




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Research on influence of track stiffness on development of rail squat defects

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Abstract

This paper presents research aiming to establish the relationship between track stiffness and the appearance and development of squat defects on running rails. Uneven incidence of squat defects was observed on the rails of the investigated main transit track in arailway station. Inspection of track support conditions was conducted using an electrometric method. The comparative analysis of the research results indicated a correlation between the incidence of squats and the changes in track support stiffness. The electrometric profiles and maps indicate the mixing of material from contaminated track ballast and wet subballast, which leads to uneven track support stiffness. This was determined as the main cause of occurrence of squats and track geometry deterioration. It was concluded that uniform track stiffness has to be maintained throughout the entire track service life.