FRACTURE TOUGHNESS

Proceedings of the 1971 National Symposium on Fracture Mechanics
PART II

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FOREWORD

The 1971 National Symposium on Fracture Mechanics was held at the University of Illinois, Urbana-Champaign, Ill., 31 August through 2 September 1971. H. T. Corten, Department of Theoretical and Applied Mechanics, University of Illinois, presided as general chairman. J. P. Gallagher, Experimental Mechanics Branch, Air Force Flight Dynamics Laboratory, Wright-Patterson AFB, served as arrangements chairman.

The proceedings have been subjectively divided into complementary volumes: Part I — Stress Analysis and Growth of Cracks and Part II — Fracture Toughness. Part II is contained herein.
Related
ASTM Publications


Electron Fractography, STP 436, (1968), $11.00, 04-436000-30

Fracture Toughness Testing at Cryogenic Temperatures, STP 496, (1971), $5.00, 04-496000-30
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INTRODUCTION

The papers in this volume were presented at the Fifth National Symposium on Fracture Mechanics held at the University of Illinois, Urbana, Illinois, 31 August through 2 September 1971. Beginning in 1972, The National Symposium on Fracture Mechanics will be sponsored by ASTM through Committee E-24 on Fracture Testing of Metals.

In this volume, methods of measurement of toughness of high-toughness metals are reported. Attention is focused on a variety of tests including a new fracture criteria for the elastic-plastic and fully plastic realm, the critical value of the $J$ integral, and the relationship between the various toughness measurements.

In the companion volume, STP 513, the papers treat crack tip stress analysis and subcritical crack extension caused by repeated loads, environments, and their combination. The threshold level for fatigue crack extension is given particular attention.

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