

(54) Title of the invention : Recycled Aggregate as Constituents of Base and Sub-Base Layers for Rural Roads

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(57) Abstract :

This invention is an endeavour to evaluate the performance of recycled aggregate as constituents of base and sub-base layers of rural roads in India. The physical and strength properties of the materials are tested and utilised to evaluate their performance. It is found that the physical properties of the Recycled Aggregate (RA) are unsatisfactory to those of crushed natural granite. The water absorption of 3.76% observed in RA is higher than the recommended 2%. The Recycled Aggregate (RA) is blended with the natural aggregates at 25%, 50%, 75%, and 100% replacement levels. The mixture with 100% crushed granite is utilised as control. The MDD of the aggregates is reduced with an increase in RA content and as a result, the OMC is increased. The CBR values of the aggregates reduced as the RA increased. The 0%, 25%, 50%, 75%, and 100% of RA had CBRs of 92%, 91%, 46%, 44%, and 28% respectively. Based on the CBR values and other tests conducted, exploitation of mixed RA for sub-base layers of rural roads is recommended. However, where mixed RA are utilised for base layers it should be limited to 25% inclusion.

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