

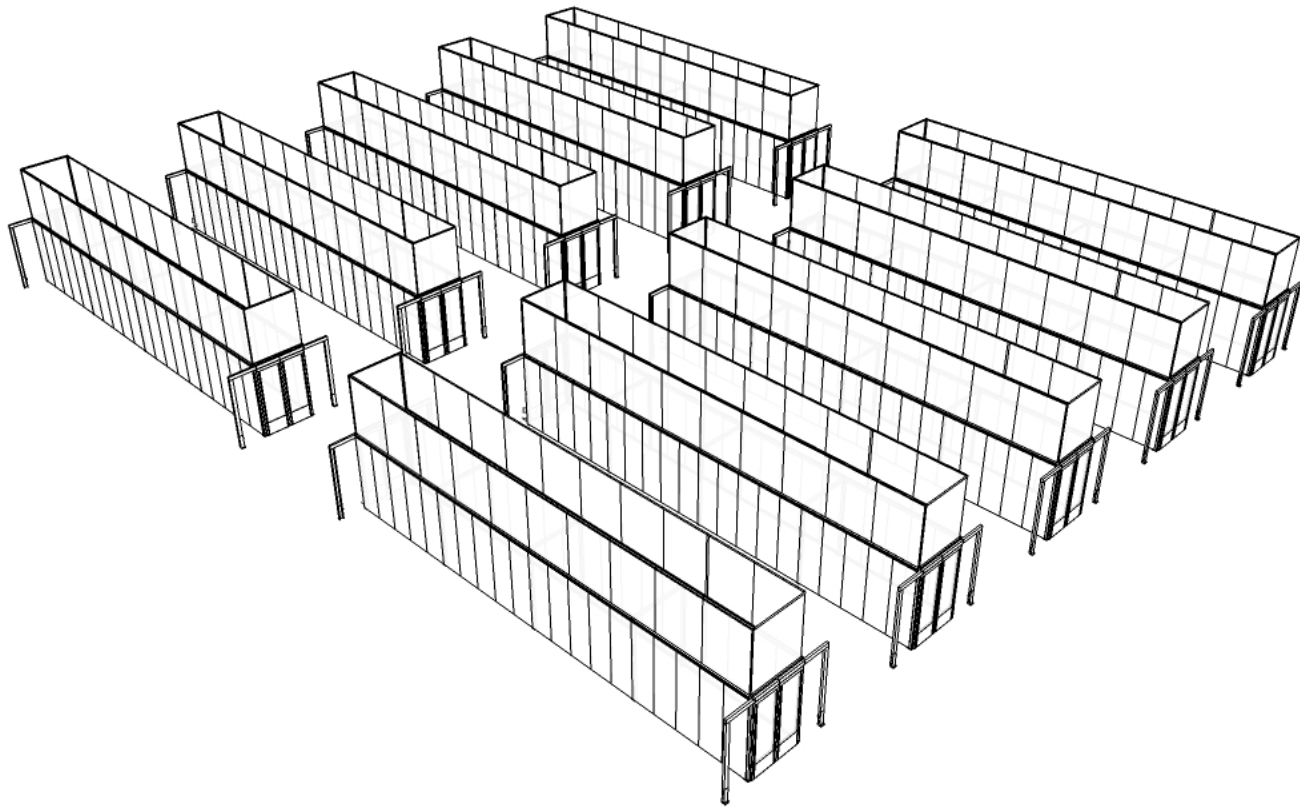
Cary Frame, President

NEW NFPA STANDARDS EXPLAINED

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COOL



Hot & Cold Aisle Containment






What's different: rooms within a room

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Sources of Confusion

- **NFPA**
 - 2013 NFPA 75 Covers Aisle Containment
 - NFPA Standards  Local Fire Code
- **Factory Mutual Global**
 - 2012 Aisle Containment Added to Data Sheet 5-32
 - Loss Prevention Data Sheets  Site Requirements
- **Manufacturers**
 - Marketing Materials  Reality

Easy: 2 Key Topics

- **Materials**
 - ASTM e84 Flame Spread and Smoke Development
 - FM4910 for Factory Mutual Global
 - UL-94 Flammability Rating
- **Sprinkler Obstructions**
 - New Build → Proper Coverage From The Start
 - Retrofit → Modify Existing
 - “Removable Obstructions”

NFPA ASTM e84 Class B Flame 50 and Smoke 450

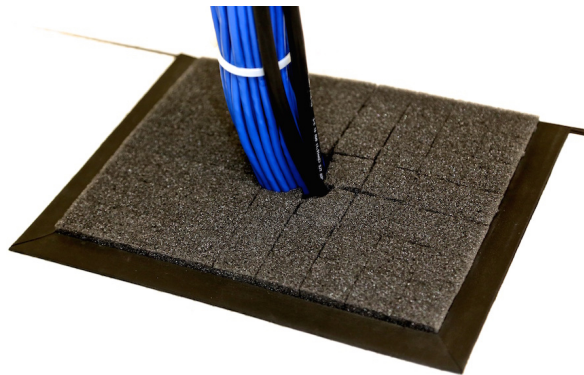
| Material | ASTM e84 | UL-94 | FM4910 | Brand Name |
|-------------------------|----------|-------|--------|-------------------------------------|
| Twin-wall Polycarbonate | Class A | no | no | Lexan by Sabic Makrolon by Bayer |
| Solid Polycarbonate | Class A | no | no | Lexan by Sabic Makrolon by Bayer |
| uPVC | Class A | V-0 | no | Ceilume (Drop-Away Panel) |
| CPVC/FM4910 | no | no | yes | Boltaron Laminations |
| Acrylic | no | V-0 | no | Plexiglass Lucite Acrylite |
| ABS Plastic | no | V-0 | no | Sabic Bayer (Lego) |

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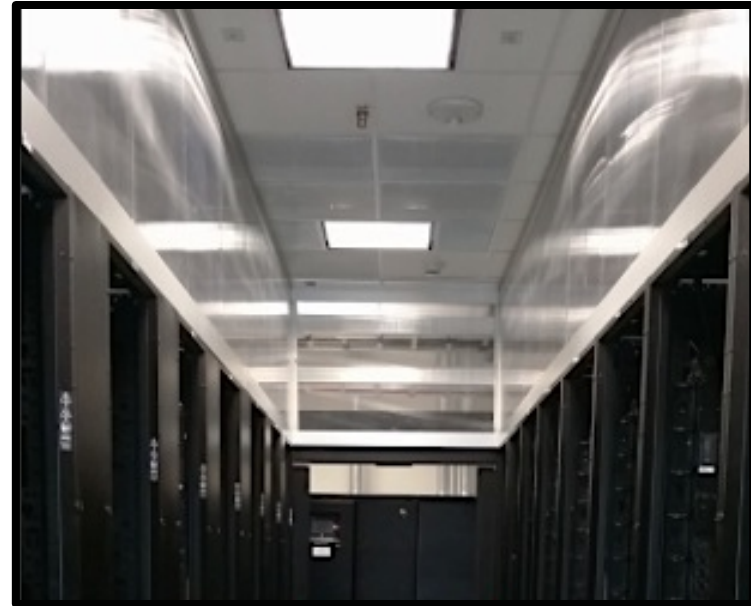
UL-94

- Plastic Materials for Parts in Devices and Appliances
- Small Scale Flammability Test
- Not Part of NFPA75



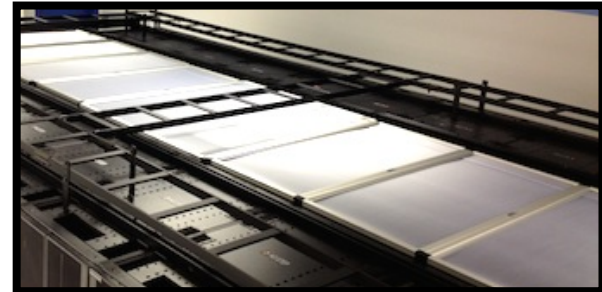
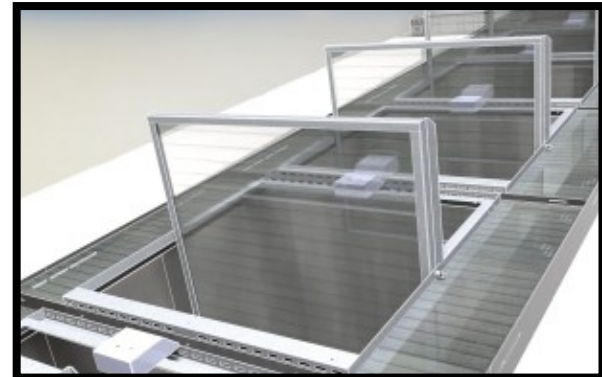
Sprinkler Obstructions

- Three Options
 - Add/Move Sprinkler Heads
 - “Removable Obstruction”
 - Open Top/Partial Containment



Removable Obstructions

- **Fire Panel Controlled Types**
 - Roll Up
 - Louvered Down
 - Slide Down
 - Swing Down
- **Heat Controlled Types**
 - Fuseable Links
 - uPVC Drop-Away Panels



NFPA 75 Removable Obstructions

- **5 Part Test**
 - Removed by Smoke Detection
(Thermal Mechanical and Fusible Links not permitted)
 - Releasing devices are listed for the purpose
 - Remove all obstructions for entire suppression zone
 - Removal doesn't impact egress (per NFPA 101)
 - Doesn't lower intended level of protection
- **Gap is the Whole Contraption**
- **Argue You “Meet Intent”**

Fuse Links

- NFPA75 Does Not Allow
 - FM Global Does Not Allow
 - Elsie - No Annual Replacement
 - Globe - Annual Replacement

7. Globe Fusible Links are stamped with the year of manufacturing. The stamped year shall be used to determine the one year replacement period.

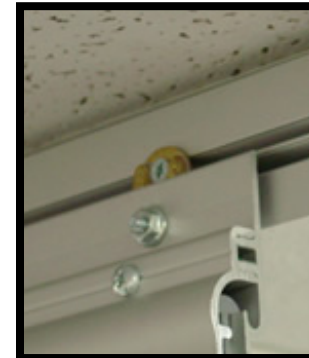
- Local Fire Marshal May Still OK



Recommended



Not Recommended



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Factory Mutual Global

- Loss Prevention Data Sheet 5-32
 - “Starting Point”
 - Each Site Gets Customized Solution - Field Engineer
 - Seems Like A Different Answer Every Time
 - FM4910 is 10X more expensive than twinwall polycarbonate



| | |
|---|---------------------------|
| FM Global | |
| Property Loss Prevention Data Sheets | 5-32 |
| | July 2012 Page 1 of 51 |
| DATA CENTERS AND RELATED FACILITIES | |
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Thank you

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