
NFRC 101-2006 [E1A25]



NFRC Errata and Addendum Log

E1A25 (October 09)

Table C.1: Thermophysical Properties of Solid Materials

Name	Density	Conductivity			Emissivity ¹	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Colonial Metal-tin plated steel	7,660	50.2	29.05	348.6	-	-

E1A24 (September 09)

Name	Density	Conductivity			Emissivity ²	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Colonial Warmetal-SST	7688	12.933	7.473	89.673		
Edgetech- Super Spacer Material nXt	493	0.114	0.066	0.789	-	-
Edgetech-Super Spacer Standard (EPDM)	820	0.127	0.074	0.883	-	-
Edgetech-Triseal Premium/Slimline	702	0.108	0.063	0.752	-	-
Leading Edge SST foil	7576	14.33	8.262	99.149	-	-

¹ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

² Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

E1A23 (August 09)

Name	Density	Conductivity			Emissivity ³	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Glasslam-air tight foam spacer	826	0.143	0.083	0.995	-	-

Name	Density	Conductivity			Emissivity ⁴	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Edgetech- Silicone foam spacer	690	0.102	0.059	0.704	-	-

E0A22 (August 09)

Name	Density	Conductivity			Emissivity ⁵	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Edgetech- Silicone foam spacer	480	0.151	0.059	0.704	-	-

E0A21 (June 09)

Name	Density	Conductivity			Emissivity ⁶	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Cardinal Stainless Steel	7,808	14.187	8.197	98.37	-	-

³ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

⁴ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

⁵ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

⁶ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

E0A20 (May 09)

Name	Density	Conductivity			Emissivity ⁷	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Chelsea Building Products-composite PVC	1,698	0.292	0.169	2.023	-	-

E0A19 (March 09)

Name	Density	Conductivity			Emissivity ⁸	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Aspen Aerogel-Spaceloft	137.1	0.015	0.009	0.103	-	-

E0A18 (February 09)

Name	Density	Conductivity			Emissivity ⁹	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Jeld-Wen EPS Door Core Material	18.58	0.033	0.019	0.229	-	-

E0A17 (January 09)

Name	Density	Conductivity			Emissivity ¹⁰	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
GED-Intercept	7,473	13.63	7.877	94.52	-	-

⁷ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

⁸ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

⁹ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

¹⁰ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

Name	Density	Conductivity			Emissivity ϵ ¹⁰	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Ultra Stainless Steel						

E0A16 (December 08)

Name	Density	Conductivity			Emissivity ϵ ¹¹	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Serious Materials-Ultem 2300	1522	0.223	0.129	1.549	-	-

E0A16 (November 08)

Name	Density	Conductivity			Source	Emissivity ϵ	Absorptivity ¹²
	ρ	k					
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-	-
Desiccant-desiccated matrix	-	0.290	0.168	2.011	11, 24	-	-
desiccant-loose fill	-	0.030	0.017	0.208	6,11, 24	0.9	0.50/0.30

E0A14 (November 08)

Table C.1: Thermophysical Properties of Solid Materials

Name	Density	Conductivity			Emissivity ϵ ¹³	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Gossen Cellular	653	0.066	0.038	0.459	-	-

¹¹ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

¹² Solar absorptance of all materials is defaulted to 0.50 for commercial products and to 0.30 for residential products without actual measurements

¹³ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

Name	Density	Conductivity			Emissivity ϵ ¹³	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
PVC						

E0A13 (September 08)

Name	Density	Conductivity			Emissivity ϵ ¹⁴	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Major Industries- IMG 125 Light Transmitting Insulation	6.92 (@ 1.25")	0.037	0.021	0.258	-	-

E0A12 (July 08)

Name	Density	Conductivity			Emissivity ϵ ¹⁵	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Aspen Aerogel- IM-Green-100F (4mm)	124.94	0.012	0.007	0.085	-	-
Aspen Aerogel- IM-Green-100P (3mm)	123.34	0.011	0.006	0.011	-	-

E0A11 (June 08)

Name	Density	Conductivity			Emissivity ϵ ¹⁶	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Major Industries-	9.58	0.07	0.041	0.487	-	-

¹⁴ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

¹⁵ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

¹⁶ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

Name	Density	Conductivity			Emissivity ϵ ¹⁶	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
10 Light Transmitting Insulation						

E0A10 (April 08)

Name	Density	Conductivity			Emissivity ϵ ¹⁷	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
JeldWen-LFI Door Skin sample-no CaCO3	1464	0.170	0.098	1.18	-	-
JeldWen-LFI Door Skin sample-30% CaCO3	1,353	0.134	0.077	0.929	-	-

E0A9 (February 08)

Name	Density	Conductivity			Emissivity ϵ ¹⁸	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Cabot Nanogel Translucent Aerogel	81.4	0.019	0.011	0.134	0.9	-

E0A8 (January 08)

Name	Density	Conductivity			Emissivity ϵ ¹⁹	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-

¹⁷ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

¹⁸ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

¹⁹ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

Name	Density	Conductivity			Emissivity ϵ ¹⁹	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Fibrex EB-vinyl coated composite material	1,389	0.199	0.115	1.38	0.9	-
Kalwall Insulation E	8.0	0.04	0.023	0.277	0.9	-

E0A7 (January 08)

Table C.1: Thermophysical Properties of Solid Materials

Name	Density	Conductivity			Emissivity ϵ ²⁰	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Advanced Environmental Recycling Technologies-Moisture Shield	1,000	0.198	0.114	1.373	0.9	-

E0A6 (October 07)

Table C.1: Thermophysical Properties of Solid Materials

Name	Density	Conductivity			Emissivity ϵ ²¹	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
CW Ohio-Wood Flour Polystyrene Material	587.9	0.077	0.044	0.533	0.9	-

E0A5 (August 07)

Table C.1: Thermophysical Properties of Solid Materials

Name	Density	Conductivity			Emissivity ϵ ²²	Absorptivity ¹
	ρ	k				

²⁰ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

²¹ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

²² Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Edgetech- Super Spacer Material nXt	784	0.151	0.088	1.05	0.9	-

E0A4 (Mar 07):

Table C.1: Thermophysical Properties of Solid Materials

Name	Density	Conductivity			Emissivity ϵ ²³	Absorptivity ¹
	ρ	k				
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-
Kalwall Insulation A	4.54	0.115	0.066	0.794	-	-
Kalwall Insulation B	4.06	0.093	0.054	0.648	-	-
Kalwall Insulation C	12.82	0.047	0.027	0.327	-	-
Kalwall Insulation D	38.98	0.032	0.019	0.222	-	-

E0A3 (Feb 07):

Appendix B Extended Set of Generic Thermophysical Property Values of Materials

Table B.1: Thermophysical Properties of Solids

Name	Density	Conductivity			Source	Emissivity ϵ	Absorptivity ¹
	ρ	k					
	kg/m ³	W/m·K	Btu/hr·ft·F	Btu·in/hr·ft ² ·°F	-	-	-
Pine (Radiata)	504	0.128	0.074	0.887	10	0.9	0.50/0.30
Red Alder	440	0.114	0.066	0.791	10	0.9	0.50/0.30

E0A2 (Jan 07):

3. TERMINOLOGY

All definitions under section 3, Terminology, were removed and a reference directing readers to NFRC Glossary and Terminology was added.

²³ Emissivity for non-metallic materials is defaulted to 0.90 without actual measurements

E0A1 (October 06):

Table C.1: Thermophysical Properties of Solid Materials

Name	Density ρ	Conductivity k			Emissivity ϵ	Absorptivity α
	kg/m ³	W/m-K	Btu/h·ft·°F	Btu·in./h·ft ² ·°F		
Royal Moldings- cellular PVC	635	0.066	0.038	0.456	-	