

Experimental Investigation on Utility and Suitability of Lateritic Soil as a Pavement Material

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Abstract : The locally available Lateritic soil in Dakshina Kanadda and Udupi districts are traditionally being used as building blocks for construction purpose but they do not meet the conventional requirements ($L L \leq 25\%$ & $P I \leq 6\%$) and desired four days soaked CBR value to be used as a sub-base course material in pavements. In order to improve its properties to satisfy the Atterberg's Limits, the soil is blended with sand, cement and quarry dust at various percentages and also to meet the CBR strength requirements, individual and combined gradation of various sized aggregates along with Laterite soil and other filler materials has been done for coarse graded granular sub-base materials (Grading II and Grading III). The effect of additives blended with lateritic soil and aggregates are studied in terms of Atterberg's limits, compaction, California Bearing Ratio (CBR), and permeability. It has been observed that the addition of sand, cement and quarry dust are found to be effective in improving Atterberg's limits, CBR values, and permeability values. The obtained CBR and permeability values of Grading III, and Grading II materials found to be sufficient to be used as sub-base course for low volume roads and high volume roads respectively.

Keywords : lateritic soil, sand, quarry dust, gradation, sub-base course, permeability

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