ACI Committee Document

Abstracts

The following ACI documents are, or will soon be, available:

"Visual Condition Survey of Concrete in Service—Guide (ACI PRC-228.4-23)"

Reported by ACI Committee 228, Nondestructive Testing of Concrete

John Popovics*, Chair; Joshua White*, Secretary; Todd Allen, Muhammed P.A. Basheer, Andrew J. Boyd*, Nicholas J. Carino*, Nestor E. Chonillo, William Ciggelakis, Aldo De La Haza, Ethan C. Dodge, Boris Dragunsky, Christopher C. Ferraro, Michael C. Forde, Eric R. Giannini*, Kerry S. Hall, Julie Ann Hartell†, Bernard Hertlein, Michael W. Hoag, Arezoo Imani*, Liying Jiang‡, Keith E. Kesner, Rakesh A. Khan, Hai S. Lew, Malcolm K. Lim*, Larry D. Olson*, Stephen Pessiki, Nathaniel Steven Rende*, Patrice Rivard, Paul L. Siwek, Heather Todak†, and Jinying Zhu, Members; Robert S. Jenkins*, Kenneth M. Lozen, and Claus Germann Petersen, Consulting Members; Frederick D. Heidbrink* and Chris M. McDermott, Voting Subcommittee Members.

*Subcommittee member.

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‡Subcommittee Secretary.

Abstract: This document provides guidance on planning, performing, and documenting visual condition surveys of concrete structures. Chapter 1 defines the objective and scope of this guide and Chapter 2 covers terminology. Chapter 3 includes the process and tools one would use to plan and conduct a condition survey. Chapter 4 provides an image library and associated descriptions of the visual features that may be encountered when conducting the survey. Chapters 5 through 7 discuss the likely causes of the various features one might see when performing a visual condition survey.

"External Curing of Cast-in-Place Concrete—Specification (ACI SPEC-308.1-23)"

Reported by ACI Committee 308, Curing Concrete

Lawrence Homer Taber, Chair; Erik Holck*, Secretary; Oscar R. Antommattei, Jason Barnes, Daron R. Brown, Joshua M. Carroll, Jonathan E. Dongell, Michael Faubel, John D. Fauth, Dale Fisher, Sidney Freedman, David E. Hoyt, Cecil L. Jones, Frank A. Kozeliski, Ronald L. Kozikowski Jr., Mauricio Lopez Casanova*, Darryl Manuel, Stephen F. McDonald, Aimee Pergalsky, David M. Suchorski, Lawrence L. Sutter, Richard E. Van Horn, Ben Wiese, and John B. Wojakowski, Members; Ralph C. Bruno, James N. Cornell, Ben E. Edwards, Jerome H. Ford, R. Doug Hooton, James A. Lee, W. Calvin McCall, and William S. Phelan*, Consulting Members.

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Abstract: This reference specification provides requirements for curing concrete that the architect/engineer can apply to any construction project by citing it in the project specification. Checklists are provided to assist the architect/engineer in supplementing the provisions of this reference specification as needed by designating or specifying customized project requirements.

This specification provides requirements for various methods for the external curing of concrete. These methods are not necessarily equal in effectiveness, cost, effect on project schedule, or impact on other aspects of the project. Provisions governing initial, final, and termination of curing are included.

This specification addresses external curing methods applied after placement of cast-in-place concrete. While internal curing (use of saturated lightweight aggregate or other materials to provide supplemental water) and accelerated curing (heat curing) shall also use external curing methods, not all aspects of internal and accelerated curing are included.

"Design and Construction of Externally Bonded Fiber-Reinforced Polymer (FRP) Systems for Strengthening Concrete Structures—Guide (ACI PRC-440.2-23)"

Reported by ACI Committee 440, Fiber-Reinforced Polymer Reinforcement

Maria Lopez de Murphy, Chair; John J. Myers, Secretary; Ehab Ahmed, Tarek Alkhrdaji, Charles E. Bakis, Abdeldjelil Belarbi, Brahim Benmokrane, Luke A. Bisby, Gregg J. Blaszak, Hakim Bouadi, Timothy E. Bradberry, Vicki L. Brown, John P. Busel, Lijuan Cheng, Raafat El-Hacha, Ehab F. El-Salakawy, Garth J. Fallis, Amir Z. Fam, Russell Gentry, Will J. Gold, Nabil F. Grace, Mark F. Green, Doug D. Gremel, Shawn P. Gross, Issam E. Harik, Kent A. Harries*, Mark P. Henderson, Ravindra Kanitkar†, Yail Jimmy Kim, Michael W. Lee, Eric MacFarlane, Radhouane Masmoudi, Antonio Nanni, Ayman M. Okeil, Carlos E. Ospina, Maria Anna Polak, Max L. Porter, Hayder A. Rasheed, Sami H. Rizkalla, Rajan Sen, Rudolf Seracino, Venkatesh Seshappa, Xavier Seynave, Carol K.

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*Past Chair of the subcommittee that prepared this document.

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The committee acknowledges W. Ghannoum, W. Shekarchi, and J. Tatar for their contributions to this guide.

Abstract: Fiber-reinforced polymer (FRP) systems for strengthening concrete structures are an alternative to traditional strengthening techniques, such as steel plate bonding, section enlargement, and external post-tensioning. FRP strengthening systems use FRP composite materials as supplemental externally bonded or near-surface-mounted (NSM) reinforcement. FRP systems offer advantages over traditional strengthening techniques: they are lightweight, relatively easy to install, and noncorroding. Due to the characteristics of FRP systems, as well as the behavior of members strengthened with FRP, specific guidance on the use of these systems is needed. This guide provides general information on the history and use of FRP strengthening systems; a description of the material properties of FRP; and recommendations on the engineering, construction, and inspection of FRP systems used to strengthen concrete structures. This guide is based on the knowledge gained from experimental research, analytical work, and field applications of FRP systems used to strengthen concrete structures.