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masses; Chapter 5. Strain; 5.1 Finite strain; 5.2 Examples of homogeneous finite strain; 5.3 Infinitesimal strain; 5.4 The strain tensor; 5.5 The elastic compliance matrix; 5.6 Implications for in situ stress; Chapter 6. Intact rock; 6.1 The background to intact rock testing 6.2 The complete stress-strain curve in uniaxial compression 6.3 Soft, stiff and servo-controlled testing machines; 6.4 Specimen geometry, loading conditions and environmental effects; 6.5 Failure criteria; 6.6 Concluding remarks; Chapter 7. Discontinuities; 7.1 The occurrence of discontinuities; 7.2 Geometrical properties of discontinuities; 7.3 Mechanical properties; 7.4 Discussion; Chapter 8. Rock masses; 8.1 Deformability; 8.2 Strength; 8.3 Post-peak strength behaviour; Chapter 9. Permeability; 9.1 Fundamental definitions; 9.2 Primary and secondary permeability 9.3 Flow through discontinuities 9.4 Flow through discontinuity networks; 9.5 Scale effect; 9.6 A note on effective stresses; 9.7 Some practical aspects: grouting and blasting; Chapter 10. Anisotropy and inhomogeneity; 10.1 Definitions; 10.2 Anisotropy; 10.3 Inhomogeneity; 10.4 Ramifications for analysis; Chapter 11. Testing techniques; 11.1 Access to the rock; 11.2 Tailoring testing to engineering requirements; 11.3 Tests on intact rock; 11.4 Tests on discontinuities; 11.5 Tests on rock masses; 11.6 Standardized tests; Chapter 12. Rock mass classification; 12.1 Rock Mass Rating (RMR) system 12.2 Q-system

Sommario/riassunto

Engineering rock mechanics is the discipline used to design structures built in rock. These structures encompass building foundations, dams, slopes, shafts, tunnels, caverns, hydroelectric schemes, mines, radioactive waste repositories and geothermal energy projects: in short, any structure built on or in a rock mass. Despite the variety of projects that use rock engineering, the principles remain the same. Engineering Rock Mechanics clearly and systematically explains the key principles behind rock engineering. The book covers the basic rock mechanics principles; how to study the inte
