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Nota di contenuto	Earthquake Risk Reduction; Contents; Preface; 1 Earthquake risk reduction; 1.1 Introduction; 1.2 Earthquake risk and hazard; 1.3 The social and economic consequences of earthquakes; 1.3.1 Earthquake consequences and their acceptability; 1.3.2 Economic consequences of earthquakes; 1.4 Earthquake risk reduction actions; 2 The nature of earthquakes; 2.1 Introduction; 2.2 Global seismotectonics; 2.3 The strength of earthquakes-magnitude and intensity; 3 Determination of site characteristics; 3.1 Introduction; 3.2 Local geology and soil conditions; 3.3 Ground classes and microzones 3.4 Site investigations and soil tests3.4.1 Introduction; 3.4.2 Field determination and tests of soil characteristics; 3.4.3 Laboratory tests relating to dynamic behaviour of soils; 4 Seismic hazard assessment; 4.1 Introduction; 4.2 Crustal strain and moment release; 4.3 Regional seismotectonics; 4.4 Faulting; 4.4.1 Location of active faults; 4.4.2 Types of fault; 4.4.3 Degree of fault activity; 4.4.4 Faults and earthquake magnitudes; 4.5 Earthquake distribution in space, size and time; 4.5.1 Introduction; 4.5.2 Spatial distribution of earthquakes-maps

4.5.3 Earthquake distribution in time and size; 4.5.4 Models of the earthquake process; 4.6 The nature and attenuation of ground motions; 4.6.1 Earthquake source models; 4.6.2 The characteristics of strong ground motion; 4.6.3 Spatial patterns of ground motions; 4.6.4 Attenuation of ground motions and spectral response; 4.6.5 Attenuation of displacement; 4.6.6 Other conditions that influence ground motions; 4.7 Design earthquakes; 4.7.1 Introduction; 4.7.2 Defining design events; 4.7.3 Sources of accelerograms and response spectra; 4.7.4 Response spectra as design earthquakes; 4.7.5 Accelerograms as design earthquakes; 4.8 Faults-hazard and design considerations; 4.8.1 Introduction; 4.8.2 Probability of occurrence of fault displacements; 4.8.3 Designing for fault movements; 4.9 Probabilistic seismic hazard assessment (PSHA); 4.10 Probabilistic vs. deterministic seismic hazard assessment; 5 Seismic response of soils and structures; 5.1 Introduction; 5.2 Seismic response of soils; 5.2.1 Dynamic properties of soils; 5.2.2 Site response to earthquakes; 5.3 Seismic response of soil-structure systems; 5.3.1 Introduction; 5.3.2 Dynamic analysis of soil-structure systems; 5.3.3 Soil models for dynamic analysis; 5.3.4 Useful results from soil-structure interaction studies; 5.4 Seismic response of structures; 5.4.1 Elastic seismic response of structures; 5.4.2 Non-linear seismic response of structures; 5.4.3 Mathematical models of non-linear seismic behaviour; 5.4.4 Level of damping in different structures; 5.4.5 Periods of vibration of structures; 5.4.6 Interaction of frames and infill panels; 5.4.7 Methods of seismic analysis for structures; 6 Earthquake vulnerability of the built environment; 6.1 Introduction; 6.2 Qualitative measures of vulnerability; 6.3 Quantitative measures of vulnerability

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Sommario/riassunto

Encompassing theory and field experience, this book covers all the main subject areas in earthquake risk reduction, ranging from geology, seismology, structural and soil dynamics to hazard and risk assessment, risk management and planning, engineering and the architectural design of new structures and equipment. Earthquake Risk Reduction outlines individual national weaknesses that contribute to earthquake risk to people and property; calculates the seismic response of soils and structures, using the structural continuum 'Subsoil - Substructure - Superstructure - Non-structu

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