1. Record Nr. UNISA996205826503316

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Titolo	Anchorage in concrete construction [[electronic resource] /] / Rolf Eligehausen, Rainer Mallee, John F. Silva
Pubbl/distr/stampa	Berlin, : Ernst & Sohn, c2006
ISBN	3-433-60136-4 3-433-60135-6 3-433-60138-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (390 p.)
Altri autori (Persone)	MalleeRainer SilvaJohn F
Disciplina	624.1/834
Soggetti	Anchorage (Structural engineering) Concrete construction
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Cover title.
Nota di bibliografia	Includes bibliographical references (p. [343]-370) and index.
Nota di contenuto	Table of Contents; 1 Introduction; 1.1 A historical review; 1.2 Requirements for fastenings; 1.3 Nature and direction of actions; 2 Fastening systems; 2.1 General; 2.2 Cast-in-place systems; 2.2.1 Lifting inserts; 2.2.2 Anchor channels; 2.2.3 Headed studs; 2.2.4 Threaded sleeves; 2.3 Drilled-in systems; 2.3.1 Drilling techniques; 2.3.2 Installation configurations; 2.3.3 Drilled-in anchor types; 2.3.3.1 Mechanical expansion anchors; 2.3.3.2 Undercut anchors; 2.3.3.3 Bonded anchors; 2.3.3.4 Screw anchors; 2.3.3.5 Ceiling hangers; 2.3.3.6 Plastic anchors; 2.4 Direct installation; 3 Principles 3.1 General3.2 Behaviour of concrete in tension; 3.3 Failure mechanisms of fastenings; 3.3.1 Theoretical studies; 3.3.2 Experimental studies; 3.3.3 Conclusions drawn from theoretical and experimental studies; 3.4 Cracked concrete; 3.5 Why anchors may use the tensile strength of concrete; 3.6 Prestressing of anchors; 3.7 Loads on anchors; 3.7.1 Calculation according to elastic theory; 3.7.1.1 Tension load; 3.7.1.2 Shear loads; 3.7.2 Calculation according to non-linear methods; 3.7.3 Calculation of loads on anchors of anchor channels; 3.7.3.1 Tension load; 3.7.3.2 Shear loads 4 Behaviour of headed studs, undercut anchors and metal expansion

anchors in non-cracked and cracked concrete4.1 Non-cracked concrete; 4.1.1 Tension load; 4.1.1.1 Load-displacement behaviour and modes of failure; 4.1.1.2 Failure load associated with steel rupture; 4.1.1.3 Failure load associated with concrete cone breakout; 4.1.1.4 Failure load for local concrete side blow-out failure; 4.1.1.5 Failure loads associated with pull-out and pull-through failures; 4.1.1.6 Failure load associated with splitting of the concrete; 4.1.2 Shear; 4.1.2.1 Load-displacement behaviour and modes of failure
4.1.2.2 Failure load associated with steel rupture4.1.2.3 Failure load associated with pry-out; 4.1.2.4 Concrete edge failure for a shear load perpendicular to the edge; 4.1.2.5 Concrete edge breakout load associated with shear loads oriented at an angle a< 90° to the edge; 4.1.3 Combined tension and shear (oblique loading); 4.1.3.1 Load-displacement behaviour and modes of failure; 4.1.3.2 Failure load; 4.1.4 Bending of the baseplate; 4.1.5 Sustained loads; 4.1.6 Fatigue loading; 4.2 Cracked concrete; 4.2.1 Tension; 4.2.1.1 Load-displacement behaviour and modes of failure
4.2.1.2 Failure load corresponding to steel failure4.2.1.3 Failure load associated with concrete cone breakout; 4.2.1.4 Failure load associated with local blow-out failure; 4.2.1.5 Failure load associated with pull-out/pull-through failure; 4.2.1.6 Failure load associated with splitting of the concrete; 4.2.2 Shear; 4.2.2.1 Load-displacement behaviour and modes of failure; 4.2.2.2 Failure load associated with steel failure; 4.2.2.3 Failure load associated with pry-out failure; 4.2.2.4 Failure load associated with concrete edge breakout; 4.2.3 Combined tension and shear
4.2.3.1 Load-displacement behaviour and modes of failure

Sommario/riassunto

A comprehensive treatment of current fastening technology using inserts (anchor channels, headed stud), anchors (metal expansion anchor, undercut anchor, bonded anchor, concrete screw and plastic anchor) as well as power actuated fasteners in concrete. It describes in detail the fastening elements as well as their effects and load-bearing capacities in cracked and non-cracked concrete. It further focuses on corrosion behaviour, fire resistance and characteristics with earthquakes and shocks. It finishes off with the design of fastenings according to the European Technical Approval Guideline (E

2. Record Nr. UNINA9910865275803321

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Titolo	Statistics with Posterior Probability and a PHC Curve / / by Hideki Toyoda
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819730940 9789819730933
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (412 pages)
Disciplina	300.727
Soggetti	Social sciences - Statistical methods Statistics Markov processes Mathematical statistics Psychometrics Statistics in Social Sciences, Humanities, Law, Education, Behavorial Sciences, Public Policy Statistical Theory and Methods Markov Process Bayesian Inference Parametric Inference Estadística matemàtica Probabilitats Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	chapter01 Data summary and theoretical distribution -- chapter02 Posterior Distribution and Bayes' Theorem -- chapter03 Inference about a normal distribution -- chapter04 Generated quantities -- chapter05 phc curve and ROPE -- chapter06 Inference about two normal distributions -- chapter07 Group difference between two independent groups -- chapter08 Bivariate and multivariate data -- chapter09 difference score of paired two groups -- chapter10 Independent one-factor analysis -- chapter11 Independent two-factor

analysis -- chapter12 Binomial distribution model -- chapter13 Multinomial distribution model -- chapter14 simple regression model -- chapter15 multiple regression model -- chapter16 Interpreting partial regression coefficients -- chapter17 Logistic regression / Meta-analysis -- chapter18 Poisson model / Log-linear model -- chapter19 Independent one-factor analysis with various distributions -- chapter20 Analysis of covariance / Propensity score -- chapter21 Advanced experimental design -- chapter22 Hierarchical linear model.

Sommario/riassunto

This textbook reconstructs the statistics curriculum from the perspective of posterior probability. In recent years, there have been several reports that the results of studies using significant tests cannot be reproduced. It is a problem called a “reproducibility crisis”. For example, suppose we could reject the null hypothesis that “the average number of days to recovery in patients who took a new drug was the same as that in the control group”. However, rejecting the null hypothesis is only a necessary condition for the new drug to be effective. Even if the necessary conditions are met, it does not necessarily mean that the new drug is effective. In fact, there are many cases where the effect is not reproduced. Sufficient conditions should be presented, such as “the average number of days until recovery in patients who take new drugs is sufficiently short compared to the control group, evaluated from a medical point of view”, without paying attention to necessary conditions. This book reconstructs statistics from the perspective of PHC, i.e., probability that a research hypothesis is correct. For example, the PHC curve shows the posterior probability that the statement “The average number of days until recovery for patients taking a new drug is at least days shorter than that of the control group” is correct as a function of . Using the PHC curve makes it possible to discuss the sufficient conditions rather than the necessary conditions for being an efficient treatment. The value of statistical research should be evaluated with concrete indicators such as “90% probability of being at least 3 days shorter”, not abstract metrics like the p-value.