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**New Codes and Standards 2023
39th FPC Annual Seminar + Expo
October 1-3, 2023**

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What's In Your Wall? FBC Chapter 7 Fire & Smoke Protection Features

Course Number: AHCA 2023.13

Credit Designation: 1 LU/HSW

AIA CES Provider Number: E240

October 2, 2023



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1
OBJECTIVE

Identify the construction assemblies of fire and smoke protection walls (materials, continuity)

2
OBJECTIVE

Identify the components of the fire and smoke protection (penetrations and openings, dampers)

3
OBJECTIVE

Identify where to apply the fire and smoke protection (life safety, smoke compartments, horizontal exits, fire walls)

4
OBJECTIVE

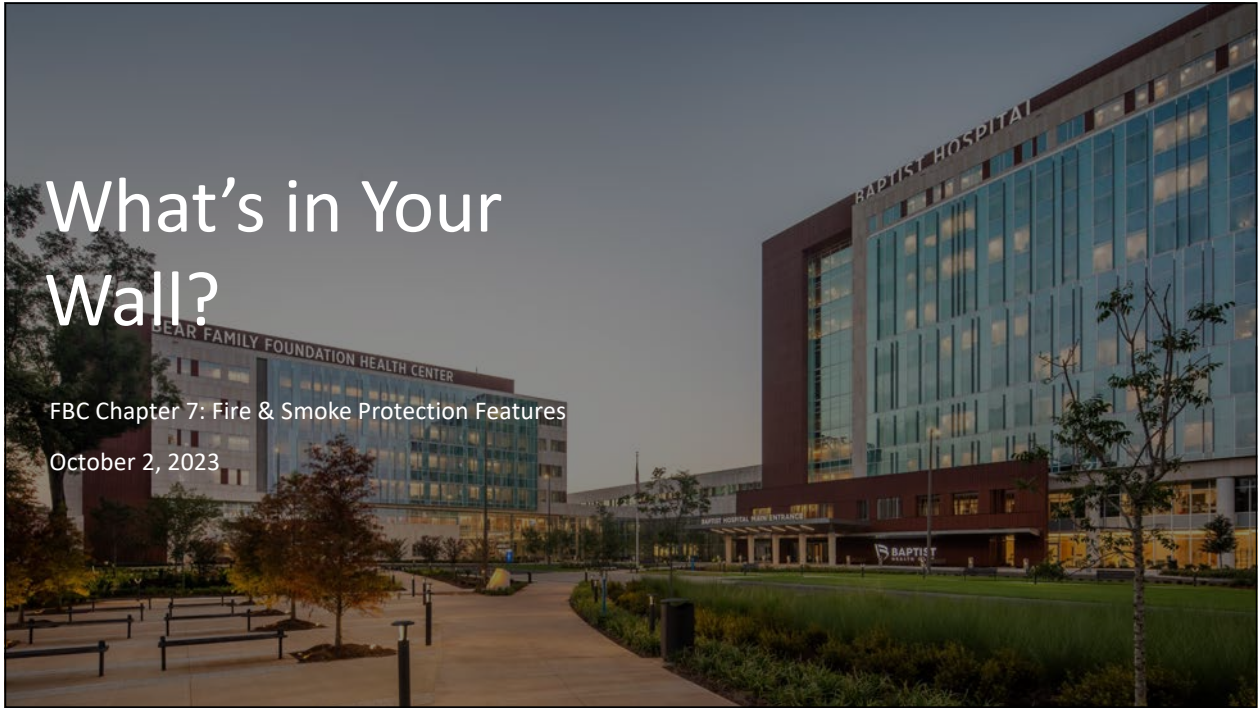
Discuss Ratings and Stenciling



What's in Your Wall?

FBC Chapter 7: Fire & Smoke Protection Features

October 2, 2023



Speakers



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Identify Construction Assemblies of Fire & Smoke Protection



What's in Your Wall?

Join at menti.com use code 2226 0478

Mentimeter

Which spaces would be protected by a fire partition?



0	0	0	0	0
Sold Utility Room	Elevator Lobby	Storage Room ~100sf	Laboratory	All of the above



Fire Walls, Section 706

Uses

- To separate portions of building
- Party walls

Continuity

- Designed and constructed to allow collapse of structure on either side
- From outside-to-outside wall and not less than 18" beyond
- Exterior walls on both sides of the Fire Wall shall have 1-hour fire resistance rating extending not less than 4'-0" perpendicular to Fire Wall
- Extend 30" above both adjacent roofs



Fire Barriers, Section 707

Uses

- To provide enclosure, subdivision or protection
- Shafts, Stairs, Exit Passageways, Horizontal Exit, Incidental Uses, Separating Occupancies, Exterior Walls

Continuity

- From outside wall to outside wall
- Or from one fire barrier to another
- Or combination thereof
- Including all concealed spaces, such as found above a ceiling



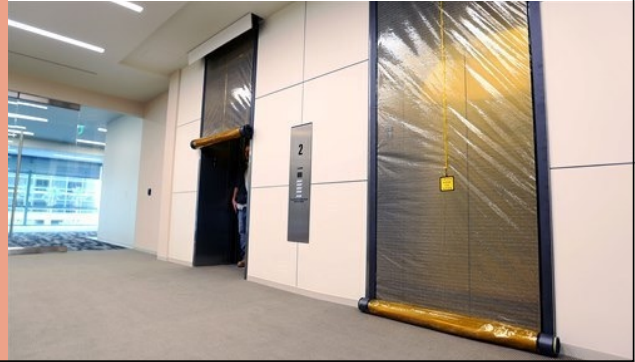
Fire Partitions, Section 708

Uses

- Enclosing Elevator Lobbies
- Enclosing Egress Balconies

Continuity

- Fire resistance rating of not less than 1 hour
- Extend from floor below to floor/roof above
- Openings protected
- Elevator Hoistway connecting more than three stories



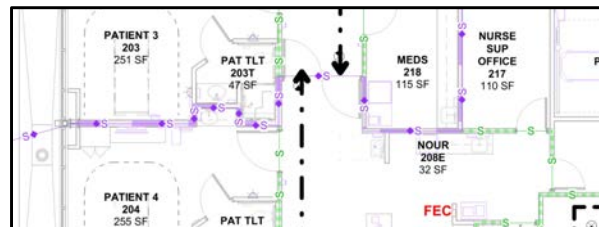
Smoke Barriers, Section 709

Uses

- Separating smoke compartments to the size limit required and to the travel distance limit required (where a Fire Barrier does not exist)
- Dividing every story used by inpatients for sleeping into not less than two smoke compartments
- Enclosing areas of refuge
- Separating atriums in which no limitation in size is required

Continuity

- Floor to deck
- Floor to ceiling with rated ceiling approach





Smoke Partitions, Section 710

Uses

- Limit the transfer of smoke
- Corridor walls
- Non fire-rated

Continuity

- Floor to deck
- Floor to ceiling

Openings

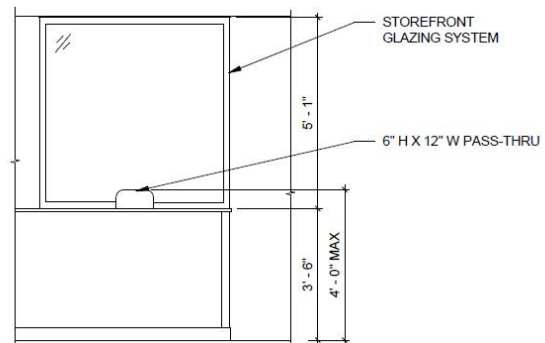
- Windows – fixed or automatic closing
- Doors – no louvers, gasketing
- Penetrations, Joints and Ducts – sealed



Smoke Partitions, Section 710

2024 Update

- Pass-thru windows allowed, I-2, Condition 2
- In a Smoke Compartment wall –
- Not around Patient Care Suite or Sleeping Room
- May not be in a fire rated wall, door or vision panel
- 48" maximum aff to TOP
- Aggregate 80sqin maximum in a single room



Priority Walls

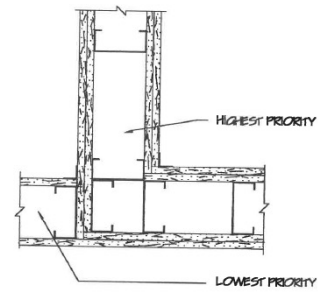
Fire Walls **Priority 1**

Fire Barriers **Priority 2**

Fire Partitions **Priority 3**

Smoke Barrier **Priority 4**

Smoke Partition **Priority 5**



PARTITION PRIORITY LEGEND

TWO HOUR FIRE AND SMOKE WALL	PRIORITY 1 HIGHEST
TWO HOUR FIRE WALL	PRIORITY 2
TWO HOUR SHAFT WALL	PRIORITY 3
ONE HOUR FIRE AND SMOKE WALL	PRIORITY 4
ONE HOUR FIRE WALL	PRIORITY 5
SMOKE TIGHT WALL	PRIORITY 6
NON-RATED WALL	PRIORITY 6

These details were first presented at the Second Annual Seminar sponsored by the office of Plans and Construction, State of Florida DHRS (HRS) held in Clearwater Beach, Florida in 1985.



What's in Your Wall?

Join at [menti.com](https://www.menti.com) use code 2226 0478



Which spaces would be protected by a fire partition?



0	0	0	0	0
Sofled Utility Room	Elevator Lobby	Storage Room ~100sf	Laboratory	All of the above



Identify the Components of the Fire & Smoke Protection



What's in Your Wall?

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Mentimeter

Are closers always required on all doors
located in Smoke Partitions?



Damper vs. No Damper

Condition 1

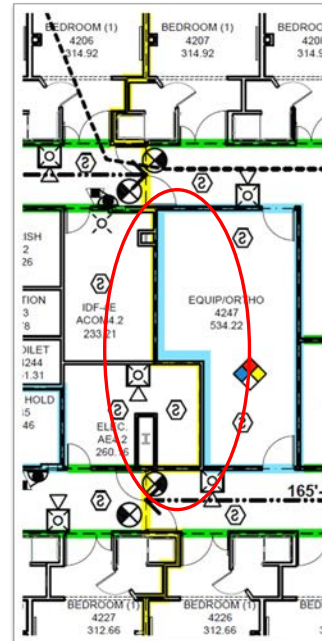
does not provide emergency care, surgery, obstetrics or in-patient stabilization units for psychiatric or detoxification

- 1 hour Fire Smoke compartment walls require dampers

Condition 2

could provide emergency care, surgery, obstetrics or in-patient stabilization units for psychiatric or detoxification

- 1 hour fire smoke compartment wall does not need smoke dampers if building is fully sprinklered
- If a room abuts the smoke compartment wall is a rated room such as Soiled Workroom, Storage, etc. then a fire damper is required.



Door Ratings and Required Hardware – Positive Latching

Positive Latching is required

- Corridor Doors
- Fire Rated Doors

Positive Latching is NOT required

- Doors inside a suite or room
- Sliding doors not on a corridor



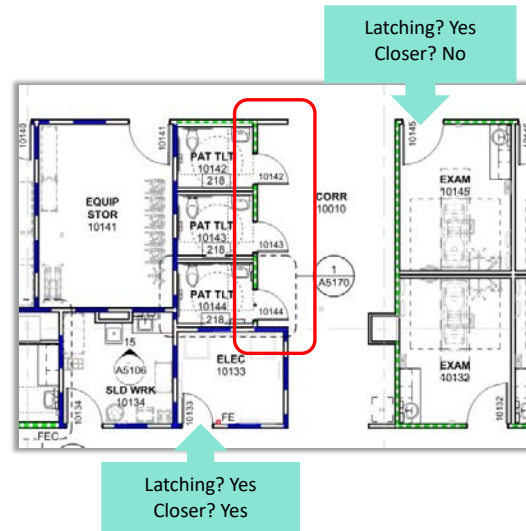
Door Ratings and Required Hardware - Closers

Self-closing or automatic closing is required

- Fire Rated Doors

Self-closing or automatic closing is *not* required

- Non-rated Doors in Smoke Partition



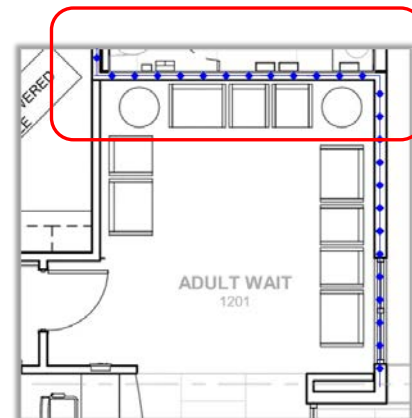
Door Ratings and Required Hardware – Ratings

The OG of doors

FIRE LABEL DESIGNATIONS:	
A-180	*A* LABEL - 180 MINUTE FIRE RATED
B-90	*B* LABEL - 90 MINUTE FIRE RATED
C-60	*C* LABEL - 60 MINUTE FIRE RATED
C-45	*C* LABEL - 45 MINUTE FIRE RATED
20 MIN.	20 MINUTE LABEL - 20 MINUTE FIRE RATED

Door Ratings

- 1 hour wall = 45 minute door
- 1 hour enclosures = 60 minute door
- 2 hour wall = 90 minute door



Where are the NV Lites Required in Doors?

Section 716 Fire-resistance-rated glazing:

- Fire-rated glazing – in door assemblies D, H or T
- Fire-protection-rated – for windows OH

Section 709 Smoke Barriers, 709.5.1 Openings:

- Cross-corridor doors in I-2 and Ambulatory Care
 - Automatic closing
 - Fire-protection-rated glazing - OH



Through Penetrations

Through penetrations shall be protected using systems installed as tested in the approved fire-resistance-rated assembly.

Through penetrations shall be protected by an approved penetration firestop system

Where walls or partitions are required to have a fire-resistance rating, recessed fixtures shall be installed such that the required fire resistance will not be reduced.



Labeling penetrations



Type of penetrations



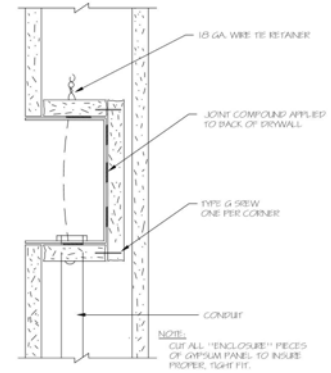
Through Penetrations

5-Sided Enclosures vs. Putty-Pad

Options for recessed Fire Extinguisher Cabinets, recessed monitors, wall drains, electric boxes and other service penetrations within a fire rated wall assembly.



Firestop Putty-Pads



5-Sided Box Enclosure



What's in Your Wall?

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Are closers always required on all doors located in Smoke Partitions?

● Yes
● No



Identify Where to Apply the Fire & Smoke Protection



What's in Your Wall?

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Mentimeter

22,500 sf is the size of a...

0	0	0
Fire Compartment	Football Field	SPD

GO TO menti.com
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2226 0478

0	0
Smoke Compartment	Administration Suite

Hazardous Rooms

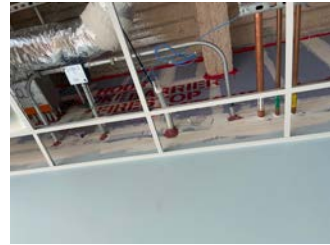
Require Fire Barrier

(NFPA 101 Section 18)

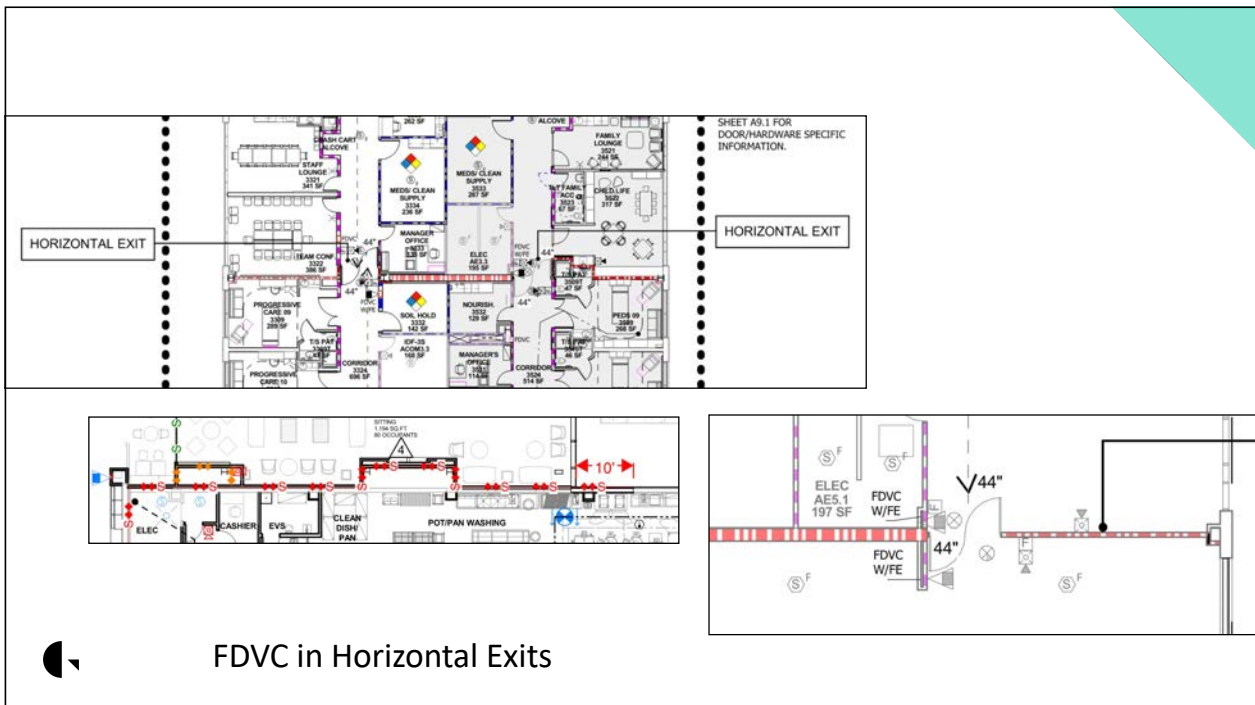
- Boiler and fuel-fired Heater rooms
- Central/Bulk Laundries larger than 100 sf
- Paint Shops
- Physical Plant Maintenance Shops
- Soiled Linen Rooms exceeding 64 gal
- Trash Collection Rooms exceeding 64 gal
- Storage Rooms larger than 100 sf & storing combustible material

(NFPA 101 Section 18)

- Laboratories w/ flammable or combustible materials less than considered a severe hazard
- Storage Rooms larger than 50 sf but not exceeding 100 sf



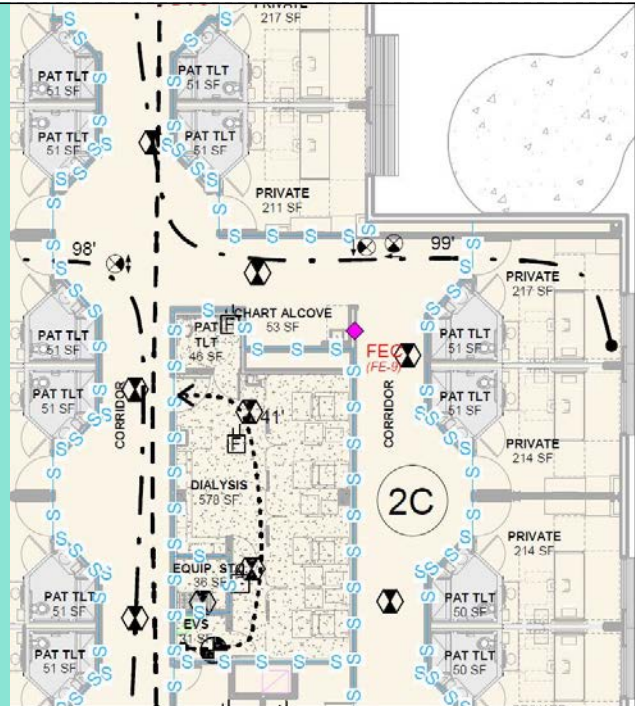
Smoke Partition



FDVC in Horizontal Exits

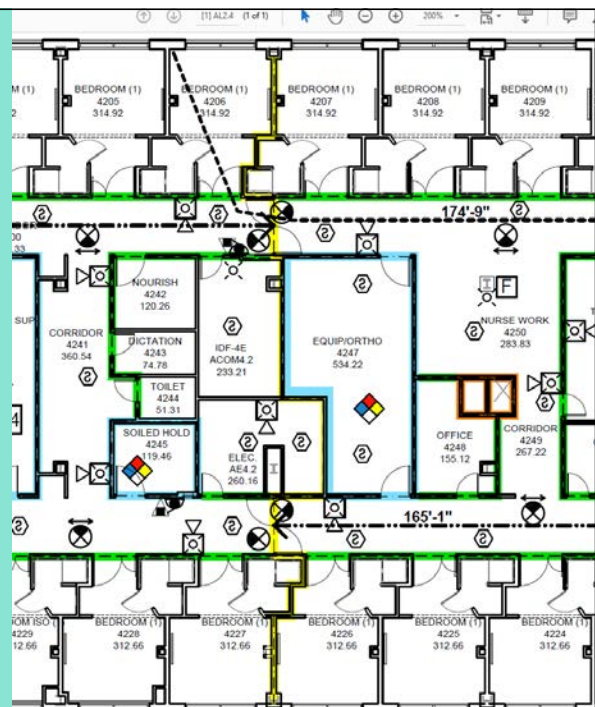
Corridor Walls in a Hospital

- Smoke partitions are required in corridors in I-2 occupancies
 - Exceptions: Within a Suite surrounded with a smoke partition, where corridors are considered “passages”.
- NFPA 18.3.6.2 Corridor walls can terminate at ceiling where ceiling is constructed to limit the transfer of smoke
- Continuity and separation
 - Waiting & similar areas
 - Care provider stations
 - Psychiatric treatment areas
 - Gift shops



Smoke Compartment Walls

- Our “language” in the industry vs. what is defined in the codes.
- Discuss when you need smoke compartments for example: Sleeping areas must be divided into a minimum of two smoke compartments
- Discuss NFPA requirements vs FBC vs CMS



What's in Your Wall?


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Mentimeter

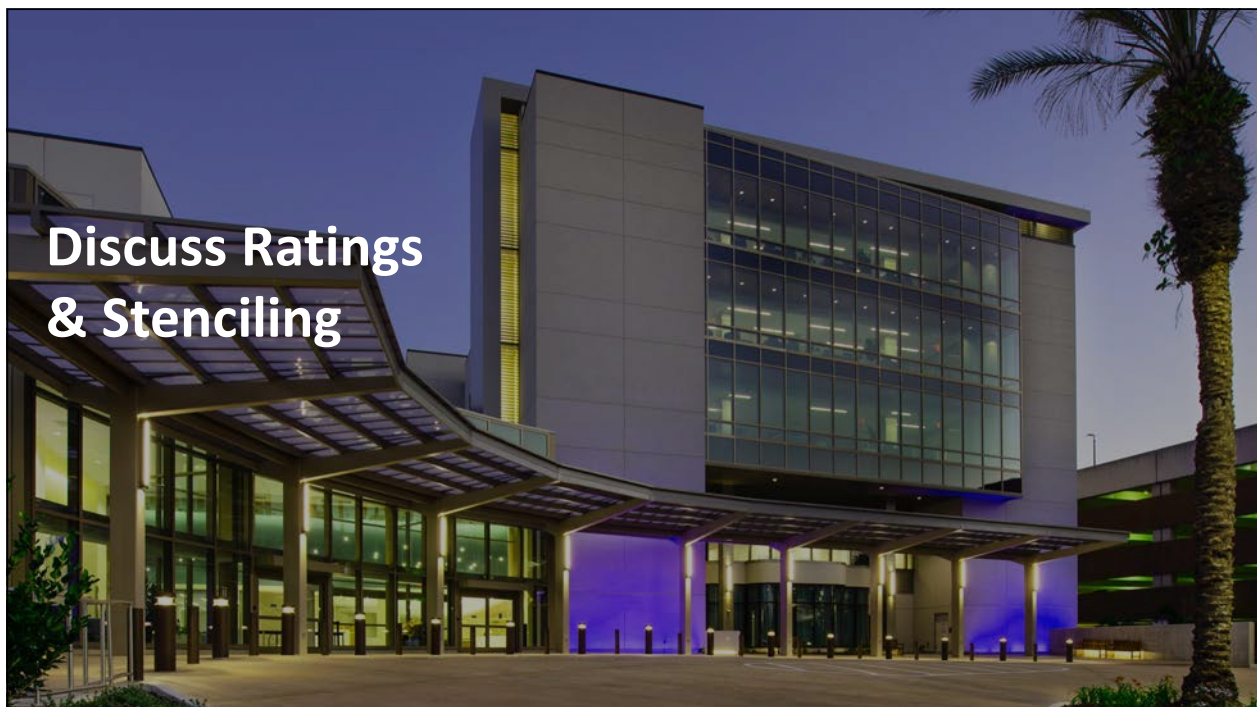
22,500 sf is the size of a...

0	0	0
Fire Compartment	Football Field	SPD
0	0	0
Smoke Compartment	Administration Suite	

GO TO menti.com
ENTER THE CODE
2226 0478



A screenshot of a Mentimeter poll interface. The poll question is "22,500 sf is the size of a...". There are five options, each with a zero vote count: "Fire Compartment", "Football Field", "SPD", "Smoke Compartment", and "Administration Suite". A QR code and a link to the poll are also visible.



What's in Your Wall?




👤 *Is this a correct application of stenciling?*

What's in Your Wall?

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Is this the correct application of stenciling?



GO TO
menti.com
ENTER THE CODE
2226 0478

0

Yes

0

No

0

What is a stencil?

👤





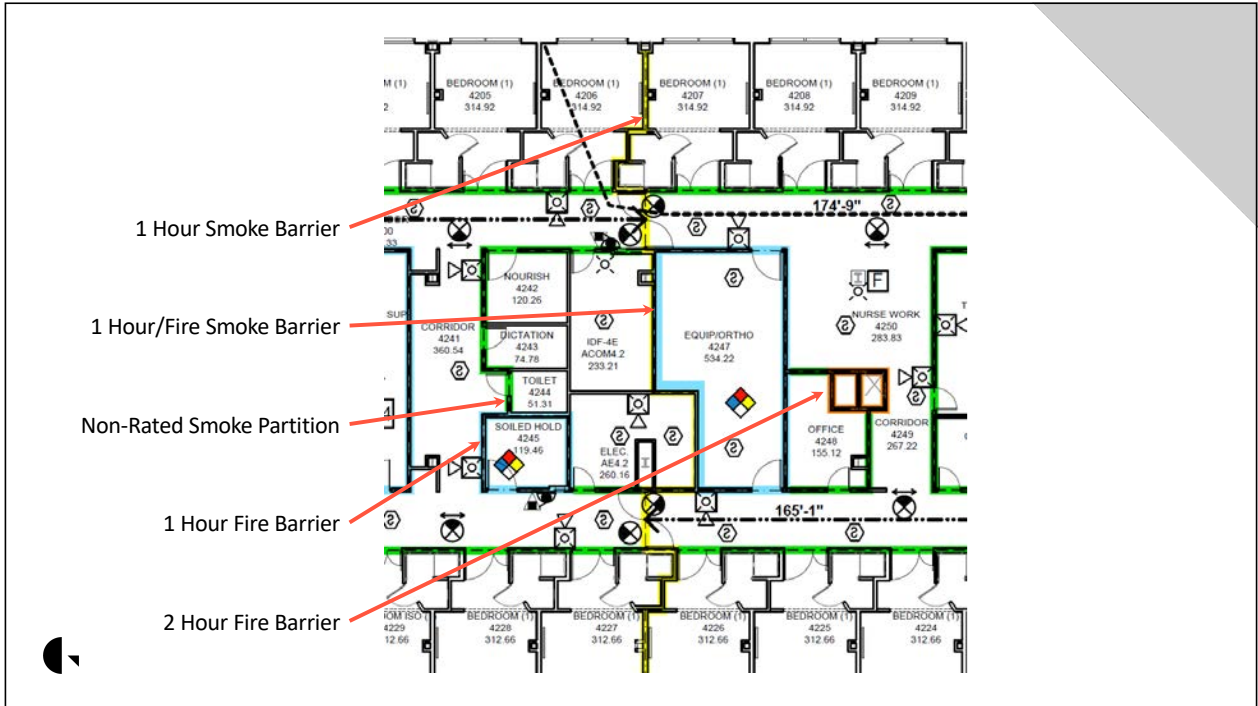
Does Stenciling Paint Color Matter?

- Recommendation:
Red vs. Black Paint
- Requirements:
 - Required for fire barriers, smoke barriers and smoke partitions
 - When located in concealed floor, floor/ceiling or attic spaces, it must be accessible
 - Be located within 15 feet of end of wall and at 30 feet intervals
 - Not less than 3 inches in height and minimum 3/8-inch stroke in contrasting color
 - Identify wall type and its fire resistance rating, as applicable



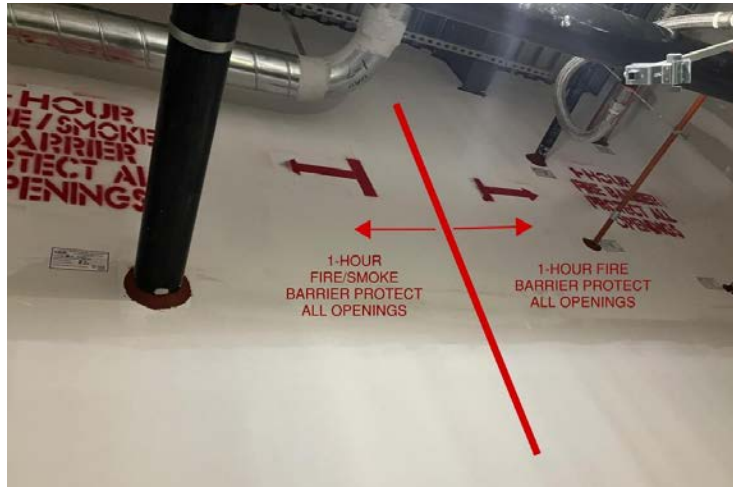
Wording is Important

- 2 HOUR FIRE BARRIER *is different than*
- 2 HOUR FIRE/SMOKE BARRIER
- 1 HOUR FIRE BARRIER *is different than*
- 1 HOUR SMOKE BARRIER *which is different than*
- 1 HOUR FIRE/SMOKE BARRIER
- NON-RATED SMOKE PARTITION



Stenciling in the Wild

What's in Your Wall?




Stenciling Corrected!

What's in Your Wall?

Join at menti.com use code 2226 0478 Mentimeter

Is this the correct application of stenciling?



GO TO
menti.com
ENTER THE CODE
2226 0478

0

Yes

0

No

0

What is a stencil?

1



The “Gotchas”



The “Gotchas”

Fire rating of the bottom of the wall before installation of floor base.

Extension of rated wall to exterior sheathing and what happens when prefab walls are involved.

UL labels/stickers – do not put stickers on until the space is climate controlled.

Acoustical sealant in upgraded fire walls.

Fire sealant requires certain depth.

Unnecessary door hardware like too many closers.

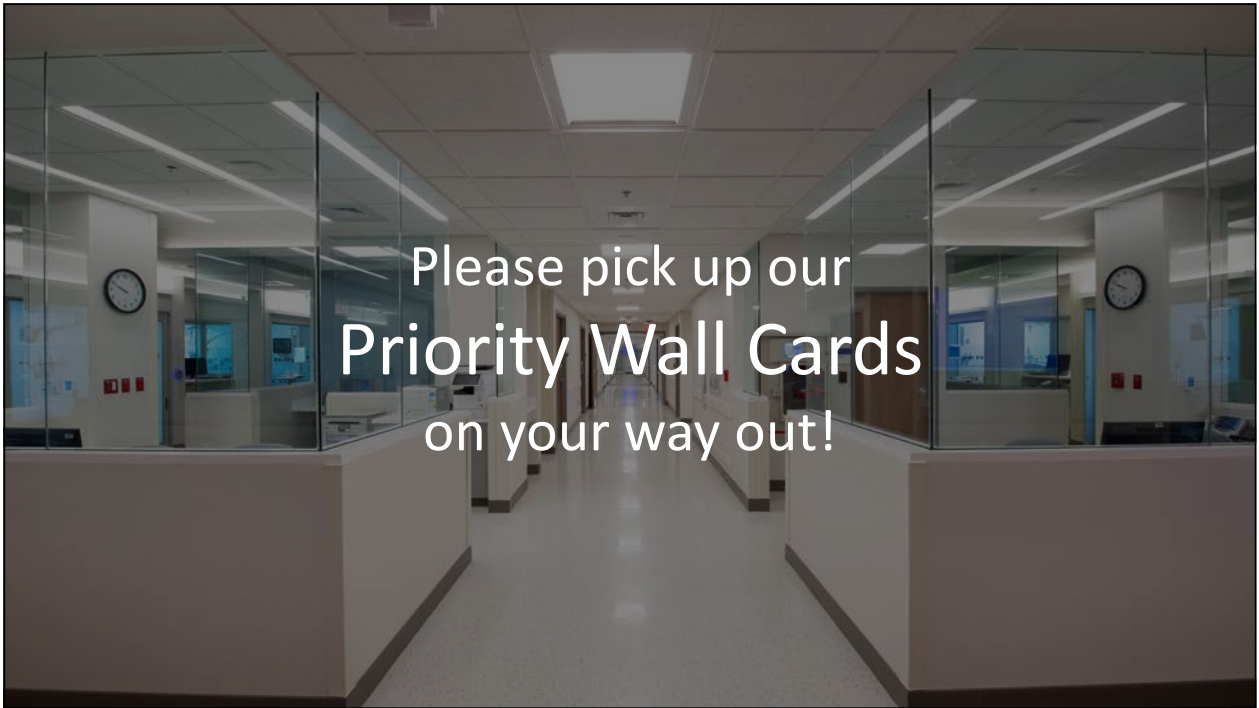


A photograph of a modern building facade with large, light-colored panels and a prominent horizontal beam. The sky is a clear, pale blue.

Burning Questions from the Audience?

The logo for Gresham Smith, consisting of a stylized white 'G' shape.

Gresham
Smith

A photograph of a long, brightly lit hospital hallway with glass-walled rooms on both sides. The floor is polished and reflects the overhead lights.

Please pick up our
Priority Wall Cards
on your way out!

Thank you for your attention!

