

**Fatigue Life Estimation of Welds on Truck Frames for Rolling Stock Based on
Stress Frequency Distribution Caused by Service Loads**

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The allowable fatigue strength of weld on truck frames has been judged according to the fatigue limit diagram stipulated in JIS E 4207, General Rules for Design of Truck Frames for Railway Rolling Stock. However, it is not possible to predict actual fatigue life by using this diagram. This study demonstrates the possibility of fatigue life estimation for welds on truck frames based on a modified Miner's rule. In order to estimate fatigue life, three factors are taken into consideration in our study, namely the S-N diagram assumed from the allowable fatigue stress stipulated in JIS E 4207 or the JSSC fatigue design curve, the relationship between crack occurrence and running distance, and stress frequency distribution caused by service loads.