

## Emissivity table

The following table serves as a guide for adjusting the emissivity for infrared measurement. It gives the emissivity  $\epsilon$  of some of the more common materials. As the emissivity changes with the temperature and surface properties, the values shown here should be regarded merely as guidelines for measuring of temperature conditions and differences. In order to measure the absolute temperature value, the exact emissivity of the material must be determined.

Material (material temperature)	Emissivity
Aluminium, heavily oxidised (93 °C)	0.20
Aluminium, highly polished (100 °C)	0.09
Aluminium, not oxidised (25 °C)	0.02
Aluminium, not oxidised (100 °C)	0.03
Aluminium, rolled blank (170 °C)	0.04
Brass, oxidised (200 °C)	0.61
Brick, mortar, plaster (20 °C)	0.93
Brickwork (40 °C)	0.93
Cast iron, oxidised (200 °C)	0.64
Chrome (40 °C)	0.08
Chrome, polished (150 °C)	0.06
Clay, burnt (70 °C)	0.91
Concrete (25 °C)	0.93
Copper, oxidised (130 °C)	0.76
Copper, polished (40 °C)	0.03
Copper, rolled (40 °C)	0.64
Copper, slightly tarnished (20 °C)	0.04
Cork (20 °C)	0.70
Cotton (20 °C)	0.77
Glass (90 °C)	0.94
Granite (20 °C)	0.45
Gypsum (20 °C)	0.90

Material (material temperature)	Emissivity
Ice, smooth (0 °C)	0.97
Iron, emery-ground (20 °C)	0.24
Iron with casting skin (100 °C)	0.80
Iron with rolling skin (20 °C)	0.77
Lead (40 °C)	0.43
Lead, grey oxidised (40 °C)	0.28
Lead, oxidised (40 °C)	0.43
Marble, white (40 °C)	0.95
Oil paints (all colours) (90 °C)	0.92–0.96
Paint, black, matt (80 °C)	0.97
Paint, blue on aluminium foil (40 °C)	0.78
Paint, white (90 °C)	0.95
Paint, yellow, 2 coats on aluminium foil (40 °C)	0.79
Paper (20 °C)	0.97
Plastics: PE, PP, PVC (20 °C)	0.94
Porcelain (20 °C)	0.92
Radiator, black, anodised (50 °C)	0.98
Rubber, hard (23 °C)	0.94
Rubber, soft, grey (23 °C)	0.89
Sandstone (40 °C)	0.67
Steel, cold-rolled (93 °C)	0.75–0.85
Steel, heat-treated surface (200 °C)	0.52
Steel, oxidised (200 °C)	0.79
Transformer paint (70 °C)	0.94
Wood (70 °C)	0.94
Zinc, oxidised	0.1