

Emissivity Table for Infrared Thermometer Readings

Material	Emissivity Value
Adobe	0.90
Alloy: 20Ni-25Cr-55Fe, oxidized	0.90 - 0.97
Alloy: 60Ni-12Cr-28Fe, oxidized	0.82 - 0.89
Alloy: 80Ni-20Cr, oxidized	0.87 - 0.89
Alloy: 24ST	0.09
Alloy: 24ST, polished	0.09
Alloy: A3003, oxidized	0.40
Alloy: 1100-0	0.05
Alloy: 75ST	0.11
Alloy: 75ST, polished	0.08
Alumel: Unoxidized	0.10 - 0.25
Alumel: Oxidized	0.60
Alumina: Flame Sprayed	0.80
Aluminum: Polished	0.05 - 0.10
Aluminum: Highly polished	0.039 - 0.09
Aluminum: Highly polished Plate	0.04 - 0.06
Aluminum: Roughly polished	0.18
Aluminum: Bright Rolled Plate	0.04 - 0.05
Aluminum: Unoxidized	0.020 - 0.20
Aluminum: Oxidized	0.10 - 0.40
Aluminum: Heavily oxidized	0.20 - 0.31
Aluminum: Commercial Sheet	0.09
Aluminum: Rough	0.07 - 0.30
Aluminum: Anodized	0.60 - 0.95
Aluminum: Almite treatment	0.77
Aluminum Foil	0.04
Aluminum Oxide	0.40
Aluminum Paint	0.27 - 0.67
Antimony: Polished	0.28 - 0.31
Asbestos: Board/Cement	0.96
Asbestos: Cement, red	0.67
Asbestos: Cement, white	0.65
Asbestos: Cloth	0.90
Asbestos: Paper	0.93 - 0.945
Asbestos: Slate	0.97
Asphalt	0.85 - 1.00
Asphalt: Pavement	0.93

Material	Emissivity Value
Asphalt: Tar Paper	0.93
Asphalt: Oil, on polished metal .001" Thick	0.27
Asphalt: Oil, on polished metal .002" Thick	0.46
Asphalt: Oil, on polished metal .005" Thick	0.72
Basalt	0.72
Beryllium	0.18
Beryllium: Anodized	0.90
Bismuth: Oxidized	0.50
Bismuth: Unoxidized	0.048 - 0.061
Bismuth: Bright	0.34
Black Body Matt	1.00
Black Epoxy Paint	0.89
Black Parson Optical	0.95
Black Platinum	0.90
Black Silicone Paint	0.95
Brass: Polished	0.01-0.05
Brass: Unoxidized	0.035 - 0.04
Brass: Oxidized	0.50 - 0.65
Brass: Oxidized 600°C	0.60
Brass: Burnished	0.30 - 0.40
Brass: Rolled Sheet/Plate Natural Surface	0.06
Brass: Dull Plate	0.22
Brass: 73% Cu, 27% Zn, polished	0.03
Brass: 62% Cu, 37% Zn, polished	0.03 - 0.04
Brass: 83% Cu, 17% Zn, polished	0.03
Brass: Cu-Zn, oxidized	0.60 - 0.61
Brass: Matte	0.07
Brick: Building	0.45
Brick: Red, rough, no gross irregularities	0.93
Brick: Gault Cream	0.26 - 0.30
Brick: Grog, glazed	0.75
Brick: Silica Brick	0.80-0.85
Brick: Silica, glazed	0.88
Brick: Silica, unglazed	0.80
Brick: Fire Clay	0.75
Brick: Fire Brick	0.75 - 0.80

Material	Emissivity Value
Brick: Light Buff	0.80
Brick: Lime Clay	0.43
Brick: Magnesite, refractory	0.38
Brick: Gray	0.75
Brick: Sandlime	0.59 - 0.63
Bronze: Polished	0.10
Cadmium	0.02
Carbon: Unoxidized	0.40 - 0.90
Carbon: Filament	0.50 - 0.95
Carbon: Soot applied to solid/with water glass	0.50 - 0.96
Carbon: Coke	0.95 - 1.00
Carbon: Graphite	0.70 - 0.80
Carbon: Graphite, pressed, filed surface	0.98
Carbon: Lamp Black, water glass coating	0.95 - 0.96
Carborundum	0.80 - 0.92
Cardboard	0.81
Carpet	0.85 - 1.00
Cement	0.54
Ceramic	0.80 - 0.95
Ceramic: Alumina on Inconel	0.45 - 0.69
Ceramic: Earthenware	0.90
Ceramic: Earthenware, Glazed	0.90
Ceramic: Earthenware, Matte	0.93
Ceramic: Greens No. 5210-2C	0.82 - 0.89
Ceramic: Coating No. C20A	0.67 - 0.73
Ceramic: Porcelain	0.92
Ceramic: Refractory Black	0.94
Ceramic: Refractory White / White Al ₂ O ₃	0.90
Ceramic: Zirconia on Inconel	0.45 - 0.62
Chrome: Oxidized	0.60 - 0.85
Chromium	0.08 - 0.26
Chromium: Polished	0.058 - 0.38
Chromium: Unoxidized	0.08
Chromium: Oxidized	0.08 - 0.66
Clay	0.39 - 0.91
Clay: Fired	0.091 - 0.95
Clay: Shale	0.69
Clay: Tiles, light red	0.32 - 0.34
Clay: Tiles, red	0.40 - 0.51
Clay: Tiles, dark purple	0.78

Material	Emissivity Value
Coal	0.80
Cobalt	0.2
Cobalt: Unoxidized	0.13 - 0.23
Columbium: Polished	0.19 - 0.24
Columbium: Oxidized	0.70 - 0.73
Columbium: Unoxidized	0.19 - 0.24
Concrete	0.85 - 0.95
Concrete: Rough	0.94
Concrete: Tiles, natural	0.62 - 0.63
Concrete: Tiles, brown	0.83 - 0.87
Concrete: Tiles, black	0.91 - 0.94
Copper: Commercial, Scoured to a shine	0.07
Copper: Calorized	0.26
Copper: Calorized, oxidized	0.18-0.19
Copper: Plate, heated long time, covered with thick oxide layer	0.78
Copper: Plate, heated at 600°C	0.570
Copper: Polished	0.02-0.10
Copper: Roughly Polished	0.07
Copper: Highly Polished	0.02
Copper: Rolled	0.64
Copper: Rough	0.74
Copper: Oxidized	0.20 - 0.88
Copper: Unoxidized	0.02 - 0.15
Copper: Roughened	0.10
Copper: Electroplated	0.03
Copper: Cuprous Oxide	0.77 - 0.87
Copper: Black, oxidized	0.78
Copper: Etched	0.09
Copper: Matte	0.22
Copper: Molten	0.13 - 0.16
Copper: Nickel Plated	0.37
Cotton	0.8
Cotton Cloth	0.77
Dolomite Lime	0.41
Dow Metal	0.15 - 0.24
Electrical terminal blocks	0.60
Emery Corundum	0.86
Enamel	0.90
Fabrics	0.75
Foods	0.85 - 1.00

Material	Emissivity Value
Formica	0.95
Firebrick	0.68
Glass: Smooth	0.67 - 0.95
Glass: Convex D	0.76 - 0.80
Glass: Nonex	0.78 - 0.82
Glass: Plate	0.90 - 0.95
Glass: Fused quartz	0.75
Glass: Fiber Glass	0.75
Glass: Pyrex, lead and soda	0.85 - 0.95
Gold: Pure, highly polished	0.02 - 0.05
Gold: Polished	0.02 - 0.03
Gold: Unoxidized	0.02 - 0.03
Gold: Enamel	0.37
Gold: Unpolished	0.47
Gold: Plate, 0.0001 on 0.0005 Silver	0.11 - 0.14
Gold: Plate, 0.0001 on 0.0005 Nickel	0.07 - 0.09
Granite	0.45
Granite: Polished	0.85
Granite: Rough	0.9
Granite: Natural	0.95
Graphite	0.70 - 0.80
Gravel	0.28 - 0.95
Gypsum	0.85 - 0.95
Haynes Alloy	0.30 - 0.80
Haynes Alloy C: Oxidized	0.90 - 0.96
Haynes Alloy 25: Oxidized	0.86 - 0.89
Haynes Alloy X: Oxidized	0.85 - 0.88
Human Skin	0.97 - 0.99
Ice	0.95 - 1.00
Ice: Smooth	0.966 - 0.97
Ice: Rough	0.980 - 0.985
Inconel: Type X	0.55 - 0.78
Inconel: Type X, polished	0.19
Inconel: Type X, oxidized	0.71
Inconel: Type B	0.35 - 0.55
Inconel: Type B, polished	0.21
Inconel: Polished	0.15
Inconel: Oxidized	0.70 - 0.95
Inconel: Sandblasted	0.30 - 0.66
Inconel Sheet	0.28 - 0.58
Iron: Cast, oxidized	0.50 - 0.95

Material	Emissivity Value
Iron: Cast, Strongly oxidized	0.95
Iron: Cast, Rusted	0.50 - 0.70
Iron: Cast, unoxidized	0.21
Iron: Cast, polished	0.21
Iron: Cast, Newly Turned	0.44
Iron: Cast, Turned and Heated	0.60 - 0.70
Iron: Cast, Liquid unoxidized	0.29
Iron: Cast, Wrought, dull	0.50 - 0.90
Iron: Cast, Wrought Iron, dull oxidized	0.94
Iron: Wrought	0.94
Iron: Wrought, polished/highly polished	0.28
Iron: Wrought, dull	0.94
Iron: Wrought, smooth	0.35
Iron: Oxidized	0.50 - 0.90
Iron: Unoxidized	0.05 - 0.89
Iron: Plate, pickled, then rusted red	0.61
Iron: Plate, completely rusted	0.69
Iron: Smooth oxidized electrolytic iron	0.78 - 0.82
Iron: Iron Oxide	0.85 - 0.89
Iron: Rough-ingot iron	0.87 - 0.95
Iron: Cast Plate, oxidized, smooth	0.80
Iron: Cast Plate, oxidized, rough	0.82
Iron: Molten Pure Iron	0.40 - 0.45
Iron: Molten Armco Iron	0.40 - 0.41
Iron: Liquid	0.42 - 0.45
Iron: Zinc Plating	0.28
Iron: Red Rust	0.70
Iron: Rusted	0.65 - 0.96
Iron: Polished	0.14 - 0.38
Iron: Dark Gray Surface	0.31
Lacquer: Colored on Al	0.75 - 0.90
Lacquer: Colored	0.95
Lacquer: Clear on Al	0.08 - 0.10
Lacquer: Clear on Cu	0.65 - 0.66
Lacquer: Clear on Tarnished Cu	0.64
Lacquer: Black Shiny, sprayed on iron	0.875
Lacquer: Black on White	0.80 - 0.95
Lacquer: Flat Black	0.96 - 0.98
Lacquer: A1 Lacquer, Varnish binder on rough plate	0.39
Lacquer: Blue on Al	0.78

Material	Emissivity Value
Lacquer: Red on Al	0.61 - 0.74
Lacquer: White	0.95
Lacquer: White on Al	0.69 - 0.88
Lacquer: Yellow on Al	0.57 - 0.79
Lead: Pure: 99.96% unoxidized	0.057 - 0.075
Lead: Polished	0.05 - 0.10
Lead: Oxidized	0.20 - 0.65
Lead: Oxidized, Gray	0.28
Lead: Oxidized at 1100°F	0.63
Lead: Rough	0.40 - 0.43
Leather	0.95 - 1.00
Limestone	0.90 - 1.00
Lime Mortar	0.90 - 0.92
Lime wash	0.91
Linseed Oil: On Al Foil, uncoated	0.087 - 0.09
Linseed Oil: On Al Foil, +1, 2 coats oil	0.51 - 0.574
Linseed Oil: On Polished Iron, .001 film	0.22
Linseed Oil: On Polished Iron, .002 film	0.45
Linseed Oil: On Polished Iron, .004 film	0.65
Linseed Oil: On Polished Iron, thick film	0.83
Magnesia	0.72
Magnesite	0.38
Magnesium	0.05 - 0.80
Magnesium: Polished	0.07 - 0.13
Magnesium Oxide	0.16 - 0.55
Marble: Light Grey polished	0.903
Marble: White	0.95
Marble: Smooth White	0.56
Marble: Polished Gray	0.75
Masonry: Plastered	0.93
Mercury: Unoxidized	0.09 - 0.12
Mercury	0.05 - 0.15
Mercury: Liquid	0.10
Mica	0.75
Molybdenum	0.06 - 0.18
Molybdenum: Polished	0.05 - 0.18
Molybdenum: Oxidized	0.20 - 0.82
Molybdenum: Oxidized at 1000°F	0.80 - 0.84
Molybdenum: Unoxidized	0.13 - 0.24
Molybdenum: Filament	0.096 - 0.202
Monel: Oxidized	0.43 - 0.85

Material	Emissivity Value
Monel: Ni-Cu	0.41 - 0.46
Monel: Ni-Cu, oxidized	0.43
Monel: Ni-Cu, oxidized at 1110°F	0.46
Mortar	0.87
Mortar: Dried	0.94
Mullite	0.80 - 0.85
Nichrome: Clean	0.65 - 0.79
Nichrome: Oxidized	0.60 - 0.98
Nichrome Wire: Bright	0.65 - 0.79
Nickel: Polished	0.05 - 0.32
Nickel: Oxidized	0.20 - 0.95
Nickel: Unoxidized	0.045 - 0.19
Nickel: Electroplated	0.03
Nickel: Electroplated, polished	0.045
Nickel: Electroplated, not polished	0.110
Nickel: Electrolytic	0.04 - 0.16
Nickel: Wire	0.096 - 0.186
Nickel: Plate, oxidized by heating at 600°C	0.37 - 0.48
Nickel: Chrome Nickel	0.64 - 0.76
Nickel: Nickel-Silver polished	0.135
Nickel Oxide	0.59 - 0.86
Oak, Planed	0.885 - 0.91
Oil: Animal/vegetable	0.95 - 1.00
Oil: Mineral	0.90 - 1.00
Oil: 0.001" thick	0.25
Oil: 0.002" thick	0.46
Oil: 0.005" thick	0.7
Oil on Nickel: 0.001 Film	0.27
Oil on Nickel: 0.002 Film	0.46
Oil on Nickel: 0.005 Film	0.72
Oil on Nickel: Thick	0.82
Oil Paints: All Colors	0.92 - 0.98
Oil Paints: Black	0.92
Oil Paints: Black Gloss	0.90
Oil Paints: Camouflage Green	0.85
Oil Paints: Flat Black	0.88
Oil Paints: Flat White	0.91
Oil Paints: Gray-Green/Green/Red	0.95
Oil Paints: Lamp Black	0.96
Oil Paints: White	0.94
Paint: Bronze Paint	0.34 - 0.80

Material	Emissivity Value
Paint: Bronze Paint, 2 coats gum varnish	0.53
Paint: Bronze Paint, 3 coats gum varnish	0.50
Paint: Bronze Paint, 2 coats cellulose binder	0.34
Paint: Black Glass paint	0.90
Paint: Green paint, Gray paint, Lamp Black	0.92 - 0.96
Paint: on metal	0.60 - 0.90
Paint: on plastic or wood	0.80 - 0.95
Paint: Black enamel	0.80
Paint: Gold enamel	0.37 - 0.40
Paint: Clear silicone	0.65 - 0.80
Paint: Other Al paints, varying age and Al content	0.27 - 0.67
Paint: 10% Al	0.52
Paint: 26% Al	0.30
Paint: Al Paint after heating to 326°C	0.35
Paint: Dow XP-310	0.22
Paint: Blue	0.94
Paint: Red	0.91
Paint: White	0.90 - 0.95
Paint: Yellow	0.90 - 0.93
Palladium Plate (0.00005 on 0.0005 silver)	0.16 - 0.17
Paper	0.85 - 1.00
Paper offset	0.55
Paper: black/burnish	0.90
Paper: white	0.68
Pine	0.84 - 0.95
Plaster	0.90 - 0.98
Plaster: Rough	0.91
Plaster board	0.91
Plastic	0.90 - 1.00
Platinum	0.05 - 0.10
Platinum: Black	0.93 - 0.97
Platinum: Black oxidized at 1100°F	0.07 - 0.11
Platinum: Cleaned polished/polished Plate	0.050 - 0.104
Platinum: Filament	0.036 - 0.192
Platinum: Unoxidized	0.037 - 0.191
Platinum: Wire	0.06 - 0.18
Polyester	0.75 - 0.85
Polyethylene	0.1
Polypropylene	0.97
Polytetrafluoroethylene (PTFE)	0.92

Material	Emissivity Value
Porcelain: Glazed	0.92 - 0.93
Propellant: Liquid rocket engine	0.90
PVC	0.91 - 0.93
Pyrex	0.92
Quartz: Rough, fused	0.93
Quartz: Glass, 1.98mm Thick	0.41-0.90
Quartz: Glass, 6.88 mm Thick	0.47 - 0.93
Quartz: Opaque	0.68 - 0.92
Radiator Paint: White, Cream, Bleach	0.75 - 0.79
Radiator Paint: Bronze	0.510
Radiator Paint: Bronze, Lacquer coatings, 0.001-0.015" thick on Alum. Alloys	0.87 - 0.97
Radiator Paint: Bronze, 3M Nextel 101-C10	.98
Radiator Paint: Bronze, Mikron High Temp Test Paint: Spirex SP102	0.999
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick on mild steels	0.66
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick on stainless steels 316, 301 , 347	0.68 - 0.75
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick on Dow Metal	0.75
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick on Al Alloys, 24ST, 75ST	0.77 - 0.82
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick, Aluminum Paint with silicone vehicle paint on Inconel	0.29
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick, Dull Black Varnish	0.80 - 0.95
Radiator Paint: Bronze, Clear Silicone Vehicle Coating 0.001-0.150" thick, Glossy Black Varnish sprayed on iron	0.96 - 0.98
Red Lead	0.93
Rhodium Flash (0.0002 on 0.0005 Ni)	0.10 - 0.18
Roofing Paper	0.90 - 0.91
Rubber: Hard glossy	0.94 - 0.97
Rubber: Hard	0.94
Rubber: Natural hard	0.91
Rubber: Soft/Natural Soft/Gray	0.86
Rubber: Soft rough	0.85
Rubber: Foam	0.90
Salt: Sodium Chloride	0.34
Salt: Himalayan Pink	0.95
Sand	0.76 - 0.90

Material	Emissivity Value
Sandstone	0.59 - 0.70
Sandstone: Red	0.60 - 0.83
Sapphire	0.48
Sawdust	0.75
Shale	0.69 - 0.70
Shellac: Black Shiny, on tinned iron sheet	0.821
Shellac: Black Matte	0.91
Silica	0.79
Silica: Powder	0.35 - 0.60
Silica: Glazed	0.85
Silica: Unglazed	0.75
Silica: (98 Si O ₂ , Fe-free effect of grain size, microns	0.42 - 0.62
Silicone Carbide	0.80 - 0.96
Silk	0.80
Silk Cloth	0.78
Silver: Polished	0.01 - 0.052
Silver: Cleaned polished	0.02 - 0.03
Silver: Unoxidized	0.02 - 0.035
Silver: Plate, 0.0005 on Ni	0.06 - 0.07
Slate	0.67 - 0.80
Snow	0.80 - 1.00
Snow: Fine Particles	0.82
Snow: Granular	0.89
Soil: Dry	0.90 - 0.95
Soil: Wet	0.95 - 1.00
Soil: Surface/Plowed Field	0.38
Soil: Black Loam	0.66
Soot: Acetylene	0.97
Soot: Camphor	0.94
Soot: Candle	0.950 - 0.952
Soot: Coal	0.95
Stainless Steel: Polished	0.075
Stainless Steel: Weathered	0.85
Stainless Steel: type 18-8, Buffed	0.16
Stainless Steel: type 18-8, polished	0.10 - 0.19
Stainless Steel: type 18-8, oxidized	0.45 - 0.95
Stainless Steel: type 18-8, oxidized at 800°C	0.85
Stainless Steel: type 18-8, Sandblasted	0.44
Stainless Steel: type 301	0.54 - 0.63
Stainless Steel: type 301, polished	0.27 - 0.57

Material	Emissivity Value
Stainless Steel: type 303, oxidized	0.74 - 0.87
Stainless Steel: type 303, 304: 8Cr 18Ni light silvery, rough brown, after heating	0.36 - 0.44
Stainless Steel: type 303, After 42 hours of heating at 527°C	0.62 - 0.73
Stainless Steel: type 310 - 25Cr, 20Ni, Brown, splotched, oxidized from furnace service	0.90 - 0.97
Stainless Steel: type 310, rolled	0.56 - 0.81
Stainless Steel: type 316, polished	0.28 - 0.66
Stainless Steel: type 321	0.27 - 0.32
Stainless Steel: type 321, polished	0.18 - 0.49
Stainless Steel: type 321, with BK oxide	0.66 - 0.76
Stainless Steel: type 347, oxidized	0.87 - 0.91
Stainless Steel: type 350	0.18 - 0.27
Stainless Steel: type 350, polished	0.11 - 0.35
Stainless Steel: type 17-7 PH	0.44-0.51
Stainless Steel: type 17-7 PH, polished	0.09 - 0.16
Stainless Steel: type C1020, oxidized	0.87 - 0.91
Stainless Steel: type PH-15-7 MO	0.07 - 0.19
Stainless Steel: Allegheny metal No. 4, polished	0.13
Stainless Steel: Allegheny metal No. 66, polished	0.11
Steel: Alloyed: 8%Ni, 18%Cr	0.35
Steel: Aluminized	0.79
Steel: Dull Nickel Plated	0.11
Steel: Cast, polished	0.52 - 0.56
Steel: Calorized, oxidized	0.52 - 0.57
Steel: Galvanized, old	0.88
Steel: Galvanized, new	0.23
Steel: Unoxidized	0.08 - 0.1
Steel: Oxidized	0.79 - 0.80
Steel: Polished	0.07
Steel: Polished Sheet	0.07 - 0.14
Steel: Cold Rolled	0.66 - 0.90
Steel: Ground Sheet	0.40 - 0.61
Steel: Flat, Rough surface	0.95 - 0.98
Steel: Sheet Steel, Strong, Rough Oxide Layer	0.80
Steel: Sheet with Shiny layer of oxide	0.82
Steel: Molten Steel	0.25 - 0.53
Steel: Molten Mild Steel	0.28
Steel: Molten Steel, various with 0.25-1.2%: slightly oxidized surfaces	0.27 - 0.39
Steel: Molten Steel, unoxidized	0.28

Material	Emissivity Value
Steel: Steel Plate, Rough, 0.94, 0.97, 0.57	0.57 - 0.97
Steel: Mild	0.20 - 0.32
Steel: Mild, polished	0.10
Steel: Mild, smooth	0.12
Steel: Mild, liquid	0.28
Stellite: Polished	0.18
Stonework	0.93
Tantalum: Unoxidized	0.14 - 0.30
Tantalum: Filament	0.19 - 0.31
Tantalum: Thorium Oxide	0.36 - 0.58
Tantalum: Oxidized	0.6
Textiles, close weave	0.70 - 0.95
Textiles, died black	0.98
Thoria	0.28
Tiles	0.80 - 0.97
Tin: Unoxidized	0.04 - 0.30
Tin: Commercial tin-plated sheet iron	0.07 - 0.08
Tinned Iron: Bright	0.05 - 0.08
Titanium: Polished	0.10 - 0.30
Titanium: Alloy C110M, polished	0.08 - 0.19
Titanium: Alloy C110M, oxidized at 538°C/1000°F	0.51 - 0.61
Titanium: Alloy Ti-95A, oxidized at 538°C/1000°F	0.35 - 0.48
Titanium: Anodized onto SS	0.82 - 0.96

Material	Emissivity Value
Titanium: Oxidized	0.50 - 0.60
Tungsten: Unoxidized	0.02 - 0.60
Tungsten: Filament	0.30 - 0.39
Tungsten: Filament, aged	0.03 - 0.35
Tungsten: Polished	0.04
Turbojet Engine Operating	0.90
Uranium Oxide	0.79
Varnish: Snow White Enamel on rough iron plate	0.906
Wallpaper: Light Grey Pattern	0.85
Water	0.67
Waterglass	0.96
Water: Seawater	0.90 - 0.98
Wood	0.80-0.90
Wood: Planed	0.80 - 0.98
Wood: Spruce, sanded	0.82 - 0.89
Wood: Beech Planed	0.935 - 0.940
Zinc: Tarnished	0.25
Zinc: Polished	0.02 - 0.06
Zinc: Oxidized	0.10 - 0.11
Zinc: Galvanized	0.20 - 0.30
Zinc: Bright, galvanized	0.23
Zinc: Commercial 99.1%	0.05
Zirconium Silicate	0.52 - 0.92