

Study of Rail Grinding Amount by Surface Layer Analysis Using X-ray Diffraction

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Rail grinding is so far carried out by many railway companies because of its effectiveness in suppressing squat. However, few studies have examined the amount of grinding required for rails which have never been grinded before. Hence, using a quantitative evaluation method of material state by diffraction X-ray analysis, the depth of surface layer affected by rolling contact was evaluated for rails with cumulative passing tonnage ranging from 100 to 700 million tons. As a result, it was found that the depth affected by rolling contact tends to increase to 0.5 to 1.5 mm with increase in cumulative passing tonnage.