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Precast Concrete Structures **Precast Concrete Structures** Precast Concrete Structures **Manual of Precast Concrete Construction** Construction of Prestressed Concrete Structures **Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components: Industrial shed-type and low-rise buildings; special structures** *Multi-Storey Precast Concrete Framed Structures Modernisation, Mechanisation and Industrialisation of Concrete Structures* **Seismic Design of Precast Concrete Building Structures** Supervision of Concrete Construction 2 Applications of Precast Concrete in Repair and Replacement of Civil Works Structures **Planning and design handbook on precast building structures** *Design and Construction of Large-panel Concrete Structures* **Design of Precast Concrete** Precast Concrete Elements with Bamboo Reinforcement *Precast Concrete Construction* **Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components** *Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components: Principles. Roof and floor units. Wall panels* **A Prototype Research Building Design and Construction of Large-panel Concrete Structures; Report Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components; Design, Analysis and Construction. Translated by C. Van Amerongen Precast, Prestressing & Post-Tensioning Technology Design and Construction of Large-panel Concrete Structures Shear at the interface of precast and in situ concrete Precast Concrete in Architecture Failures in Concrete Structures** *Basics Concrete Construction* **Prototype Research Buildings Utilizing Precast Concrete Construction Precast Concrete Prestressed Concrete Bridges** Precast Concrete Structures Concrete Construction Manual Precast Concrete in Mixed Construction A Comparative and Comprehensive Study of Details of Precast Concrete Construction **Precast Concrete Design of Precast Concrete Structures** *Precast Insulated Sandwich Panels Tolerances for Precast and Prestressed Concrete Construction* **Manual of precast concrete construction** *Management of Precast Concrete Construction*

Prototype Research Buildings Utilizing Precast Concrete Construction Apr 24 2021

Planning and design handbook on precast building structures Sep 10 2022 In 1994 fib Commission 6: Prefabrication edited a successful Planning and Design Handbook that ran to approximately 45,000 copies and was published in Spanish and German. Nearly 20 years later Bulletin 74 brings that first publication up to date. It offers a synthesis of the latest structural design knowledge about precast building structures against the background of 21st century technological innovations in materials, production and construction. With it, we hope to help architects and engineers achieve a full understanding of precast concrete building structures, the possibilities they offer and their specific design philosophy. It was principally written for non-seismic structures. The handbook contains eleven chapters, each dealing with a specific aspect of precast building structures. The first chapter of the handbook highlights best practice opportunities that will enable architects, design engineers and contractors to work together towards finding efficient solutions, which is something unique to precast concrete buildings. The

second chapter offers basic design recommendations that take into account the possibilities, restrictions and advantages of precast concrete, along with its detailing, manufacture, transport, erection and serviceability stages. Chapter three describes the precast solutions for the most common types of buildings such as offices, sports stadiums, residential buildings, hotels, industrial warehouses and car parks. Different application possibilities are explored to teach us which types of precast units are commonly used in all those situations. Chapter four covers the basic design principles and systems related to stability. Precast concrete structures should be designed according to a specific stability concept, unlike cast in-situ structures. Chapter five discusses structural connections. Chapters six to nine address the four most commonly used systems or subsystems of precast concrete in buildings, namely, portal and skeletal structures, wall-frame structures, floor and roof structures and architectural concrete facades. In chapter ten the design and detailing of a number of specific construction details in precast elements are discussed, for example, supports, corbels, openings and cutouts in the units, special features related to the detailing of the reinforcement, and so forth. Chapter eleven gives guidelines for the fire design of precast concrete structures. The handbook concludes with a list of references to good literature on precast concrete construction.
Precast Concrete Elements with Bamboo Reinforcement Jun 07 2022
Construction of Prestressed Concrete Structures Apr 17 2023 Methods and practices for constructing sophisticated prestressedconcrete structures. Construction of Prestressed Concrete Structures, Second Edition,provides the engineer or construction contractor with a completeguide to the design and construction of modern, high-qualityconcrete structures. This highly practicable new edition of Ben C.Gerwick's classic guide is expanded and almost entirely rewrittento reflect the dramatic developments in materials and techniquesthat have occurred over the past two decades. The first of the book's two sections deals with materials andtechniques for prestressed concrete, including the latest recipesfor high-strength and durable concrete mixes, new reinforcingmaterials and their placement patterns, modern prestressingsystems, and special techniques such as lightweight concrete andcomposite construction. The second section covers application tobuildings; bridges; pilings; and marine structures, includingoffshore platforms, floating structures, tanks, and containments.Special subjects such as cracking and corrosion, repair andstrengthening of existing structures, and construction in remoteareas are presented in the final chapters. For engineers and construction contractors involved in any type ofprestressed concrete construction, this book enables the effectiveimplementation of advanced structural concepts and their economicaland reliable translation into practice.
Precast Concrete Structures Jul 20 2023 Building with precast concrete elements is one of the most innovative forms of construction. This book serves as an introduction to this topic, including examples, and thus supplies all the information necessary for conceptual and detailed design.
Precast Concrete Sep 17 2020 This general treatise on precast concrete reflects Maurice Levitt's extensive experience in the construction industry and as a researcher and consultant. It gives detailed coverage of the subject from the material's properties through its manufacture and quality control, and on to specialist topics such as accelerated curing and use in hot and cold climates. It then looks at the properties of precast concrete and its performance in situ before covering standards and testing and then the issues of finishing, repair and jointing. A wide range of professionals in both the civil engineering and general construction sectors should find this an invaluable reference for its guidance on the range of practical questions they can expect to encounter. It will also be useful for students at graduate level.
Precast Concrete Structures Aug 21 2023 This second edition of Precast Concrete Structures introduces the conceptual design ideas for the prefabrication of concrete structures and presents a number of worked examples that translate designs from BS 8110 to Eurocode EC2, before going into the detail of the design, manufacture, and construction of precast concrete multi-storey buildings. Detailed structural analysis of precast concrete and its use is provided and some details are presented

of recent precast skeletal frames of up to forty storeys. The theory is supported by numerous worked examples to Eurocodes and European Product Standards for precast reinforced and prestressed concrete elements, composite construction, joints and connections and frame stability, together with extensive specifications for precast concrete structures. The book is extensively illustrated with over 500 photographs and line drawings.

Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components: Principles. Roof and floor units. Wall panels Mar 04 2022

Design and Construction of Large-panel Concrete Structures Sep 29 2021

Precast Insulated Sandwich Panels Jul 16 2020 During the mid-20th century, with the rise of industrial prefabrication, precast concrete sandwich panels started being used as cladding for buildings. Since then, society and construction industry have become increasingly aware of energy efficiency in all fields, including affordability and sustainability consciousness, while maintaining the buildings' durability. As such, buildings have been subject to increasingly stringent requirements which has kept the technology of sandwich panels continually at the forefront of building envelope evolution. Nowadays, sandwich panels have reached the highest standards of functional performance and aesthetic appeal. In building construction, these sandwich panel attributes combine with the well-known advantages of prefabrication including structural efficiency, flexibility in use, speed of construction, quality consciousness, durability, and sustainability. Sandwich panels have gained more exposure, thus representing quite a significant application within the prefabrication industry and a vital component of the precast market. The fib Commission "Prefabrication" is eager to promote the development of all precast structural concrete products and to share the knowledge and experience gained, to aid with practical design and construction. By issuing this comprehensive overview, "Guide to Good Practice", a better understanding of design considerations, structural analysis, building physics, use of materials, manufacturing methods, equipment usage and field performance will be provided. This document contains the latest information currently available worldwide. The Commission is particularly proud that this document is a result of close cooperation with PCI and that it is published by both the fib and PCI. This cooperation started six years ago, first with comparing the different approaches to several issues, then progressively integrating and producing common documents, like this one, that hasn't yet been treated in a specific Guide by either body. This Guide is intended to be the reference document to all who are interested in utilising the advantages of Precast Sandwich wall panels. In conjunction with the previously published Planning and Design Handbook on Precast Building Structures, the designer will have significant resources to integrate sandwich wall panels into any applicable structure.

Design and Construction of Large-panel Concrete Structures Aug 09 2022

A Comparative and Comprehensive Study of Details of Precast Concrete Construction Oct 19 2020

Prestressed Concrete Bridges Feb 20 2021 Prestressed concrete decks are commonly used for bridges with spans between 25m and 450m and provide economic, durable and aesthetic solutions in most situations where bridges are needed. Concrete remains the most common material for bridge construction around the world, and prestressed concrete is frequently the material of choice. Extensively illustrated throughout, this invaluable book brings together all aspects of designing prestressed concrete bridge decks into one comprehensive volume. The book clearly explains the principles behind both the design and construction of prestressed concrete bridges, illustrating the interaction between the two. It covers all the different types of deck arrangement and the construction techniques used, ranging from in-situ slabs and precast beams; segmental construction and launched bridges; and cable-stayed structures. Included throughout the book are many examples of the different types of prestressed concrete decks used, with the design aspects of each discussed along with the general analysis and design process. Detailed descriptions of the prestressing components and

systems used are also included. Prestressed Concrete Bridges is an essential reference book for both the experienced engineer and graduate who want to learn more about the subject.

Shear at the interface of precast and in situ concrete Aug 29 2021

Manual of precast concrete construction May 14 2020

Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components Apr 05 2022

Precast Concrete in Architecture Jul 28 2021

Supervision of Concrete Construction 2 Nov 12 2022 This book should be of interest to construction site managers and supervisors; concrete technologist; testing organisations. It covers steel reinforcement, batching and mixing, readymix, handling and transporting, pumping, placing, curing, QC, precast, prestressed, special techniques, repair and some background mathematics.

Failures in Concrete Structures Jun 26 2021 Some lessons are only learned from mistakes but, it's much cheaper to learn from someone else's mistakes than to have to do so from your own. Drawing on over fifty years of working with concrete structures, Robin Whittle examines the problems which he has seen occur and shows how they could have been avoided. The first and largest part of the book tells the stories of a number of cases where things have gone wrong with concrete structures. Each case is analyzed to identify its cause and how it might have been prevented. It then looks at how failures in structural modelling can lead to big problems if they are not identified before construction is undertaken. Beyond this it examines how contract arrangements can encourage or prevent problems in the designing and building processes. It concludes with an examination of the role research and development in preventing failures. By identifying the differences between shoddy economizations and genuine efficiency savings, this book offers savings in the short term which won't be at the expense of a structure's long-term performance. Invaluable reading if you're designing or building concrete structures and want to avoid problems which could be expensive or embarrassing further down the line.

Applications of Precast Concrete in Repair and Replacement of Civil Works Structures Oct 11 2022 The objective of this study was to develop, review, and analyze selected case histories involving applications of precast concrete in the repair or replacement of civil works structures. Information was obtained through literature searches; discussions with designers, precasters, and contractors; visits to project sites; and discussions with project personnel. Each case history includes a description of the project, the cause and extent of the deficiency that necessitated repair or replacement, design details, descriptions of materials and precasting procedures, construction techniques, costs, and performance to date of the precast concrete. Based on a review and analysis of these case histories, recommendations for future applications of precast concrete were developed, and areas that could benefit from research were identified. (MM).

Precast, Prestressing & Post-Tensioning Technology Oct 31 2021 First, we have to understand what is precast concrete. Precast concrete can also be called readymade concrete or prefabricated concrete. Following is the definition of precast concrete. The form of construction where concrete is cast in a reusable mold and then cured in a controlled environment (a precast plant) is called precast concrete. The casted structural member is then transported to the construction site and then erected. Structural members such as concrete frames, concrete walls, concrete floors, etc. can be constructed using precast concrete. There are many precast concrete advantages. They are discussed below. 1. Saves Construction Time: Precast Concrete construction saves time, and the risk of project delay is also less. The precast concrete casting can be carried on simultaneously with other works on site such as earthwork, survey, etc., and thus saves time. It is a major advantage of precast concrete. 2. Quality Assurance: The key factors which regulate the quality of construction such as curing, temperature, mix design, formwork, etc. can be monitored for pre-cast concrete. So, improved quality construction can be performed. 3. Usage of Prestressed Concrete: By using pre-stressed precast, structural materials of high strength and load-bearing capacity can be achieved, which can result in greater clear span, reduced size of the cross-section of structural members, etc 4.

Cost-effective: The simplified construction process reduces time and increases productivity, quality, and safety and thus the cost is reduced. 5. Durability: Precast Concrete structure has a longer service time period and minimal maintenance. The high-density Precast Concrete is more durable against acid attack, corrosion, and impact, reduces surface voids, and resists the accumulation of dust.

Precast Concrete Structures Jan 22 2021 'Precast Concrete Structures' introduces the subject in detail looking at the design process, manufacture and construction using precast concrete for multi-storey buildings. Detailed structural analysis of the material and its use is provided. The theory is supported by practical case studies and worked examples. There are explanatory illustrations throughout. Endorsed by the British Precast Concrete Federation and written by an acknowledged authority, this is the first book to explain and educate the student in the uses and advantages of precast concrete.

Tolerances for Precast and Prestressed Concrete Construction Jun 14 2020

Basics Concrete Construction May 26 2021 Concrete is the “modern” construction material that has helped shape the fundamental static principles of structural load bearing. Similar to masonry, concrete effectively transmits pressure downward, but its weak point is tractive forces. Concrete has also enabled freer use of architectonic forms. This title imparts the basic knowledge every architect needs to master for planning reinforced and non-reinforced concrete construction.

Multi-Storey Precast Concrete Framed Structures Feb 15 2023 Precast reinforced and prestressed concrete frames provide ahigh strength, stable, durable and robust solution for anymulti-storey structure, and are widely regarded as a high quality,economic and architecturally versatile technology for theconstruction of multi-storey buildings. The resulting buildingssatisfy a wide range of commercial and industrial needs. Precastconcrete buildings behave in a different way to those where theconcrete is cast in-situ, with the components subject to differentforces and movements. These factors are explored in detail in thesecond edition of Multi-Storey Precast Concrete FramedStructures, providing a detailed understanding of theprocedures involved in precast structural design. This new editionhas been fully updated to reflect recent developments, and includesmany structural calculations based on EUROCODE standards. These areshown in parallel with similar calculations based on BritishStandards to ensure the designer is fully aware of the differencesrequired in designing to EUROCODE standards. Civil and structural engineers as well as final year undergraduateand postgraduate students of civil and structural engineering willall find this book to be thorough overview of this importantconstruction technology.

A Prototype Research Building Feb 03 2022

Design of Precast Concrete Jul 08 2022

Manual of Precast Concrete Construction May 18 2023

Precast Concrete Construction May 06 2022

Management of Precast Concrete Construction Apr 12 2020

Precast Concrete Structures Jun 19 2023 Building with precast concrete elements is one of the most innovative forms of construction. This book serves as an introduction to this topic, including examples, and thus supplies all the information necessary for conceptual and detailed design.

Concrete Construction Manual Dec 21 2020 The Construction Manuals from Edition Detail are among the most important reference works in the specialist literature. The latest volume shows the potential of the material concrete and documents comprehensively the technical principles of using concrete in construction. Chapters cover the history of the material, the properties of concrete, reinforced concrete, and prestressed concrete, the treatment of its surface. Also covered are the basic principles of statics for large and small structures, and the building requirements with respect to heat, damp, sound-proofing and fire protection according to the most recent norms and standards. Finally a large number of built examples are presented from illustrations of the complete structure down to detailed plans, showing the broad spectrum of applications for concrete in contemporary building. All plans have been specially produced by the editorial department Detail for this book and for ease of comparison, they have been drawn to the same scale.

Seismic Design of Precast Concrete Building Structures Dec 13 2022 The aim of this state-of-art report is to present current practices for use of precast and prestressed concrete in countries in seismic regions, to recommend good practice, and to discuss current developments. The report has been drafted by 30 contributors from nine different countries. This state-of-art report covers: state of the practice in various countries; advantages and disadvantages of incorporating precast reinforced and prestressed concrete in construction; lessons learned from previous earthquakes; construction concepts; design approaches; primary lateral load resisting systems (precast and prestressed concrete frame systems and structural walls including dual systems) diaphragms of precast and prestressed concrete floor units; modelling and analytical methods; gravity load resisting systems; foundations; and miscellaneous elements (shells, folded plates, stairs and architectural cladding panels). Design equations are reported where necessary, but the emphasis is on principles. Ordinary cast-in-place reinforced concrete is not considered in this report. This fib state-of-the-art report is intended to assist designers and constructors to provide safe and economical applications of structural precast concrete and at the same time to allow innovation in design and construction to continue. This Bulletin N° 27 was approved as an fib state-of-art report in autumn 2002 byfib Commission 7, Seismic design.

Precast Concrete Mar 24 2021 This book provides a general treatise covering precast concrete as a whole. It gives a comprehensive account of materials, properties, manufacture and usage.Materials, processes, mix-designs, accelerated curing, performance, durablility and quality control, as well as repairs, are each discussed in their own right. Each section deals with a good pr

Precast Concrete in Mixed Construction Nov 19 2020 The purpose of this publication is to show how precast concrete may be mixed in combination with other structural materials to maximise overall building performance. The other materials are: cast insitu concrete, reinforced and post-tensioned, structural steelwork, timber and glue-laminated timber, masonry in brickwork and blockwork, glass and glazing. The aim is to provide a companion volume to composite Floor Structures [FIP, 1998] and to show some of the many other ways that precast concrete can be used to advantage with other materials. The term mixed precast construction is used to describe these other combinations. The intention is not to discuss design calculations - that is for a future 'fib Guide to good practice'. Instead, the bulletin is meant as a 'State-of-art' publication showing photographs, sketches and details of precast concrete with other materials. There are no design equations, although some technical information on how to combine the materials, e.g. bearings, connections, tolerances, thermal and shrinkage effects, etc., is included if appropriate. Thus, the document focuses on the use of mixed construction in multistorey buildings, offices, housing, grandstands, parking garages, and industrial warehouses, etc. i. e. on precast concrete as the main construction material and looks at the manner in which other materials can be integrated. Chapter by chapter the strengths and weakness of each material studied are assessed as part of the total building design. In some cases it is obvious that the load carrying performance of one material outweighs another. In other cases aspects such as thermal, fire, vibration, fatigue, creep, acoustic, seismic and visual characteristics, and the geographical local availability of that material, may be critical. A world-wide survey, presented in Table 1.1, found that precast concrete is a universal building material, but mixed construction is limited mostly to developed countries where structural steelwork and types of timber, such as glue-laminated timber, is readily available. In addition there may be design, detailing, production, transportation, erection and maintenance limitations, which do or do not favour mixed construction.

Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components; Design, Analysis and Construction. Translated by C. Van Amerongen Dec 01 2021

Manual of Precast Concrete Construction with Large Reinforced Concrete and Prestressed Concrete Components: Industrial shed-type and low-rise buildings; special structures Mar 16 2023 V. 1. Principles. Roof and floor units. Wall panels.--v. 2. Industrial shed-type

and low-rise buildings; special structures.--v. 3. Multi-storey industrial and administrative buildings. School and university buildings. Residential buildings.

Design and Construction of Large-panel Concrete Structures; Report Jan 02 2022

Modernisation, Mechanisation and Industrialisation of Concrete Structures Jan 14 2023 Modernisation, Mechanisation and Industrialisation of Concrete Structures discusses the manufacture of high quality prefabricated concrete construction components, and how that can be achieved through the application of developments in concrete technology, information modelling and best practice in design and manufacturing techniques.

Design of Precast Concrete Structures Aug 17 2020

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