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## **INVESTIGATION OF THE UTILIZATION OF POLYVINYL ALCOHOL AS SURFACE TREATMENT IN MORTARS USING END-OF-LIFE TIRE**

**Asena Karshoğlu Kaya**

Institute of Graduate School, Engineering Faculty, Civil Engineering, Eskişehir Technical University, Eskişehir,  
Türkiye  
0000-0001-5178-4069

**Mehmet İnanç Onur**

Engineering Faculty, Civil Engineering, Eskişehir Technical University, Eskişehir, Türkiye  
0000-0002-2421-4471

### **ABSTRACT**

This study explores the potential benefits of employing polyvinyl alcohol (PVA) as a surface treatment in mortars incorporating end-of-life tire (ELT) particles. The investigation focuses on assessing the mechanical, physical, and thermal properties of cementitious mortars with the incorporation of PVA and ELT materials. The research aims to enhance the sustainability and performance of mortars by using waste materials and innovative surface treatments. The mechanical properties of the mortars were evaluated through compressive strength, flexural strength, and tensile strength tests. The addition of ELT particles with PVA exhibited notable effects on the strength characteristics of the mortars. The physical properties, including porosity, unit weight, and water absorption, were examined to understand the material's structural integrity and durability. The study also delved into the thermal behavior of the mortars using techniques such as thermal conductivity analysis. Results indicate that the incorporation of PVA as a surface treatment contributes to improved mechanical strength, reduced porosity, and enhanced durability of the mortars. The synergy between PVA and ELT particles demonstrates promising outcomes in terms of sustainable construction materials. The study provides insights into the potential of utilizing waste materials for enhancing the performance of mortars, contributing to both environmental conservation and construction industry sustainability.

**Keywords:** ELT, PVA, Silica Fume, Surface treatment, Sustainability