Effective DGAB Construction Techniques for Optimizing Segregation during Compaction Process

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Road construction in Sri Lanka widely uses Graded Aggregate (Dense Graded Aggregate Base - DGAB) for base construction with RDA specified Gradation requirements. But in loading, transporting, unloading, handling and in construction processes the segregation occurs deviating specified gradation.

This study covered investigation on DGAB segregation during layer compaction by focusing;

(1) What factors contribute to segregation of DGAB Layers, (2) The relationship between compaction effort and segregation, (3)The co-relations between water content, compaction effort and the extent of segregation , (4) To find out practical measures to control / minimize segregation effect in layer compaction

In site trials it is generally observed that following segregation effects present and those make compacted layer non-uniform throughout its depth, (1) Fine particles tend to migrate upward while course particles remain at underneath layers at high water content. And (2) Fine Particles tend to settle down at dry condition

Compaction trials were done in both thin (App. 150mm Loose) and thick layers (App. 225mm Loose). A number of factors like layer thickness, water content at compaction, the type of roller used (weight, with or without vibration) gives a major impact on particle dislocation and to the extent of segregation.

Keywords:

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