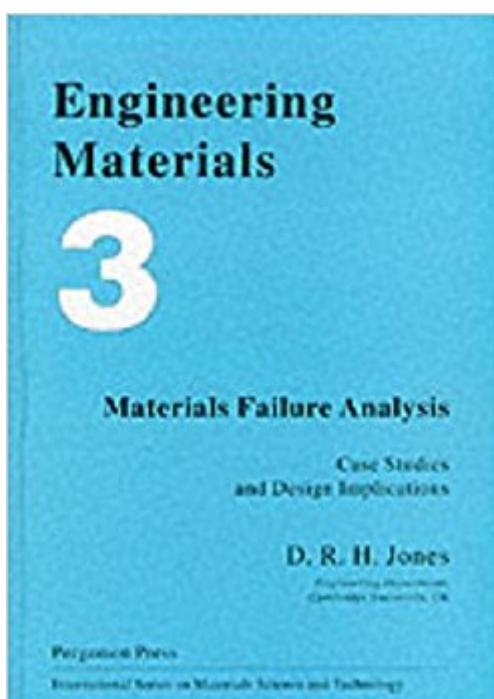


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# Engineering Materials 3: Materials Failure Analysis: Case Studies And Design Implications (International Series On Materials Science And Technology) (v. 3)



## **Synopsis**

Engineering Materials 3 provides undergraduate students and graduates with an excellent source of practical information on the design implications of material properties, building on the basic material contained in Engineering Materials 1 and 2. The book presents a series of case studies drawn from real situations involving the failure of materials. These are arranged in groups, each describing failures which were linked mainly to a particular material property. The case studies provide specific examples of the use of engineering materials in real applications and provide essential information for introductory courses on materials, structures, mechanics and design. Most of the case studies involve a fairly detailed analysis, and numerical solutions are obtained where this is appropriate, but the level of mathematics used is basic and standard results are quoted from related branches of engineering. A special feature is a basic "toolkit" of the formulae and data which are most frequently used in failure analysis and design. The book contains a comprehensive set of realistic examples and worked solutions. The final group of chapters - "Great Engineering Disasters" - emphasises the practical consequences of inadequate materials and design. The book has been written in a style to match the widely adopted and popular Ashby & Jones' Engineering Materials 1 and Engineering Materials 2. It draws on the basic material presented in these texts and provides the practical slant which is becoming increasingly important in engineering courses.

## **Book Information**

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## Customer Reviews

D.R.H. Jones This book provides an excellent source of practical information on the design implications of materials properties, and presents a series of case studies drawn from real situations involving the failure of materials. Materials Australia A. Gilat...highly recommended for individuals and libraries. *Applied Mechanics Review*, Vol 47, No 6, Part 1

I am a 17-year practitioner in the field of metallurgical failure analysis. I have a large number of texts and collections of case studies, so I picked this up used for a reasonable cost (and in new condition, very nice!). I judge the book to be written for metallurgical engineering students at the undergrad level. It turns out not to be very useful in my practice, the main reason being that it blends introduction of metallurgical concepts like fracture with case studies. Maybe that works well in the right course, but I find the approach not that useful. My personal view is that failure analysis should be pursued as a career only after a solid theoretical foundation is in place, and after a few years spent in a related field (welding engineering in my case).

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