

# Design of Concrete Parking Lots

Select Date and Location (8:30 am – 4:30 pm)

Submit separate form for each registrant. Save a copy for your files.

- February 24, 2009 — Cincinnati, OH
- February 25, 2009 — Columbus, OH
- February 26, 2009 — Cleveland, OH

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email (required for confirmation) \_\_\_\_\_

**Early Bird Registration Fee: \$125, includes lunch (before January 15, 2008)**

**Registration Fee: \$140, includes lunch**

**Payment Method:** (Credit card information or check must accompany registrations)

- Check
- VISA
- MasterCard

Card Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

Name on Credit Card (print) \_\_\_\_\_

Signature \_\_\_\_\_

For credit card payment, fax form to 614/891-2675. Make checks payable to ORMCA, and mail along with form to ORMCA POB 29190, Columbus, OH 43229-0190.

**Important:** ORMCA reserves the right to cancel this seminar. If cancelled, ORMCA will notify registrants via fax or e-mail 2 weeks in advance of the seminar. ORMCA will refund the entire registration fee, but is not responsible for airline and hotel reservation fees. **You are responsible for making and paying for your own hotel and travel arrangements.**

**Cancellation Policy:** Full cancellation refunds, less a \$15 administration fee, will be extended until 7 business days prior to each seminar. All cancellations within 7 business days of each seminar will not be refunded. Registrations may be transferred to other individuals. For additional registration information, contact the ORMCA office at 614/891-0210.



Ohio Concrete/Ohio Ready Mixed Concrete Association  
2600 Corporate Exchange Dr., Ste. 165, Columbus, OH 43231  
PH: 614/891-0210 FX: 614/891-2675 ormca@ohioconcrete.org



Ohio Ready Mixed Concrete Association  
Ohio Concrete  
P.O. Box 29190  
Columbus, OH 43231



## Continuing Education

### Design of Concrete Parking Lots

#### Locations and Dates

Cincinnati, OH  
February 24

Columbus, OH  
February 25

Cleveland, OH  
February 26

#### Presented by:



#### In cooperation with:

The National Ready Mixed Concrete Association (NRMCA)

Cleveland State University



**6** Professional Development Hours



**Reserve your seat today! Complete the enclosed registration form or go to [www.ohioconcrete.org](http://www.ohioconcrete.org) or call 614/891-0210**

# Design of Concrete Parking Lots

# Continuing Education

## Purpose and Background

Concrete has traditionally been perceived as the higher priced but longer lasting material for parking lots. Now, with asphalt prices up 34% for the first eight months of 2008, concrete for the first time is more competitive in terms of initial cost to go along with its long-standing advantage in life cycle costs. Now property owners can enjoy the benefits of concrete including long service life and low maintenance along with environmental benefits including cooler surfaces and reduced lighting requirements.

This course provides detailed instruction on how to design and build concrete parking lots. It provides details of pavement design including traffic loads and pavement stresses. Concrete properties and thickness design are presented in detail. Recommendations for subgrade support and pavement jointing are provided. Concrete materials are presented including discussions on strength, workability and durability. Recommended specifications are provided.

Construction techniques, inspection, testing, maintenance and repair are discussed. Parking area geometry and layout are presented including parking requirements, entrances and exits, and truck parking. Additional detail will be provided on cost estimating, cost-benefit analysis, and life cycle cost. In addition to details of conventional concrete parking lots, this seminar will provide introductions to innovative products such as whitetopping and pervious concrete. Features of each system will be presented including economic and environmental benefits.

### Seminar Benefits

This seminar will provide attendees with state-of-the-art techniques and methodologies for designing, specifying and building concrete parking lots. Attendees will be able to provide their clients with the best possible solutions to their parking needs. They will provide clients with the benefits of concrete parking lots including long service life and low maintenance. In addition, attendees will be able to provide environmentally superior solutions.

### Who Should Attend?

This course is intended for civil engineers, geotechnical engineers, landscape architects and public works officials involved in the design and layout of concrete parking areas. Concrete contractors and concrete producers will also benefit from this seminar.

### Professional Development Hours

Architects and engineers earn **six** Professional Development Hours upon completion of this program. This seminar is registered with the American Institute of Architects Continuing Education Systems. This program also fulfills some of the requirements for NRMCA's STEPS™ Certified Concrete Professional program. Visit [www.nrmca.org/STEPS](http://www.nrmca.org/STEPS) for details.



## Seminar Outline

8:30 am—4:30 pm

### Overview of concrete parking

- Conventional concrete, whitetopping and pervious concrete
- Economic and environmental benefits
- Costs estimating and life cycle costing

### Design

- Pavement stresses, traffic loads and subgrade support
- Concrete properties and thickness design
- Jointing: contraction, construction and isolation joints
- Distributed steel reinforcement, dowels and tie bars
- Joint filling & sealing
- Pavement grades, curbs and islands
- Material strength, durability and workability

### Construction

- Subgrade preparation
- Layout for construction
- Paving equipment, placement, finishing and texturing
- Curing and protection
- Jointing and striping
- Opening to traffic

### Inspection and testing

- Subgrade preparation
- Concrete quality
- Construction operations

### Maintenance and repair

- Surface sealing, joint and crack sealing
- Full depth repair
- Undersealing and leveling
- Overlay
- Cleaning

### Specifications

#### Whitotopping

#### Pervious Concrete

**\$209 Value**

### Handout Materials

- Guide for the Design and Construction of Concrete Parking Lots—ACI 330R
- Specifications for Unreinforced Concrete Parking Lots—ACI 330.1
- NRMCA Concrete Pavement Analyst Software

## Locations & Dates

**Cincinnati, OH**  
**February 24, 2009**  
Sheraton Cincinnati N.  
11320 Chester Rd.  
Cincinnati, OH 45246  
513/771-2080

**Columbus, OH**  
**February 25, 2009**  
Bryce Eck Center  
3880 Reed Rd.,  
Upper Arlington, OH 43220

Nearby hotel: Baymont Inn & Suites OSU  
3246 Olentangy River Rd.  
Columbus, OH 43202  
614/267-4646

**Cleveland, OH**  
**February 26, 2009**  
Sheraton Independence  
5300 Rockside Rd.  
Independence, OH 44131  
216/524-0700

## Seminar Instructor



Dr. Norbert J. Delatte, Jr., P.E., is a Professor in the Department of Civil and Environmental Engineering at Cleveland State University. He was also recently appointed as CSU's Faculty Coordinator for Off-Campus Operations.

Prior to that he served for 6 ½ years on the faculty of The University of Alabama at Birmingham. He received his B.S. in Civil Engineering from The Citadel in 1984, a Master's Degree in Civil Engineering from The Massachusetts Institute of Technology in 1986, and a Ph.D. in Civil Engineering from The University of Texas at Austin in 1996.

He served for eleven years in the United States Army as an officer in the Corps of Engineers, including two years of service in the Republic of Korea, wartime service in the Arabian Peninsula during Operation Desert Storm, and command of an engineer company during Hurricane Andrew relief operations in southern Florida. He taught as an Assistant Professor at the United States Military Academy at West Point, New York during the 1996-1997 academic year. He specializes in concrete pavement behavior and performance, structural engineering, transportation engineering, and construction materials.

He is a member of the International Society for Concrete Pavements, the American Concrete Institute, the International Concrete Repair Institute, the American Society of Civil Engineers, and the American Society for Engineering Education. He is the former chair of ACI Committee 325, (Concrete Pavements) and a member of ACI Committees 327 (Roller Compacted Concrete Pavements), 330 (Concrete Parking Lots and Site Paving), 522 (Pervious Concrete), E802 (Teaching Methods and Educational Materials), and E803 (Faculty Network Coordinating Committee). He is the former chair of the ASCE Technical Council on Forensic Engineering (TCFE) Executive Committee and the TCFE Education Committee. In addition, he is the Editor of ASCE's Journal of Professional Issues in Engineering Education and Practice. Dr. Delatte is a registered professional engineer in the States of Ohio and Alabama and in the Commonwealth of Virginia.