

SOUTH CAROLINA BUILDING CODES COUNCIL
2021 INTERNATIONAL BUILDING CODE
MEETING MATERIALS
OCTOBER 6, 2021





American Concrete Institute



South Carolina Department of Labor, Licensing and Regulations
South Carolina Building Codes Council
Attention: South Carolina Building Codes Council Board Members
110 Centerview Drive
Columbia, South Carolina 29211

June 29, 2021

Re: Code Change Proposal – 2021 Building Code, Section 101.4.7

Dear SC BCC Board Members,

Please find included with this letter a copy of the code change proposal form and supporting information submitted by ACI on behalf of the ACI Carolinas Chapter, as well as other local industry supporters.

Please contact me directly if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'Kerry Sutton'.

Kerry Sutton, PE
American Concrete Institute
Code Advocacy Engineer



Attachment 1 - Letter of Support from ACI Carolinas Chapter
Attachment 2 – Photocopy of applicable code section
Attachment 3 – Justification for proposed modification
Attachment 4 – Additional letters of support



South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
 110 Centerview Dr • Columbia • SC • 29210
 P.O. Box 11329 • Columbia • SC • 29211-1329
 Phone: 803-896-4688 • contact.bcc@llr.sc.gov • Fax: 803-896-4814
 llr.sc.gov/bcc

2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
- Each request for code modification must be submitted separately.
- A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
- Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
- For local modification requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
- A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
- **A completed modification request must be received with all required documentation before it will be reviewed.**

Statewide Modification

Local Modification: _____

(List all jurisdictions that apply.)

Association/Jurisdiction: American Concrete Institute

Address: _____

Name: Kerry Sutton, PE

Title/Position: Code Advocacy Engineer

Phone No.: _____

Email Address: _____

Please select the applicable code to be modified:

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: [A] 101.4.7, add 101.4.7.1

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

Reference to ACI 562
Chapter 1
SC Building Code
[A] 101.4.7 add 101.4.7.1

[A] 101.4.7 Existing buildings. The provisions of the South Carolina Existing Building Code shall apply to matters governing the repair, alternation, change of occupancy, addition to and relocation of existing buildings.

(101.4.7.1 Structural Concrete. In addition, assessment, repairs, and restoration of structural concrete in accordance with ACI 562 shall be permitted.

Exception:

ACI 562 shall not be used for the evaluation or design of repairs or rehabilitation of elements of seismic force-resisting system that result in strength, stiffness, or ductility of those elements different from the pre-damage condition.)

Add new referenced standard to Chapter 16 as follows:

ACI American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331

Standard reference number Title Referenced in code section number
562-19 Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures
101.4.7.1

8/19 Study Committee Recommendation: Support approval

In 200 characters or less, please briefly describe the justification for this modification request.

This proposed amendment adds ACI 562: Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures, to establish minimum requirements for the evaluation, design, construction, repair, and rehabilitation of concrete structural elements in buildings for various levels of desired performance as deemed appropriate for the project. This proposal is intended for consideration where the requirements of the South Carolina State Building Code are used for existing buildings. Please see Attachment 3, which includes additional information.

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information in the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
Kerry Sutton	Code Advocacy Engineer	American Concrete Institute	[REDACTED]	[REDACTED]
Keith Kesner	Senior Project Manager	CVM	[REDACTED]	[REDACTED]
Dave Tepke	Senior Engineer	SKA Consulting Engineers/ACI Carolinas Chapter	[REDACTED]	[REDACTED]
John McDougall	Dir. of Business Dev.	Baker Roofing/ICRI	[REDACTED]	[REDACTED]
Steve Szoke	Code Advocacy Engineer	American Concrete Institute	[REDACTED]	[REDACTED]

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature: _____ Date: 6-29-2021

Title: Code Advocacy Engineer

ATTACHMENT 3

Reference to ACI 562
Chapter 1
SC Building Code

[A] 101.4.7; add 101.4.7.1

[A] 101.4.7 Existing buildings. The provisions of the *South Carolina Existing Building Code* shall apply to matters governing the *repair, alternation, change of occupancy, addition to and relocation of existing buildings.*

(101.4.7.1 Structural Concrete. In addition, assessment, repairs, and restoration of structural concrete in accordance with ACI 562 shall be permitted.

Exception:

ACI 562 shall not be used for the evaluation or design of repairs or rehabilitation of elements of seismic force-resisting system that result in strength, stiffness, or ductility of those elements different from the pre-damage condition.)

Add new referenced standard to Chapter 35 as follows:

ACI		American Concrete Institute 38800 Country Club Drive Farmington Hills, MI 48331
Standard reference number	Title	Referenced in code section number
<u>562-19</u>	<u><i>Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures</i></u>	<u>101.4.7.1</u>

Justification - This proposed amendment adds ACI 562: *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures*, to establish minimum requirements for the evaluation, design, construction, repair, and rehabilitation of concrete structural elements in buildings for various levels of desired performance as deemed appropriate for the project. This proposal is intended for consideration where the requirements of the South Carolina State Building Code are used for existing buildings.

In addition to improved life safety, the requirements clearly define objectives and anticipated performance for the code official, owners, designers, contractors, and installers. The proposed language is not exclusive as *Section 104.11 Compliance Alternative* of the South Carolina Building Code allows for alternative design and methods of construction. Citing this reference provides the building official a baseline for considering approval of design requirements and methods of construction. Further the baseline is beneficial for product suppliers, owners, designers, contractors and most importantly the expectation of a reasonable level of safety for the residents of the State of South Carolina.

ACI 562 complements the Building Code by providing specific direction on how to evaluate, design, and construct repairs to structural concrete and how to address the unique construction methods and problems associated with repair. This standard helps the designer assess the existing structure. The standard then provides the requirements that bridge the inconsistencies and gaps in acceptable criteria that occur from the two following situations that a designer must solve:

1. Repairing a structure according to the original building code used at the time it was built using today's construction methods and materials; or
2. Repairing a structure built according to an older building code but repaired according to the latest building code.

ACI 562 permits flexibility in evaluation, design, construction, and repair materials to provide economies while establishing expected performance for the service-life of the rehabilitation or repairs. Note that ACI 562 does not address the evaluation of lateral-force resisting systems in high seismic areas. ASCE 41 *Seismic Evaluation and Retrofit of Existing Buildings* would be the appropriate standard for this situation as stated in ACI 562.

Benefits – There are many benefits that ACI 562 provides for the designer, owner, contractor, materials providers, building code official and the citizens residing in and working in the State of South Carolina. A few of these benefits are:

- Provides a level of expectation of life safety to the public in buildings where repairs or rehabilitation is performed on concrete structural elements.
- Provides clearly defined, uniform requirements aimed at extending the service life of existing structures.
- Provides minimum requirements for efficiency, safety, and quality of concrete repair.
- Establishes clear responsibilities between owners, designers, and contractors.
- Provides building code officials with a means to evaluate rehabilitation designs.
- Provides specific repair requirements that often result in less costly repairs compared to repairs required to meet only new construction requirements.
- References standard specifications for materials used in concrete repairs that are not addressed in the code requirements for new construction such as fiber reinforced polymer (FRP) reinforcement and polymer concrete.

It is noteworthy that ACI has been publishing and making available guidance documents on evaluation and repair of concrete for more than five decades and still it is reported that more than 50% of all structural

concrete repairs are found to fail in 20 years or less and 20% of repairs to structural concrete fail within 5 years. Recognizing this as putting the public at risk, ACI Committee 562 saw the need for and developed the *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* as an ACI standard intended for adoption in building codes. ACI continues to maintain and develop additional resources to support assessment, repairs, and rehabilitation of structural concrete in accordance with ACI 562. Among these are:

- [Concrete Repair Manual: Fourth Edition 2013](#)
- [ACI 563-18, Specifications for Repair of Structural Concrete in Buildings](#)
- [MNL-3\(20\) Guide to the Code for Assessment, Repair, and Rehabilitation of Existing Concrete Structures](#)

These resources are readily available to provide greater understanding of assessment, repair, and rehabilitation of concrete structural elements. ACI MNL-3 provides case studies demonstrating the ease of use of ACI 562. Numerous technical notes, reports, guides, and specifications that provide background information and technical support are available through other organizations, such as American Society of Civil Engineers, British Research Establishment, Concrete Society, International Concrete Repair Institute, National Association of Corrosion Engineers, Post-Tensioning Institute, Society for Protective Coatings, and US Army Corps of Engineers. Many of these organizations' publications related to concrete repair can be found in the Concrete Repair Manual.

Estimated impact on life safety – Structural failure, spalling concrete, and failure of connections and anchors all pose a life safety threat to the public. This code will provide minimum requirements for assessment, repair, and rehabilitation of existing structural concrete buildings, members, systems and where applicable, nonbuilding structures, thus having a positive impact on satisfying the intent of the code.

Estimated impact on cost - The use of this referenced standard should in many cases reduce the cost of repair. Too often in the process of repair, there is insufficient information to determine acceptance criteria that is amicable to both the owner and the building code official. The result is the determination that the repair must meet the latest building code requirements for new construction. This standard increases the options available for repair and provides the acceptance criteria necessary to permit these options. A case study that illustrates this point: "ACI 562 has been referenced in expert reports for litigation cases, resulting in significantly reduced financial settlements. Denver-based J. R. Harris & Company recently used the code as a standard in several litigation reports assessing damages in existing concrete structures. As an approved consensus standard, according to American National Standards Institute (ANSI) procedures, ACI 562-13 has been accepted as the source standard to use for damage assessment and repair on individual projects by Greenwood Village and Pikes Peak Regional Building Departments in Colorado. Based on this acceptance, the consulting engineer was able to cite the code in their recommendation for structural remediation and determination of damages. In one case involving rehabilitation work on four buildings with faulty construction, J.R. Harris was able to reduce the repair costs from \$12 million to \$3 million, with a repair plan based on the lesser of the demand-capacity ratio based on either the original or current building code per ACI 562."

Resiliency – This proposal will increase Resiliency. Use of the ACI 562 standard helps ensure that repairs are properly performed and will satisfy an acceptable service life. Without minimum standards, repairs may not satisfy the intent of the code or the expectations of the owners or public. Proper evaluation and repairs will improve resiliency of the building. News coverage demonstrates the potential risk to life safety due to deteriorating concrete and inappropriate repairs. A [news investigation](#) of parking structures in the City of Pittsburgh, PA is an example of such coverage.

Sustainability - Reference of ACI 562 in the *South Carolina Building Code* will help improve the confidence of owners, builders, and developers regarding effective repairs, upgrades, and reuse of existing buildings in lieu of demolition and replacement. Typically, extending the life of existing buildings is substantially more sustainable than demolition and new construction. Adoption of ACI 562 by reference is needed to help facilitate efforts that conserve energy and resources while maintaining a minimum level of requirements to ensure reasonable levels of life safety, and welfare are afforded to the public.

ACI 562 is already being used in several major jurisdictions:

[City of Los Angeles, California](#)

[Florida](#)

[Hawaii](#)

[New York City](#)

[Ohio](#)



**APPLIED
BUILDING
SCIENCES**

Date: June 17, 2021

South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
110 Centerview Dr.
Columbia, SC 29210

Subject: Support for Adoption by Reference of ACI 562 in the South
Carolina Building Code

SC Building Codes Council Members:

This letter is in support of approval of adoption by reference of ACI 562 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* in the South Carolina State Building Code as presented in the code change proposal submitted by the American Concrete Institute.

Applied Building Sciences is directly involved in the design of repairs of concrete buildings. Applied Building Sciences, located in North Charleston, SC employs 24 South Carolinians and directly contributes in sales and taxes to the South Carolina economy.

We find that it is increasingly more important to establish minimum requirements for evaluation, repair, and rehabilitation of structural concrete in existing buildings undergoing alternations, additions, renovations, or changes in occupancy to safeguard the public and minimize disruption of businesses. The requirements provided in ACI 562 improve the clarity of expectations by owners, designers, contractors, officials, material providers, and other relevant parties regarding repairs and rehabilitation of structural concrete and, where appropriate, provide a benchmark for use by building officials responsible for approving other means and methods.

Helping to assure that delivery of products and services are consistent with the expectations of all parties involved saves costs associated with unnecessary direct costs and indirect costs associated with due to construction delays when there are discrepancies in the various expectations.

Adoption by reference of ACI 562 helps ensure minimum levels of life safety, health and general welfare are being provided for the public. In addition, adoption of ACI 562 will improve the confidence for building owners, developers, and officials regarding the extended life and re-use of concrete buildings. This is not only important for the specific project but also is typically more sustainable than demolition and replacement.

The use of ACI 562 provides an increased level of anticipated outcome associated with repairs and rehabilitation regarding the ability to satisfy the intent of the code and provides information that can facilitate the efforts of officials involved in the project. Where repairs meet minimum



requirements for life safety, for businesses will have increased confidence that they may be able to safely operate with less frequent interruptions while remaining in or relocating to existing buildings.

Other jurisdictions have adopted ACI 562. ACI 562 has been adopted in Hawaii, Ohio, and Florida. It is also referenced by the New York City building department and the City of Los Angeles building department.

While this proposal simply establishes a minimum level of expected performance of structural concrete for a design service life specified for the project, the change does not specify a design service life. Selection of a design service life continues to reside with the owners, owner's representatives, and where applicable, officials of the authority having jurisdiction. Also, the proposal is permissive and does not exclude other means and methods approved by the building official.

We have reviewed the code change proposal submitted by ACI and recommend the code change proposal be approved as submitted. We believe that this addition to the SC State Building Code will help ensure repairs to structural concrete will satisfy the intent of the code, result in affordable repairs with reasonable minimum levels of life safety, and support business operations with minimal disruption. The latter is important, not just for business operations, but also to maintain a consistent flow of revenue to the state resulting from these businesses.

Thank you in advance for your consideration of this recommendation.

Sincerely,

APPLIED BUILDING SCIENCES, INC.



Al Schweickhardt, PE, SE



June 11, 2021



cvm

**South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
110 Centerview Dr.
Columbia, SC 29210**

RE: Letter in Support of Proposal to Adopt ACI 562-19 by Reference

Dear SC Building Codes Council Members,

I am writing this letter in support of the proposal to allow use of ACI 562-19 into the South Carolina State Building Code as presented in the code-change proposal submitted by the American Concrete Institute. As the chair of the ACI 562 committee that developed ACI 562-19, I strongly believe that design professionals in South Carolina will benefit from the use of ACI 562-19. I have worked on numerous evaluation and repair projects in South Carolina and am familiar with the challenges of working on existing structures in an area with significant coastal exposure conditions. ACI 562-19, and the documents developed that support the standard are important tools for design professionals working on these types of structures.

When I began my career as a civil/structural engineer, it was never my intention to become the chair of a committee responsible for the development of an ACI Standard. I initially got involved with the American Concrete Institute to improve my technical knowledge related to repair and rehabilitation of existing structures. Hearing, and witnessing the variations in repair practice, I soon recognized a need for minimum standards for the repair and rehabilitation of existing concrete structures.

The ACI 562-19 Standard provides code minimum requirements for evaluation of existing structures and provisions that will improve the repair design practice, and the durability and reliability of repaired structures. These requirements have the potential to improve repair practice and decrease the likelihood of repair failure. Further, by encouraging evaluation of existing structures, use of ACI 562-19 on concrete repair projects will potentially reduce repair scope uncertainty. Repair failure and changes in scope are major sources of cost uncertainty.

In my opinion, use of ACI 562-19 will be cost-neutral or potentially reduce the total cost of concrete repairs. In examining the cost of concrete repairs, the greatest risk to the owner is having to re-repair a structure due to a repair failure. ACI 562-19 implementation has the potential to mitigate the widespread premature failure of repairs. Use of ACI 562-19 for repair also provides design professionals a standard to follow, potentially allowing existing structures to be repaired rather than replaced.

Please feel free to contact me if you have any comments regarding the material discussed in this letter.

Sincerely,

A handwritten signature in blue ink that reads "Keith Kesner".

Keith Kesner, PhD, PE, SE, FACI
Chair ACI 562-19
Senior Project Manager – CVM





CONCRETE REPAIR
Restore | Repurpose | Renew

June 13, 2021

South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Code Council
110 Centerview Drive
Columbia, SC 29210

RE: Support for Adoption by Reference of ACI 562
in the South Carolina Building Code

Dear SC Building Code Council Members:

Please accept this letter of recommendation from the International Concrete Repair Institute (ICRI) Carolinas Board of Directors for approval of adoption of ACI 562 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* into the South Carolina State Building Code as presented in the building code change proposal submitted by the American Concrete Institute (ACI).

We find that it is imperative to establish minimum requirements for the evaluation, repair, and rehabilitation of structural concrete in existing buildings to ensure the public's health, safety, and welfare. The ACI 562 Code provides clarity and direction to design professionals, contractors, materials manufacturers, and testing agencies. ACI 562, written and maintained by industry experts, will help the design professionals and contractors improve the design and execution of concrete repairs. Adopting ACI 562 will ultimately deliver safer structures and reduce the life cycle cost of concrete structures and minimize disruption to businesses.

ICRI is the only non-profit organization that is dedicated solely to the repair of concrete structures. ICRI has over 2500 members and 39 local chapters across the United States and Canada, with a local chapter in South Carolina. The ICRI Carolinas chapter members include South Carolina registered Professional Engineers, contractors, technicians, materials manufacturers, and material distributors. We are dedicated to improving the quality of concrete restoration, repair, and protection, through education and communication among the members and those who use their services.

Other states and jurisdictions have supported the ACI 562 code and adopted it. The ICRI Carolinas Chapter recommends that the State of South Carolina also realize the benefit of this code and adopt the proposed code change to the South Carolina State Building Code.

If you have any questions, feel free to contact us at your convenience.

Respectively submitted,
ICRI Carolinas Chapter Board

A handwritten signature in blue ink that reads "Courtney S. Green".

Courtney S. Green, P.E.
President, ICRI Carolinas Chapter



William Brickey, P.E.
Vice-President, ICRI Carolinas Chapter





CONCRETE REPAIR
Restore | Repurpose | Renew

June 9, 2021

South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
110 Centerview Dr.
Columbia, SC 29210

RE: Support for Adoption by Reference of ACI 562
in the South Carolina Building Code

SC Building Codes Council Members:

I am writing this letter as President of the International Concrete Repair Institute (ICRI) in support of approval of adoption by reference of ACI 562-19 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* into the *South Carolina Building Code* as presented in the code change proposal submitted by the American Concrete Institute (ACI).

ICRI is the only non-profit organization that is dedicated solely to the repair of concrete structures. ICRI has over 2500 members and 38 local chapters across the United States and Canada, with a local chapter serving South Carolina.

For the past 33 years, ICRI has developed and promoted best practices for concrete repair and has developed consensus document guidelines for the repair of deteriorated concrete structures. These guidelines have been published and used to result in more durable concrete repairs. It has been proven that poor performance of concrete repairs is a serious issue in the industry, and improvements are needed in concrete repair practices. Several studies indicate that **less than 50%** of concrete repairs perform satisfactorily, posing a significant danger to the health, safety and welfare of the public. This is a tremendous burden on owners, municipalities and the economy.

As a repair industry professional and the President of an organization that represents contractors, design professionals and material manufacturers that are involved in the repair of existing concrete buildings, both I and ICRI as an organization recognize the need for standards that will help design professionals and contractors improve the design, implementation and performance of concrete repairs.

The ACI 562-19 code provides minimal requirements for assessment, design and construction, and implementation of repairs and rehabilitation, including quality assurance requirements, for structural concrete **in service**. ACI 562 encourages evaluation of the structure, and a better evaluated structure is potentially less risky to repair. ACI 562 also requires consideration of durability in design, likely leading to better repair performance and less premature repair failure.



The concrete repair industry utilizes many unique repair strategies. The Code provides latitude and flexibility to the licensed design professional to prepare a design to address the specific issues encountered on an existing building while still meeting the requirements of ACI 562. The ACI 562 code will serve to unify and strengthen concrete evaluation, repair, and rehabilitation projects while accommodating the diverse and unique repair strategies and materials used in the repair industry, making existing structures safer. All of these goals are consistent with the mission of ICRI.

In examining the cost of concrete repairs, the greatest cost to the owner is having to remove and replace previous repairs to a structure due to premature repair failure. I believe the adoption of the ACI 562-19 code has the potential to significantly reduce the long-term life cycle cost of maintaining a structure. I also believe it will provide safer structures with minimal impact on initial cost of repairs.

Any standard that improves the quality of the completed repair work will be a welcome addition to the building code and the concrete repair industry. Use of ACI 562 also contributes to increased sustainability, increasing the probability that a concrete structure will be restored rather than demolished and replaced.

Many leaders in the repair industry support the ACI 562 code and other states, including Hawaii, Ohio and Florida, and jurisdictions have already adopted it. It is also referenced by the New York City building department. This code complements the *South Carolina Building Code* by providing specific direction on how to evaluate and design concrete repairs and how to address the unique construction methods and issues associated with repair. In addition, ACI 562 provides building code officials with a means to evaluate rehabilitation designs.

On behalf of the Board of Directors and members of ICRI, I recommend and hope that South Carolina will also realize the benefit of this code and adopt the code change proposal into the South Carolina Building Code.

If you have any questions regarding my comments or would like to discuss my viewpoints in more detail, please feel free to contact me at your convenience.

Thank you in advance for your time and consideration of this recommendation for support of the proposed code change.

Sincerely,



Elena Kessi
2021 ICRI President





June 10, 2021

Subject: Support for Adoption by Reference
of ACI 562 in the South Carolina
Construction Codes

South Carolina Construction Codes Coordinating Board Members:

This letter is in support of approval of adoption by reference of ACI 562 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* in *South Carolina Construction Codes* as presented in the code change proposal submitted by the American Concrete Institute and its industry partners.

NDT Corporation performs investigations of post-tensioned concrete structures and recommends the adoption of the repair code to help standard expectations and requirements for the repair of concrete structures.

We find that it is increasingly more important to establish minimum requirements for evaluation, repair, and rehabilitation of structural concrete in existing buildings undergoing alternations, additions, renovations, or changes in occupancy to safeguard the public and minimize disruption of businesses. The requirements provided in ACI 562 improve the clarity of expectations by owners, designers, contractors, officials, material providers, and other relevant parties regarding repairs and rehabilitation of structural concrete and, where appropriate, provide a benchmark for use by building officials responsible for approving other means and methods.

Helping to assure that delivery of products and services are consistent with the expectations of all parties involved saves costs associated with unnecessary direct costs and indirect costs associated with due to construction delays when there are discrepancies in the various expectations.

Adoption by reference of ACI 562 helps ensure minimum levels of life safety, health and general welfare are being provided for the public. In addition, adoption of ACI 562 will improve the confidence for building owners, developers, and officials regarding the extended life and re-use of concrete buildings. This is not only important for the specific project but also is typically more sustainable than demolition and replacement.

The use of ACI 562 provides an increased level of anticipated outcome associated with repairs and rehabilitation regarding the ability to satisfy the intent of the code and provides information that can facilitate the efforts of officials involved in the project. Where repairs meet minimum requirements for life safety, for businesses will have increased confidence that they may be able to safely operate with less frequent interruptions while remaining in or relocating to existing buildings.

We Save Structures™

Other jurisdictions have adopted ACI 562. ACI 562 has been adopted in Hawaii, Ohio, Florida. It is also referenced by the New York City building department.

While this proposal simply establishes a minimum level of expected performance of structural concrete for a design service life specified for the project, the change does not specify a design service life. Selection of a design service life continues to reside with the owners, owner's representatives, and where applicable, officials of the authority having jurisdiction. Also, the proposal is permissive and does not exclude other means and methods approved by the building official.

We have reviewed the code change proposal submitted by ACI and recommend the code change proposal be approved as submitted. We believe that this addition to the South Carolina Construction Codes will help ensure repairs to structural concrete will satisfy the intent of the code, result in affordable repairs with reasonable minimum levels of life safety, and support business operations with minimal disruption. The latter is important, not just for business operations, but also to maintain a consistent flow of revenue to the state resulting from these businesses.

Thank you in advance for your consideration of this recommendation.

Sincerely,

Bill Horne
President
NDT Corporation



June 23, 2021

South Carolina Building Codes Council
110 Centerview Dr.
Columbia, SC 29210

Attention: SC Building Code Council Members

Reference: Letter of Support for Inclusion of ACI 562 into the SC Building Code

Dear SC Building Code Council Members:

Please accept this letter of endorsement for incorporation of *ACI 562-19, Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures and Commentary* into the *South Carolina Building Code* by reference.

SKA Consulting Engineers, Inc. was established in 1957 with its corporate office in Greensboro, NC and satellite offices in Wilmington, Asheville, Charlotte, Charleston (SC) and Charlottesville (VA). We have experience in new structural design, structural repair and rehabilitation, strengthening, materials evaluations, corrosion mitigation and protective coatings for coastal and inland structures, both historical and contemporary. Although we are not members of the ACI 562 committee that developed this code, SKA has engineers that actively participate in committees and initiatives by professional organizations on the local and/or national level such as American Concrete Institute (ACI), Structural Engineers Association (SEA), American Society for Civil Engineers (ASCE), National Association for Corrosion Engineers / Association for Materials Protection and Performance (NACE / AMPP), Post-Tensioning Institute (PTI), and International Concrete Repair Institute (ICRI).

As structural engineers that practice regularly in the State of South Carolina, we have conducted numerous structural and durability assessments of concrete structures and have been involved in numerous structural concrete repair and rehabilitation projects throughout our history. A considerable number of these repair projects have included severe deterioration requiring shoring, immediate removal of dangerous spalling hazards, and inadequately performing previous repairs.

This code (ACI 562-19) provides useful direction tailored for structural concrete above that provided in the current Existing Building Code for practicing engineers. In our opinion, it will significantly improve the industry standard, leading to more predictable, standardized and sustainable concrete repair and rehabilitation projects. We, as a company and individually as signed below, fully support the incorporation of ACI 562-19 into the South Carolina Building Code for use on existing structures, see the benefits of incorporation and would be willing to discuss our opinions or assist with the adoption process if desired.

Stephen P. Robinson, PE
President

Aaron B. Bopp, PE
Executive VP

Timothy E. Cook, PE
Principal Engineer

David G. Tepke, PE
Senior Engineer

John R. Mancuso, PE
Senior Engineer

QUALITY. INTEGRITY. INNOVATION.

**VECTOR CONSTRUCTION INC.**

June 10, 2021

Subject: Support for Adoption by Reference
of ACI 562 in South Carolina
Construction Codes

South Carolina Construction Codes Coordinating Board Members:

This letter is in support of approval of adoption by reference of ACI 562 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures in South Carolina Construction Codes* as presented in the code change proposal submitted by the American Concrete Institute and its industry partners.

As a concrete repair contractor, Vector Construction Inc. recommends the adoption of the repair code to help standardize expectations and requirements for the repair of concrete structures. This will lead to better quality and longer lasting repairs and ultimately extend the life of existing buildings.

We find that it is increasingly more important to establish minimum requirements for evaluation, repair, and rehabilitation of structural concrete in existing buildings undergoing alternations, additions, renovations, or changes in occupancy to safeguard the public and minimize disruption of businesses. The requirements provided in ACI 562 improve the clarity of expectations by owners, designers, contractors, officials, material providers, and other relevant parties regarding repairs and rehabilitation of structural concrete and, where appropriate, provide a benchmark for use by building officials responsible for approving other means and methods.

Helping to assure that delivery of products and services are consistent with the expectations of all parties involved saves costs associated with unnecessary direct costs and indirect costs associated with due to construction delays when there are discrepancies in the various expectations.

Adoption by reference of ACI 562 helps ensure minimum levels of life safety, health and general welfare are being provided for the public. In addition, adoption of ACI 562 will improve the confidence for building owners, developers, and officials regarding the extended life and re-use of concrete buildings. This is not only important for the specific project but also is typically more sustainable than demolition and replacement.

The use of ACI 562 provides an increased level of anticipated outcome associated with repairs and rehabilitation regarding the ability to satisfy the intent of the code and provides information that can facilitate the efforts of officials involved in the project. Where repairs meet minimum requirements for life safety, for businesses will have increased confidence that they may be able to safely operate with less frequent interruptions while remaining in or relocating to existing buildings.

We Save Structures™

Other jurisdictions have adopted ACI 562. ACI 562 has been adopted in Hawaii, Ohio, and Florida. It is also referenced by the New York City building department.

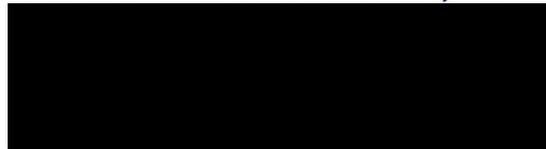
While this proposal simply establishes a minimum level of expected performance of structural concrete for a design service life specified for the project, the change does not specify a design service life. Selection of a design service life continues to reside with the owners, owner's representatives, and where applicable, officials of the authority having jurisdiction. Also, the proposal is permissive and does not exclude other means and methods approved by the building official.

We have reviewed the code change proposal submitted by ACI and recommend the code change proposal be approved as submitted. We believe that this addition to the South Carolina Construction Codes will help ensure repairs to structural concrete will satisfy the intent of the code, result in affordable repairs with reasonable minimum levels of life safety, and support business operations with minimal disruption. The latter is important, not just for business operations, but also to maintain a consistent flow of revenue to the state resulting from these businesses.

Thank you in advance for your consideration of this recommendation.

Sincerely,

Devon Simpson
VP US Construction Operations
Vector Construction Inc.

**VECTOR CORROSION SERVICES, INC.**

June 10, 2021

Subject: Support for Adoption by Reference
of ACI 562 in South Carolina
Construction Codes

South Carolina Construction Codes Coordinating Board Members:

This letter is in support of approval of adoption by reference of ACI 562 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* in the *District of Columbia Construction Codes* as presented in the code change proposal submitted by the American Concrete Institute and its industry partners.

VCS performs investigations and evaluations of reinforced concrete structures. Clearer requirements for investigation are outlined in the code which will improve quality and improve the industry.

We find that it is increasingly more important to establish minimum requirements for evaluation, repair, and rehabilitation of structural concrete in existing buildings undergoing alternations, additions, renovations, or changes in occupancy to safeguard the public and minimize disruption of businesses. The requirements provided in ACI 562 improve the clarity of expectations by owners, designers, contractors, officials, material providers, and other relevant parties regarding repairs and rehabilitation of structural concrete and, where appropriate, provide a benchmark for use by building officials responsible for approving other means and methods.

Helping to assure that delivery of products and services are consistent with the expectations of all parties involved saves costs associated with unnecessary direct costs and indirect costs associated with due to construction delays when there are discrepancies in the various expectations.

Adoption by reference of ACI 562 helps ensure minimum levels of life safety, health and general welfare are being provided for the public. In addition, adoption of ACI 562 will improve the confidence for building owners, developers, and officials regarding the extended life and re-use of concrete buildings. This is not only important for the specific project but also is typically more sustainable than demolition and replacement.

The use of ACI 562 provides an increased level of anticipated outcome associated with repairs and rehabilitation regarding the ability to satisfy the intent of the code and provides information that can facilitate the efforts of officials involved in the project. Where repairs meet minimum requirements for life safety, for businesses will have increased confidence that they may be able to safely operate with less frequent interruptions while remaining in or relocating to existing buildings.

We Save Structures™

Other jurisdictions have adopted ACI 562. ACI 562 has been adopted in Hawaii, Ohio, and Florida. It is also referenced by the New York City building department.

While this proposal simply establishes a minimum level of expected performance of structural concrete for a design service life specified for the project, the change does not specify a design service life. Selection of a design service life continues to reside with the owners, owner's representatives, and where applicable, officials of the authority having jurisdiction. Also, the proposal is permissive and does not exclude other means and methods approved by the building official.

We have reviewed the code change proposal submitted by ACI and recommend the code change proposal be approved as submitted. We believe that this addition to the South Carolina Construction Codes will help ensure repairs to structural concrete will satisfy the intent of the code, result in affordable repairs with reasonable minimum levels of life safety, and support business operations with minimal disruption. The latter is important, not just for business operations, but also to maintain a consistent flow of revenue to the state resulting from these businesses.

Thank you in advance for your consideration of this recommendation.

Sincerely,

Matt Miltenberger
President
VCS Inc.

**VECTOR CORROSION TECHNOLOGIES, INC.**

June 10, 2021

Subject: Support for Adoption by Reference
of ACI 562 in South Carolina
Codes

South Carolina Construction Codes Coordinating Board Members:

This letter is in support of approval of adoption by reference of ACI 562 *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures* in the *District of Columbia Construction Codes* as presented in the code change proposal submitted by the American Concrete Institute and its industry partners.

Vector Corrosion Technologies Inc. is a supplier of corrosion protection products to the concrete repair industry.

We find that it is increasingly more important to establish minimum requirements for evaluation, repair, and rehabilitation of structural concrete in existing buildings undergoing alternations, additions, renovations, or changes in occupancy to safeguard the public and minimize disruption of businesses. The requirements provided in ACI 562 improve the clarity of expectations by owners, designers, contractors, officials, material providers, and other relevant parties regarding repairs and rehabilitation of structural concrete and, where appropriate, provide a benchmark for use by building officials responsible for approving other means and methods.

Helping to assure that delivery of products and services are consistent with the expectations of all parties involved saves costs associated with unnecessary direct costs and indirect costs associated with due to construction delays when there are discrepancies in the various expectations.

Adoption by reference of ACI 562 helps ensure minimum levels of life safety, health and general welfare are being provided for the public. In addition, adoption of ACI 562 will improve the confidence for building owners, developers, and officials regarding the extended life and re-use of concrete buildings. This is not only important for the specific project but also is typically more sustainable than demolition and replacement.

The use of ACI 562 provides an increased level of anticipated outcome associated with repairs and rehabilitation regarding the ability to satisfy the intent of the code and provides information that can facilitate the efforts of officials involved in the project. Where repairs meet minimum requirements for life safety, for businesses will have increased confidence that they may be able to safely operate with less frequent interruptions while remaining in or relocating to existing buildings.

We Save Structures™

Other jurisdictions have adopted ACI 562. ACI 562 has been adopted in Hawaii, Ohio, and Florida. It is also referenced by the New York City building department.

While this proposal simply establishes a minimum level of expected performance of structural concrete for a design service life specified for the project, the change does not specify a design service life. Selection of a design service life continues to reside with the owners, owner's representatives, and where applicable, officials of the authority having jurisdiction. Also, the proposal is permissive and does not exclude other means and methods approved by the building official.

We have reviewed the code change proposal submitted by ACI and recommend the code change proposal be approved as submitted. We believe that this addition to the South Carolina Construction Codes will help ensure repairs to structural concrete will satisfy the intent of the code, result in affordable repairs with reasonable minimum levels of life safety, and support business operations with minimal disruption. The latter is important, not just for business operations, but also to maintain a consistent flow of revenue to the state resulting from these businesses.

Thank you in advance for your consideration of this recommendation.

Sincerely,

David Whitmore
President
Vector Corrosion Technologies Inc.

ATTACHMENT 2

SC Building Code
Chapter 1 - Scope and Administration
Part 1 - Scope and Application
Section 101 - General

[A] 101.4.6 Energy.

The provisions of the *International Energy Conservation Code* shall apply to all matters governing the design and construction of buildings for energy efficiency.

[A] 101.4.7 Existing buildings.

The provisions of the *South Carolina Existing Building Code shall apply to matters* governing the *repair, alteration, change of occupancy, addition* to and relocation of existing buildings.

SECTION 102 APPLICABILITY

[A] 102.1 General.

Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

[A] 102.2 Other laws.

The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

FEEDBACK

LIVE CHAT





CAROLINAS CHAPTER

June 25, 2021

To: South Carolina Building Code Council
110 Centerview Drive
Columbia, South Carolina 29210

Attn: South Carolina Building Code Council Members

Dear Council Members:

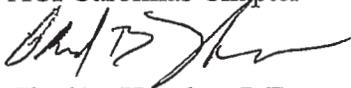
Please accept this letter of endorsement from the ACI Carolinas Chapter for incorporation of ACI 562-19, *Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures and Commentary* into requirements of the South Carolina Building Code by reference for use on existing structures. Suitable repair and rehabilitation of existing concrete structures is imperative for the safety, environmental sustainability and economic viability of our communities. This not only includes communities in severe coastal environments susceptible to known rapid and often severe deterioration, but also other communities where typical environmental conditions can result in eventual and progressive deterioration of aging or historical structures, or where defects may be present in more contemporary structures. ACI 562 provides substantial and important information for providing industry standard repairs, supplementing the Existing Building Code and achieving the above-mentioned objectives throughout the state.

The Board of Directors for ACI Carolinas Chapter making this endorsement is comprised of Professional Engineers registered in the State of South Carolina, and those that provide services related to design, construction, repair and rehabilitation, education, materials production, and testing for concrete and other building materials in the State of South Carolina. We believe that ACI 562, written and maintained by industry experts, provides fundamental and important direction for practicing engineers in the interest of safe repair and rehabilitation of existing concrete structures.

ACI Carolinas Chapter is a separate legal entity from ACI International and was formed in 1975. Among its purposes are the active involvement in disseminating technical and educational information for advancing the knowledge-base and ability of local Engineers, Architects, Producers, Contractors, Material Suppliers, Testing Agencies, Students, Educators, Agencies and others for the safe and durable construction and repair of concrete structures.

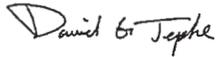
Please let me know if we can be of further assistance.

Respectfully submitted,
ACI Carolinas Chapter



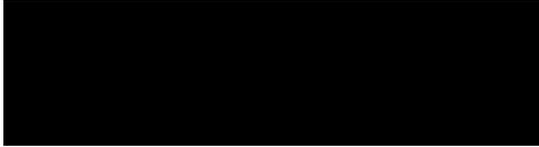
Chad B. Hensley, P.E.
President

**with*



David G. Tepke, P.E., FACI – Primary Author
Director

ACI CAROLINAS CHAPTER





2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

2021 Code Section: 202 ~~Chapter-2~~ Definitions

Modification: New

Vapor Retarder, Ground Contact: Ground contact vapor retarder class shall be defined using the requirements of ASTM E1745, Class A, B, or C-Standard specification for water vapor retarders used in contact with soil or granular fill under concrete slabs.

Primitive Camp Structure: Shall include any structure permanent or temporary in nature, used for outdoor camping (transient), open on at least one side with no fully enclosed habitable spaces, less than 400 square feet under roof, and not classified as a residential occupancy due to lack of electrical, plumbing, mechanical and sprinkler systems.

Reason: N/A

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 01	202

Comments: See clerical correction above.

7/27 Study Committee Recommendation: Support approval with clerical correction above.



South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
 110 Centerview Dr • Columbia • SC • 29210
 P.O. Box 11329 • Columbia • SC • 29211-1329
 Phone: 803-896-4688 • contact.bcc@llr.sc.gov • Fax: 803-896-4814
 llr.sc.gov/bcc

2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
- Each request for code modification must be submitted separately.
- A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
- Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
- For local modification requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
- A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
- **A completed modification request must be received with all required documentation before it will be reviewed.**

Statewide Modification

Local Modification: _____
 (List all jurisdictions that apply.)

Association/Jurisdiction: Home Builders Association of South Carolina

Address: _____

Name: Mark Nix Title/Position: Executive Director

Phone No.: _____

Please select the applicable code to be modified:

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: SECTION 202, 311.2.1, 312.1, 312.3, 412.3, 412.4, 412.4.3-.7

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

See attached

9/28 Study Committee Recommendation: Do not support approval

In 200 characters or less, please briefly describe the justification for this modification request.

See attached

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information in the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
Mark Nix	Executive Director	HBA of SC		
Andy Barber	HBASC Codes Chairman	HBA of SC		
Ronald Heiderbrink		Myrtle Beach Hardee Airpark		

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature: Mark Nix Date: 9/17/2021

Title: Executive Director

[BG] RESIDENTIAL AIRCRAFT HANGAR. ~~An accessory building less than 2,000 square feet (186 m²) and 20 feet (6096 mm) in building height constructed on a one or two family property where aircraft are stored. A building or portion of a building where aircraft that are used by the owner or tenants of the building or buildings are stored or kept without provisions for repairing or servicing such aircraft for profit. Such use will be considered as a residential accessory use incidental to the dwelling.~~

311.2.1 Aircraft hangars. ~~Aircraft hangars, other than residential aircraft hangars, used for storage or repair shall comply with Section 412.3.~~

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

- *Agricultural buildings*
- ~~Aircraft~~ *Residential aircraft hangars* accessory to a one or two family residence (see Section 412.4)
- Barns
- Carports
- Communication equipment structures with a gross floor area of less than 1,500 square feet (139 m²)
- Fences more than 7 feet (2134 mm) in height
- Grain silos, accessory to a residential occupancy
- Livestock shelters
- *Private garages*
- Retaining walls
- Sheds
- Stables
- Tanks
- Towers

312.3 Residential aircraft hangars. ~~Aircraft~~ *Residential aircraft hangars* accessory to a one or two family residence shall comply with Section 412. 4.

412.4 Residential aircraft hangars. *Residential aircraft hangars* shall comply with Sections 412.4.1 through ~~412.4.5~~ 412.4.7.

Exception: Detached residential aircraft hangars with a fire separation distance of 5 feet (1524 mm) or greater shall not be required to have a fire-resistance rating.

(F) 412.4.3 Smoke or Heat Detector alarms. *Smoke or Heat Detector alarms* shall be provided within the hangar in accordance with Section ~~907.2.22~~ 907.2.21.

412.4.4 Independent systems.

Exception: *Smoke or Heat detector* wiring and feed for electrical subpanels in the hangar.

412.4.5 Height and area limits. *Residential aircraft hangars* shall be not greater than ~~2,000~~ 5,000 square feet (~~186~~ 465 m²) in area and ~~20~~ 28 feet (8534 mm) in *building height*.

412.4.6 Residential Aircraft Lots Residential Aircraft Hangars can be grouped on lots on or near runway of airport.

412.4.7 Classification. Residential aircraft hangars shall be classified as Group U occupancies. Aircraft in the residential aircraft hangar shall be limited to aircraft weighing 6,000 gross pounds or less.

Reason Statement: The purpose of this modification is to allow for personal small aircraft hangars to be considered Group U and not have to be on the same property as a house. Instead they will be limited by airplane size. This should be similar to a detached garage. A small airplane hangar is less dangerous than a private garage. Airplanes have safety requirements from the **FAA** for inspections to make sure engines, props and airframe are maintained. All aircraft have logbooks to document inspections and repairs. Log books are official FAA documents for the lifetime of the aircraft. Airplanes have regulations for construction out of flame resistant or non-combustible materials.

The current definition includes the size of the hangar. This is addressed in the revised Section 412.4.5, which is revised for the new size - 5,000 sq. ft. or less. 28 feet in height maximum. This size is below the sprinkler thresholds for larger hangars in Table 412.3.6. footnote a.

2000 square feet is not enough room to store today's aircraft. This is only large enough for one small personal plane with no extra space. You would not limit a home owner to a single car garage. I own 3 aircraft and they need to be stored, no different than my neighbor who collects Ford Mustangs and uses a large Group U barn to store them. Another reason for the increase in size is the necessity for the width of a door for certain aircraft. Gliders and some aircraft have a very large wing span. The doors need to be at least 4 feet wider than the wing spans. High wind resistant buildings need more width to get designed strength to support door opening.

Section 412.3 is applicable to all aircraft hangars for the storage and repair of planes of all sizes. Section 412.4 is applicable to residential aircraft hangars. The references in Section 311.2, 322.2.1, 312.1, and 312.3 should use the defined terms and allow the sections to define the criteria.

Section 412.3 - This is just restating the Group S-1 for this type of facility. This will also help differentiate the requirements from the much larger hangars from the hangars for the smallest aircraft.

Section 412.4 just allows a residential airplane hangar to comply with the specific provisions,

Section 412.4.1 Classification is restating the occupancy and then setting the limit on the plane size stored there. Examples are:

Stearman Biplane from 1934 to 1945



Stearman



Stemme S10 Glider

Stemme S10 Glider 75 feet Wingspan 1986

The sections are reordered to put the area limitations behind the classification systems, and group the fire separation and smoke or heat detector alarms together. There are separate proposals related to the size and separation requirements.

Most airplane storage is not on the same lot as a house. Airports may restrict only hangars near the runway.

In 1955, only a few privately owned airports were in existence. Today, over 600 are in USA. It is time to address the outdated codes on small Hangars and residential airports. Pilots and Aircraft Owners are a very large group. EAA (Experimental Aircraft Association)

And AOPA (Aircraft Owners and Pilots Association) are comprised of over 430,000 members. All 50 States have additional Aircraft related associations.

South Carolina has dozens of these promoting the industry. SCAA in Charleston, S.C. Low Country Aviation Association one of many Flight Schools.

I would believe Boeing would support these changes too. Millions of jobs exist from General Aviation.

We need to clarify the codes for the citizens of South Carolina, but also the AHJ/code enforcement.

In 2005, S.C. had 6 Airparks (aircraft and houses). Today, 2021, there are 14 listed fields.

Each AHJ interprets the current codes differently. One county says aircraft are under Recreational Building Codes, and the next county uses the more restrictive aircraft commercial storage codes as in 412.3.

I am a member of ICCSAFE. The Code Director, Chris Reeves, of ICCSAFE, agrees the current codes need updating. A few states and counties have made some changes.

2,000 square feet will not house today's airplanes. Powered gliders have wing spans over 65 feet wide. A 74 feet wide x 50 feet deep hangar, is 3700 square feet.

Several owners have more than one airplane much like family's having several vehicles, motorcycle, boat, and a RV to store.

A residential lot can have Vehicle parking in hangar, saving the cost of a garage. Owners are passionate about their aircraft and have moved to other states to store their aircraft.

In South Carolina it can take years for hangar storage. Horry County in 2021 has 83 aircraft owners waiting for storage. I estimate over 800 more are looking.

Small aircraft carry an average of 50 gallons, 25 each wing tank. Less than a Motor Home with 100 gallons of Gas or Diesel plus 80-100 gallons of Propane.

And then while stored, they plug their RV into 230 volts, and walk away.

Small Aircraft are much safer to store. Reasons.

1. Master electrical cut off switch. On pilot checklist.
2. Avionics shut off switch. On pilot checklist.
3. Fuel shut off. On pilot checklist.
4. Carry less fuel than Motor Homes. A small pull type camper may carry 2 twenty-pound bottles of Propane.
5. Interior and upholstery are fire resistant.
6. Fueled outside the Hangar.
7. Aircraft Grounded before fueling. No static spark.
8. Fire extinguisher on board.
9. Engine never running inside hangar.
10. There are over 60 Electric powered Aircraft Manufacturers. A list is available.
11. Most small aircraft use Auto Fuel. Jet Fuel is nothing but Kerosene, like home heating oil. A Cessna Skyhawk 172 holds 39 Gallons
12. Entire aircraft inspected every year. Aircraft Logbook entries by trained and licensed aircraft mechanic.
13. Pilot training every 2 years minimum.

Us stats: A. Natural gas is used by 66.7 million homes and 5.4 million businesses. It causes 286 serious explosions, and 15 deaths each year.

B. 5.5 million households use heating oil. (jet fuel, diesel in same family) Average of 250 gallons stored next to the house.

C. NFPA reports 48,530 home heating equipment Fires each year.

I can only find 1 death in any one year that is related to a Aircraft Hangar. This one death may or may not be fire related. Could have fell off a ladder.

The Hangar insurance companies pay out more money for accidental Sprinkler and Foam activations than any fire related instances..

Cost Impact: The code change proposal will decrease the cost of construction allowing residential aircraft hangars to be constructed on **or near** a common runway increase options for small aircraft owners. The criteria is less expensive than the requirements for hangars that could house commercial planes of much larger size.

TABLE 705.5

FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H ⁸	OCCUPANCY GROUP F- 1, M, S-1 ¹	OCCUPANCY GROUP A, B, E, F-2, I, R1, s-2, uh
X<5b	All	3	2	1
5: SX<10	IA, IVA	3	2	1
	Others	2	1	1
10 ≤ X < 30	IA, IB, IVA, IVB ²	2	1	1c
	IIB, VB	1	0	0
	Others	1	1	1c
X ≥ 30	All	0	0	0

For SI: 1 foot= 304.8 mm.

- a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.
- b. See Section 706.1.1 for party walls.
- c. Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.
- d. The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.
- e. For special requirements for Group H occupancies, see Section 415.6.
- f. For special requirements for Group S aircraft hangars, see Section 412.3.1.
- g. Where Table 705.8 permits nonbearing exterior walls with unlimited area of unprotected openings, the required fire-resistance rating for the exterior walls is 0 Hours.
- h. For a building containing only a Group U occupancy private garage, ~~or~~ Carport or residential aircraft hangar, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater.
- i. For a Group R-3 building of Type 11-B or Type V-B construction, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater.

The purpose of this modification is to provide a break for detached residential aircraft hangar exterior walls,

The exception in the new 412.4.1 is only for 'detached' hangars, so this is not the hangar attached to a house. This is similar to a detached garage.

Moving this away from the house will increase resident safety. Residential aircraft hangars with small planes have a low hazard - even lower than private garages for cars given that the hangars are not typically used for the storage of 'extra stuff' you find in many private garages. Aircrafts are required by the FAA to have yearly safety inspections by a certified aircraft mechanic, so the airplanes themselves are safe.

The reference in footnote h of Table 705.5 is correlative.



September 27, 2021

South Carolina Building Codes Council
P.O. Box 11329
110 Centerview Drive
Columbia, SC 29211-1329
Delivered Via Electronic Mail to: contact.bcc@llr.sc.gov

Dear Members of the Building Codes Council,

My name is Hal Hunt. I am the program manager at the National Hangar Insurance Program. I was in the USMC for 20 years as a KC-130 pilot and I'm now in my 19th year here at National Hangar. National Hangar is the largest provider of private airport property insurance in the United States. We specialize in all types and sizes of hangars. We insure close to 30,000 buildings from small personal hangars to large airport terminals. I recently participated in a study conducted by the University of Maryland and provided them with 20 years of claims data. The data provided actually preceded my arrival by 4 years and runs from 1999 to 2019. As indicated by the data, fires in hangars are extremely rare. They made up .005 of our claims or 36 out of 7,087 claims for this timeframe. There are various reasons for this. Typically for a small private hangar there are no ignition sources. One would think that aircraft storage would be high risk for a fire but I've never heard of an aircraft catching on fire and being an ignition source inside a hangar. Not once. As can be seen from the list I provided Mr. Heidebrink, most fires are a result of electrical shorts or human error such as leaving a hot glue gun plugged in, a battery charger on or even emptying an ashtray into a garbage can. Another thing to consider is, individuals involved in aviation are very safety-conscious and their aircraft is their pride and joy. Pilots have high attention to detail and tend to keep their hangars in a high state of repair. Just like their aircraft. Over the years I have been approached numerous times about the building codes required for hangars and the potential fire threat. I believe the data proves that the threat of a fire in a hangar is actually quite low.

Please don't hesitate to call me if you have any additional questions. My number is 918 764-7145.

Hal Hunt

Hal Hunt

LtCol USMC (ret)
Program Manager National Hangar Insurance Program



IBC 2021-3

www.aopa.org

September 17, 2021

South Carolina Building Codes Council
P.O. Box 11329
110 Centerview Dr
Columbia, SC 29211-1329
DELIVERED VIA ELECTRONIC MAIL to: contact.bcc@llr.sc.gov

RE: Aircraft hangar building codes for September 28 meeting

Dear Members of the Building Codes Council,

The Aircraft Owners and Pilots Association (AOPA) is a membership organization comprised of nearly 330,000 aircraft owners, pilots, and people who appreciate the value of general aviation in their communities. On behalf of our members in South Carolina, I am writing to encourage the council to modernize the code to allow for more hangar development in the state.

Aircraft owners are facing a severe shortage of hangars due, in part, to burdensome building codes which have not been tailored to aircraft storage. The current codes are a major driver of costs and must be reviewed. States are beginning to recognize the need for a change. This year, the Pennsylvania legislature introduced a bill to exempt hangars sized less than 12,000 square feet from that state's building codes. The changes being offered by Mr. Heidebrink and the Home Builders Association of South Carolina present an opportunity to review the codes to ensure they fit the actual use of the building.

Aircraft hangars are essential to the aviation ecosystem. With aircraft values higher than ever, owners are highly motivated to protect their aircraft from the elements. Hangars also improve security at airports by discouraging trespassers and preventing theft of aircraft and other equipment. Hangar development at private airports is especially attractive since private airports can offer more favorable terms to the builder than the terms at public airports.

Again, AOPA enthusiastically supports hangar development in South Carolina. Thank you for your consideration of our views on this matter. If I may be of further assistance, please contact me at 202-609-9702 or adam.williams@aopa.org.

Sincerely,

Adam Williams
Manager, Airport Policy

From: [Williams, Adam](#)
To: [Contact.BCC](#); [Molly Price](#); [Maggie Smith](#); [Teresa Martin](#)
Subject: Aircraft hangar building codes for September 28 meeting
Date: Friday, September 17, 2021 3:32:05 PM
Attachments: [image001.png](#)
[AOPA to SC Building Code Council.pdf](#)

---- SCDLLR NOTICE (M365) ----

- **This email is from an external email address. Please use caution when deciding whether to open any attachments or when clicking links.**
- **Personally Identifiable Information (PII) should not be included in e-mail text or attachments. Do not save or transmit PII unencrypted.**

Dear Members of the Building Codes Council,

Please see the attached letter for the public record. The Aircraft Owners and Pilots Association (AOPA) is a membership organization comprised of nearly 330,000 aircraft owners, pilots, and people who appreciate the value of general aviation in their communities. On behalf of our members in South Carolina, I am writing to encourage the council to modernize the code to allow for more hangar development in the state.

Sincerely,

ADAM WILLIAMS

Manager, Airport Policy
Aircraft Owners & Pilots Association



Confidentiality Notice: The information contained in this email and any attachments is intended only for the recipient[s] listed above and may be privileged and confidential. Any dissemination, copying, or use of or reliance upon such information by or to anyone other than the recipient[s] listed above is prohibited. If you have received this message in error, please notify the sender immediately at the email address above and destroy any and all copies of this message.



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-4

2021 Code Section: 303.4 Assembly Group A-3

Modification: New

Add to the listing of A-3 occupancies the following use: Structures, without a commercial kitchen, used in agritourism activity as defined by S.C. Code Ann. 46-53-10(1).

Reason: N/A

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 02	303.4

Comments: No changes in 2021 IBC.

7/27 Study Committee Recommendation: Support approval



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-5

2021 Code Section: 312.1 General

Modification: Added Language

The term “Primitive Camp Structure” is added to the list of examples in this section for Group U.

Reason: N/A

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 03	312.1

Comments: No changes in 2021 IBC.

7/27 Study Committee Recommendation: Support approval

THE
SOUTH CAROLINA MASTER PLUMBERS
ASSOCIATION



September 20, 2021

South Carolina Building Codes Council
PO Box 11329
Columbia, SC 29211-1329

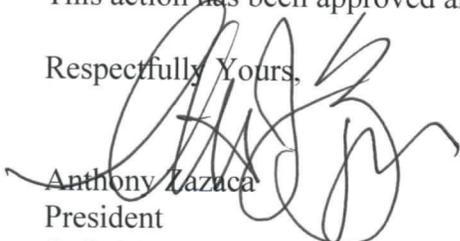
CC: Molly Price - Administrator
Teresa Martin Board Staff, Building Codes

Subject: 2021 Code Modification Association Cover Letter

To Whom It May Concern:

This cover letter is providing verification that SC MPA Code Committee, as represented by Committee Member Charles Stewart and President Anthony Zazaca offers the attached submissions and provides supporting testimony for the proposed modification to the 2021 International Residential Code, as well as the 2021 International Building Code. This action has been approved and authorized by the S.C. Master Plumbers Association.

Respectfully Yours,


Anthony Zazaca
President
S. C. Master Plumbers Association

"The Plumber Protects the Health and Safety of the Nation"

From: [Charles Stewart](#)
To: [Maggie Smith](#)
Cc: [Molly Price](#)
Subject: Re: 2021 IRC and IBC proposed Modifications
Date: Wednesday, September 22, 2021 10:59:58 PM
Attachments: [image003.png](#)

---- SCDLLR NOTICE (M365) ----

- **This email is from an external email address. Please use caution when deciding whether to open any attachments or when clicking links.**
- **Personally Identifiable Information (PII) should not be included in e-mail text or attachments. Do not save or transmit PII unencrypted.**

Greetings

Please use the form we submitted for the cover letter for all the proposals

Please be aware that the code committee, who serves at the will of the majority of the voting membership, has proffered the aforementioned proposals as a result of the majority vote of the membership of the S C MPA..

Thank you

Charles Stewart

On Wed, Sep 22, 2021 at 11:36 AM Maggie Smith <maggie.smith@llr.sc.gov> wrote:

Thank you Mr. Stewart. These requests will be placed on the agenda for the 9/28 Study Committee Meeting. Should I use the cover letter that you submitted in person for each of these requests? Also, can you also confirm that these modification requests have the support of the majority of your members? Please let me know if you have any questions.

Maggie Smith, CBO

SC Building Codes Council

SC Manufactured Housing Board

110 Centerview Dr, Columbia SC 29210 (physical)

PO Box 11329, Columbia SC 29211 (mailing)

Ph: 803-896-4688

Fx: 803-896-4814

Twitter: [@SCDLLR](#)

Facebook: [@SCLLR](#)

Website: www.llr.sc.gov



Making South Carolina a Safe Place to Work and Live

Please click on the link below to complete the Customer Service Satisfaction Survey. It only takes a minute to complete. This will let my supervisor know if you were satisfied or dissatisfied with the service you received from me.

<https://eservice.llr.sc.gov/OnlineSurvey/Home/Index/75>

Confidentiality Note: This e-mail message, including any attachments, contains privileged and confidential information intended only for the use of the individual or entity named above. If the reader of this e-mail message is not the intended recipient or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination or copying of this e-mail message, including attachments, is strictly prohibited. If you have received this e-mail message in error, please notify us immediately by telephone and return the original e-mail message, including attachments, to LLR Communications Office, Post Office Box 11329, Columbia, SC 29211, via the US Postal Service. Thank you.

From: Charles Stewart [REDACTED]
Sent: Wednesday, September 22, 2021 11:30 AM
To: Molly Price <Molly.Price@llr.sc.gov>; Maggie Smith <maggie.smith@llr.sc.gov>
Subject: 2021 IRC and IBC proposed Modifications

---- SCDLLR NOTICE (M365) ----

- This email is from an external email address. Please use caution when deciding whether to open any attachments or when clicking links.**
- Personally Identifiable Information (PII) should not be included in e-mail text or attachments. Do not save or transmit PII unencrypted.**

Greetings

Please dispose of the previous submissions I dropped off yesterday and replace them with these corrected copies

Thanks for your service to the people of SC

Charles Stewart



--

"The Plumber Protects the Health and Safety of the Nation."

SC Master Plumbers Association

--

"The Plumber Protects the Health and Safety of the Nation."

SC Master Plumbers Association



South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
110 Centerview Dr • Columbia • SC • 29210
P.O. Box 11329 • Columbia • SC • 29211-1329
Phone: 803-896-4688 • contact.bcc@llr.sc.gov • Fax: 803-896-4814
llr.sc.gov/bcc

2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
Each request for code modification must be submitted separately.
A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
For local jurisdiction requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
A completed modification request must be received with all required documentation before it will be reviewed.

[X] Statewide Modification

[] Local Modification: (List all jurisdictions that apply.)

Association/Jurisdiction: South Carolina Master Plumbers Association

Address: [Redacted] Charleston, S.C. 29412
City State Zip

Name: Charles Stewart Title/Position: Code Committee Member

Phone No. [Redacted] Email Address: [Redacted]

Please select the applicable code to be modified:

2021 International Building Code [Dropdown arrow]

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: SC IBC 504.3 (Table 504.4 line R-3h S13D Type IV and V const)

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

.Current Language

504.4 Number of Stories

The maximum number of stories of a building shall not exceed the limits specified in Table 504.4.

TABLE 504.4

ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE^{a, b}

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION				
	TYPE I	TYPE II	TYPE III	TYPE IV	TYPE V
R3h S13D	4	4	4	4	4

Proposed Modification

504.4 Number of Stories

The maximum number of stories of a building shall not exceed the limits specified in Table 504.4.

TABLE 504.4

ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE^{a, b}

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION				
	TYPE I	TYPE II	TYPE III	TYPE IV	TYPE V
R3h S13D	4	4	4	(4)	(4)

9/28 Study Committee Recommendation: Do not support approval

In 200 characters or less, please briefly describe the justification for this modification request.

Reason for Modification

1) When properly designed, a 13D system is equally effective with a 13R system to deliver the exact same water flow requirement of NFPA 13R systems (0.5 GPM per sq ft) of coverage area

2) Significant cost savings when 13D is utilized for R-3 residential applications making the systems affordable

3) Maximum building height is already prescribed as 504.3 at 40 feet with no credit for sprinkler

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information in the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
Charles Stewart	Code Committee Member	SC MPA		
Anthony Zazaca	President	SC MPA		

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature:  Date: 9/20/2021

Title: Code Committee Member

From: [Charles Stewart](#)
To: [Maggie Smith](#)
Cc: [Molly Price](#)
Subject: Re: 2021 IRC and IBC proposed Modifications
Date: Wednesday, September 22, 2021 10:59:58 PM
Attachments: [image003.png](#)

---- SCDLLR NOTICE (M365) ----

- **This email is from an external email address. Please use caution when deciding whether to open any attachments or when clicking links.**
- **Personally Identifiable Information (PII) should not be included in e-mail text or attachments. Do not save or transmit PII unencrypted.**

Greetings

Please use the form we submitted for the cover letter for all the proposals

Please be aware that the code committee, who serves at the will of the majority of the voting membership, has proffered the aforementioned proposals as a result of the majority vote of the membership of the S C MPA..

Thank you

Charles Stewart

On Wed, Sep 22, 2021 at 11:36 AM Maggie Smith <maggie.smith@llr.sc.gov> wrote:

Thank you Mr. Stewart. These requests will be placed on the agenda for the 9/28 Study Committee Meeting. Should I use the cover letter that you submitted in person for each of these requests? Also, can you also confirm that these modification requests have the support of the majority of your members? Please let me know if you have any questions.

Maggie Smith, CBO

SC Building Codes Council

SC Manufactured Housing Board

110 Centerview Dr, Columbia SC 29210 (physical)

PO Box 11329, Columbia SC 29211 (mailing)

Ph: 803-896-4688

Fx: 803-896-4814

Twitter: [@SCDLLR](#)

Facebook: [@SCLLR](#)

Website: www.llr.sc.gov



Making South Carolina a Safe Place to Work and Live

Please click on the link below to complete the Customer Service Satisfaction Survey. It only takes a minute to complete. This will let my supervisor know if you were satisfied or dissatisfied with the service you received from me.

<https://eservice.llr.sc.gov/OnlineSurvey/Home/Index/75>

Confidentiality Note: This e-mail message, including any attachments, contains privileged and confidential information intended only for the use of the individual or entity named above. If the reader of this e-mail message is not the intended recipient or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination or copying of this e-mail message, including attachments, is strictly prohibited. If you have received this e-mail message in error, please notify us immediately by telephone and return the original e-mail message, including attachments, to LLR Communications Office, Post Office Box 11329, Columbia, SC 29211, via the US Postal Service. Thank you.

From: Charles Stewart [REDACTED]
Sent: Wednesday, September 22, 2021 11:30 AM
To: Molly Price <Molly.Price@llr.sc.gov>; Maggie Smith <maggie.smith@llr.sc.gov>
Subject: 2021 IRC and IBC proposed Modifications

---- SCDLLR NOTICE (M365) ----

- This email is from an external email address. Please use caution when deciding whether to open any attachments or when clicking links.**
- Personally Identifiable Information (PII) should not be included in e-mail text or attachments. Do not save or transmit PII unencrypted.**

Greetings

Please dispose of the previous submissions I dropped off yesterday and replace them with these corrected copies

Thanks for your service to the people of SC

Charles Stewart



--

"The Plumber Protects the Health and Safety of the Nation."

SC Master Plumbers Association

--

"The Plumber Protects the Health and Safety of the Nation."

SC Master Plumbers Association



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-7

2021 Code Section: 706.1 General

Modification: Add Language.

Fire walls shall be constructed in accordance with Sections 706.2 through 706.11. Each portion of a building separated by one or more firewalls may be considered a separate building. The extent and location of such fire walls shall provide a complete separation. Where a fire wall separates occupancies that are required to be separated by a fire barrier wall, the most restrictive requirements of each separation shall apply.

Reason: N/A

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 05	706.1

Comments: No changes in 2021 IBC.

7/27 Study Committee Recommendation: Support approval



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-8

2021 Code Section: 903.2.9 Group S-1

Modification: Added Language to Number 5 only.

An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).
5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses where the fire area exceeds 2,500 square feet (232 m²). This section, when acceptable to the Authority Having Jurisdiction, does not apply to self-storage facilities that are single-story, fire area(s) less than 12,000 square feet (1115 m²), and the building is only accessible from exterior entry points and is not provided with interior hallways, spaces or corridors.

Reason: N/A

Proponent: Charleston Fire Department

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 08	903.2.9

Continued



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-8

2021 Code: 903.2.9 Group S-1

Comments: Number 5 is deleted in the 2021 code. Modification no longer necessary.

2018 Code: 903.2.9 Group S-1

An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exist:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).
5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exist:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).

7/27: Modification dropped. See reason above in red.



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-9

2021 Code Section: 1009.4 Elevators

Modification: To add Section 3008 to be included in this section.

1009.4 Now reads:

In order to be considered part of an accessible means of egress, an elevator shall comply with the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1/CSA B44. Standby power shall be provided in accordance with Chapter 27 and Section 3003. The elevators shall be accessed from an area of refuge complying with Section 1009.6. ~~Elevators shall also comply with 3008 Occupant Evacuation Elevators.~~

Exceptions:

1. Areas of refuge are not required at the elevator in open parking garages.
2. Areas of refuge are not required in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2
3. Areas of refuge are not required at elevators not required to be located in a shaft in accordance with Section 712.
4. Areas of refuge are not required at elevators serving smoke-protected **or open-air** assembly seating areas complying with Section ~~1029.6.2~~ **1030.6.2 and 1030.6.3.**
5. Areas of refuge are not required for elevators accessed from a refuge area in conjunction with a horizontal exit.

Reason: To allow for elevator use in a fire as a means of egress

Proponent: England Training LLC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 09	1009.4
IBC 2015	IBC 2015 05	1009.4

Comments: A clerical correction was made to the spelling of “accessible”, and the following changes in red were made to the language in the 2018 IBC. The previous modification in 2018 deleted the last sentence of the first paragraph, negating the original modification request. Modification is no longer necessary.

7/27: Modification dropped. See reason in Comments above.



2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
- Each request for code modification must be submitted separately.
- A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
- Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
- For local modification requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
- A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
- **A completed modification request must be received with all required documentation before it will be reviewed.**

Statewide Modification

Local Modification: Statewide

(List all jurisdictions that apply.)

Association/Jurisdiction: Midlands Fire Marshal's Association

Address: 111 Westpark Blvd Columbia SC 29210
Street City State Zip

Name: James Ballentine Title/Position: Deputy Fire Marshal

Phone No.: [REDACTED] Email Address: [REDACTED]

Please select the applicable code to be modified:

2021 International Fire Code

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: 1010.2.14

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-1, I-2 (and I-4) occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

9/28 Committee Meeting: Support Approval. Need to also include changes in IBC and add I-4 to title.

1010.2.14 Controlled egress doors in Groups I-1, I-2, and I-4.

Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-1, I-2, and I-4 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

In 200 characters or less, please briefly describe the justification for this modification request. **IBC 2021-10**

Requesting to include I-4 when occupied as an Adult Day Care. This would help prevent nuisance alarms and reduce elopement issues when serving clients with Dementia, Alzheimer's or similar health care issues.

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information in the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
Darryl Todd McAlhany	Fire Investigator, director	DHEC		
Terry Mueller	Fire Investigator IV	DHEC		

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature: _____ Date: 9/8/2021

Title: Deputy Fire Marshal



2021 International Building Code

South Carolina Building Codes Council

Proposed Modification Continuations from 2018

IBC 2021-11

2021 Code Section: 1016.2 Egress through intervening spaces

Modification: Delete and Add Language. ~~New (Section number changed from 1014.2 to 1016.2 in 2015)~~

Egress through intervening spaces shall comply with this section.

1. Exit access through an enclosed elevator lobby is permitted. Access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006 of the International Building Code. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the exit unless direct access to an exit is required by other sections of this code.

2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S, or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

3. An exit access shall not pass through a room that can be locked to prevent egress.

4. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

Exception: Dwelling units or sleeping areas in R-1 and R-2 occupancies shall be permitted to egress through other sleeping areas serving adjoining rooms that are part of the same dwelling unit or guest room.

5. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

Exceptions:

1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.

2. Means of egress are not prohibited through stockrooms in Group M occupancies where all of the following are met:

2.1 The stock is of the same hazard classification as that found in the main retail area.

2.2 Not more than 50 percent of the exit access is through the stockroom.

2.3 The stockroom is not subject to locking from the egress side.

2.4 There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by ~~full or partial height fixed walls~~ a wall not less than 42 inches high or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

Reason: N/A

Continued



2021 International Building Code

South Carolina Building Codes Council

Proposed Modification Continuations from 2018

IBC 2021-11

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 10	1016.2

Comments: See clerical corrections above to show modification type and changes. Language was added to number 1 in the 2021 IBC. It is in red below.

2021 Code: 1016.2 Egress through intervening spaces.

Egress through intervening spaces shall comply with this section.

1. Exit access through an enclosed elevator lobby is permitted. **Where access to two or more exits or exit access doorways is required in Section 1006.2.1**, access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the exit unless direct access to an exit is required by other sections of this code.
2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

3. An exit access shall not pass through a room that can be locked to prevent egress.
4. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.
5. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.
Exceptions:
 1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.
 2. Means of egress are not prohibited through stockrooms in Group M occupancies where all of the following are met:
 - 2.1. The stock is of the same hazard classification as that found in the main retail area.
 - 2.2. Not more than 50 percent of the exit access is through the stockroom.
 - 2.3. The stockroom is not subject to locking from the egress side.
 - 2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by full- or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

7/27 Study Committee Recommendation: Support approval with added language in red and clerical corrections. See next page for modification as it will read in 2021 code, with changes in red.



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-11

1016.2 Egress through intervening spaces.

Egress through intervening spaces shall comply with this section.

1. Exit access through an enclosed elevator lobby is permitted. Where access to two or more exits or exit access doorways is required in Section 1006.2.1, access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006 of the International Building Code. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the exit unless direct access to an exit is required by other sections of this code.
2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

3. An exit access shall not pass through a room that can be locked to prevent egress.
4. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

Exception: Dwelling units or sleeping areas in R-1 and R-2 occupancies shall be permitted to egress through other sleeping areas serving adjoining rooms that are part of the same dwelling unit or guest room.

5. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

Exceptions:

1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.
2. Means of egress are not prohibited through stockrooms in Group M occupancies where all of the following are met:
 - 2.1. The stock is of the same hazard classification as that found in the main retail area.
 - 2.2. Not more than 50 percent of the exit access is through the stockroom.
 - 2.3. The stockroom is not subject to locking from the egress side.
 - 2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by ~~full-or partial-height fixed walls~~ a wall not less than 42 inches high or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.



American Concrete Institute



South Carolina Department of Labor, Licensing and Regulations
South Carolina Building Codes Council
Attention: South Carolina Building Codes Council Board Members
110 Centerview Drive
Columbia, South Carolina 29211

July 12, 2021

Re: Code Change Proposal – 2021 Building Code, Chapter 17, Section 1703

Dear SC BCC Board Members,

Please find included with this letter a copy of the code change proposal form and supporting information submitted by ACI on behalf of the ACI Carolinas Chapter, as well as other local industry supporters.

Please contact me directly if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Kerry Sutton". The signature is written in a cursive, flowing style.

Kerry Sutton, PE
American Concrete Institute
Code Advocacy Engineer



Attachment 1 - Letter of Support from ACI Carolinas Chapter
Attachment 2 – Photocopy of applicable code section
Attachment 3 – Justification for proposed modification



2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
- Each request for code modification must be submitted separately.
- A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
- Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
- For local modification requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
- A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
- **A completed modification request must be received with all required documentation before it will be reviewed.**

Statewide Modification

Local Modification: _____
 (List all jurisdictions that apply.)

Association/Jurisdiction: American Concrete Institute

Address: [REDACTED] Farmington Hills Michigan 48187
City State Zip

Name: Kerry Sutton Title/Position: Code Advocacy Engineer



Please select the applicable code to be modified:

2021 International Building Code

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: Section 1703.1.3 Add 1703.1.3.1 and Table 1703.1

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

Chapter 17
SC Building Code
Section 1703 APPROVALS

Add new language as follows:

1703.1.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising, and evaluating tests and special inspections.

(1703.1.3.1 Concrete Testing Personnel. Individuals with current credentials as provided in Table 1703.1 or equivalent credentials approved by the building official, shall be considered qualified for sampling and testing of concrete.)

Add new Table 1703.1 Concrete Testing Personnel Qualifications

Please see Attachment 3 for proposed added Table 1703.1

8/19 Study Committee Recommendation: Do not support approval

In 200 characters or less, please briefly describe the justification for this modification request.

This proposal adds qualifications for conducting sampling and testing of concrete by placing specific requirements in the code. In this way the information is readily visible to the design professionals, building officials, testing agencies, inspectors, owners and contractors. It is important that qualified individuals conduct sampling and testing to ensure proper performance. Please see Attachment 2 for proposed Table 1703.1 and additional information for justification.

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information in the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
Kerry Sutton	Code Advocacy Engineer	American Concrete Institute		
Steve Szoke	Code Advocacy Engineer	American Concrete Institute		
Kenny Johnson	Vice President	Soils Consultants, Inc./ACI Carolinas Chapter		
Chad Hensely	EVP	Wayne Brothers Co./ACI Carolinas Chapter		

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature: _____ Date: 7-12-2021

Title: Code Advocacy Engineer

ATTACHMENT 2

SC Building Code
Chapter 17
Section 1703

1703.1.2 Equipment.

An *approved agency* shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.

1703.1.3 Personnel.

An *approved agency* shall employ experienced personnel educated in conducting, supervising and evaluating tests and *special inspections*.

1703.2 Written approval.

Any material, appliance, equipment, system or method of construction meeting the requirements of this code shall be *approved* in writing after satisfactory completion of the required tests and submission of required test reports.

1703.3 Record of approval.

For any material, appliance, equipment, system or method of construction that has been *approved*, a record of such approval, including the conditions and limitations of the approval, shall be kept on file in the *building official's* office and shall be available for public review at appropriate times.



Attachment 3

SECTION 1703
APPROVALS

Add new language as follows:

1703.1.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising, and evaluating tests and special inspections.

(1703.1.3.1 Concrete Testing Personnel. Individuals with current credentials as provided in Table 1703.1 or equivalent credentials approved by the building official, shall be considered qualified for sampling and testing of concrete.)

Add new Table 1703.1 'Concrete Testing Personnel Qualifications' as follows:

TABLE 1703.1 MINIMUM CONCRETE TESTING QUALIFICATIONS	
Testing	Minimum Qualifications (refer to key at end of Table)
Cast-in-place or precast concrete	
<u>Concrete field sampling and testing</u>	<u>A or B</u>
<u>Concrete laboratory testing including strength testing</u>	<u>A or C</u>
<u>Concrete strength testing only</u>	<u>A or D</u>

KEY:

- A. Licensed Structural Engineer (SE) or Professional Engineer (PE) specializing in the design of building structures, or Engineer-in Training (EIT) under the direct supervision of a PE and competent in the specific task area.
- B. American Concrete Institute (ACI) Concrete Field-Testing Technician with Grade 1 certification
- C. American Concrete Institute (ACI) Concrete Laboratory Testing Technician with Level 1 or Level 2 certification.
- D. American Concrete Institute (ACI) Strength Testing Technician.

Justification - This proposal addresses the need to better ensure proper sampling and testing of concrete. Improper testing may result in deficiencies regarding the performance of structural concrete. This is especially a concern for concrete, as it is one of the few structural materials that are not in their final form and condition until after being placed on the construction site.

It is important that qualified individuals conduct sampling and testing to ensure proper performance. Improper sampling and testing can lead to costly added testing and construction delays. In some instances, unnecessary removal and replacement of concrete. The latter may result in challenges to ensure proper structural integrity and load paths.

The SC Building Code is somewhat vague on the qualifications of personnel conducting sampling and tests, suggesting that approved agencies shall employ experienced personnel:

“1703.1.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising, and evaluating tests and special inspections”

However, in addition to the requirements of Chapter 17, Chapter 19 references ACI 318 Building Code Requirements for Structural Concrete. Chapter 26 of ACI 318 clearly specifies that field testing and laboratory technicians must be certified.

“26.12.1.1 (d) Certified field testing technicians shall perform tests on fresh concrete at the job site, prepare specimens for standard curing, prepare specimens for field curing, if required, and record the temperature of the fresh concrete when preparing specimens for strength tests.” – 2019 ACI 318

“26.12.1.1 (e) Certified laboratory technicians shall perform required laboratory tests.” – 2019 ACI 318

This code change proposal better allows the building official to identify individuals qualified to conduct sampling and testing.



7/9/2021

South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
110 Centerview Dr.
Columbia, South Carolina 29210

Subject: Support for Provisions that Require Qualified Individuals for
Sampling and Testing of Concrete
Code Change Proposal

SC Building Codes Council Board Members:

This letter is to recommend approval provisions that set minimum requirements for individuals engaged in the sampling and testing of concrete, to the *South Carolina Building Code*, as presented in the code change proposal initiated by the American Concrete Institute.

The ACI Carolinas Chapter represents Material Suppliers, Engineers, and Contractors involved in concrete design, construction, repair, etc. throughout the Carolinas. These firms directly and indirectly contribute substantially to the South Carolina economy.

Cast-in-place concrete is one of the few building materials formed, cured, and otherwise conditioned to create the final product on the construction site. Proper sampling and testing of cast-in-place concrete and specimens is crucial to assure quality concrete that will satisfy the intent of the building code. The code, directly or indirectly through referenced standards, establishes minimum requirements for the type and frequency of sampling, testing, and inspection. However, the code is remiss in that it does not establish or provide necessary direction to the building official regarding minimum qualifications for individuals conducting sampling and tests of structural concrete. The proposed modification to the SC Building Code identifies qualified individual to perform these duties and establishes a level of competency to aid the building official approving other persons for the purpose of sampling and testing.

Examples of specific existing referenced standard language are:

ASTM C94 *Standard Specification for Ready-Mixed Concrete* referenced in ACI 318:

7.2 Tests of concrete required to determine compliance with this specification shall be made by a certified technician in accordance with Practice C1077.

ASTM C1077

6.1.3 Personnel performing laboratory and field testing shall possess current certification(s) that includes a written and performance examination for each relevant standard identified

These standards are applicable to any use of structural concrete, not just buildings. Thus, the needed guidance to assist the building official in the approval process of qualified personnel is not specifically included in the standards. This proposed modification is extremely important for the building officials, owners, public and all effected entities in the building design and construction process to understand the appropriate levels of competency to perform sampling and testing.

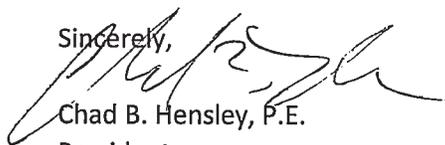
In addition to appropriate quality assurances, qualified individuals are necessary to reduce the frequency of improper sampling and testing which results in additional direct costs related to more expensive sampling (coring) and testing and indirect costs due to construction delays.

We find that it is increasingly more important to require qualified individuals because of significant changes in and increased complexities of mix designs, use of high strength and high-performance concrete, combined with improved engineering procedures that permit more economical use and sizing of concrete elements. Sampling and testing of concrete needs to have a level of precision commensurate with the current design and construction requirements.

We have reviewed the code change proposal initiated by ACI and respectfully request that this proposal be approved for inclusion in the South Carolina Building Code.

Thank you in advance for your consideration of this recommendation.

Sincerely,



Chad B. Hensley, P.E.

President

ACI Carolinas Chapter



American Concrete Institute



South Carolina Department of Labor, Licensing and Regulations
South Carolina Building Codes Council
Attention: South Carolina Building Codes Council Board Members
110 Centerview Drive
Columbia, South Carolina 29211

July 12, 2021

Re: Code Change Proposal – 2021 Building Code, Chapter 17, Section 1704

Dear SC BCC Board Members,

Please find included with this letter a copy of the code change proposal form and supporting information submitted by ACI on behalf of the ACI Carolinas Chapter, as well as other local industry supporters.

Please contact me directly if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Kerry Sutton". The signature is written in a cursive, flowing style.

Kerry Sutton, PE
American Concrete Institute
Code Advocacy Engineer



Attachment 1 - Letter of Support from ACI Carolinas Chapter
Attachment 2 – Photocopy of applicable code section
Attachment 3 – Justification for proposed modification



South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
 110 Centerview Dr • Columbia • SC • 29210
 P.O. Box 11329 • Columbia • SC • 29211-1329
 Phone: 803-896-4688 • contact.bcc@llr.sc.gov • Fax: 803-896-4814
 llr.sc.gov/bcc

2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
- Each request for code modification must be submitted separately.
- A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
- Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
- For local modification requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
- A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
- **A completed modification request must be received with all required documentation before it will be reviewed.**

Statewide Modification

Local Modification: _____

(List all jurisdictions that apply.)

Association/Jurisdiction: American Concrete Institute (ACI)

Address: _____

Farmington Hills

Michigan

48187

City

State

Zip

Name: Kerry Sutton, PE

Title/Position: Code Advocacy Engineer

Phone No.: _____

Please select the applicable code to be modified:

2021 International Building Code

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: Section 1704.2.1 Add new language; Add new Table 1704.2

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

Chapter 17
SC Building Code
Section 1704 Special inspector qualifications.

Add new language as follows:

1704.2.1 Special inspector qualifications. Prior to the start of the construction, the approved agencies shall provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material qualities. (Individuals conducting special inspections and tests shall be qualified in accordance with Table 1704.2, or shall be otherwise approved by the building official.) These qualifications are in addition to qualifications specified in other sections of this code.

The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the approved agency and their personnel are permitted to act as the special inspector for the work designed by them, provided they qualify as special inspectors.

Add new Table 1704.2 Concrete Testing Personnel Qualifications

Please see Attachment 3 for proposed added Table 1704.2

8/19 Study Committee Recommendation: Do not support approval

In 200 characters or less, please briefly describe the justification for this modification request.

This proposal clarifies qualifications for conducting special inspections by placing specific requirements in the code readily visible to the design professional, owner, testing agency and building official. Please see Attachment 2 for proposed Table 1704.2 and additional information for justification.

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information in the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
Kerry Sutton	Code Advocacy Engineer	American Concrete Institute		
Steve Szoke	Code Advocacy Engineer	American Concrete Institute		
Kenny Johnson	Vice President	Soils Consultants, Inc./ACI Carolinas Chapter		
Chad Hensley	EVP Business Management	Wayne Brothers Companies		

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature: _____ Date: 7/12/2021

Title: Code Advocacy Engineer

ATTACHMENT 2

SC Building Code
Chapter 17
Section 1704

1704.2.1 Special inspector qualifications.

Prior to the start of the construction, the *approved agencies* shall provide written documentation to the *building official* demonstrating the competence and relevant experience or training of the *special inspectors* who will perform the *special inspections* and tests during construction. Experience or training shall be considered to be relevant where the documented experience or training is related in complexity to the same type of *special inspection* or testing activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as special inspectors for the work designed by them, provided they qualify as special inspectors.

1704.2.2 Access for special inspection.

The construction or work for which *special inspection* or testing is required shall remain accessible and exposed for *special inspection* or testing purposes until completion of the required *special inspections* or tests.



SECTION 1704
SPECIAL INSPECTIONS AND TESTS, CONTRACTOR RESPONSIBILITY
AND STRUCTURAL OBSERVATIONS

Add new language as follows:

1704.2.1 Special inspector qualifications. Prior to the start of the construction, the *approved agencies* shall provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of *special inspection* activities for projects of similar complexity and material qualities. (Individuals conducting special inspections and tests shall be qualified in accordance with Table 1704.2, or shall be otherwise approved by the building official.) These qualifications are in addition to qualifications specified in other sections of this code.

The *registered design professional in responsible charge* and engineers of record involved in the design of the project are permitted to act as the *approved agency* and their personnel are permitted to act as the special inspector for the work designed by them, provided they qualify as special inspectors.

Add new Table 1704.2 ‘Minimum Special Inspector Qualifications’ as follows:

<u>TABLE 1704.2 MINIMUM SPECIAL INSPECTOR QUALIFICATIONS</u>			
<u>Category of Testing and Inspection</u>	<u>Minimum Qualifications (refer to key at end of Table)</u>		
	<u>Shop Testing or Inspection</u>	<u>Field Testing or Inspection</u>	<u>Review Testing, Certification, & Lab Reports</u>
<u>1704.2.5 Inspection of Fabricators</u>			
<u>Pre-cast concrete</u>	<u>A, C or E</u>		
<u>Structural steel construction</u>	<u>C, F, G or H</u>		
<u>Wood construction</u>	<u>A</u>		
<u>Cold formed metal construction</u>	<u>A</u>		
<u>1705.2, 1705.10, 1705.11 & 1705.12 Steel Construction</u>			
<u>Verification of welding consumables, filler metals, procedure specifications, procedure qualification records and personnel performance qualification records</u>			<u>C or F</u>
<u>Nondestructive testing of welding</u>	<u>H</u>	<u>H</u>	
<u>Inspection of welding</u>	<u>C or F</u>	<u>C or F</u>	
<u>TABLE 1704.2 MINIMUM SPECIAL INSPECTOR QUALIFICATIONS</u>			
<u>Category of Testing and Inspection</u>	<u>Minimum Qualifications (refer to key at end of</u>		

	<u>Table)</u>		
	<u>Shop Testing or Inspection</u>	<u>Field Testing or Inspection</u>	<u>Review Testing, Certification, & Lab reports</u>
<u>1705.2, 1705.10, 1705.11 & 1705.12 Steel Construction, continued</u>			
<u>Verification of fabricator and erector documents as listed in AISC 360, chapter N, paragraph 3.2</u>			<u>A or C</u>
<u>Material verification of weld filler materials</u>			<u>C, F or G</u>
<u>Inspection of high strength bolting and steel frame joint Details</u>		<u>A or C</u>	
<u>Inspection of embedments</u>		<u>A, C, F or G</u>	
<u>Inspection of steel elements of composite construction</u>		<u>A, C, F or G</u>	
<u>Verification of reinforcing steel, cold formed steel deck and truss materials</u>			<u>A, C or F</u>
<u>Inspection of reinforcing steel, cold formed steel deck and trusses</u>		<u>A or C</u>	
<u>1705.3 & 1705.12 Concrete</u>			
<u>Reinforcing placement, cast-in-place bolts, post installed anchors concrete and shotcrete placement and curing operations. Inspection of formwork for shape, location and dimensions</u>		<u>A, C or I</u>	
<u>Pre-stressing steel installation</u>		<u>A, C, D or E</u>	
<u>Erection of pre-cast concrete members</u>		<u>A, C or I</u>	
<u>Review certified mill reports</u>			<u>A or C</u>
<u>Verify use of required design mix</u>		<u>A, C or J</u>	
<u>Pre-stressed (pre-tensioned) concrete force application</u>	<u>A, C or E</u>		
<u>Post-tensioned concrete force application</u>		<u>A, C or D</u>	
<u>Review of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs</u>		<u>A, C, D or I</u>	
<u>Reinforcing steel weldability, reinforcing welding, weld filler material</u>		<u>C or F</u>	
<u>Testing of welding of reinforcing steel</u>		<u>H</u>	
<u>Post-installed concrete anchor inspection</u>	<u>A or M</u>	<u>A or M</u>	
<u>Shotcrete installation inspection</u>		<u>A or N</u>	
<u>1705.4 Masonry</u>			
<u>Verification of f'_m and f'_{AC}</u>		<u>A, C or L</u>	
<u>Mortar joint construction, grout protection and placement, materials proportion, type/size/location of reinforcement, structural elements, anchorage, and connectors</u>		<u>A, C or K</u>	
<u>Observe preparation of masonry prisms for testing of compressive strength of masonry, f'_m and f'_{AC}</u>		<u>A, C, K or L</u>	
<u>Inspection of welding of reinforcing steel</u>		<u>C or F</u>	
<u>Testing of welding of reinforcing steel</u>		<u>H</u>	
<u>1705.6 & 1804 Soils</u>			
<u>Observe site preparation, fill placement testing of compaction for compliance with the construction documents for the project</u>		<u>A, B, C, J or L</u>	
<u>Observe test bearing materials below shallow foundations for ability to achieve design bearing capacity</u>		<u>A, B, C, L or J (Level III)</u>	
<u>Review compaction testing for compliance with the construction documents for the project</u>			<u>A</u>
<u>TABLE 1704.2 MINIMUM SPECIAL INSPECTOR QUALIFICATIONS</u>			
<u>Category of Testing and Inspection</u>	<u>Minimum Qualifications (refer to key at end of Table)</u>		

	<u>Shop Testing or Inspection</u>	<u>Field Testing or Inspection</u>	<u>Review Testing, Certification, & Lab Reports</u>
<u>1705.5, 1705.10, 1705.11 & 1705.12 Wood Construction</u>			
<u>Observe structural panel sheathing, size of framing members, nail or staple diameter and length, number of fastener lines, and spacing of fastener lines and fasteners for compliance with construction documents for the project</u>		<u>A or C</u>	
<u>Observe temporary and permanent truss member restraint/bracing, field gluing of elements. Observe bolting, anchoring or other fastening of: shear walls, diaphragms, drag struts, braces and hold-downs</u>		<u>A or C</u>	
<u>1705.7, 1705.8, 1705.9 & 1810 Pile and Pier Foundations</u>			
<u>Observe installation</u>		<u>A, B or L</u>	
<u>Observe load tests</u>		<u>A or B</u>	
<u>1705.13 Sprayed Fire-Resistant Materials</u>			
<u>Observe surface conditions, application, average thickness and density of applied material, and cohesive/adhesive bond</u>		<u>A or C</u>	
<u>1705.14 Mastic and Intumescent Fire-Resistant Coatings</u>			
<u>Observe application compliance with AWCI 12-B</u>		<u>A or C</u>	
<u>1705.15 Exterior Insulation and Finish Systems</u>			
<u>Inspect EIFS systems</u>		<u>A or C</u>	
<u>1705.1 Special Cases</u>			
<u>Work of unusual or special nature</u>		<u>A</u>	
<u>1705.16 Fire-Resistant Penetrations and Joints</u>			
<u>See requirements of IBC Section 1705.16.1 and 1705.6.2</u>		<u>A</u>	
<u>1705.10, 1705.11 & 1705.12 Seismic and Wind Resistance</u>			
<u>Periodic inspection of fabrication, installation and/or anchorage of building systems and components</u>		<u>A</u>	

KEY:

- A. Licensed Structural Engineer (SE) or Professional Engineer (PE) specializing in the design of building structures, or graduate engineer who has passed the Fundamentals of Engineering examination, Engineer-in-Training (EIT), under the direct supervision of an SE or PE.
- B. Geotechnical Engineer (GE), a licensed Professional Engineer (PE) specializing in soil mechanics and foundations.
- C. International Code Council (ICC) Special Inspector Certification specific to the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
- D. Post-tensioning Institute (PTI) Certification, Level 2, bonded or unbonded as applicable.
- E. Pre-stressed Concrete Institute (PCI) Certified Inspector.
- F. American Welding Society (AWS) Certified Welding Inspector (CWI) or AWS Certified Associate Welding Inspector working under the direct on-site supervision of a CWI.
- G. American Welding Society (AWS)/American Institute of Steel Construction (AISC) certified structural steel inspector.
- H. American Society for Nondestructive Testing (ASNT) Level II certification, or a Level III certification if previously certified as a Level II in the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
- I. American Concrete Institute (ACI) Concrete Construction Special Inspector.
- J. National Institute for Certification in Engineering Technologies (NICET) Level II or higher certification specific to the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
- K. ICC/The Masonry Society Masonry (TMS) Construction Inspector Certification.
- L. NICET Certified Engineering Technologist (CT).
- M. American Concrete Institute (ACI) Post-Installed Concrete Anchor Installation Inspector
- N. American Concrete Institute (ACI) Shotcrete Inspector

Justification - This proposal addresses the need to better ensure proper inspection of structural elements. Improper inspection may result in deficiencies regarding the performance of structural concrete. This is especially a concern for concrete, as it is one of the few structural materials that are not in their final form and condition until after being placed on the construction site. It is important that qualified individuals conduct inspections to ensure proper performance.

The Building Code is somewhat vague on the qualifications of personnel conducting special inspections. While it is clear that a registered design professional in responsible charge satisfies the requirements of the code, the code is somewhat vague regarding other qualified individuals approved by the building official. The language in the code is:

1704.3 Statement of special inspections. Where *special inspections* or tests are required by Section 1705, the *registered design professional in responsible charge* shall prepare a statement of *special inspections* in accordance with Section 1704.3.1 for submittal by the applicant in accordance with Section 1704.2.3.

Exception: The statement of *special inspections* is permitted to be prepared by a qualified person *approved by the building official* for construction not designed by a *registered design professional*.

The requirements of Section 1704.3 are consistent with the requirements of ACI 318:

26.13.1.2 Inspection of concrete construction shall be conducted by the licensed design professional responsible for the design, a person under the supervision of the licensed design professional, or a qualified inspector. The inspection shall verify conformance with construction documents throughout the various Work stages. If an inspector conducts inspection of formwork, concrete placement, reinforcement, and embedments, the inspector shall be certified.

There is no direction in either ACI 318 or the SC Building Code as to what qualifications are necessary for individuals conducting special inspections. While the [State of South Carolina Special Inspections Manual](#) (August 26, 2009) lists a limited number of specific certifications or licenses for individuals performing a stipulated test or inspection, as deemed appropriate by the Registered Design Professional, updating and incorporating the requirements directly into the building code better communicates to all parties involved (design professionals, building officials, testing agencies, inspectors, owners, and contractors) qualifications for conducting special inspections. Including a new table, Table 1704.2, in the SC State Building Code will provide additional clarification and reinforce the importance of qualification requirements for all personnel performing special inspection and testing activities.

This proposal is modelled after modification adopted by other authorities having jurisdiction. The [Georgia Building Code](#) now includes a table of minimum qualifications for certified inspectors. (See pages 10 through 12).

This proposal still allows approval of qualified individuals by the building code official where the official has confidence based on based on relevant prior experience.



7/9/21

South Carolina Department of Labor, Licensing and Regulation
 South Carolina Building Codes Council
 110 Centerview Dr.
 Columbia, South Carolina 29210

Subject: Support for Provisions that Require Qualified Individuals for
 Structural Elements Code Change Proposal

SC Building Codes Council Board Members:

This letter is to recommend approval provisions that set minimum requirements for individuals engaged in the inspection of structural elements to the *South Carolina Building Code* as presented in the code change proposals initiated by the American Concrete Institute.

The ACI Carolinas Chapter represents material suppliers, engineers, contractors and testing firms involved in concrete design, construction, repair, and testing. These firms directly and indirectly contribute substantially to the South Carolina economy.

Cast-in-place concrete is one of the few building materials formed, cured, and otherwise conditioned to create the final product on the construction site. Proper sampling and testing of cast-in-place concrete and specimens is crucial to assure quality concrete that will satisfy the intent of the building code. The code, directly or indirectly through referenced standards, establishes minimum requirements for the type and frequency testing and inspection. However, the code is remiss in that it does not establish or provide necessary direction to the building official regarding minimum qualifications for individuals conducting tests and inspections of concrete or other structural elements. The proposed modifications to the SC Building Code identifies qualified individuals to perform these duties and establishes a level of competency to aid the building official approving other persons for the purpose of testing and inspecting.

Examples of specific existing referenced standard language testing and inspection of structural concrete are:

- ACI 318 *Code Requirements for Structural Concrete*, referenced in the SC Building Code:
 26.13.1.2 Inspection of concrete construction shall be conducted by the licensed design professional responsible for the design, a person under the supervision of the licensed design professional, or a qualified inspector.

ASTM C94 *Standard Specification for Ready-Mixed Concrete* referenced in ACI 318:

7.2 Tests of concrete required to determine compliance with this specification shall be made by a certified technician in accordance with Practice C1077.

ASTM C1077

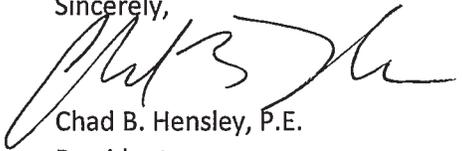
6.1.3 Personnel performing laboratory and field testing shall possess current certification(s) that includes a written and performance examination for each relevant standard identified

These standards are applicable to any use of structural concrete, not just buildings. Thus, the needed guidance to assist the building official in the approval process of qualified personnel is not specifically included in the standards. These proposed modifications are extremely important for the building officials, owners, public and all effected entities in the building design and construction process to understand the appropriate levels of competency to perform testing and inspection.

We have reviewed the code change proposals initiated by ACI and respectfully request that this proposal be approved for inclusion in the South Carolina Building Code.

Thank you in advance for your consideration of this recommendation.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chad B. Hensley', written in a cursive style.

Chad B. Hensley, P.E.

President

ACI Carolinas Chapter



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-14

2021 Code Section: 1803.2 Investigation required

Modification: Add Language.

Geotechnical investigations shall be conducted in accordance with Sections 1803.3 through 1803.5.

Exceptions:

1. The building official shall be permitted to waive the requirement for a geotechnical investigation where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections 1803.5.1 through 1803.5.6 and Sections **1803.5.10 and 1803.5.11**.

2. For single story buildings not more than 5,000 sq ft and not more than 30ft in height, a site specification investigation report is not required if the seismic design category is determined by the design professional in accordance with Chapter 20 of ASCE 7.

Reason: N/A

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 11	1803.2

Comments: See clerical correction above.

7/27 Study Committee Recommendation: Support approval with clerical corrections.

South Carolina Foundation Repair & Helical Pile Ad Hoc Committee

IBC 2021-15

September 22, 2021

To Whom it May Concern:

This Ad Hoc Committee of Foundation Repair Companies and Helical Pile Installers was formed on July 28, 2021, for the purpose of submitting Building Code Modification Requests.

The six founding members, met via telephone conference on Monday September 20th and voted unanimously to submit the attached proposal updating the wording of Section 1810 Deep Foundations, specifically 1810.3.1.5.

Our industry in 2008 adoption of the IBC, formed AC358 as an accepted criterion. We implore the Code Counsel to submit our request for review and implement it into the revised 2021 IBC.

We have seen an influx in the use of untested and uncertified materials in the form of

- Recycled/Rejected Oil Field Pipe
- Steel from China
- Steel from India
- Homemade helical piles.

It is our experience that when informing the local building officials on the helical pile industry and standard accepted practices, there is confusion and vagueness in the code, which facilitate an inability to enforce the code as written. In no other area of the Building Code is substandard structural components allowed (ie. impact glass, fasteners and specialty connections such as Simpson and USB connections)

For the life/safety and well being of the consumer, we believe this very attainable and minimum standard, yet specific wording should be adopted.

Thank you for your consideration.



Travis Bedson

Ad Hoc Chair



South Carolina Department of Labor, Licensing and Regulation
South Carolina Building Codes Council
 110 Centerview Dr • Columbia • SC • 29210
 P.O. Box 11329 • Columbia • SC • 29211-1329
 Phone: 803-896-4688 • contact.bcc@llr.sc.gov • Fax: 803-896-4814
 llr.sc.gov/bcc

IBC 2021-15

2021 BUILDING CODE MODIFICATION REQUEST FORM

Requirements:

- All requests must be submitted by September 22, 2021.
- Each request for code modification must be submitted separately.
- A cover letter from the local jurisdiction or professional association stating that the individual is authorized to present the proposed amendment; and verification that the proposed amendment has the support of at least a majority of the members of the board or council governing the local jurisdiction or professional association proposing the modification.
- Sufficient test information, studies, data, or other documentation that would be necessary to fully explain and justify the proposed amendment
- For local modification requests only: the physical or climatological basis for the request and the reason that the suggested change would correct the condition.
- A local jurisdiction or professional association shall not propose a modification which will amend, suspend, eliminate or supersede an existing statute, policy, rule or regulation of any state or federal agency per S.C. Regulation 8-240 (H).
- **A completed modification request must be received with all required documentation before it will be reviewed.**

Statewide Modification

Local Modification: _____

(List all jurisdictions that apply.)

Association/Jurisdiction: South Carolina FOundation Repair & Helical Pile Ad Hoc C

Address: _____

State

Zip

Name: Travis Bedson

Title/Position: Ad Hoc Chair

Phone No.: _____

Email Address: _____

Please select the applicable code to be modified:

2021 International Building Code

Please list the exact code section, table, figure, or appendix to be modified, and attach a photocopy of the applicable code section: 1810.3.1.5

Code section as modified:

(Please strike through language being removed, and put language to be added in parentheses. Use additional pages as needed.)

Please see attached for redlined language to be removed.

This is the language we wish to replace it with.

(Helical piles used in deep foundations, which include but not limited to plain helical piles, grouted helical piles, cased helical piles, and/or any combination thereof, shall be manufactured in accordance with AC308 issued by ICC-ES, or any other equivalent acceptance criteria. At minimum, and in the absence of ICC-ES, IAPMO or equivalent report for the product to be used in deep foundations, helical piles shall be manufactured in a facility that is compliant with the requirements of AC10 and subjected to regular follow up inspections by an accredited inspection agency, as stated in the criteria.)

9/28 Study Committee Recommendation: Do not support approval

ported in accordance with Section 1810.2.1 for the entire height and applied forces cause bending moments not greater than those resulting from accidental eccentricities, structural design of the element using the load combinations of Section 1605.3 and the allowable stresses specified in this chapter shall be permitted. Otherwise, the structural design of concrete deep foundation elements shall use the load combinations of Section 1605.2 and *approved* strength design methods.

1810.3.1.2 Composite elements. Where a single deep foundation element comprises two or more sections of different materials or different types spliced together, each section of the composite assembly shall satisfy the applicable requirements of this code, and the maximum allowable load in each section shall be limited by the structural capacity of that section.

1810.3.1.3 Mislocation. The foundation or superstructure shall be designed to resist the effects of the mislocation of any deep foundation element by not less than 3 inches (76 mm). To resist the effects of mislocation, compressive overload of deep foundation elements to 110 percent of the allowable design load shall be permitted.

1810.3.1.4 Driven piles. Driven piles shall be designed and manufactured in accordance with accepted engineering practice to resist all stresses induced by handling, driving and service loads.

1810.3.1.5 Helical piles. ~~Helical piles shall be designed and manufactured in accordance with accepted engineering practice to resist all stresses induced by installation into the ground and service loads.~~

1810.3.1.6 Casings. Temporary and permanent casings shall be of steel and shall be sufficiently strong to resist collapse and sufficiently water tight to exclude any foreign materials during the placing of concrete. Where a permanent casing is considered reinforcing steel, the steel shall be protected under the conditions specified in Section 1810.3.2.5. Horizontal joints in the casing shall be spliced in accordance with Section 1810.3.6.

1810.3.2 Materials. The materials used in deep foundation elements shall satisfy the requirements of Sections 1810.3.2.1 through 1810.3.2.8, as applicable.

1810.3.2.1 Concrete. Where concrete is cast in a steel pipe or where an enlarged base is formed by compacting concrete, the maximum size for coarse aggregate shall be $\frac{3}{4}$ inch (19.1 mm). Concrete to be compacted shall have a zero slump.

1810.3.2.1.1 Seismic hooks. For structures assigned to *Seismic Design Category* C, D, E or F, the ends of hoops, spirals and ties used in concrete deep foundation elements shall be terminated with seismic hooks, as defined in ACI 318, and shall be turned into the confined concrete core.

1810.3.2.1.2 ACI 318 Equation (25.7.3.3). Where this chapter requires detailing of concrete deep foundation elements in accordance with Section 18.7.5.4 of ACI 318, compliance with Equation (25.7.3.3) of ACI 318 shall not be required.

1810.3.2.2 Prestressing steel. Prestressing steel shall conform to ASTM A416.

1810.3.2.3 Steel. Structural steel H-piles and structural steel sheet piling shall conform to the material requirements in ASTM A6. Steel pipe piles shall conform to the material requirements in ASTM A252. Fully welded steel piles shall be fabricated from plates that conform to the material requirements in ASTM A36, ASTM A283, ASTM A572, ASTM A588 or ASTM A690.

1810.3.2.4 Timber. Timber deep foundation elements shall be designed as piles or poles in accordance with ANSI/AWC NDS. Round timber elements shall conform to ASTM D25. Sawn timber elements shall conform to DOC PS-20.

1810.3.2.4.1 Preservative treatment. Timber deep foundation elements used to support permanent structures shall be treated in accordance with this section unless it is established that the tops of the untreated timber elements will be below the lowest ground-water level assumed to exist during the life of the structure. Preservative and minimum final retention shall be in accordance with AWPA U1 (Commodity Specification E, Use Category 4C) for round timber elements and AWPA U1 (Commodity Specification A, Use Category 4B) for sawn timber elements. Preservative-treated timber elements shall be subject to a quality control program administered by an *approved agency*. Element cutoffs shall be treated in accordance with AWPA M4.

1810.3.2.5 Protection of materials. Where boring records or site conditions indicate possible deleterious action on the materials used in deep foundation elements because of soil constituents, changing water levels or other factors, the elements shall be adequately protected by materials, methods or processes *approved* by the *building official*. Protective materials shall be applied to the elements so as not to be rendered ineffective by installation. The effectiveness of such protective measures for the particular purpose shall have been thoroughly established by satisfactory service records or other evidence.

1810.3.2.6 Allowable stresses. The allowable stresses for materials used in deep foundation elements shall not exceed those specified in Table 1810.3.2.6.

1810.3.2.7 Increased allowable compressive stress for cased mandrel-driven cast-in-place elements. The allowable compressive stress in the concrete shall be permitted to be increased as specified in Table 1810.3.2.6 for those portions of permanently cased cast-in-place elements that satisfy all of the following conditions:

1. The design shall not use the casing to resist any portion of the axial load imposed.
2. The casing shall have a sealed tip and be mandrel driven.

In 200 characters or less, please briefly describe the justification for this modification request.

Please see Attached Letter

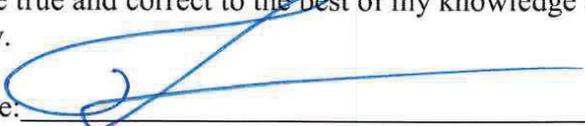
Better clarity on manufacturing criterion specifications for proper enforcement.

Per Regulation 8-240(E)(5), please list the persons with their titles and affiliations, known at the time of submittal, who will provide testimony in favor of the amendment. Due to the possibility of virtual hearings, **all information is the table below is required** to ensure proper notification. Use additional pages as needed.

Name	Title	Affiliation	Phone Number	Email Address
C Travis Bedson	CEO	CNT Foundations LLC		
Moncef Souissi	Engineer	Cantsink Manufacturing		
William Cantey	CEO	Cantey Foundations		
Patrick Hutchinson	CEO	Cantsink Manufacturing		
Scott Erlewine	CEO	Ram Jack		
Chris Morrison	CEO	Terratec		

Affirmation

I certify that all information in this form, including all supplementary documents submitted with this form, are true and correct to the best of my knowledge after undertaking due diligence to determine their accuracy.

Signature:  Date: 9/22/21

Title: Ad-Hoc Chair



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-16

2021 Code Section: 1907.1 ~~Minimum Slab Provisions General~~

Modification: Delete and Add Language.

The thickness of concrete floor slabs supported directly on the ground shall not be less than 3 ½ inches (89mm). A 10-mil (0.010 inch) polyethylene ground contact vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the base course or subgrade and the concrete floor slab, or other approved equivalent methods or materials shall be used to retard vapor transmission through the floor slab.

Reason: Bring into compliance with the American Concrete Institute standards.

Proponent: Structural Engineers' Association of SC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 12	1907.1

Comments: See clerical correction above.

7/27 Study Committee Recommendation: Support approval



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-17

2021 Code Section: 2303.2.2 Other means during manufacture

Modification: Delete last sentence of 2018 Code.

Reason: The language in the '18 code would prevent the use of methods for the treatment of fire retardant treated wood that have been in use since at least 2009. We're not aware of any issues with products that have been tested in accordance with code requirements.

Proponent: BOASC

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 13	2303.2.2

Comments: No changes in 2021 IBC. ~~The sentence to be removed by modification is struck through below.~~

2021 Code: 2303.2.2 Other means during manufacture

For wood products impregnated with chemicals by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product. The treatment shall provide permanent protection to all surfaces of the wood product. ~~The use of paints, coating, stains or other surface treatments is not an approved method of~~

7/27 Study Committee Recommendation: Support approval



2021 International Building Code
South Carolina Building Codes Council
Proposed Modification Continuations from 2018

IBC 2021-18

2021 Code Section: Appendix H Signs

Modification: Appendix H was adopted for use statewide

Reason: To provide minimum requirements for signs for the protection of people and property.

Proponent: Structural Engineers Association of South Carolina

Previous Code Cycles	Previous Modification Number	Previous Code Section
IBC 2018	IBC 2018 14	Appendix H
IBC 2015	IBC 2015 07	Appendix H
IBC 2012	IBC 2012 05	Appendix H

Comments: No changes in 2021 IBC.

7/27 Study Committee Recommendation: Support approval