VOLCANIC ASH USE AS A DEVELOPMENT COMPOSITE CONCRETE MATERIAL

\( f'c \) 30 MPa

Name : Ahmad Baihaqi  
NRP : 3107.100.019  
Department : Teknik Sipil FTSP – ITS  
Supervisor : Prof. Dr. Ir Triwulan, DEA  
Dr. Eng. Januarti, ST, MT  
Dr. techn. Pujo Aji, ST, MT

Abstract

High prices of cement to make the human race to seek a cheaper substitute materials. for that we feel need to do research on volcanic ash in the hope of volcanic ash can be utilized as an ingredient in the manufacture of concrete \( f'c \) 30MPa.

In this study conducted experiments on the influence of a mixture of Volcanic Ash Bromo paste, mortar and concrete with a percentage of 0%, 10%, 15%, 20%, 25%. The addition of bromo ash hydration will lower the temperature reached 14.1% on a 25% cement replacement. As well as setting the longer the time that happens. Volcanic ash percentage Bromo ditambahakan be obtained using the optimum occurs in the percentage of 15%, because the compressive strength of concrete produced at 28 days amounting to 31 903 MPa, optimum prosenatse also occur in the test mortar or paste. Porosity in this percentage are also better than the other percentage, so that the resulting compressive strength is also better, while the tie between the paste produced by the aggregate percentage of 15% this is the best. For that from this study suggested the use of volcanic ash as a concrete mixture used on the percentage of 15%.
Key words: Cement, Volcanic Ash Bromo, Concrete f'c 30MPa. Optimum 15%.