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Titolo	Road Tunnels : An Analytical Model for Risk Analysis / / by Fabio Borghetti, Paolo Cerean, Marco Derudi, Alessio Frassoldati
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Disciplina	363.17 388.13
Soggetti	Transportation engineering Traffic engineering Quality control Reliability Industrial safety Fire prevention Fluid mechanics Transportation Technology and Traffic Engineering Quality Control, Reliability, Safety and Risk Fire Science, Hazard Control, Building Safety Engineering Fluid Dynamics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Road tunnels risk analysis -- Background of modelling approaches and tools -- Model structure -- Tunnel infrastructure measures, equipment and management procedures -- Queue formation model -- Distribution model of potentially exposed users inside the tunnel -- Consequence analysis of the accidental scenarios -- Egress model for tunnel users -- Calculation of the F-N curve and the expected damage value -- Model calibration and validation.
Sommario/riassunto	This book illustrates a new quantitative risk analysis model for road tunnels that is capable of evaluating the role of infrastructure measures, equipment and management procedures as prescribed by EU

Directive 2004/54/EC. The risk assessment draws on the typical F-N curves of societal risk, evaluated with the help of event tree analysis, vehicle queue formation dynamics, and users' egress and tenability models. In addition, the model considers the reliability of the safety measures. The work provides essential guidance on the following aspects: how a quantitative model can be implemented to evaluate risk in road tunnels; how to build an event tree for the accident scenarios considered; how to simulate the vehicle queue formation; how to simulate the evolution of accident scenarios; and how to simulate the users' egress. Given its scope and depth of coverage, the book will be of interest to all engineers whose work involves fire protection and safety in tunnels, all persons engaged in safety and transport engineering or risk analysis for road tunnels, as well as public and private bodies involved in the application of Directive 2004/54/EC.