

# INTERIOR FINISHES AND FURNISHINGS

## Introduction

Because of the significant impact wall and ceiling finishes and furnishings have on flame spread, both state and federal codes and standards contain fairly stringent requirements intended to either inhibit their ignition (in the case, for example, of drapes, curtains, decorations and upholstered furniture) or control the speed with which flame will travel across their surfaces (in the case of wall and ceiling finishes). While providing an obvious property protection benefit, the main purpose of such protections is to buy time for staff to safely evacuate residents under fire conditions.

The purpose of this guide is to outline the major requirements, both state and federal, that apply to:

- Interior wall and ceiling finishes
- Interior floor finishes
- Drapes, curtains and decorations
- Upholstered furniture
- Mattresses

## ***Part I – Interior Wall and Ceiling Finishes***

### The basics

Federal certification requirements applicable to interior wall and ceiling finishes in health care occupancies can be found in NFPA 101(12), Sections 18.3.3/19.3.3 and 10.2. State licensure requirements can be found in Sections 803, 804 and 807 of the 2015 MN State Fire Code [MSFC(15)] and Sections 803 and 806 of the 2015 MN State Building Code [MSBC(15)].

In the case of existing interior finishes, because MSFC(15), Sec. 102.13 specifies that the construction provisions applicable to existing health care (Group I-2) occupancies shall be those found in the Life Safety Code, the provisions of NFPA 101(12), Sec. 10.2 should prevail over the requirements of MSFC(15), Sec. 803. MSFC(15), Sec. 801.1 requires that newly installed interior wall and ceiling finishes be in accordance with the MN State Building Code.

There are several factors that affect the types of wall finishes (e.g. paneling, wallpaper and vinyl wall coverings) and ceiling finishes (e.g. acoustical tile) allowed in a health care facility including:

- Date of installation of the finish;
- Location of the finish – i.e. where it's installed in the building (e.g. rooms, corridors, etc.); and
- Automatic fire sprinkler protection.

For a definition of *Interior Finish*, *Interior Ceiling Finish*, and *Interior Wall Finish*, see NFPA 101(12), Sec. 3.3.90. It should be noted that:

1. By definition, interior wall finish includes the interior finish of columns, fixed or movable walls, and fixed or movable partitions including toilet room privacy partitions [see NFPA 101(12), Sec. 3.3.90.4; see also: Sec. 202, *Interior Wall and Ceiling Finish*, of the 2015 MN State Fire and Building Codes].
2. Paneling, wainscoting, wall pads and crash pads installed for decoration, acoustical correction, surface insulation or other purposes are also considered to be interior finish [see NFPA 101(12), Sec. 10.2.1.4; MSBC(15), Sec. 806.1; MSFC(15), Sec. 807.1].
3. **NEW** to the 2012 *Life Safety Code*<sup>®</sup>, lockers constructed of combustible materials are considered to be interior finish as well [see NFPA 101(12), Sec. 10.2.1.5; see also: MSFC(15), Sec. 808.4].

## Classification of interior finish

Interior finishes are broken down into three classifications:

- Class A Interior Wall and Ceiling Finish (flame spread index 0-25, smoke developed index 0-450)
- Class B Interior Wall and Ceiling Finish (flame spread index 26-75, smoke developed index 0-450)
- Class C Interior Wall and Ceiling Finish (flame spread index 76-200, smoke developed index 0-450)

A more detailed explanation of the various flame spread classifications can be found in NFPA 101(12), Sec. 10.2.3.4. You will find the 2012 *Life Safety Code® Handbook* to be another excellent resource. These classifications are based on testing performed in accordance with ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, often referred to as the Steiner Tunnel Test. As an alternate, interior wall and ceiling finishes are also allowed to be tested in accordance with ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*.

NFPA 101(12), Sec. 10.2.3.2 allows wall and ceiling finishes tested in accordance with NFPA 286(11), *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*, to be used where Class A finish is required [see also: MSBC(15), Sec. 803.1.2]. It is felt that the NFPA 286 test represents an improvement over the ASTM E 84 and ANSI/UL 723 tests, as it was specifically developed to measure such factors as whether flashover occurs, the peak rate of heat released and the amount of smoke obscuration. NFPA 101(12), Sec. 10.2.3.7.2 and MSBC(15), Sec. 803.1.2.1 set forth the specific criteria that must be met when using the NFPA 286 test.

**Note:** The peak rate of heat release throughout the test cannot exceed 800 kW. For new installations, the total smoke released throughout the test cannot exceed 1,000 m<sup>2</sup>. See also: MSBC(15), Sec. 803.1.2.1.

For other than textile materials, where automatic fire sprinkler protection is installed, the code allows Class C interior wall and ceiling finish to be used in any location where Class B finish is required and Class B finish to be used in any location where Class A finish is required [see NFPA 101(12), Sec. 10.2.8.1].

## Exemptions

1. The 2012 *Life Safety Code®* exempts existing interior finish (i.e. that installed prior to the date of adoption of the code – 07/05/2016) from the smoke developed index criteria identified above [see NFPA 101(12), Sec. 10.2.3.4(4)].
2. The following materials are exempted from the interior finish requirements of the code:
  - Approved existing materials having a total thickness of less than 1/28-inch (0.036-inch) applied directly to the surface of walls and ceilings (e.g. paint and wallpaper) [see NFPA 101(12), Sec. 10.2.1.3].
  - Newly installed materials having a total thickness of less than 1/28-inch (0.036-inch) applied directly to the surface of walls and ceilings so long as it can be shown that the materials meet the requirements of Class A interior finish when tested using fiber cement board as the substrate material [see NFPA 101(12), Sec. 10.2.1.2]. The MN State Building Code, on the other hand, requires no testing of materials having a thickness of less than 0.036-inch applied directly to the surface of walls and ceilings [see MSBC(15), Sec. 803.2].
3. Exposed portions of structural members (e.g. wood columns, beams and girders) complying with the requirements for Type IV(2HH) construction, often referred to as heavy timber construction, are exempt from interior finish requirements [see NFPA 101(12), Sec. 10.2.3.1; see also: MSBC(15), Sec. 803.3]. This is based on the fact that these structural members are of substantial thickness, are spaced some distance apart and, as a result, do not form a continuous surface that would allow the spread of flame through a space.

Type IV(2HH) construction is not very common in health care facilities, but has been found to be used for such things as chapel additions.

Note: NFPA 101(12), Chapter 18 limits Type IV(2HH) construction to one story in height (fire sprinklers required), while NFPA 101(12), Chapter 19 allows up to two stories, so long as automatic fire sprinkler protection is provided [see NFPA 101(00), Sec. 18.1.6.1/19.1.6.1 and Table 18.1.6.1/19.1.6.1].

### Trim and incidental finish

1. Interior wall and ceiling trim, not in excess of 10 percent of the aggregate wall and ceiling areas of any room or space is allowed to be Class C materials [see NFPA 101(12), Sec. 10.2.5.1; see also MSBC(15), Sec. 806.5 and MSFC(15), Sec. 804.1].

Note: This would also apply to incidental finish such as plywood used as a backing material to support such things as communication or IT equipment. With perhaps the exception of a couple of types of soft pine, most plywood manufactured today carries at least a Class C flame spread rating. The authority having jurisdiction (AHJ) may still require proof of this, however, so it is recommended that care be taken to ensure that the fire rating stamp on the plywood is not painted over.

2. Interior floor trim material not exceeding 6 inches in height used at the junction of the wall and floor to provide a functional or decorative border (e.g. wall base, carpet cove) is addressed in NFPA 101(12), Sec. 10.2.5.2. This material needs to meet one of the following criteria:
  - The requirements for interior wall finish applicable to the location in which it is installed – **or**
  - The requirements for Class II interior floor finish when tested in accordance with NFPA 253(11), *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source* (where Class I floor finish is required, the floor-wall base must also be Class I). These requirements are consistent with MSBC(15), Sec. 806.6 and MSFC(15), 804.4.

Note: Interior floor finish is discussed in more detail later on in this guide – see Part II, Interior Floor Finish.

3. Where bulletin boards and posters attached directly to the wall exceed 20 percent of the aggregate wall area to which they are applied, NFPA 101(12), Sec. 10.2.5.3.1, in effect, requires that they be treated as interior finish.

### Textile materials

The codes have very stringent requirements regarding the use of textile materials (e.g. carpeting) on walls and ceilings [see NFPA 101(12), Sec. 10.2.4.1; MSBC(15), Sections 803.1.3 and 803.1.4]. That is because studies of past fires have revealed that such materials can contribute to a very rapid rate of fire spread.

1. Textile materials having a Class A flame spread rating are allowed on the walls or ceilings of rooms protected with automatic fire sprinklers.
2. Previously approved, existing installations of textile material having a Class A flame spread rating are allowed to be continued to be used.
3. Textile materials having a Class A flame spread rating are allowed on partitions that do not exceed  $\frac{3}{4}$  of the floor-to-ceiling height or do not exceed 8 ft in height, whichever is less.

4. Textile materials having a Class A flame spread rating are allowed to extend not more than 48 inches above the finished floor on ceiling-height walls and ceiling-height partitions.
5. Textile materials are allowed on walls and partitions when tested in accordance with method B of NFPA 265(11), *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on full Height Panels and Walls*. NFPA 101(12), Sec. 10.2.3.7.1 and MSBC(15), Sec. 803.1.3.1 set forth the specific criteria that must be met when using the NFPA 265 test. For new installations, the total smoke released throughout the test, however, cannot exceed 1000 m<sup>2</sup> [see MSBC(07), Sec. 803.6.2.1, Item 3].
6. Textile materials tested in accordance with NFPA 286 and meeting the criteria specified in NFPA 101(12), Sec. 10.2.3.7.2 and MSBC(15), Sec. 803.1.2.1 are allowed on walls and ceilings.

### Specific requirements applicable to health care (Group I-2) occupancies

The following breakdown is based on the more restrictive of the requirements found during a comparison between NFPA 101(12) and the 2015 MN State Building and Fire Codes.

1. NEW Health Care Occupancies [see NFPA 101(12), Sec. 18.3.3; MSBC(15), Sec. 803.9 and Table 803.9]:
  - a. Wall and ceiling finishes must be Class A throughout, except that Class A or Class B wall and ceiling finish is allowed in individual rooms with a capacity of not more than 4 persons.
  - b. Corridor wall finish not exceeding 48 inches in height that is restricted to the lower half of the wall is allowed to be Class A or Class B.
  - c. The reductions in class of interior finish where automatic fire sprinkler protection is present, as set forth in NFPA 101(12), Sec. 2.8.1, is allowed. It should be noted, however, that the MN State Building Code only allows Class C finish [see MSBC(15), Sec. Table 803.9, Footnotes a, h and i]:
    - For wainscoting or paneling at a grade level lobby, provided it doesn't exceed 1,000 ft<sup>2</sup> of surface area and is applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked in accordance with MSBC(15), Sec. 803.11.1;
    - In administrative areas; and
    - In rooms with a capacity of not more than 4 persons.
2. EXISTING Health Care Occupancies [see NFPA 101(12), Sec. 19.3.3]:
  - a. Existing wall and ceiling finishes must be Class A or Class B throughout.
  - b. As set forth in NFPA 101(12), Sec. 43.4.3, interior finish materials installed in existing health care occupancies on or after 07/05/2016 must meet the requirements for new construction.
  - c. The reduction in class of interior finish where automatic fire sprinkler protection is present, as set forth in NFPA 101(12), Sec. 2.8.1, is allowed.

### Fire retardant coatings

NFPA 101(12), Sec. 10.2.6.1 and MSFC(15), Sec. 803.4 allow the use of approved fire-retardant coatings (e.g. fire retardant paints and varnishes) to upgrade the flame spread ratings of existing interior finishes to meet the requirements of the code. The product used must be listed by a nationally recognized independent testing laboratory (e.g. ETL, FM, SwRI, UL, etc.). Such coatings need to be applied in strict conformance with

manufacturer's instructions and, if so specified by the manufacturer, may need to be periodically reapplied or renewed.

Manufacturer's documentation needs to clearly identify the flame spread rating achieved with proper application of the product and should also provide information about whether the treatment will be negatively affected by washing or other cleaning procedures. In addition to the manufacturer's documentation (which should include a label from the container of each product used), the facility must be able to provide written documentation:

- Identifying who applied the fire retardant coating to the finish in question,
- Stating the date the coating was applied,
- Listing the interior finish(es) to which the coating was applied, and
- Certifying that the coating was applied in accordance with manufacturer's instructions.

### DOCUMENT your interior wall and ceiling finishes

Flame spread ratings of interior wall and ceiling finishes must be properly documented. Each piece of documentation should identify the specific location(s) in which the finishes are present.

It is important that at least two people in your facility know where the documentation on your facility's interior wall and ceiling finishes is kept to increase the likelihood that it can be readily provided if requested during an inspection. This documentation needs to be maintained for the life of the finish.

### Interior wall/ceiling finish policy

The best way to maintain compliance with the requirements of the code is to have a policy in place to help ensure that only approved wall and ceiling finishes are purchased in the first place. The policy should specify that no wall or ceiling finishes will be allowed in the building unless written documentation can be provided showing that they meet the flame resistance requirements of the code.

## ***Part II – Interior Floor Finish***

### The basics

Federal certification requirements applicable to interior floor finishes in health care occupancies can be found in NFPA 101(12), Sections 18.3.3.3/19.3.3.3 and 10.2.7. State licensure requirements can be found in Sec. 804.3 of the 2015 MN State Fire Code and Sec. 804 of the 2015 MN State Building Code.

There are several factors that affect the type of floor finishes allowed in a health care facility including:

- Date of installation of the finish;
- Location of the finish – i.e. **where** it's installed in the building (e.g. rooms, corridors, etc.); and
- Automatic fire sprinkler protection.

By definition, interior floor finish includes the interior finish (i.e. exposed surfaces) of floors, ramps, stair treads and risers, and other walking surfaces [see NFPA 101(12), Sec. 3.3.90.3]. Since most traditional smooth surface floor coverings (like wood, vinyl, linoleum or terrazzo) and resilient floor covering materials that are not comprised of fibers generally contribute minimally to fire growth and spread in the early stages of a fire, the requirements in the state codes and federal standards focus primarily on textile floor coverings, like carpeting [see the exceptions to MSBC(15), Sec. 804.1 and MSFC(15), Sec. 804.3].

## Classification of interior floor finish

Interior floor finishes are grouped into two classes, based on their critical radiant flux ratings when tested in accordance with NFPA 253(11), *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*:

- Class I Interior Floor Finish (critical radiant flux of 0.45 watts/cm<sup>2</sup> or greater)
- Class II Interior Floor Finish (critical radiant flux of 0.22 watts/cm<sup>2</sup> or greater but less than 0.45 watts/cm<sup>2</sup>)

More information about the testing of interior floor finishes can be found in NFPA 101(12), Sec. A.10.2.7.3. You will find the 2012 *Life Safety Code® Handbook* to be another excellent resource.

## Specific requirements applicable to health care (Group I-2) occupancies

The following breakdown is based on the more restrictive of the requirements found during a comparison between NFPA 101(12) and the 2015 MN State Building and Fire Codes.

1. NEW Health Care Occupancies [see NFPA 101(12), Sec. 18.3.3; MSBC(15), Sec. 804.4; MSFC(15), Sec. 804.3.3]:
  - a. Floor finish and floor covering materials in exit enclosures, exit passageways, and exit access corridors and rooms or spaces not separated from corridors by full-height partitions extending from the floor to the underside of the ceiling must be Class I.
  - b. Where automatic fire sprinkler protection is present, the use of Class II materials is allowed.
  - c. Textile floor covering materials installed in all areas must comply with DOC FF-1 “Pill Test” (CPSC 16 CFR, Part 1630, *Standard for the Surface Flammability of Carpets and Rugs*) or ASTM D 2859, *Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials*. This should really be a moot point, however, as all carpeting sold in the United States since 1971 has been required to pass this test procedure.
2. EXISTING Health Care Occupancies [see NFPA 101(12), Sec. 19.3.3]:
  - a. Neither NFPA 101(12) nor the 2015 MN State Fire Code have restrictions on existing interior floor finishes.
  - b. As set forth in NFPA 101(12), Sec. 43.4.3, interior floor finish materials installed in existing health care occupancies on or after 07/05/2016 must meet the requirements for new construction.

As explained earlier, these requirements do not apply to traditional smooth surface floor coverings.

## Floor-wall base

NFPA 101(12), Sec. 10.2.5.2 contains specific requirements that apply to interior floor trim material not exceeding 6 inches in height used at the junction of the wall and floor to provide a functional or decorative border (e.g. wall base, carpet cove). These requirements, which are consistent with those found in the 2015 MN State Building and Fire Codes, were discussed in more detail earlier in this guide – see the “Trim and incidental finish” section in Part I, Interior Wall and Ceiling Finishes.

## DOCUMENT your floor finishes

Flame spread ratings of interior floor finishes must be properly documented. Each piece of documentation should identify the specific location(s) in which the finishes are present.

It is important that at least two people in your facility know where the documentation on your facility’s floor finishes is kept to increase the likelihood that it can be readily provided if requested during an inspection. This documentation needs to be maintained for the life of the finish.

## Floor finish policy

The best way to maintain compliance with the requirements of the code is to have a policy in place to help ensure that only approved floor finishes are purchased in the first place. The policy should specify that no floor finishes will be allowed in the building unless written documentation can be provided showing that they meet the flame resistance requirements of the code. This can be a separate policy or included in a general policy dealing with interior wall, ceiling and floor finishes.

## ***Part III – Drapes, Curtains and Decorations***

### The basics

Federal certification requirements applicable to drapes, curtains and decorations in health care occupancies can be found in NFPA 101(12), Sections 18.7.5/19.7.5 and 10.3.1. State licensure requirements can be found in Sec. 807 of the 2015 MN State Fire Code and Sec. 806.1 of the 2015 MN State Building Code.

### Drapes, curtains, etc.

1. Although there are some exceptions, draperies, curtains (including cubicle or privacy curtains, but excluding curtains at showers), and other loosely hanging fabrics and films serving as furnishings or decorations in health care occupancies are required to be flame resistant as demonstrated by testing in accordance with NFPA 701(10), *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*.

Two different test methods are found in NFPA 701 – a small- or intermediate-scale test (Test Method 1) and a large-scale test (Test Method 2). The applicable test method is determined, for the most part, by the weight of the test material per unit area (i.e. areal density). *It is important to note that Test Method 2 must be used for such things as plastic films (including plastic used as temporary enclosures during building construction); vinyl-coated fabric blackout linings and lined draperies using a vinyl-coated fabric blackout lining; fabrics having an areal density greater than 21 oz/yd<sup>2</sup> (700 g/m<sup>2</sup>); and fabric used in the construction of awnings and similar architectural fabric structures and banners [see NFPA 701(10), Sec. 1.1.2].*

2. If textiles and films are applied to surfaces of buildings or backing materials as interior finishes, they must meet the requirements for interior wall and ceiling finishes discussed earlier in this guide.
3. Specific requirements applicable to health care (Group I-2) occupancies  
The MN State Building Code requires that all drapes, curtains, hangings and other decorative materials suspended from a wall or ceiling be noncombustible or be shown to pass the test criteria of NFPA 701 [see MSBC(15), Sec. 806.1]. NFPA 101(12) and the MN State Fire Code have a similar provision, but allow some exemptions:
  - a. NFPA 101(12):
    - i. Sec. 18.7.5.1(3)/19.7.5.1(3) exempts draperies and curtains at windows in patient/resident sleeping rooms located in smoke compartments protected by automatic fire sprinklers.
    - ii. Sec. 18.7.5.1(4)/19.7.5.1(4) exempts draperies and curtains in other areas or rooms where all of the following conditions are met:
      - o Individual drapery or curtain panel area does not exceed 48 ft<sup>2</sup>.
      - o Total area of drapery and curtain panels per room or area does not exceed 20 percent of the aggregate area of the wall on which they are located.
      - o The smoke compartment in which the draperies or curtains are located is protected by automatic fire sprinklers.
  - b. MN State Fire Code

MSFC(15), Sec. 807.1 exempts drapes, curtains, hangings and other decorative materials suspended from a wall or ceiling where the suspended materials constitute not more than 10 ft<sup>2</sup> for every 50 lineal feet of the wall or ceiling surface.

The MN State Building Code requirement would likely be applied by the state or local building code official as a condition of issuing a certificate of occupancy following a construction or renovation project in your building. The requirements of NFPA 101(12) and the MN State Fire Code would likely be applied during a federal certification survey and/or state licensure inspection of your facility.

## Decorations

While not specifically defined in NFPA 101(12), Sec. 202, *DEFINITIONS*, of the 2015 MN State Building and Fire Codes defines the term “decorative material” to include all materials utilized for decorative effect, such as batting, cloth, cotton, artificial vegetation, moss, foam plastics and similar items, but not to include floor coverings, ordinary window shades, interior finish and materials 0.025 inch or less in thickness applied directly to and adhering tightly to a substrate.

The MN State Building Code requires that all combustible decorative materials be shown to pass the test criteria of NFPA 701, unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present [see MSBC(15), Sec. 806.1]. The latter is, obviously, a judgment call on the part of the building code official.

NFPA 101(12), Sec. 18.7.5.6/19.7.5.6 and MSFC(15), Sec. 807.5 have provisions similar to those of MSBC(15), Sec. 806.1], but allow some exemptions:

1. Combustible decorations are allowed to be treated with an approved fire retardant that is listed and labeled for application to the material to which it is applied.
2. Decorations shown to have a maximum heat release rate of 100 kW when tested in accordance with NFPA 289(09), *Standard Method of Fire Test for Individual Fuel Packages*, using a 20 kW ignition source are allowed.
3. Combustible decorations that meet the following conditions are allowed to be attached directly to walls, ceilings and non-fire rated doors:
  - a. Decorations on non-fire-rated doors do not interfere with the operation or required latching of the door.
  - b. Decorations do not exceed 20% of the wall, ceiling and door areas inside any room or space of a smoke compartment that is not protected throughout by fire sprinklers.
  - c. Decorations do not exceed 30% of the wall, ceiling and door areas inside any room or space of a smoke compartment that is protected throughout by fire sprinklers.
  - d. Decorations do not exceed 50% of the wall, ceiling and door areas inside patient sleeping rooms having a capacity not exceeding 4 persons and located in a fully sprinklered smoke compartment.

### **Remember:**

- Decorations must be located such that they will not interfere with access to, or the operation of, any door, fire sprinkler, portable extinguisher, or automatic fire/smoke detector, nor shall they obstruct the visibility of exits or EXIT signs.
- There should be no decorations on doors having a fire protection rating of ¾-hour or greater (e.g. stair enclosure doors, fire separation doors and hazardous area doors).



The MN State Building Code requirements would likely be applied by the state or local building code official as a condition of issuing a certificate of occupancy following a construction or renovation project in your building. The requirements of NFPA 101(12) and the MN State Fire Code would likely be applied during a federal certification survey and/or state licensure inspection of your facility.

### Natural and artificial vegetation

1. Natural cut decorative vegetation (e.g. wreaths, Christmas trees, hay bales, corn stalks, etc.) is prohibited in health care occupancies [see MSFC(15), Sec. 806.1.4.2].
2. Artificial decorative vegetation must meet the flame propagation criteria of NFPA 701(10) [see MSFC(15), Sec. 806.2]. As an alternative, such vegetation is allowed to be tested in accordance with NFPA 289(09), *Standard Method of Fire Test for Individual Fuel Packages*, using a 20 kW ignition source and must have a maximum heat release rate of 100 kW.

### DOCUMENT your drapes, curtains and decorations

1. The flame resistance of drapes, curtains and decorations must be properly documented. Each piece of documentation should identify the specific location(s) in which the materials are present.
2. Where allowed, approved fire-retardants (e.g. chemicals, coatings and sprays) can be used to render drapes, curtains and decorations flame resistant. This can be done commercially (e.g. by a local dry cleaner) or by facility staff. The product used must be listed by a nationally recognized independent testing laboratory (e.g. ETL, FM, SwRI, UL, etc.) and must be compatible with the material(s) to which it is applied. Application needs to be performed in strict conformance with manufacturer's instructions and, if so specified by the manufacturer, may need to be periodically reapplied or renewed.

Manufacturer's documentation needs to clearly identify the material(s) to which its product can be applied (e.g. paper, fabric, plastic, etc.) and certify that, with proper application of the product, the material to which it is applied will be rendered flame resistant as demonstrated by testing in accordance with NFPA 701. In addition to the manufacturer's documentation (which should include a label from the container of each product used), the facility must be able to provide written documentation:

- Identifying who applied the fire retardant to the material(s) in question,
- Stating the date the fire retardant was applied,
- Listing the material(s) to which the fire retardant was applied, and
- Certifying that the fire retardant was applied in accordance with manufacturer's instructions.

3. It is very important that manufacturer's documentation provide proper care instructions. Some flame retardant treatments (whether factory-applied or otherwise) are affected by laundering, dry cleaning or water leaching. Others may just leach out over time, especially on exposure to sunlight. For these reasons, some treatments may need to be periodically reapplied or renewed.

Care should be taken to ensure that at least two people in your facility know where the documentation on your facility's drapes, curtains and decorations is kept to increase the likelihood that it can be readily provided if requested during an inspection. This documentation needs to be maintained for the life of the product.

### Drapes/curtains/decorations policy

The best way to maintain compliance with the requirements of the code is to have a policy in place to help ensure that only approved drapes, curtains and decorations are purchased in the first place. To provide the greatest flexibility on their use, the policy should specify that no drapes, curtains or decorations will be allowed

in the building unless written documentation can be provided showing that they are flame resistant or have been rendered flame resistant by treatment with an approved fire retardant.

## ***Part IV – Upholstered Furniture***

### The basics

Federal certification requirements applicable to upholstered furniture in health care occupancies can be found in NFPA 101(12), Sections 18.7.5.2/19.7.5.2, 10.3.2.1 and 10.3.3. State licensure requirements can be found in MSFC(15), Sec. 805.2.

### Federal certification requirements

A review of NFPA 101(12), Sec. 18.7.5.2/19.7.5.2 will reveal that there are no special fire safety requirements that apply to upholstered furniture located in buildings protected throughout by an approved automatic fire sprinkler system. Where automatic fire sprinkler protection is not present, the following federal certification requirements apply to upholstered furniture brought into a health care facility on or after 07/05/2016:

1. It must be resistant to ignition by cigarettes in accordance with one of the following:
  - a. The components of the upholstered furniture must meet the requirements for Class I when tested in accordance with NFPA 260(09), *Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture* or ASTM E 1353, *Standard Test Methods for Cigarette Ignition Resistance of Components of Upholstered Furniture*; **or**
  - b. Mocked up composites of the upholstered furniture must have a char length not exceeding 1.5 inches when tested in accordance with NFPA 261(09), *Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes* or ASTM E 1352, *Standard Test Method for Cigarette Ignition Resistance of Mock-Up Upholstered Furniture Assemblies*.
2. It must have limited rates of heat release as demonstrated by passing the criteria set forth in NFPA 101(12), Sec. 10.3.3 when tested in accordance with ASTM E 1537, *Standard Method for Fire Testing of Upholstered Furniture*. It should be noted that the values in Sec. 10.3.3 correspond with those found in California Technical Bulletin 133.
3. Upholstered furniture belonging to a resident is allowed in resident sleeping rooms without meeting the criteria spelled out in Items 1 and 2 above, provided automatic smoke detection is present in such rooms [see NFPA 101(12), Sec. 19.7.5.3]. Battery-operated single-station smoke alarms are allowed to be used to meet this provision.

### State licensure requirements

MN state law used to require that upholstered seating furniture manufactured on or after 01/01/1992 comply with the testing and labeling requirements of California Technical Bulletins 133 and 117. The charging statute, known as the “Furniture Fire Safety Act” (formerly MN Statutes, sections 299F.840 – 299F.848), was repealed effective 05/18/2008. The repealer of the associated MN rules (formerly MN Rules, Parts 7511.8500 – 7511.8570) was published 06/12/2012.

What this means is that the furniture fire safety provisions of state law applicable to health care facilities now default to the requirements found in MSFC(15), Sec. 805.2. *While the provisions of the MSFC are similar to those found in NFPA 101, they are not identical.*

As specified in MSFC(15), Sec. 805.2, the following requirements apply to upholstered furniture brought into a health care facility on or after 05/02/2016:

1. It must be resistant to ignition by cigarettes in accordance with one of the following [see MSFC(15), Sec. 805.2.1.1]:
  - a. Mocked up composites of the upholstered furniture must have a char length not exceeding 1.5 inches when tested in accordance with NFPA 261(09); or
  - b. The components of the upholstered furniture must meet the requirements for Class I when tested in accordance with NFPA 260(09).
  - c. By Exception, upholstered furniture belonging to a resident is allowed in resident sleeping rooms without meeting the criteria spelled out in Items a and b above, provided automatic smoke detection is present in such rooms. Battery-operated single-station smoke alarms are allowed to be used to meet this provision.

Note: There is no fire sprinkler exception to MSFC(15), Sec. 805.2.1.1. That said, pursuant to the authority granted to the fire code official in MSFC(15), Sec. 104.8, Modifications, an argument could be made that in a fully sprinklered health care facility that prohibits smoking in its building and prominently post signs to that effect at all major entrances, the purpose and intent of Sec. 805.2.1.1 are met without newly installed furniture being tested for cigarette ignition.

1. It must have limited rates of heat release when tested in accordance with ASTM E 1537 or California Technical Bulletin 133 as follows [see MSFC(15), Sec. 805.2.1.2]:
  - a. The peak rate of heat release for the single upholstered furniture item must not exceed 80 kW, and
  - b. The total energy released by the single upholstered furniture item during the first 10 minutes of the test must not exceed 25 MJ.

Note: These requirements, identical to those found in NFPA 101(12), Sec. 10.3.3, do not apply to upholstered furniture placed in rooms or spaces protected by automatic fire sprinklers installed in accordance with NFPA 13.

### DOCUMENT your upholstered furniture

Upholstered furniture located in areas not protected by automatic fire sprinklers, except pieces meeting the exceptions mentioned above, is required to bear a hangtag or the label of an approved agency confirming compliance with the criteria specified above. Care must be taken to ensure that these hangtags or labels are not removed. That being said, it is always a good idea to have hard copy documentation on each piece of upholstered furniture purchased as a back-up. It is also important that the manufacturer's documentation provide proper care instructions.

Make sure that at least two people in your facility know where the documentation on your facility's upholstered furniture is kept to increase the likelihood that it can be readily provided if requested during an inspection. This documentation needs to be maintained for the life of the furniture.

### Upholstered furniture policy

In facilities not protected throughout by an approved automatic fire sprinkler system, the best way to maintain compliance with the requirements of the code is to have a policy in place to help ensure that only properly tested and labeled upholstered furniture is brought into the facility in the first place. The policy should specify that no

upholstered furniture will be allowed in the building unless written documentation can be provided showing that it complies with the requirements of the code.

### ***Part V – Mattresses***

Federal certification requirements applicable to mattresses in health care occupancies can be found in NFPA 101(12), Sections 18.7.5.4/19.7.5.4, 10.3.2.2 and 10.3.4. State licensure requirements can be found in MSFC(15), Sec. 805.2.2.

A review of the codes will reveal that:

1. Mattresses brought into the facility on or after 05/02/2016 must be resistant to ignition by cigarettes when tested in accordance with DOC 16 CFR 1632, *Standard for the Flammability of Mattresses and Mattress Pads* (FF 4-72) and must have a char length not exceeding 2 inches [see NFPA 101(12), Sec. 10.3.2.2; MSFC(15), Sec. 805.2.2.1]. *Actually, this should be a moot point as DOC 16 CFR 1632 is part of federal regulations governed by the Consumer Product Safety Commission (CPSC) and applies to all mattresses sold in the United States.*
2. Mattresses brought into the facility on or after 05/02/2016, if located in rooms or spaces **not** protected by an approved automatic fire sprinkler system, must have limited rates of heat release when tested in accordance with ASTM E 1590, *Standard Method for Fire Testing of Mattresses* or California Technical Bulletin 129 as follows [see NFPA 101(12), Sec. 10.3.4; MSFC(15), Sec. 805.2.2.2]:
  - a. The peak rate of heat release for the single mattress must not exceed 100 kW, and
  - b. The total energy released by the single mattress during the first 10 minutes of the test must not exceed 25 MJ.
3. NFPA 101(12), Sec. 18.7.5.5/19.7.5.5 allows a mattress belonging to a resident in a resident sleeping room without meeting the criteria spelled out in Items 1 and 2 above, provided automatic smoke detection is present in such rooms. Battery-operated single-station smoke alarms are allowed to be used to meet this provision.

**Note:** There is no equivalent provision in MSFC(15), Sec. 805.2.2. To use smoke detection in lieu of meeting the criteria spelled out in Items 1 and 2 above, the facility would need to convince the fire code official that the smoke detection provides a level of protection that meets the purpose and intent of the code [see MSFC(15), Sec. 104.8, Modifications].

### **DOCUMENT your mattresses**

Mattresses are required to bear a hangtag or the label of an approved agency confirming compliance with the criteria specified in Items 1 and 2 above. Care must be taken to ensure that these hangtags or labels are not removed. That being said, it is always a good idea to have hard copy documentation on each mattress purchased as a back-up. It is also important that the manufacturer's documentation provide proper care instructions.

Make sure that at least two people in your facility know where the documentation on your facility's mattresses is kept to increase the likelihood that it can be readily provided if requested during an inspection. This documentation needs to be maintained for the life of the mattresses.

### **Mattress policy**

The best way to maintain compliance with the requirements of the code is to have a policy in place to help ensure that only properly tested and labeled mattresses are brought into the facility in the first place. The policy

should specify that no mattress will be allowed in the building unless written documentation can be provided showing that it complies with the requirements of the code.