Long-Term Installation Test of Head-Hardened Rails for Reducing Rolling Contact Fatigue on High Rails in Curved Sections

Yoshikazu KANEMATSU Yoshihiro TERASHITA

Head-hardened rails (HH340) are characterized by reduced wear compared to standard as-rolled rails. As a result, they extend the replacement life of rails due to wear on high rails in curved sections. However, HH340 can develop rolling contact fatigue (RCF) damage in the form of gauge corner cracks. Therefore, to reduce both wear and RCF damage, several new types of head-hardened rails have been developed and its resistance to damage was evaluated in long-term installation tests. These tests showed that some of the developed rails exhibited less wear than standard as-rolled rails. Moreover, fewer horizontal cracks that could develop into gauge corner cracks than HH340 rails.