

ToughGard® R Duct Liner



1. PRODUCT NAME

ToughGard® R Duct Liner

2. MANUFACTURER

CertainTeed Corporation

P.O. Box 860

Valley Forge, PA 19482-0105

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800-233-8990

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3. PRODUCT DESCRIPTION

Basic Use: ToughGard R Duct Liner is used primarily as an acoustical liner in HVAC sheet metal ducts to absorb unwanted crosstalk, equipment and air rush noise. This product can be used 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).

Benefits: ToughGard R Duct Liner is 40% more water repellent than standard duct liner. This product provides excellent thermal properties, exhibits low air flow resistance and meets applicable fire resistance standards and building code requirements. It is durable, easy to clean and has a factory-applied edge coating that assures sealing of the transverse edges as per SMACNA and NAIMA installation standards.

Composition and Materials: Composed of rotary-type glass fibers firmly bonded together with a thermosetting resin overlaid with an extremely tough and durable fire-resistant black composite surface on the air stream side. The air stream surface contains an EPA registered anti-microbial 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. Product contains minimum 25% recycled content based on LEED definition.

Limitations: ToughGard R Duct Liner should be kept clean and dry during shipping, storage, installation and system operation.

Sizes: See table at right for available sizes. Contact CertainTeed for availability and minimum order quantities.

4. TECHNICAL DATA

Applicable Standards:

• Model Building Codes:

- ICC
- California Title 24

• Material Standards:

- ASTM C1071, Type I
- CAN/CGSB-51.11-92

• Fire Safety Standards:

- NFPA 90A, NFPA 90B

Fire Hazard Classification:

- UL 723, ASTM E84, NFPA 255, CAN/ULC-5102-M88
- Max. Flame Spread Index: 25
- Max Smoke Developed Index: 50

• Limited Combustible:

- NFPA 259
- <3500 Btu/lb

Physical/Chemical Properties:

• Thermal Performance:

- See table on other side

• Acoustical Performance:

- See table on other side

• Operating Limits:

- Temperature: ASTM C411
- Max. 250°F (121°C)
- Air Velocity: ASTM C1071
- Max. 6,000 fpm (30.5 m/s)

• Water Vapor Sorption:

- ASTM C1104
- < 3% by weight

• Corrosiveness:

- ASTM C665
- Pass

• Bacteria Resistance:

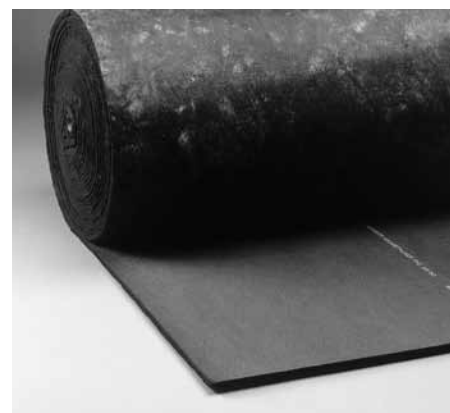
- ASTM G22
- No Growth

• Fungi Resistance

- ASTM C1338 and ASTM G21
- Pass; No Growth

• Water Repellency Rating:

- INDA IST 80.6-92
- ≥ 4



Quality Assurance: CertainTeed's commitment to quality and environmental management has ensured the registration of the Athens, Chowchilla and Kansas City plants to ISO 9001:2000 and ISO 14001:2004 standards.

5. INSTALLATION

All duct liner shall be installed in accordance with the requirements of the NAIMA Fibrous Glass Duct Liner Standard or SMACNA HVAC Duct Construction Standard and the project specification.

The liner shall be cut and fitted to ensure all joints are neatly and tightly butted with no interruptions or gaps.

All duct liner products shall be adhered to the sheet metal ductwork using an adhesive meeting the requirements of ASTM C916. The adhesive film coverage shall be a minimum 90% of the metal surface. Additionally, secure duct liner as required to the sheet metal ductwork using mechanical fasteners (impact-driven or weld-secured). These fasteners vary in length and type. Mechanical fasteners of the specified type and length shall be used, ensuring no greater than 10% compression of the liner thickness.

AVAILABLE SIZES							
Product Type	Density	Thickness		Length		Width	
		in.	mm	ft.	m	in.	mm
150	1.5 pcf (32 kg/m³)	1	25	50-140	15.2-42.67	34-72	864-1829
		1½	38	50-90	15.2-27.43	34-72	864-1829
		2	51	50-70	15.2-21.34	34-72	864-1829
200	2.0 pcf (32 kg/m³)	½	13	50-200	15.2-61	34-72	864-1829

Maximum fastener spacing shall be in accordance with NAIMA or SMACNA standards. ToughGard R provides clean “buttered” transverse edges. However, some circumstances will require the use of adhesive to butter raw exposed liner edges. Final job site buttering may be required to coat duct cut-ins and/or minor installation damage.

ToughGard Duct Liner fabricated duct systems shall be kept clean and dry from the point of fabrication through job site installation and system commissioning. Special precautions at the job site may be necessary to accomplish this.

Design Considerations:

- Butter all raw exposed edges.
- High in-duct air turbulence areas may require special procedures, i.e., perforated inner metal liner, etc.
- Metal nosings shall be securely installed over transversely oriented liner edges facing air stream at fan discharge and at any interval of lined duct preceded by unlined duct.

6. AVAILABILITY AND COST

Manufactured and sold throughout the United States. For availability and cost contact your local distributor, or call CertainTeed Sales Support Group in Valley Forge, PA at 800-233-8990.

7. WARRANTY

Refer to CertainTeed’s One-Year Limited Warranty for ToughGard R Fiber Glass Duct Liner (30-33-010).

8. MAINTENANCE

An inspection and preventative maintenance program for the HVAC system is recommended to ensure optimum performance. Use NAIMA guidelines for duct cleaning methods and procedures.

9. TECHNICAL SERVICES

Technical assistance can be obtained either from the local CertainTeed sales representative, or by calling CertainTeed Sales Support Group in Valley Forge, PA at 800-233-8990.

THERMAL PERFORMANCE								
PRODUCT			K-VALUE		C-VALUE		R-VALUE	
Type	Thickness		$\frac{\text{Btu} \cdot \text{in}}{\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}}$	$\frac{\text{W}}{\text{m}^2 \cdot ^\circ\text{C}}$	$\frac{\text{Btu}}{\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}}$	$\frac{\text{W}}{\text{m}^2 \cdot ^\circ\text{C}}$	$\frac{\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}}{\text{Btu}}$	$\frac{\text{m}^2 \cdot ^\circ\text{C}}{\text{W}}$
	in.	mm						
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.								

ACOUSTICAL PERFORMANCE									
PRODUCT			ABSORPTION COEFFICIENTS @ OCTAVE BAND CENTER FREQUENCIES (HZ)						NRC
Type	Thickness		125	250	500	1000	2000	4000	
	in.	mm							
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	0.82	0.45
Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795									



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