

Live Interactive Web Seminar

Pay a single site registration fee* and an unlimited number of people in your organization can attend at that site

New Webinar

Deflection Calculation of Concrete Floors - Immediate; Long-Term; Cracking

Sponsored by ASCE Continuing Education and ASCE's Structural Engineering Institute (SEI)

THURSDAY, November 4, 2010
11:30 am - 1 pm Eastern Time

PURPOSE AND BACKGROUND

A reliable assessment of immediate and long-term deflections of concrete floors is the primary consideration for in-service design of concrete floors. Prediction of probable deflections is a routine challenge for structural concrete design engineers. This webinar provides the knowledge and numerical examples necessary for estimating a concrete floor's deflection in the environment of an everyday consulting office. The webinar covers the recommended code limits and their application to practical conditions. Starting with a review of the simplest method of estimating deflections, the discussion moves progressively to more rigorous schemes, and concludes with the practical application of the Finite Element Method. It covers the consideration of crack formation and its impact on a concrete floor's deflection, a critical consideration for conventionally reinforced slabs. Crack width calculation, where applicable, is also discussed. Detailed numerical examples illustrate the application of each of the methods presented. A comparative evaluation of different methods illustrates the merits of each method. The webinar also covers the application of post-tensioning to concrete floors.

The presentation is targeted to practicing concrete design engineers, with the objective to provide them with practical knowledge and the tools needed to estimate floor deflections. The webinar starts with the background in allowable values, the code permissible thresholds, and the application of code stipulated values to practical conditions. It proceeds to the review of the current methods of deflection calculation, starting with the simplest and more approximate, and progressively leads to the more rigorous, but practical design-office tool for estimating deflections. The discussion includes the application of the Finite Element Methods for floor design with due allowance for cracking. Each method is followed with a numerical example and concluded with an evaluation of its merits and the level of its approximation. Different options for the estimate of long-term deflections due to shrinkage, creep and time of application of load are discussed in detail. The discussion is followed by numerical examples for long-term deflections.

The seminar concludes with an estimate of location and width of probable cracks and the means to control them.

LEARNING OUTCOMES

- Selection of allowable deflections for specific applications
- Application of different methods for estimating deflection values and the differences among them
- Selection of a suitable method of calculation for a reliable estimate of probable deflections
- Impact of cracking on deflection of concrete floors
- Application of finite elements in estimating deflection of floor systems

- Estimate of crack widths and their control
- Significance and computation of long-term deflections

SEMINAR BENEFITS

- Become familiar with the interpretation and application of ACI-318 allowable deflection values for concrete floors; flat slabs, and other construction schemes
- Learn the background and application of different methods of calculating deflection of concrete floors
- Find out the differences between the different calculation schemes; how they compare and which is the suitable method for your project
- Become familiar with the use of the Finite Element Method in estimating the deflection of concrete floors, with or without allowance for crack formation
- Attain a full understanding of the impact of creep, shrinkage and time of application of loads on the long-term deflection of concrete floors
- Learn how to estimate the long-term deflection of a concrete floor and its code compliance
- Explore the application of post-tensioning in deflection control and cracking of concrete floors
- Find out how probable crack widths are estimated and their control in concrete floors
- Earn 1.5 Professional Development Hours (1.5 PDHs)

INTENDED AUDIENCE

Structural engineers, building officials, plan checkers, and students engaged in the design of conventionally reinforced or post-tensioned floor systems, who are seeking to learn about practical procedures for estimating the immediate and long-term deflections of concrete floors, as well as the state-of-the art tools available.

SEMINAR OUTLINE

- Acceptable deflection values
- Code permissible deflection limits; interpretation and evaluation
- Review and presentation of methods of deflection calculation
 - Simplified ACI-318 equivalent moment of inertia I_e
 - Improved ACI-318 based on I_e
 - Recommended dimensional values
 - Closed form formulas
 - Finite Element Methods, with allowance for cracking
- Long-term deflections; shrinkage, creep, impact of amount and location of reinforcement
- Credible estimates of long-term and immediate deflections
- Estimate of crack width and its control

REGISTER ONLINE NOW! SPACE IS LIMITED!

For more information and to register for this webinar please click the link below:

<https://secure.asce.org/ASCEWebSite/Webinar/ListWebinarDetail.aspx?ProdId=17433>

REGISTRATION FEES***DEFLECTION CALCULATION OF CONCRETE FLOORS - IMMEDIATE; LONG-TERM; CRACKING**

THURSDAY, November 4, 2010 / 11:30 am – 1 pm Eastern Time

- \$299 Member \$349 Non-Member
- Special Offer on Webinars:** Have less than 5 engineers in your organization? For a limited time, ASCE Members who are employed by organizations with less than five engineers can participate in webinars at a reduced rate. Use promotional code LESS10 when registering to receive \$100 off.

Information/Registration:**SEMINAR INSTRUCTOR**

Bijan O. Aalami, Ph.D., M.ASCE, is Professor Emeritus of San Francisco State University, Life Member of the Post-Tensioning Institute, Chartered Engineer, and a Principal of ADAPT Corporation – a structural engineering firm in California specializing in design of concrete structures, and providing design software for concrete consulting firms. He has been actively engaged in the design and construction of numerous concrete buildings, bridges and special structures, in particular post-tensioning. A renowned world leader and teacher in the design of concrete buildings, bridges and special structures, through his worldwide educational seminars in over 20 countries, Aalami has enriched the practice of many engineers in North and Latin America, Far East, Europe and Middle East. His extensive publications on concrete design, in particular post-tensioning, are the principal resource for practical design of conventionally reinforced or post-tensioned floor systems and bridges. Aalami has been the project leader of the software suite ADAPT that is serving concrete design engineers in over 70 countries worldwide.

BENEFITS OF LIVE TELEPHONE/WEB SEMINARS

These online courses use teleconferencing and the Microsoft Live Meeting Professional software to make the courses actual live, interactive learning experiences. You will be able to ask the instructor questions and get live real time answers. The instructor will be able to conduct polls to gauge your interest in certain areas and ask you questions as well. You will receive course materials by e-mail prior to the seminar and will be able to view the instructor's Power Point slides during the seminar. These types of online courses have a much higher impact than simply reading material on the web. Live telephone/web seminars offer exceptional convenience and are very cost-effective. No travel is required and the site registration fee allows an unlimited number of participants to attend at each site. In addition, each course participant will earn one Professional Development Hour (PDH) per seminar hour.

**Fees per seminar site. Pay one site registration fee and an unlimited number of people in your organization can attend the seminar at that site. The single site registration fee for ASCE's live, web seminars is intended to be an easy, affordable way to provide training for multiple employees in your organization. Your single site registration fee provides you with a site license for one computer log in to the seminar and one toll free phone call to access the audio portion of the seminar. Long distance charges will apply for attendees outside of the U.S. The site license provided to you by the single site registration fee does not permit you to have multiple logins or phone calls from your site or to transmit this information to another site. Therefore, if you plan to have a large group attend the seminar at your site, all participants should assemble in a conference room to hear (via speaker phone) and view (via one computer and a computer projection system) the seminar. If you have several sites, you must register each site individually and pay a separate site registration fee.*

SYSTEM REQUIREMENTS FOR PARTICIPANTS

As a participant using the Microsoft Live Meeting Professional your computer must meet the following requirements:

Audio: Using a touch-tone telephone.

Web: Microsoft Internet Explorer 6.0, Netscape 7.0, Mozilla 1.6, Firefox 1.0, for Windows/Mac/Linux, or Safari 1.0 for Macintosh. Internet connection of minimum 128K.

Pop-up Blockers: All Pop-up blockers must be disabled.

Java: Microsoft Internet Explorer 5.5 with Java script and session cookies enabled.

REGISTRATION INFORMATION

For more information please contact the webinars registrar at: webinars@asce.org. Please note: Registration for each seminar will be closed three business days prior to the seminar. No cancellations will be accepted if they are received within three business days of a seminar. Late registrations may be accepted if space is available and will be assessed a \$25.00 late registration fee. Your registration will be confirmed by e-mail. Two business days before the seminar, you will receive a confirmation e-mail with a link to download the course materials, a sign in sheet to verify attendance, and detailed information on how to join the meeting; including the phone number you'll need to dial, and meeting number. Please contact the registrar, at webinars@asce.org, no later than 12 noon Eastern Time the day prior to the seminar if you do not receive the confirmation e-mail or for additional information.

CEU'S/PDH'S

ASCE has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102. In addition, ASCE follows NCEES guidelines on continuing professional competency. Since continuing education requirements for P.E. license renewal vary from state to state, ASCE strongly recommends that individuals regularly check with their state registration board(s) on their specific continuing education requirements that affect P.E. licensure and the ability to renew licensure. For details on your state's requirements, please go to: http://www.ncees.org/licensure/licensing_boards/

SEI was created in 1996 to serve the unique needs of the structural engineering community more effectively while also being their voice on broader issues that shape the entire civil engineering community. The mission of the Structural Engineering Institute (SEI) is to advance and serve the structural engineering profession. It has 20,000 members and strives to advance its members' careers, stimulates technological advancement, and improves professional practice.