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REPORT NUMBER: 134897  
DATE: December 29, 1999  
PAGE: 1 of 2

REPORT OF TEST

CLIENT: Humane Manufacturing Co.  
805 Moore Street  
Baraboo, WI 53913-2796

Attn: Fran Johnson

AUTHORIZATION: Letter of authorization received from Fran Johnson of Humane Manufacturing Co. dated December 17, 1999.

SAMPLE DESCRIPTION: One (1) sample was received from the client on December 22, 1999. Client identified the sample as: 1/2" x 9" x 9" Rubber Mat (STD Diamond) Genoa Origin.

TEST PROCEDURE: The submitted sample was tested for flammability according to the procedures outlined in 16CFR 1630/1631.

TEST DATE: December 28, 1999.

RESULTS: Continued on Page 2.

PREPARED BY:

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Textile Services

SIGNED FOR COMPANY BY:

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Member of the SGS Group

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REPORT NUMBER: 134897  
DATE: December 29, 1999  
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CLIENT: Humane Manufacturing Co.

RESULTS:

Surface Flammability of Carpets and Rugs  
16 CFR Part 1630 FF1-70 & Part 1631 FF2-70

Test Criterion:

A specimen passes the test if the charred portion does not extend to within 1.0 inch of the edge of the hole in the flattening frame at any point.

<u>Pass</u>	<u>Fail</u>
8	0

Requirements:

At least 7 of the 8 specimens must meet the above criterion.

Conclusion:

The submitted sample was found to meet the criteria of the above code.

\*\*\*\*\*  
End of Report

REPORT OF TEST

uses regulated by model building codes, light-transmitting plastics in such applications may be substantiated by fire tests that demonstrate the combustibility characteristics of the light-transmitting plastics for the use intended under actual fire conditions.

**A-6-5.3.5.1** Expanded vinyl wall covering consists of a woven textile backing, an expanded vinyl base coat layer, and a non-expanded vinyl skin coat. The expanded base coat layer is a homogeneous vinyl layer that contains a blowing agent. During processing, the blowing agent decomposes, which causes this layer to expand by forming closed cells. The total thickness of the wall covering is approximately 0.055 to 0.070 in. (0.14 to 0.18 cm).

**A-6-5.5.1** It has been shown that the method of mounting interior finish materials may affect actual performance. Where materials are tested in intimate contact with a substrate to determine a classification, such materials should be installed in intimate contact with a similar substrate. Such details are especially important for "thermally thin" materials. For further information, refer to NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*.

Some interior wall and ceiling finish materials, such as fabrics not applied to a solid backing, may not lend themselves to a test made in accordance with NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*. In these cases, the large-scale test outlined in NFPA 701, *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*, may be used.

Prior to 1978, the test report described by NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*, included an evaluation of the fuel contribution as well as the flame spread rating and the smoke development value. However, it is now recognized that the measurement on which the fuel contribution is based does not provide a valid measure. Therefore, although the data are recorded during the test, the information is no longer normally reported. Classification of interior wall and ceiling finish thus relies only on flame spread index and smoke development value.

The 450 smoke development value limit is based solely on obscuration.

**A-6-5.6.1** The flooring radiant panel provides a measure of a floor covering's tendency to spread flames when located in a corridor and exposed to the flame and hot gases from a room fire. The flooring radiant panel test method is to be used as a basis for estimating the fire performance of a floor covering installed in the building corridor. Floor coverings in open building spaces and in rooms within buildings merit no further regulation, providing it can be shown that the floor covering is at least as resistant to spread of flame as a material that will meet the federal flammability standard, FF1-70, *Standard for the Surface Flammability of Carpets and Rugs (Pill Test)*. All carpeting sold in the U.S. since 1971 is required to meet this standard and therefore is not likely to become involved in a fire until a room reaches or approaches flashover. Therefore, no further regulations are necessary for carpet other than carpet in exitways and corridors.

It has not been found necessary or practical to regulate interior floor finishes on the basis of smoke development.

**A-6-5.8** Fire retardant coatings need to be applied to surfaces properly prepared for the material, and application needs to be consistent with the product listing.

Deterioration of coatings applied to interior finishes may occur due to repeated cleaning of the surface or painting over applied coatings.

**A-6-6.1** Testing per NFPA 701, *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*, is applicable to textiles and films used in a hanging configuration. If the textiles and films are to be applied to surfaces of buildings or backing materials as interior finishes for use in buildings, they should be treated as interior wall and ceiling finishes in accordance with Section 6-5 of this Code, and they should then be tested for flame spread rating and smoke development values in accordance with NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*, or for flame spread and flashover in accordance with NFPA 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings*, in accordance with Section 6-5.

**A-6-6.2** The Class I requirement associated with testing per NFPA 260, *Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture*; the maximum 1.5-in. (3.8-cm) char length requirement associated with testing per NFPA 261, *Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes*; and the maximum 2-in. (5.1-cm) char length requirement of FF4-72, *Standard for the Flammability of Mattresses*, are indicators that the furniture item or mattress is resistant to a cigarette ignition. Although rooms or spaces protected by an approved, automatic sprinkler system are exempt from cigarette ignition resistance testing, a fire that smolders for an excessive period of time without flaming can reduce the tenability within the room or area of fire origin without developing the temperatures necessary to operate automatic sprinklers.

**A-6-6.3** The intent of the provisions of 6-6.3 is as follows:

(a) The maximum 250 kW peak rate of heat release for a single upholstered furniture item was chosen based on maintaining a tenable environment within the room of fire origin. The sprinkler exception was developed because the sprinkler system will help to maintain tenable conditions even if the single upholstered furniture item were to have a peak rate of heat release in excess of 250 kW.

(b) The maximum 40 MJ total energy release by the single upholstered furniture item during the first 5 min of the test was established as an additional safeguard to protect against the adverse conditions that would be created by an upholstered furniture item that released its heat in other than the usual measured scenario. During the test for measurement of rate of heat release, the instantaneous heat-release value usually peaks quickly and then quickly falls off so as to create a triangle-shaped curve. In the atypical case, if the heat-release were to peak and remain steady at that elevated level, as opposed to quickly falling off, the maximum 250 kW limit would not ensure safety. Again, only a sprinkler exception is allowed in lieu of the test because of the ability of the sprinkler system to control the fire.

**A-6-6.4** The intent of the provisions of 6-6.4 is as follows:

(a) The maximum 250 kW peak rate of heat release for a single mattress was chosen based on maintaining a tenable environment within the room of fire origin. The sprinkler exception was developed because the sprinkler system will help to maintain tenable conditions even if the single mattress were to have a peak rate of heat release in excess of 250 kW.

$\frac{1}{2}$  in. (1.3 cm) in thickness and 4 in. (10.2 cm) in width, and complies with the requirements for Class A or B interior wall and ceiling finish as described in 6-5.5; however, the smoke rating shall not be limited.

**6-5.3.3\*** Light-transmitting plastics shall be permitted to be used as interior wall and ceiling finish if approved by the authority having jurisdiction.

**6-5.3.4** Where surface nonmetallic raceway products, as permitted by NFPA 70, *National Electrical Code*, are regulated as interior finish, they shall comply with the requirements for Class A interior wall and ceiling finish as described in 6-5.5 and testing in the form in which they are used. The smoke rating shall not be limited when the raceway is less than 10 percent of the wall or ceiling area.

#### 6-5.3.5 Expanded Vinyl Wall Coverings.

**6-5.3.5.1\*** Expanded vinyl wall covering shall comply with one of following the conditions:

(a) Materials having a Class A rating (*see* 6-5.5.1) shall be permitted on the walls or ceilings of rooms or areas protected by an approved, automatic sprinkler system.

(b) Materials having a Class A rating (*see* 6-5.5.1) shall be permitted on partitions that are not more than  $\frac{3}{4}$  of the floor-to-ceiling height nor more than 8 ft (2.4 m) in height, whichever is less.

(c) Materials having a Class A rating (*see* 6-5.5.1) shall be permitted on ceiling-height walls and ceiling-height partitions up to 4 ft (1.2 m) above the finished floor.

(d) Previously approved, existing installations of materials having a Class A rating (*see* 6-5.5.1) shall be permitted to be continued to be used.

(e) Materials shall be permitted on walls and partitions, without requiring classification in accordance with 6-5.5, where tested in accordance with NFPA 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings*.

**6-5.3.5.2** Expanded vinyl wall coverings in existing installations complying with the appropriate wall finish classification for the occupancy involved shall be classified in accordance with the provisions in 6-5.5.1.

**6-5.3.6** For requirements on decorations and furnishings not meeting the definition of interior finish, *see* Section 6-6.

#### 6-5.4 Interior Wall or Ceiling Finish Classifications.

**6-5.4.1** Interior wall or ceiling finish shall be classified based on test results from NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*.

#### 6-5.5 Interior Wall and Ceiling Finish Testing.

**6-5.5.1\*** Products required to be tested in accordance with NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*, shall be grouped in the following classes in accordance with their flame spread and smoke development.

(a) *Class A Interior Wall and Ceiling Finish.* Flame spread 0-25; smoke development 0-450. Includes any material classified at 25 or less on the flame spread test scale and 450 or less on the smoke test scale. Any element thereof, when so tested, shall not continue to propagate fire.

(b) *Class B Interior Wall and Ceiling Finish.* Flame spread 26-75; smoke development 0-450. Includes any material clas-

sified at more than 25 but not more than 75 on the flame spread test scale and 450 or less on the smoke test scale.

(c) *Class C Interior Wall and Ceiling Finish.* Flame spread 76-200; smoke development 0-450. Includes any material classified at more than 75 but not more than 200 on the flame spread test scale and 450 or less on the smoke test scale.

*Exception:* Existing interior finishes complying with the above flame spread ratings only shall be permitted to be continued to be used.

**6-5.5.2** Wherever the use of Class C interior wall and ceiling finish is required, Class A or B shall be permitted. Where Class B interior wall and ceiling finish is required, Class A shall be permitted.

**6-5.5.3** The classification of interior finish specified in 6-5.5.1 shall be that of the basic material used by itself or in combination with other materials.

*Exception:* Exposed portions of structural members complying with the requirements for Type IV(2HH) construction per NFPA 220, *Standard on Types of Building Construction*.

#### 6-5.6 Interior Floor Finish Classification.

**6-5.6.1\*** Interior floor finishes shall be classified in accordance with 6-5.6.2 based on test results from NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*.

**6-5.6.2** Interior floor finishes shall be grouped in the following classes in accordance with the critical radiant flux ratings.

(a) *Class I Interior Floor Finish.* Critical radiant flux minimum of 0.45 W/sq cm as determined by the test described in 6-5.6.1.

(b) *Class II Interior Floor Finish.* Critical radiant flux minimum of 0.22 W/sq cm as determined by the test described in 6-5.6.1.

**6-5.6.3** Wherever the use of Class II interior floor finish is required, Class I interior floor finish shall be permitted.

**6-5.7 Trim and Incidental Finish.** Interior wall and ceiling finish not in excess of 10 percent of the aggregate wall and ceiling areas of any room or space shall be permitted to be Class C materials in occupancies where interior wall and ceiling finish of Class A or Class B is required.

#### 6-5.8\* Fire Retardant Coatings.

**6-5.8.1** The required flame spread or smoke developed classification of existing surfaces of walls, partitions, columns, and ceilings shall be permitted to be secured by applying approved fire retardant coatings to surfaces having higher flame spread ratings than permitted. Such treatments shall comply with the requirements of NFPA 703, *Standard for Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials*.

**6-5.8.2** Fire retardant coatings shall possess the desired degree of permanency and shall be maintained so as to retain the effectiveness of the treatment under the service conditions encountered in actual use.

#### 6-5.9 Automatic Sprinklers.

**6-5.9.1** Where an approved, automatic sprinkler system is installed in accordance with Section 7-7, Class C interior wall and ceiling finish materials shall be permitted in any location where Class B is required, and Class B interior wall and ceiling