

ABSTRACT

In everyday life cement plaster serves as a coating on the walls of houses and buildings. Cement must pass the compressive strength test of the material before use. The compressive strength test of materials in general uses the destructive method or damages the sample, through this research the material compressive test is done using a non-destructive method. In this study the test material was given in the form of cement plaster with dimensions of 10 x 5 x 0.5 cm which had variations in material composition with three different conditions. The first test material with the independent variable in the form of sand with a mass of sand ranging from 25-70 grams, while the quantity of cement and water is constant, the second test material uses an independent variable in the form of cement with a cement mass of 25-70 grams, while the quantity of sand and water is constant and the third test material using water as the independent variable the first version water composition varies between 20-40 ml with a mass of sand and cement 35 grams. For the second version the water composition is 15-35 ml with a mass of sand and 25 grams of cement. This study provides the results of the effect of variations in the composition of the plaster cement on electrical parameters and porosity of the material, where the highest correlation coefficient is $R = 0.99$ found in the relationship of resistivity and material composition, after that capacitance with 0.98 and porosity of 0.97 with the contribution of the influence classified as very strong. The effect of parameters on compressive strength also has a correlation coefficient (R) which is classified as strong, including compressive strength on porosity $R = 0.66$; compressive strength against capacitance $R = 0.65$ and compressive strength against resistivity $R = 0.6$.

Keywords : *Cement Plaster, Capacitance, Porosity, Resistivity, Compressive Strength of Materials*