

ASPHALT ADDING LATENT HEAT STORAGE MATERIAL



Does phase change heat storage asphalt mixture meet high-temperature performance requirement? As can also be seen that the phase change heat storage asphalt mixtures with 20 vol% and 40 vol% PUSSPCM have dynamic stability values that are higher than the limit value of 2800 kN, meeting high-temperature performance requirement in JTG D50-2006.

Fig. 13. Test results of high-temperature performance of phase change heat storage asphalt mixtures.



What is the construction temperature of hot mix asphalt pavement? The construction temperature of hot-mix asphalt mixtures usually ranges from 160 °C to 185 °C, at which the phase change heat storage asphalt pavement materials should keep solid without obvious leakage to avoid the detrimental influence of the leaked PCM on the comprehensive performance of asphalt pavement.



Can phase change asphalt mastic relieve high-temperature distress? Therefore, developing an asphalt mastic with cooling ability may be a promising strategy to relieve the high-temperature distresses. Phase change materials (PCMs) are latent heat storage materials, having ability to absorb thermal energy from phase change asphalt (binder, mastic, mortar or mixture) via phase transition process.



Do PCMs reduce the temperature rise of asphalt pavement materials? PCMs with the unique latent heat storage characteristic enable delaying the temperature rise of asphalt pavement materials. The temperature of phase change asphalt could be 9 °C lower than that of the conventional counterpart according to the laboratory test results of Wei et al. .



How is AC-13 phase change heat storage asphalt mixture prepared? Table 3. Gradation composition of asphalt mixtures. Based on the above composition design, the AC-13 phase change heat storage asphalt mixtures were prepared by adopting a standardized mixing machine for asphalt mixture, with a total mixing time of 3 min.

ASPHALT ADDING LATENT HEAT STORAGE MATERIAL



Can pusspcm reduce asphalt pavement temperature in summer?

Overall, these findings indicate that the synthesized PUSSPCM is a promising phase change heat storage asphalt pavement material that can potentially help to effectively reduce the asphalt pavement temperature in summer.



PCMs are a group of functional materials that are able to adjust and control the surroundings by means of storing and releasing heat during the phase change [7], [8], [9]. To ???



The goal of this work is to improve the latent heat storage capacity and the thermal response rate of a polyurethane solid ??? solid phase change material (PUSSPCM) for evaluating ???



Latent heat storage is to use the phase change of materials to store thermal energy, and differs from sensible heat storage that uses the specific heat of materials [18]. The phase ???



PCM is an excellent energy storage material because it can absorb or release a lot of thermal energy in the process of phase transition but keep at a constant temperature [15]. ???

ASPHALT ADDING LATENT HEAT STORAGE MATERIAL



During the construction and maintenance of asphalt pavement, a lot of non-renewable resources are consumed, which discharge a variety of waste gasses and smoke, causing a serious impact on the environment. Reducing ???



Studies have indicated that the temperature difference between the asphalt mixture and the external environment can be reduced by adding additives to the asphalt mixture [8, 9]. The ???