



**RESIDENTIAL AIRCRAFT HANGAR**

- In order to be considered a residential aircraft hangar, the hangar must meet all three of the criteria listed below. If not meeting the criteria of a residential hangar, the hangar shall be constructed as required for an S-1, aircraft hangar per the current NC Building Code.
  - An accessory building constructed on a one- or two-family residential property
  - Not more than 2,000 square feet
  - Not more than 20 feet in height
- If attached to a dwelling, the hangar shall be separated by walls having a fire-resistance rating of not less than 1-hour. Such separation shall be continuous from the foundation to the underside of the roof and shall be un-pierced except for doors leading into the dwelling unit. Openings from the hangar into a room used for sleeping purposes are not permitted.
- Doors into the dwelling unit that separate the dwelling unit from the residential aircraft hangar must comply with the following:
  - Equipped with self-closing devices
  - ¾ hour rated assembly
  - Minimum 4" noncombustible raised sill
- If detached, the hangar shall require a 1-hour fire-resistance-rated exterior wall if fire separation distance is less than 3 feet from the property line or any other buildings on the same property.
- A hangar shall provide two means of egress. Only one door into the dwelling shall be considered as meeting one of the two means of egress.
- A minimum of one listed smoke alarm shall be installed within the hangar and shall be interconnected into the residential smoke alarm or other sounding device that will be audible in all sleeping areas of the dwelling. This requirement is applicable to attached and detached residential hangars.
- Electrical, mechanical, and plumbing systems installed within the hangar shall be independent of the systems installed within the dwelling. Building sewer lines may connect outside the structures.



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- An aircraft hangar that does not meet the criteria of a residential aircraft hangar requires plan review. Documents submitted for plan review shall bear the North Carolina seal of a registered design professional and shall include the following:
  - 4 complete sets, 5 complete sets if fire suppression or fire alarm systems are required (County zoning only – other jurisdiction’s requirements may differ)
  - Appendix B
  - Site plan
  - Structural drawings
  - Architectural drawings
  - Plumbing, Mechanical, and Electrical drawings
  
- Aircraft hangars shall be considered an S-1 occupancy and shall comply with section 412.4 and all other applicable sections of the NCBC to include, but not limited to, the following:
  - Exterior walls located less than 30’ from property lines shall have a fire-resistance rating of not less than 2 hours.
  - If located on the same lot as a one- or two- family dwelling, the hangar shall be separated from the residential building as follows:
    - (Attached) 2-hour fire resistant rated construction, 1-1/2 hour rated door assembly.
    - (Detached with less than 20’ separation distance between hangar and dwelling unit) 1 to 2 hour rated walls and openings based on the location of the assumed property line.
    - (Detached and 20’ or more separation distance between hangar and dwelling unit) no rating required.
  - Heating equipment shall be placed in another room separated by 2-hour fire-barriers or horizontal assemblies, or both. Entrance shall be from the outside or by means of a vestibule providing a two-door separation.  
**(Exceptions below)**
    - *Unit heaters and vented infrared radiant heating equipment suspended not less than 10’ above the upper surface of wings or engine enclosures of the highest aircraft that are permitted to be housed in the hangar need not be located in a separate room provided they are mounted not less than 8’ above the floor in the shops, offices and other sections of the hangar communicating with storage or service areas.*
    - *Entrance to the separated room shall be permitted by a single door, provided the sources of ignition in the appliance are not less than 18” above the floor.*
  - Floor surface shall be graded and drained to prevent water or fuel from remaining on floor.
  - Fire suppression shall be required as follows:
    - Any hangar having an aircraft access door exceeding 28’ in height.
    - Any hangar exceeding one story in height
    - Any hangar where hazardous operations including fuel transfer, welding, torch cutting, torch soldering, doping, or spray-painting are performed.
    - Any hangar of type VB construction with a fire area exceeding 5,000 square feet
    - Any hangar of type II-B construction with a fire area exceeding 12,000 square feet
      - For hangars not complying with the above types of construction or exceeding the above limitations the designer should reference NFPA 409 for fire suppression requirements.
  
- Notes:
  - Electrical wiring materials and methods shall comply with Article 513 of the current NEC.
  - Refer to Environmental Health and Zoning for additional requirements
  - This Guide Sheet is based upon the 2018 NCBC.