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Effect of Lime treatment, moisture and fine content on the Permanent Deformation Behavior of Unbound Granular Materials (UGM)

This paper presents permanent deformation behavior of untreated and lime treated base/sub base course materials at varying gradations and moisture conditions. Two types of base course gradations (NHA-A and NHA-B), three varying moistures i.e. optimum moisture content, optimum to dry condition and optimum to wet conditions and lime treatment of UGM investigated. Performance test (Permanent deformation) of selected materials was carried out by using Wheel Tracker (WT) test technique. The results show that gradation with high percentage of fines increases the permanent deformation of UGM upto 29%. Moisture content has adverse effect on the unbound base/sub base layers material, specifically when moisture increases from optimum to wet conditions. By increasing the moisture from optimum to wet conditions, permanent deformation increases by 32%. Lime treatment technique has proven to reduce the permanent deformation of UGM by 79%.

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