

ATTACHMENT FOR APPEAL CASE #20210057101

Item 1: Double Fire Wall Condition

A double fire wall condition is proposed between the parking deck (Type IB) and the R-2 (Type IIIA construction). This double fire wall condition consists of a 2 hour precast wall on the parking deck and a 2 hour CMU wall on the Residential. Per the 2012 IBC, through its reference to NFPA 221, openings are allowed in this double fire wall condition as long as both walls have an opening protective. Solutions typically involve two (2) fire shutters, one (1) fire door and one (1) fire shutter, or a 2-hour vestibule with two (2) fire doors in series.

Based on the complications with these solutions in a Residential-Parking Garage double fire wall condition, the 2015 IBC added an exception in the Code which would allow for a single protective opening at the parking garage fire wall condition (2015 IBC, Section 705.3, Exception 2). Considering that Nashville has adopted the 2018 IBC, with no amendment to Section 705.3, it is requested that the provisions in the 2018 IBC, Section 705.3, Exception 2 be allowed for The Finery double fire wall condition.

A single door will be installed on the parking garage fire wall at two (2) elevator lobby locations. At two (2) interior exit stair locations, the stair construction itself is requested to be approved as the code compliant 2-hour vestibule with two (2) fire doors in series.

We respectfully request the use of 2018 IBC Section 705.3, Exception 2 to assist with providing compliance at the elevator lobbies and request the inclusion of the exit stair within the 2-hour vestibule proposed at the interior exit stair enclosures.

Further justification is provided in Attachment 1 for consideration.

Item 2: Residential Fire Wall designed to have structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for the duration of time required for the fire wall.

The Finery residential fire wall construction occurs between two (2) Type IIIA buildings and is designed to have sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for the duration of time required for the fire wall. Refer to attachment for a more detailed review.

- UL U210, Configuration C is specified for The Finery 3-hour fire wall
- UL U210, Configuration C provides a fire resistance rating compliant assembly for fire exposure on either side.
- The design team's structural engineer and the manufacturer's structural engineer have confirmed the structural stability of the fire wall.

The Finery residential fire wall 3-hour fire rating is provided by the 4-inch precast autoclaved aerated concrete (AAC) panels in the center of the wall assembly. The precast AAC panels create the core of the wall and are self-supporting of its weight (vertical load) but not the lateral (horizontal) load acting on the wall assembly. The precast AAC panels are laterally supported by the wood framing on either side. The wall construction includes aluminum melt-away clips used to attach the precast AAC panels to the wood framing. When one Type IIIA building is exposed to a fire, the building construction, including the aluminum melt-away clips, can collapse and fall away. The precast AAC panels will maintain their 3-hour fire rating, maintain their vertical loading ability, and are laterally supported on the non-fire side by the unexposed wood framing.