

Effect of Decarburisation Layer Removal by Rail Grinding on Reduction of Microcrack Formation

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This study aims to understand the effect of decarburisation on microcrack formation on rails using a twin-disc test and an on-site (laying) test. Test pieces with and without decarburisation were compared under the same test conditions using a twin-disk test. The results show that decarburisation affects the formation of microcracks and a plastic flow. Furthermore, we investigated the decarburisation effect on the microcrack formation using test pieces taken from actual tracks. The comparison between the test pieces with and without a decarburized layer showed that the crack density of rails on the unground was 2.7-5.7 times higher than that of rails ground at a cumulative tonnage of 23 MGT.