



# ICBO Evaluation Service, Inc.

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## ACCEPTANCE CRITERIA FOR PLASTIC PARTITIONS USED IN PUBLIC RESTROOMS AND SIMILAR FACILITIES

AC150

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### PREFACE

Evaluation reports issued by ICBO Evaluation Service, Inc. (ICBO ES), are based upon performance features of the *Uniform Building Code*<sup>™</sup>, *ICBO Uniform Mechanical Code*<sup>™</sup> and related codes. Section 104.2.8 of the *Uniform Building Code* is the primary charging section upon which evaluation reports are issued. Section 104.2.8 reads as follows:

The provisions of this code are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this code, provided any alternate has been approved and its use authorized by the building official.

The building official may approve any such alternate, provided the building official finds that the proposed design is satisfactory and complies with the provisions of this code and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in suitability, strength, effectiveness, fire resistance, durability, safety and sanitation.

The building official shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the files of the code enforcement agency.

The attached acceptance criteria has been issued to provide all interested parties with guidelines on implementing performance features of the codes. The criteria was developed and adopted following public hearings conducted by the Evaluation Committee and is effective on the date shown above. All reports issued or reissued on or after the effective date must comply with this criteria, while reports issued prior to this date may be in compliance with this criteria or with the previous edition. If the criteria is an updated version from a previous edition, solid vertical lines (■) in the outer margin within the criteria indicate a technical change or addition from the previous edition. Deletion indicators (◆) are provided in the outer margins where a paragraph or item has been deleted if the deletion resulted from a technical change. This criteria may be further revised as the need dictates.

ICBO ES may consider alternate criteria, provided the proponent submits valid data demonstrating that the alternate criteria are at least equivalent to the attached criteria and otherwise meet the applicable performance requirements of the codes. Notwithstanding that a material, type or method of construction, or equipment, meets the attached acceptance criteria, or that it can be demonstrated that valid alternate criteria are equivalent and otherwise meet the applicable performance requirements of the codes, if the material, product, system or equipment is such that either unusual care in its installation or use must be exercised for satisfactory performance, or malfunctioning is apt to cause unreasonable property damage or personal injury or sickness relative to the benefits to be achieved by the use thereof, ICBO ES retains the right to refuse to issue or renew an evaluation report.

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# ACCEPTANCE CRITERIA FOR PLASTIC PARTITIONS USED IN PUBLIC RESTROOMS AND SIMILAR FACILITIES

## 1.0 INTRODUCTION

**1.1 Purpose:** The purpose of this acceptance criteria is to establish requirements for recognition of plastic partitions in ICBO Evaluation Service, Inc. (ICBO ES), evaluation reports under the 1997 *Uniform Building Code*<sup>TM</sup>. The criteria includes a performance-based fire test in lieu of the test for surface-burning characteristics required in Chapter 8 of the code. The basis of acceptance is Section 104.2.8 of the code.

**1.2 Scope:** The criteria is limited to solid-plastic panels used to form individual toilet, urinal, shower or dressing spaces in public plumbing facilities.

### 1.3 Reference Documents:

**1.3.1** 1997 *Uniform Building Code*.

**1.3.2** ANSI Z124.2-95, Plastic Shower Receptors and Shower Stalls.

**1.3.3** UBC Standard 26-5, Chamber Method of Test for Measuring the Density of Smoke from the Burning or Decomposition of Plastic Materials.

**1.3.4** UBC Standard 26-6, Ignition Properties of Plastics.

**1.3.5** UBC Standard 26-7, Method of Test for Determining Classification of Approved Light-transmitting Plastics.

**1.3.6** ICBO ES Acceptance Criteria for Plastic Panels for Walls of Water Closet Compartments and Showers (AC83).

**1.3.7** ASTM D 790-97, Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

**1.3.8** ASTM D 756-93, Practice for Determination of Weight and Shape Changes of Plastics Under Accelerated Service Conditions.

**1.3.9** ASTM D 2240-97, Test Method for Rubber Property—Durometer Hardness.

**1.3.10** ANSI/NEMA LD3-1995, High-pressure Decorative Laminates, published by the National Electrical Manufacturers Association.

**1.3.11** MIL-STD-810B, Environmental Test Methods.

## 2.0 BASIC INFORMATION AND REPORTS OF TESTS

**2.1 Product Description:** Description of the materials and of the manufacturing process must be submitted.

**2.2 Installation Instructions:** Installation instructions must be submitted.

**2.3 Packaging and Identification:** Description of the method of packaging and identification of the board must be submitted.

**2.4 Testing Laboratories, Reports of Tests and Product Sampling:**

**2.4.1** Testing laboratories must comply with the ICBO ES Acceptance Criteria for Laboratory Accreditation (AC89).

**2.4.2** Test reports must comply with the ICBO ES Acceptance Criteria for Test Reports and Product Sampling (AC85). All reports of tests must be prepared by an ICBO ES accredited independent testing laboratory.

**2.4.3** Test specimens must be sampled in accordance with the product sampling requirements of AC85.

## 3.0 REQUIRED DATA AND TEST REQUIREMENTS

Reports of the following tests must be submitted:

### 3.1 Physical Characteristics Tests:

**3.1.1** The minimum hardness of the plastic materials must be 65 as determined in accordance with ASTM D 2240, Shore D.

**3.1.2** The minimum value of flexural modulus for the plastic materials must be 200,000 psi (138 MPa) as determined in accordance with ASTM D 790.

**3.1.3** There must be no surface fracture of the plastic panels when tested in accordance with NEMA LD3, Section 8, Ball Impact Resistance. The specimens must be individually clamped to hold them flat against a rigid substrate such as  $\frac{3}{4}$ -inch-thick (19.1 mm) plywood on a level floor. A  $1\frac{1}{2}$ -inch-diameter (38 mm) steel ball weighing  $224 \pm 3$  grams is dropped once on each specimen from a free-fall height of 36 inches (914 mm).

**3.1.4** Chemical resistance tests must be conducted in accordance with the test methods and conditions of acceptance in Section 5.5 of ANSI Z124.2, using the following liquid reagents:

- Heavy duty detergent
- Ethyl alcohol, 50% water solution
- Soap, 1% water solution
- Urea, 6% water solution
- Phenol, 0.1% water solution
- Hydrogen peroxide, 3% water solution
- Household ammonia, 1% water solution
- Citric acid, 10% water solution
- Sodium chloride, 10% water solution
- Sodium hypochloride, concentrated solution
- Lye, 1% to 2% water solution
- Acetone

**3.2 Water Percolation Test:** When tested in accordance with Section 4.5 of AC83, there can be no more than a 0.5-inch (12.7 mm) drop in column height.

**3.3 Accelerated Aging Test:** When tested in accordance with ASTM D 756, Procedure G, there must be no cracking, checking, crazing, erosion or other characteristics that might affect performance as a partition in water-closet compartments and showers.

**3.4 Fungus Resistance Test:** When tested in accordance with MIL-STD-810B, Method 508, at the completion of the test, mold growth must be confined to the inoculated area, with no significant growth within, when examined under 5× magnification.

**3.5 Abrasion Test:** When tested in accordance with Section 4.9 of AC83, after 25 cycles, the average percent of weight-loss of the three specimens must not be more than 0.045 percent.

### 3.6 Fire Performance Tests:

**3.6.1** The materials must have a smoke-density rating not greater than 75 when tested in accordance with UBC Standard 26-5.

**3.6.2** The materials must have a self-ignition temperature of 650°F (343°C) or higher when tested in accordance with UBC Standard 26-6.

**3.6.3** The materials must be classified as CC1 or CC2 in accordance with UBC Standard 26-7.

#### 3.6.4 Diversified Fire Test:

**3.6.4.1 General:** One three-sided compartment, consisting of two side panels and a door panel, must be

installed in a room having dimensions of 8 feet by 12 feet by 8 feet (2438 mm by 3658 mm by 2438 mm), with sufficient exhaust ventilation to provide a complete change of air every 15 minutes. The materials and test arrangement must be representative of the assemblies and conditions for which recognition is sought.

A fuel load consisting of 50 percent (by weight) crumpled, dry, double paper towels, and 50 percent (by weight) dry newspaper sections, weighing a total of 1<sup>1</sup>/<sub>4</sub> pounds (0.57 kg), must be dropped into a 14-inch-diameter-by-26<sup>1</sup>/<sub>2</sub>-inch-tall (356 mm by 673 mm) metal waste can. The waste can must be tipped over, allowing a portion of the contents to spill out, and must be placed so that the top rim of the can is parallel to and approximately 11 inches (279 mm) away from the center of one vertical side panel of the compartment. The bottom edge of the side panel must be 14 inches (356 mm) above the floor. Immediately before ignition, the waste paper must be wetted with 2 fluid ounces (0.06 L) of reagent ethyl alcohol or absolute ethyl alcohol. The flames resulting from ignition of

this fuel load must directly impinge upon the bottom and sides of the panel for a minimum of 10 minutes. Tests that do not result in direct impingement on the bottom and sides of the panel must be repeated, using a new panel.

The test report must document the test materials, compartment arrangement, size of test room, exhaust ventilation in the test room, fire source, placement of the ignition source, and extent of burning.

**3.6.4.2 Condition of Acceptance:** Condition of acceptance is that there must be no evidence of flame propagation, either vertically or laterally, beyond the area of flame-plume impingement.

#### 4.0 QUALITY CONTROL

The plastic panels must be produced under a quality control program with inspections by a quality control agency accredited by ICBO ES. A quality control manual, jointly developed by the applicant and the agency, complying with the ICBO ES Acceptance Criteria for Quality Control Manuals (AC10), must be submitted.