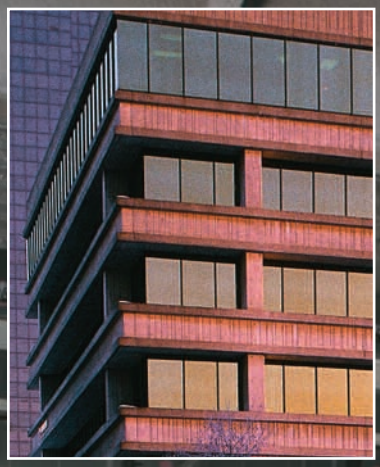
CertainTeed

HVAC Insulation

Product Overview

Products for Air Handling, HVAC and Industrial Applications



CertainTeed

Quality made certain. Satisfaction guaranteed.™

Products that go beyond spec. Support that goes beyond the expected.

CERTAINTEED HAS YOU COVERED.

No other manufacturer understands the unique needs of the air handling HVAC industry better than CertainTeed. From our state-of-the-art manufacturing facilities to our dedicated sales and service team, we honestly believe that we must earn your business each and every day.

We consider ourselves more than just a supplier. Whether it involves delivery, fabrication, Building Science, technical support, or product specs, we partner with you to understand your company's unique needs to deliver the best overall insulation solutions.

PRODUCTS THAT PERFORM.

Let's face it. You wouldn't buy our products if they didn't perform. Our HVAC-focused products meet the highest standards for thermal and acoustical performance. CertainTeed manufactures a full line of fiber glass insulation for air handling systems, including duct liner, duct board and duct wrap.

MEETING AND EXCEEDING YOUR CUSTOMER'S EXPECTATIONS.

Your customers look to you to provide energy efficient and cost effective solutions. In turn, we provide you with products that meet and exceed your client's performance expectations. For example, our duct liner and duct board are more water repellent than standard duct liners and boards, which helps protect your customer's air handling systems from the problems associated with moisture. And in this age of litigation and remediation, it's something your customers will not only recognize, but will truly appreciate.

GET SMART ABOUT BUILDING SCIENCE.

Building Science continues to gain attention and grow in importance in the air handling industry. A number of factors—from increased code requirements to increased media coverage—have brought this issue to the forefront. CertainTeed understands the role our products play in the overall integrity of a building system. We have a dedicated Building Science department that works regularly with building professionals to solve critical building envelope issues and provide solutions that have a positive and lasting effect on the industry. If your customers have questions about Building Science, we encourage you to tap into this unique resource.

PUTTING THE "SERVICE" BACK IN CUSTOMER SERVICE.

At CertainTeed we take service seriously. That's why our phone system is seamlessly integrated with our customer database, so the complete history of your relationship with CertainTeed is instantly available to the Order Management Associate who handles your call. And there's a pretty good chance you'll talk with someone you've spoken with before—which means a better understanding of your business and better service for you.

THE RIGHT CHOICE.

With everything we have to offer, it's easy to see why CertainTeed is the right insulation partner for your business.

CertainTeed

Quality made certain. Satisfaction guaranteed.™

Contents


TG2
CertainTeed

Duct Liner

ToughGard® 2 and ToughGard® R liners feature an enhanced surface that repels water and prevents it from seeping into the fiber glass.

You'll find a CertainTeed duct liner product for virtually any duct liner application. All products offer outstanding acoustical and thermal properties vital to today's air handling needs.

BASIC USES

Duct liner is used primarily as acoustical liner in HVAC sheet metal ducts to absorb unwanted crosstalk, equipment and air rush noise. It also helps improve the energy-efficiency of the system by reducing heat gain or loss. Plus, duct liner helps minimize moisture problems due to condensation.

PRODUCT DESCRIPTIONS

- **ToughGard® 2 Textile Duct Liner** Composed primarily of long, textile-type glass fibers firmly bonded together with a thermosetting resin and overlaid with an extremely tough and durable fire-resistant black composite air stream surface.
- **ToughGard® R Duct Liner** A similar product composed of rotary-type glass fibers. It also has the same durable air stream surface and moisture protection.
- **ToughGard® R-EP Duct Liner** In addition to having the benefits of ToughGard 2 and ToughGard R, ToughGard R-EP with Enhanced Surface provides superior thermal and acoustical properties compared to other duct liners of the same thickness, making it the ideal choice for applications that demand enhanced performance.
- **ToughGard® Rigid Liner Board** A rigid, board-type insulation composed of resin-bonded glass fibers with a durable black mat facing applied to the air stream surface. It is used to line large sheet metal ducts and plenums.

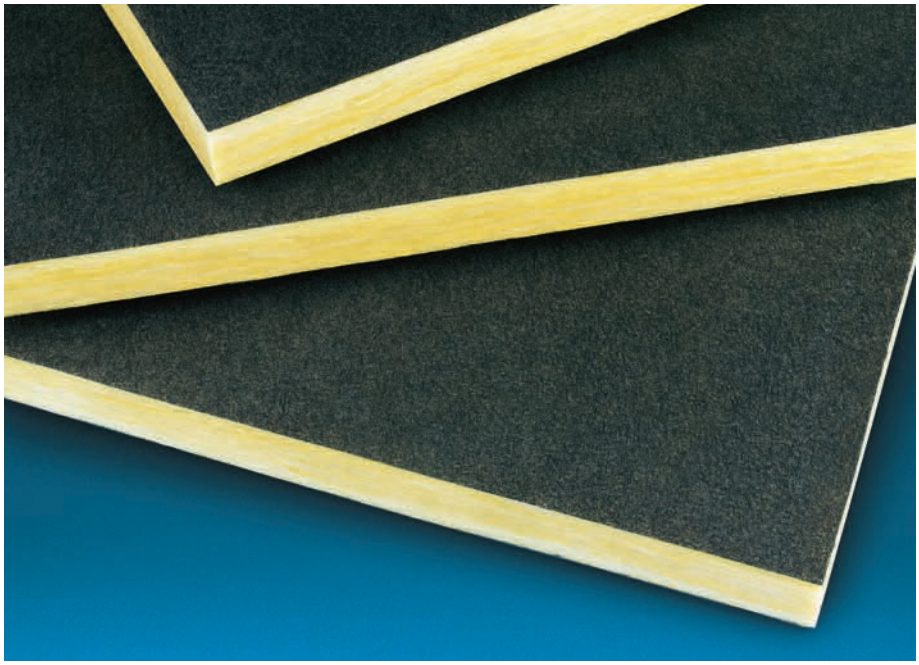
FEATURES AND BENEFITS

- **Quiet Operation** ToughGard duct liner helps absorb equipment and air rush noises over a broad spectrum of sound. Noise is trapped and dissipated within the glass fiber matrix.
- **Thermal Protection** All products offer excellent thermal-insulating properties and lower HVAC operating costs by reducing energy consumption. This saves natural resources and reduces emissions into the atmosphere.
- **Water Repellency** The thermal properties of duct liner help control condensation, which helps improve indoor air quality by reducing unwanted moisture.
- **Low Emitting** Certified by the GREENGUARD® Environmental Institute.
- **Low Air Resistance** The smooth ToughGard air stream surface offers low air resistance to deliver efficient HVAC system operation.

- **Resists Microbial Growth** The air stream surface contains an EPA registered antimicrobial agent in order to reduce the potential of microbial growth that may affect this product. The antimicrobial properties are intended to only protect this product.
- **Durable** The strength and resiliency of the ToughGard surface provides outstanding resistance against puncturing, tearing and other damage during fabrication, installation, and periodic system maintenance.
- **Long-lasting and Non-corrosive** Inert fiber glass will not deteriorate or provide sustenance for vermin or rodents, and it will not corrode the sheet metal it insulates.
- **Cleanability** The smoothness and durability of all ToughGard duct liner products means an extremely cleanable surface during the life of the duct system. The surface of each product can be easily and effectively cleaned with industry-recognized duct cleaning equipment and procedures as outlined in the North American Insulation Manufacturers Association (NAIMA) Duct Cleaning Guide. Proper design, filtration, maintenance and operation of the HVAC system will reduce the need for cleaning.

BASIC PRODUCT DATA

Duct liner products perform in most types of heating and cooling duct systems, operating at velocities up to 6,000 fpm (30.5 m/s) and temperatures to 250°F (121°C).



ToughGard® Rigid Liner Board

COMPLIANCES

Duct liner products regularly meet the requirements of the following current specifications, standards and codes:

- **Material Specifications**
  ASTM C 1071
- **Fire Safety Standards**
  NFPA 90A, NFPA 90B
- **Model Building Code**
  ICC
- GREENGUARD®
  Children & Schools

INSTALLATION

All fabrication, application and installation steps shall be in accordance with the requirements of the NAIMA Fibrous Glass Duct Liner standard, or the SMACNA HVAC Duct Construction standard and the project specification. Refer to the CertainTeed website, installation manuals or CertainTeed specification sheets for installation guidelines.

MAINTENANCE

An inspection and preventative maintenance program for the HVAC system is recommended to ensure optimum performance. Insulation should be kept clean and dry during shipping, storage, installation and system operation.

ToughGard® 2 and ToughGard® R Duct Liner Sizes

TOUGHGARD® 2 DUCT LINER AVAILABLE SIZES

PRODUCT	DENSITY	NOMINAL THICKNESS		LENGTH		WIDTH	
TYPE	PFC	in.	mm	ft.*	m**	in.	mm
150	1.6 (24 kg/m³)	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/m³)	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/m³)	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

*¼" increments, **6mm increments

TOUGHGARD® R DUCT LINER AVAILABLE SIZES

PRODUCT	DENSITY	THICKNESS		LENGTH		WIDTH	
TYPE	PCF	in.	mm	ft.	m	in.	mm
150	1.5 (24 kg/m³)	1	25	50–150	15.2–45.7	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/m³)	½	13	50–200	15.2–61.0	34–72	864–1829

TOUGHGARD® R-EP DUCT LINER AVAILABLE SIZES

PRODUCT	DENSITY	THICKNESS		LENGTH		WIDTH	
TYPE	PCF	in.	mm	ft.	m	in.	mm
200	2.0 (32 kg/m³)	1	25	50–150	15.2–45.7	34–72	864–1829

TOUGHGARD® R RIGID LINER BOARD AVAILABLE 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® 2 Textile Duct Liner Physical Properties & Performance

TOUGHGARD® 2 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 C 411 ASTM C 1071
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	 NFPA 255, ASTM E 84 UL 723, CAN/ULC-S102-M88
Water Vapor Sorption	< 3% by Weight	ASTM C 1104
Corrosion Resistance	Pass	ASTM C 665
Fungi Resistance	Pass; No growth	ASTM C 1338 & G 21
Bacteria Resistance	No growth	ASTM G 22
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259
Water Repellency	≥ 4	INDA IST 80.6–92

TOUGHGARD® 2 DUCT LINER THERMAL PERFORMANCE

PRODUCT	NOMINAL THICKNESS*		K-VALUE		C-VALUE		R-VALUE	
TYPE	in.	mm	Btu•in/h•ft²•°F	W/m•°C	Btu/h•ft²•°F	W/m²•°C	h•ft²•°F/Btu	m²•°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 C 518 and/or ASTM C 177 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® 2 DUCT LINER ACOUSTICAL PERFORMANCE

PRODUCT	NOMINAL THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
TYPE	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	0.27	0.72	1.04	1.02	0.96	0.96	0.95

Sound absorption tested in accordance with ASTM C 423 using Type A mounting per ASTM E 795.

See Air Friction chart for ToughGard duct liner on next page.

ToughGard® R Duct Liner Physical Properties & Performance

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 C 411 ASTM C 1071
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	 NFPA 255, ASTM E 84 UL 723, CAN/ULC-S102-M88
Water Vapor Sorption	< 3% by Weight	ASTM C 1104
Corrosion Resistance	Pass	ASTM C 665
Fungi Resistance	Pass; No growth	ASTM C 1138 & G 21
Bacteria Resistance	No growth	ASTM G 22
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259
Water Repellency	≥ 4	INDA IST 80.6 – 92

TOUGHGARD® R DUCT LINER THERMAL PERFORMANCE

PRODUCT	THICKNESS		K-VALUE		C-VALUE		R-VALUE	
TYPE	in.	mm	Btu•in/h•ft²•°F	W/m•°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
EP	1	25	0.227	0.033	0.23	1.29	4.4	0.78

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value. Tested in accordance with ASTM C 518 and/or ASTM C 177 at 75° F (24° C) mean temperature.

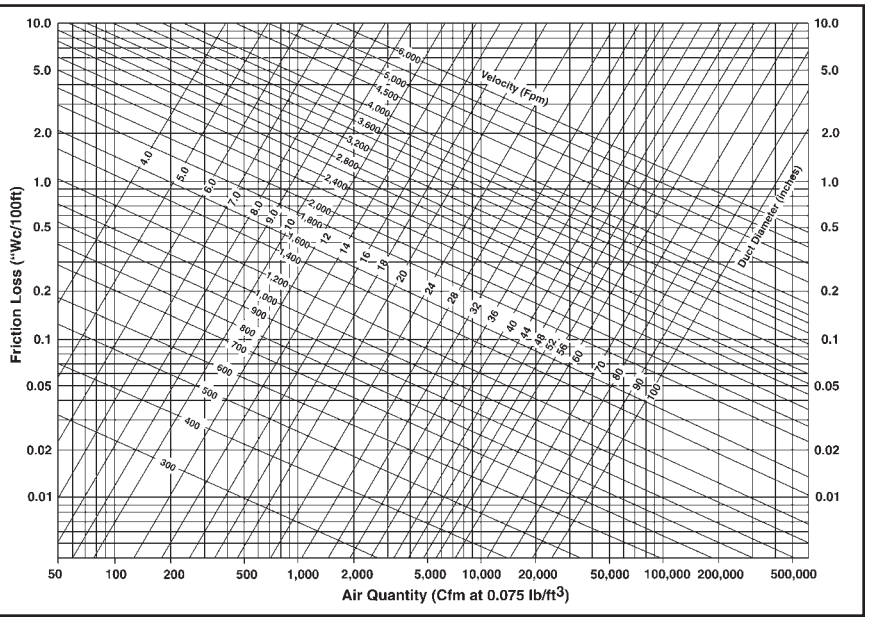
TOUGHGARD® R DUCT LINER ACOUSTICAL PERFORMANCE

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
TYPE	in.	mm	125	250	500	1000	2000	4000	NRC
150	1	25	0.10	0.32	0.66	0.84	0.91	0.91	0.70
	1½	38	0.16	0.53	0.95	1.02	1.03	1.00	0.90
	2	51	0.24	0.79	1.09	1.05	1.02	1.01	1.00
200	½	13	0.03	0.12	0.35	0.61	0.75	0.84	0.45
EP	1	25	0.09	0.34	0.73	0.90	0.95	0.95	0.75

Sound absorption tested in accordance with ASTM C 423 using Type A mounting per ASTM E 795.

CertainTeed ToughGard® 2 and ToughGard® R Duct Liner Air Friction Chart

This chart is to be used in place of the standard friction loss chart published in the ASHRAE Handbook of Fundamentals. For conversion of round equivalents to rectangular sizes, use Table 2 "Equivalent Rectangular Duct Dimensions" from the same reference. Test conducted in accordance with ASHRAE 120.



ToughGard® Rigid Liner Board Physical Properties & Performance

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 C 411 ASTM C 1071
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	NFPA 255 UL 723 ASTM E 84
Water Vapor Sorption	< 3% by Weight	ASTM C 1104
Corrosion Resistance	Pass	ASTM C 665
Fungi Resistance	Pass; No growth	ASTM C 1338 & G 21
Bacteria Resistance	No growth	ASTM G 22
Limited Combustible	Pass (<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/m²•°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 C 518 and/or ASTM C 177 at 75° F (24° C) mean temperature.

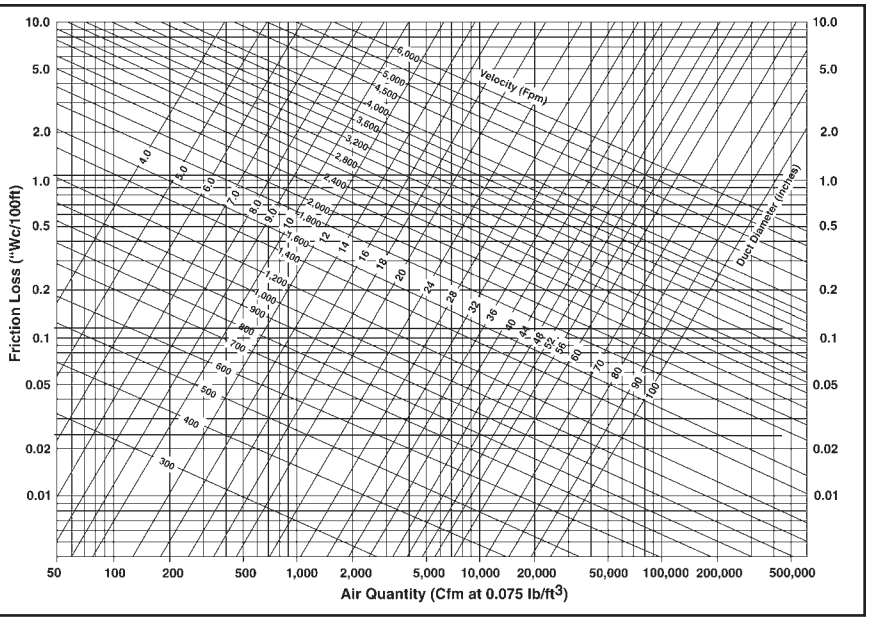
TOUGHGARD® RIGID LINER BOARD ACOUSTICAL PERFORMANCE

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

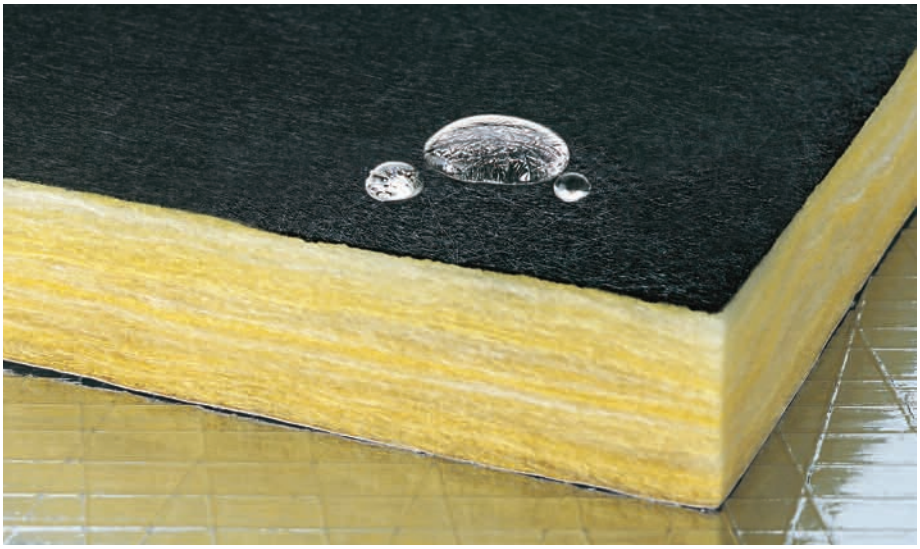
Sound absorption tested in accordance with ASTM C 423 using Type A mounting per ASTM E 795.

ToughGard® Rigid Liner Board Air Friction Chart

This chart is to be used in place of the standard friction loss chart published in the ASHRAE Handbook of Fundamentals. For conversion of round equivalents to rectangular sizes, use Table 2 "Equivalent Rectangular Duct Dimensions" from the same reference. Test conducted in accordance with ASHRAE 120.



Duct Board



In addition to optimum moisture resistance, the ToughGard® duct board air stream surface includes an EPA-registered antimicrobial agent in order to reduce the potential for microbial growth that may affect this product.

CertainTeed duct board products are durable, lightweight and easy to install. The efficient thermal and acoustical properties of CertainTeed duct board products help improve the overall quality of the indoor environment.

BASIC USES

Designed for fabrication into supply and return air duct work for both residential and commercial heating, ventilating and air conditioning systems. CertainTeed duct board products can be fabricated into square, rectangular or multiside sections. Standard, factory-molded male and female shiplap edges ensure tight and strong fabricated transverse joints.

PRODUCT DESCRIPTIONS

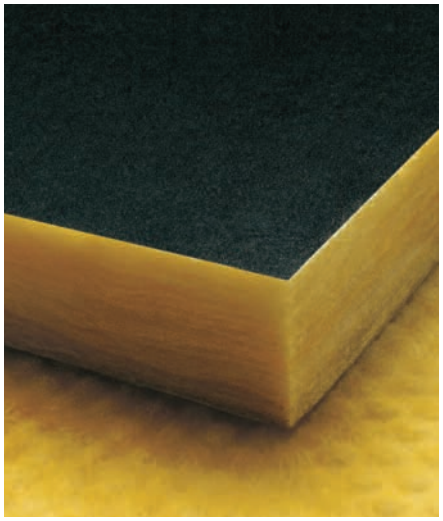
- **Ultra*Duct™ Black Duct Board**
  Composed of resin-bonded glass fibers with a reinforced foil laminate air barrier/vapor retarder facing applied to the outside surface and a textile fiber glass non-woven mat bonding to the air stream surface.
- **ToughGard® Duct Board**
  The same as Ultra*Duct Black except it is overlaid with an extremely tough and durable fire-resistant black composite air stream surface. The enhanced air stream surface provides improved water repellency.

FEATURES AND BENEFITS

- **Quiet System**
  The fiber glass acoustical insulation attenuates unwanted crosstalk, air rush and equipment noise.
- **Lower Operating Costs**
  The exceptional low leakage rate (SMACNA class 6), in combination with the thermal efficiency of ToughGard and Ultra*Duct Black, means savings in energy and improved system performance.
- **Reduces Condensation**
  The built-in vapor retarder on ToughGard and Ultra*Duct Black reduces the chance of condensation and the resulting chance of material and system damage caused by unwanted moisture.

- **Durability and Cleanability**
  ToughGard's tough air stream surface makes it resistant to fabrication, job site and installation damage and provides extra protection during system cleaning.

  Ultra*Duct Black and ToughGard duct board can be cleaned effectively with industry recognized duct cleaning equipment and procedures as outlined in the North American Insulation Manufacturers Association (NAIMA) Duct Cleaning Guide. Proper design, filtration, maintenance and operation of the HVAC system will reduce the need for cleaning.



Ultra*Duct™ Black

- **Resists Microbial Growth**
  The air stream surface of CertainTeed duct board contains an EPA registered antimicrobial agent to reduce the potential of microbial growth that may affect this product. The antimicrobial properties are intended to only protect this product.

BASIC PRODUCT DATA

ToughGard and Ultra*Duct Black perform at air velocities of up to 5,000 fpm (25.4 m/s). Both also perform at maximum internal pressures of ± 2" (51 mm) water gauge, and 250°F (121°C).

COMPLIANCES

Duct board products regularly meet the requirements of the following current specifications, standards and codes:

- **Material Specifications** UL181 for Factory Made Air Ducts and Air Connectors, Class 1 Rigid. Closure systems must meet the requirements of UL 181A.
- **Fire Safety Standards**
  NFPA 90A, NFPA 90B
- **Building Code**
  ICC
- GREENGUARD®
  Children & Schools

INSTALLATION

All fabrication, application and installation steps shall be in compliance with the NAIMA Fibrous Glass Duct Construction Standard or the SMACNA Fibrous Glass Duct Construction Standard and the project specification. Refer to the CertainTeed website, installation manuals or CertainTeed specification data sheets for installation guidelines.

MAINTENANCE

An inspection and preventative maintenance program for the HVAC system is recommended to ensure optimum performance.

TOUGHGARD® AND ULTRA*DUCT™ BLACK DUCT BOARD AVAILABLE SIZES

PRODUCT TYPES		THICKNESS		WIDTH		LENGTH		NO. BOARDS	
EI	EDGE	in.	mm	in.	mm	in.	mm	CARTON	PALLET
475	Shiplap or Butt Edge	1	25	48	1219	120	3048	6	45
	Shiplap or Butt Edge	1	25	48	1219	96	2438	8	45
800	Shiplap or Butt Edge	1	25	48	1219	120	3048	6	45
	Shiplap or Butt Edge	1½	38	48	1219	120	3048	4	30
	Shiplap or Butt Edge	1½	38	48	1219	96	2438	6	30
UDB	Shiplap or Butt Edge	2	51	48	1219	120	3048	3	22

NOTE: Contact CertainTeed for minimum order quantities and availability.

ToughGard® Duct Board Physical Properties & Performance

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. (51mm) 5000 fpm (25.4m/s)	 ASTM C 411 UL 181 UL 181
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	NFPA 255 UL 723 ASTM E 84
Water Vapor Sorption	< 2% by weight	ASTM C 1104
Water Vapor Transmission (Facing only)	0.02 perms	ASTM E 96, Dessicant Method
Corrosion Resistance	Pass	UL 181, ASTM C 665
Fungi Resistance	Pass; No Growth	ASTM G 21, UL 181, ASTM C 1338
Bacteria Resistance	No Growth	ASTM G 22
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259
Water Repellency Rating	≥ 4	INDA IST 80.6-92

TOUGHGARD® DUCT BOARD THERMAL PERFORMANCE

PRODUCT	THICKNESS		K-VALUE		C-VALUE		R-VALUE	
EI	in.	mm	Btu•in/h•ft²•°F	W/m•°C	Btu/h•ft²•°F	W/m²•°C	Btu/h•ft²•°F	W/m²•°C
475	1	25	0.23	0.033	0.23	1.31	4.3	0.76
800	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	1.15

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (k) value.
Tested in accordance with ASTM C 518 and/or ASTM C 177 at 75°F (24°C) mean temperature.

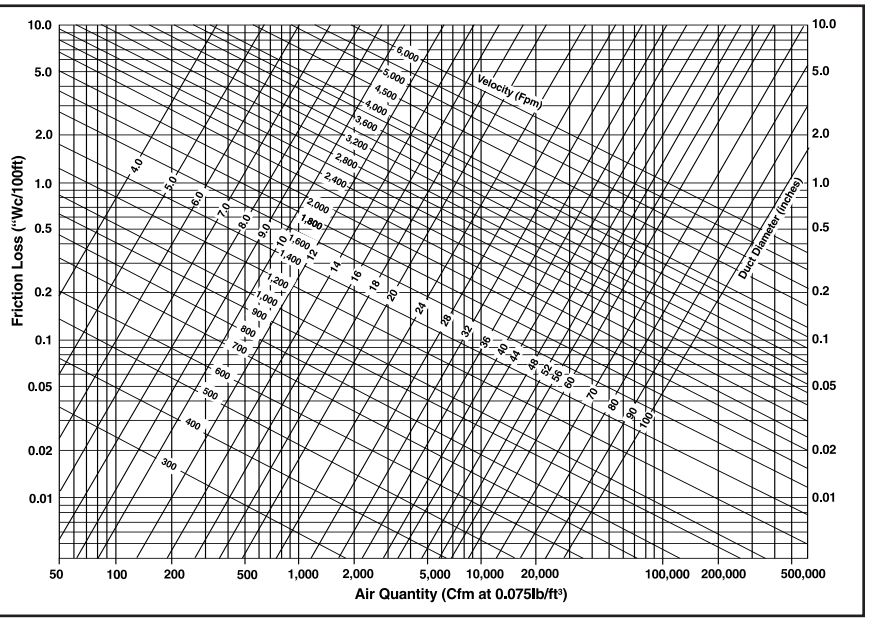
TOUGHGARD® DUCT BOARD ACOUSTICAL PERFORMANCE

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
EI	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
800	1	25	0.07	0.22	0.77	1.00	1.03	1.05	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	0.95	0.95

Sound absorption tested in accordance with ASTM C 423 using Type A mounting per ASTM E 795.

ToughGard® Duct Board Air Friction Chart

This chart is to be used in place of the standard friction loss chart published in the ASHRAE Handbook of Fundamentals. For conversion of round equivalents to rectangular sizes, use Table 2 "Equivalent Rectangular Duct Dimensions" from the same reference. Test conducted in accordance with ASHRAE 120P.



Ultra®Duct™ Black Duct Board Physical Properties & Performance

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 (25.4m/s)	 ASTM C 411 UL 181 UL 181
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	NFPA 255 UL 723 ASTM E 84
Water Vapor Sorption	< 2% by weight	ASTM C 1104
Water Vapor Transmission (Facing only)	0.02 perms	ASTM E 96, Dessicant Method
Corrosion Resistance	Pass	ASTM C 665, UL 181
Fungi Resistance	Pass; No Growth	ASTM G 21, UL 181, ASTM C 1338
Bacteria Resistance	No Growth	ASTM G 22
Limited Combustible	Pass (< 3500 Btu/lb)	NFPA 259

ULTRA*DUCT™ BLACK DUCT BOARD THERMAL PERFORMANCE

PRODUCT	THICKNESS		K-VALUE		C-VALUE		R-VALUE	
EI	in.	mm	Btu•in/h•ft²•°F	W/m•°C	Btu/h•ft²•°F	W/m²•°C	Btu/h•ft²•°F	W/m²•°C
475	1	25	0.23	0.033	0.23	1.31	4.3	0.76
800	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 C 518 and/or ASTM C 177 at 75°F (24°C) mean temperature.

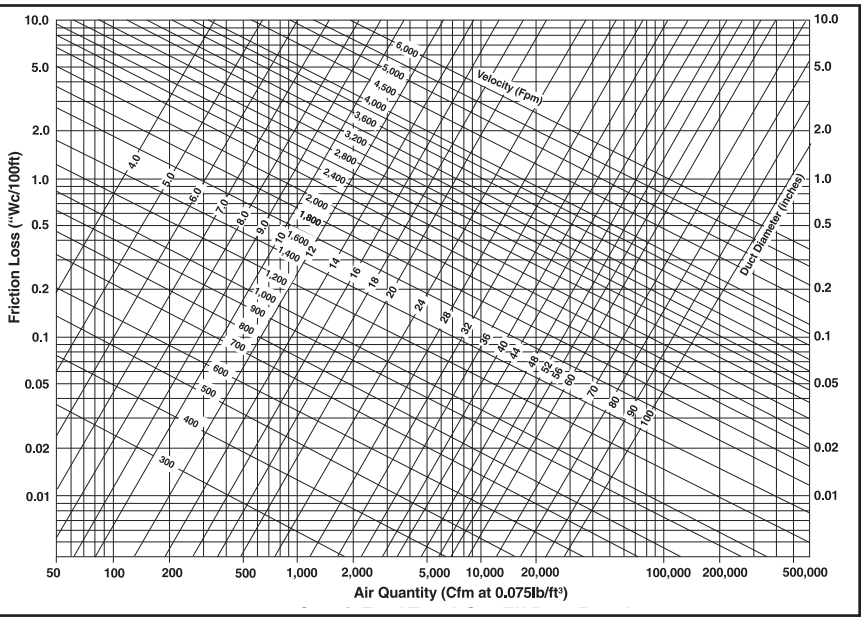
ULTRA*DUCT™ BLACK DUCT BOARD ACOUSTICAL PERFORMANCE

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
EI	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
800	1	25	0.07	0.22	0.77	1.00	1.03	1.05	0.75
	1½	38	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 C 423 using Type A mounting per ASTM E 795.

Ultra*Duct™ Black Duct Board Air Friction Chart

This chart is to be used in place of the standard friction loss chart published in the ASHRAE Handbook of Fundamentals. For conversion of round equivalents to rectangular sizes, use Table 2 "Equivalent Rectangular Duct Dimensions" from the same reference. Test conducted in accordance with TIMA AHS-152T.



Duct Wrap

SoftTouch™ Duct Wrap reduces unwanted heat loss or gain and condensation during system operation.

CertainTeed SoftTouch™ duct wrap Insulation offers outstanding thermal properties that reduce unwanted heat loss or gain and condensation during system operation. SoftTouch duct wrap is GREENGUARD® Certified as low emitting.

BASIC USES

CertainTeed SoftTouch duct wrap products are used to insulate rectangular and round heating, ventilating and air conditioning ductwork.

PRODUCT DESCRIPTIONS

- **SoftTouch Duct Wrap** This blanket-type insulation is composed of glass fibers bonded together with a thermosetting resin. It's available unfaced or with an FSK, gray PSK or white PSK vapor retarder facing. On faced products, a taping tab is provided on one edge for ease of installation.

FEATURES AND BENEFITS

- **Lower Energy Usage** Duct wrap products provide thermal efficiency that reduces unwanted heat loss or gain from equipment and ductwork. This means a likely savings of energy and improved system performance.
- **Condensation Control** When properly installed in the correct thickness, duct wrap virtually eliminates condensation problems on cold duct surfaces.
- **SoftTouch** Our duct wrap products are now made with SoftTouch for a softer, less itchy product.

BASIC PRODUCT DATA

Duct wrap may be used to insulate most heating, ventilating and air conditioning ductwork at temperatures from 35°F to 250°F (1.7°C to 121°C) for faced duct wrap, and from 35°F to 350°F (1.7°C to 177°C) for unfaced duct wrap. The FSK and white PSK facing have a 0.02 perm rating. The gray PSK has a 0.09 perm rating.

COMPLIANCES

Duct wrap products meet the requirements of the following current specifications and standards:

- **Material Specifications** ASTM C 1290, ASTM C 553. The FSK facing meets the requirements of ASTM C 1136, Type II.
- **Fire Safety Standards** NFPA 90A, NFPA 90B
- **Model Building Code** ICC
- GREENGUARD® Children & Schools

INSTALLATION

All fabrication, application and installation steps shall be in accordance with the requirements of the product specification sheet or the National Commercial and Industrial Installation Standards (current edition) published by the Midwest Insulation Contractors Association (MICA). Refer to CertainTeed website, installation manuals or CertainTeed specification sheets for installation guidelines.

MAINTENANCE

An inspection and preventative maintenance program for the HVAC system is recommended to ensure optimum performance.

For optimum performance and longest life, the insulation should be kept dry at all times.

DUCT WRAP AVAILABLE SIZES

PRODUCT		THICKNESS		LENGTH		WIDTH	
TYPE	FACING	in.	mm	ft.	m	in.	mm
75	unfaced	1	25	150	30.5	9–72	229–1829
	unfaced	1½	38	150	30.5	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	2⅛	54	75	22.9	48	1219
	FSK/PSK	2¼	57	75	22.9	48	1219
	FSK/PSK	3	76	50	15.2	48	1219
	FSK/PSK	4	102	50	15.2	48	1219
100	unfaced	1	25	150	30.5	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

SoftTouch™ Duct Wrap Physical Properties & Performance

DUCT WRAP PHYSICAL PROPERTIES

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits: Temperature	Unfaced: 35–350°F (1.7–177°C) Faced: 35–250°F (1.7–121°C)	ASTM C 411
Surface Burning Characteristics (Fire Hazard Classification)	Maximum: Flame Spread Index: 25 Smoke Developed Index: 50	NFPA 255, ASTM E 84 UL 723, CAN/ULC-S102-M88
Water Vapor Sorption	< 5% by Weight	ASTM C 1104
Water Vapor Transmission (Facing only)	FSK and white PSK: 0.02 perms	ASTM E 96, Dessicant Method
	Gray PSK: 0.09 perms	ASTM E 96, Dessicant Method
Corrosion Resistance	Pass	ASTM C 665
Fungi Resistance	Pass	ASTM C 1338
Odor Emission	Pass	ASTM C 1304
Noncombustible	Pass	ASTM E 136

DUCT WRAP THERMAL PERFORMANCE

PRODUCT	THICKNESS		R-VALUE		INSTALLED R-VALUE		K-VALUE		INSTALLED K-VALUE	
TYPE	in.	mm	h•ft²•°F/Btu	m²•°C/W	h•ft²•°F/Btu	m²•°C/W	Btu•in/h•ft²•°F	W/m•°C	Btu•in/h•ft²•°F	W/m•°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
	2⅛	54	7.3	1.29	6.0	1.06	0.29	0.042	0.27	0.038
	2¼	57	7.8	1.37	6.5	1.14	0.29	0.042	0.26	0.037
	2½	64	8.6	1.51	7.1	1.25	0.29	0.042	0.26	0.037
	3	76	9.6	1.69	8.0	1.41	0.31	0.045	0.28	0.041
	4	102	13.5	2.38	11.0	1.94	0.30	0.043	0.27	0.039
100	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
	2	51	7.6	1.34	6.1	1.07	0.26	0.038	0.25	0.035
150	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 C 518 and/or ASTM C 177 at 75°F (24°C) mean temperature. R means resistance to heat flow. The higher the R-Value, the greater the insulating power. The installer 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.

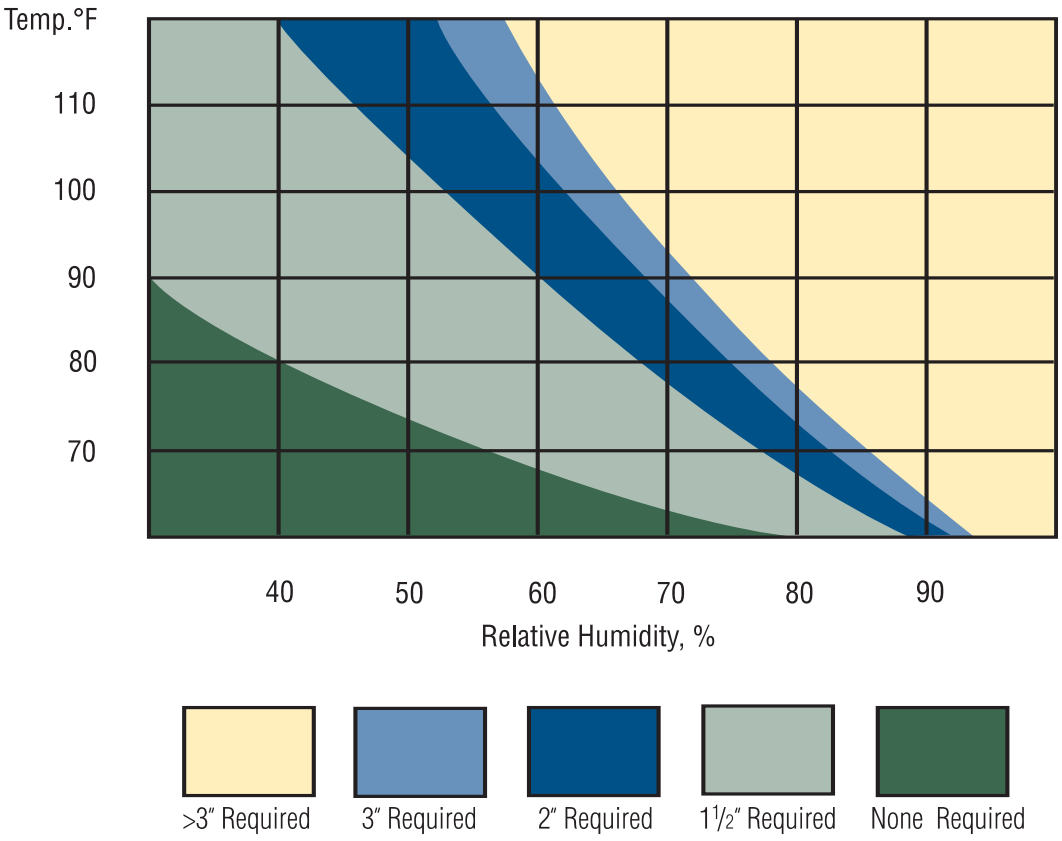
DUCT WRAP ACOUSTICAL PERFORMANCE

PRODUCT		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	2	51	13	17	26	36	47	58
	FSK	2¼	57	13	17	27	37	48	60
	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 Standard Duct Wrap on 20 gauge sheet metal when tested according to ASTM E 90.

DUCT WRAP CONDENSATION CONTROL

This chart is based on indoor conditions so far as wind and other factors are concerned. To determine thickness to prevent condensation, based on installed thickness at 75% of nominal (out-of-package) thickness and a duct internal air temperature of 55°F, refer to the condensation control chart below.

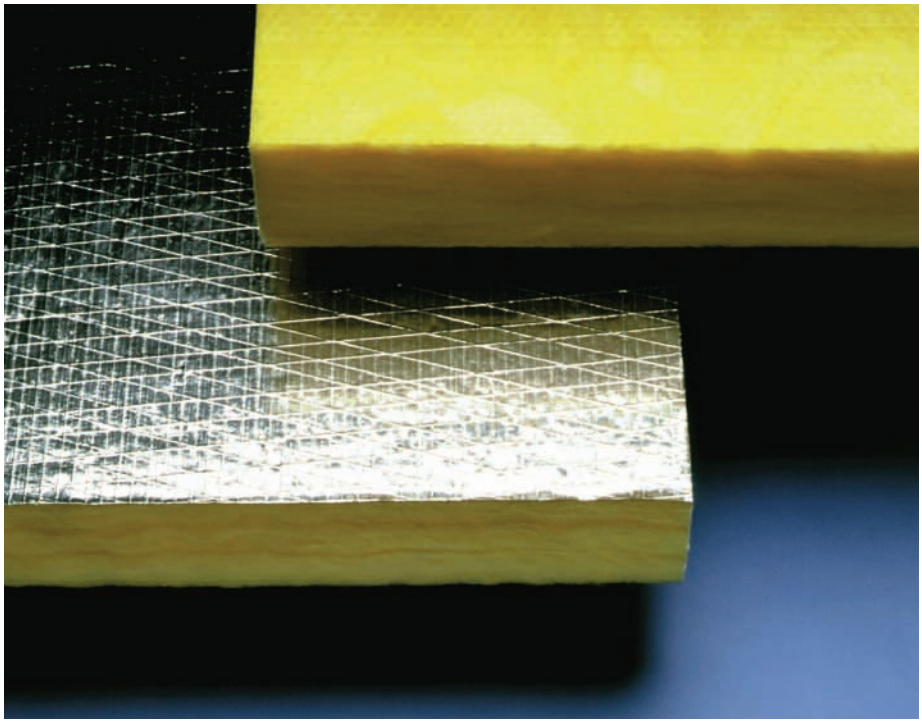


To use: 1) select maximum relative humidity (%) on lower axis;

2) read up vertically until that line intersects the maximum ambient air temperature;

3) select the thickness indicated at the point of intersection.
The chart is based on indoor conditions as far as wind and other factors are concerned.

Commercial Board



CertaPro™ commercial board

Commercial board is a general purpose fiber glass board product for thermal and acoustical applications.

BASIC USES

CertaPro™ commercial board is used to insulate hot or cold tanks, vessels, equipment, ductwork and plenums, or whenever a neat finished appearance is required. It is also suitable for use in commercial construction applications requiring thermal and acoustical insulation.

PRODUCT DESCRIPTION

Commercial board is composed of glass fibers bonded together with a thermosetting binder. It is available in various densities from flexible CB 150 to rigid CB 600 with a degree of flexibility or rigidity for nearly any application requiring conformance to curved surfaces, resistance to compression or where sharp, square edges are required.

Commercial board is available unfaced or faced with FSK or ASJ vapor-retardant facings. FSK is a glass scrim reinforced laminate of aluminum foil and kraft bonded together with a fire-retardant adhesive. The foil presents a neat, metallic surface finish. ASJ is a glass scrim reinforced white kraft and aluminum foil laminate. The kraft presents an attractive white surface finish.

FEATURES AND BENEFITS

- **Thermally Efficient** Commercial board allows for increased energy efficiency in narrow cavities by providing high R-Value per inch thermal performance.
- **Easy to Fabricate** Commercial board can be cut on the job site to the size and shape required of the application.
- **Wide Variety of Uses** Commercial board can be used in nearly any application requiring conformance to curved surfaces or needing sharp edges.
- **Facilitates Easy Material Handling** Commercial board (2' x 4') is cartoned and cross-stacked on pallets (16 ctns/pallet) for faster loading and unloading of product.

BASIC PRODUCT DATA

Commercial board can be used at temperatures up to 250°F if faced or 450°F if unfaced.

COMPLIANCES

Commercial board regularly meets the requirements of the following current specifications, standards and codes:

- **Material Specifications** ASTM C 612, ASTM C1136
- **Fire Safety Standards** UL 723, ASTM E 84 and NFPA 255
- **Model Building Code** ICC

CERTAPRO™ COMMERCIAL BOARD AVAILABLE SIZES

PRODUCT	DENSITY		NOM. THICKNESS		AVAILABLE FACING			DIMENSIONS	
TYPE	Lb/ft³	Kg/m³	in.	mm	PLAIN	FSK	ASJ	in.	mm
CB 150	1.50	24	1½	38	3	3	n/a	24 x 48	610 x 1219
	1.50	24	2	51	3	3	n/a	24 x 48	610 x 1219
CB 225	2.25	36	1	25	3	3	3	24 x 48	610 x 1219
	2.25	36	1½	38	3	3	3	24 x 48	610 x 1219
	2.25	36	2	51	3	3	3	24 x 48	610 x 1219
CB 300	3.00	48	1	25	3	3	3	24 x 48	610 x 1219
	3.00	48	1½	38	3	3	3	24 x 48	610 x 1219
	3.00	48	2	51	3	3	3	24 x 48	610 x 1219
CB 600	6.00	96	1	25	3	3	3	24 x 48	610 x 1219
	6.00	96	1½	38	3	3	3	24 x 48	610 x 1219
	6.00	96	2	51	3	3	3	24 x 48	610 x 1219

NOTE: contact CertainTeed for minimum order quantities and availability.

CERTAPRO™ COMMERCIAL BOARD PHYSICAL PROPERTIES

PROPERTIES	PERFORMANCE	TEST METHOD
Operating Limits	Up to 250°F (faced) or 450°F (unfaced)	ASTM C 411
Fire Resistance	Maximum: Flame Spread Index: 25 or less; Smoke Developed Index: 50	UL 723, ASTM E 84, NFPA 255
Vibration Resistance	Will not crack, split, shrink, or crumble	ASTM C 1139
Moisture Absorption	< 5% by Weight	ASTM C 1104
Fungi Resistance	Pass	ASTM C 1338
Moisture Vapor Transmission (Facing only)	0.02 perms	ASTM E 96, Dessicant Method
Limited combustible	Pass (< 3500 Btu/lb)	NFPA 259

Commercial Board Performance

CERTAPRO™ COMMERCIAL BOARD THERMAL PERFORMANCE

PRODUCT			THERMAL CONDUCTIVITY		THERMAL RESISTANCE	
TYPE	THICKNESS		K-VALUE		R-VALUE	
	in.	mm	Btu•in/h•ft²•°F	W/m•°C	h•ft²•°F/Btu	m²•°C/W
CB 150	1½	38	0.25	0.036	6.0	1.06
	2	51	0.25	0.036	8.0	1.41
	2½	64	0.25	0.036	10.0	1.76
	3	76	0.25	0.036	12.0	2.11
	3½	89	0.25	0.036	14.0	2.47
	4	102	0.25	0.036	16.0	2.82
CB 225	1	25	0.23	0.033	4.3	0.77
	1½	38	0.23	0.033	6.5	1.15
	2	51	0.23	0.033	8.7	1.53
	2½	64	0.23	0.033	10.9	1.91
	3	76	0.23	0.033	13.0	2.30
	3½	89	0.23	0.033	15.2	2.68
	4	102	0.23	0.033	17.4	3.06
CB 300	1	25	0.23	0.033	4.3	0.77
	1½	38	0.23	0.033	6.5	1.15
	2	51	0.23	0.033	8.7	1.53
	2½	64	0.23	0.033	10.9	1.92
	3	76	0.23	0.033	13.0	2.30
	3½	89	0.23	0.033	15.2	2.68
	4	102	0.23	0.033	17.4	3.06
CB 600	1	25	0.22	0.032	4.5	0.80
	1½	38	0.22	0.032	6.8	1.20
	2	51	0.22	0.032	9.1	1.60

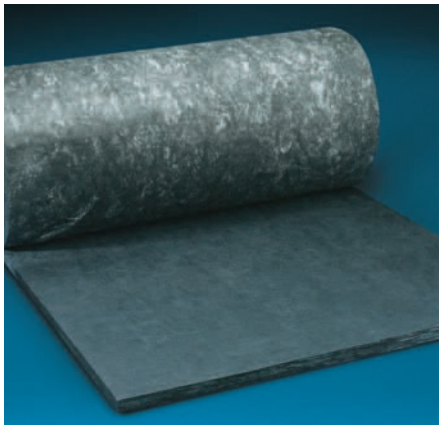
Tested in accordance with ASTM C 518 and/or ASTM C 177 at 75° F (24° C) mean temperature.

CERTAPRO™ COMMERCIAL BOARD TYPICAL ACOUSTICAL PERFORMANCE (PLAIN)

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND FREQUENCIES (Hz)						
TYPE	in.	mm	125	250	500	1000	2000	4000	NRC
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 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	0.95
	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 300	1	25	0.08	0.25	0.68	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	0.17	0.73	1.08	1.04	1.02	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
	4	102	0.75	1.18	1.09	1.00	1.00	1.02	1.05
CB 600	1	25	0.02	0.27	0.63	0.85	0.93	0.91	0.75
	1½	38	0.17	0.50	0.98	1.03	0.99	0.98	0.90
	2	51	0.16	0.71	1.02	0.99	0.99	0.98	0.95

Sound absorption tested in accordance with ASTM C 423 using Type A mounting per ASTM E 795.
*Estimated sound absorption coefficients and NRC.

Acoustical Insulation



CERTAPRO™ ACOUSTABLANKET™ BLACK

AcoustaBlanket Black insulation is a black fiber glass blanket with an abuse resistant black surface for acoustical applications.

BASIC USES

CertaPro AcoustaBlanket Black insulation is used for acoustical control in theatres, studios, and the entertainment industry. It has a black Class A surface for exposed applications.

PRODUCT DESCRIPTION

Composed of glass fibers firmly bonded together with a thermoset resin and overlaid with an extremely tough and durable abuse-resistant, black composite surface

FEATURES AND BENEFITS

- **Noise Control** Provides excellent acoustical properties for use in theatres, studios and the entertainment industry.
- **Durable** The strength and resiliency of the fire-resistant surface provides outstanding resistance against puncturing, tearing and other damage during fabrication, installation, and periodic system maintenance.
- **Long-lasting and Non-corrosive** Inert fiber glass will not deteriorate or provide sustenance for vermin or rodents.

COMPLIANCE

AcoustaBlanket Black meets the requirements of the following current specifications, standards and codes:

- **Material Specifications** ASTM C 553, Type I & II
- **Fire Safety Standards** UL 723, ASTM E 84 and NFPA 255
- **Model Building Code** ICC

INSTALLATION

AcoustaBlanket Black insulation is applied to spandrel, pre-cast concrete panels with approved adhesives or mechanical fasteners. These installation recommendations are general in nature. Other methods are acceptable. Please consult your contractor for recommendations best suited to the application.

MAINTENANCE

No maintenance required.

CERTAPRO™ ACOUSTABLANKET™ BLACK AVAILABLE SIZES

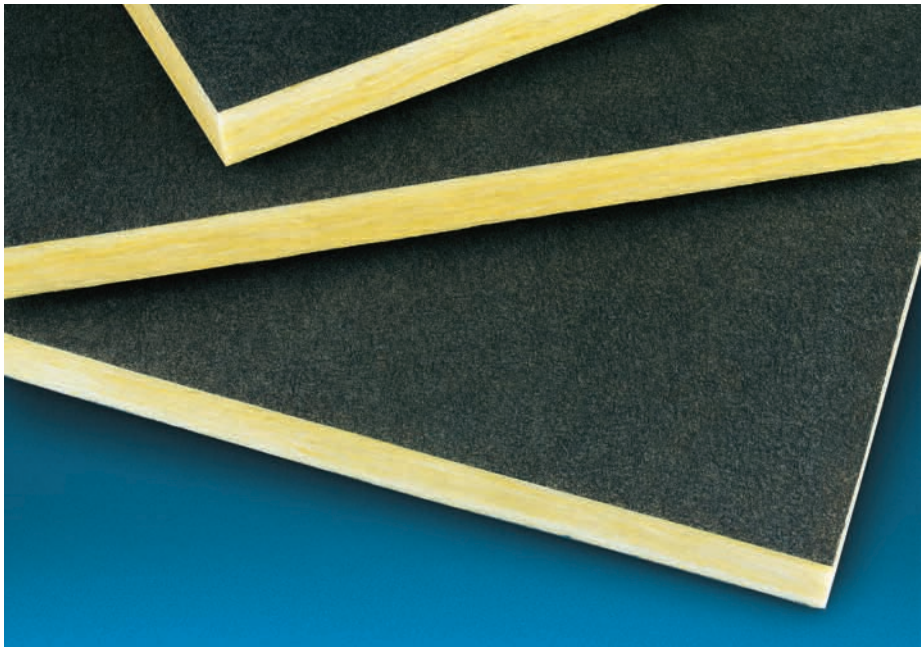
PRODUCT		THICKNESS		WIDTH		LENGTH		R-VALUES	
TYPE	DENSITY	in.	mm	in.	mm	ft.	m	R	RSI
150	1.5 pcf (24 kg/m³)	1	25	48	1219	100	30.5	4.2	0.74
	1.5 pcf (24 kg/m³)	1½	38	48	1219	50	15.2	6.3	1.11
	1.5 pcf (24 kg/m³)	2	51	48	1219	50	15.2	8.3	1.46
200	2.0 pcf (32 kg/m³)	½	13	48	1219	100	30.5	2.1	0.37

CERTAPRO™ ACOUSTABLANKET™ BLACK ACOUSTICAL PERFORMANCE

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
TYPE	in.	mm	125	250	500	1000	2000	4000	NRC
150	1	25	0.10	0.32	0.66	0.84	0.91	0.91	0.70
	1½	38	0.16	0.53	0.95	1.02	1.03	1.00	0.90
	2	51	0.24	0.79	1.09	1.05	1.02	1.01	1.00
200	½	13	0.03	0.12	0.35	0.61	0.75	0.84	0.45

Sound absorption tested in accordance with ASTM C 423 using Type A mounting per ASTM E 795.

Acoustical Insulation



CertaPro™ Acoustaboard™ Black

CERTAPRO™ ACOUSTABOARD™ BLACK

AcoustaBoard Black insulation is a black fiber glass board with an abuse resistant black surface for acoustical applications.

BASIC USES

CertaPro AcoustaBoard Black is used for sound control in theatres, studios and entertainment facilities. The rigid board has a Class A surface that can be used in exposed applications.

PRODUCT DESCRIPTION

Composed of glass fibers bonded together with a thermoset resin. A durable, black non-woven mat surface is adhered to the glass fiber base board.

FEATURES AND BENEFITS

- **Noise Control** Provides excellent acoustical properties for use in theatres, studios and the entertainment industry.
- **Light Absorbing** The durable black surface can be left exposed and absorbs light for use when interiors need to be dark.
- **Long-lasting and Non-corrosive** Inert fiber glass will not deteriorate or provide sustenance for vermin or rodents.

COMPLIANCES

AcoustaBoard Black meets the requirements of the following current specifications, standards and codes:

- **Material Specifications** ASTM C 612, Type 225, Type 1A; Type 300, Type 1A & 1B
- **Fire Safety Standards** UL 723, ASTM E 84 and NFPA 255
- **Model Building Code** ICC

INSTALLATION

AcoustaBoard Black can be installed rapidly and is easily cut to fit around obstructions and structural members. The black-faced side of the board should be installed toward the interior side of the structure. The product is applied to spandrel, pre-cast concrete panels and to gypsum board surfaces with adhesives or mechanical fasteners. Boards may also be installed using hat channels or Z studs.

These installation recommendations are general in nature. Other methods are acceptable. Please consult your contractor for recommendations best suited to the application.

MAINTENANCE

No maintenance required.

CERTAPRO™ ACOUSTABOARD™ BLACK AVAILABLE SIZES

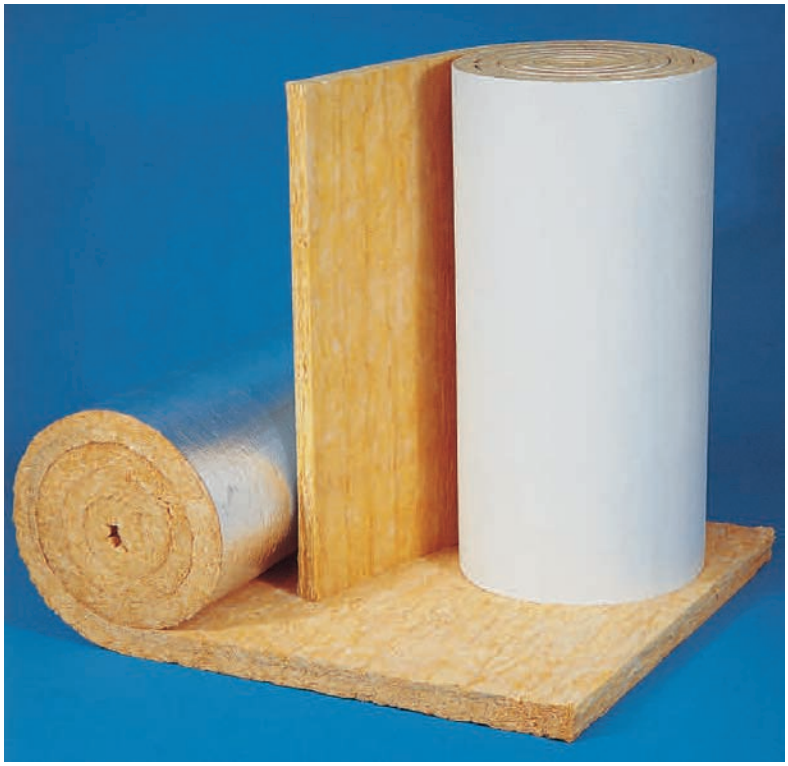
PRODUCT	THICKNESS		DIMENSIONS		DENSITIES		R-VALUES	
TYPE	in.	mm	in.	mm	lb/ft³	kg/m³	R	RSI
225	1	25	24 x 48	610 x 1219	2.25	36	4.3	0.76
	1½	38	24 x 48	610 x 1219	2.25	36	6.5	1.14
	2	51	24 x 48	610 x 1219	2.25	36	8.7	1.53
300	1	25	48 x 96	1219 x 2438	3.00	48	4.3	0.76
	1½	38	48 x 96	1219 x 2438	3.00	48	6.5	1.14
	2	51	48 x 96	1219 x 2438	3.00	48	8.7	1.53

CERTAPRO™ ACOUSTABOARD™ BLACK ACOUSTICAL PERFORMANCE

PRODUCT	THICKNESS		ABSORPTION COEFFICIENTS AT OCTAVE BAND CENTER FREQUENCIES (Hz)						
TYPE	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 C 423 using Type A mounting per ASTM E 795.

CrimpWrap™ Crimped Pipe and Tank Wrap



CrimpWrap™

BASIC USES

Insulating vessels and large diameter pipes in commercial and industrial construction projects to help control heat loss or gain, and provide hot surface personnel protection during system operation.

PRODUCT DESCRIPTION

A unique, flexible, continuous blanket insulation composed of variably-oriented glass fibers firmly bonded together with a thermosetting resin. It's available with either a foil faced or a white ASJ vapor retarder facing.

FEATURES AND BENEFITS

- **Economical** CrimpWrap is more economical than molded pipe insulation when used to wrap large diameter pipe.
- **Thermal Performance** Helps control heat loss or gain and provides protection from a hot surface during system operation.
- **Rigid Fiber Glass Board Qualities** Thermal and compressible properties of rigid fiber glass board, yet flexible enough to wrap vessels and large diameter pipes.
- **Helps Eliminate Strip Delamination** The continuous fiber glass blanket construction eliminates the potential for strip delamination common in traditional tank wrap type insulations.

BASIC PRODUCT DATA

CrimpWrap insulates vessels and large diameter pipes with service temperatures from 35°F to 850°F (1.7°C to 454°C).

COMPLIANCES

CrimpWrap regularly meets the requirements of the following current specifications, standards and codes:

- **Material Specifications**
  ASTM C 612, Type IB ASTM C 1393, Type IIIA, Category 2

INSTALLATION

All fabrication, application and installation steps shall be in accordance with the product specification sheet or the requirements of the National Commercial and Industrial Installation Standards (current edition) published by the Midwest Insulation Contractors Association (MICA). Refer to CertainTeed website, installation manuals or CertainTeed specification sheets for installation guidelines.

CRIMPWRAP™ PHYSICAL PROPERTIES

PROPERTIES	PERFORMANCE	TEST METHOD
Maximum Use Temp °F (°C) (See Limitations)	850 (454)	ASTM C 411
Water Vapor Sorption Maximum % by Weight	5%	ASTM C 1104
Density, lb/ft3 (kg/m^3)	2.5 (40)	ASTM C 167
Surface Burning Characteristics: –Maximum Flame Spread Index: –Maximum Smoke Developed Index:	25 50	ASTM E 84
Corrosiveness	Meets Requirements	ASTM C 665
Fungi Resistance	Meets Requirements	ASTM C 1338
Odor Emission	Meets Requirements	ASTM C 1304
Moisture Vapor Transmission (facing only)	.02 Perms	ASTM E 96, Dessicant Method
Compressive resistance, minimum load required to produce a 10% reduction in thickness, lb/ft^2 (kPA)	25 (1.2)	ASTM C 165

CRIMPWRAP™ THERMAL PERFORMANCE

MEAN TEMPERATURE		APPARENT THERMAL CONDUCTIVITY	
°F	°C	Btu•in/hr•ft^2•°F	W/m•°K
75	24	0.26	0.037
150	66	0.30	0.043
200	93	0.33	0.048
300	149	0.43	0.062
400	204	0.55	0.078
500	260	0.74	0.107

CRIMPWRAP™ AVAILABLE SIZES

THICKNESS		WIDTH		LENGTH	
in.	mm	in.	mm	ft.	m
1	25	48	1219	39–4" to 52	12 to15.85
1½	38	48	1219	25–9" to 30	7.85 to 9.14
2	51	48	1219	19–2" to 26	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 20	4 to 4.57
4	102	48	1219	13 to 14	4 to 4.27

NOTE: Contact CertainTeed for minimum order quantities and availability.

CertainTeed is the right choice for your business.

THE RIGHT PRODUCTS.

CertainTeed has been making quality building products for more than 100 years and is part of the largest building materials company in the world, Saint-Gobain. We offer you a full line of fiber glass and spray foam insulation products to meet the needs of your business and your customers.

And even though we've been doing this for a long time, we're always looking for new and better ways to improve our products and increase productivity. Many of our manufacturing plants are registered to ISO 9001:2000 standards. So you know you're getting the best products possible.

THE RIGHT PERFORMANCE.

Our fiber glass insulation products have achieved GREENGUARD® Certification for superior indoor air quality performance. This means our products will contribute very low levels of volatile organic compounds (VOCs) and other pollutants to the indoor environment.

THE RIGHT PROGRAMS.

Our ultimate goal, of course, is to deliver the absolute best products and programs for your business. We offer solutions that streamline inventory and incentives to maximize sales as well as margins.

THE RIGHT SUPPORT.

We don't just sell insulation. We listen. We want to understand the unique needs of your business in order to deliver solutions that actually work. From our Building Science department to our dedicated sales team, we work to earn your trust and your business—order after order, year after year.

For questions regarding specifications, building codes and installation practices, contact our Technical Services Department at (800) 233-8990.

In addition to these HVAC and fiber glass products, CertainTeed offers a full line of commercial and residential insulation products.

ASK ABOUT OUR OTHER CERTAINTEED PRODUCTS AND SYSTEMS:

EXTERIOR: ROOFING • SIDING • WINDOWS • FENCE • RAILING • TRIM • DECKING • FOUNDATIONS • PIPE
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