FLY ASH RATIO AND ASH BOTTOM WITH ADDITIONAL THE MATERIALS TAMBAHAN SILICA FUME AND SUPERPLASTICIZER FOR CONCRETE

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ABSTRACT

The utilization of fly ash and ash bottom PLTU Air Anyir (Bangka) waste in concrete is expected to cope with the impact of environmental pollution. Therefore, fly ash and bottom ash are combined with additional admixture materials such as silica fume and superplasticizer concrete mix to improve the quality of concrete.

The main objective of this research is to get the temperature comparison of casting, slump test value, concrete strength value, and setting fly ash to bottom ash ratio 0%, 5%, 10%, 15% , 20% and 25% by weight of cement, combined with variations of 0% silica fume, 2%, 4%, 6%, 8%, 10% of cement weight reduced by the weight of fly ash and bottom ash cement, With a superplasticizer of 2% of the water requirement. The sample used is cylindrical (15 cm x 30 cm), concrete quality planned 41.7 MPa at 28 days. Samples were tested at age 7, 14, 28 days, with prior care before testing. The sample size is 99 samples, consist of 11 variations and each variation of 9 samples.

From the research shows that the temperature of concrete at foundry of variation of fly ash mixture obtained maximum temperature 37^0C and minimum temperature 33^0C. Meanwhile, the variation of bottom ash mixture obtained maximum temperatur 37^0C and minimum temperature 34^0C. The highest concrete strength for fly ash concrete is found in FA 10% + 4% SP + SF 2% is 56.16 MPa. And for mixed bottom ash highest compressive strength on mixed variation of BA 5% + SF 2% + SP 2% that is equal to 49,82 MPa. generated in concrete FA 5% + SF 2% + SP 2% has the fastest initial time setting is 251 minutes of all mixture.

Keywords : fly ash (fly ash), bottom ash, compressive strength, setting time,

silica fume, slump test, temperature of casting, superplasticize