



NIH Division of the Fire Marshal

Administrative Interpretation 18-1

Data Center Aisle Containment

Code reference: NFPA 75 *Standard for Fire Protection of Information Technology Equipment*

Background: Due to high energy costs, data centers that have a hot/cold aisle layout often utilize aisle containment systems to improve energy efficiency. Aisle containment systems impact air flow patterns and create obstructions to fire sprinklers. Therefore, special consideration must be given to both fire detection and fire suppression systems.

Interpretation: The following shall apply to both new and existing data centers:

- Aisle containment systems that add a roof below fire sprinkler and/or fire detection devices are not permitted, including retractable and drop-out roof systems
- Aisle containment systems that compartmentalize hot and cold aisles without a roof are permitted provided that all of the following are met:
 - Fire sprinklers are installed/modified such that the curtain walls are treated as a full vertical obstruction, regardless of automatic release mechanisms
 - The minimum spacing between fire sprinklers is 6-ft, regardless of the location of obstructions from the aisle containment system
 - Smoke detection devices are installed/modified such that each compartment (aisle) is protected
 - Smoke detection devices and sprinklers must be listed for use in the ambient temperature and air flow rates expected for each installation
 - Smoke detection devices are required in the ceiling plenum
- Pre-action sprinkler systems are permitted under the following conditions:
 - Double- or single-interlock pre-action sprinkler systems are permitted where air aspirated smoke detection is provided in the server room and ceiling plenum
 - Non-interlock pre-action sprinkler systems are permitted where air aspirated or spot-type smoke detection (photoelectric type only) is provided

Prepared by: Bryant Hendrickson, P.E., Senior Fire Protection Engineer

Date Issued 2/8/18

Fire Marshal J. P. McCabe