

# STUDY OF THE COMPRESSIVE STRENGTH OF MODIFIED POLYSTYRENE (MPS) AS LIGHTWEIGHT AGGREGATE

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## ABSTRACT

In this research, we investigated the possibility of using polystyrene as lightweight aggregate by taking advantage of its low density. Waste polystyrene foam was modified and sintered in a furnace at temperatures ranging from 130 °C to 220 °C. During the sintering process, polystyrene underwent 97% shrinkage and become harder. To determine the strength of MPS aggregate, a modified compression test was used since the conventional tests used to determine the strength of normal aggregate were not applicable to the lightweight aggregate. An attempt was made to determine the strength of the MPS aggregate using the aggregate crushing value (ACV) test. However, the MPS aggregate hardened and agglomerated, making it impossible to determine its ACV. It appears that MPS has significant potential for use as an artificial lightweight aggregate.

**KEYWORDS:** Compressive strength, modified polystyrene, lightweight aggregate

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