

1. Record Nr.	UNINA9910737295803321
Autore	Wang Lei
Titolo	Strand Corrosion in Prestressed Concrete Structures [[electronic resource] /] / by Lei Wang
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-9920-54-X
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (261 pages)
Disciplina	624
Soggetti	Civil engineering Buildings - Design and construction Building materials Civil Engineering Building Construction and Design Structural Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Effect of corrosion on mechanical behaviors of prestressing strands -- Corrosion-induced cracking of prestressed concrete -- Effect of corrosion-induced crack on the bond between strand and concrete -- Bond-slip model of corroded strand considering rotation effect -- Prestress loss and transfer length prediction in pretensioned concrete structures with corrosive cracking -- Secondary anchorage and prestress loss of fractured strand in PT beams -- Flexural behaviors of corroded posttensioned concrete beams -- Bearing capacity prediction of corroded PC beams incorporating grouting defects and bond degradation.
Sommario/riassunto	This is an open access book. This book focuses on the durability problems of existing prestressed concrete (PC) structures caused by strand corrosion, clarifies the mechanical behavior of corroded prestressing strands, corrosion-induced cracking, bond degradation, prestress loss and structural performance deterioration of PC structures, and proposes the corresponding prediction models. We hope that this text may be useful for those who work in the field of civil and construction engineering, as well as for those involved in the area

of maintenance and management of prestressed concrete structures. Its aim is to provide the knowledge, tools, and methods to understand the deterioration phenomena of prestressed concrete structures. It is suitable for teachers and students majoring in civil engineering in universities, and researchers in the field of civil engineering. It is also suitable for practitioners of design institutes, construction units, supervising units and traffic management departments. This book is also applicable to anyone else who wants to understand the corrosion of strand. Enthusiasts of civil engineering are also a potential audience. At the same time, this book can also stimulate the interest of young scholars in interdisciplinary research.
