

Test Method for Loading Tracks Composed of a Set of Rail Fastening Systems for Rail Joints

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This study aims to establish a test method for loading test tracks composed of a set of rail fastenings for rail joints. The authors of this paper constructed FEM models for railway tracks which represent rail joint parts accurately and performed the FEM analysis. The FEM results are in good agreement with the results of a loading test on a test track composed of plural sets of rail fastenings. On the basis of the FEM model, the authors proposed the test method for loading test tracks composed of a set of rail fastenings and compared the test results of a set of rail fastenings and plural sets of rail fastenings. The results show that rail head displacement and rail tilting angles obtained from a single set of rail fastenings are in good agreement with those obtained from plural sets of rail fastenings. Therefore, the proposed method based on the FEM model is available to evaluate the performance of rail fastenings system for rail joints.