

Accepted Manuscript

Variability of fatigue parameters under uniaxial loading in the function of the number of cycles

Grzegorz Robak, Tadeusz Łagoda

PII: S0142-1123(18)30133-6
DOI: <https://doi.org/10.1016/j.ijfatigue.2018.04.003>
Reference: JIJF 4642

To appear in: *International Journal of Fatigue*

Received Date: 12 February 2018
Revised Date: 31 March 2018
Accepted Date: 3 April 2018

Please cite this article as: Robak, G., Łagoda, T., Variability of fatigue parameters under uniaxial loading in the function of the number of cycles, *International Journal of Fatigue* (2018), doi: <https://doi.org/10.1016/j.ijfatigue.2018.04.003>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Variability of fatigue parameters under uniaxial loading in the function of the number of cycles

Grzegorz Robak, Tadeusz Łagoda

Opole University of Technology

Abstract: This paper presents the problems relating to the determination of the material constants. It was demonstrated that the scatter of the values of the fatigue life and stresses applied for determination of the σ_a-N_f characteristics could have an impact on the slope of the m curve. The phenomenon associated with the variability of a number of material parameters relating to the variable number of cycles is discussed. In addition, the paper reports on the impact of the number of cycles on fatigue notch factor and on the variability of the function accounting for geometrical and structural notches for the case of the welded elements.

Keywords: fatigue life, fatigue notch factor, critical length

Nomenclature:

A, m – constants of the regression model,

a – material constant,

b – fatigue life exponent,

c – ductility exponent,

E – Young's modulus,

K' – cyclic hardening coefficient,

K_f – fatigue notch factor,

K_t – stress concentration factor,

ΔK_{th} – threshold stress intensity factor range,

Download English Version:

<https://daneshyari.com/en/article/7171397>

Download Persian Version:

<https://daneshyari.com/article/7171397>

[Daneshyari.com](https://daneshyari.com)