



## Elasticity [

Barber, J. R.,

author.

aut.

<http://id.loc.gov/vocabulary/relators/aut>

Springer International Publishing :

Imprint: Springer,

2022.

Monografía

This book emphasizes engineering applications of elasticity. This is a first-year graduate textbook in linear elasticity. It is written with the practical engineering reader in mind, dependence on previous knowledge of solid mechanics, continuum mechanics or mathematics being minimized. Examples are generally worked through to final expressions for the stress and displacement fields in order to explore the engineering consequences of the results. This 4th edition presents new and revised material, notably on the Eshelby inclusion problem and anisotropic elasticity. The topics covered are chosen with a view to modern research applications in fracture mechanics, composite materials, tribology and numerical methods. Thus, significant attention is given to crack and contact problems, problems involving interfaces between dissimilar media, thermoelasticity, singular asymptotic stress fields and three-dimensional problems.

<https://rebiunoda.pro.baratznet.cloud:38443/OpacDiscovery/public/catalog/detail/b2FpOmNlbgVicmF0aW9uOmVzLmJhcmF0ei5yZW4vMzQ1NDYzMzY>

**Título:** Elasticity electronic resource] by J. R. Barber.

**Edición:** 4th ed. 2022

**Editorial:** Cham Springer International Publishing Imprint: Springer 2022.

**Descripción física:** XX, 637 p. 131 illus., 2 illus. in color. online resource.

**Mención de serie:** Solid Mechanics and Its Applications 2214-7764 172

**Documento fuente:** Springer Nature eBook

**Contenido:** Part I. General Consideration -- Chapter 1. Introduction -- Chapter 2. Equilibrium and Compatibility -- Part II. Two-Dimensional Problems -- Chapter 3. Plane Strain and Plane Stress -- Chapter 4. Stress Function Formulation -- Chapter 5. Problems in Rectangular Coordinates -- Chapter 6. End Effects -- Chapter 7. Body Forces -- Chapter 8. Problems in Polar Coordinates -- Chapter 9. Calculation of Displacements -- Chapter 10. Curved Beam Problems -- Chapter 11. Wedge Problems -- Chapter 12. Plane Contact Problems -- Chapter 13. Forces, Dislocations and Cracks -- Chapter 14. Thermoelasticity -- Chapter 15. Antiplane Shear -- Chapter 16. Moderately Thick Plates -- Part III. End Loading of the Prismatic Bar -- Chapter 17. Torsion of a Prismatic Bar -- Chapter 18. Shear of a Prismatic Bar -- Part IV. Complex-Variable Formulation -- Chapter 19. Preliminary Mathematical Results -- Chapter 20. Application to Elasticity Problems -- Part V. Three Dimensional Problems -- Chapter 21. Displacement Function Solutions -- Chapter 22. The Boussinesq Potentials -- Chapter 23.

Thermoelastic Displacement Potentials -- Chapter 24. Singular Solutions -- Chapter 25. Spherical Harmonics -- Chapter 26. Cylinders and Circular Plates -- Chapter 27. Problems in Spherical Coordinates -- Chapter 28. Eigenstrains and Inclusions -- Chapter 29. Axisymmetric Torsion -- Chapter 30. The Prismatic Bar -- Chapter 31. Frictionless Contact -- Chapter 32. The Boundary-value Problem -- Chapter 33. The Penny-shaped Crack -- Chapter 34. Hertzian Contact -- Chapter 35. The Interface Crack -- Chapter 36. Anisotropic Elasticity -- Chapter 37. Variational Methods -- Chapter 38. The Reciprocal Theorem.

**ISBN:** 9783031152146 978-3-031-15214-6

**Materia:** Fluid mechanics. Physics. Engineering mathematics. Engineering Data processing. Mechanical engineering. Mechanics, Applied. Solids. Mathematics. Engineering Fluid Dynamics. Classical and Continuum Physics. Mathematical and Computational Engineering Applications. Mechanical Engineering. Solid Mechanics. Applications of Mathematics.

**Entidades:** SpringerLink (Online service)

**Enlace a formato físico adicional:** Printed edition 9783031152139 Printed edition 9783031152153 Printed edition 9783031152160

**Punto acceso adicional serie-Título:** Solid Mechanics and Its Applications 2214-7764 172.

---

## Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es