

EXPLORING FATIGUE ASSESSMENT GUIDELINES FOR RAILWAY FREIGHT VEHICLES

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Summary: Railway vehicles experience continuous dynamic loads, making fatigue a principal concern in maintaining structural integrity throughout their service life. Fatigue assessment of railway vehicles can follow different methodologies, and choosing the most appropriate one is a challenging task. This article compares international standards and guidelines: EN 12663-2, EN 15085-3, DVS 1612, PrEN 17149-3, Eurocode 3 Part 1-9 and IIW recommendations. The comparison discusses fatigue load scenarios, notch case classifications, weld performance, and the fatigue analysis procedure of metallic components. The discussion covers approaches such as service-life fatigue resistance and fatigue damage calculations. The conclusion focuses on the advantages and disadvantages of different technical code methodologies in the fatigue analysis of railway vehicles.

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