ACI Committee Document Abstracts

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

"Use of Industry Foundation Classes in Exchange of Reinforcement Models—Guide (ACI PRC-131.2-24)"

Reported by ACI Committee 131, Building Information Modeling of Concrete Structures

Michael G. Hernandez, Chair; Dinesh Reddy Allam, Secretary; Asit N. Baxi, Allan P. Bommer, Dave Brewster, Christopher D. Brown, Jeffrey N. Cochrane, Aaron Costin, Jeffrey J. Dragovich, Dennis J. Fontenot, Leonardo Garcia, Robert W. Hall, William M. Klorman, Yogesh Patel, Travis Shelton, and Leo Zhang, Members; Jarod Beaman, Daniel D. Berend, Daniel Bittrich, Peter J. Carrato, David A. Grundler Jr., Brad Malmsten, and Peter Zdgiebloski, Consulting Members.

Special acknowledgment and thanks to D. Yang, Research Scientist at the Digital Building Laboratory in the Georgia Institute of Technology, the ACI Foundation, Concrete Reinforcing Steel Institute, and the Charles Pankow Foundation for their contributions to the first version of this guide, and to the Post-Tensioning Institute for its contributions to this second version.

Abstract: This guide provides a protocol for the exchange of data related to concrete reinforcement between software applications. This guide presents a human-readable list of concrete reinforcement entities, attributes, property sets, and relationships, with sufficient specificity so that the format and syntax for machine-readable exchanges based on Industry Foundation Classes (IFCs) can be employed, enhanced, or developed. This specific set of exchange requirements is referred to as a model view definition (MVD). Material and geometric attributes, property sets, and relationships, both required and optional, that address the requirements of most reinforced concrete applications for buildings and nonbuilding structures are presented. This guide is intended to be used by building information modeling (BIM) software developers to assist in the development of consistent and accurate exchanges of concrete reinforcement information between applications.

"Nuclear Safety-Related Concrete Structures—Code Requirements and Commentary (ACI CODE-349-23)"

Reported by ACI Committee 349, Concrete Nuclear Structures

Adeola K. Adediran, Chair; Madhumita Sircar, Chair; Branko Galunic, Vice Chair; Partha Ghosal, Vice Chair; John F. Silva, Vice Chair; Lisa M. Anderson, Secretary; Carlos Cantarero-Leal, Secretary; Omesh B. Abhat, Monzer M. Allam, Taha D. Al-Shawaf, Sungjin Bae, Mi-Geum Chorzepa, Rolf Eligehausen, Werner A.F. Fuchs, Stewart C. Gallocher, Herman L. Graves, James A. Hammell, Charles J. Hookham, Thomas T.C. Hsu, Ronald J. Janowiak, Scott A. Jensen, Christopher A. Jones, Ola Jovall, Carl L. Larosche, Nam-Ho Lee, W. Calvin McCall, Javeed Munshi, Nebojsa Orbovic*†, Jaspal Saini, David B. Scott, Matthew R. Sherman, Bozidar Stojadinovic, Amit H. Varma, Shen Wang, Andrew S. Whittaker, and Charles A. Zalesiak, Members; Hansraj G.

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*ACI Committee 349 would like to thank Orhan Gurbuz and Nebojsa Orbovic for their many years of membership to Committee 349 and their hard work and dedication to this Code.

Special acknowledgement is given to Giulio Leon Flores, Kenton McBride, and Jason Draper for their contributions to this Code.

†Deceased.

Abstract: ACI CODE-349 covers the design and construction of concrete structures that form part of a nuclear facility and that have nuclear safety-related functions but does not cover concrete reactor vessels and concrete containment structures, as defined by ASME BPVC Section III Division 2:2019, or steel-plate composite walls and steel-plate composite slabs, as defined by ANSI/AISC N690.

The structures covered by ACI CODE-349 include concrete structures inside and outside the containment system.

ACI CODE-349 may be referenced and applied subject to agreement between the owner and the regulatory authority.

The format of ACI CODE-349 is such that it depends on the "Building Code Requirements for Structural Concrete (ACI 318-14)" and should be used in conjunction with ACI 318. Unless otherwise stated, all instances of ACI 318 are referring to ACI 318-14. When searching for subsections, tables, and figures in this ACI CODE-349, first refer to the main section of this Code to see if it is included and to find potential exceptions to the corresponding subsection, table, or figure in ACI 318.

The commentary, which is presented after the Code, discusses some of the considerations of ACI Committee 349 in developing "Code Requirements for Nuclear Safety-Related Concrete Structures (ACI 349)." This information is provided in the commentary because the Code is written as a legal document and therefore cannot present background details or suggestions for carrying out its requirements.

"Design of Nuclear Safety-Related Structures for Impactive and Impulsive Loads using ACI CODE-349 and ASME Section III Division 2 Provisions—Guide (ACI PRC-(349-359)-24)"

Reported by ACI Committee 349, Concrete Nuclear Structures, and Joint ACI-ASME Committee 359, Concrete Containments for Nuclear Reactors

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Special acknowledgement is given to Adeola K. Adediran, Ola Jovall, and Nebojsa Orbovic for their contributions to this guide.

*Deceased.

Abstract: This guide is the work of the ACI 349/359 Task Group on Impulsive and Impactive Loading that established a proposal of updated design provisions for both ACI CODE-349 and ASME BPVC Section III Division 2. The provisions of this guide are nonbinding on ACI CODE-349-23 Appendix F or ASME BPVC Section III Division 2:2011 and may change if implemented.

This guide gives the genesis of the provisions that are proposed to be incorporated into these code documents and further explains why these provisions were adopted. Furthermore, the primary mandate of this guide was to align both aforementioned codes and to bring these codes up to date with current industry practices, using current references for the provisions of both code documents. This guide serves as an independent report of the task group's work to the code committees. This guide is issued as a detailed commentary to the provisions of ACI CODE-349-23 Appendix F or ASME BPVC Section III Division 2. The language of ACI 349-13 and ASME BPVC Section III Division 2:2011 form the starting point for the proposed nonbinding revisions already incorporated in the first two columns of this guide. The last column does not provide proposed changes but provides explanations of why such changes are proposed.