



Engineering

Wayne Goodwin, Commissioner of Insurance
Rick McIntyre, Assistant State Fire Marshal

May 11, 2016

Daryl Decker
Redwood Acquisition
23775 Commerce Park
Beachwood, OH 44122

RE: 2012 NC Building Code
Section 903.3.1.3, NFPA 13D Sprinkler Systems
Section 706, Fire Walls
Section 705, Exterior Walls
Section 202, Townhouse

Mr. Decker:

This letter is in response your request for formal interpretation dated 4/22/2016 and received on 4/27/2016. Dan Austin and I have discussed this project with Adam Ryerson.

The single question raised in e-mails with Carl Martin and Dan Austin beginning on 4/20/2016 (in my words) is:
Can an NFPA 13D sprinkler system be installed in townhouses constructed under the NC Building Code?

The local Fire Marshal has not received plans and details for this Building Code Townhouse project, but is in agreement with our office that an NFPA 13D sprinkler system is appropriate with 2-hour Fire Wall separations. The absence of plans for review may be the reason for your impasse and standstill. This is not a Residential Code Townhouse project because you chose not to provide property line separations as required under that code.

Carl Martin wrote on 4/21/2016:

Dan Austin and I discussed this and have the following response:

If a building meets the definition of "townhouse" in the 2012 NC Building Code (NCBC) then Section 903.3.1.3 of the NCBC and NC Fire Prevention Code allows such buildings to be NFPA 13D sprinklered.

Unlike the NC Residential Code, the definition in the NCBC does not require that each dwelling unit sit on an individually deeded lot of land.

So, if all dwelling units are separated by 2-hour firewalls complying with Section 706 and exterior walls complying with Section 705 and meet the definition of "townhouse" in Chapter 2, they would be considered "townhouses" and can be sprinklered per NFPA 13D.

Dan Austin wrote on 4/25/2016:

If the building meets the definition of Townhouse from Chapter 2 of the North Carolina Fire Code (NCFC) then a 13D sprinkler system would be allowed per 903.3.1.3. Whether or not the building is a townhouse must be determined by the Building Inspections department

NFPA 13D has added townhouse to the definition of dwelling to clarify that the standard is meant to apply to them as well. The system should be monitored per 903.4, supervised per 903.4.1 and will require a building alarm per 903.4.2 of the NCFC, unless they meet one of the exceptions.

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Barry Gupton, PE

Another concern you expressed is that there is one riser feeding 6 dwellings. NFPA 13D does allow this standalone type system provided each dwelling is equipped with a control valve for that dwelling. 6.2.3 of NFPA 13D -2013 edition.

The 3-questions raised in this request letter are:

1. *Mr. Martin was somewhat vague in his final comment. We ask for a ruling on not "if" but does the construction of the fire wall as diagramed there in meet the qualifications listed in section 706?*
2. *Can you please clarify for us What Mr. Martin and Mr. Austin are specifically looking for in the exterior wall for compliance with section 705?*
3. *Finally, do you fully concur with Mr. Martin and Mr. Austin's opinion that we be permitted to sprinkle per NFPA 13D?*

There is nothing vague about the original response to Question #1. If Fire Wall separations are provided between Townhouses, then an NFPA 13D sprinkler system is appropriate. The G.A. #3820 detail submitted with your 4/22/2016 request is identified as a 2-hour separation wall, but not as a Fire Wall. The Designer needs to identify it as such and indicate how it will allow collapse of construction on either side without collapse of the wall.

In Question #2, Section 705 applies to any Exterior Wall along the assumed lot lines, beyond the Fire Wall. This usually occurs where buildings are offset. The Designer should be able to assist with this as well.

In Question #3, we are all in agreement that an NFPA 13D sprinkler system is appropriate. No further clarification is necessary.

Sincerely,



Barry Gupton, PE
Chief Code Consultant

cc: File
Adam Ryerson, Concord
Todd Culp, Cabarrus County
Dan Austin, NCDOI
Carl Martin, NCDOI

April 22, 2016

Barry Gupton, Chief Code Consultant

I am writing you on behalf of our company Redwood Living out of Beachwood, Ohio. We are developing a property in Concord NC called Birchwood Commons. We have run into a discrepancy in the interpretation of the North Carolina Fire Code and I am writing you for clarification and your formal ruling.

Our understanding of the North Carolina code says that our structures do NOT meet the definition of a townhouse under the NC residential code as we do NOT have individual lot lines.¹ For this reason we are forced to go with the NC commercial code in which our buildings DO meet the definition of a townhouse.²

Per section 903.3.1.3 of the 2012 North Carolina Building Code, as allowed, we can install our sprinkler systems in accordance with NFPA 13D or Appendix P2904 of the international Residential Code.³

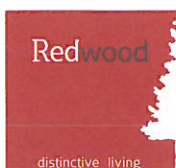
However the local jurisdictions keep telling us we are required a 13R. Our submitted plans have been denied approval by the City of Concord Planning because of this discrepancy and a written comment was returned to us requiring a 13R as part of our review process. This impasse impacts our building and site development and has us at a standstill in a major housing development. Per this argument we are seeking a formal ruling.

I have already contacted Mr. Carl Martin and Mr. Dan Austin from the Engineering Division Office of State Fire Marshal at the N. C. Department of Insurance on this matter and include here Mr. Martin's response.

Dan Austin and I discussed this and have the following response:

If a building meets the definition of "townhouse" in the 2012 NC Building Code (NCBC) then Section 903.3.1.3 of the NCBC and NC Fire Prevention Code allows such buildings to be NFPA 13D sprinklered.

Unlike the NC Residential Code, the definition in the NCBC does not require that each dwelling unit sit on an individually deeded lot of land.



Redwood

ACQUISITION

So, if all dwelling units are separated by 2-hour firewalls complying with Section 706 and exterior walls complying with Section 705 and meet the definition of "townhouse" in Chapter 2, they would be considered "townhouses" and can be sprinklered per NFPA 13D.

I am including a proposed site plan cover sheet showing our 106 units on a single entry development as submitted to the City of Concord. I am also including a rendering of our fire wall construction as part of your review. I would request an official ruling on the following:

- 1) Mr. Martin was somewhat vague in his final comment. We ask a ruling on not "if" but does the construction of the fire wall as diagramed there in meet the qualifications listed in section 706?
- 2) Could you please clarify for us What Mr. Martin and Mr. Austin are specifically looking for in the exterior wall for compliance with section 705?
- 3) Finally, do you fully concur with Mr. Martin and Mr. Austin's opinion that we be permitted to sprinkle per NFPA 13D.

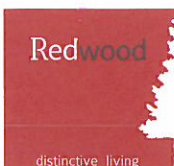
Many thanks for your review.

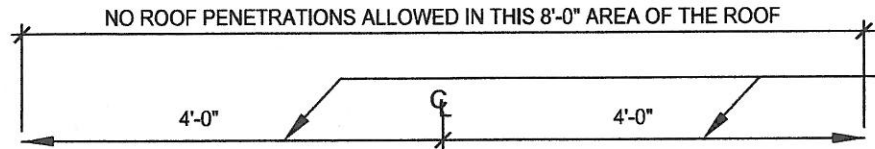
Daryl Decker

¹ 2012 NORTH CAROLINA RESIDENTIAL CODE, Definitions: TOWNHOUSE. A single-family *dwelling unit* constructed in a row of attached units separated by property lines and with an open space on at least two sides

² 2012 NORTH CAROLINA BUILDING CODE, Definitions; TOWNHOUSE. A single-family *dwelling unit* constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides

³ 2012 NORTH CAROLINA BUILDING CODE, Fire Protection Systems; (F) 903.3.1.3 NFPA 13D sprinkler systems. Where allowed. *Automatic sprinkler systems* installed in one-and two-family *dwelling units* and *townhouses* shall be permitted to be installed throughout in accordance with NFPA 13D or Appendix P2904 of the *International Residential Code*.





FIRE RATED ROOF CONSTRUCTION

30 YR. CLASS 'C' RATED ASPHALT OR FIBERGLASS SHINGLES OVER 15 LB FELT OVER 7/16" EXT. GRADE FIRE TREATED O.S.B. ROOF SHEATHING WITH CLIPS OVER PRE-ENGINEERED WOOD TRUSSES AT 24" O.C.

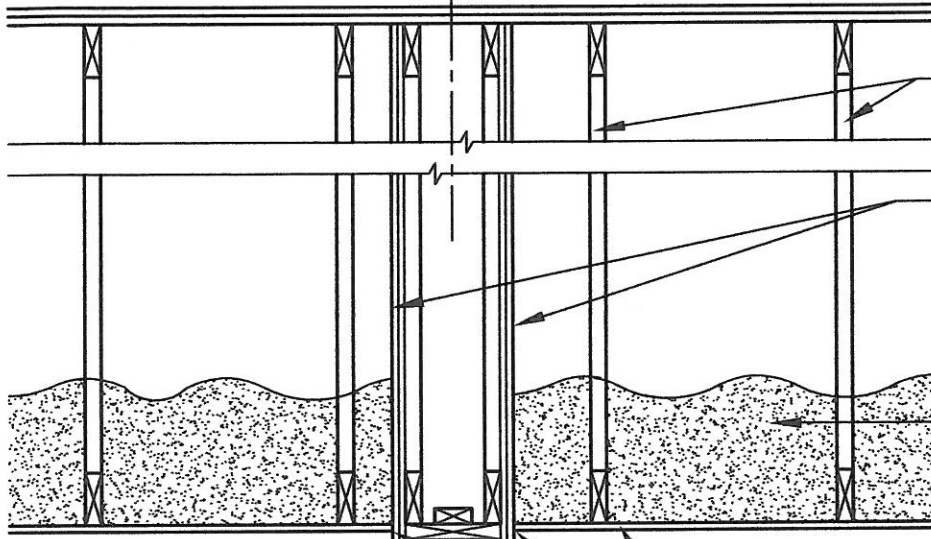
LOAD BEARING PRE-ENGINEERED WOOD TRUSSES @ 2'-0" O.C. - TYP

2 HOUR SEPARATION WALL

GABLE END TRUSS WITH (2) LAYERS 5/8" TYPE 'X' GYP. BD. BOTH SIDES, SIMILAR TO 2 HOUR RATED GA FILE #WP 3820. RUN GYP. BD. TIGHT TO ROOF SHEATHING.

R-38 FIBERGLASS BLOWN IN ATTIC INSULATION

TRUSS BEARING ELEV: +8'-1"



MASTER BEDROOM

MASTER BEDROOM

5/8" TYPE "X" GYP. BOARD CLG.
 PROVIDE GYP. BD. CLIPS AS REQUIRED FOR SUPPORT OF CEILING GYP. BD.

1" AIR SPACE
 (2) LAYERS 5/8" TYPE 'X' GYP BOARD EACH SIDE.
 2X4 WOOD STUDS @ 16" O.C.

2 HOUR SEPARATION WALL
 2 HOUR RATED ASSEMBLY AS PER . G.A. #3820 (SIM.)

3 1/2" SOUND ATTENUATION BLANKETS (UL CLASSIFIED)
 2x4 P.T. SILL PLATE

FLOOR CONSTRUCTION

4" CONCRETE SLAB WITH FIBER MESH ON 6 MIL. VISQUEEN VAPOR BARRIER ON MIN. 2" COMPACTED GRANULAR BASE

FIRST FIN. FLOOR ELEV: +0'-0"

