

ABSTRAK

This research aims to analyze the compressive strength of paving blocks using a mixture of PET (Polyethylene Terephthalate) plastic waste, sand and used oil as an alternative material for road pavement. PET plastic waste was chosen because it is difficult to decompose, so its use can reduce environmental pollution. Used oil is used as a medium for melting plastic as well as helping distribute the material into sand aggregates. The mixture variations tested were 75/25, 65/35, and 55/45, with a total mold volume of 1200 cm³. Tests include paving block weight, water absorption capacity, compressive strength, as well as cost comparison analysis with normal paving blocks. The research results show that the more plastic added to the mixture, the smaller the weight of the paving block because the density of plastic is lower than sand. The water absorption capacity of paving blocks decreases with age, with the lowest value being 0.2% in the 75/25 variation at 28 days, thanks to the hydrophobic nature of the plastic. The best compressive strength is achieved in the 65/35 variation with a value of 12.25 MPa at 28 days, which meets the D quality standard for light applications such as parks. In terms of cost, plastic paving blocks are more economical in terms of raw materials because they use cheap plastic waste and used oil. However, it requires additional energy to melt the plastic. However, the environmental advantages and sustainable materials make paving blocks an attractive alternative for the construction industry. This research shows that PET plastic waste and used oil can be used effectively to make environmentally friendly paving blocks that are economical, strong and durable, while supporting sustainable waste management and meeting the technical standards of SNI 03-0691-1996.

Keywords: *paving blocks, PET plastic , used oil, compressive strength*