

ICC/NSSA STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS

ICC 500-2008
American National Standard

International Code Council
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The cover photo: L'Ouverture Computer Technology Magnet, Unified School District 259, Wichita, Kansas. Designed by PBA Architects, this shelter is one of 30 in the school district. It consists of a precast concrete multipurpose room designed for approximately 450 occupants. Photo by Tom Pott.

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ICC/NSSA Standard for the Design and Construction of Storm Shelters

FOREWORD

[The information contained in this foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to this standard.]

Introduction

In May of 2002 the International Code Council (ICC) and the National Storm Shelter Association (NSSA) initiated a joint project to write a standard for the design and construction of storm shelters. A standard development committee was created, and the first meeting of that committee was in May of 2003. The scope of the standard is to provide minimum design and construction requirements for storm shelters that provide a safe refuge from storms that produce high winds, hurricanes and tornadoes. Hurricanes and tornadoes generate high winds that produce wind pressures on buildings and structures and that create flying debris at levels and intensities that are higher than those for which most commercial building and residences are designed. The magnitude of the wind speeds associated with these storms are such that building occupants and residents are required to evacuate the area or seek protection in a shelter designed for resistance to extraordinary loads and flying debris. This standard provides design requirements for the main wind-resisting structural system and components and cladding of these shelters, and provides basic occupant life safety and health requirements for these shelters, including means of egress, lighting, sanitation, ventilation, fire safety and minimum required floor space for occupants.

Development

This is the first edition of the International Code Council (ICC) and National Storm Shelter Association's (NSSA) *Standard for the Design and Construction of Storm Shelters*. This standard was developed by the ICC/NSSA Consensus Committee on Storm Shelters (IS-STM) that operates under ANSI Approved ICC Consensus Procedures for the Development of ICC Standards. The consensus process of ICC for promulgating standards is accredited by ANSI. The Storm Shelter Committee is a balanced committee formed and operated in accordance with ICC rules and procedures.

The meetings of the ICC/NSSA IS-STM Consensus Committee were open to the public and interested individuals and organizations from across the country participated. The technical content of currently published documents on storm shelters, including documents of the National Storm Shelter Association, the Federal Emergency Management Agency (FEMA), the Red Cross, and the State of Florida, was reviewed and considered by the committee. The information from these documents helped form a basis for the regulations installed in this standard, but the exact provisions adopted by the committee were determined based upon the scope and intent of this standard. The requirements of ICC/NSSA 500 are based on the intent to establish provisions consistent with the scope of the ICC family of codes and standards that are written to adequately protect public health, safety and welfare; provisions that do not necessarily increase construction costs; provisions that do not restrict the use of new materials, products or methods of construction; and provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction.

Adoption

ICC/NSSA 500 *Standard for the Design and Construction of Storm Shelters* is available for adoption and use by any jurisdictions. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings establishing the jurisdiction's laws. At the time of adoption, jurisdictions should insert the appropriate information in provisions requiring specific local information, such as the name of the jurisdiction.

Formal Interpretations

Requests for Formal Interpretations on the provisions of ICC 500-2008 should be addressed to: ICC, Chicago District Office, 4051 West Flossmoor Road, Country Club Hills, IL 60478.

Maintenance – Submittal of Proposals

All ICC standards are revised as required by ANSI. Proposals for revising this edition are welcome. Please visit the ICC website at www.iccsafe.org for the official “Call for Proposals” announcement. A proposal form and instructions can also be downloaded from www.iccsafe.org.

ICC, its members and those participating in the development of ICC 500-2008 do not accept any liability resulting from compliance or noncompliance with the provisions of ICC 500-2008. ICC does not have the power or authority to police or enforce compliance with the contents of this standard. Only the governmental body that enacts this standard into law has such authority.

International Code Council/National Storm Shelter Association Consensus Committee on Storm Shelters (IS-STM)

Consensus Committee SCOPE: The ICC/NSSA Consensus Committee on Storm Shelter (IS-STM) shall have primary responsibility for minimum requirements to safeguard the public health, safety and general welfare through design, construction and installation requirements for storm shelters.

This standard was processed and approved for submittal to ANSI by the ICC/NSSA Consensus Committee on Storm Shelters (IS-STM). Committee approval of the standard does not necessarily imply that all committee members voted for its approval.

Representatives on the Consensus Committee are classified in one of three voting member categories. The committee has been formed in order to achieve consensus as required by ANSI Essential Requirements. At the time it approved this standard, the IS-STM Consensus Committee consisted of the following members:

General Interest (G) - User Interest (U) - Producer Interest (P)

Mr. Majed Dabdoub (G), City of Cincinnati, Cincinnati, OH

Mr. Kenneth Ford (P), National Association of Home Builders, Washington, DC

Mr. Jaime D. Gascon (G), Miami-Dade County Building Code Compliance Office, Miami, FL

Mr. Dennis W. Graber (P), National Concrete Masonry Association, Herndon, VA

Mr. John D. Holmes (U), Louisiana State University LSU Hurricane Center, Baton Rouge, LA

Mr. Mitchell Hort (G), Community Development, City of Yukon, Yukon, OK

Dr. Ernst W. Kiesling (U), Wind Engineering Research Center, Texas Tech University, Lubbock, TX

Mr. Danny John Kilcollins (G), Florida Department of Community Affairs, Tallahassee, FL

Dr. Marc L. Levitan (U), Louisiana State University LSU Hurricane Center, Baton Rouge, LA

Mr. Joseph J. Messersmith, Jr. (P), Portland Cement Association, Rockville, VA

Mr. Timothy A. Reinhold (U), Institute for Business and Home Safety, Tampa, FL

Mr. Roger M. Robertson (G), Chesterfield County Department of Building Inspections, Chesterfield, VA

Mr. Kurt A. Poeppel (P), Ingersoll-Rand Security & Safety, Cincinnati, OH

Mr. Corey Schunz (U), PBA Architects, P.A., Wichita, KS

Mr. E. Scott Tezak, P.E. (U), URS Corporation, Boston, MA

Mr. James E. Waller, P.E. (P), Remagen Safe Rooms, Monteagle, TN

Mr. Mark Whitaker (G), City of Little Rock, Little Rock, AR

Mr. Robert J. Wills (P), American Iron & Steel Institute, Birmingham, AL

Committee Secretary: **David A. Bowman, P.E.**, Manager, Codes, Codes & Standards, International Code Council, Country Club Hills, IL

Voting Membership in Each Category

Category	Number
General (G)	6
User (U)	6
Producer (P)	6
TOTAL	18

Interest Categories

General Interest: Individuals assigned to the General Interest category are those who represent the interests of an entity, including an association of such entities, representing the general public or entities that promulgate or enforce the provisions within the committee scope. These entities include consumers and government regulatory agencies.

User Interest: Individuals assigned to the User Interest category are those who represent the interests of an entity, including an association of such entities, which is subject to the provisions or voluntarily utilizes provisions within the committee scope. These entities include academia, applied research laboratory, building owner, design professional, government nonregulatory agency, insurance company, private inspection agency and product certification/evaluation agency.

Producer Interest: Individuals assigned to the Producer Interest category are those who represent the interests of an entity, including an association of such entities, which produces, installs or maintains a product, assembly or system subject to the provisions within the committee scope. These entities include builder, contractor, distributor, labor, manufacturer, material association, standards promulgator, testing laboratory and utility.

NOTE — Multiple Interests: Individuals representing entities in more than one of the above interest categories, one of which is a Producer Interest, are assigned to the Producer Interest. Individuals representing entities in the General Interest and User Interest categories are assigned to the User Interest.

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