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Current analysis of concrete

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In this growing need and the run for sustainability, The increase in demand for better and safe housing has increased many folds. We live in an era were the construction industry is changing its phase from a labour and skill intensive industry to a more automated industry with greater sophistication. However this alarming rate of construction is a also accompained by structural faults and failures, which needs to be curbed in order to ensure hazard mitigation. Along with the aesthetical characteristics the life span of a building is very important which depends on a number of factors like the strength of the building material, duarability of concrete etc. Since electrical properties play an important role in monitoring structural health. In this paper for the purpose of Structural Health Monitoring, the properties of concrete has been studied with varying paramters. The study for the bulk electrical properties was carried out using the 2-point probe method for both alternating and direct current source. And the semi-conductor properties of concrete have been further studied as a probable combination of resistances and capacitances. It was found that conductivity of concrete decreases with aging. M40 grade of concrete showed higher conductivity when compared to M20 owing to better pore refining. 20 mm downsize aggregates showed higher conductivity compared to 12mm downsized aggregates. And as expected cured concrete blocks showed greater conductivity compared to uncured block. Peak Current analysis showed there was a constant drop from the maximum current passing through all the samples. Samples have been further studied for their conductivity in various samples under loading. All the results have been presented in the form of I-V charts. This study is further extended to studying crack propagation or stress zones in the sample using solid work as a tool.

Biography

Rajdeep Srivastava is persuing his undergraduate degree in Civil Engineering 2012-2016.Has recieved job offer from TATA CONSULTING ENGINEERS, A reputed consulting firm in Civil engineering industry. The author has succesfully presented a paper on Direct Current Analysis of concrete in The National Conference for Emerging Trends in Engineering science and management(NCESM-2016).

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