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**LIMESTONE FROM CEMENT WASTE AS FILLER IN SILICATE
PAINT TO REDUCE DEGRADATION**

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ABSTRACT

LIMESTONE FROM CEMENT WASTE AS A FILLER IN SILICATE PAINT TO REDUCE DEGRADATION

The increasement waste in landfill impact the environment, same for the waste from the cement manufacturing. One of the wastes includes the limestone which discard at the first stage of the cement production. Limestone derived from cement waste can beneficial the silicate paint by utilising in the filler. Despite limestone discarded and unused as it is a waste in cement manufacture, but the composition exist in the limestone can improve the performance of the silicate paint in term of the paint degradation and durability. In developing the new formulation of paint to overcome issue of detachment of the coating and leachate from the paint, maybe the limestone can improve the formulation of the silicate paint. This study demonstrates the finding of element exist in the limestone which is calcium (Ca) as the higher content using the X-rays Fluorescence (XRF) analysis. This finding lead to the production of calcium carbonate to be used in silicate paint preparation. Hence, to examine the performance, two silicate paint with different percent of filler is produce: silicate paint with 50% filler and silicate paint with 10% filler. After several weeks, the physical evaluation is done to observe any degradation of the paint, resulting silicate paint with 50% filler gives the best performance by showing zero degradation. In fact, Fourier Transmission Infrared- Attenuated Total Reflectance (FTIR-ATR) also used to confirm the paint made is a silicate paint. Overall, the finding suggest improvement in term of varied the analyses instruments to compared with the current result. Therefore, it is proven that the limestone from waste derived can be used to reduce degradation of the silicate paint.

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