

**THE EFFECT OF VARIATION OF LEVELS OF PAYAK NGORO SAND
MUD IN JOMBANG DISTRICT ON COMPRESSIVE STRENGTH,
SETTING TIME AND CONCRETE POROSITY**

Damario Artasena R.P.P (182322201056)
Email: damarioartasena29@gmail.com

ABSTRACT

Concrete is formed from coarse aggregate, fine aggregate, cement and water with a certain ratio that can affect the speed of hardening of concrete. Furthermore, the silt content, cleanliness, and aggregate gradation affect the workability which includes pouring, compaction, and curing methods, which ultimately affect the strength of the concrete. The silt content in sand tends to inhibit hydration in concrete (compounding cement with water). Payak sand is located in Ngoro District, Jombang Regency. In this study to determine the effect of silt content in fine aggregate (sand) on compressive strength, setting time and concrete porosity, five variations of silt content were made in fine aggregate (sand), namely variations in silt content of 3%, 5%, 10%, 15 %, 20%. The density and strength of concrete will increase with the smallest variations in mud content. Determine the initial set time and final set time of cement. Sand dug sand with a mud content of 3%, the results of the examination carried out obtained the results of the initial setting time of cement with a maximum decrease of 25 mm, which is 75 minutes and the final setting time of cement with a decrease of 0 mm, which is 150 minutes. The less silt content contained in the sand will further increase the compressive strength of the concrete and reduce the porosity of the concrete. The concrete with the highest compressive strength was 3% silt content concrete with a value of 22.66 MPa and the smallest porosity with a value of 5.06%. Concrete that has a silt content of 5% with a compressive strength value of 20.46 MPa and the highest porosity with a value of 6.79%.

Keywords : *Mud Content, Compressive Strength, Setting Time, Porosity*