

INDUSTRIAL BUILDING, NETHERLANDS

Oss, Netherlands

2012

Industrial Building

Fluorocarbon coating

PROJECT DESCRIPTION / NEEDS

Rejection of solar gains is the aim of passive cooling strategies in any type of building and any climatic region. The extent of cool materials' applicability depends on the external climatic conditions and internal heat gains. To minimise the energy demand for cooling, the cool material is applied in an industrial building in Oss, Netherlands. The specific building is in Northern climatic conditions (temperate marine climate) where the heating penalty of cool materials is of a great significance.



APPLICATION / UTILIZATION

This study includes laboratory testing (spectral reflectance measurements, calculation of the solar reflectance, measurement of the infrared emittance, calculation of the solar reflectance index, calculation of maximum surface temperature, accelerated ageing of the samples) and field testing after the application of FC coating on the roof of the building.

The field testing measurements (measurement of the roof's albedo, thermal imaging of the roof, thermal imaging of the interior spaces, measurement of indoor temperature and humidity) were performed in two phases, i.e. before (1st Phase) and after (2nd Phase) the FC coating application on the roof.

Main products / systems used:

tetrafluoroethylene monomer fluorocarbon coating (FC coating) in a water-borne formula

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CUSTOMER BENEFITS

The value of the roof albedo has changed from 0.3 to 0.67 after the application of the cool coating. There is an increase of 120% of the roof's albedo. Regarding the heating and cooling loads there was a decrease of 73% for cooling while there was a minor heating penalty of 5%.

