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Stabilization of Weak Subgrade using Pumice Stone, a Waste Material

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Abstract : A pavement designed for a particular set of conditions and resting on a weak subgrade is very thick and hence is expensive. The cost of such a pavement could be reduced by strengthening the subgrade by a suitable stabilization process. In the present work, the suitability of waste pumice stone as a mechanical stabilizer in pavements has been studied. Pumice stone, a by-product of steel and garment industries, is a locally available, porous, light and non-plastic material. This has been mixed with the weak soil in different proportions and CBR tests have been performed on them. The experimental results show that there is a considerable increase in the CBR value of the stabilized subgrade leading to the reduction of overall cost of pavements. Use of pumice stone not only reduces the overall cost of the pavements but also solves the disposal problem faced by industries producing pumice stone as a by-product.

Key words : pavement, subgrade, stabilization, waste pumice stone, CBR.

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