

Mechanical News

January 2013

Questions from contractors

1. Question : Am I required to perform a load calculation on every job that I install regardless if it's a new install or a replacement?

Answer : Yes . All heating and cooling equipment shall be sized in accordance with **ACCA Manual S** based on building loads calculated in accordance with **ACCA Manual J** or other approved heating and cooling calculation methodologies, see **NCMC section 312.1**. Ducts systems installed in single dwelling units shall be sized in accordance with **ACCA manual D** or other approved methods. Duct installed in other buildings shall be sized in accordance with **ASHRAE**, see **NCMC section 603.2**

(Information on this topic from the North Carolina State Board of Examiners.)

The Role of State Board of Examiners of Plumbing, Heating, and Fire Sprinkler Contractors

In addition to the Mechanical Code, a licensee of the Plumbing, Heating, and Fire Sprinkler Contractor Board (Board) is subject to the rules set forth By **G.S. 87-21**, and in particular **21 NC Administrative Code 50.0505** which addresses General Supervision and Standard of Competence. This Board is charged with the examination, regulation, investigation, and discipline of licensees (<http://nclicensing.org/>). As such, in cases where an in-depth investigation of performance is required, this Board should be the primary contact.

The requirements of the Board are sometimes used synonymously with the Building Code, but the Board Rules are more distinct for residential heating systems, especially in regards to zoning and temperature differentials. Also, the Board requires all licensees to perform, and keep records of, load calculations performed for each heating system, air conditioning system, or both, prior to the installation. Refer to paragraph (d) in a reprint of the **21 NCAC 50.0505** section below.

Excerpt of Board Rules:

21 NCAC 50 .0505 GENERAL SUPERVISION AND STANDARD OF COMPETENCE

(b) The provisions of the North Carolina Building Code, including the provisions of codes and standards incorporated by reference, and adopted by the Building Code Council of North Carolina are the minimum standard of competence applicable to contractors licensed by the Board. Licensees shall design and install systems which meet or exceed the minimum standards of the North Carolina State Building Code, manufacturer's specifications and installation instructions and standards prevailing in the industry.

(d) Every newly installed residential heating system, air conditioning system or both shall be designed and installed to maintain a maximum temperature differential of four degrees Fahrenheit room-to-room and floor-to-floor. On multilevel structures, contractors shall either provide a separate HVAC system for each floor or to install automatically controlled zoning equipment for each level with individual thermostats on each level to control the temperature for that level. The seasonal adjustment needed to maintain the four degrees Fahrenheit room-to-room and floor-to-floor maximum temperature differential shall not be accomplished through the use of manual dampers.

(e) All licensed HVAC contractors or licensed technicians shall perform a room-by-room load calculation for all newly installed residential structures prior to installing heating systems, air conditioning systems, or both, which calculations shall be specific to the location and orientation where the HVAC system or equipment is to be installed. A written record of the system and equipment sizing information shall be provided to the homeowner, owner or general contractor upon request and a copy shall be maintained in the job file of the licensee for a minimum of six years. Load calculations shall be performed by a licensee who holds the appropriate license from this Board, or a licensee may utilize a load calculation carried out for this particular structure and location by a North Carolina Licensed Professional Engineer.

(f) When either a furnace, condenser, package unit or air handler in an existing residential heating or air conditioning system is replaced, the licensed HVAC contractor or licensed technician is required to perform a minimum of a whole house block load calculation. When a furnace, condenser, package unit or air handler in a residential heating or air conditioning system is replaced, the licensee shall ensure that all systems and equipment are properly sized. The licensee may utilize industry standards, reference materials, evaluation of the structure, and load calculations. A written record of the system and equipment sizing information shall be provided to the homeowner, owner or general contractor upon request and a copy shall be maintained in the job file of the licensee for a minimum of six years. If a load calculation was not performed or if a load calculation was performed and it is later determined by the Board that the unit installed was undersized or oversized, the installation will be considered as evidence of incompetence. Load calculations shall be performed by a licensee who holds the appropriate license from this Board, or a licensee may utilize load calculations carried out for this particular structure and location by a North Carolina Licensed Professional Engineer.

History Note: Authority G.S. 87-18; 87-23; 87-26;

Eff. February 1, 1976;

Readopted Eff. September 29, 1977;

Amended Eff. July 3, 2012; January 1, 2010; March 1, 2005; January 1, 2004; July 1, 2003; July 1, 1991; October 1, 1989; May 1, 1989.

(Information from Winston Salem/Forsyth County Inspections Division on this topic.)

The Code Requires "...For one and two-family dwellings and townhouses, heating and cooling equipment shall be sized in accordance with **ACCA Manual S** based on building loads calculated in accordance with **ACCA Manual J**, or other approved heating and cooling calculation methodologies." **NCMC Section 312.1.**

Similarly, Section **603.2 of the NCMC** requires "...Ducts installed within a single dwelling unit shall be sized in accordance with **ACCA Manual D** or other approved methods..."

In short, the Code requires these calculations be performed, and be available, but no peer review is required.

Refer to Section **107.1 of the NC Administrative code** for minimum inspections. As is the case for a review of plans from a design professional, a quick check certainly can be performed by experienced code officials, but a line-item by line-item review of the design professional's load calculations is usually not warranted or expected.

Likewise, it is within the permitting Agency's authority to require drawings and specifications and additional data as required in order to determine the compliance with the applicable Codes, refer to Section **106.2.1 and 106.2.2 of the NC Administrative Code.**

Summary : Have your load calculation completed for every job that you install regardless if it's a replacement of an existing system or the installation of a new system. It is good practice to have them available if requested by the inspector. If the calculations are requested by the inspector ,they must be available before the inspection will be completed.

Department changes

The city has made some changes to our credit card purchasing policy that will include permit purchasing. Effective September 4th 2012 credit card purchases are now limited to a \$5.00 minimum per transaction. The maximum number of transactions is 10 transactions in any 30 day period and a maximum of \$2,500 total in any 30 day period. If you are a contractor who regularly purchase permits and pay fees with a credit card please make note of these changes and make arrangements if needed so we can still help provide the best possible service to you and your company.

Permit information

Please provide us with accurate permit information including contact information, cross streets and description of work . There are fields on the permit application for all of this information to be provided. By completing all of the appropriate information we can operate more efficiently and help get your job completed quicker. If you should need assistance on completing any of this information please contact me and I will help walk you through the process or go over it with your office staff..

AM /PM Inspections

When you request an inspection there is an option of selecting AM or PM inspection request. This selection is **only for Building inspections of footings or concrete inspections**, it is not for normal routine inspections . If you have a no heat or an emergency please let us know and we will get you on the front of our list.

Contact information

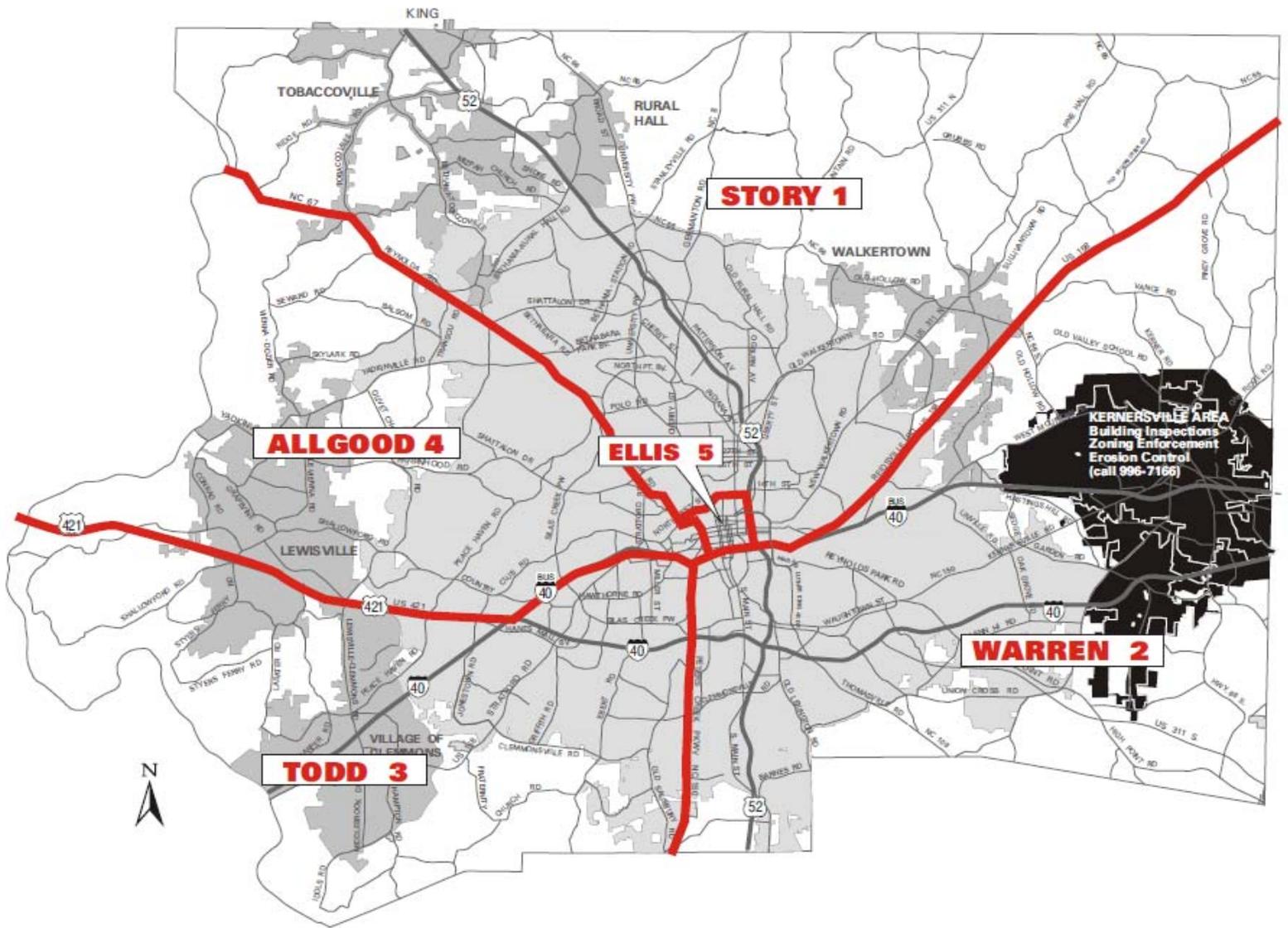
If you have a occupied dwelling that needs an inspection, please leave us the contact information on the permit and let the owners or tenants know that we will be contacting them to make arrangements to gain access to perform your inspection . Please Do not tell them when we will be there to do the inspection .You can let them know that you have your inspection scheduled and that we will contact them.

Thank you

**If you wish to have your questions included in our monthly newsletter,
Please send to alexe@cityofws.org Alex Ellis Senior Mechanical Inspector 336-727-2382**

CITY OF WINSTON-SALEM Mayor: Allen Joines City Council: Vivian H. Burke, Mayor Pro Tempore, Northeast Ward;
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Northwest Ward; Derwin L. Montgomery, East Ward; James Taylor, Jr., Southeast Ward City Manager: Lee Garrity
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Mechanical/Heating Inspector's Work Areas

MECH. / HEATING INSPECTORS	Work Area	Office Phone	Nextel Mobile	Nextel Direct Connect
Alex Ellis (Supr.)	5	747-7462	462-7501	150*1129*30
Jim Story	1	748-3098	462-7498	150*1129*27
Wade Warren	2	734-1394	462-7502	150*1129*31
Shawn Todd	3	727-2387	462-7499	150*1129*28
Troy Allgood	4	747-7431	462-7489	150*1129*18