

Improving slurry seal performance in Eastern Saudi Arabia using steel slag

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Abstract: Harsh climate, heavy traffic and, most importantly, use of low-quality aggregates have resulted in unsatisfactory slurry seal performance in the eastern region of Saudi Arabia. On the other hand, blast furnace steel slag, a superior aggregate type with excellent strength and surface properties, is being wasted as a by-product during the steel manufacturing process. This research was carried out to assess and improve the performance of slurry seal mixtures in the laboratory using the Aggregate Blend Improvement Technique by incorporating steel slag aggregate. Aggregate blends consisting of slag and limestone were evaluated to form an improved slurry seal mixture that will generate simultaneously greater wear-resistance and improved bonding characteristics with bitumen. Results indicate that significant improvements in mixtures are guaranteed through improved aggregate blending of slag with limestone.