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Titolo	Tunnel Fire Testing and Modeling : The Morgex North Tunnel Experiment // by Fabio Borghetti, Marco Derudi, Paolo Gandini, Alessio Frassoldati, Silvia Tavelli
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Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XIII, 97 p. 96 illus., 43 illus. in color.)
Collana	PoliMI SpringerBriefs, , 2282-2577
Disciplina	624.193
Soggetti	Fluid mechanics Thermodynamics Heat engineering Heat transfer Mass transfer Quality control Reliability Industrial safety Computer simulation Civil engineering Engineering Fluid Dynamics Engineering Thermodynamics, Heat and Mass Transfer Quality Control, Reliability, Safety and Risk Simulation and Modeling Civil Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Safety in road tunnels -- The research project and partners involved -- The fire tests in the Morgex North tunnel -- The test results -- Evaluation of the consequences on the users safety -- Conclusions.
Sommario/riassunto	This book aims to cast light on all aspects of tunnel fires, based on experimental activities and theoretical and computational fluid dynamics (CFD) analyses. In particular, the authors describe a transient

full-scale fire test (~15 MW), explaining how they designed and performed the experimental activity inside the Morgex North tunnel in Italy. The entire organization of the experiment is described, from preliminary evaluations to the solutions found for management of operational difficulties and safety issues. This fire test allowed the collection of different measurements (temperature, air velocity, smoke composition, pollutant species) useful for validating and improving CFD codes and for testing the real behavior of the tunnel and its safety systems during a diesel oil fire with a significant heat release rate. Finally, the fire dynamics are compared with empirical correlations, CFD simulations, and literature measurements obtained in other similar tunnel fire tests. This book will be of interest to all engineers and public officials who are concerned with the nature, prevention, and management of tunnel fires.
