

NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Log Cabins

Codes: NC Administration and Enforcement, 2002 Edition Date: July 22, 2005

Section: 205.1, Alternate Material, Design and Methods

Question:

Is engineering required for log cabin construction since there are no provisions in the Residential Code to address this type of construction?

Answer:

Inspectors have, at their own risk, relied on Section 205.1, Alternate Material, Design and Methods in the NC Administration and Enforcement Requirements code which states:

"The provisions of this code are not intended to limit the appropriate use of materials, appliances, equipment or methods of design or construction not specifically prescribed by this code, provided that the alternate has been reviewed and approved by the Code Enforcement Official at his sole discretion. The Code Enforcement Official may approve the alternate provided the alternate, for purpose intended, is at least the equivalent of that prescribed in the technical codes in quality, strength, effectiveness, fire resistance, durability, and safety."

The use of Section 205.1, if applied to the log cabin, is not recommended unless the Inspector has the expertise and the experience to warrant its use.

In the case of the construction methods of an entire structure, such as a log cabin, being an alternate method, "expertise" would at the least, include the ability to do structural engineering calculations for any or all of the unconventional components of the construction and to be able to demonstrate the ability of the construction method to be at least the equivalent of that prescribed in the technical codes.

In conclusion, unless the inspector can demonstrate his ability to ensure the structural integrity of the log cabin construction, it is expected that all components for a log cabin, which are not addressed in the Code be sealed by a NC Design Professional and that the Design Professional stipulate that all of the construction elements meet at least the dead load, live load and wind zone requirements as specified in the NC Residential Code.