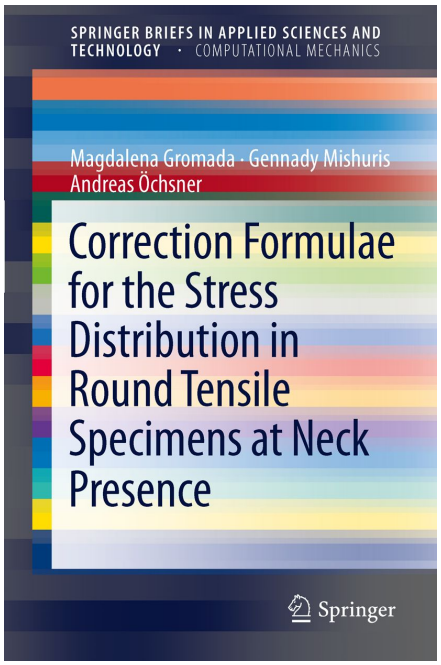

2011, IX, 89 p. 22 illus.

Printed book

Softcover

60,74 € | £49.99 | $69.99

[1]64,99 € (D) | 66,81 € (A) | CHF 72,00

eBook

50,28 € | £39.99 | $54.99

[2]50,28 € (D) | 50,28 € (A) | CHF 57,50

Available from your library or springer.com/shop

MyCopy [3]

Printed eBook for just

€ | $ 24.99

springer.com/mycopy

Magdalena Gromada, Gennady Mishuris, Andreas Öchsner

Correction Formulae for the Stress Distribution in Round Tensile Specimens at Neck Presence

Series: SpringerBriefs in Computational Mechanics

- **Presents methods to determine mechanical properties and evaluate the flow curve of ductile materials Revises classical hypotheses concerning the onset of neck creation and completes them with new solutions**

The monograph deals with methods to determine mechanical properties and evaluate the flow curve of ductile materials from the tensile test. It presents classical hypotheses concerning the onset of neck creation as well as the state of the art in determining the mechanical properties from the tensile test, with emphasis on the consequences of the neck formation. It revises derivations of formulae for the stress distribution in the minimal cross-section of the axisymmetrical specimen in the classical approaches proposed by Bridgman, Davidenkov / Spiridonova and Siebel as well as in the less famous formulae derived by Szczepinski and Malinin / Petrosjan. The revision is completed with solutions evaluated by the authors. In the monograph, the simplifying assumptions utilised in the classical approaches were carefully verified by numerical simulations accompanied by theoretical analysis. Errors imposed in the evaluation of the average axial stress acting on the minimal cross-section as a result of every particular simplification are estimated. The accuracy of all formulae to evaluate the flow curve is discussed.

Order online at springer.com / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: customerservice@springernature.com. / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: customerservice@springernature.com.

The first € price and the £ and $ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

Part of SPRINGER NATURE