

Construction of radiant panels

ECOSUN low-temperature radiant panels

The basic structure of the panel is formed from a zinc-coated steel sheet body with a frontal heating surface featuring a special surface finish on both sides. The inner Thermoquartz *) – ensures the maximum transmission of heat from the source of heat, and the outer Thermocrystal *) – significantly increases efficiency during the emission (radiation) of heat – known as infrared heating. The outer Thermocrystal surface finish is based on quartz crystals – a characteristic feature obvious at first sight is the grainy surface of the panel, which is one of the reasons for its significantly heightened emissivity. The panel has a 2.5 times larger transfer surface in comparison with a smooth surface of the same dimensions!

In panels with a wattage of up to 600W, the heating element is a specially woven graphite-based heating foil with a temperature resistance of 150°C; panels with a wattage of 700 W are equipped with a length of insulated resistance wire which has a temperature resistance of 180°C. A dielectric insulation board is inserted between the heating element and the front heating surface.

Inside the panel, mineral wool heat insulation prevents the escape of heat through the rear side of the panel and thus increases the radiation efficiency. The execution of joints in the body and the rear cover (riveting/soldering), the jacket of the supply lead (PVC/silicon) and the type of cable duct affects the resultant IP coverage of the panels. The method of mounting these panels is described in detail in the chapter Installation, warranty conditions.

ECOSUN G glass radiant panels

The construction of ECOSUN G panels is derived from ECOSUN low-temperature panels. In contrast with them, however, the front heating surface is composed of a 6mm thick glass board. This is not only for technical reasons but also for aesthetic ones – the use of glass as a design element would lose its importance if layers of Thermoquartz/Thermocrystal were applied to the glass. The heating element in Ecosun G heating panels is a weave fabricated from insulated resistance wire; in the case of printed Ecosun G panels, the element consists of woven graphite-based heating foil. The dielectric insulation board is inserted between the heating element and the glass board. The rear part of the panel takes the form of a zinc-coated case filled with basalt wool thermal insulation. There are versatile attachment openings in the case which enable the panel to be hung in a vertical as well as horizontal position. The case is connected to the glass board with the help of an anodized aluminium frame. The panel is fitted with a limit thermostat which protects the panel from overheating.

ECOSUN E radiant panels

ECOSUN E panels are an alternative variant to ECOSUN G glass panels. In the case of this panel type the glass front is replaced by a galvanized steel panel sprayed with powdered plastic.

*) **Thermoquartz/Thermocrystal** – Registered trademark – apart from the above-mentioned influence on the absorption and radiation of thermal energy, the lifespan and stability of technical and aesthetic parameters is also guaranteed.

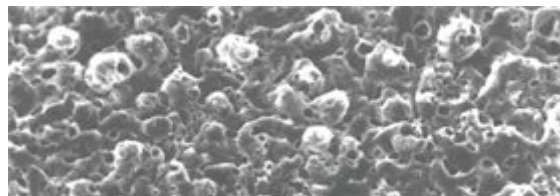
Colour finish of ECOSUN low-temperature panels

These heating panels are coated with water soluble BALAKRYL paints which are not harmful to health and have guaranteed colour stability under thermal load. The standard finish is white or dark brown, but other colours can be chosen according to the **RAL colour chart** published on the FENIX internet pages. The range of colours available for ECOSUN G and ECOSUN E panels is limited by the materials used (the colour of the glass, the colour of the powdered plastic) and so it unfortunately isn't possible to adapt their colours should the customer wish for something different. The available colours are displayed in the preceding table Basic Radiant Panel Colour Range.

ECOSUN high-temperature radiant panels

Also in the case of high-temperature panels is the basic body made of a steel sheet or metal sheet with a triple layer of anti-corrosive surface finish in panels for aggressive environments. Aluminium heating lamellas with pressed-in heating rods are embedded in the body. The surface of the lamellas is treated with a special **SILICATING** galvanic surface finish, which, similarly as with **Thermocrystal** for low-temperature panels, significantly increases the emissivity of the lamellas. However, its temperature resistance extends up to 500°C. According to the wattage, the panels can have one, two or three lamellas. The panels are equipped with a terminal into which a supply lead is connected. The types with one lamella are only for a voltage of 230V, while the two- and three-lamella types can be connected both to 230V and 400V. From the operational aspect and if connected suitably, the individual lamellas of the panel can be switched on gradually and thus fluently increase the output of the panel as needed.

The following picture is a microscope photo of the surface of the heating board of the panel after the SILICATING finish has been applied – enlarged 260 times (performed by a BS 340 device).



Colour finish of ECOSUN high-temperature panels

Panels from steel sheets are treated with sprayed powder paint in the 9002 RAL tone (Anticor - RAL 9006) which features long-term colour stability even when exposed to temperatures of up to 140°C. Other colour tones are not produced as standard.

