

ABSTRACT

Fly ash, which is a by-product of coal processing, is classified as hazardous and hazardous waste (B3) which can be used to produce artificial coarse aggregates by using an alkali activator to reduce waste and utilize it. The aim of this research is to compare the effect of artificial coarse aggregate with natural aggregate on compressive strength and determine the workability of concrete mixtures using artificial coarse aggregate and natural aggregate. The method used in this research is to test the slump value of concrete samples BA-A, BA-B1, BA-B2, and BA-B3 to determine the workability of the concrete mixture. The slump value of samples BA-B2 and BA-B3 is the highest, namely 120 mm, indicating that the mixture has good workability and is easy to apply to concrete mixtures. Meanwhile, the BA-A slump value was 110 mm, the lowest among all samples. The compressive strength of concrete samples in BA-B3 is the highest, namely 5.08 MPa. The difference with BA-A is 25.65%, where the flexural strength of BA-A is 3.77 MPa. This is influenced by the rounded shape of the aggregate so that it is able to withstand more force than natural aggregate (Burhanuddin, 2016).

Kata Kunci: *flexural strength , alkalie activator , fly ash, artifical agreggate*