FRP Composites for Reinforced Concrete Construction

In-House Seminar

ONE DAY, 7.5 HOURS (7.5 PDHs/0.75 CEUs)

Practical application of products and systems for new and retrofit reinforced concrete construction

Who should attend: Engineers, designers, contractors, owners, and building officials will receive information on the specification, design, and construction of concrete reinforced with FRP bars

Program Content:

This intensive seminar will introduce FRP materials and focus on the practical application of products and systems currently in use for new and retrofit reinforced concrete construction.

Part I Introduction to FRP Composite Materials and Systems

FRP Forms, Products, and Applications
FRP rebar; Other FRP forms; FRP strengthening systems

Physical and Mechanical Properties and Behavior of FRP Systems
Design tensile strength; Time-dependent behavior; Fatigue; Durability

Part II Design of Concrete Members with Internal FRP Reinforcement

Flexural Design
Failure modes; Flexural capacity; Minimum reinforcement; Serviceability

Shear Design
Failure modes; Shear capacity; Stirrup design

Temperature and Shrinkage Reinforcement
Development and Splices of Reinforcement
Development length of a straight bar; Development length of a bent bar; Tension lap splice

Slabs-on-Ground
Design of slabs with shrinkage and temperature reinforcement

Design examples and case studies
Recently completed projects will provide the attendees with field application information and will demonstrate why the use of FRP for concrete reinforcement has dramatically risen in recent years

Part III Design of FRP Strengthening Systems for Concrete Structures

Strengthening Concrete Structures
Reasons for strengthening; Types of FRP strengthening systems; Materials and properties of FRP strengthening systems

Substrate Preparation/FRP Application
Substrate repair; Installation methods; Quality control

Design Principles
Strengthening limits; Flexural strengthening; Shear strengthening; Axial strengthening

Reinforcement Details
Bond and delamination; Detailing of laps and splices

Design examples and case studies
Recently completed projects will provide the attendees with field application information and will demonstrate why FRP composites are used for strengthening concrete structures

Instructors:

Two industry experts will present this seminar.

Up to 40 printouts of the presentation included. Additional copies can be purchased.

ACI is an approved education provider for AIA and ICC.

Related Documents:

To expand attendees knowledge, ACI In-House Seminar customers may purchase multiple copies of related documents at 50% off the regular price.

- Guide for the Design and Construction of Structural Concrete Reinforced with FRP Bars (ACI 440.1-15)
- Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete Structures (ACI 440.2-17)