

TO EVALUATE THE ENGINEERING PROPERTIES OF CLAYEY SOIL THROUGH GLASS POWDER AND QUARRY DUST

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Abstract

Soil is one of the most important and primary media for any construction work. The strength and durability of any structure depends on the strength properties of soil. Soil also performs a range of ecosystem services like nutrient cycling and water filtration. Engineering geology and Geomechanics is very significant in civil engineering, but also as the root of sustainability. The soil behaves as an engineering material and provide a valuable resource for construction. Whenever soil act as an engineering material and load applied on it so failure occur in it which is General, local and punching shear failure and other types etc. The study shows the techniques of soil that are considered as they improve soil quality, strength and other engineering properties, while reducing the industrials wastes such as glass powder and quarry dust. The research uses slide software to find out the strength of the soil that is sustainable. In this study, survey was conducted and low strength soil were collected, glass powder and quarry dust were added in percentage (5 to 15%). The condition of soil was determined by a series of modern techniques, while keeping the strength of soil in our mind, increases upto addition of glass powder and quarry dust 10%. We have performed some of test like Modified Proctor Test (MPT), CBR, EDAX, SEM, Specific gravity test and Atterberg limits to visualize engineering properties of soil. The result demonstrated that slide software can adequately measure the strength of soil, quality and reducing industrials wastes (Glass Powder and Quarry Dust).

Keywords: California Bearing Ratio (CBR), Energy Dispersive X-ray spectrometry (EDAX), Scanning Electron Microscope (SEM), Atterberg limits