incorporated into the calculated dimensions. If a staple flap is desired, add 3" to the number shown.

Metal Building Insulation

Metal Building Insulation is used as a thermal and acoustical insulation in the roofs and sidewalls of pre-engineered metal buildings and post frame construction.



Metal Building Insulation

CertainTeed Fiber Glass Metal Building Insulation can provide thermal and acoustical insulation for the roofs and sidewalls of pre-engineered metal buildings and post frame construction. Our sustainable Metal Building Insulation is composed of inorganic glass fibers bonded with a formaldehyde-free resin, formed as a uniformly textured tan blanket insulation and furnished in rolls. Once laminated on one side with a suitable vapor retarder, Metal Building Insulation reduces transmission of exterior sound to the interior of the building and absorbs reverberating sounds within the building.

Metal Building Insulation Thermal Performance

NOMINAL THICKNESS PRIOR TO LAMINATING		R-VALUES	
in.	mm	R	RSI
3.375	86	10	1.76
3.75	95	11	1.94
4.375	111	13	2.29
5.25	133	16	2.82
6.375	162	19	3.35
6.75	171	21	3.70
8	203	25	4.40
9.25	235	30	5.30

Metal Building Insulation Sound Absorption - Unfaced

R-VALUE	NOMINAL THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (HZ)						
	in.	mm	125	250	500	1000	2000	4000	NRC
10	3.375	86	0.29	0.82	1.02	0.94	0.95	0.98	0.95
11	3.75	95	0.39	0.91	1.01	0.92	0.93	0.98	0.95
13	4.375	111	0.53	0.97	1.04	0.90	0.95	0.98	0.95
16	5.25	133	0.67	1.05	1.02	0.92	0.98	0.99	1.00
19	6.375	162	0.89	1.22	1.02	0.98	1.01	1.00	1.05

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.



Metal Building Insulation Sound Transmission

CONSTRUCTION TYPE	TRANSMISSION LOSS IN DB AT THE OCTAVE FREQUENCIES						STC
	125	250	500	1000	2000	4000	Rating
roofs							
No Insulation	12	13	19	24	30	32	24
R-10 Faced 202-96 Insulation Over the Purlins	12	16	26	37	45	49	29
R-19 Faced 202-96 Insulation Over the Purlins	13	20	30	41	49	51	32
202-96 Insulation Over & Between the Purlins to Fill the Cavity (R-25 Combined)	14	24	34	44	53	56	36
walls	125	250	500	1000	2000	4000	Rating
No Insulation	12	14	19	19	20	27	21
R-10 Faced 202-96 Insulation Over the Girts	13	16	25	32	37	46	28
R-13 Faced 202-96 Insulation Over the Girts	13	17	26	33	38	47	29
R-13 Faced 202-96 Insulation Over the Girts 35/8" Steel Studs on 24" Centers with 1/2" Gypsum Board on Interior.	26	40	51	60	64	65	50
R-13 Faced 202-96 Insulation Over the Girts 35/8" Steel Studs on 24" Centers with R-11 Batts & 1/2" Gypsum Board on Interior.	31	43	55	68	73	75	54

Sound Transmission Class (STC) in accordance with ASTM E90.
 - Roof construction is 24ga. standing seam roof with 8" Z purlins on 5' centers.
 - Wall construction is 26ga. wall panels screwed to 8" Z girts placed on 7' centers.
 - Interior metal furring wall studs were 35/8" by 25ga. on 24' centers.

Metal Building Insulation Available Sizes*

R-VALUE	NOMINAL THICKNESS		WIDTH		LENGTH	
	in.	mm	in.	mm	ft.	m
10	3.375	86	36, 48, 60, 72	914, 1219, 1524, 1829	100	30.5
11	3.75	95	36, 48, 60, 72	914, 1219, 1524, 1829	100	30.5
13	4.375	111	36, 48, 60, 72	914, 1219, 1524, 1829	75	22.9
16	5.25	133	36, 48, 60, 72	914, 1219, 1524, 1829	50	15.2
19	6.375	162	36, 48, 60, 72	914, 1219, 1524, 1829	50	15.2
21**	6.75	171	36, 48, 60, 72	914, 1219, 1524, 1829	45	13.7
25**	8	203	36, 48, 60, 72	914, 1219, 1524, 1829	30	9.1
30**	9.25	235	36, 48, 60, 72	914, 1219, 1524, 1829	25	7.6

*Non-standard widths are available and subject to an upcharge on an individual basis determined by manufacturer's capability, quantity, lead times and packaging availability.

**R-21, R-25 and R-30 are made to order.

Commercial Blanket Insulation

Used as a thermal or acoustical insulation in commercial buildings, Commercial Blanket Insulation offers increased comfort, lower energy use and noise control.



Commercial Blanket Insulation

The best choice where wide rolls of unfaced insulation are required, such as retrofitting a warehouse, the uniformly textured tan blanket is made from inorganic glass fibers bonded with a thermoset formaldehyde-free resin. A range of R-values are available to meet energy code requirements.

Commercial Blanket Insulation can be used in roofs and sidewalls as a sound layer over the unfaced side of Metal Building Insulation. Available up to 10" thick, Commercial Blanket is also used in post frame construction and may be installed over old roof decks (BUR and metal) prior to application of a new standing seam roof.

Commercial Blanket Insulation Available Sizes

THICKNESS		WIDTH		LENGTH		R-VALUES	
in.	mm	in.	mm	ft.	m	R	RSI
3½	89	48, 60, 72	1219, 1524, 1829	100	30.5	11	1.9
6¼	159	48, 60, 72	1219, 1524, 1829	50	15.2	19	3.3
6½	165	48, 60, 72	1219, 1524, 1829	45	13.7	21	3.6
8	203	48, 60, 72	1219, 1524, 1829	40	12.2	25	4.4
10	254	48, 60, 72	1219, 1524, 1829	25	7.6	30	5.3



Universal Blanket Insulation

Universal Blanket is utilized in general purpose applications where a flexible thermal acoustical insulation is required. Available in five different densities and able to withstand temperatures up to 450°F (232°C), it will help lower energy consumption by reducing heat transfer through equipment walls. Universal Blanket can be fabricated into a variety of shapes and sizes to fit almost any application. When properly installed, it will maintain thermal and acoustical efficiency under normal conditions, won't be affected by aging and temperature changes, and if installed with a suitable vapor retarder, will help to prevent condensation from forming on the equipment.

Universal Blanket Insulation Acoustical Performance

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
	in.	mm	125	250	500	1000	2000	4000	NRC
501	1½	38	0.21	0.49	0.71	0.79	0.80	0.80	0.70
	2	51	0.23	0.62	0.87	0.87	0.85	0.87	0.80
	4	102	0.51	0.92	1.01	1.93	0.95	1.06	0.95
751	1	25	0.14	0.33	0.64	0.77	0.83	0.86	0.65
	1½	38	0.17	0.45	0.78	0.84	0.92	0.93	0.75
	3	76	0.36	0.82	1.02	1.00	0.96	1.01	0.95
1001	1½	38	0.21	0.53	0.79	0.85	0.85	0.87	0.75
	2	51	0.28	0.69	0.94	0.91	0.90	0.93	0.85

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.



ULTIMATE U SeaProtect

When you need a product that can withstand temperatures as high as 1200°F (650°C), look to ULTIMATE. Used in shipbuilding and industrial applications, ULTIMATE U SeaProtect provides excellent fire protection in addition to thermal and acoustic insulation. Composed of high melting point temperature fibers, non-combustible ULTIMATE U SeaProtect is available unfaced or faced on one side with a fiber scrim reinforced with aluminum, black cloth tissue, glass fiber fabric, or a wire mesh (to ensure the faced surface is limited to 212°F (100°C) maximum temperature).

Up to 45% Lighter Than Stone Wool

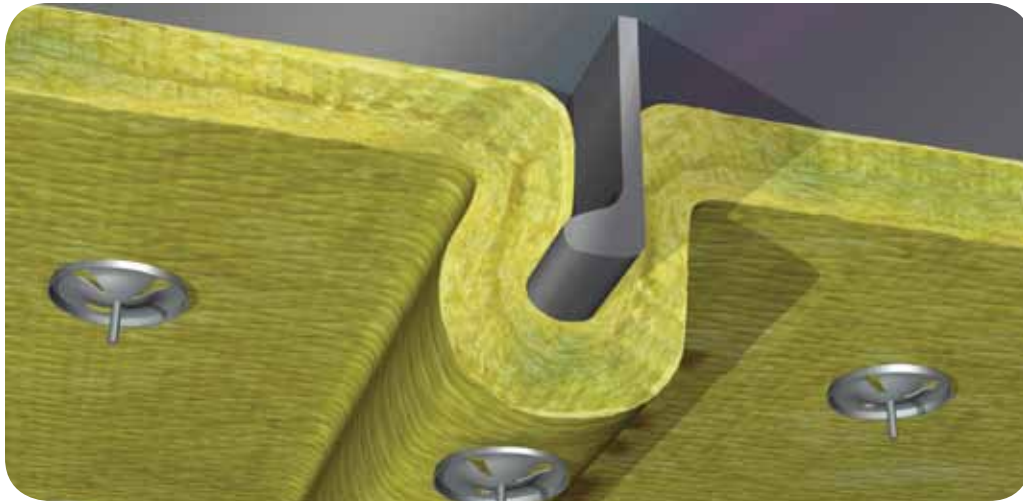
Fire protection solutions for steel constructions following FTP Code 2010

Selection Table

Example: U SeaProtect Roll 24 20 mm

ULTIMATE	PRODUCT RANGE	PRODUCT FORM	DENSITY (kg/m ³)	FACING	THICKNESS (mm)	
U	SeaProtect	Roll	24	→ Unfaced	20 mm	
			36	Alu1 → Aluminum	25 mm	
			56	G120 → Glass cloth (black)	30 mm	
		Slab	76	G220 → Glass cloth (white)	40 mm	
			86	G420 → Glass cloth (white)	50 mm	
			Wired Mat	90	B-Al → B Facing* (Alu outside)	70 mm
				—	B-Gl → B Facing* (Glass cloth outside)	100 mm

* B facing is a laminated composite facing combining glass cloth and aluminum foil.



Bending Around the Stiffeners – Fast, Easy and Efficient

Example shown with ULTIMATE U MPN 66.



Standard Design

Lightweight and easy logistics • 4 products to cover all Steel A-Fire Classifications

STEEL	Plate		Stiffener		Complete Solution
	PRODUCTS*	WEIGHT (kg/m ²)	PRODUCTS*	WEIGHT (kg/m ²)	WEIGHT (kg/m ²)
A-15 Bulkhead	U SeaProtect Slab 24 50mm	1.20	U SeaProtect Slab 76 25mm	1.90	2.53
	U SeaProtect Roll 24 50mm		U SeaProtect Slab 24 50mm	1.20	2.04
A-30 Bulkhead A-60 Bulkhead Restricted	U SeaProtect Slab 36 70mm	2.52	U SeaProtect Slab 36 70mm	2.52	4.28
	U SeaProtect Roll 36 70mm		U SeaProtect Slab 76 25mm	1.90	3.85
A-60 Bulkhead	U SeaProtect Slab 56 70mm	3.92	U SeaProtect Slab 76 25mm	1.90	5.25
A-15 Deck A-30 Deck	U SeaProtect Slab 24 50mm	1.20	U SeaProtect Slab 76 25mm	1.90	2.53
	U SeaProtect Roll 24 50mm		U SeaProtect Slab 24 50mm	1.20	2.04
A-60 Deck	U SeaProtect Slab 36 70mm	2.52	U SeaProtect Slab 36 70mm	2.52	4.28
	U SeaProtect Roll 36 70mm	2.52	U SeaProtect Slab 76 25mm	1.90	3.85

Thin Design

Thin Solutions between and around the stiffeners

STEEL	Plate		Stiffener		Complete Solution
	PRODUCTS*	WEIGHT (kg/m ²)	PRODUCTS*	WEIGHT (kg/m ²)	WEIGHT (kg/m ²)
A-15 Bulkhead	U SeaProtect Slab 66 30mm	1.98	No insulation around stiffeners	—	1.98
A-30 Bulkhead Restricted	U SeaProtect Slab 46 40mm	1.84	U SeaProtect Slab 46 30mm	1.38	2.81
A-30 Bulkhead	U SeaProtect Slab 36 70mm	2.52	U SeaProtect Slab 76 20mm	1.52	3.58
	U SeaProtect Roll 36 70mm		U SeaProtect Slab 76 20mm	1.52	4.10
	U SeaProtect Slab 76 40mm	3.04	U SeaProtect Slab 76 25mm	1.90	4.37
A-60 Bulkhead	U SeaProtect Slab 86 50mm	4.30	U SeaProtect Slab 76 25mm	1.90	5.63
A-15 Deck	U SeaProtect Slab 36 70mm	2.52	No insulation around stiffeners	—	2.52
U SeaProtect Roll 36 70mm	U SeaProtect Slab 76 20mm		1.52	2.26	
A-15 Deck	U SeaProtect Slab 24 50mm	1.20	U SeaProtect Slab 76 20mm	1.52	2.96
U SeaProtect Roll 24 50mm	U SeaProtect Slab 76 25mm		1.90	3.23	
A-30 Deck	U SeaProtect Slab 76 25mm	1.90	U SeaProtect Slab 76 25mm	1.90	3.23
A-60 Deck	U SeaProtect Slab 66 50mm	3.30	U SeaProtect Slab 76 25mm	1.90	4.63

* All U SeaProtect products are available for each construction with different facings approved by a recognized test laboratory (Alu facing Alu1, glass cloth facings G120, G220, G420, B facing, etc.).



Products highlighted in colors are part of the U SeaProtect Easy Logistics Portfolio. These products are available with a low Minimum Order Quantity (equivalent to 1 pallet) for various facings. For more information, please contact your local CertainTeed representative.

sustainable insulation.

CertaPro® HT (High Temperature) Blanket Insulation



HT Blanket Insulation

TYPE	K FACTOR AT °F AT MEAN TEMPERATURES						
	75	100	200	300	400	500	600
1	.025	.027	0.34	0.43	0.56	TBD	TBD
2	.023	.024	0.30	0.36	0.46	0.52	0.64

CertaPro® HT Blanket Typical Sizes

PRODUCT	THICKNESS		LENGTH		WIDTH	
	in.	mm	ft.	m	in.	mm
Type 1: Rolls	1	25.4	100	30.5	24	610
	2	50	70	21.3		
	2½	64	55	16.8		
	3	76	40	12.2		
	3½	89	35	10.7		
	4	102	30	9.1		
	1	25.4	100	30.5	35	914
	2	50	70	21.3		
	2½	64	55	16.8		
	3	76	40	12.2		
	3½	89	35	10.7		
	4	102	30	9.1		
1	25.4	100	30.5	72	1829	
2	50	70	21.3			
2½	64	55	16.8			
3	76	40	12.2			
3½	89	35	10.7			
4	102	30	9.1			
Type 1: Batts	1	25.4	48	1.219	24	610
			96	2.438		
	2	50	48	1.219		
			96	2.438		
	2½	64	48	1.219		
			96	2.438		
	3	76	48	1.219		
			96	2.438		
	3½	89	48	1.219		
			96	2.438		
	4	102	48	1.219		
			96	2.438		
Type 2: Batts	1	25.4	48	1.219	24	610
			96	2.438		
	1½	38	48	1.219		
			96	2.438		
	2	50	48	1.219		
			96	2.438		
	2½	64	48	1.219		
			96	2.438		
	3	76	48	1.219		
			96	2.438		
	3½	89	48	1.219		
			96	2.438		
4	102	48	1.219			
		96	2.438			

Our High Temperature Blanket is composed of rotary glass fibers bonded with a thermosetting resin and formed into plain, flexible and resilient thermal insulation. HT blankets contain more than 60% recycled glass content and are designed for use on industrial equipment, panel systems, pipe fittings and tanks operating at temperatures up to 1000°F (538°C). HT Blanket Type 1 rolls and batts — used on panel systems, as a flexible wrap or on industrial ovens — and Type 2 batts — meant for metal mesh blankets, on boilers, vessels and other industrial equipment — are easy to handle, cut with a knife and install.

Building Responsibly™ Starts with CertainTeed



CertainTeed now offers high-quality Sustainable Insulation® products for air handling applications made from recycled content and a renewable, plant-based binder without any formaldehyde, harsh acrylics, dyes or chemicals added. CertainTeed Sustainable Insulation is biosoluble fiber glass insulation that inhibits microbial growth on the airstream surface, contributing to better indoor air quality in commercial buildings while helping you to meet green building standards.

CertainTeed Sustainable Insulation is GREENGUARD Gold Certified for low emissions, with excellent thermal and acoustical performance — providing energy savings and comfort.



CertainTeed stands behind our commitment to Building Responsibly™ with customer service that's second to none.



Scan here to learn more about our complete line of mechanical and industrial insulation solutions.



Fiber Glass Blowing Insulation

CertainTeed offers loose fill fiber glass blowing insulation products designed specifically for attics. The pneumatic blowing machines used to install these products are fast and efficient, so you can finish more projects in a day and maximize your revenue. The insulation fills every nook and cranny in an attic to deliver both thermal and acoustical benefits, and will not settle over time.

Go Retrofitting

Millions of older homes either have no insulation at all in the attic or are woefully under-insulated. The TrueComfort® system is an excellent way to tap this lucrative retrofit market. Distributors can purchase blowing machines and rent them to local contractors, while contractors who are serious about adding insulation retrofits to their service offering can buy their own machines.

TrueComfort is easy to transport: 16 packages vs. 46 packages of cellulose for a 1,000 sq. ft. area.

Achieve the same R-value more easily and with less waste.

TrueComfort®

Blown-in Fiber Glass Insulation

TrueComfort® is the perfect add-on opportunity for HVAC contractors who want to add attic insulation retrofits to their list of services. It's actually a system: TrueComfort blown-in fiber glass insulation and the blowing machine used to install it. The insulation is super-expanding, so fewer bags are required to achieve the target R-value than with cellulose insulation products. And, like other CertainTeed fiber glass blowing insulation, it's easy to install, less dusty, noncombustible and noncorrosive, and won't settle over time.

HVAC Contractors and Attic Insulation

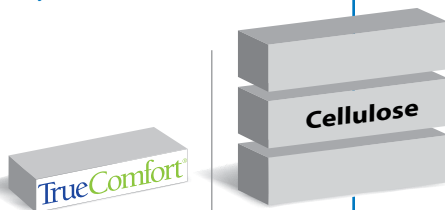
While servicing attic-mounted HVAC equipment, most technicians have an opportunity to identify poorly insulated attic spaces.

A trained technician can identify and upgrade inadequate attic insulation and improve comfort and energy efficiency for their existing customers. Most attic insulation can be upgraded simply by blowing loose insulation over existing insulation.

HVAC System and Building Attic Insulation

Better attic insulation reduces roof heat gain in summer and heat loss in the winter. Why is this important for HVAC contractors?

- Helps meet capacity in homes with undersized equipment
- Right-size replacement HVAC equipment capacity
- Reduces run time of HVAC equipment = energy savings
- Improves comfort in space and reduces radiant panel effect from hot or cold ceilings





Open Attic Application

R-VALUE	BAG REQUIREMENTS	MAXIMUM COVERAGE	MINIMUM WEIGHT	MINIMUM INSTALLED THICKNESS*	MINIMUM SETTLED THICKNESS
To obtain a thermal resistance (R) of:	Number of bags per 1,000 sq. ft. of net area:	Contents of bag shall not cover more than: (sq. ft.)	Weight per sq. ft. of installed insulation shall not be less than: (lbs./sq. ft.)	Should not be less than: (in.)	Should not be less than: (in.)
11	5.7	176.9	0.167	4.90	4.90
13	6.6	150.5	0.196	5.70	5.70
19	9.9	101.5	0.291	8.20	8.20
22	11.3	88.3	0.334	9.30	9.30
26	13.4	74.7	0.395	10.80	10.80
30	15.5	64.5	0.457	12.30	12.30
38	19.8	50.5	0.584	15.20	15.20
44	23.1	43.4	0.680	17.30	17.30
49	25.8	38.8	0.761	19.00	19.00
60	32.1	31.2	0.947	22.75	22.75

R-values are determined in accordance with ASTM C687 and C518. Complies with ASTM C764 as Type 1 pneumatic application.

*Minimum Installed Thickness: When using the TrueComfort blowing machine and 2-1/2-inch-diameter x 100-foot internally corrugated blowing hose. Based upon 29.5-lb. package net weight. This product is designed to be installed using the TrueComfort blowing machine and accessory equipment. Product performance, including coverage, may vary if installed using different equipment.

For Minnesota coverage chart, go to www.certainteed.com/truecomfort.

TrueComfort® Blowing Machine

This easy-to-learn system can generally insulate a 1,000-square-foot attic in about four hours with a two-man crew. Its compact, two-piece design transports easily in an SUV or pick-up. From set-up to tear-down, we supply complete instructions, making it easy for you to start insulation jobs right away.

The TrueComfort machine is portable and simple to operate. It consists of two pieces for easy transportation, a base and a hopper. Wheels on the base make it maneuverable, and it runs off of one basic 15-amp outlet.



For every insulation challenge, there's a CertainTeed solution.



Metal Building Insulation



CertaPro® Commercial Insulation



Machine Works



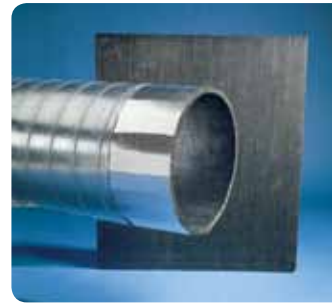
ToughGard® R Duct Liner



SoftTouch™ Duct Wrap Insulation



HVAC/Mechanical



UltraRound® Spiral Duct Liner



[**Be Certain**]™

You can **Be Certain**™ no other manufacturer offers the depth and breadth of interior and exterior building solutions, knowledge, innovation and sustainability that CertainTeed does. Our advanced, multi-product solutions optimize building efficiency, while creating beautiful, comfortable environments where people can thrive. We continue to shape the future of the building materials industry with a new generation of integrated building solutions.

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