

limited high-value set, thereby providing policymakers with specific interventions known to be effective.

“Save LIVES“ provides an evidence-based inventory of priority interventions for road safety decision-makers and practitioners. The momentum generated by those targets challenges countries to create safer roads and scale up the implementation of priority interventions around the world in order to halve deaths and injuries caused by road traffic crashes, as well as to improve road safety through access to safe, affordable, accessible and sustainable transport systems for all by 2030.

If the problem of road safety is effectively addressed, the gains resulting from the reduction in costs, both in economic and human terms, can be channeled, for example, into development projects and other areas of concern. If no significant action is taken, however, road traffic fatalities are predicted to become the seventh leading contributor to the global burden of disease by 2030 [1].

To draw attention of world society to road traffic victims the World Day of Remembrance for Road Traffic Victims (WDoR) was founded by RoadPeace in 1993. In 2005, the United Nations endorsed it as a global day to be observed every third Sunday in November each year, as the “appropriate acknowledgement for victims of road traffic injuries and their families”. Since then the World Day of Remembrance has been observed and promoted worldwide by many governments, international agencies and groups [5].

References

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DRY SHRINKAGE PROPERTIES OF CEMENT STABILIZED MACADAM

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Cement stabilized macadam (CSM) as a semi-rigid base mix has been widely used in the construction of high-grade highway base, which has the advantages of high strength, stability, anti-scouring ability and low engineering cost. At the same time, it also has its own defects: the pavement paved with semi-rigid base mixes such as CSM will have cracks in the surface layer one after another after several years or even months of use. The main causes of semi-rigid base material cracking make the vehicle load and the dry shrinkage and temperature shrinkage of CSM. Among them, the drying shrinkage of CSM has the greatest effect on the shrinkage cracks in semi-rigid sub-grade [1,2].

This paper analyzes the factors affecting the drying shrinkage performance of CSM and puts forward effective measures to prevent drying shrinkage of CSM.

The drying shrinkage of CSM is the volume contraction due to the change in its internal water content. This is due to the capillary tension effect, adsorption of water and inter-molecular forces and inter-layer water action caused with the decrease of water content.

Moisture content With the loss of water, the diameter of capillary pores becomes smaller, the radius of curvature of bending liquid surface decreases gradually, the capillary tension becomes larger and larger, and the drying shrinkage force becomes larger and larger. At the late stage of capillary tension, the influence of adsorbed water and intermolecular force on water begins to increase gradually. There is also a repulsive force between the particles due to osmotic pressure due to the higher concentration of ions in the bonded water at the particle center than in the normal aqueous solution far from the particle surface. Therefore, the adsorbed water and intermolecular forces reach the maximum value and gradually decrease with the further decrease of particle spacing. Interlayer water plays an important role in the process of water adsorption and intermolecular force weakening, but with the decrease of the distance between crystal layers, interlayer water decreases, and interparticle repulsion increases gradually. Therefore, the effect on macroscopic volume contraction is weaker and weaker.

Age The dry shrinkage coefficient of CSM decreases rapidly at the initial stage, and then the rate of decrease slows down gradually. The dry shrinkage coefficient of CSM is inversely proportional to the stiffness of the material, while it is directly proportional to its moisture content. With the growth of the age, the material internal crystallization and condensation continuously generated, so that the inter-particle connectivity and integrity is stronger and stronger, and the material stiffness increases, so the material dry shrinkage value decreases with the growth of the age.

Conclusions In order to solve the effect of drying shrinkage on CSM, the following measures can be taken:

(1) The water content has a greater impact on the drying shrinkage, and the water content of the material must be strictly controlled during construction.

(2) The destructive effect of drying shrinkage occurs mainly in the early stage, so good and timely nourishment after the completion of construction can reduce the occurrence of dry shrinkage.

(3) Try to schedule the construction in the wet and cool season.

(4) The method of sawing joints, setting expansion joints and using geotextiles for treatment can be used.

References

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