

عنوان مقاله:

Destructive & Non-Destructive Methods for Monobloc-wheel Residual Stress Measurement in Railways and Introduction of the CONTOUR Method

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خلاصه مقاله:

Monobloc wheels used in railway transportation must have residual compressive stress. In such a state, any cracks initiated in the wheel surface shall not grow and expand. Residual compressive stress is achieved in the product through heating during production process. The tolerance and distribution behavior for this stress is provided in EN13262 Standard. In this standard, two methods of destructive and non-destructive methods for measuring residual stress are introduced. In the UIC812-3 Regulations, a destructive method for measuring residual stress is provided. An attempt here is made to both examine and explain these methods, their advantages and disadvantages, and their operative setbacks. Also, another approach for measurement called CONTOUR method for use in the study of residual stress distribution in Monobloc wheel is introduced which is more straightforward and accurate and can show the stress in all points of the wheel cross-section whilst having a significant advantage compared to the methods presented by UIC and EN

کلمات کلیدی:

Railway, residual stress measurement, Monobloc wheel, destructive, non-destructive, CONTOUR method

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