

Improvement in the Precision of Verification Method for Rail Fastening Systems

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International Standards of the test method for the rail fastening system has been developed in recent years. In order to make the Japanese test methods incorporated in the international standards, the validity of Japanese test method should be indicated with reasonable argument. In particular, it is apprehended that the conventional rail tilting model applied to calculation of the biaxial loading test condition is not accurate enough. For the solution of this problem, a calculation method of a rail tilting angle using the FEM analysis model whose several stiffness regarding the rail fastening system can be set as non-linear property has been proposed and its validity has been confirmed. In addition, expected effects of number of a set of fastening assembly, loading position, loading direction and temperature on the test result of the rail restraint test have been experimentally found out.