

## WA QUALITY STANDARD FOR POLYMER COATED FABRIC WALLCOVERING

### **1. PURPOSE**

The purpose of this document is to establish nationally recognized quality standards for polymer coated fabric wallcovering for institutional and commercial use, and to provide producers, distributors and users with a basis for a common understanding of the characteristics of the product.

### **2. SCOPE**

2.1 This document sets forth quality standards and test methods for measuring the properties of polymer coated fabric wallcovering, institutional and commercial.

2.2 General identification and installation information is included, but is not part of this Standard.

2.3 The Wallcovering Association assumes no liability resulting from use of this Standard.

### **3. APPLICABLE DOCUMENTS**

3.1 ASTM Standard D-751 - "Standard Methods of Testing Coated Fabrics".

3.2 ASTM Standard E-84 - "Standard Test Method for Surface Burning Characteristics of Building Materials"

3.3 NFPA 101 - Life Safety Code

3.4 NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

3.5 Federal Test Method Standard No. 191A, Federal Standard for Textile Test Method.

3.6 ASTM Standard D-1308 - "Standard Method for Test for Effect of Household Chemicals on Clear and Pigmented Organic Finishes".

3.7 ASTM F793- Standard Classification of Wallcovering by Durability Characteristics.

3.8 CDPH/EHLB Standard Method V1.1 (2010) Testing for low voc emissions per California Specification Section 01350.

3.9 EN 15102 European Standard – Decorative wallcoverings – roll and panel form products.

3.10 En 12149 , "Determination of migration of heavy metals and certain other elements, of vinyl chloride monomer and of formaldehyde release".

3.11 ASTM E96, "Standard Test Method for Water Vapor Transmission".

### **4. CLASSIFICATION**

4.1 This "Quality Standard for Polymer Coated Fabric Wallcovering" for institutional and commercial use covers three types based upon specific physical test requirements (Table I), and two classes based upon ASTM E-84 test results.

#### **TYPES:**

4.1.1 Type I - Light Duty. Intended for use in areas of low wear.

4.1.2 Type II - Medium Duty. Intended for use in areas of medium wear.

4.1.3 Type III - Heavy Duty. Intended for use in areas of heavy wear.

Note: Types are based on Table I.

#### **CLASSES:**

4.1.4 Class A - Flame Spread Index of 0-25 inclusive. Smoke development of 0-50 inclusive.

4.1.5 Class B - Flame Spread Index of 26-75 inclusive. Smoke development of 0-100 inclusive.

NOTE: Flame Spread Index and Smoke Development – based on ASTM E-84 Test Method. Unless otherwise specified, the flame spread and the smoke development testing shall be conducted on glass reinforced cement board (GRC) or equivalent. Materials that meet the requirements of NFPA 101 - Life Safety Code, when tested under NFPA 286, are exempt.

### **5. MATERIAL AND WORKMANSHIP**

5.1 The supporting material shall be woven cloth, non-woven fabric or other suitable material that will enable the wallcovering to meet this standard.


5.2 The coating compound shall be formulated from polymers suitably pigmented to meet the specified color requirements.

5.3 Workmanship shall be in accordance with good commercial practice, and the wallcovering shall be free of defects affecting serviceability.

## 6. PHYSICAL REQUIREMENTS

6.1 In order to conform to this standard, wallcovering shall meet the physical test requirements described in Table I.

**TABLE I - PHYSICAL TEST REQUIREMENTS**

	<u>TYPE I</u>	<u>TYPE II</u>	<u>TYPE III</u>	
Total Wt <sup>5/</sup> .oz/yd <sup>2</sup> (Kg/m <sup>2</sup> )				
PVC Coated Wallcovering	7.0(0.237)	13.0(0.442)	22.0(0.748)	
Polyolefin Coated Wallcovering	7.0(0.237)	13.0(0.442)	22.0(0.748)	
Breaking Strength, lbs. force -Newtons Min.				
Machine Direction	30 (133)	50 (222)	95 (423)	
Cross Machine Direction	30 (133)	50 (222)	95 (423)	
Tearing Strength, Scale Reading Min.				
Machine Direction	12	25	50	
Cross Machine Direction	12	25	50	
Coating Adhesion, lbs. force for 1" width, (Newtons for 2.5 cm width)	2 (8.9)	3 (13.35)	3 (13.35)	
Colorfastness to Light <sup>2</sup>	200	200	200	
Blocking, scale rating max.	2	2	2	
Crocking, scale rating min.	Good	Good	Good	
Cold Crack Resistance (20°F/-7°C)	No Change	No Change	No Change	
Heat Aging <sup>3/</sup> (7 days at 158°F/70°C)	Note 4	Note 4	Note 4	
Shrinkage, percent max.				
Machine Direction	2	2	2	
Cross Machine Direction	1	1	1.5	
Stain Resistance <sup>4</sup>	1-9	1-12	1-12	
Washability (Cycles, Min.) <sup>1/</sup>	100	100	100	
Scrubability (Cycles, Min.) <sup>1/</sup>	200	300	500	

<sup>1/</sup>Cycles are defined as double rubs.

<sup>2/</sup>There shall be no change in color or shade, discoloration, exudation, development of tackiness, or stiffness after prescribed hours of exposure.

<sup>3/</sup>Shall not become stiff, brittle, discolored, or show loss of grain.

<sup>4/</sup>Shall show no appreciable effect of staining.

## 7. TEST METHODS

7.1 The wallcovering shall be tested by the test methods listed in Table II.

**TABLE II - TEST METHODS**

<u>Test</u>	<u>Test Method</u>
Breaking Strength	ASTM D-751 - Grab Method
Tear Strength (1)	ASTM D-751 - Pendulum Impulse Method
Coating Adhesion	ASTM D-751
Colorfastness to Light (2)	Federal Test Method Standard 191A - Method 5660
Blocking	Federal Test Method Standard 191A - Method 5872
Crocking	Federal Test Method Standard 191A - Method 5651-b
Cold Crack Resistance	Paragraph 7.1.2
Heat Aging (3)	Federal Test Method Standard 191A - Method 5850
Shrinkage	Paragraph 7.1.3
Stain Resistance (4)	ASTM D-1308
Washability	ASTM F793
Scrubability	ASTM F793

- NOTE 1: Type I to be tested without the augmenting weight. Type II and Type III to be tested with the augmenting weight.
- NOTE 2: Exposure to be 200 hours.
- NOTE 3: Exposure conditions to be 158°F + 3°F (70 + 2°C) for seven days.
- NOTE 4: Test period to be 24 hours. Each of the following reagents shall be included:
- 1- Distilled water, cold, 1mL (75 ± 5°F) (23.9 ± 8°C)
  - 2- Distilled water, hot, 1mL (120 ± 5°F) (48.9 ± 2.8°C)
  - 3- Ethyl alcohol, 1mL (50% by volume)
  - 4- Vinegar (3% acetic acid)
  - 5- Alkali solution, 1mL (1% sodium hydroxide)
  - 6- Acid solution (5% acetic or hydrochloric acid)
  - 7- Soap solution, 1mL
  - 8- Detergent solution, 1mL (mild)
  - 9- Pure orange juice, 1mL
  - 10- Butter, 1mg
  - 11- Catsup, 1g
  - 12- Tea, 1mL

Water or mild detergent may be used to wipe the spot before examining for staining.

**7.1.1 Cold Crack Resistance** - Testing as follows:  
 Cut a 2 in. x 8 in. (50 mm by 200 mm) specimen with the 8 in. (200 mm) dimension in the machine direction and cut another specimen with the 8 in. (200 mm) dimension in the cross machine direction. Condition the samples and a 0.5 in. (12.5 mm) mandrel at +20°F (-7°C) for 30 minutes. After conditioning and without removal from the test conditions, the specimen shall be bent quickly around the mandrel and the specimen shall meet not more than 0.25 in. (6 mm) behind the mandrel. The uncoated side shall contact the mandrel.

**7.1.2 Shrinking Resistance** - Three specimens 10in.x 10 in. (250 mm x 250 mm) shall be accurately measured in each direction to the nearest 1/32 in.(0.5 mm). The specimens shall be soaked for 30 minutes in distilled water at room temperature, removed and dried at 200°F (87°C) for 30 minutes. The specimens shall then be conditioned at the standard conditions as provided in ASTM Specification D-751 for a minimum of 8 hours prior to remeasuring. The percent shrinkage in each direction shall be calculated using the following formula:

$$\% \text{ Shrinkage} = \frac{A - B}{A} \times 100, \quad \text{Where } A = \text{Length before test.}$$

$$B = \text{Length after test.}$$

**8. Environmental**

**8.1 Volatile Organic Compound (VOC) Emissions:**  
 Wallcovering Product must comply with the low emissions criteria established within the CDPH/EHLB Standard Method V1.1(2010) when tested and evaluated to California Specification Section 01350.

**8.2 Migration or Release of heavy metals, vinyl chloride monomer, and formaldehyde.**

Wallcovering shall comply with the EN15102 requirements of European Standard, for Decorative Wallcoverings when tested to EN12149.

**9. Optional Requirements**

**9.1 Permeability (When Specified – Optional)**

Wallcovering that is specified to be permeable when tested to ASTM E96, “Standard Test for Water Vapor Transmission – Procedure B” (wet cup method) must have a minimum result of 8 perms. (Requires microventing for standard polymer coated wallcoverings)

**9.2 Sustainable Wallcovering (When specified – Optional)**

Sustainable wallcovering products are constructions that provide environmental, social and economic benefits while protecting human health and the environment throughout the whole life cycle – from the extraction of raw materials until final disposal. Minimum requirement for Sustainable Wallcovering would be a certification grade of “Compliant” under NSF/ANSI Standard 342 or comparable multi-attribute sustainability program.

## **10. LENGTH AND WIDTH**

- 9.1 The nominal length and width shall be as agreed upon between purchaser and seller.
- 9.2 Widths shall be trimmed unless otherwise specified.
- 9.3 Minimum length piece shall be 9' unless otherwise Specified.

## **11. PACKAGING**

- 10.1 The wallcovering shall be packaged in accordance with the supplier's standard practice

## **IDENTIFICATION AND INSTALLATION** **(Not Part of Standard)**

### **IDENTIFICATION**

Statement suggested for use in representing products as conforming to all requirements of this Standard

“This Type \_\_\_\_\_, \_\_\_\_\_ Duty, Class \_\_\_\_\_ polymer coated fabric wallcovering for institutional and commercial use conforms in all respects to WA101, “Quality Standard for Polymer Coated Fabric Wallcovering”. Full responsibility for the conformance to the Standard is assured by (name and address of producer or distributor).”

### **INSTALLATION**

Polymer coated fabric wallcovering for institutional and commercial use should be installed in strict accordance with the printed instructions of the manufacturer.