

Sand concrete using fine sand to build roads in central provinces of Vietnam

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Summary

Central Coast of Vietnam has huge reserves of soft sand, about 200 billion m³, but lacks of large aggregates to make concrete traditions. Cement industry in Vietnam is sufficient to meet domestic demand and use the surplus for export. VINA FLY ASH AND CEMENT Co. alone can provide 300,000 tons of fly ash annually to use as filler activity for manufacture of sand concrete. The national target program on new rural development in the period 2010 - 2020 from the Government of Vietnam is aiming to develop socio-economic situation and infrastructure system, giving priority to construct the access to the headquarters of People's Committees of communes and roads system in the communes. Communal roads will be asphalted or concreted. Using sand concrete instead of traditional concrete to build road system in the central provinces of Vietnam will reduce construction costs by reducing transportation costs of aggregate due to large distance. On the other hand, it will reduce the volume of rock mining, contribute to environmental protection.

Keywords: sand concrete, road pavement, fine sand

1. Background

Fine sand along the coast of central Vietnam with great reserve, so far it has not been used for normal cement concrete because the fineness module is < 2 . Mixed Stone 0/5 (equivalent to ground sand) at the quarry are occupied large storage area and has not been used properly. Mixture of fine sand or mixed stone can be used as aggregate for sand concrete. Sand concrete is a granules concrete including large grains sand (can substitute per mixed stone 0/5), granules sand, powder (fly ash, slag, granite ..), cement, water and additives [1, 2]. In sand concrete, sand is the aggregate frame, extended range and gradation using more smooth inert fillers such as crushed granite or crushed sand powder. Central Vietnam is an area with abundant reserves of sand in stable quality. Therefore, using sand in this area to build structures on roads and sidewalks with cement sand concrete is a matter that needs attention. The Prime Minister of