World Academy of Science, Engineering and Technology
International Journal of Civil and Environmental Engineering
Vol:8, No:09, 2014

Evaluation of Structural Behavior of Wide Sleepers on Asphalt Trackbed Due to Embedded Shear Keys

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Abstract : Korea Train eXpress (KTX) is now being operated, which allows Korea being one of the countries that operates the high-speed rail system. The high-speed rail has its advantage of short time transportation of population and materials, which lead to many researches performed in this matter. In the case of high speed classical trackbed system, the maintenance and usability of gravel ballast system is costly. Recently, the concrete trackbed structure has been introduced as a replacement of classical trackbed system. In this case, the sleeper plays a critical role. Current study investigated to develop the track sleepers readily applicable to the top of the asphalt trackbed, as part of the trcakbed study utilizing the asphalt material. Among many possible shapes and design of sleepers, current study proposed two types of wide-sleepers according to the shear-key installation method. The structural behavior analysis and safety evaluation on each case was conducted using Korean design standard.

Keywords : wide sleepers, asphalt, high-speed railway, shear-key
Conference Title : ICCSEE 2014 : International Conference on Civil, Structural and Environmental Engineering
Conference Location : Paris, France
Conference Dates : September 22-23, 2014