

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Guidance Paper: Acceptance of Licensed Architect or Licensed Engineer Inspections

Code: 2018 NC Administrative Code and Policies

Date: 04/26/2024ⁱ

Section: GS 160D-1106 Alternate inspection method for component or element

Question #1:

What inspections can a licensed architect or licensed engineer perform prescriptively based on the North Carolina General Statutes?

Definitions:

N.C.G.S 160D-1106 allows for a local government to accept, without further responsibility to inspect, a design or other proposal for a “component” or “element”. The Statute has provided definitions and examples:

1. **Component.** Any assembly, subassembly, or combination of elements designed to be combined with other components to form part of a building or structure. Examples of a component include an excavated footing trench containing no concrete, a foundation, and a prepared underslab with slab-related materials without concrete. The term does not include a system.
2. **Element.** A combination of products designed to be combined with other elements to form all or part of a building component. This term does not include a system.

Opinion:

Section 107 of the NC Administrative Code and Policies shows the required inspections that shall be performed by the inspection department of the local government. This guidance paper is written in the context of those inspections, reprinted below for convenience:

**SECTION 107
INSPECTIONS**

107.1 General. The inspection department shall perform the following inspections:

1. Footing inspection;
2. Under slab inspection, as appropriate;
3. Foundation inspection;
4. Rough-in inspection;
5. Building framing inspection;
6. Insulation inspection;
7. Fire protection inspection; and
8. Final inspection.

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Based upon the principals in the Statute, the following required inspectionsⁱⁱ may be performed by a licensed architect or licensed engineer using the form set out within the Statute approved by the NC Building Code Council.

1. **Footing Inspection.** Footing inspections shall be made after the trenches are excavated, all grade stakes are installed, all reinforcing steel and supports are in place and tied, and all necessary forms are in place and braced before any concrete is placed.
2. **Under-slab inspection.** Under-slab inspections, as appropriate, shall be made after all materials and equipment to be concealed by the concrete slab are completed.
3. **Foundation inspection.** Foundation and crawl space inspections shall be made after all foundation supports are installed. [Commentary: Foundation inspections are conducted to verify correct installation and proper bearing support. Poured concrete and masonry walls that have reinforcement steel should be inspected prior to concrete placement. Crawl space leveling, ground clearances, positive drainage and waterproofing/dampproofing, when required, may be inspected at future inspections prior to concealment].
4. **Partial Rough-In Inspection - Trench inspection.** The NC Administrative Code has commentary that discusses underground components, and conveys to the reader the intent to classify underground component inspection(s) under a **Rough-In Inspection**ⁱⁱⁱ, but notes they can be inspected at any point during construction prior to covering. Therefore, open trench inspections for plumbing, mechanical, and electrical components shall be made after the full length and depth of the trench is made, and the intended piping, conduit, tracer wires, and/or conductors are placed. Any given trench could have multiple code volumes applicable, including plumbing, mechanical, fuel gas, and electrical, and may also include required tracer wires, so the code sections pertaining to bedding, depth and support of all the materials in the trench need to be certified by the engineer or architect for all applicable code sections. A trench may contain only a single pipe, but a commercial property could contain many different elements requiring verification of code-compliant materials and assembly. The proper backfilling of the open trench, after the inspection, is fully the responsibility of the installing contractor.

The Statute further defines that components and elements are not systems. An entire building is, therefore, not considered a component or element. A component or element does not encompass a system, such as a structural system, plumbing system, HVAC system, electrical system, etc., but only a component or element within a system; therefore, such systems must be inspected by a certified code enforcement official (inspector) of the local government. The Statute centers around the placement of concrete. The original focus of the Statute was to get weather and time-sensitive items, such as the pouring of concrete for footings another avenue for proper inspection, however; the Statute does not solely limit itself to footings.

Summary:

The footing, under-slab and foundation inspections may be inspected by a certified code enforcement official (inspector) or a licensed architect or licensed engineer using the Appendix G form. **All** other Section 107 Inspections are almost always composed of systems, and the full Rough-in, Building Framing, Insulation, Fire Protection, and Final Inspection cannot be done wholly via this Statute. However, this does not mean individual elements and components that are subsets of each inspection listed under Section 107 cannot be inspected, but they would be for elements and components that for some reason or another need to be concealed, are time-sensitive, or something similar prior to the full scheduled inspection under Section 107. If this Appendix G is used in this scenario, it is very important for the permit holder, the engineer or

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architect to provide clear demarcation where they started and ended their element or component inspection; see Question #8 below for further clarification of partial inspections.

As noted in Question #6 below, this Appendix G Inspection of Elements and Components is different from an inspection of a non-prescriptive design or special inspection that may have to be inspected by a registered architect or design professional.

Question #2:

Are any specific requirements of the code allowed to be eliminated if a licensed architect or licensed engineer designs and performs the component or element inspection per § 160D-1106.

Opinion:

No. The Statute does not eliminate the requirements of the Code or other laws. Building Codes are minimum life safety requirements.

Question #3:

Can a permit holder have a licensed architect or licensed engineer perform the inspection of a revised design for a given component or element at any time?

Opinion:

No. According to the *2018 North Carolina Administration Code and Policies, Section 107.4 Independent inspections authorized by the code enforcement official*, in part states, "...Any change from the permit documents shall be approved by the code enforcement official prior to its implementation."

However, if the code official approves the request for the deviation and the requisite documentation, prior to field inspection, then the licensed architect or registered engineer could perform the inspection of the component or element.

Question #4:

Based on § 160D-1106, what must a jurisdiction require to accept and approve a component or element inspection from a licensed architect or licensed engineer?

Opinion:

The Statute states that a form approved by the North Carolina Building Code Council shall be used when a licensed architect or licensed engineer performs a component or element inspection. Below is a guide for jurisdictions in need of more clarification:

1. The form, as issued or approved by the NC Building Code Council, should indicate the specific component or element inspected.
2. The design submission is completed under the responsible charge and seal of a licensed architect or licensed engineer who holds a license registration in good standing.
3. The site-specific field inspection of the installation or completion of a construction component or element of the building is performed by a licensed architect or licensed engineer or a person under the direct supervisory or responsible charge and seal of the licensed architect or licensed engineer, as defined in the licensing laws.
4. The component or element must meet the current applicable North Carolina Residential

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or Building Code. A licensed architect or licensed engineer should describe the element/component/type of inspection on the form including the specific applicable code sections for the inspection of the component or element.

5. The submission may include additional information such as observations from the site visit, basis of compliance and an explanation of the compliance method, conclusions, recommendations, and any corrective action that was required.

Important Notes:

1. Each jurisdiction should establish a written procedure to address this matter so that all parties are aware at the time of permitting of the procedure (see template attached). The template can be downloaded in MS Word format at: <https://www.ncosfm.gov/media/2645/open>
2. A licensed architect or licensed engineer shall take responsibility for the inspection of a given component or element. Licensing laws for the respective boards shall be adhered to. Architects and engineers must be licensed in North Carolina.

Question #5:

Does § 160D-1106 allow a licensed architect or licensed engineer to design and inspect the sum total of a system of components or elements of a building, thus circumventing the local Code Enforcement Official?

Opinion:

No. While it is possible to list every single component or element of a given building, we believe that was not the intent of the Statute. It is our opinion that the intent is to allow a licensed architect or licensed engineer to submit the necessary paperwork in the design and inspection of a specific component or element in order to reduce project delays, thus moving the given project forward in a timely manner.

Question #6:

Does § 160D-1106 affect in any way non-prescriptive design?

Opinion:

No. Architects and engineers have always designed non-prescriptive (also known as performance-based design), components, elements, systems, etc. (ie: Trusses, steel beams, log homes), and may be required to certify them if required by the jurisdiction. Licensed architects or licensed engineers should provide detailed documentation and conclusions on standard company letterhead. A jurisdiction may ask for detailed documentation upon which the design and conclusions were based (calculations, standard tables, project drawings, existing drawings, field test data, national standards, research data, manufacturer's test data, evaluation reports, manufacturer's installation instructions, and code requirements as applicable) to protect life safety and property. The form approved by the NC Building Code Council is **not** to be used for non-prescriptive designs.

An example of a non-prescriptive design would be heavy timber design showing steel plate connections of a log home, a reinforced concrete column or steel beam across an opening.

Question #7:

Does § 160D-1106 apply to counties?

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Opinion:

Yes. The city and county Statutes were recodified S.L. 2019-111.

Question #8:

Can § 160D-1106 be used to inspect a partial footing, foundation or slab?

Opinion:

Yes. The licensed architect or licensed engineer should provide a separate letter stating what was inspected while also noting on the form “PARTIAL [foundation] INSPECTION ONLY”. An example would be that a licensed engineer inspected the reinforcing on a foundation wall. A separate foundation inspection must be performed by the local inspection department or licensed engineer to verify code compliance for any remaining items (ie: foundation drains, stone, waterproofing, backfill).

Work shall **not** be done beyond the point indicated in each successive inspection without first obtaining the approval of the code enforcement official or the approval and acknowledgement per § 160D-1106.

Question #9:

Can a permit holder use § 160D-11-6 to have a design professional inspect and approve a component or element (ie: footing or slab because of poor soil conditions) that has been turned down by a code enforcement official?

Opinion:

Yes; however, the licensed architect or licensed engineer should provide a separate letter stating what was inspected and any test or evaluations requested/required by the code enforcement official. An example would be where an inspector found poor soil conditions and asked that soil bearing test and reports be performed and for an engineer to evaluate and re-design appropriately to meet the Code. Licensed Engineers or licensed Architects should use caution when performing a component or element inspection that has been turned down by a code enforcement official. Code enforcement officials should ask for all documentation in such situations to properly document that any issues found by the code enforcement official initially were fixed and meets the Code.

References:

1. “§ 160D-1106 – Alternate inspection method for component or element.

(a) Notwithstanding the requirements of this Article, a city shall accept, without further responsibility to inspect, a design or other proposal for a component or element in the construction of buildings from a licensed architect or licensed engineer provided all of the following apply:

- (1) When required by the North Carolina State Building Code, the submission design or other proposal is completed under the valid seal of the licensed architect or licensed engineer.*
- (2) Field inspection of the installation or completion of the component or element of the building is performed by a licensed architect or licensed engineer or a person under the direct supervisory control of the licenses architect or licensed engineer.*

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(3) *The licensed architect or licensed engineer provides the city with a signed written document certifying that the component or element of the building so inspected under subdivision (2) of this subsection is in compliance with the North Carolina State Building Code or the North Carolina State Residential Code for One- and Two-Family Dwellings. The certification required under this subdivision shall be provided by electronic or physical delivery, its receipt shall be promptly acknowledged by the city through reciprocal means.*

(b) *Upon the acceptance and approval receipt of a signed written document by the city as required under subsection (a) of this section, notwithstanding the issuance of a certificate of occupancy, the city, its inspection department, and the inspectors shall be discharged and released from any liabilities, duties, and responsibilities imposed by this Article with respect to or in common law from any claim arising out of or attributed to the component or element in the construction of the building for which the signed written document was submitted.*

(c) *With the exception of the requirements contained in subsection (a) of this section, no further certification by a licensed architect or licensed engineer shall be required for any component or element designed and sealed by a licensed architect or licensed engineer for the manufacturer of the component or element under the North Carolina State Building Code or the North Carolina Residential Code for One- and Two-Family Dwellings.*

(d) *As used in this section, the following definitions shall apply:*

(1) *Component. – Any assembly, subassembly, or combination of elements designed to be combined with other components to forms part of a building or structure. Examples of a component include an excavated footing trench containing no concrete, a foundation, and a prepared underslab with slab-related materials without concrete. The term does not include a system.*

(2) *Element. – A combination of products designed to be combined with other elements to form all or part of a building component. The term does not include a system.”*

Keywords:

Designer, house, home, component, element

ⁱ This version replaces the version dated 7/24/2020

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6. Insulation inspection;
7. Fire protection inspection; and
8. Final inspection.

ⁱⁱⁱ *Commentary: Plumbing, mechanical, and electrical components installed underground should be considered as rough-in inspections and may be inspected at any point during construction prior to covering.*

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