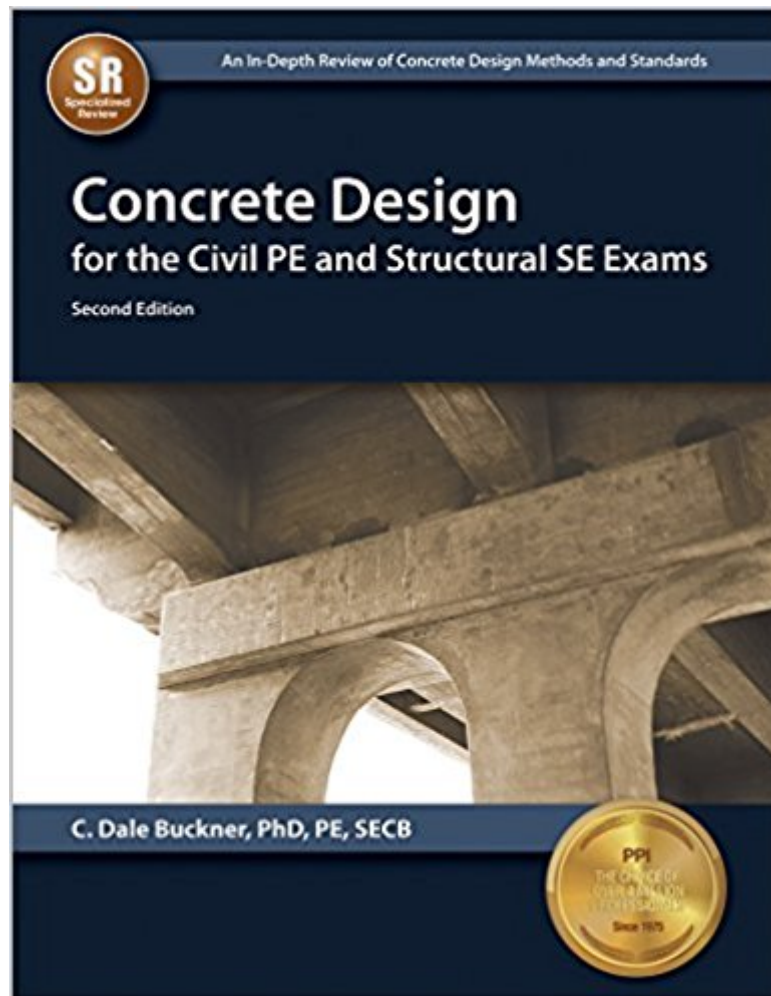




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# Concrete Design For The Civil PE And Structural SE Exams, 2nd Edition



## Synopsis

An In-Depth Review of Concrete Design Methods and StandardsConcrete Design for the Civil PE and Structural SE Exams, Second Edition Â An In-Depth Review of Concrete Design Methods and StandardsConcrete Design for the Civil PE and Structural SE Exams presents the concrete design and analysis methods most needed by civil and structural engineering students. Â The bookâ€™s 12 chapters provide a concise but thorough review of concrete theory, code application, design principles, and structural analysis. The 51 example problems demonstrate how to apply concepts, codes, and equations, and over 40 figures and tables provide essential support material. A complete nomenclature list defines the industry-standard variables and symbols used in each chapter. Â This book includes code references to familiarize you with exam-adopted codes, such as ASCE7 and ACI 318. It also includes 35 multiple-choice problems and 2 scenario-based design problems to enhance your problem-solving skills. Each problemâ€™s complete solution lets you check your solving approach. On exam day, you can use this bookâ€™s thorough index to quickly locate important codes and concepts. Â Topics CoveredColumns and Compression MembersContinuous One-Way SystemsDesign SpecificationsDevelopment of ReinforcementFlexural Design of Reinforced Concrete BeamsMaterialsPrestressed ConcreteSeismic Design of Reinforced Concrete MembersServiceability of Reinforced Concrete BeamsShear Design of Reinforced ConcreteTwo-Way Slab Systems

## Book Information

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## Customer Reviews

C. Dale Buckner is a registered professional civil engineer in Virginia. Dr. Buckner has consulted on engineering projects, and he now teaches in the Department of Civil and Environmental Engineering at the Virginia Military Institute. He holds bachelor of science, master of science, and doctorate degrees in civil engineering from North Carolina State University. He has authored several Structural Engineering and Civil PE exam review books, and he has served as a long-time advisor in PPI's Civil PE Passing Zone.

This book is designed to complement and be used with PPI's Civil Engineering Reference Manual (CERM), Structural Depth Reference Manual (CEST), or Structural Engineering Reference Manual (STRM). CERM, CEST, and STRM are the basic texts for anyone studying for the civil PE or structural engineering (SE) exams, and each book contains an introduction to the basic concepts and most common applications pertaining to concrete design. It is essential that this book be used with the American Concrete Institute's Building Code Requirements for Structural Concrete (ACI 318) and Commentary (ACI 318R). The following chapters are meant to explain and clarify those aspects of the building code that are most likely to come up during the civil PE and SE exams, but it will be frequently assumed along the way that you can refer directly to the code itself when necessary. Throughout the book, citations to code criteria refer to the 2011 edition of the ACI code. For example, the citation "ACI Sec. 7.12" refers to Sec. 7.12 of ACI 318-11. For the problems covered in this book, however, the differences between ACI 318-08 and ACI 318-11 are minor and amount to no more than the notation used for a few variables. That means you can study this book with either ACI 318-08 or ACI 318-11 at hand. When it comes to the exam itself, of course, it's important to bring the editions of the design standards that the current exam is based on. Check the NCEES website at [ncees.org](http://ncees.org) for the current design standards for your exam. You can also check PPI's website at [ppi2pass.com/civil](http://ppi2pass.com/civil) or [ppi2pass.com/structural](http://ppi2pass.com/structural) for current information and answers to frequently asked questions (FAQs) about the civil PE or SE exams.

This is a text designed to assist with the Professional Engineer Exam in Civil or Structural engineering. The book can be used to compliment other texts and manuals: PPI's Civil Engineering Reference Manual (CERM), Structural Depth Reference Manual (CEST), or Structural Engineering Reference Manual (STRM). The text is also essential with updated building codes for structural concrete. The text is first and foremost designed to assist with study and preparation for the PE Exams, but it has a wealth of information that can be used and referenced. Speaking of the references in the text, quoting from the description: "Throughout the book, citations to code criteria

refer to the 2011 edition of the ACI code. For example, the citation "ACI Sec. 7.12" refers to Sec. 7.12 of ACI 318-11. For the problems covered in this book, however, the differences between ACI 318-08 and ACI 318-11 are minor and amount to no more than the notation used for a few variables. That means you can study this book with either ACI 318-08 or ACI 318-11 at hand."

Concrete Design is written for engineers studying for the NCEES structural engineering exam or the structural depth section of the NCEES civil Principles and Practice of Engineering exam. The explanation of how to use the book explains what manuals and building code guides it must be used with, and how to study and mark pages for the (open book) exam. The book includes:

1. Materials
2. Design Specifications
3. Flexural Design of Reinforced Concrete Beams
4. Serviceability of Reinforced Concrete Beams
5. Shear Design of Reinforced Concrete
6. Columns and Compression Members
7. Continuous One-Way Systems
8. Two-Way Slab Systems
9. Development of Reinforcement
10. Prestressed Concrete
11. Seismic Design of Reinforced Concrete Members
12. Practice Problems

A complete guide to the exam when used together with PPI's Civil Engineering Reference Manual, Structural Depth Reference Manual, or Structural Engineering Reference Manual, and the American Concrete Institute's Building Code Requirements for Structural Concrete and Commentary.

Very clearly written review guide with ample examples and some practice problems. This is not comprehensive and does not replace a course on concrete design or a proper design handbook, but it should be enough to make sure you are familiar with the basics needed for the PE exam or to review basic principles or terminology. It is a nice reference for basic problems.

Foremost, when you purchase this text, be certain to register it with PPI. When you do this, you will receive updates, test tips/strategies, and any necessary corrections. It only takes a moment, but it is well worth your time. Secondly, do know that test-takers who invest in these texts (and in comparable texts) enter the exam with more confidence and are better equipped for success. Now, know that this is helpful for any person taking the NCEES: SE; however, it also speaks to the structural depth section of the NCEES: PE exam, in particular. The editing and publication are nearly immaculate. All figures are explicit and needed. Likewise, the text is concise and values the test-taker's time. There are ample examples and practice-problems. While the price seems daunting (it is a fairly brief text), it does allow for review and practice. And, any edge that you can find for this exam is well worth it.

Not an engineer and I certainly do not have the intelligence to do anything with structural engineering beyond the makeshift tree house I built as a kid. When given the opportunity to review this manual for engineering students hoping to pass the NCEES exam I saw an opportunity for me to expand my knowledge into a field I had no real expertise in. After attempting to read the introduction and barely making it through the first two chapters on design and materials I reached out to my brother who is, in fact, a structural and manufacturing engineer to assist me in learning more on the subject. He perused the manual and explained that the information is very comprehensive and critical to anyone wanting to take the exam. However, I was interested in seeing if I could apply any of the knowledge therein to everyday use as this manual is already established as a solid study guide. After much tutoring and frustrating hours I have come to the conclusion that thank GOD I'm not an engineer as the math formulas were too much for me to handle. I do, however, have a greater appreciation to the thought and design that goes into modern structures from basic railings to bridges to even stadiums as one must know more than simple math to make such structures stand the test of time. This is a great manual for anyone wanting to take the NCEES exam or anyone that wants to expand their knowledge on structural engineering.

This is a clear cut aid to preparing for the exams. It doesn't replace knowledge and experience, but it will help you with the exam.

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