

**Evaluation of Dark Spot Resistance of Bainitic Steel Rail
in Long-Term Durability Test**

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Long-term durability test was carried out in a revenue line of narrow gauge track in order to examine the resistant performance of bainitic steel rail against squat type of defect. The bainitic steel rail was developed to prevent the defect and reduce the rail maintenance cost with the focus placed on a slightly higher wear rate than that of the as-rolled standard carbon rail under normal rolling contact with wheel based on the effective self-removal of rail surface damage of rolling contact fatigue. The test rails with several levels of hardness were supplied to the durability test and showed that the bainitic steel rails with lower hardness provided the target wear rate and better resistant performance for the squat type of defect than the as-rolled standard carbon rail.