

Preparation and Thermal Performance of Thermo-Shielding Paint with Ceramic Oxides

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The incidence of Urban Heat Island, a phenomenon caused mainly by the removal of natural vegetation and its replacement with buildings and paved surfaces, is increasing in large metropolitan centers and produces temperatures exceeding 10 °C above those in surrounding areas. To reduce indoor temperature of building in summer, new type thermo-shielding paints were prepared by mixing with ceramic oxides, such as mica, hollow silica, zinc oxide, and hydrotalcite with certain amounts. The thermo-shielding paints indicate lower surface temperatures, about 3-10 °C, than general paint and effective with increasing ceramics contents. The prepared samples were characterized by reflective index, thermal image, cross-section SEM to explain reasons.