

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Cob Construction

Code: 2018 Residential Code
Section: R301, Table N1102.1.2

Date: March 20, 2019

Question:

Cob is a term which defines a mixture of clay and sand, with or without straw. This mixture is hand-formed into lumps (cobs), or bricks (adobe) which are either tamped or stacked to form a wall. Is it permissible to construct a single-family or two-family dwelling and associated accessory buildings using Cob-construction?

Answer:

Yes. Because adobe (brick) construction is not addressed in the NC Residential Code (NCRC) it can be constructed in compliance with the 2018 NC Building Code (NCBC), Section 2109.

The lump form (cob) of material is not addressed in the NCRC or the NCBC and would have to be addressed as an alternate material and method of construction, as per 2018 North Carolina Administrative Code and Policies - Section 105. Such buildings shall be designed by a NC registered design professional.

Because of the high mud content, Cob takes a long time to dry and has a very low insulating capacity. Cob wall construction (both cob and adobe) will require analysis to determine compliance with the thermal envelope energy provisions contained in Chapter 11. Depending on the properties of the material and wall thickness, cob walls shall meet the non-mass wall criteria or the mass wall [as defined in chapter 2 of the NCRC] criteria found in Table N1102.1.2, as applicable.

If cob construction is being considered, it is advisable to meet and discuss the project with the local Authority Having Jurisdiction (AHJ). The Code Enforcement Officer of the AHJ has final determination of code compliance. Any submission shall be reviewed - as an Alternate Material, Design or Method of construction, as addressed in Section 105 of the 2018 NC State Administrative Code and Policies.

Keywords:

Type V, house