

Material Properties of Structural Pumice Lightweight Aggregate Concrete

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Abstract—Lightweight concrete plays a vital role in today's construction industry. In current research work material properties of structural pumice obtained from district Chaghi in Pakistan were investigated and also it has been used as a replacement of coarse aggregate in concrete. The physical and mechanical properties of aggregates were presented such as specific gravity, water absorption, gradation, and impact value. For harden properties of pumice-based lightweight aggregate concrete such as compressive strength, split tensile strength with different proportions of coarse aggregate were investigated and their test results were presented. The cubes and cylinder samples were 100x100x100 mm and 100x200 mm respectively, and mix design was done for 30Mpa. The results show lessen strength value while increasing the percentage of pumice as compared to normal concrete after 28 days of curing.

Keywords — pumice, compressive strength, split tensile strength, water absorption, and impact value