HYDROPHILIC GEO-SMART COATING

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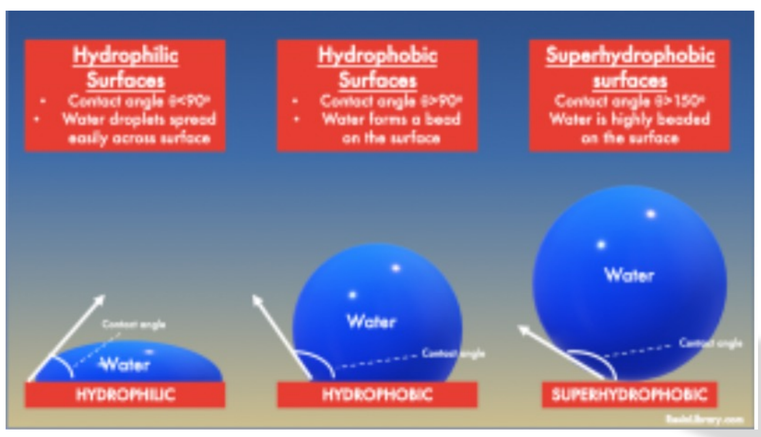
Introduction

Geopolymer is an environmentally friendly cemented material which consists of three-dimensional Si-O-Al networks produced with lower energy consumption.

Hydrophilic Geo-Smart Coating is a combination of metakaolin added zinc oxide and titanium dioxide make the geopolymer as coating materials with hydrophilic surface application effective with photocatalytic pollutant degradation using inexpensive and harmless material is an effective method



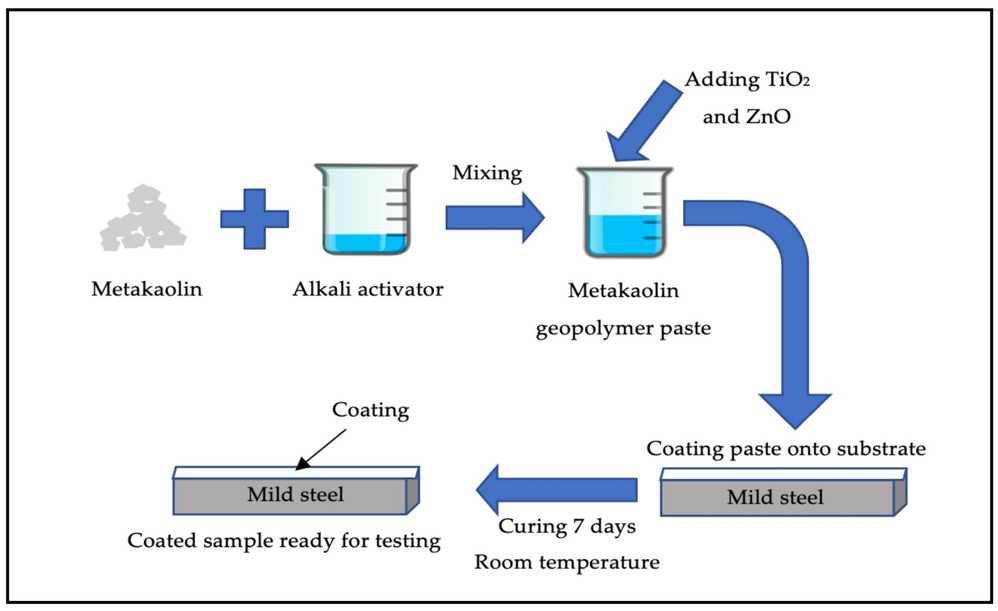
Hydrophilic mechanism

Problem Statement

PROBLEM: Surface deterioration, hazardous material and toxic paint

SOLUTION: Hydrophilic Geo-Smart Coating gives excellent properties through adhesion strength between coating and substate, provide photocatalyst degradation of pollutant and also non-hazardous coating material. It uses rain by wash away organic dirt.

Methodology

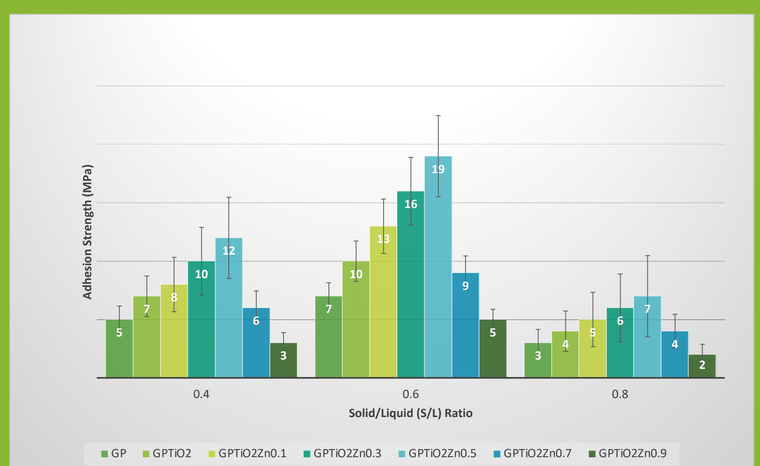


Product Description

Description	Performance
Adhesion strength	19 MPa
Photocatalyst	Degradation of Methylene Blue after 60 minutes
Viscosity	100 CPS suitable as paint
Water contact angle	<50 degree (Hydrophilic effect)

Results

Hydrophilic Geo-Smart Coating was found efficient in degradation of methylene blue via photocatalyst. The results indicates that addition of ZnO into geopolymer metakaolin coating gave high photocatalytic activity. From this figure shows the complete degradation effect after 60 minutes exposure under visible light.



Adhesion is the strength of the bonds forming between coating and substrates is required for a long-lasting protective coating. Geo-Smart Coating shows high adhesion strength between coating and substrates at 19MPa compared with conventional coating at 3.6 MPa.

PATENT

US20130260043A1 – Method of Coating A Geopolymer onto An Article

US 20130081557A1 – Environmental Friendly Composite Construction Materials

PI 2012700134 – A Method of Geopolymer of Coating A Geopolymer Onto an Article

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Publication

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