

Cool Metal Roofs Are Energy-Efficient and Cost-Effective



Buildings consume one-third of all energy and two-thirds of all electricity generated. Cool metal roofs can help reduce energy consumption by lowering cooling loads with their wide array of finishes, designs, and colors.

Cool metal roofs are energy-efficient.

The roof can have the greatest impact on the energy use of a building. On a typical summer afternoon, a light-colored, more reflective roof that reflects 80 percent of sunlight will stay about 31°C (55°F) cooler than a darker roof that reflects only 20 percent of sunlight, as reported by the Heat Island Group of the Lawrence Berkeley National Laboratory.

Cool metal roofs are an excellent option for commercial retrofit applications because they can be efficiently installed with ventilation, allowing heat to dissipate through the ridge vent in hot weather, while acting as an insulating layer when it is cold. Metal roofs can result in as much as a 30 percent reduction in heat gain through the vented roof.

Metal roofs provide the optimal foundation for photovoltaic installations since the roof can be expected to last longer than the PV system it supports.

Wall and roof solar heat recovery systems can be integrated with steel cladding and used to provide air, water, or process heating needs.

Cool metal roofing is available unpainted, with thermosetting coil-applied paint finishes, or with granular coated surfaces. This family of roofing can achieve solar reflectance of over 70 percent, meeting the EPA Energy Star Roof Products Program performance criteria.

Emittance as high as 90 percent can be achieved for painted and granular coated metal roofing.

Painted metal roofs retain 95 percent of their initial reflectance and emittance over time. They resist the growth of organic matter, and shed dirt more readily than other materials.

Cool metal roofing can help to mitigate the Urban Heat Island Effect because of its high reflectance, which can reduce ambient air temperatures.

Cool metal roofs are cost-effective.

Metal roofing has low life-cycle costs, making it the choice of many school, government, commercial, industrial, and institutional building owners.

Due to its light weight per unit area, structural savings can be realized in a building when compared with heavier non-metal roofing alternatives.

For re-roofing projects, metal roofing can often be applied over the original roof, saving removal and disposal costs.

Metal roofing is fully recyclable when ultimately removed as part of a building renovation or demolition, allowing it to credibly claim both recycled content and 100 percent recyclability by recognized definitions. The product's recyclability also provides significant savings on construction removal and disposal costs.

For more information, visit the Cool Metal Roofing Coalition at coolmetalroofing.org.