

The Improvement of Heat Insulation for Roof Steel Plates by TRIZ

Application

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Abstract

More and more colored plates have been used on roofs in the steel buildings in Taiwan, such as roofs of high-technology factories and offices of large-scale construction sites. Facing the impacts of global economic crisis as well as the exhaustion of natural resources, we should seriously look at the issue of energy saving and try every possible method to save energy in daily life. In architecture industry, architects have devoted themselves to green buildings. However, there should be an inventive way to upgrade heat insulation of external building structures. The studies on this topic in Taiwan mainly focus on the heat insulation of air flow and use the compound-heat-proof materials to decrease the heat load of buildings. There were a few researches done on the invention of heat-proof paint on roof plates.

This paper applies TRIZ, the Russian acronym for theory of inventive problem solving, to develop a new heat-proof paint used on the colored roof plates. After conducting and analyzing several heat resistant tests, this study has successfully developed a new paint that upgrades the solar reflectance and heat insulation of the plate paint, which saves over 24% of electricity and thus achieves the goal of saving energy.

Keyword : TRIZ, plate paint, heat insulation