

**NC Department of Insurance  
Office of the State Fire Marshal - Engineering Division  
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**Closed Crawl Space Moisture Control – Permitting<sup>1</sup> and H3 Licensure**

**Code:** 2012 Residential  
**Section:** R409.5

**Date:** March 3, 2015  
**Rev.:** February 17, 2017

**Code:** 2012 NC Mechanical  
**Section:** 101.2

**Code:** 2012 NC Administrative  
**Section:** 106.1

**Question:**

How does the 2012 NC Mechanical Code and 2012 NC Residential Code correlate with the licensure requirements of the State Board of Examiners of Plumbing, Heating and Fire Sprinkler Contractors?

**Answer:**

Section R409.5 of the 2012 NC Residential Code contains four prescribed methods of moisture control.

The licensure requirement depends on the methodology chosen to control the humidity. **Table 1: Humidity Control Method** lists the four prescriptive methods for providing humidity control in a closed crawl space. **Table 2: Licensure Requirement** identifies which method requires an H-3 license.

The licensure requirements are determined by the State Board of Examiners of Plumbing, Heating and Fire Sprinkler Contractors. The licensure question was posed to this Board and the response reprinted here for the convenience of the reader. If there are detailed questions concerning the licensure requirements, please contact the Board, at 919-875-3612.

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<sup>1</sup> See 2012 Administrative Code - 106.1 - Permit Required for Closed Crawl Space.pdf at [http://www.ncdoi.com/OSFM/Engineering\\_and\\_Codes/Default.aspx?field1=Code Interpretations&user=State Building\\_Codes&field2=Interpretations4/2012 Administrative](http://www.ncdoi.com/OSFM/Engineering_and_Codes/Default.aspx?field1=Code Interpretations&user=State Building_Codes&field2=Interpretations4/2012 Administrative) for permit requirements.

<b>Table 1: Humidity Control Method</b>
R409.5.1 Dehumidifier
R409.5.2 Supply Air
R409.5.3 House Air
R409.5.4 Exhaust fan

<b>Table 2: Licensure Requirement</b>	<b>H-3 license required<sup>2</sup> ?</b>
R409.5.1 Dehumidifier	No
R409.5.2 Supply Air	Yes
R409.5.3 House Air <sup>3</sup>	No
R409.5.4 Exhaust fan	No

Please note there are other trades that are involved, such as electrical, that may require licensure. This interpretation does not address the electrical, plumbing or general contracting licensure requirements.

**Keywords:** humidity  
filename

**Excerpt of NC Residential Code Section 409.5:**

**R409.5 Space moisture vapor control.** Closed crawl spaces shall be provided with a mechanical drying capability to control space moisture levels. The allowed methods are listed below in Sections R409.5.1 through R409.5.5. At least one method shall be provided; however, combination systems shall be allowed.

**R409.5.1 Dehumidifier.** A permanently installed dehumidifier shall be provided in the crawl space. The minimum rated capacity per day is 15 pints (7.1 Liters). Condensate discharge shall be drained to daylight or interior condensate pump. Permanently installed dehumidifier shall be provided with an electrical outlet.

**R409.5.2 Supply air.** Supply air from the dwelling air conditioning system shall be ducted into the crawl space at the rate of 1 cubic foot per minute (0.5 L/s) per 30 square feet (4.6 m<sup>2</sup>) of crawl space floor area. No return air duct from the crawl space to the dwelling air conditioning system is allowed. The crawl space supply air duct shall be fitted with a backflow damper to prevent the entry of crawl space air into the supply duct system when the system fan is not operating. An air relief vent to the outdoors may be installed. Crawl spaces with moisture vapor control installed in accordance with this section are not considered plenums.

**R409.5.3 House air.** House air shall be blown into the crawl space with a fan at the rate of 1 cubic foot per minute (0.5 L/s) per 50 square feet (4.6 m<sup>2</sup>) of crawl space floor area. The fan motor shall be rated for continuous duty. No return air duct from the crawl space to the dwelling air conditioning system is allowed. An air relief vent to the outdoors may be installed. Crawl spaces with moisture vapor control installed in accordance with this section are not considered plenums.

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<sup>2</sup> The determination of licensure requirements under GS 87-21 is made by the State Board of Examiners of Plumbing, Heating and Fire Sprinkler Contractors.

<sup>3</sup> As written, the code assumption is the house air source will be provided separate from the ducted hvac system. If the hvac system is used, it falls back to R409.5.2.

**R409.5.4 Exhaust fan.** Crawl space air shall be exhausted to outside with a fan at the rate of 1 cubic foot per minute (0.5 L/s) per 50 square feet (4.6 m<sup>2</sup>) of crawl space floor area. The fan motor shall be rated for continuous duty. There is no requirement for make-up air.