



## ACCEPTANCE CRITERIA FOR CPVC SYSTEMS OF PIPING, FITTINGS AND SOLVENT CEMENT USED IN CHEMICAL WASTE SYSTEMS

**AC252**

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### PREFACE

Evaluation reports issued by ICC Evaluation Service, Inc. (ICC-ES), are based upon performance features of the International family of codes and other widely adopted code families, including the Uniform Codes, the BOCA National Codes, and the SBCCI Standard Codes. Section 104.11 of the *International Building Code*® reads as follows:

The provisions of this code are not intended to prevent the installation of any materials or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of 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 quality, strength, effectiveness, fire resistance, durability and safety.

Similar provisions are contained in the Uniform Codes, the National Codes, and the Standard Codes.

This acceptance criteria has been issued to provide all interested parties with guidelines for demonstrating compliance with performance features of the applicable code(s) referenced in the acceptance criteria. The criteria was developed and adopted following public hearings conducted by the ICC-ES 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 the previous edition, a solid vertical line (|) in the margin within the criteria indicates a technical change, addition, or deletion from the previous edition. A deletion indicator (→) is provided in the margin where a paragraph has been deleted if the deletion involved a technical change. This criteria may be further revised as the need dictates.

ICC-ES may consider alternate criteria, provided the report applicant submits valid data demonstrating that the alternate criteria are at least equivalent to the criteria set forth in this document, and otherwise demonstrate compliance with the performance features of the codes. Notwithstanding that a product, material, or type or method of construction meets the requirements of the criteria set forth in this document, or that it can be demonstrated that valid alternate criteria are equivalent to the criteria in this document and otherwise demonstrate compliance with the performance features of the codes, ICC-ES retains the right to refuse to issue or renew an evaluation report, if the product, material, or type or method of construction is such that either unusual care with its installation or use must be exercised for satisfactory performance, or if malfunctioning is apt to cause unreasonable property damage or personal injury or sickness relative to the benefits to be achieved by the use of the product, material, or type or method of construction.

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## 1.0 INTRODUCTION

**1.1 Purpose:** The purpose of this acceptance criteria is to establish requirements for a complete system of CPVC piping, fittings and solvent cement, used in chemical waste systems, to be recognized in an ICC Evaluation Service, Inc. (ICC-ES), evaluation report under the 2006 *International Plumbing Code*<sup>®</sup> (IPC) and the 2006 *Uniform Plumbing Code*<sup>\*</sup> (UPC). Bases of recognition are IPC Sections 105.2 and 702.5 and UPC Sections 811.0 and 811.2.

**1.2 Scope:** The scope of this criteria includes CPVC piping systems used for conveying certain chemical wastes as defined in this criteria. This criteria is limited to use with solvent cements complying with ASTM F 493. For the purposes of this criteria, the systems include the piping, fittings, and solvent cement.

### 1.3 Codes and Reference Standards:

**1.3.1** ASTM D 1784-03, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds, ASTM International.

**1.3.2** ASTM F 493-04, Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings, ASTM International.

**1.3.3** ASTM F 1412-01, Standard Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems, ASTM International.

**1.3.4** NSF 14-2003, Plastic Piping System Components and Related Materials, NSF.

**1.3.5** 2006 *International Plumbing Code*<sup>®</sup>, International Code Council.

**1.3.6** 2006 *Uniform Plumbing Code*<sup>\*</sup>, International Association of Plumbing and Mechanical Officials.

## 2.0 BASIC INFORMATION

**2.1 General:** The following information shall be submitted:

**2.1.1 Product Description:** Complete information concerning material specifications, thickness, size and the manufacturing process.

**2.1.2 Installation Instructions:** Installation details, limitations and pipe connection details.

**2.1.3 Packaging and Identification:** A description of the method of packaging and field identification of the pipe and fittings. Identification provisions shall include the evaluation report number and the name or logo of the inspection agency.

**2.1.4 Field Preparation:** A description of the methods of field-cutting, application and finishing.

**2.2 Testing Laboratories:** Testing laboratories shall comply with Section 2.0 of the ICC-ES Acceptance Criteria for Test Reports (AC85) and Section 4.2 of the ICC-ES Rules of Procedure for Evaluation Reports.

**2.3 Test Reports:** Test reports shall comply with AC85.

**2.4 Product Sampling:** Sampling of the CPVC piping and fittings and the solvent cement for tests under this criteria shall comply with Section 3.1 of AC85.

## 3.0 TEST METHODS AND PERFORMANCE REQUIREMENTS

**3.1** Except when specified by the test standard, a minimum of three samples of pipe and fittings shall be shown to satisfy each of the requirements of this section.

**3.2** The samples tested shall meet or exceed the requirements of the following sections of ASTM F 1412: 6.1, 6.2, 6.4, 6.5, 6.8, 6.9 and 7.

**3.3** The samples shall demonstrate resistance to the chemicals shown in Table 1 of this criteria in accordance with the procedures of Section 6.3 of ASTM F 1412.

**3.4** Solvent cement shall satisfy the requirements of ASTM F 493.

## 4.0 QUALITY CONTROL

**4.1** The products shall be manufactured under an approved quality control program with inspections by an inspection agency accredited by the International Accreditation Service (IAS) or otherwise acceptable to ICC-ES.

**4.2** Quality documentation complying with the ICC-ES Acceptance Criteria for Quality Documentation (AC10) shall be submitted.

**4.3** The piping system, consisting of pipe, solvent and fittings, shall be listed by an inspection agency as conforming to NSF 14.

**4.4** The piping and fittings shall meet or exceed the cell classification 23447 of ASTM D 1784.

## 5.0 EVALUATION REPORT RECOGNITION

**5.1** The report shall document the chemicals and concentrations tested as specified in Section 3.3.

**5.2** The report shall limit the solvent cement used in the system to that tested and recommended by the manufacturer. ■

<sup>\*</sup>*Uniform Plumbing Code* is a copyrighted publication of the International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, California 91761.

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**TABLE 1—CHEMICAL RESISTANCE TEST CRITERIA**

<b>CHEMICAL</b>	<b>CONCENTRATION</b>
Acetic acid	5%
Acetone	5%
Ammonium hydroxide	10%
Nitric acid	40%
Sodium hydroxide	60%
Sulfuric acid	30%
Hydrochloric acid	20%