

**THE UTILIZATION OF ALUMINUM WASTE AS SAND
REPLACEMENT IN CONCRETE**

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ABSTRACT

THE UTILIZATION OF ALUMINUM WASTE AS SAND REPLACEMENT IN CONCRETE

Development activities in construction sector have caused serious problems throughout the world as the natural resource depletion and produce large amounts of waste. In Malaysia, the main problem appeared when most of the waste was abandoned and not recycling. Such conditions can cause problem such as environmental pollution. The use of these materials not only helps in the natural resources such as sand, aggregate, cement and other building. However, it also helps in reducing the manufacturing cost of the concrete. In addition, the reduction in the cost of waste disposal, saving manpower and the environment from the effects of pollution are the benefits derived from the use of waste materials. The properties of containing aluminum waste as sand of sand were investigated in this study. Aluminum waste was used as a partial replacement for sand at 1%, 2% and 5% of the concrete mixes. A study was conducted on the use of recyclable aluminum materials, as sand replacement material in concrete mix with replacement of 1%, 2% and 5%. Lab tests, including slump tests, compressive strength and water absorption were conducted in this study. As a result, samples containing 1% aluminum waste has better performance in terms of strength and containing 5% aluminum waste has good resistance to water absorption. Using waste in concrete is an interesting possibility for economy on waste disposal on waste disposal sites and conservation of natural resources.