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ANALYSIS OF STRESSES IN WELDED RAILS UNDER THE ACTION OF DIFFERENT LOADINGS

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ABSTRACT

On railways of many countries of the world welded rails are used. Such technology becomes widespread on railways in countries of the former USSR. The length of welded rail threads here reaches 800 m. In the presence of a continental climate the differences of temperatures can reach 80 degrees. Hard loaded movement when static loading on an axis reaches 250 kN here is used. Bad condition of railways also has an influence on the increase of dynamic forces on the rails. Specified factors raise probability of a break of the rails. In the paper the attempt of the use of the finite element method for the analysis of the stresses in such rails under the influence of all complexes of external loadings is made. Thus the rail fastenings are modeled usage of the simplified scheme.

Key words: welded rails, finite element method, stress analysis