

Virginia Tech University Building Officials Office

Uniform Statewide Building Code Independent Inspections

Guidelines and Procedures

2012 VUSBC Edition



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Preface

Virginia Tech University Building officials Office has formulated a uniform set of procedures based on experience in several Virginia regions, for the manner in which the University shall enforce the Virginia Uniform Statewide Building Code through inspection provisions of the Virginia Uniform Statewide Building Code (VUSBC). This guidelines and procedures shall replace the relevant chapters and forms in the Commonwealth of Virginia's Construction and Professional Services Manual (CPSM) for projects on VA Tech property in the Commonwealth of Virginia.

The 2012 VUSBC, effective July 14, 2014, incorporates and amends the International Code Council, Inc. (ICC) 2012 International Building Code (IBC). The *Virginia Tech Virginia Uniform and Statewide Building Code Independent Inspection Guidelines and Procedures* provides and coordinates the procedures for *Virginia Uniform and Statewide Building Code* inspections that are required Section 113.7. These procedures and guidelines are intended to be useable during the design and permitting process, and on the job site by containing the pertinent information needed for successful implementation of the inspection program.

The *Virginia Tech Virginia Uniform and Statewide Building Code Independent Inspection Guidelines and Procedures* include the following:

- The responsibilities of the University Building Official and staff
- The responsibilities of the Project Manager or Permittee
- The responsibilities of the Special Inspector and related inspectors.
- The responsibilities of the Independent or Third party Inspector,
- The responsibilities of the Registered Design Professionals responsible for the design;
- The role of each member of the building construction team to include the Registered Design Professionals, Building Owner (VA TECH), Contractors, the Inspectors, and University Building Official;
- Identification of the required areas of inspections, and;
- Administrative procedures that include important definitions, reporting requirements, and conflict resolution procedures.

The purpose of the *Virginia Tech Virginia Uniform and Statewide Building Code Independent Inspection Guidelines and Procedures* is to increase awareness of the independent or third party inspection requirements and to have a uniform procedure applicable to all campus projects. Should you have any questions or suggestions for future editions of this document, contact the University Building Official.

1. Introduction

The IBC as adopted by reference through the Virginia Uniform Statewide Building Code (VUSBC) intends that the Authority having jurisdiction or Building Official be responsible for the inspection of construction for code compliance.

The provisions for inspections are intended to provide a degree of scrutiny for aspects of construction that, upon failure, would cause significant risk to life or property harm. These aspects of construction include soil suitability, footings, foundations, framing (steel and wood), masonry and concrete construction, finishes, electrical, mechanical and plumbing as detailed in the VUSBC. Additionally, the inspections are intended to provide a degree of scrutiny for aspects of the construction that may if not installed properly, create maintenance and serviceability issues within a building.

There are times or events that prevent the staff of the University Building Officials office cannot provide time or resources for field inspection. A classic example is weekend or late night concrete pours required to maintain a project schedule. In those situations, with the prior approval of the authority having jurisdiction, the Project Manager may opt to engage an Independent or Third Party Inspector in accordance with these Guidelines and Procedures.

This procedure is intended to safeguard general welfare through:

- Clearly defining the responsibility of all parties involved in the independent or third party inspection process;
- Applying the inspection provisions of the VUSBC in a consistent manner across the Virginia Tech Community in a manner consistent with other jurisdictions across the Commonwealth.

2. Abbreviations and Definitions

2.1 Abbreviations

ACI	International (American Concrete Institute)
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
AR	Architect of Record
ASCE	American Society of Civil Engineers
ASNT	American Society of Non-Destructive Testing
ASTM	American Society for Testing Materials
AWS	American Welding Society
BIA	Brick Industry Association
CASE	Council of American Structural Engineers
CM	Construction Manager
DB	Design Builder
EDI	Exterior Design Institute

EIFS	Exterior Insulation and Finish Systems
GC	General Contractor
IBC	International Building Code
ICC	International Code Council, Inc.
NCMA	National Concrete Masonry Association
NEC	National Electric Code
NFPA	National Fire Protection Association
NICET	National Institute for Certification in Engineering Technologies
MEPR	Mechanical/Electrical/Plumbing Engineer of Record
OSHA	U.S. Dept. of Labor Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Pre-cast/Pre-stressed Concrete Institute
PTI	Post Tensioning Institute
PM	Project Manager
RDP	Registered Design Professional
SDI	Steel Deck Institute
SER	Structural Engineer of Record
SFRM	Spray-Applied Fire Resistant Material
SJI	Steel Joist Institute
TMS	The Masonry Society
TPI	Truss Plate Institute
VOSHA	Virginia Occupational Safety and Health Administration

2.2 Definitions

Words used in this procedure shall have a meaning as defined in the VUSBC and the IBC. Unless otherwise expressly stated, other words and terms shall have the meaning shown in this procedure. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

Agents of Special Inspector (Agents). Qualified individuals or agencies working under the direction of the Special Inspectors who are providing the inspections and tests necessary to complete the special inspection process.

Approved. See VCC Chapter 2 as amended

Approved agency. See VCC Chapter 2 as amended

Approved documents. Includes building construction documents as approved by the jurisdiction including all approved revisions; and also fabrication and erection documents as approved by jurisdiction including all approved revisions.

Approved fabricator. See VCC Chapter 2 as amended, 1702.1

Architect of Record (AR). The registered design professional (RDP) retained by the Owner to design or specify architectural construction in accordance with the VUSBC and whose signature and seal appears on the approved architectural construction documents.

Building. See VCC Chapter 2 as amended

Building Official, UBO (also referred to as the University Building Official at Virginia Tech and Commissioner in some jurisdictions). The local government authority charged with the administration and enforcement of the VUSBC. This shall include any duly authorized technical assistants as specified in the VUSBC.

Certificate of Compliance. See VCC Chapter 2 as amended, 1704.2.5.2

Certificate of Occupancy, CO. This is an authorization for occupancy of a building upon the completion of the work based on the approved construction documents and successful acceptance after all fire code and building code related inspections are satisfied. This recognizes the building is considered in general compliance, although under the building code, there is an addition two year period in which code violations can be identified and required to be resolved.

Construction documents. See VCC Chapter 2 as amended

Contractor: A General Contractor licensed in the Commonwealth of Virginia (See Commonwealth of Virginia, Title 54.1)

Discrepancy: A deviation from the approved plans and specifications and/or Virginia Uniform Statewide Building Code.

Fabricated item. See VCC Chapter 2 as amended

Fabrication and erection documents (placement drawings). All of the written, graphic, and pictorial documents prepared or assembled after issuance of a building permit and in addition to the university approved construction documents, describing the design, location, and physical characteristics of the building components or materials necessary for fabrication, assembly, or erection of the elements of the project. (Examples would include, but are not limited to, concrete reinforcing shop drawings, steel fabrication and erection shop drawings, and metal building fabrication and erection shop drawings.)

Final Report of Special Inspections. A certification by the SI which shall indicate that all construction elements subject to Special Inspections as identified by the jurisdiction approved Statement and Schedule of Special Inspections (SSI) for all materials or phases of construction have been inspected prior to concealment, and in the SI's professional opinion and knowledge, the construction project complies with jurisdiction's approved Construction Documents.

Geotechnical Engineer of Record (GER). The RDP retained by the Owner to design or specify earthwork and foundation support in accordance with the VUSBC, and whose seal and signature appear on the jurisdiction approved geotechnical report.

Inspection. The continuous or periodic observation of work and the performance of tests for certain building or structural components to establish conformance with jurisdiction approved documents as required by the VUSBC and the IBC.

Independence. See VCC 1703.1.1 as amended.

Independent Inspection. Inspections done by an approved independent third party, normally an engineering or testing firm, when approved by the Building Official as a substitute for an inspection by the UBO staff. Can be used for inspections outside normal working hours or when required at distant sites from campus. Can only be done for code when prior approval is granted.

Inspection Certificate. See VCC Chapter 2, as amended.

Inspection and testing agency. An established and recognized agency or agencies, meeting the requirements of ASTM E 329 and accredited, retained by the Owner, independent of the Contractors performing the work subject to special inspections, to perform special inspections and materials testing required by the VUSBC and the IBC. See IBC-1703.1 Approved agency.

Main Wind force-Resisting System: *An assemblage of structural elements assigned to provide support and stability for the overall structure. The system generally receives wind loading from more than one surface.*

Occupancy Category: *See Building Occupancy Category.*

Owner. See VCC Chapter 2, as amended.

Pre-engineered structural elements. Structural elements specified by the SER but which may be designed by a specialty RDP. (Examples are items such as open web steel joists and joist girders; wood trusses; combination wood, metal and plywood joists; pre-cast concrete elements; prefabricated wood or metal buildings; tilt-up concrete panel reinforcement and lifting hardware.)

Primary Registered Design Professional of Record (PRDP). The leader of the design team charged with the preparation of construction documents, either an architect or professional engineer. The Primary Registered Design Professional of Record is responsible for determining and interpreting the needs of the client or for coordinating the work of the other members of the design team.

Primary structural system. The combination of elements which serve to laterally brace and support the weight of the building's structural shell, the applicable live loads based upon use and occupancy, wind, snow, ice, thermal and seismic environmental loads.

Registered Design Professional (RDP). *See VCC-Chapter 2 as amended*

Registered Design Professional in Responsible Charge. *See VCC Chapter 2*

Registered Design Professionals Seal. A seal placed on documents prepared by or under the supervision of a registered design professional. The application of a professional seal indicates that the professional has exercised direct control and personal supervision over the work to which it has been affixed. An appropriately licensed certified professional shall apply a seal to all final documents in which they have had direct control and personal supervision thereof.

Risk Category. See VCC Chapter 2, 1604.5

Seismic Design Category. See VCC Chapter 2 as amended.

Seismic Force Resisting System. See VCC Chapter 2 as amended.

Shear Wall. See VCC Chapter 2 as amended.

Sprayed fire-resistant materials. See VCC Chapter 2-1702.1

Structural observation. See VCC-1702.1

Shall. This term indicates mandatory requirements.

Special Inspector (SI). See VCC Chapter 2. The SI is the Registered Design Professional in Responsible Charge who is directly responsible for Special Inspections, materials testing, and related services as described in the approved SSI. The SI shall be retained by the Owner, independent of the Contractors performing the work subject to special inspection. The SI must be approved by the Building Official. The SI shall be listed as Agent 1 on the SSI.

Statement of Special Inspections (SSI). See VCC 1704.2.3 as amended. The SSI is a statement prepared by an RDP and shall be approved by the appropriate RDP(s) of Record and submitted by the permit applicant. The SSI includes the scope (schedule) of the Special Inspection services applicable to a construction project, and the RDP's and inspection and testing agencies that will provide those services. The SSI is required as a condition for permit issuance in accordance with IBC as amended by USBC and must be approved by the Building Official.

Special Inspection, Continuous. See VCC Chapter 2. The full time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed. (Noted as "c" on the scope or schedule of inspections in the statement of special inspections.)

Special Inspection, Periodic. See VCC Chapter 2 The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been, or is being performed, or at the completion of groups of task involved in completion of the work. One-hundred percent of the work required to be inspected shall be inspected. Under special circumstances, and after a substantiating data is reviewed, the Building Official may decrease the percentage of work that is required to be inspected.

Special Inspector (SI). See VCC Chapter 2. The SI is the RDP who is directly responsible for special inspections, materials testing, and related services as described in the approved SSI. The SI shall be retained by the Owner, independent of the Contractors performing the work subject to special inspection. The SI must be approved by the University Building Official. The SI shall be listed as Agent 1 on the SSI.

Structural Engineer of Record (SER). The Registered Design professional retained by the Owner to design or specify structural documents in accordance with the VUSBC, and whose signature and seal appear on the jurisdiction approved structural construction documents.

Structure. See VCC-Chapter 2 as amended.

Submittal Review Stamp. A stamp applied to a submittal indicating that the registered design professional has reviewed the submittal, and that the submittal clearly and completely indicates in detail the product(s) that are proposed to be installed. In addition to the product, the RDP and/or UBO, may require the method(s) of installation to be completely and clearly defined. The intent of the shop drawing review process is to ensure that the RDP's intended results coincide with the contractors proposed products and methods.

Temporary Certificate of Occupancy, TCO. This is an authorization for occupancy of a building for a specific time and for a specific set of limitations. While it is issued only where the minimum requirements for fire, fire, and

general safety as well as egress are meet for a specific set for situations, it is not indicative of a completed structure.

Third party Inspection. See Independent Inspection

Virginia Uniform Statewide Building Code, VUSBC The adopted statewide building code in Virginia and includes Parts I, II, and III.

Virginia Construction Code, VCC Part I of the VUSBC which adopts and amends the IBC.

3. Responsibilities

The **University Building Official** is responsible for permit plan review, the issuance of the building permits, code mandated inspections, and the Certificate of Occupancy. Prior to issuing the Building Permit, the University Building Official will review and approve the required Construction Documents. During construction, the University Building Official shall conduct inspections as delineated in the VUSBC for the purpose of the verifying the construction is in good conformance with the approved construction drawings and the VUSBC. The University Building Official has the authority to issue a stop work order if it is found that the work is in non-conformance with the approved construction documents or the VUSBC. The Certificate of Occupancy or final inspection shall be issued only after the University Building Official has conducted and approved the Final Inspections.

The **Project Manager** is the person who has been given the responsibility and authority to manage a project, regardless of the size. Typically they will be University employees from either the Facilities or Residence and Dining Departments. The PM normally applies for and holds the permits for a project as well as manages the contracts and contractors.

The **Contractor**, either a General Contractor (BC), Design-Builder (DB) or Construction Manager (CM), is responsible for the construction of the project in accordance with the Construction Documents and the VUSBC; this would include the coordination and direction of all subcontractors, fabricators and material suppliers.

The Contractor is responsible for means and methods of construction as well as for construction site safety. The Contractor is responsible for contacting the project manager or his designee for the scheduling of inspections and tests. Sufficient notice and lead time must be allowed for the inspection and testing to be performed without impeding the construction operations. The Contractor must cooperate with the inspection and testing agencies. When deficiencies are identified, the Contractor must take corrective actions to comply with the contract documents or remedy the deficiencies as directed by the appropriate Registered Design Professional. The Contractor is responsible for testing services that are required for material submittals and are not part of the VUSBC Code Enforcement or Special Inspection program, such as aggregate tests, concrete mix designs, testing of controlled fill materials, etc. The Contractor is the primary person or firm responsible for compliance with OSHA and VOSHA standards and regulations Safe access must be provided to allow inspections and tests to be performed. This may require the Contractor to provide scaffolding, ladders or lifts.

The contractual responsibility of a **Construction Manager (CM)** can vary widely therefore it is important to define the CM's role and responsibility relative to inspections. The Contractor is responsible for completing the construction work in compliance with the Contract Documents and the Building Code. The VUSBC Inspection or any other special inspection or Quality Assurance program does not relieve the Contractor of his or her responsibility to perform Quality Control.

The **Independent Inspector** is a person or firm who, for this procedure, is outside the employee of the University Building Official office. The role of an independent inspector is to provide a code enforcement inspection when the code official is unable to and authorizes the independent inspection in order to meet a schedule or to address a specific issue that staff resources are not capable of addressing. The responsibilities of the Independent Inspector are typically to

verify the requirements of the code and the approved drawings and specifications have been meet. In the case of special equipment of assemblies, this also requires the inspector to verify installation in accordance with any manufacturer's documentation. The Building Official may add additional issues or points to be inspected based on the nature of the work or progress of the preceding work.

An Independent Inspection is not the same as and shall not be confused with the Special Inspection or Special Inspector. It may be possible for the Special Inspector to conduct an Independent Inspection, but it shall be under a separate line of authority and must be pre-approved on a case by case basis.

The **Primary Registered Design Professional of Record (PRDP)**, (or A & E) shall be the primary agent responsible for the design and design team. The RDP shall review and act upon conditions noted in inspection reports and providing submittals, fabrication and erection documents including those revisions and change orders affecting work to be inspected or tested. Please note the following sub-classifications of an RDP that may or may not be an active part of any given project:

Architect of Record

The **Architect of Record (AR)** is the Registered Design Professional (RDP) in Responsible Charge of the architectural building elements and is often the Prime Design Professional for "typical" building projects.

Geotechnical Engineer or Record

Geotechnical Engineer of Record (GER) is the Registered Design Professional in Responsible Charge of the Geotechnical analysis and design of support systems for the footing and foundation support.

Structural Engineer of Record

The **Structural Engineer of Record (SER)** is the Registered Design Professional (RDP) in Responsible Charge of the structural system.

Mechanical/Electrical/Plumbing Engineer of Record

The **Mechanical/Electrical/Plumbing Engineers of Record (MEPR)** are the Registered Design Professionals (RDP) in Responsible Charge of the HVAC systems, electrical systems, fire protection systems and plumbing systems.

Inspections

All projects that have a permit or permits shall have an inspection of some magnitude in accordance with the building code. Those inspections are normally conducted by the staff of the University Building Officials Office. In some cases there maybe schedule or distance issues that call for an independent inspector to be utilized with approval in lieu of the UBO staff.

Key Contacts:

Inspections scheduler:

Heather Snidow Phone: 540-231-5534 Fax 540-231-7239 Email: hsnidow@vt.edu

University Building Official

William Hinson Phone: 540-231-4678 Fax 540-231-7239 Email: hinson@vt.edu

4. When Inspections are Required:

Refer to the *Virginia Tech Virginia Uniform and Statewide Building Code Inspection Guidelines and Procedures* for when inspections are required. Note that under the building code, the authority having jurisdiction may require additional inspection if the scope or work warrants additional inspection as authorized by the building code.

5. Inspection Request Procedure:

Independent inspections must be pre-approved. They will be approved when an inspection cannot be conducted by a UBO inspector at a critical time outside the normal business hours, when a UBO inspector cannot conduct an inspection within 48 hours, or for other unusual circumstances.

All requests must be from the person who holds the permit and be in writing and sent to the attention of the University Building Official. The request cannot be made by the sub-contractors or contractors (unless they hold the permit).

The following minimum information is needed to be submitted with an Independent Inspection request.

- Permit Number

- Street Address

- Type of Inspection

- Date of proposed inspection

- Reason for the request

- Name and credentials, including the resume and job experience of the Independent Inspector

We recommend the request be provided as soon as possible, however, requests will not generally be approved within less than 3 working or business days notice.

An independent inspection can only proceed when the Project manager receives written approval from the University Building Official Office. If the PM or applicant has not received the written approval, DO NOT proceed with the inspection.

The approval will outline what is to be inspected, observed and or tested or verified. The Building Official may incorporate other issues or documentation in order to gain a clear understanding of the inspectors site visit.

The inspection report must be provided within one business day of the inspection. Failure to provide a written report within the allotted time will result in an inspection rejection and the work is subject to being re-inspected which can have an impact in the field if the work has been concealed.

Reports must include the following:

- Permit number

- Complete explanation of what was inspected and/or observed

- Any deviations that were corrected during the inspection

- Deviations that were not that were approved by the A&E

If the inspection finds deviations that cannot be or are not being corrected or not approved by the A&E, reject the work and the work cannot continue.

All work being inspected must at a minimum, be in accordance with UBO approved plans and specs., and the UBO approved construction documents were verified as present at the inspection and in use.

APPEAL PROCESS:

Appeals of inspection results by reviewers and inspectors as well as department directives may be made to the University Building Official.

- Be specific as to the issue being appealed
- Provide supporting documentation as may be applicable, such as code or UL references, etc.

Further appeal of UBO code interpretations can be appealed by the permit applicant to the Department of Housing and Community Development Building Code Technical Review Board.

6. Referenced Documents

- 2012 edition of the Virginia Construction Code that adopts by reference and amends the 2012 edition of the ICC code family published by the International Code Council.
- ASTM E-329, Standard specification for agencies engaged in construction inspection and testing. West Conshohocken: ASTM, Intl.; American Society of Testing Materials, 2007

7. Revisions to this document

Revisions will be made from time to time based on changes in the Virginia Construction Code or problems identified in the field.



Request for Independent Inspection

(To be performed in lieu of UBO inspection)

UBO Permit #: _____ Date: _____

Project Title: _____

Description of Work To Be Inspected: _____

Proposed Date of Inspection: _____

Reason for Independent Inspection: _____

Proposed Inspection Firm and Inspector (attach resume): _____

Name _____

Address _____

Phone/Email _____

I have reviewed the guidelines for independent inspection and reporting. I understand and agree that if the proposed inspection report does not strictly adhere to the above guidelines, it may be rejected and may be cause for the removal of the work.

Permit Holder (Printed name) _____

Signature – Permit Holder _____ Date _____

UBO Comments and Conditions: _____

Inspection Authorized (UBO) _____ Date _____

Invent the Future

Independent Inspection/Report Guidelines:

1. Inspections shall be in accordance with the Virginia Uniform Statewide Building Code.
2. Inspections shall not be performed without a permit posted and the approved plans on site.
3. The report shall include photographs of each area inspected. The photographs shall include a tape measure placed near the items being inspected in order to provide scale to the photo. Photographs showing the overall area and detail shall be included.
4. There shall be no ambiguous words included in the report such as: *general conformance, generally accepted practices, appears or observed.*
5. The report shall contain specific details (ex. reinforcing size, spacing, number of bars, cover and location). The report shall not make general statements similar to “meets drawing” or “general conformance.”
6. Each item inspected shall be referenced to the Approved Plans and specifically state the details of the approved design and the details of the actual field condition.
7. The physical inspection shall be performed by a Virginia Registered Design Professional.
8. The resulting original inspection report shall be submitted within 24 hours of the inspection to the University Building Official.
9. The report must be sealed (signed and dated) in conformance with Department of Professional and Occupational Regulations for RDP and use of seal.

Re-inspections: If the University Building Official’s office failed the inspection, independent inspectors may not perform the re-inspection. If an independent inspector failed the inspection, the independent inspector may do the re-inspection.

Approved Plans: Approved plans shall be stamped drawing(s) for the complete structure for which the building permit has been issued. “Stamped” means the drawing(s) shall contain a date, signature, (University Building Official or his designee) and the approved University Building Official stamp. If the plans do not have such stamp, the inspection must be failed with the comment “No Approved Plans on Site.” If approved plans are not onsite and available at the time the inspection is performed supplemental engineering plans for such things as “grade beams”, brick ledges, etc. do not constitute *Approved Plans*. Any question as to the existence of the proper “Approved Plans” shall be directed to the Building Official prior to rendering a pass/fail inspection decision.

Notification: Prior to performing the inspection, the building official shall be contacted. The notification is to include the name of the permit Holder, the permit number, the inspectors/firms name (3rd party), the contractors name and contact number, the Location of the project and the type of work to be inspected. The resulting original inspection report shall be submitted within 24 hours of the inspection to the building official.

Authorization: The inspection cannot be done for the purpose of being in lieu of the UBO inspection unless authorized prior to the inspection.

Inspection Fees: No costs associated with independent inspection shall be incurred by the VT University Building Official’s Office.