



## ACCEPTANCE CRITERIA FOR ASPHALT-COATED GLASS-FIBER-MAT ROOF UNDERLAYMENT

AC165

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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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# ACCEPTANCE CRITERIA FOR ASPHALT-COATED GLASS-FIBER-MAT ROOF UNDERLAYMENT

## 1.0 INTRODUCTION

**1.1 Purpose:** The purpose of this acceptance criteria is to establish requirements for asphalt-coated glass-fiber-mat roof underlayment to be recognized in an ICC Evaluation Service, Inc. (ICC-ES), evaluation report under the 2003 *International Building Code*<sup>®</sup> (IBC), the 2003 *International Residential Code*<sup>®</sup> (IRC) and the 1997 *Uniform Building Code*<sup>™</sup> (UBC). Bases of recognition are IBC Section 104.11, IRC Section R104.11 and UBC Section 104.2.8.

**1.2 Scope:** This criteria is limited to proprietary sheet materials consisting of a fiberglass mat coated on both sides with asphalt. The sheet materials are alternates to the ASTM D 226, Type I, underlayment specified in Chapter 15 of the IBC and Chapter 9 of the IRC; and the Type 15 and Type 30 underlayment specified in Chapter 15 of the UBC. The underlayments shall be installed over solid sheathing.

### 1.3 Codes and Reference Standards:

**1.3.1** ASTM D 146-97, Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing, ASTM International.

**1.3.2** ASTM D 226-97a, Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing, ASTM International.

**1.3.3** ASTM D 4601-98, Standard Specification for Asphalt-Coated Glass Fibre Base Sheet Used in Roofing, ASTM International.

**1.3.4** ASTM D 4869-88 (1993), Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing, ASTM International.

## 2.0 BASIC INFORMATION

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

**2.1.1 Product Description:** Description of underlayment sheet materials, and of the manufacturing process.

### 2.1.2 Installation Instructions:

**2.1.3 Packaging and Identification:** Description of the method of packaging and field identification of the underlayment. Product labeling 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 Asphalt-coated glass fiber mat roof underlayment for tests under this criteria shall comply with Section 3.1 of AC85.

## 3.0 TEST AND PERFORMANCE REQUIREMENTS

**3.1** Reports of tests showing conformance of the materials and the physical requirements noted in Table 1, and the performance requirements noted in Table 2, shall be submitted.

**3.2** Reports of tests shall be submitted to demonstrate that the finished product does not crack, and is not so sticky as to cause tearing or other damage, upon being unrolled at temperatures between 50°F and 140°F (10°C and 60°C).

## 4.0 QUALITY CONTROL

**4.1** The underlayment 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** A quality control manual complying with the ICC-ES Acceptance Criteria for Quality Control Manuals (AC10) shall be submitted. ■

**TABLE 1—PRESCRIPTIVE REQUIREMENTS**

DESCRIPTION	TEST METHOD	REQUIREMENTS
Linear feet per roll	ASTM D 146-97, Section 8	Report Value
Roll width	ASTM D 146-97, Section 8	Report Value
Area per roll	ASTM D 226-97a	216 square feet, minimum
Net dry mass Average of 5 rolls Individual rolls	ASTM D 4601-98	15.5 lbs./100 sq. ft., minimum 14.5 lbs./100 sq. ft., minimum
Moisture content	ASTM D 4601-98	1.0 percent, maximum
Mass of desaturated glass mat	ASTM D 4601-98	1.7 lbs./100 sq. ft., minimum
Surfacing and stabilizer	ASTM D 4601-98	65 percent, maximum
Asphalt	ASTM D 4601-98	7.0 lbs./100 sq. ft., minimum
Ash ( glass mat only)	ASTM D 4601-98	70 to 88 percent

For SI: 1 foot = 304.8 mm, 1 pound= 0.454 kg, 1 square foot = 0.093m<sup>2</sup>.

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TABLE 2—PERFORMANCE REQUIREMENTS

TEST REQUIREMENT	TEST METHOD	TEST REQUIREMENT
Average breaking strength	ASTM D226-97a, using ten specimens, each direction	Machine direction – 44 lbf, min. Cross direction – 44 lbf, min.
Pliability at 77°F ± 2°F	ASTM D226-97a, using ten specimens, each direction	No cracking when bent 90° at a uniform speed over a rounded corner of 1/2-inch radius.
Loss on heating at 221°F for 5 hours	ASTM D 226-97a	4 percent, maximum
Liquid water transmission	ASTM D 4869-88 (1993)	Pass