

COMMON SUBSTANCES

EMISSIVITY TABLE

Surface Material	Emissivity Coefficient - ε -
Alloy 24ST Polished	0.09
Alumina, Flame sprayed	0.8
Aluminium, Commercial Sheet	0.09
Aluminium, Heavily Oxidised	0.2-0.31
Aluminium, Highly Polished	0.039-0.057
Aluminium, Anodised	0.77
Aluminium, Rough	0.07
Aluminium, Painted	0.27-0.67
Antimony, Polished	0.28-0.31
Asbestos, Board	0.96
Asbestos, Paper	0.93-0.945
Ashphalt	0.93
Basalt	0.72
Beryllium	0.18
Beryllium, Anodised	0.9
Bismuth, Bright	0.34
Black, Body Matt	1.00
Black, Lacquer on Iron	0.875
Black, Parson Optical	0.95
Black, Silicone Paint	0.93
Black, Epoxy Paint	0.89
Black, Enamel Paint	0.80
Brass, Dull Plate	0.22
Brass, Rolled Plate Natural Surface	0.06
Brass, Polished	0.03
Brass, Oxidised 600°C	0.6
Brick, Red Rough	0.93
Brick, Fireclay	0.75
Cadmium	0.02
Carbon, Not Oxidised	0.81
Carbon, Filament	0.77
Carbon, Pressed Filled Surface	0.98

Surface Material	Emissivity Coefficient - ε -
Cast Iron, Turned & Heated	0.60-0.70
Chromium, Polished	0.058
Clay	0.91
Coal	0.80
Concrete	0.85
Concrete, Rough	0.94
Concrete, Tiles	0.63
Cotton, Cloth	0.77
Copper, Electroplated	0.03
Copper, Polished	0.023-0.052
Copper Nickel Alloy, Polished	0.059
Glass, Smooth	0.92-0.94
Glass, Pyrex	0.85-0.95
Gold, Unpolished	0.47
Gold, Polished	0.025
Granite	0.45
Gypsum	0.85
Ice, Smooth	0.966
Ice, Rough	0.985
Inconel X, Oxidised	0.71
Iron, Polished	0.14-0.38
Iron, Plate Rusted Red	0.61
Iron, Dark Grey Surface	0.31
Iron, Rough Ingot	0.87-0.95
Lampblack, Paint	0.96
Lead, Pure Unoxidised	0.057-0.075
Lead, Oxidised	0.43
Limestone	0.90-0.93
Lime Wash	0.91
Magnesia	0.72
Magnesite	0.38

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Surface Material	Emissivity Coefficient - ε -
Magnesium, Oxide	0.20-0.55
Magnesium, Polished	0.07-0.13
Marble, White	0.95
Masonry, Plastered	0.93
Mercury, Liquid	0.1
Mild Steel	0.20-0.32
Molybdenum, Polished	0.05-0.18
Nickel, Electroplated	0.03
Nickel, Polished	0.072
Nickel, Oxidised	0.59-0.86
Nichrome Wire, Bright	0.65-0.79
Oak, Planed	0.89
Oil Paints, All Colours	0.92-0.96
Paper, Offset	0.55
Platinum, Polished Plate	0.054-0.104
Pine	0.84
Porcelain, Glazed	0.92
Paint	0.96
Paper	0.93
Plaster, Smooth	0.98
Plaster, Rough	0.91
Plaster, Board	0.91
Plastics	0.91
Pyrex	0.92
Quartz Glass	0.93
Roofing Paper	0.91
Rubber, Foam	0.90
Rubber, Hard Glossy Plate	0.94
Rubber, Natural Hard	0.91
Rubber, Natural Soft	0.86
Salt	0.34
Sand	0.76

Surface Material	Emissivity Coefficient - ε -
Sandstone	0.59
Sapphire	0.48
Sawdust	0.75
Silica	0.79
Silicon Carbide	0.83-0.96
Silver, Polished	0.02-0.03
Soil	0.38
Steel, Oxidised	0.79
Steel, Polished	0.07
Steel, Galvanised Old	0.88
Steel, Galvanised New	0.23
Stainless Steel, Weathered	0.85
Stainless Steel, Polished	0.075
Stainless Steel, Type 301	0.54-0.63
Teflon	0.92
Thoria	0.28
Tile	0.97
Tin, Unoxidised	0.04
Titanium, Polished	0.19
Tungsten, Polished	0.04
Tungsten, Aged Filament	0.032-0.35
Water	0.95-0.963
Wood Beech, Planed	0.935
Wood Oak, Planed	0.885
Wood, Pine	0.95
Wrought Iron	0.94
Zink, Tarnished	0.25
Zink, Polished	0.045