

ABSTRACT

Brick is a composition of building materials made from a mixture of portland cement or similar hydraulic adhesives, water and aggregate with or without other additives which do not reduce the quality of the concrete brick itself (SNI-03-0691-1996). Waste processing is an alternative that is cheap and environmentally friendly. One of the inorganic waste is PET and LDPE plastic. Organic waste is also an important problem that pollutes and harms the environment. Especially on agricultural waste such as husk ash and coffee skins. The purpose of this study was to determine the effect of variations in husk ash, coffee skins and plastic in the manufacture of eco-friendly bricks on water absorption and compressive strength tests according to SNI standards. In stages, melting the plastic and mixing it with the husk ash and coffee skins will produce bricks that are ready to be tested. The treatments tested in this study were P1 (plastic, cement) P2 (plastic, husk ash, coffee skins, cement) P3 (plastic, husk ash, cement) P4 (plastic, coffee skins, cement). Based on the results of the water absorption test, it can be seen that treatments 2, 3 and 4 showed higher water absorption values than treatment 1. This was due to the addition of coarse aggregate composition, namely husk ash and coffee skins. In addition, the treatment by combining husk ash and coffee skins gave the most ideal water absorption value of 2%. And based on the results of the compressive strength test, treatments 3 and 4 showed better strength quality than treatment 1. This was due to the addition of coarse aggregate, namely husk ash and coffee skins which could improve strength quality.

Keywords: Brick, Plastic, PET, LDPE, Waste, Husk Ash, Coffee skins, Water absorption, Compressive strength