

Orange County Fire Rescue Department
Office Of The Fire Marshal
Code Position

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| Date Submitted: March 1, 2007 |
| Document Name: NFPA 13, 2002 Edition Sections 5.1.2 & 5.4 |
| Document Interpretation Number: 2007-11 |
| Fire Marshal: Assistant Chief Daniel K. Kucik |
| Question: 1. What design criteria are appropriate in exhibit halls, ballrooms, and convention spaces with ceilings that are 20'-0 or more and where ceiling sprinklers are severely obstructed where water discharged by sprinklers may not reach the burning material because of shielding? 2. Is a light hazard design acceptable for pre-function and back-of-house areas located outside of exhibit halls, ballrooms, and convention spaces? |
| Answer: Shielded fires and the need for larger design areas is extremely important due to the larger number of sprinklers activated in shielded fires due to delayed activation times; extreme ceiling heights; increased use of highly combustible contents introducing the probability of rapidly developing fires with high rates of heat release. Factory Mutual Global Property Loss Prevention Data Sheets define more restrictive densities and design areas for exhibit halls and convention spaces with unusually high ceilings and shielding of combustibles. It is my interpretation of NFPA 13 that specific occupancies types, storage types, commodities, ceiling heights, and shielding of fires must be addressed by densities and design areas that have been tested and approved. For that reason, it is the position of the Orange County Fire Marshal that exhibit halls, ballrooms, and convention spaces with ceilings of 20'-0" or more, specific design parameters are required. These minimum specific design criteria are a wet pipe sprinkler system with high temperature rating sprinkler heads, with a minimum of 0.30 gpm over a graduating demand area outlined below. |

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0.30 of 2,500 square feet for ceilings of 20'-0" up to 25'-0"
0.30 of 3,000 square feet for ceilings exceeding 25'-0" up to 30'-0"
0.30 of 3,500 square feet for ceilings exceeding 30'-0" up to 35'-0"
0.30 of 4,000 square feet for ceilings exceeding 35'-0" up to 40'-0"
0.30 of 5,000 square feet for ceilings exceeding 40'-0"

2. No. Historically, pre-function areas are many times located within an atrium area adjacent to large volume spaces and have been used for more than just waiting or assembly areas. They have been used as the limited overflow of the exhibit or convention areas and for placement of advertisement and display items such as vehicles, and combustible displays. In addition, the back-of-house service areas adjacent to the large volume spaces normally stage an array of ordinary hazard products which must be protected as such. Given the increased combustible materials, shielded fires, and that these areas are normally limited to ordinary hazard contents the design criteria shall be a minimum of Ordinary Group I density.

Finally, written verification from the building owner must be provided to the Orange County Fire Marshal's Office that any large meeting rooms with ceilings less than 20'-0" feet high will only be utilized for group meetings, food and beverage settings, or classroom settings otherwise they must comply with the design criteria of this code position.

Deviations to the aforementioned design parameters must be submitted and approved by the Orange County Fire Marshal.