

# Emissivity values of common materials

Material	Emissivity*
Aluminum, polished	0.05
Aluminum, rough surface	0.07
Aluminum, strongly oxidized	0.25
Asbestos board	0.96
Asbestos fabric	0.78
Asbestos paper	0.94
Asbestos slate	0.96
Brass, dull, tarnished	0.22
Brass, polished	0.03
Brick, common	0.85
Brick, glazed, rough	0.85
Brick, refractory, rough	0.94
Bronze, porous, rough	0.55
Bronze, polished	0.10
Carbon, purified	0.80
Cast iron, rough casting	0.81
Cast iron, polished	0.21
Charcoal, powdered	0.96
Chromium, polished	0.10
Clay, fired	0.91
Concrete	0.92
Copper, polished,	0.01
Copper, commercial burnished	0.07
Copper, oxidized	0.65
Copper, oxidized to black	0.88
Electrical tape, black plastic	0.95
Enamel **	0.90
Formica	0.93
Frozen soil	0.93
Glass	0.92
Glass, frosted	0.96
Gold, polished	0.02
Ice	0.97
Iron, hot rolled	0.77
Iron, oxidized	0.74
Iron, sheet galvanized, burnished	0.23
Iron, sheet, galvanized, oxidized	0.28
Iron, shiny, etched	0.16

Material	Emissivity*
Iron, wrought, polished	0.28
Lacquer, Bakelite	0.93
Lacquer, black, dull	0.97
Lacquer, black, shiny	0.87
Lacquer, white	0.87
Lampblack	0.96
Lead, gray	0.28
Lead, oxidized	0.63
Lead, red, powdered	0.93
Lead, shiny	0.08
Mercury, pure	0.10
Nickel, on cast iron	0.05
Nickel, pure polished	0.05
Paint, silver finish**	0.31
Paint, oil, average	0.94
Paper, black, shiny	0.90
Paper, black, dull	0.94
Paper, white	0.90
Platinum, pure, polished	0.08
Porcelain, glazed	0.92
Quartz	0.93
Rubber	0.93
Shellac, black, dull	0.91
Shellac, black, shiny	0.82
Snow	0.80
Steel, galvanized	0.28
Steel, oxidized strongly	0.88
Steel, rolled freshly	0.24
Steel, rough surface	0.96
Steel, rusty red	0.69
Steel, sheet, nickelplated	0.11
Steel, sheet, rolled	0.56
Tar paper	0.92
Tin, burnished	0.05
Tungsten	0.05
Water	0.98
Zinc, sheet	0.20

\*Emissivities of almost all materials are measured at 0 °C but do not differ significantly at room temperature.

\*\*Paint, silver finish is measured at 25 °C and Paint, enamel at 27 °C

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**Fluke Corporation**  
PO Box 9090, Everett, WA 98206 U.S.A.  
**Fluke Europe B.V.**  
PO Box 1186, 5602 BD  
Eindhoven, The Netherlands

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**For more information call:**  
In the U.S.A. (800) 443-5853 or  
Fax (425) 446-5116  
In Europe/M-East/Africa +31 (0) 40 2675 200 or  
Fax +31 (0) 40 2675 222  
In Canada (800)-36-FLUKE or  
Fax (905) 890-6866  
From other countries +1 (425) 446-5500 or  
Fax +1 (425) 446-5116  
Web access: <http://www.fluke.com>

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