



ICC Evaluation Service, Inc.
Los Angeles Business/Regional Office
5360 Workman Mill Road
Whittier, CA 90601
tel: 562.699.0543
fax: 562.695.4694
www.icc-es.org

August 24, 2009

TO: PARTIES INTERESTED IN EVALUATION REPORTS ON ACCESS FLOORS

SUBJECT: Revisions to the Acceptance Criteria for Access Floors, Subject AC300-0609-R1 (EL/BG)

Dear Madam or Sir:

In June, proposed revisions to the subject acceptance criteria were posted on the ICC-ES web site for public comment, under the alternative criteria process. The revised criteria was concurrently balloted to the ICC-ES Evaluation Committee, which approved the criteria with an effective date of September 1, 2009, with the following changes to what was proposed:

1. Two additional statements have been added to Section 6.0 of the criteria, requiring the evaluation reports to indicate that seismic design of access floors must comply with Section 13.5.7 of ASCE/SEI 7-05, and that use as a Special Access Floor complying with Section 13.5.7.2 of ASCE/SEI 7-05 is outside the scope of the evaluation report.
2. Reference standard ASCE/SEI 7-05 has been added to Section 1.3.2 of the criteria.

A copy of the revised acceptance criteria is enclosed. Evaluation reports issued on or after the effective date noted above, and falling within the scope of this criteria, will be required to comply with the enclosed edition of the criteria. Evaluation reports issued prior to the effective date may be in compliance either with the enclosed criteria or with the previous edition. Evaluation reports based on a superseded version of an acceptance criteria must be brought into compliance with the most recent edition at the time the reports are reissued. Therefore, affected report holders should submit data verifying compliance at the time they apply for re-examination.

If you have any questions, please contact Elyse G. Levy, S.E., at (800) 423-6587, extension 4315. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,

A handwritten signature in black ink that reads 'Kurt Stochlia'.

Kurt Stochlia, P.E.
Vice President

KS/raf

Enclosure

cc: Evaluation Committee

ACCEPTANCE CRITERIA FOR ACCESS FLOORS

AC300

Approved June 2009

Effective September 1, 2009

Previously approved February 2005

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.

Acceptance criteria are developed for use solely by ICC-ES for purposes of issuing ICC-ES evaluation reports.

ACCEPTANCE CRITERIA FOR ACCESS FLOORS (AC300)

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for access floors to be recognized in an ICC Evaluation Service, Inc. (ICC-ES), evaluation report under the 2006 and 2009 *International Building Code*® (IBC), the BOCA® *National Building Code/1999* (BNBC), the 1999 *Standard Building Code*® (SBC), and the 1997 *Uniform Building Code*™ (UBC). The bases of recognition are IBC Section 104.11, BNBC Section 106.4, SBC Section 103.7, and UBC Section 104.2.8.

This criteria has been developed to specify the test methods, and performance and installation requirements, for access floors which are to be recognized by ICC-ES, since such requirements are not addressed by the codes listed above.

1.2 Scope: This criteria is applicable to access floors which consist of panels supported by structural assemblies placed directly on structural floors and used to provide an access for electrical and other accessories installed below the floor panel surface. Panels shall be mounted on pedestals with or without stringers. Pedestals can either be adjusted to various heights or a fixed height. Panels are limited to occupancies (nonresidential) other than IBC Groups R-1, R-2, R-3, and R-4. For access floors with combustible materials in the concealed spaces on fire-resistance-rated floors, fireblocking shall fill the space between the floor and the underside of access floor panels to resist the free passage of flame and products of combustion; or there shall be fireblocking in such a manner that there will be no open spaces under the flooring that will exceed 100 square feet (9.3 m²) in accordance with Sections 717.2.7 and 804.4.1 of the IBC. In combustible construction, draftstopping in accordance with IBC Section 717.3.3 shall be installed in floor spaces, so that the horizontal floor areas do not exceed 1,000 square feet (93 m²).

1.3 Codes and Reference Standards: Where standards are referenced in this criteria, these standards shall be applied consistently with the applicable code upon which compliance is based.

1.3.1 Codes:

1.3.1.1 2006 and 2009 *International Building Code*® (IBC), International Code Council.

1.3.1.2 BOCA® *National Building Code/1999* (BNBC).

1.3.1.3 1999 *Standard Building Code*® (SBC).

1.3.1.4 1997 *Uniform Building Code*™ (UBC).

1.3.2 Reference Standards:

1.3.2.1 ASCE/SEI 7-05, *Minimum Design Loads for Building and Other Structures*, American Society of Civil Engineers.

1.3.2.2 ASTM E 84[-04, 2006 IBC; -07, 2009 IBC], Standard Test Method for Surface Burning Characteristics of Building Materials, ASTM International.

1.3.2.3 ASTM E 136[-99e01, 2006 IBC; -04, 2009 IBC], Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C, ASTM International.

1.3.2.4 ASTM E 2322-03, Standard Test Method for Conducting Transverse and Concentrated Load Tests

on Panels Used in Floor and Roof Construction, ASTM International.

1.3.2.5 ICC-ES Acceptance Criteria for Sandwich Panel Adhesives (AC05).

1.3.2.6 NFPA 70 [2005, 2006 IBC; 2008, 2009 IBC], *National Electric Code*, National Fire Protection Association.

1.3.2.7 Recommended Test Procedures for Access Floors, Ceilings and Interior Systems Construction Association (CISCA), 2007.

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

2.1.1 Product Description:

2.1.1.1 Panels: Complete information concerning panel materials, weights, dimensions, specifications, and the manufacturing process. Specifications for cementitious materials shall include 28-day compressive strength (f_c) and density.

2.1.1.2 Pedestals: Components used as a supporting structure shall be defined. Complete information concerning dimensions, specifications and the manufacturing process of the pedestal head, stud, tube and base shall be provided.

2.1.1.3 Connections: Connections (welds, and mechanical fasteners) shall be detailed or sufficiently described. Fasteners used in the assembly shall be specified. Information regarding the mechanical fasteners shall be provided as follows:

a. Whether the fastener is a commodity fastener or a proprietary fastener.

b. Fastener name and designation, as applicable.

c. Fastener dimensions.

d. For proprietary fasteners, provide the following: name of manufacturer; manufacturer's model or catalog number; technical drawing showing the fastener dimensions, including manufacturing tolerances; material specifications, including chemical and mechanical properties and protective coating requirements.

2.1.1.4 Stringers: Complete information concerning stringer dimensions, specifications, and the manufacturing process.

2.1.1.5 Adhesives: Types of adhesives used. Information shall cover commercial stock numbers, specifications, assembly conditions, application instructions, pot life, storage temperature and the minimum cure time when applied. Adhesives shall comply with AC05.

2.1.2 Installation Instructions: Drawings or installation details, limitations, and a description of how the product is to be installed.

2.1.3 Packaging and Identification: A description of the method of packaging and identification of floor panels, pedestals, and accessory components. Identification provisions shall include the manufacturer's name, the product name, the manufacturing date, the evaluation report number and the name or logo of the

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inspection agency. A copy of the installation instructions, as packaged with the product, shall be submitted.

2.1.4 Field Preparation: A description of the methods for field-cutting, trimming and forming; adhesive preparation and placement; fastener placement.

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 tests under this criteria shall comply with Sections 3.1 and 3.3 of AC85.

3.0 TEST AND PERFORMANCE REQUIREMENTS

3.1 Noncombustibility: To be considered noncombustible, access floor component materials shall comply with Section 703.4 of the IBC, or Section 215 of the UBC. For assessment of a composite material for compliance with Section 703.4.2 of the IBC, Section 704.4.1.2 of the BNBC, Section 202 of the SBC, or Section 215 of the UBC, testing in accordance with ASTM E 84 shall be conducted on both top and bottom panel faces, if dissimilar.

3.2 Interior Floor Finish: Interior floor finish, when used as a part of the access floor assembly, shall comply with Sections 804.1, 804.2, 804.3 and 804.5 of the IBC, Sections 805.2 and 805.3 of the BNBC, and Sections 803.8.1, 803.8.2, 803.8.3, 803.8.4 and 803.8.5 of the SBC.

3.3 Fireblocking and Draftstopping Materials: Fireblocking and draftstopping materials shall comply with IBC Sections 717.2.1 and 717.3.1, respectively; BNBC Sections 721.2.2 and 721.3, respectively; SBC Section 705.3.1.3; or UBC Sections 708.2.2 and 708.3.1.3, respectively.

3.4 Structural Requirements:

3.4.1 General: Access floors shall withstand uniform and concentrated loads specified in Section 1607.5 and Table 1607.1 of the IBC (SBC), Section 1606.2.4 and Table 1606 of the BNBC, Section 1603.2 of the SBC, or Section 1606.2 and Table 16-A of the UBC. The concentrated load set forth in the IBC (SBC), BNBC, or the UBC shall be assumed to be applicable for an area $2\frac{1}{2}$ feet (762 mm) square in accordance with Section 1607.4 of the IBC (SBC), Section 1606.3 of the BNBC or Section 1607.3.3 of the UBC. The access floors shall also have the ability to withstand the applied seismic loads determined in accordance with the applicable code. Tests shall be performed on the access floor components in accordance with Sections 4.1, 4.2 and 4.3 of this criteria. Tests on stringers, if used, shall be conducted in accordance with Section 4.1.3 of this criteria.

3.4.2 Conditions of Acceptance:

3.4.2.1 Where fewer than five samples are tested, and the coefficient of variation is greater than 15 percent, the most conservative value shall be used; where the coefficient of variation does not exceed 15 percent, the average value shall be used. Where five or more samples are tested, the average value shall be used, regardless of the coefficient of variation.

3.4.2.2 Panels: The recognized allowable loads of panels shall be the lesser of the following:

a. The maximum deflection of panels under allowable loads shall be $\frac{1}{360}$ of the span in accordance with Table 1604.3 of the IBC, Section 1674.5.4 of the BNBC, Table 1610.1 of the SBC, or Table 16-D of the UBC.

b. A factor of safety of 5 shall be applied to the average panel maximum loads to establish the allowable panel load.

The resulting allowable load shall be equal to or exceed the load specified for Access Floors in Section 1607.5 and Table 1607.1 of the IBC (SBC), Section 1606.2.4 and Table 1606 of the BNBC, Section 1603.2 of the SBC, or Section 1606.2 and Table 16-A of the UBC.

3.4.2.3 Stringers: Testing may be omitted when stringers are nonload-bearing. The allowable load of stringers shall be the lesser of the following:

a. The peak or maximum load divided by a safety factor of 3.

b. The load at which the maximum deflection is $\frac{1}{360}$ of the span.

c. The load at which the permanent set after removing service loads is a maximum of 0.01 inch (0.25 mm).

3.4.2.4 Adhered Pedestal Lateral Resistance: A factor of safety of 3 shall be applied to the average pedestal ultimate loads to qualify pedestals for the lateral load resistance when adhered pedestals will be utilized. Pedestal adhesives shall be tested with a safety factor of 5 applied to establish the allowable load. The lesser of two values will establish the allowable lateral capacity of the adhered pedestals. Test procedures shall be as specified in Section 4.2 and 4.2.1 of this criteria.

3.4.2.5 Mechanically Fastened Pedestal Lateral Resistance: A factor of safety of 3 shall be applied to the average pedestal ultimate loads to qualify pedestal anchors for the lateral load resistance and to establish the allowable loads for mechanically anchored pedestals. Tests shall be in accordance with Section 4.2 of this criteria.

3.4.2.6 Pedestal Axial Load: The allowable pedestal axial load shall be the peak or maximum load divided by a safety factor of 3.

3.5 Component Properties: Reports of structural testing shall include verification that each component complies with the manufacturer's specifications, through testing or other methods of verification, such as mill certificates.

4.0 TEST METHODS

4.1 Concentrated and Uniform Load Test on Panels:

4.1.1 Concentrated Load Test on Panels: When panel dimensions exceed $2\frac{1}{2}$ feet (762 mm) square, allowable concentrated load shall be determined. At least three randomly selected specimens shall be used during the test. Test procedures shall be in general conformance with ASTM E 2322. The concentrated load shall be applied over an area measuring a minimum of $2\frac{1}{2}$ feet (762 mm) square. The load shall be applied at the most critical location. Multiple tests may be necessary to determine the critical location.

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4.1.2 Uniform Load Test on Panels: A minimum of three specimens shall be used during the test. Testing shall be conducted in accordance with Section 10.2.1 of ASTM E 2322 and Section 7 of CISCA, with the following clarifications:

- a. Load application and deformation readings shall be in accordance with Section 6.3 of ASTM E 2322.
- b. Air bags shall fully contact the test specimens during testing.
- c. Bearing area of the test specimens shall accurately represent the intended field installation.

4.1.3 Concentrated Load Test on Stringers: At least three specimens shall be tested. Tests shall be conducted in accordance with Section 4 of CISCA. As an alternative, testing on stringers in combination with the panels shall be performed in accordance with Sections 4.1.1 and 4.1.2, if the stringers directly carry the load from the panel.

4.2 Lateral Load Capacity Test on Pedestals: Lateral capacity tests shall be performed on adhered or fastened pedestals at the base. A minimum of five specimens of each combination of pedestal, adhesive/fastener and substrate shall be tested and subjected to the lateral loads. Test procedures shall conform to Section 6 of CISCA. Results may be extended to other pedestal types provided an analysis demonstrating the other pedestals are stiffer and stronger than the tested pedestals, is submitted to and found acceptable by ICC-ES staff.

4.2.1 Lateral Load Capacity Test on Pedestal Adhesives: Test pedestals utilized to qualify pedestal adhesives for the lateral load resistance shall be of sufficient construction and stiffness to ensure that the mode of failure is confined to the adhesives and the area of the base plates. A minimum of five specimens of each combination of pedestal, adhesive, and substrate shall be tested and subjected to the lateral loads. Test procedures shall conform to Section 6 of CISCA.

4.3 Axial Load Test on Pedestals: Axial load tests shall be conducted in accordance with Section 5 of CISCA

on a minimum of three specimens of each type of pedestal for which recognition is sought.

5.0 QUALITY CONTROL

5.1 The products shall be manufactured under an approved quality control program. Inspections by an inspection agency accredited by the International Accreditation Service (IAS), or otherwise acceptable to ICC-ES, are required, except for nonwelded metal components. Quality documentation complying with the current ICC-ES Acceptance Criteria for Quality Documentation (AC10) shall be submitted. The quality program shall verify continued product compliance with specifications in Section 2.1 of this criteria.

5.2 Third-party follow-up inspections are required under this acceptance criteria as set forth in Section 5.1.

6.0 EVALUATION REPORT RECOGNITION

The evaluation report shall include:

6.1 Basic information referenced in Section 2.1 of this criteria, including a description of the access floor system, installation instructions and requirements, and product identification information.

6.2 Language indicating that electrical wiring methods for installations below the access floor system shall be in compliance with Section 300.22 (C) of the NFPA 70.

6.3 Allowable loads, including fastening methods and substrates.

6.4 Fireblocking and draftstopping requirements.

6.5 Language indicating that changes in the floor elevation provided by ramps or stairs shall be in accordance with the IBC or UBC.

6.6 Language indicating that interior floor finish shall comply with Section 804 of the IBC, Sections 805.2 and 805.3 of the BNBC, or Section 803.8 of the SBC.

6.7 Language indicating that seismic design of the access floors shall comply with Section 13.5.7 of ASCE/SEI 7-05.

6.8 Language indicating that use as a Special Access Floor complying with Section 13.5.7.2 of ASCE/SEI 7-05 is outside the scope of the evaluation report. ■