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August 3, 2009

**TO: PARTIES INTERESTED IN ALTERNATIVE GYPSUM BOARD SUPPORTS**

**SUBJECT: Proposed Revisions to the Evaluation Guideline for Nonstructural Gypsum Board Supports, Subject EG271-0809-R1 (DZ/BG)**

Dear Madam or Sir:

The revisions proposed to the subject evaluation guideline, as presented in the enclosed acceptance criteria draft, are being posted on the ICC-ES web site to allow for public comment. The revisions include:

1. The title has been revised from "Evaluation Guideline for Nonstructural Gypsum Board Supports" to "Acceptance Criteria for Alternative Gypsum Board Supports (AGBSs)," for the following reasons:
  - a. Since Section 3.3 allows for recognition of structural shear walls, use of the term "nonstructural" is inconsistent in this regard.
  - b. The gypsum board supports recognized in this guideline are connectors/clips that are alternatives to solid wood or metal framing at joints between gypsum boards. "Alternative" is added to the title to clarify this intent.
2. The guideline has been updated to the 2006 *International Building Code* (IBC) and the 2006 *International Residential Code* (IRC), and to delete provisions for the legacy codes. The following is a list of detailed revisions:
  - a. Revised code references in Sections 1.1, 1.3.1, 3.3.1, 3.3.2, 3.3.3, 5.2 and 5.3.
  - b. Revised editions of referenced standards in Section 1.3.2.
  - c. Revised material specification of cold-formed steel in Sections 3.1.3 and 1.3.2, since the current C1010 specification does not identify material mechanical properties such as yield strength, and ASTM A 879 does not specify the coating requirements such as thickness.
  - d. Revised Section 3.1.3 to include three different profiles for the steel AGBSs.

- e. Revised Section 3.3.2 to clarify additional installation conditions, to be consistent with Table 2306.4.5 of the IBC.
- f. Revised Section 5.0 to clarify that the horizontal ceiling diaphragm will be beyond the scope of the evaluation report.
- g. Revised Section 5.0 to clarify that only type 4 material, described in Table 2306.4.5 of the 2006 IBC, will be recognized in the evaluation report for shear wall application.
- h. Used “AGBSs” as the acronym for “alternative gypsum board supports”.

You are cordially invited to submit written comments, within 30 days of the date of this letter. Please use the comment form on the web site attaching any letters to the form. An explanation of the alternate criteria process can be found on our web site at [http://www.icc-es.org/Criteria\\_Development/alternative\\_criteria\\_process.shtml](http://www.icc-es.org/Criteria_Development/alternative_criteria_process.shtml).

All comments received in the 30-day comment period will be considered. During this same 30-day period, however, the draft criteria will be balloted to the Evaluation Committee. If the public comments raise major issues, generate controversy, or require the criteria to be substantially rewritten, then ICC-ES staff may decide to reballot the criteria; or place a revised draft on the web site for further public comment; or put the criteria on the agenda for a future Evaluation Committee meeting.

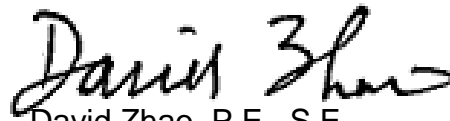
Correspondence received and a memo outlining staff’s resolution of the comments in the correspondence will be posted on the web site shortly after the close of the comment period.

Your cooperation is requested in forwarding to the Los Angeles business/regional office all material directed to the Evaluation Committee. Parties interested in the deliberations of the committee should refrain from communicating, whether in writing or verbally, with committee members. The committee reserves the right to refuse communications that do not comply with this request.

Newly approved acceptance criteria may involve test methods or test protocols that are not currently included in the scope of testing services offered by accredited testing laboratories. As noted in the ICC-ES Rules of Procedure for Evaluation Reports, the scope of the laboratory’s accreditation must include the type of testing that is to be reported to ICC-ES. We encourage accredited laboratories to expand their scopes of accreditation to include testing under newly approved acceptance criteria. Please note that testing laboratories must be accredited by the International Accreditation Service (IAS) or by another accreditation body that is a signatory to the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement. For further information, please contact IAS at (562) 699-0541, extension 3309, or send an e-mail to [pmccullen@iasonline.org](mailto:pmccullen@iasonline.org).

Please submit all comments using the form on the web site. Attach any letters to the comment form. If you have any questions (not comments), please contact the undersigned at (800) 423-6587, extension 3722. You may also reach us by e-mail at [es@icc-es.org](mailto:es@icc-es.org).

Yours very truly,

A handwritten signature in black ink that reads "David Zhao". The signature is written in a cursive style with a large, sweeping "Z" and a long, horizontal tail.

David Zhao, P.E., S.E.  
Senior Staff Engineer

DZ/gh:raf

Enclosure

cc: Evaluation Committee

**PROPOSED REVISIONS TO THE EVALUATION GUIDELINE  
ACCEPTANCE CRITERIA FOR NONSTRUCTURAL  
ALTERNATIVE GYPSUM BOARD SUPPORTS (AGBSs)**

**EGAC271**

**Proposed August 2009**

**Previously issued October 2006, September 2004**

## **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.

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 proposed in this document, and otherwise meet the applicable performance requirements of the codes. Notwithstanding that a product, material, or type or method of construction meets the requirements of the criteria proposed in this document, or that it can be demonstrated that valid alternate criteria are equivalent to the criteria in this document and otherwise meet the applicable performance requirements 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 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 for purposes of issuing ICC-ES evaluation reports.*

# PROPOSED REVISIONS TO THE EVALUATION GUIDELINE ACCEPTANCE CRITERIA FOR ALTERNATIVE NONSTRUCTURAL GYPSUM BOARD SUPPORTS (AGBSs)

## 1.0 INTRODUCTION

**1.1 Purpose:** The purpose of this ~~evaluation guideline~~ acceptance criteria is to establish requirements for rigid polyvinyl chloride (PVC) ~~plastic foam~~ foam plastic, high-density polyethylene (HDPE) or galvanized steel alternative gypsum board supports (AGBSs) to be recognized in an ICC Evaluation Service, Inc. (ICC-ES), evaluation report under the ~~2003~~ 2006 *International Building Code*® (IBC), and the ~~2003~~ 2006 *International Residential Code*® (IRC), ~~the BOCA® National Building Code/1999 (NBBC), the 1999 Standard Building Code® (SBC) and the 1997 Uniform Building Code™ (UBC).~~ Bases of recognition are IBC Section 104.11, and IRC Section R104.11 ~~BNBC Section 106.4, SBC Section 103.7 and UBC Section 104.2.8.~~

**1.2 Scope:** This ~~evaluation guideline~~ acceptance criteria is applicable to rigid PVC ~~plastic foam~~ foam plastic, high-density polyethylene (HDPE) or galvanized steel gypsum board supports AGBSs used as alternatives to solid wood or metal framing for the attachment of the edges/ends of gypsum board, which are located between framing members in interior wood or steel framed wall assemblies. The galvanized steel gypsum board supports AGBSs are permitted in nonload-bearing and load-bearing wall assemblies in all types of construction permitted by the applicable code. The PVC and HDPE gypsum board supports AGBSs are permitted in nonload-bearing wall assemblies in buildings of Type V (IBC, ~~SBC and UBC~~), Type 5 (~~BNBC~~), and structures constructed in accordance with the IRC, and in other types of construction, when combustible interior nonload-bearing walls and partitions are allowed by the applicable code. Fire-resistance-rated wall assemblies incorporating the gypsum board supports AGBSs shall ~~meet~~ comply with the requirements of in Section 3.5 of this ~~evaluation guideline~~ acceptance criteria. The gypsum board supports AGBSs may be installed at gypsum board joints created at 90-degree or 120-degree corners with one side attached to the existing framing and the other side installed as a nailer for the attachment of the gypsum board. The gypsum board supports AGBSs are not to be used in the construction of interior braced wall lines

### 1.3 Codes and Referenced Standards:

#### 1.3.1 Codes:

**1.3.1.1** ~~2003~~ 2006 *International Building Code*® (IBC), International Code Council.

**1.3.1.2** ~~2003~~ 2006 *International Residential Code*® (IRC), International Code Council.

**1.3.1.3** ~~BOCA® National Building Code/1999 (NBBC)~~

**1.3.1.4** ~~1999 Standard Building Code® (SBC).~~

**1.3.1.5** ~~1997 Uniform Building Code™ (UBC).~~

#### 1.3.2 Standards:

**1.3.2.1** AISI NAS-01, North American Specification for the Design of Cold-formed Steel Structural Members,

including 2004 Supplement, American Iron and Steel Institute.

**1.3.2.2** ASTM A 879-~~04~~06, Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface, ASTM International.

**1.3.2.3** ASTM D 4216-~~03~~06, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly (Vinyl Chloride) (CPVC) Building Products ~~Components~~ Compounds, ASTM International.

**1.3.2.4** ASTM D 1238-04c, Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer, ASTM International.

**1.3.2.5** ASTM E 72-02, Standard Test Method of Conducting Strength Tests of Panels ~~For~~ Building Construction, ASTM International.

**1.3.2.6** ASTM E 84-~~01~~04, Test Method for Surface Burning Characteristics of Building Materials, ASTM International.

**1.3.2.7** ASTM E119-00, Test Method for Fire Tests of Building Construction and Materials, ASTM International.

~~1.3.2.8 SAE J403-NOV2001, Chemical Composition of SAE Carbon Steels, SAE International.~~

## 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 and limitations, including fastening methods and materials.

**2.1.3 Packaging and Identification:** A description of the method of packaging and field identification of the product. Identification provisions shall include the evaluation report number and a unique identification number.

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

**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. Test reports shall be in sufficient detail to identify specimen properties that affect performance as a gypsum board support. The testing agency laboratory shall verify and report specimen material, dimensions, weight, coating or any other physical properties of the product. The testing agency laboratory shall also report method of installation and provide a description of fasteners, including material, size, number and location.

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FOR ALTERNATIVE NONSTRUCTURAL GYPSUM BOARD SUPPORTS (AGBSs)**

**2.4 Product Sampling:** Sampling of the gypsum board supports AGBSs for tests under this guideline criteria shall comply with Section 3.2 of AC85.

**3.0 TEST METHODS AND PERFORMANCE REQUIREMENTS**

**3.1 Materials:**

**3.1.1** The materials used in the manufacture of the rigid PVC plastic foam foam plastic gypsum boards supports AGBSs shall comply with the values given in Table 1 of ASTM D 4216 which shall be used to establish the cell classification of the PVC. The material is expanded and extruded into straight, 90-degree and 120-degree profiles.

**3.1.2** In the absence of a product specification, the critical physical properties of the high density polyethylene (HDPE) gypsum board supports AGBSs described in Section ~~1.3.2.3~~ 1.3.2.4 of this evaluation guideline acceptance criteria shall be ~~submitted~~ provided to ICC-ES. The quality control program shall verify continuing compliance with the stated properties. The material is molded into modified "T" profiles.

**3.1.3** The materials used in the manufacture of steel gypsum board supports AGBSs shall be minimum No. 24 gage [0.024 inch thick (0.61 mm)], cold-formed C4040 steel conforming to SAE J403, galvanized in accordance with ASTM A 879. The material is formed into straight or channel-shaped profiles conforming to AISI NAS, galvanized in accordance with ASTM A 879, with a minimum coating designation of 40G on each surface; or have a protective coating with an equivalent corrosion resistance. The material shall be formed into straight-, channel-, or tee-shaped profiles.

**3.2 Transverse Load:** A minimum of three samples of each configuration of assemblies incorporating the gypsum board supports AGBSs shall be tested to show transverse load resistance, following the test method specified in Section 11 of ASTM E 72 (air bag method). The assemblies shall be installed in accordance with the manufacturer's published installation instructions and tested in both positive and negative directions. Minimum conditions of acceptance are that the assemblies shall resist a minimum uniformly distributed load of 15 lb/ft<sup>2</sup> (73 kg/m<sup>2</sup>). The wall assembly shall not exceed a deflection of L/120, while resisting a uniformly distributed load of 5 lb/ft<sup>2</sup> (24 kg/m<sup>2</sup>) at the maximum span between framing members.

**3.3 Racking Load (Optional):** In order to qualify for the details noted in Section 3.3.1 of this evaluation guideline acceptance criteria, there must be submission of reports on load tests of assemblies incorporating the gypsum board supports AGBSs described in this evaluation guideline acceptance criteria, along with code-complying construction. Tests shall be conducted in accordance with Section 14 of ASTM E 72 and meet the criteria requirements specified in Sections 3.3.2 and 3.3.3 of this evaluation guideline acceptance criteria. The assemblies shall be constructed in accordance with the manufacturer's published installation instructions.

**3.3.1** Assemblies incorporating gypsum board supports AGBSs conforming to Section 3.1.3, (channel-shaped profiles) of this evaluation guideline used in corner applications with channel- and tee-shaped profiles used in

corner applications, and with straight-shaped profile used in straight wall application where two or three gypsum boards are abutted against each other in the same vertical plane and interconnected with the supporting clips, may be recognized as equivalent to conventional blocked and unblocked gypsum board sheathed walls, and assigned the allowable shear values given in IBC Table 2306.4.5, IRC Table 702.3.5, NBC Table 2502.1, SBC Table 2506 or UBC Table 25-1, provided the nail spacing and thickness of the gypsum board is consistent with that noted in the applicable table for the shear values assigned. including footnotes, provided that the construction of gypsum board wood framed wall assemblies are identical to the type 4 described in Table 2306.4.5 of the IBC, with the exception that fasteners are replaced with AGBSs recognized in this acceptance criteria, at corners with channel- or tee-shaped profiles; or at abutting ends of gypsum boards aligned in the same plane with straight-shaped profiles.

**3.3.2** A minimum of two assemblies shall be tested for each variation in installation details. Variations include each combination described in IBC Table 2306.4.5, for type 4 material, such as gypsum board thickness [<sup>1</sup>/<sub>2</sub> inch (12.7 mm) and/or <sup>5</sup>/<sub>8</sub> inch (15.9 mm)]; blocked and unblocked construction; gypsum nailing spacing requirements [7 inches (178 mm) and/or 4 inches (102 mm) on center]; [4 inches (102 mm), 6 inches (152 mm), 7 inches (178 mm), 8 inches (203 mm), 12 inches (305 mm), and 16 inches (406 mm) on center]; and spacing of the alternative gypsum board supports; and spacing of the wall studs [16 inches (406 mm) or 24 inches (610 mm) on center]. Eight-foot-by-eight-foot (2438 by 2438 mm) assemblies shall be tested with at least one board joint.

**3.3.3 Conditions of Acceptance:**

**3.3.3.1** The lowest of the two ultimate test loads, reduced to pounds per foot (N/m) and divided by 2.8, shall be equal to or greater than the comparable shear values noted in IBC Table 2306.4.5.

**3.3.3.2** The deflection at the load determined in Section 3.3.3.1 of this guideline criteria shall not exceed <sup>1</sup>/<sub>8</sub> inch (3.2 mm).

**3.3.4** The evaluation report shall include a complete description of the assemblies, including all components and installation requirements; and shall also indicate that the applicable footnotes, noted in the tables described in Section 3.3.1 of this guideline criteria, apply to the assemblies constructed with the gypsum board supports AGBSs.

**3.4 Surface Burning Characteristics:** The materials from which the gypsum board supports AGBSs are manufactured shall demonstrate a flame spread index of not more than 25, when testing is in accordance with ASTM E 84. **Exception:** Gypsum board supports AGBSs conforming to Section 3.1.3 of this evaluation guideline acceptance criteria.

**3.5 Fire-resistance-rated Assemblies:** Assemblies incorporating the gypsum board supports AGBSs may be recognized as fire-resistance-rated assemblies, provided the assemblies meet the test requirements specified in ASTM E 119. The evaluation report shall include a complete description of the assemblies, including all components and installation requirements.

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**4.0 QUALITY CONTROL**

~~4.1 Quality control manual documentation~~  
4.1 Quality control manual documentation complying with the ICC-ES Acceptance Criteria for Quality Control Manuals Documentation (AC10) shall be submitted.

4.2 Third-party follow-up inspections are not required under this ~~evaluation guideline~~ acceptance criteria.

**5.0 EVALUATION REPORT RECOGNITION**

5.1 The evaluation report shall include a complete description of the wall assemblies, including all components and installation requirements, and shall also indicate that the applicable footnotes noted in the tables described in Section 3.3.1 of the ~~guideline~~ this criteria, apply to the wall assemblies constructed with the ~~gypsum board supports~~ AGBSs.

~~5.2 The evaluation report shall note that the limitations noted in IBC Section 1617.6 and Footnote 1 of UBC Table 25-1 apply.~~  
The evaluation report shall note that wood-framed shear walls sheathed with gypsum board, utilizing AGBSs and qualified under Section 3.3, if applicable, are recognized as equivalent to the conventional blocked and unblocked gypsum board sheathed walls which are

described as type 4 for the "type of material" in Table 2306.4.5 of the IBC, provided that the construction of gypsum board wood framed wall assemblies are identical to the type 4 described in Table 2306.4.5 of the IBC, with the exception that fasteners are replaced with AGBSs at corners with channel- or tee-shaped profiles; or at abutting ends of gypsum boards aligned in the same plane with straight profiles.

5.3 Wall construction not specifically mentioned in the evaluation report shall conform to IBC Section 2306.4.5 and ~~UBC Section 2513~~ IRC Section R702, as applicable.

5.4 The evaluation report shall note the types of construction permitted with the wall assemblies containing the ~~gypsum board supports~~ AGBSs and the submitted testing in accordance with Section 3.5 of the ~~guideline~~ criteria.

5.5 The evaluation report shall note that AGBSs are limited to interior use only.

5.6 The evaluation report shall indicate that AGBSs used in horizontal ceiling diaphragm assemblies are beyond the scope of the evaluation report. ■