

Notch Effects in Fatigue and Fracture

edited by

Guy Pluinage

Laboratoire de Fiabilité Mécanique,
Université de Metz,
Metz, France

and

Marenglen Gjonaj

Polytechnical University of Tirana,
Department of Mechanics,
Tirana, Albania



Kluwer Academic Publishers

Dordrecht / Boston / London

Published in cooperation with NATO Scientific Affairs Division

TABLE OF CONTENTS

Preface	vii
Address List of Authors	ix
Notch Effects In Fatigue And Fracture G. PLUVINAGE	1
Characteristic Distance As A Material's Structure Parameter In The Theory Of Fracture Emanating From Notches And Cracks A. J. KRASOWSKY	23
Inclusions Effect On The Notch Behaviour Of A Low-Alloy Tempered Steel R. DOGLIONE & D. FIRRAO	39
Local Fracture Criterion For Notched Structures E.M. MOROZOV	51
Notch Effects On The Fracture Behaviour Of Orthotropic Materials Ph. JODIN	59
Experimental Results On Temperature, Strain Rate And Size Effects In Steel Of Reactor Pressure Vessel K. LABIBES, G. SOLOMOS & B. MORAS	73
The Notch And Size Effect In Brittle-Ductile Transition Behaviour Of Materials L. TÓTH	95
Mixed Mode Fracture For Notched Structures L. S. NIU, Q.Y. HU & W. WANG	117
Local Characteristics Of (Brittle) Failure Assessed From Charpy Type Specimen I. DLOUHÝ, Z. CHLUP & M. HOLZMANN	127
Probabilistic Local Approach Based On Notched Tensile Specimen Data V. KOZÁK & A. NOVÁK	147
Analysis Of The Evolution Of The Charpy Impact Test Through The Notch Fracture Mechanics G. PLUVINAGE & L. TOTH	161

The Critical Volume Method In Fatigue Analysis D. TAYLOR & G. WANG	187
Notch Effect In High Cycle Fatigue N. KADI	207
Loading mode and notch effect in high cycle fatigue G. QILAFKU	221
Probabilistic Description Of Fatigue Crack Growth In A Titanium Alloy Notched Member D. KOCANĀDA, S. KOCANĀDA & H. TOMASZEKV	239
Experimental Analysis Of Crack Growth In A Notched Specimen Made Of Ni ₃ Al Intermetallic Alloy P. JÓŹWIK & L. ŚNIEŹEK	257
Numerical Simulation Of Fatigue Crack Growth For Corner Cracks Emanating From Fastener Holes X.B. LIN & R.A. SMITH	271
A Numerical Analysis Of The Fatigue Life Of Electron Beam Welds In An Aircraft Hydraulic Pump B. T. VALAIRE	289
Fatigue Strength Of Welded Joints By The Local Strain Method C. PAPPALLETTERE & R. NOBILE	307
Growth Rates And Closure Development Of Short Fatigue Cracks At Notches And At Weld Toes Y. VERREMAN	317
On Corrosion Fatigue Initiation From Notches And The Local Corrosion Fracture Approaches I.M. DMYTRAKH	331
Notch Effect In Welded Joints Submitted To Fatigue D. PIGNEAUX & J. GILGERT	347