INTERIOR FINISHES

MHCEA
2013 FALL CONFERENCE
HINCKLEY, MN
SEPTEMBER 12, 2013
INTERIOR FINISHES

K14 – Interior finishes means of egress
K15 – Interior finishes for room and spaces not used for corridor or exit ways
K16 – Newly installed interior floors
INTERIOR FINISHES

K73 – Combustible decorations

K74 – Draperies, curtain, and furniture
INTERIOR FINISHES

Interior wall and ceiling finishes are rated for their flame spread and smoke development.

These rating are given as, Class A, Class B, and Class C.
INTERIOR FINISHES

CLASS A

- Has a flame spread rating of 0-25
- Has a smoke development rating of 0-450
INTERIOR FINISHES

CLASS B
• Has a flame spread rating of 26 - 75
• Has a smoke development rating of 0-450
INTERIOR FINISHES

CLASS C

• Has a flame spread rating of 76 - 200
• Has a smoke development rating of 0-450
INTERIOR FINISHES

- Existing materials – Class A or Class B

*Exception: in rooms protected by a sprinkler system, existing Class C can be used in room separated from exit corridors
INTERIOR FINISHES

- Newly Installed Materials – Class A

*Newly installed walls/ceiling are permitted to have Class A or Class B interior finishes in individual room not exceeding 4 persons
INTERIOR FINISHES

*newly installed corridor wall finish not exceeding 4 ft. in height that is restricted to the lower half of the wall is permitted to be Class A or Class B
INTERIOR FINISHES

Interior finishes existing before December 17, 2010 shall be permitted to remain in use without flame spread rating documentation if:

- Applied directly to wall/ceiling
- Thickness of less than 1/28 inch
INTERIOR FLOOR FINISH

- Newly installed interior floor finish shall be permitted in corridors and exits if Class I
- No restriction shall apply to existing interior floor finish
INTERIOR FINISHES

Class I
- Critical radiant flux not less than 0.45 W/cm²

Class II
- Critical radiant flux not less than 0.22 W/cm² but less than 0.45 W/cm²
INTERIOR FLOOR FINISH

• In smoke compartments protected by a fire sprinkler system no interior floor finish requirement shall apply
FURNISHINGS & DECORATIONS

COMBUSTIBLE DECORATIONS

- Combustible decorations shall be prohibited in any health care occupancy unless they are flame-retardant*
FURNISHINGS & DECORATIONS

COMBUSTIBLE DECORATIONS

*Exception: combustible decorations such as photographs and paintings in such limited quantities that a hazard of fire development or spread is not present
FURNISHINGS & DECORATIONS

DRAPERIES & CURTAINS

- Must meet LSC 101 (00) - 10.3.1
- Shall be flame resistant
- NFPA 701 testing standards
FURNISHINGS & DECORATIONS

UPHOLSTERED FURNITURE & MATTRESSES

- LSC 101 (00) - 10.3.2
- Shall be resistant to a cigarette ignition
FURNISHINGS & DECORATIONS

• With an approved automatic sprinkler system shall meet:
  • Class I NFPA 260, or
  • 1.5” char length - NFPA 261, or
  • 2” char length – CFR 16 part 1632
FURNISHINGS & DECORATIONS

UPHOLSTERED FURNITURE & MATTRESSES

• LSC 101 (00) – 10.3.4
• Shall have limited rates of heat release IAW
  • NFPA 266 or ASTM E 1537
FURNISHINGS & DECORATIONS

• The peak rate of heat release for the mattress shall not exceed 250kW
• The total energy release by the mattress during the first 5 minutes of the test shall not exceed 40Mj
FURNISHINGS & DECORATIONS

QUESTIONS???
Egress

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2013 FALL CONFERENCE
HINCKLEY, MN
SEPTEMBER 12, 2013
Egress - Objectives

- Walking surface
- Egress Reliability
- Locking requirements
- Lighting requirements
- Marking of exits
Code References

7.1.6 Walking Surfaces in the Means of Egress.
7.1.6.1 General. Walking surfaces in the means of egress shall comply with 7.1.6.2 through 7.1.6.4.

Exception: Existing walking surfaces shall be permitted where approved by the authority having jurisdiction.

7.1.6.2 Changes in Elevation. Abrupt changes in elevation of walking surfaces shall not exceed 1/4 in. (0.6 cm). Changes in elevation exceeding 1/4 in. (0.6 cm), but not exceeding 1/2 in. (1.3 cm), shall be beveled 1 to 2. Changes in elevation exceeding 1/2 in. (1.3 cm) shall be considered a change in level and shall be subject to the requirements of 7.1.7.

7.1.6.3 Level. Walking surfaces shall be nominally level. The slope of a walking surface in the direction of travel shall not exceed 1 in 20 unless the ramp requirements of 7.2.5 are met. The slope perpendicular to the direction of travel shall not exceed 1 in 48.
7.1.10 Means of Egress Reliability.
7.1.10.1* Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

7.1.10.2 Furnishings and Decorations in Means of Egress.
7.1.10.2.1 No furnishings, decorations, or other objects shall obstruct exits, access thereto, egress therefrom, or visibility thereof.

Egress – Reliability (K38)

2012 NFPA 101 sections 18/19.2.3 Capacity of Means of Egress and more specifically the requirements at 18/19.2.3.4 which allow, under certain circumstances, projections into the means of egress corridor width for wheeled equipment and fixed furniture;
Alternative & Unique Locking Arrangements

Objectives

- Identify the various types of alternative locking arrangements in Institutional Group I-2
- Understand the specific requirements for Center for Medicare and Medicaid
- Testing requirements
1008.1.8.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

5. Delayed egress locks, installed and maintained in conformance with Section 1008.1.8.6.

6. Special egress-control devices installed and maintained in conformance with Section 1008.1.11 are allowed in Group R-3 and Group R-4 congregate care facilities and in Group I occupancies.
7. Existing door-locking arrangements in Group I occupancies that were installed prior to **March 20, 1995**, and comply with **Appendix I** may be allowed to continue.
SPECIAL LOCKING ARRANGEMENTS FOR GROUP I OCCUPANCIES

SECTION 1 - GENERAL

When approved by the fire chief and where there is a demonstrated safety or security concern for the patients or residents, existing door-locking arrangements conforming to Appendix I are permitted in Group I-2 occupancies.

NOTE: Appendix I is going to be removed in the next addition of the MSFC.
Special egress control devices

Where the clinical needs of the patients require specialized security measures for their safety, door-locking arrangements are permitted in Group I-2 occupancies, provided that:
Alternative & Unique Locking Arrangements
2007 MSFC 1008.1.11

1. Keys or devices that function like keys are carried by staff at all times;

2000 NFPA 101 18/19.2.2.2.4 Exception No.1
2. In at least one egress path, not more than one such arrangement is located;
2000 NFPA 101 - 18/19.2.2.2.5
3. The building or fire area is protected by an approved automatic sprinkler system in accordance with Section 903.3.1.1 and an approved fire alarm system having smoke detection installed throughout the exit corridor system and areas open to the exit corridor;

**NOTE:** Per CMS **ALL** nursing homes have to be fully sprinkled as of August 13, 2013.
4. Locking devices automatically unlock upon activation of any of the following:

   a. Automatic sprinkler system;

   b. Automatic smoke-detection system;

   c. Automatic fire alarm system; or

   d. Loss of electrical power;

**NOTE:** SFMD has permitted combination of any two smoke detectors to release doors in the secured area (2000 NFPA 101 7.2.1.6.1)
Alternative & Unique Locking Arrangements Devices In Use

Security against infant abduction:
- Insures that baby does not leave the nursing unit unless authorized
- If infant gets within 10 feet of any one of the egress doors from the nursing unit it will activate an audible alarm. At 3 feet a audible / visual alarm and magnetically lock **ALL** the egress doors on that nursing unit.
Alternative & Unique Locking Arrangements
Devices In Use

When the fire alarm activates the egress doors that have delayed egress or magnetically locked, now have to unlock immediately.

Remember manual pull stations are not require at every exit in an I-2, as long as the facility meets **907.2.6.1 Exception** that manual pull station can be located at the nurses station or a 24 hour attended location and meets **907.4.1** the 200 feet travel distance.
Alternative & Unique Locking Arrangements
Devices In Use

If the facility wants the pull stations by the exits they can place a protective cover over the manual pull station which emits a local alarm signal. Facility needs prior approval by the AHJ per 907.4.5.
Alternative & Unique Locking Arrangements
Devices In Use

Security against nursing home resident elopement:
Magnetic Lock

Key pad for staff to use stairwell and also to reset delayed egress

Antenna for wander bracelet
CMS Requirements

Magnetic Lock

Require by CMS 2000 NFPA 101 – 7.2.1.6.1 (d)

Key pad for anyone over the age of 13 to exit

To exit press 1234 in reverse
5. Locking devices can be remotely unlocked from an approved location within the secured area;
6. There is **no public assembly space** within the secured area;

7. 24-hour patient supervision is provided within the secured area;
8. Relocking of the locking device is by manual means from an approved location within the secured area;
9. Locking devices are designed to fail in the open position.
Appendix I - SECTION 6

TESTING OF DEVICES AND SYSTEMS

Special locking arrangements shall be tested at least monthly in conjunction with the fire alarm system to ensure that they will release under the conditions as set forth above.
1008.1.12 Exit stair door locking. Doors are not to be locked on the stairwell side unless meeting one of the following criteria:

1. Delayed egress locks meeting Section 1008.1.8.6.

2. Locking devices meeting the requirements of Section 403.12 of the *International Building Code*.

3. Non-high-rise buildings that are more than four stories meeting NFPA 101 Section 7.2.1.5.2.
1999 NFPA 80 3-4.3 Fire Door Hardware.

3-4.3.1 General. Only labeled fire door hardware shall be used. The design and construction of typical fire door hardware for swinging fire doors shall be as illustrated in ANSI A133.1, *Tin-Clad Fire Doors Mounted Singly and in Pairs*.

3-4.3.2 Components. Fire door hardware shall include hinge brackets, hinges, latches, latch keepers, and operating handle mechanisms; hardware for inactive door or pairs of doors includes top and bottom bolts and keepers.
Alternative & Unique Locking Arrangements Hardware
Egress - Lighting (K45)

All egress corridors 24X7 requires the following per 2000 NFPA 101:

**7.8.1.3*** The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated in 7.8.1.1 shall be illuminated to values of at least 1 ft-candle (10 lux) measured at the floor.
Egress - Lighting (K45)

7.8.1.4* Required illumination shall be arranged so that the failure of any single lighting unit does not result in an illumination level of less than 0.2 ft-candle (2 lux) in any designated area.
2000 NFPA 101 - 7.10.8.1* No Exit. Any door, passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign that reads as follows:

NO
EXIT

Such sign shall have the word NO in letters 2 in. (5 cm) high with a stroke width of 3/8 in. (1 cm) and the word EXIT in letters 1 in. (2.5 cm) high, with the word EXIT below the word NO.

Exception: This requirement shall not apply to approved existing signs.
Corridors (K17+)
Corridors

18 /19.3.6 Corridors.

18 /19.3.6.1 Corridors shall be separated from all other areas by partitions complying with 18/19.3.6.2 through 18/19.3.6.5.

(See also 18/19.2.5.9.)

There are (8) Exceptions
Corridor - Walls

18/19.3.6.2 Construction of Corridor Walls.

18/19.3.6.2.1* Corridor walls shall be continuous from the floor to the underside of the floor or roof deck above, through any concealed spaces, such as those above suspended ceilings, and through interstitial structural and mechanical spaces, and they shall have a fire resistance rating of not less than 1/2 hour.

Exception No. 1:* In smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.2, a corridor shall be permitted to be separated from all other areas by non-fire-rated partitions and shall be permitted to terminate at the ceiling where the ceiling is constructed to limit the transfer of smoke.

There are (3) Exceptions
19.3.6.2.2* Corridor walls shall form a barrier to limit the transfer of smoke.

19.3.6.2.3 Fixed fire window assemblies in accordance with 8.2.3.2.2 shall be permitted in corridor walls.
18/19.3.6.3 Corridor Doors.

19.3.6.3.1* Doors protecting corridor openings in other than required enclosures of vertical openings, exits, or hazardous areas shall be substantial doors, such as those constructed of 13/4-in. (4.4-cm) thick, solid-bonded core wood or of construction that resists fire for not less than 20 minutes and shall be constructed to resist the passage of smoke. Compliance with NFPA 80, *Standard for Fire Doors and Fire Windows*, shall not be required. Clearance between the bottom of the door and the floor covering not exceeding 1 in. (2.5 cm) shall be permitted for corridor doors.

**Exception No. 1:** Doors to toilet rooms, bathrooms, shower rooms, sink closets, and similar auxiliary spaces that do not contain flammable or combustible materials.

**Exception No. 2:** In smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.2, the door construction requirements of 19.3.6.3.1 shall not be mandatory, but the doors shall be constructed to resist the passage of smoke.
18.3.6.3.2 Doors shall be provided with positive latching hardware. Roller latches shall be prohibited.

Exception: Doors to toilet rooms, bathrooms, shower rooms, sink closets, and similar auxiliary spaces that do not contain flammable or combustible materials.
18/19.3.6.3.3* Hold-open devices that release when the door is pushed or pulled shall be permitted.

18/19.3.6.3.4 Door-closing devices shall not be required on doors in corridor wall openings other than those serving required exits, smoke barriers, or enclosures of vertical openings and hazardous areas.

18/19.3.6.3.5 Nonrated, factory- or field-applied protective plates extending not more than 48 in. (122 cm) above the bottom of the door shall be permitted.

18/19.3.6.3.6 Dutch doors shall be permitted where they conform to 19.3.6.3. In addition, both the upper leaf and lower leaf shall be equipped with a latching device, and the meeting edges of the upper and lower leaves shall be equipped with an astragal, a rabbet, or a bevel.

Dutch doors protecting openings in enclosures around hazardous areas shall comply with NFPA 80, *Standard for Fire Doors and Fire Windows*. 
18/19.3.6.4 Transfer Grilles. Transfer grilles, regardless of whether they are protected by fusible link–operated dampers, shall not be used in these walls or doors.

Exception: Doors to toilet rooms, bathrooms, shower rooms, sink closets, and similar auxiliary spaces that do not contain flammable or combustible materials shall be permitted to have ventilating louvers or to be undercut.
Corridor – Openings

18/19.3.6.5 Openings. In other than smoke compartments containing patient bedrooms, miscellaneous openings such as mail slots, pharmacy pass-through windows, laboratory pass through windows, and cashier pass-through windows shall be permitted to be installed in vision panels or doors without special protection, provided that the aggregate area of openings per room does not exceed 20 in.² (130 cm²), and the openings are installed at or below half the distance from the floor to the room ceiling.

Exception: For rooms protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.2, the aggregate area of openings per room shall not exceed 80 in.² (520 cm²).
Smoke Barrier (K25)

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SEPTEMBER 12, 2013
Smoke Barrier (K25)

2000 NFPA 101 - 8.3.2* Continuity. Smoke barriers required by this Code shall be continuous from an outside wall to an outside wall, from a floor to a floor, or from a smoke barrier to a smoke barrier or a combination thereof. Such barriers shall be continuous through all concealed spaces, such as those found above a ceiling, including interstitial spaces.

Exception: A smoke barrier required for an occupied space below an interstitial space shall not be required to extend through the interstitial space, provided that the construction assembly forming the bottom of the interstitial space provides resistance to the passage of smoke equal to that provided by the smoke barrier.
Smoke Barrier (K25) Existing

2000 NFPA 101 - 19.3.7.1 Smoke barriers shall be provided to divide every story used for sleeping rooms for more than 30 patients into not less than two smoke compartments. The size of any such smoke compartment shall not exceed 22,500 ft² (2100 m²), and the travel distance from any point to reach a door in the required smoke barrier shall not exceed 200 ft. (60 m).
2000 NFPA 101 - 19.3.7.5 Openings in smoke barriers shall be protected by fire-rated glazing; by wired glass panels and steel frames; by substantial doors, such as 1 3/4-in. (4.4-cm) thick, solid-bonded wood core doors; or by construction that resists fire for not less than 20 minutes. Nonrated factory- or field-applied protective plates extending not more than 48 in. (122 cm) above the bottom of the door shall be permitted.
Smoke Barrier (K25)
Existing

2000 NFPA 101 - 19.3.7.6* Doors in smoke barriers shall comply with 8.3.4 and shall be self-closing or automatic-closing in accordance with 19.2.2.2.6. Such doors in smoke barriers shall not be required to swing with egress travel. Positive latching hardware shall not be required.
2000 NFPA 101 - 18.3.7.1 Buildings containing health care facilities shall be subdivided by smoke barriers as follows:

1. To divide every story used by inpatients for sleeping or treatment into not less than two smoke compartments

2. To divide every story having an occupant load of 50 or more persons, regardless of use, into not less than two smoke compartments

3. To limit the size of each smoke compartment required by (1) and (2) to an area not exceeding 22,500 ft² (2100 m²)
   ○ Exception: The area of an atrium separated in accordance with 8.2.5.6 shall not be limited in size.
4. To limit the travel distance from any point to reach a door in the required smoke barrier to a distance not exceeding 200 ft (60 m).

*Exception No. 1:* Stories that do not contain a health care occupancy, located totally above the health care occupancy.

*Exception No. 2:* Areas that do not contain a health care occupancy and that are separated from the health care occupancy by a fire barrier complying with 7.2.4.3.

*Exception No. 3:* Stories that do not contain health care occupancies and that are more than one story below the health care occupancy.

*Exception No. 4:* Open-air parking structures protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.
Smoke Barrier (K25)

New

2000 NFPA 101 - 18.3.7.3 Any required smoke barrier shall be constructed in accordance with Section 8.3 and shall have a fire resistance rating of not less than 1 hour.
Smoke Barrier (K25)

New

2000 NFPA 101 - 18.3.7.5* Doors in smoke barriers shall be substantial doors, such as 1 3/4-in. (4.4-cm) thick, solid-bonded wood core doors, or shall be of construction that resists fire for not less than 20 minutes. Nonrated factory- or field-applied protective plates extending not more than 48 in. (122 cm) above the bottom of the door shall be permitted. Cross-corridor openings in smoke barriers shall be protected by a pair of swinging doors or a horizontal sliding door complying with 7.2.1.14. Swinging doors shall be arranged so that each door swings in a direction opposite from the other.
Smoke Barrier (K25)

New

2000 NFPA 101 - 18.3.7.6* Doors in smoke barriers shall comply with 8.3.4 and shall be self-closing or automatic-closing in accordance with 18.2.2.2.6.

18.3.7.7* Vision panels consisting of fire-rated glazing or wire glass panels in approved frames shall be provided in each cross-corridor swinging door and at each cross-corridor horizontal sliding door in a smoke barrier.
Smoke Barrier (K25)
New

2000 NFPA 101 - 18.3.7.8 Rabbets, bevels, or astragals shall be required at the meeting edges, and stops shall be required at the head and sides of door frames in smoke barriers. Positive latching hardware shall not be required. Center mullions shall be prohibited.
WRAP UP

QUESTIONS?
SFMD – Healthcare Inspection Website

https://dps.mn.gov/divisions/sfm/programs-services/Pages/health-care-inspection.aspx
Documentation

REMEMBER
If you didn’t document it.

It didn’t happen!
MINNESOTA HEALTH CARE ENGINEERS ASSOCIATION

THANK YOU!
WALLS & CEILINGS

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SEPTEMBER 12, 2013
WALLS & CEILINGS

CORRIDOR WALLS – NEW CONSTRUCTION

• LSC 101 (00) New 18.6.3.2
• LSC 101 (00) Existing 19.6.3.2.1
WALLS & CEILINGS

LSC 101 (00) – NEW 18.6.3.2
Corridor walls shall
• Form a barrier to limit the transfer of smoke
• Be permitted to terminate at the ceiling
LSC 101 (00) – NEW 18.6.3.2

Corridor walls shall

• When terminating at the ceiling where it is constructed to limit the transfer of smoke

• No rating required for corridor walls
WALLS & CEILINGS

LSC 101 (00) – EXISTING 19.6.3.2.1
Corridor walls shall
• Continuous
  • Floor to roof deck above
  • Through any concealed spaces
  • Through interstitial spaces
WALLS & CEILINGS

- Through mechanical spaces
- Shall have a fire resistive rating of not less than ½ hour
WALLS & CEILINGS

LSC 101 (00) – EXISTING 19.6.3.2.1

Guess What???

Exceptions – again!
1. **Smoke compartments protected throughout by an approved sprinkler system:**
   - Separated from other areas by a non-fire-rated partition
   - Terminate where the ceiling will limit the transfer of smoke
2. Existing corridor partitions are permitted to terminate at ceilings that are:
   • not an integral part of a floor construction if 5ft or more of space between the top of the ceiling and the floor/roof above
WALLS & CEILINGS

- Provided that they meet the following criteria:
  - Be a part of a fire rated assembly of not less than 1 hour in compliance with LSC 101 (00) 8.2.3.1
  - The corridor partitions form a smoketight joint with the ceiling
WALLS & CEILINGS

- Each compartment of interstitial space that constitutes a separate smoke area is vented to the outside by mechanical means that can provide at least 2 air changes per hour with a capacity of less than 5000 ft³
WALLS & CEILINGS

• The interstitial space shall not be used for storage, and
• The space shall not be used as a plenum except as noted in 19.63.6.2.1(3)
WALLS & CEILINGS

3. **Existing corridor partitions shall be permitted to terminate at a monolithic ceiling that resists the passage of smoke where there is a smoketight joint between the top of the partition and the bottom of the ceiling**
SEPARATIONS:

• 2hr separation between occupancies, e.g. clinics and hospital or nursing home and assisted living...

• 1hr for hazardous areas
WALLS & CEILINGS

- ½ hr. for Smoke barriers
- Corridor walls:
  - Existing = ½ hour rating
  - New = limit the transfer of smoke – non-fire-rated
WALLS & CEILINGS

QUESTIONS???
ELECTRICAL

EXTENSION CORDS, POWER TAPS, AND PANELS... OH MY!
POWER TAP:

- A device that is connected to an electrical receptacle,
- Has built-in overcurrent protection,
• Allows connection of one or more electrical plugs to supply electricity to other devices and equipment.
ELECTRICAL

- Cannot be plugged into each other
- Different from surge protectors
• Taps shall be of the polarized or grounded type, equipped with overcurrent protection, and shall be listed in accordance with UL 1363.
ELECTRICAL

- Shall be directly connected to a permanently installed receptacle
- Cords shall not extend through walls, ceilings, floors, under doors floor coverings,
ELECTRICAL

- be subject to environmental or physical damage
EXTENSION CORDS:

• Extension cords and flexible cords shall not be a substitute for permanent wiring

• Shall not be affixed to structures
ELECTRICAL

- Shall not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor coverings
- Be subject to environmental damage or physical impact
ELECTRICAL

- Extension cords shall be used only with portable appliances.
- The ampacity of the extension cords shall not be less than the rated capacity of the portable appliance supplied by the cord.
ELECTRICAL EQUIPMENT:

- Working space of not less than 30 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided in front of electrical service equipment.
ELECTRICAL

- No storage of any materials shall be located within the designated working space.
ELECTRICAL

QUESTIONS???
What is a Hazardous Area?
LSC 18/19.3.2.1

- Boiler and fuel-fired heater rooms
- Central laundries greater than 100 sq.ft.
- Paint/repair shops
- Soiled linen rooms
- Trash collection rooms
What is a Hazardous Area, Cont.?
LSC 18/19.3.2.1

- Storage rooms greater than 50 sq.ft.
- New construction requirements are different
- Laboratories
- All doors to hazardous areas must self or automatically close and self-latch
Existing hazardous area requirements

• All hazardous areas or rooms shall be protected by 1-hour fire rated construction, -OR-
• Protected by a complete fire sprinkler system
  - When fire sprinkler are present, the walls and doors must only be smoke resistant
New hazardous area requirements

- All hazardous areas are required to be 1-hour fire separated
- Exceptions:
  - Laboratories with flammable/combustible liquids that are not considered a severe hazard (labs containing more than 20 gal. of flammable/combustible liquids)
  - MN State Fire Code only allows 10 gal. in use or 20 gal. when fire sprinkler protected (operational supply limitations)
New hazardous area requirements

- Exceptions cont.:
  - Storage rooms greater than 50 sq.ft. but less than 100 sq.ft.
  - These are permitted to only be smoke resistant
Hazardous area tips

- Most problems are “human caused”
- Self-closing doors get abused
- Doors require regular inspection
- Doors that need to be held open (such as laundry) are permitted to be automatic closing
Questions?
Alcohol Based Hand Rub (ABHR) Sanitizer Dispensing in Health Care Facilities

MHCEA
2013 FALL CONFERENCE
HINCKLEY, MN
SEPTEMBER 12, 2013
• ABHR is used to avoid transmission of pathogens, including bacteria, fungi, and some viruses.

• The Centers for Disease Control (CDC) authorizes the use of ABHR as the preferred method of hand hygiene, where hands are not visibly dirty.
Question: What are the Fire and Life Safety concerns surrounding the use and dispensing of ABHR??
Answer: The stuff is extremely flammable!
• ABHR gel is between 60% - 70% alcohol.
• The dispensing and storage of ABHR is regulated by Minnesota State Fire Code (MSFC), 2007 edition
**3401.1 Scope and application.**
Prevention, control and mitigation of dangerous conditions related to storage, use, dispensing of flammable liquids.

**3401.2(10):** The use of wall-mounted dispensers containing nonaerosol, ABHR classified as Class I or Class II liquids shall be in accordance with Section 3405.5.

**ABHR:** An alcohol-containing preparation designed for application to the hands for reducing the number of viable microorganisms on the hands and containing ethanol or isopropanol in an amount not exceeding 70 percent by volume.
**Flash Point.** The minimum temperature in degrees Fahrenheit at which a liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion.
3405.5 Alcohol-based hand sanitizers. ABHR dispensers containing liquids classified as Class I or Class II liquids shall comply with the following:

** There are seven requirements... Refer to SFMD handout.
ALCOHOL BASED HAND SANITIZERS (ABHR)

A lot has been written about alcohol-based hand sanitizers and their effectiveness in dealing with infection control, particularly in health care facilities. What many don’t realize is that these products contain alcohol, a flammable liquid. In fact, in order to meet the definition of a waterless hand sanitizer for the Centers for Disease Control (CDC), the product must be at least 60% alcohol by volume. Flammable liquids give off vapors that can be easily ignited. Once ignited, they burn very intensely (alcohols normally burn with a clean blue flame and produce very little smoke). They can contribute to the rapid spread of fires that originate elsewhere in the building (e.g. linen or cleaning cart fire).

The Minnesota State Fire Code (MnSCC 06) controls the use and storage of flammable liquids in Chapter 34. Section 3401.3 of the MnSCC (07) is amended by adding Item 10, which reads:

The use of wall-mounted dispensers containing non-aerosol, alcohol-based hand sanitizers classified as Class I or Class II liquids shall be in accordance with section 3405.5.

1. Where dispensers are in a corridor, the corridor shall have a minimum width of 6 feet.
2. The maximum individual dispenser fluid capacity shall be as follows:
   - Dispensers in rooms, corridors and areas open to corridors 1.2 liters or 40.57 fl. oz.
   - Dispensers in suites of rooms 2.0 liters or 67.63 fl. oz.
3. The dispensers shall be separated from each other by at least 48 inches horizontally.
4. Not more than 10 gallons (37.8 L) (aggregate) shall be in use outside of a storage cabinet within a single smoke compartment.
5. Storage quantities greater than 5 gallons (18.9 L) in a single smoke compartment shall meet the requirements of chapter 3400.
6. Dispensers shall not be installed over or within 6 inches to the centerline of the dispenser to an electrical receptacle, switch, appliance, device or other ignition source.
7. Dispensers installed directly over carpeted floors shall be permitted only in sprinklered smoke compartments.
8. The dispenser shall not project over any walking surface (corridor, aisle) by more than 4 inches (102mm) between the heights of 27 inches (686 mm) and 80 inches (2032 mm) on either side. (MnSCC 2007 section 1003.3).

While the use of ABHR was first found in healthcare occupancies (hospitals, nursing homes, ambulatory surgery centers), the use is showing up in other occupancies such as schools, doctor’s offices, churches, and even grocery stores.
So Much For The State, What About The Federal Government?

• Centers for Medicare and Medicaid Services (CMS): Use and dispensing of ABHR mirrors the State requirements.
### 2000 CODE

**Name of Facility**

<table>
<thead>
<tr>
<th>ID PREFIX</th>
<th>MET</th>
<th>NOT</th>
<th>N/A</th>
<th>REMARKS</th>
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</thead>
<tbody>
<tr>
<td>2000 NEW</td>
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<tr>
<td>Hazardous areas are protected in accordance with 8.4. The areas shall be enclosed with a one hour fire-rated barrier, with a ( \frac{1}{2} ) hour fire-rated door, without windows (in accordance with 8.4). Doors shall be self-closing or automatic closing in accordance with 7.2.1.8, 18.3.2.1</td>
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<table>
<thead>
<tr>
<th>Area</th>
<th>Automatic Sprinkler</th>
<th>Separation</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Brake and Fluid Room/Room</td>
<td></td>
<td></td>
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<tr>
<td>b. Lubricant (greater than 100 sq feet)</td>
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<tr>
<td>c. Repair, Maintenance and Paint Shop</td>
<td></td>
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<tr>
<td>d. Laboratories (classified as Hazard - see K30)</td>
<td></td>
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<td></td>
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<tr>
<td>e. Combustible Storage Rooms/Spaces (over 50 and less than 100 sq feet)</td>
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<tr>
<td>f. Trash Collector Rooms</td>
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<tr>
<td>g. Soiled Linen Room</td>
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<tr>
<td>h. Combustible Storage Rooms/Spaces (over 100 sq feet)</td>
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</tbody>
</table>

*Describe the floor and zone locations of hazardous areas that are deficient in REMARKS.*

### K30

**Gift shops** shall be protected as hazardous areas when used for storage or display of combustibles in quantities considered hazardous. Non-rated walls may separate gift shops that are not considered hazardous, have separate protected storage and that are completely sprinkled. Gift shops may be open to the corridor if they are not considered hazardous, have separate protected storage, are completely sprinkled and do not exceed 500 square feet. 18.3.2.5, 19.3.2.5

<table>
<thead>
<tr>
<th>Area</th>
<th>Automatic Sprinkler</th>
<th>Separation</th>
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</thead>
<tbody>
<tr>
<td>1. Gift Shop storing hazardous quantities of combustibles</td>
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### K211

**2000 EXISTING**

Where Alcohol Based Hand Rub (ABHR) dispensers are installed:

- ☑ The corridor is at least 6 feet wide
- ☑ The maximum individual fluid dispenser capacity shall be 1.2 liters (2 liters in suites of rooms)
- ☑ The dispensers shall have a minimum spacing of 4 ft from each other
- ☑ Not more than 10 gallons are used in a single smoke compartment outside a storage cabinet.
- ☑ Dispensers are not installed over or adjacent to an ignition source.
- ☑ If the floor is carpeted, the building is fully sprinklered.

CIF 403.744, 418.100, 460.72, 482.41, 483.70, 483.623, 485.623

Form CMS-2788R (06/07) EF 06/2007
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<thead>
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<td>K211 2000 NEW</td>
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<td>Where Alcohol Based Hand Rub (ABHR) dispensers are installed:</td>
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<td>- The corridor is at least 6 feet wide</td>
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<td>- The maximum individual fluid dispenser capacity shall be</td>
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<td>- If the floor is carpeted, the building is fully sprinklered.</td>
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<td>CFR 403.744, 418.100, 460.72, 482.41, 483.70, 483.823, 485.825</td>
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<td>K32</td>
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<td></td>
<td>EXIT AND EXIT ACCESS</td>
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<td>Not less than two exits, remote from each other, are provided for each floor or fire section of the building. Only one of these two exits may be a horizontal exit. 18.2.4.1, 18.2.4.2, 19.2.4.1, 19.2.4.2</td>
</tr>
<tr>
<td>K34</td>
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<td>EXITS AND EGRESS</td>
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<td>Stairways and smokeproof towers used as exits are in accordance with 7.2.</td>
</tr>
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<td>18.2.2.4, 19.2.2.3, 19.2.2.4</td>
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<tr>
<td>K35</td>
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<td>Capacity of exits in number of persons per unit of exit width is in accordance with 7.3.</td>
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<td>18.2.3.1, 19.2.3.1</td>
</tr>
<tr>
<td>K36</td>
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<td>Travel distance (exit access) to exits are in accordance with 7.6.</td>
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<td>18.2.6, 19.2.6</td>
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<td>2000 EXISTING</td>
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<td>Existing dead-end corridors shall be permitted to be continued to be used if it is impractical and uneconomic to alter them so that exits are accessible in not less than two different directions from all points in aisles, passageways, and corridors. 19.2.5.10</td>
</tr>
</tbody>
</table>
DATE: November 1, 2006

TO: State Survey Agency Directors
State Fire Authorities

FROM: Director
Survey and Certification Group

SUBJECT: Provisions of the Final Rule regarding Adoption of New Fire Safety Requirements, for the Use of Alcohol Based Hand Rubs (ABHRs) and Installation of Battery Powered Smoke Alarms

Letter Summary

- This letter highlights the final rule concerning fire safety requirements for Hospitals, Ambulatory Surgical Centers, Nursing Homes, Religious Non-Medical Health Care Institutions, Programs of All-Inclusive Care for the Elderly (PACE) Facilities, Critical Access Hospitals, and Intermediate Care Facilities for the Mentally Retarded.

- Regarding ABHRs, the final rule clarifies terminology and adds a requirement for maintenance in accordance with manufacturer’s recommendations.

- Regarding battery powered smoke alarms, the final rule changed terminology and defined the terms “common area” and “fully sprinklered.” The maintenance requirements were modified to include manufacturer’s recommendations.

This memorandum notifies States and the Centers for Medicare & Medicaid Services’ (CMS) regional offices of the September 22, 2006 publication of the final rule entitled: “Medicare and Medicaid Programs: Fire Safety Requirements for certain Health Care Facilities; Amendment” (Federal Register Vol. 70, No. 184, Page 55326). A copy of the regulation is attached to this memorandum.

Previously, CMS provided guidance concerning the use of ABHRs and smoke alarms in two Survey and Certification letters (S&C-05-25 and S&C-05-33) which described the requirements of the interim final rule published on March 25, 2005.
• ABHR Dispensers must be installed in a manner that adequately protects against inappropriate access.

• ABHR Dispensers must be maintained in accordance with manufacturer guidelines.

• Regular maintenance to prevent leaks or spills that could lead to falls. Facilities must develop policies and procedures to ensure that the dispensers neither leak nor the contents spill.
How to Handrub?

Duration of the entire procedure: 20-30 seconds

1a. Apply a palmful of the product in a cupped hand, covering all surfaces;
1b. Rub hands palm to palm;
2. Right palm over left dorsum with interlaced fingers and vice versa;
3. Palm to palm with fingers interlaced;
4. Backs of fingers to opposing palms with fingers interlocked;
5. Rotational rubbing of left thumb clasped in right palm and vice versa;
6. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
7. Once dry, your hands are safe.

World Health Organization | Patient Safety | SAVE LIVES
| Clean Your Hands |
Thank You!

Questions?
Documentation

REMEMBER

If you didn’t document it.

It didn’t happen!
MINNESOTA HEALTH CARE ENGINEERS ASSOCIATION

THANK YOU!