Study of the Slip Risk Value (SRV) of Concrete Enhanced with Waste Material in the Production of Paving Blocks

Marcin Giedrowicz
Faculty of Architecture, University of Technology, Poznan

Konrad Waluś
Faculty of Architecture, University of Technology, Poznan

Bartosz Wieczorek
Faculty of Architecture, University of Technology, Poznan

Łukasz Warguła
Faculty of Architecture, University of Technology, Poznan

Abstract:

The study aims to evaluate the slip risk value (SRV) of concrete enhanced with waste material in the production of paving blocks. The research investigates changes in surface parameters due to wear and tear under simulated real-world conditions on urban sidewalks in a laboratory setting. The British Pendulum Test (PTV) method was employed to assess slip risk. The methodology simulated pedestrian movement on concrete surfaces enriched with different mixtures of concrete and waste material from cut cables. The findings indicated that surface wear is most significant in high-traffic areas, increasing the risk of slipping depending on the composition of the concrete mixture. The results were referenced against relevant safety standards, providing insights into the suitability of these concrete mixtures for use in urban environments. This research offers valuable information for designing safer paving blocks and can contribute to the planning of urban infrastructure.

Keywords:

Slip risk value (SRV), Concrete enhancement, Waste material recycling, Paving blocks, British Pendulum Test (PTV), Urban sidewalks.