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INTERNATIONAL CODE COUNCIL 2018

Welcome to the

2018 Annual Conference Educational Sessions

Session: Approving and Selecting Building Products with Confidence - What To Look for in Evaluation Reports

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Approving and Selecting Building Products with Confidence - What To Look for in Evaluation Reports

William Gould, P.E.

Michael Temesvary, P.E.

October 23, 2018

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Agenda

- The importance of verifying compliance of building products with applicable codes and standards
- The process for developing evaluation reports and building product listings to show compliance with codes and standards
- The difference between ICC-ES evaluation reports and building product listings
- ICC-ES tool that helps building code officials, designers and builders find code compliant products
- ICC-ES program updates
- Open discussion / Q & A

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Introduction to ICC-ES

The building codes cannot realistically include every possible product used in construction.

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Introduction to ICC-ES

- The building codes would be unmanageable in size!
- Maintaining such a code would be impractical.

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Introduction to ICC-ES

Many new and innovative building products enter the construction marketplace every year. They cannot possibly be incorporated into the codes.

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Introduction to ICC-ES

If these products are not in the code, then…

…how are they approved?

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ICC

- Introduction to ICC Evaluation Service
  - Establishment of ICC as part of the three legacy building code organizations, including ICBO, SBCCI and BOCA. This merger also established ICC Evaluation Service (ICC-ES) in 2003.
  - Code publisher and building code official membership
  - Along with IAS, SKGA and GC, ICC-ES is a subsidiary of the ICC non-profit parent organization

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About ICC Evaluation Service (ICC-ES)

- ISO 17065 accredited assessment body most widely recognized and accepted by building code officials
- Nonprofit, limited liability company
- Evaluation Service for innovative building products and code referenced building products
- Provides evidence of code compliance in accordance with Section 104.11 and code referenced standards
- Not every building product is referenced in the IBC, therefore there needs to be a mechanism for product evaluation to prove compliance with code requirements

ES ICC EVALUATION SERVICE
In Cooperation with Innovation RESEARCH LABS

ISO

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About ICC-ES

- Created as an extension of building code official's staff, and governed by a Board comprised of building code officials
- Serves as valuable resource to building departments across the United States
- Provides building departments and industry with technical support for its services
- An organization with a dedicated staff of:
  - Licensed design professionals
  - Product evaluation specialists

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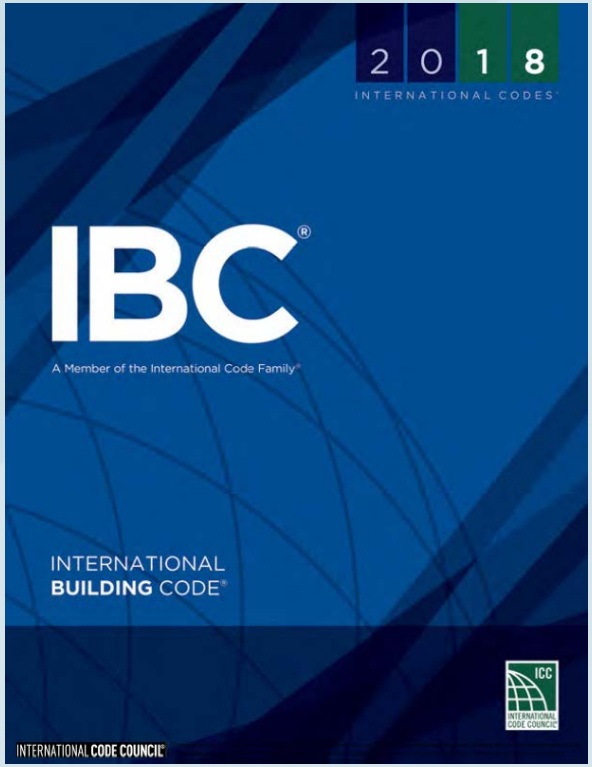
Alternative Materials, Design and Methods of Construction



IBC Section 104.11

Contains provisions which allows for products not specifically covered in the code, provided that the products are in compliance with the intent & purpose of the code.

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International Building Code®

Section 104.11 Alternative materials, design and methods of construction and equipment

The provisions of this code are not intended to prevent the installation of any material 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 not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.*** *Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved.*

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International Building Code®

Section 104.11

104.11.1 Research reports.

Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

104.11.2 Tests.

Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records.

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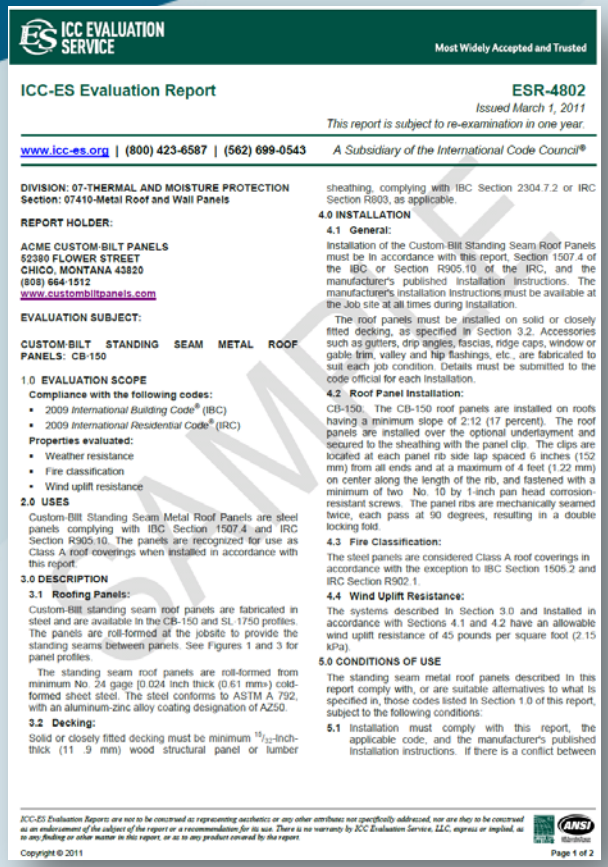
Research Reports

IBC Section 104.11.1

Research reports.

- Provide supporting data.
- Must come from approved sources.



ICC EVALUATION SERVICE — Most Widely Accepted and Trusted

ICC-ES Evaluation Report — **ESR-4802**

Issued March 1, 2011

This report is subject to re-examination in one year.

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DIVISION: 07-THERMAL AND MOISTURE PROTECTION
Section: 07410-Metal Roof and Wall Panels

REPORT HOLDER:

ACME CUSTOM-BILT PANELS
62380 FLOWER STREET
CHICO, MONTANA 43820
(808) 664-1512
www.custombiltpanels.com

EVALUATION SUBJECT:

CUSTOM-BILT STANDING SEAM METAL ROOF PANELS: CB-150

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2009 *International Building Code®* (IBC)
- 2009 *International Residential Code®* (IRC)

Properties evaluated:

- Weather resistance
- Fire classification
- Wind uplift resistance

2.0 USES

Custom-Bilt Standing Seam Metal Roof Panels are steel panels complying with IBC Section 1507.4 and IRC Section R905.10. The panels are recognized for use as Class A roof coverings when installed in accordance with this report.

3.0 DESCRIPTION

3.1 Roofing Panels:

Custom-Bilt standing seam roof panels are fabricated in steel and are available in the CB-150 and SL-1750 profiles. The panels are roll-formed at the jobsite to provide the standing seams between panels. See Figures 1 and 3 for panel profiles.

The standing seam roof panels are roll-formed from minimum No. 24 gage (0.024 inch thick (0.61 mm)) cold-formed sheet steel. The steel conforms to ASTM A 792, with an aluminum-zinc alloy coating designation of AZ50.

3.2 Decking:

Solid or closely fitted decking must be minimum $^{15}/_{32}$-inch-thick (11 .9 mm) wood structural panel or lumber sheathing, complying with IBC Section 2304.7.2 or IRC Section R803, as applicable.

4.0 INSTALLATION

4.1 General:

Installation of the Custom-Bilt Standing Seam Roof Panels must be in accordance with this report, Section 1507.4 of the IBC or Section R905.10 of the IRC, and the manufacturer's published installation instructions. The manufacturer's installation instructions must be available at the job site at all times during installation.

The roof panels must be installed on solid or closely fitted decking, as specified in Section 3.2. Accessories such as gutters, drip angles, fascias, ridge caps, window or gable trim, valley and hip flashings, etc., are fabricated to suit each job condition. Details must be submitted to the code official for each installation.

4.2 Roof Panel Installation:

CB-150. The CB-150 roof panels are installed on roofs having a minimum slope of 2:12 (17 percent). The roof panels are installed over the optional underlayment and secured to the sheathing with the panel clip. The clips are located at each panel rib side lap spaced 6 inches (152 mm) from all ends and at a maximum of 4 feet (1.22 mm) on center along the length of the rib, and fastened with a minimum of two No. 10 by 1-inch pan head corrosion-resistant screws. The panel ribs are mechanically seamed twice, each pass at 90 degrees, resulting in a double locking fold.

4.3 Fire Classification:

The steel panels are considered Class A roof coverings in accordance with the exception to IBC Section 1505.2 and IRC Section R902.1.

4.4 Wind Uplift Resistance:

The systems described in Section 3.0 and installed in accordance with Sections 4.1 and 4.2 have an allowable wind uplift resistance of 45 pounds per square foot (2.15 kPa).

5.0 CONDITIONS OF USE

The standing seam metal roof panels described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, the applicable code, and the manufacturer's published installation instructions. If there is a conflict between

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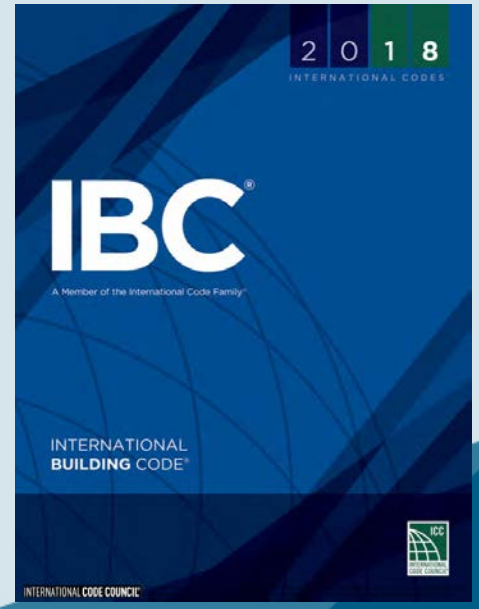
SAMPLE



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Who Has Responsibility?

Q: Who has the authority and responsibility to review and approve building materials, design or method of construction?

A: THE BUILDING CODE OFFICIAL

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Code Compliance

- Importance of verifying compliance of building products with applicable codes and standards.
  - Streamlines review process for building code officials and design professionals
  - Provides independently assessed performance data
  - Levels playing field and allows for product innovation
  - Saves time and money

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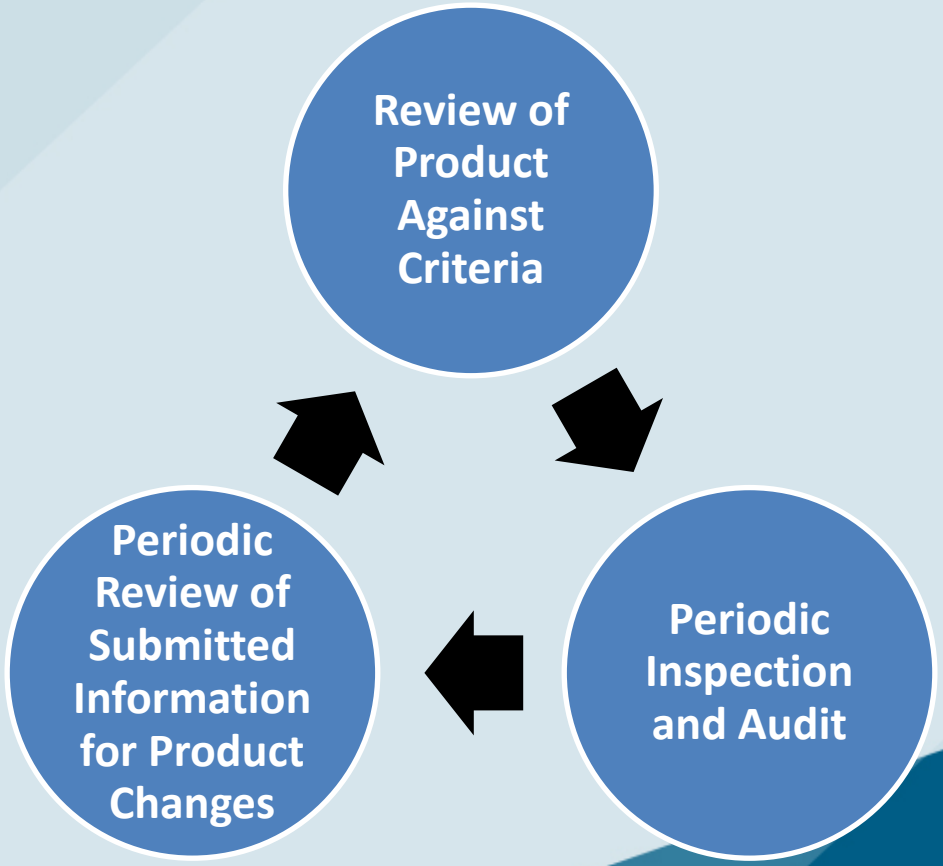
Continuous Compliance Process



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How is Compliance Verified?

- ICC-ES has hundreds of Acceptance Criteria (AC) that have been historically developed based on ESR applications from manufacturers.
- Approved AC are periodically reviewed to latest code requirements (IBC, IRC, etc.) and renewed.
- Manufacturers and other interested parties can propose revisions and contribute to AC development process.
- Once AC has been approved, manufacturers can apply for ESRs.

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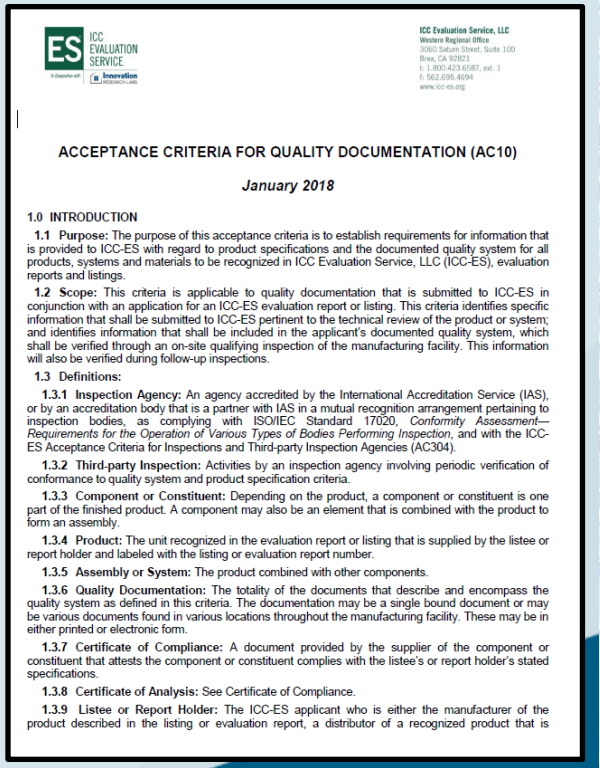
Manufacturing Quality Control

- Ensures product is manufactured in accordance with specifications consistent with the product tested and used on project site.
  - Qualifying inspections by ICC-ES or ISO 17020 accredited inspection agencies (MRA) to verify manufacturing quality programs prior to issuance of ESR
  - Periodic follow-up inspections for the life of ESR (annually or more frequently)
  - Acceptance Criteria for Quality Documentation (AC10)



ICC EVALUATION SERVICE

ICC Evaluation Service, LLC
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Brea, CA 92821
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f: 562.695.4694
www.icc-es.org

ACCEPTANCE CRITERIA FOR QUALITY DOCUMENTATION (AC10)

January 2018

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for information that is provided to ICC-ES with regard to product specifications and the documented quality system for all products, systems and materials to be recognized in ICC Evaluation Service, LLC (ICC-ES), evaluation reports and listings.

1.2 Scope: This criteria is applicable to quality documentation that is submitted to ICC-ES in conjunction with an application for an ICC-ES evaluation report or listing. This criteria identifies specific information that shall be submitted to ICC-ES pertinent to the technical review of the product or system; and identifies information that shall be included in the applicant's documented quality system, which shall be verified through an on-site qualifying inspection of the manufacturing facility. This information will also be verified during follow-up inspections.

1.3 Definitions:

1.3.1 Inspection Agency: An agency accredited by the International Accreditation Service (IAS), or by an accreditation body that is a partner with IAS in a mutual recognition arrangement pertaining to inspection bodies, as complying with ISO/IEC Standard 17020, *Conformity Assessment—Requirements for the Operation of Various Types of Bodies Performing Inspection*, and with the ICC-ES Acceptance Criteria for Inspections and Third-party Inspection Agencies (AC304).

1.3.2 Third-party Inspection: Activities by an inspection agency involving periodic verification of conformance to quality system and product specification criteria.

1.3.3 Component or Constituent: Depending on the product, a component or constituent is one part of the finished product. A component may also be an element that is combined with the product to form an assembly.

1.3.4 Product: The unit recognized in the evaluation report or listing that is supplied by the listee or report holder and labeled with the listing or evaluation report number.

1.3.5 Assembly or System: The product combined with other components.

1.3.6 Quality Documentation: The totality of the documents that describe and encompass the quality system as defined in this criteria. The documentation may be a single bound document or may be various documents found in various locations throughout the manufacturing facility. These may be in either printed or electronic form.

1.3.7 Certificate of Compliance: A document provided by the supplier of the component or constituent that attests the component or constituent complies with the listee's or report holder's stated specifications.

1.3.8 Certificate of Analysis: See Certificate of Compliance.

1.3.9 Listee or Report Holder: The ICC-ES applicant who is either the manufacturer of the product described in the listing or evaluation report, a distributor of a recognized product that is

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Why Acceptance Criteria (AC)?

- ICC-ES ACs provides independent, third-party validation that products meet the minimum performance requirements of the IBC.
- ICC-ES develops ACs which serve as baselines against which innovative products can be objectively measured.
- AC may also be developed when codes are not clear in a particular area or on specific issues related to a product; when industry raises concerns regarding ESR requirements; or when a new AC is deemed necessary by the report applicant, ICC-ES staff, or the ICC-ES Evaluation Committee.

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Acceptance Criteria Hearing

- In person testimony given by interested parties and proponents to Evaluation Service Committee and ICC-ES staff

- ES Committee consists of 9 – 12 building code officials from throughout the U.S.

- ES Committee serves on a voluntary basis for a year. In person AC hearings are broadcast through ICC-ES website.

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Alternative AC Development Process

- AC revisions are posted on ICC-ES website for review.
- Nonstructural revisions, do not involve life safety and are already addressed in nationally recognized standards or generally accepted industry standards, or minor / noncontroversial.
- AC can also be approved by the ES Committee based on submission of electronic testimony through the ICC-ES webpage.
- If AC is not approved, then it may move to the primary AC process and then heard through in-person testimony

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Acceptance Criteria

- Open process. ICC-ES seeks public input.
- Postings held for 30 days on-line for submittal of comments by interested parties
- Building code officials, designers and manufacturers have opportunity to participate and share their technical expertise, experience and perspective

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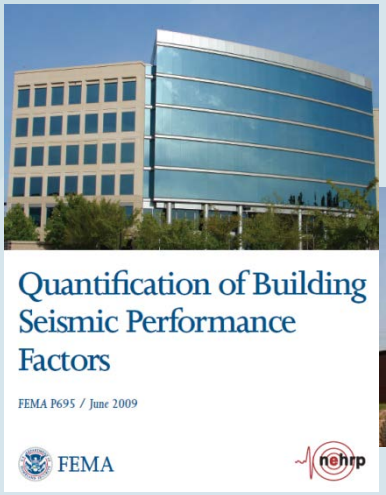
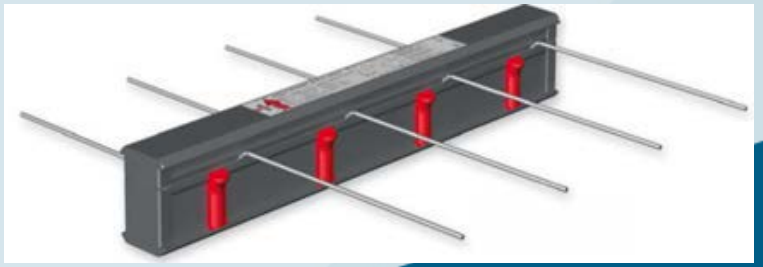
Acceptance Criteria

- Industry groups attend ICC-ES AC hearings and provide input
- Opportunity to get involved and provide technical input on seismic, wind, fire resistance and other areas of expertise
- Recently developed AC for innovative products





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Evaluation Reports

- Internal technical staff review – test reports and manufacturing quality documents
- Examples of innovative product ESRs:
  - Concrete and masonry anchors
  - Fasteners
  - Reinforcing fibers
  - Cross-laminated timber panels
  - Joist hangers and cold-formed steel connectors
  - Metal deck, joists and framing
  - Diaphragm and shear wall systems
  - Suspended ceiling systems

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ICC-ES Evaluation Report — **ESR-2262***

Reissued July 1, 2012

This report is subject to renewal August 1, 2014.

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DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
Section: 05 05 19—Post-Installed Concrete Anchors

REPORT HOLDER:

HILTI, INC.
5400 SOUTH 122ND EAST AVENUE
TULSA, OKLAHOMA 74146
(800) 879-8000
www.us.hilti.com
HiltiTechEng@us.hilti.com

EVALUATION SUBJECT:

HILTI HIT-HY 150 MAX ADHESIVE ANCHORING SYSTEM IN UNCRACKED CONCRETE

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2009, 2006, 2003 and 2000 *International Building Code®* (IBC)
- 2009, 2006, 2003 and 2000 *International Residential Code®* (IRC)

Property evaluated:

Structural

2.0 USES

The Hilti HIT-HY 150 MAX Adhesive Anchoring System is used to resist static, wind, or earthquake (Seismic Design Categories A and B only) tension and shear loads in uncracked normal-weight concrete having a specified compressive strength, f'_c, of 2,500 psi to 8,500 psi (17.2 MPa to 58.6 MPa). The anchor system is an alternative to anchors described in Sections 1911 and 1912 of the 2009 and 2006 IBC and Sections 1912 and 1913 of the 2003 and 2000 IBC. The anchor systems may also be used where an engineered design is submitted in accordance with Section R301.1.3 of the 2009, 2006 and 2003 IRC, or Section R301.1.2 of the 2000 IRC.

3.0 DESCRIPTION

3.1 General:

The Hilti HIT-HY 150 MAX Adhesive Anchoring System is comprised of the following components:

- Hilti HIT-HY 150 MAX adhesive packaged in foil packs.
- Adhesive mixing and dispensing equipment.
- Hole cleaning equipment.

The Hilti HIT-HY 150 MAX Adhesive Anchoring System may be used with continuously threaded rod, Hilti HIS-N and HIS-RN internally-threaded inserts or deformed reinforcing bar. The primary components of the Hilti Adhesive Anchoring System are shown in Figure 3 of this report.

Installation information and parameters, as included with each adhesive unit package, are shown in Figure 5 of this report.

3.2 Materials:

3.2.1 Hilti HIT-HY 150 MAX Adhesive: Hilti HIT-HY 150 MAX Adhesive is an injectable hybrid adhesive combining urethane methacrylate resin, hardener, cement and water. The resin and cement are kept separate from the hardener and water by means of a dual-cylinder foil pack attached to a manifold. The two components combine and react when dispensed through a static mixing nozzle attached to the manifold. Hilti HIT-HY 150 MAX is available in 11.1-ounce (330 ml), 16.9-ounce (500 ml), and 47.3-ounce (1400 ml) foil packs. The manifold attached to each foil pack is stamped with the adhesive expiration date. The shelf life, as indicated by the expiration date, applies to unopened foil packs that are stored in accordance with the Instructions for Use, as illustrated in Figure 5 of this report.

3.2.2 Hole Cleaning Equipment: Hole cleaning equipment comprised of steel wire brushes and air nozzles is illustrated in Figure 5 of this report.

3.2.3 Dispensers: Hilti HIT-HY 150 MAX must be dispensed with manual dispensers, pneumatic dispensers, or electric dispensers provided by Hilti.

3.2.4 Anchor Elements:

3.2.4.1 Threaded Steel Rods: The threaded steel rods must be clean, continuously threaded rods (all-thread) in diameters as described in Tables 2 and 3 of this report. Steel design information for common grades of threaded rod and associated nuts are provided in Tables 7 and 10, and instructions for use are shown in Figure 5. Carbon steel threaded rods must be furnished with a 0.0002-inch-thick (0.005 mm) zinc electroplate coating in accordance with ASTM B633 SC 1; or must be hot-dipped galvanized in accordance with ASTM A153, Class C or D. Threaded rods must be straight and free of indentations or other defects along their length. The ends may be stamped with identifying marks and the embedded end may be blunt cut or cut on the bias (chisel point).

*Revised August 2013

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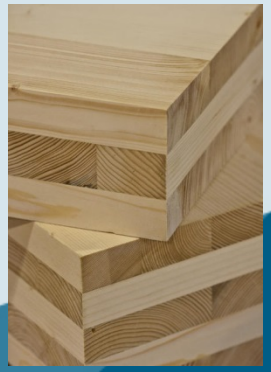

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What's in an ICC-ES Evaluation Report

ICC-ES Evaluation Reports from ICC Evaluation Service® are the most preferred resource used by code officials to verify that new and innovative building products comply with code requirements. The ICC-ES Evaluation Reports provide information about what code requirements or acceptance criteria were used to evaluate the product, how the product should be installed to meet the requirements, how to identify the product, and much more. ICC-ES Evaluation Reports are divided into eleven major areas.

1. **CSI Division Number**—ICC-ES Evaluation Reports, and the building products represented in them, are organized according to the Construction Specifications Institute's (CSI) Masterformat system.
2. **Report Holder**—The name and address of the company or organization that has applied for the ICC-ES Evaluation Report.
3. **Evaluation Subject**—The specific product(s) covered by the report.
4. **Evaluation Scope**—The code(s) that were used to evaluate the product.
5. **Properties Evaluated**—A brief description of the properties the product was evaluated against such as fire resistance and wind resistance. This section also shows if the product can be used for structural purposes.
6. **Uses**—Identifies the scope of the ICC-ES Evaluation Report and relates the product evaluated to code provisions.
7. **Description**—Provides a general description of the product and its features, such as length, thickness, etc.
8. **Installation**—Identifies general and often specific requirements to help the inspector ensure the product is installed properly according to the code requirements or acceptance criteria.
9. **Conditions of Use**—Statement that the product, as described in the ICC-ES Evaluation Report, complies with or is a suitable alternative to the requirements of the applicable code and a list of conditions under which the report is issued.
10. **Evidence Submitted**—Data (i.e. test reports, calculations, installation instructions) that was used in evaluating the product.
11. **Identification**—Information that can be used to identify the product, including the manufacturer's name, product code, ICC-ES Evaluation Report number, etc.

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ICC-ES Evaluation Report **ESR-4802**

Reissued March 1, 2012

This report is subject to renewal February 1, 2014.

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1 **DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**
Section: 07 30 05—Roofing Felt and Underlayment

2 **REPORT HOLDER:**

ACME UNDERLAYMENTS UNLIMITED
52300 FLOWER STREET
CHICO, MONTANA 43829
(800) 664-1512
www.underlaymentunlimited.com

3 **EVALUATION SUBJECT:**

UU 100 UNDERLAYMENT FOR ASPHALT SHINGLE ROOF COVERINGS IN SEVERE CLIMATE AREAS

4 **1.0 EVALUATION SCOPE**

Compliance with the following codes:

- 2012 and 2009 *International Building Code®* (IBC)
- 2012 and 2009 *International Residential Code®* (IRC)

5 **Properties evaluated:**

Ice barrier

6 **2.0 USES**

UU 100 is a self-adhering, rubberized asphalt membrane, complying with ASTM D1970, that is used over plywood substrates as ice barriers as specified in Chapter 15 of the IBC and Chapter 9 of the IRC.

7 **3.0 DESCRIPTION**

The UU 100 has a granule surfacing. The membrane has a silicone-treated release paper on the back that is removed prior to attachment to plywood sheathing. The membrane is a minimum of 0.040 inch (1.02 mm) thick and is supplied in rolls 36 inches(914 mm) wide and 66.7 feet (20.3 m) long.

8 **4.0 INSTALLATION**

Installation of the UU 100 membrane must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions and this report must be available at the jobsite at all times during the installation.

Prior to application of the membrane, the deck surface must be free of frost, dust and dirt, loose nails and other protrusions. Damaged sheathing must be replaced. Installation is limited to plywood substrates. The membrane is designed for applications when the ambient air temperature is above 40°F (4.4°C).

Vertical ends and horizontal edges must be overlapped a minimum, respectively, of 6 inches (152 mm) and 3½ inches (89 mm). Horizontal edge overlaps must run with the flow of water in a shingling effect. A minimum of two layers of the membrane must be applied, starting at the lower edge (eave) of the roof, and extend a minimum of 24 inches (610 mm) inside the exterior wall line of the building. Final coverage width must comply with the code.

Installation of the roof covering can proceed immediately following application of the membrane. The membrane must be covered by an approved roof covering as soon as possible. For reroofing applications, the same procedures apply after removal of the old roof covering and roofing felts to expose the plywood roof deck.

9 **5.0 CONDITIONS OF USE**

The UU 100 membrane described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.

5.2 Installation is limited to use on plywood substrates on structures located in areas where nonclassified roof coverings are permitted.

5.3 Installation is limited to use with roof coverings that are mechanically fastened through the underlayment to the sheathing or rafters.

5.4 Installation is limited to roofs with ventilated attic spaces, in accordance with the requirements of the applicable code.

10 **6.0 EVIDENCE SUBMITTED**

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Self-adhered Roof Underlayment for Use as an Ice Barrier in Severe Climate Areas (AC48), dated February 2012.

6.2 Reports of testing in accordance with ASTM D1970.

11 **7.0 IDENTIFICATION**

The membrane is identified by labels on the rolls or packaging, displaying the Acme Underlayments Unlimited's name and address, the product name, the evaluation report number ESR-4802.

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SAMPLE

View current ICC-ES Evaluation Reports online: www.icc-es.org/Evaluation_Reports

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Evaluation Report Maintenance

- ESRs and listings are valid for a specific duration. Check the scope of the report!
- New ESRs are renewed one year after issuance. After first year, one- or two-year renewal options exist.
- Manufacturers must re-apply for product listings annually.
- An ESR or listing can undergo revisions at any time (Editorial, Technical).

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Test Labs

- ISO 17025, General requirements for the competence of testing and calibration laboratories
- IAS accreditation for ICC-ES AC and reference test standards
- Requires ongoing assessment of test lab for proficiency, quality control, calibrations, etc.
- ICC-ES AC85 Acceptance Criteria for Test Reports
  - Test labs and independent product sampling

ES ICC EVALUATION SERVICE
In Cooperation with Innovation RESEARCH LABS

IAS INTERNATIONAL ACCREDITATION SERVICE®

ISO

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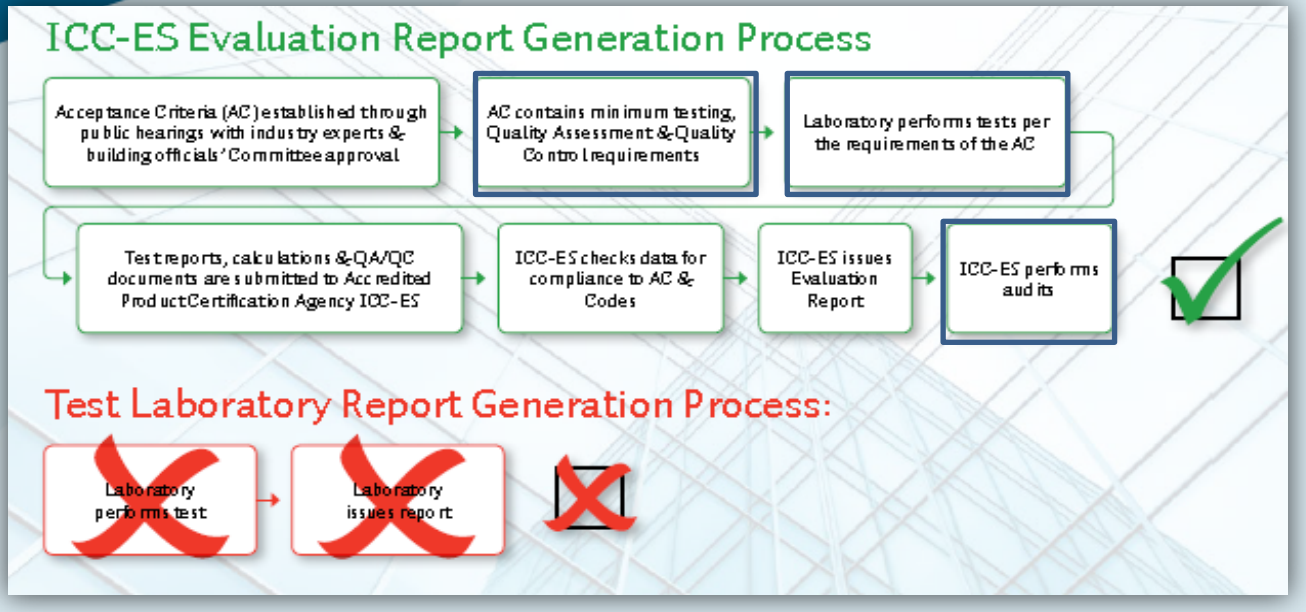
Why not directly accept a test report?



- ICC-ES requires data from accredited or approved test labs.
- ICC-ES requires data based on a test standard or AC.
- ICC-ES ascertains continuous compliance through inspections.
- ICC-ES reviews data so you don't have to.

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Building Product Listings

- Different than ICC-ES Evaluation Reports
- Listings are intended for products referenced in the code
- Listings provide independent, third party evidence of compliance with code requirements in consensus standards (e.g. ASTM, ANSI, ACI, AISI, AISC, UL, NFPA).


ICC EVALUATION SERVICE
Most Widely Accepted and Trusted
ICC-ES Listing
ESL-1004
ICC-ES | (800) 423-6587 | (562) 699-0543 | www.icc-es.org
Valid: 03/15 to 03/16
DIVISION: 13 00 00—SPECIAL CONSTRUCTION
SECTION: 13 48 53—MANUFACTURED SEISMIC CONTROL COMPONENTS
SECTION: 13 48 63—FABRICATED SEISMIC CONTROL ASSEMBLIES
DIVISION: 21 00 00—FIRE SUPPRESSION
SECTION: 21 05 48—VIBRATION AND SEISMIC CONTROLS FOR FIRE-SUPRESSION PIPING AND EQUIPMENT
DIVISION: 22 00 00—PLUMBING
SECTION: 22 05 48—VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT
REPORT HOLDER:
LOOS & CO., INC.
901 INDUSTRIAL BOULEVARD
NAPLES, FLORIDA 34104
EVALUATION SUBJECT:
SEISMIC WIRE ROPE/CABLE™ BRACING SYSTEM COMPONENTS
(SEE TABLES 1 THROUGH 4)
Look for the trusted marks of Conformity!
"2014 Recipient of Prestigious Western States Seismic Policy Council (WSSPC) Award in Excellence"
A Subsidiary of
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ICC ES LISTED

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ESR vs. ESL

Evaluation Report (ESR)

- ✓ Proof of compliance to codes and acceptance criteria
- ✓ Safety
- ✓ Inspections
- ✓ Complex and innovative products
- ✓ Evaluation time varies according to complexity of the product

Listing (ESL)

- ✓ Proof of compliance to codes and standards referenced in codes
- ✓ Safety
- ✓ Inspections
- ✓ Traditional products
- ✓ Quick evaluation

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It's all Part of a Process!

Initial contact and estimation of capabilities and cost

Manufacturer submits application along with supporting documentation

Products tested at accredited testing lab

Initial inspection of manufacturing process

Successful evaluation and an ICC-ES evaluation report issued

<u>Continuous Compliance Process</u>:

Inspections to verify products are manufactured according to report or listing, and annual file review

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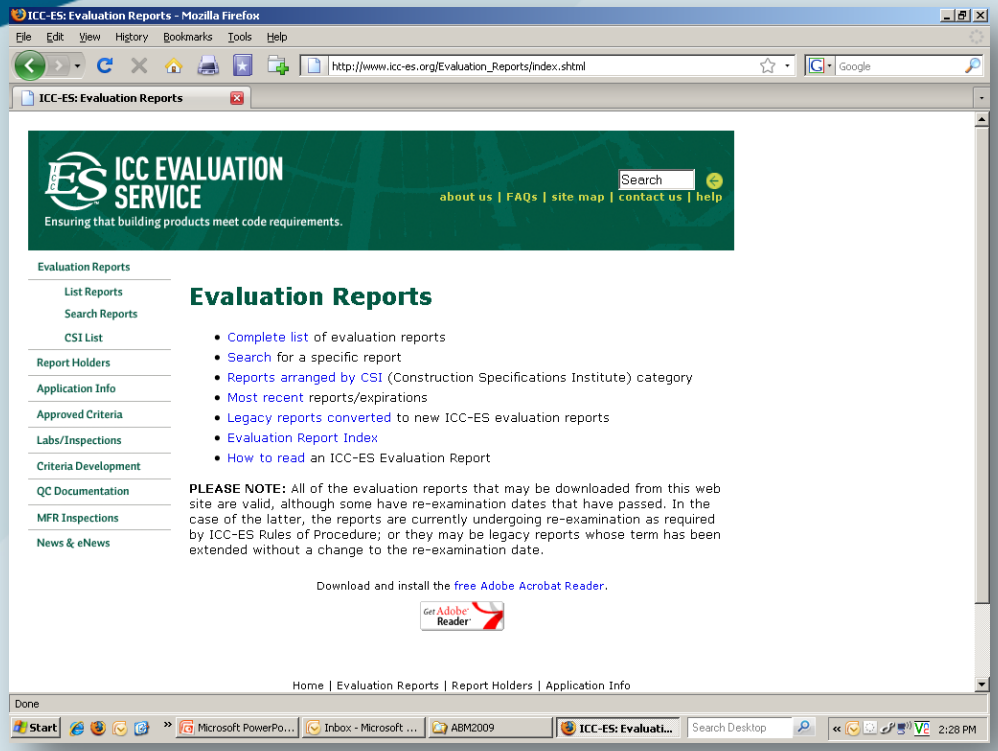
Code Conformity Tool



Evaluation reports and listings can be accessed for free at:

- www.icc-es.org
- www.icc-es.org/listing
- www.icc-es.org/pmg
- www.icc-es.org/ep
- Or, through e-Codes

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Other ICC-ES Programs

- ICC-ES PMG Program – Plumbing, Mechanical and Gas products evaluated by ICC-ES. Separate evaluation reports are issued for these products

ICC ES C PMG

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The ICC-ES Mark of Conformity

- The ICC-ES Mark of Conformity means that products have undergone a rigorous evaluation.
- Look for the ICC-ES Marks of Conformity on building construction products and packaging before approving for installation.

ICC ES | ICC ES C PMG | ICC ES LISTED

SCC Accredited CB-P/S OCPS Accrédité CCN

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Why obtain an ICC-ES Report?

ICC EVALUATION SERVICE — Most Widely Accepted and Trusted

ICC-ES Evaluation Report — **ESR-2252**

Reissued April 1, 2013

This report is subject to renewal April 1, 2015.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 — *A Subsidiary of the International Code Council®*

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 25 00—Water-Resistive Barriers/Weather Barriers

REPORT HOLDER:

QINGDAO G & E BIO-POLYTEX COMPANY, LTD.
GONG YE YUAN QU, JIANG SHAN TOWN
LAIXI CITY, QINGDAO 2660603
CHINA
(86) 532-8788-1784
www.gyoha.com.cn

ADDITIONAL LISTEE:

PRIME SOURCE BUILDING PRODUCTS, INC.
1321 GREENWAY DRIVE
IRVING, TEXAS 75038-2504
(972) 999-8500

EVALUATION SUBJECT:

G & E WATER-RESISTIVE BARRIERS: G & E HOUSEGUARD, G & E HOUSEGUARD2, EASYGARD, EASYGARD2, AND CODEWRAP; PRIMESOURCE WATER-RESISTIVE BARRIER: GRIP RITE™ COMMERCIAL GRADE WEATHER BARRIER

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2009 and 2006 *International Building Code*® (IBC)
- 2009 and 2006 *International Residential Code*® (IRC)

Properties evaluated:

- Water resistance
- Surface-burning characteristics

2.0 USES

G & E Houseguard, G & E Houseguard2, EasyGard, EasyGard2, CodeWrap and Grip Rite® Commercial Grade Weather Barrier are used as water-resistive barriers on the exterior side of exterior walls of buildings of all construction types under the IBC and the IRC. The membranes are alternatives to the water-resistive barriers required in IBC Section 1404.2 and IRC Section R703.2. The products are also considered equivalent to a Grade D paper in accordance with IBC Section 2510.6 and IRC Section R703.6.3.

3.0 DESCRIPTION

The membranes are made of high-density polyethylene (HDPE) woven fabric that is coated on both sides with low-density polyethylene coating. The membranes have a nominal thickness of 0.005 inch (0.12 mm) and a basis weight of 2.9 oz/yd² (98 g/m²) for G & E Houseguard2, EasyGard2 and Grip Rite® Commercial Grade Weather Barrier; and 2.18 oz/yd² (74 g/m²) for G & E Houseguard, EasyGard, and CodeWrap. The membranes are available in rolls of varying sizes. The G & E membranes have a flame-spread index of 25 or less and a maximum smoke-developed index not exceeding 450, when tested in accordance with ASTM E84.

4.0 INSTALLATION

The membranes must be installed after wall framing and sheathing are installed in accordance with the applicable code, and before windows and doors are installed. The roll must be placed a minimum of 3 inches (76 mm) from the starting corner and fastened to wood framing with corrosion-resistant nails having 1-inch-diameter (25.4 mm) plastic head caps; or to steel framing with corrosion-resistant, minimum No. 7, Type S screws with 1-inch-diameter (25.4 mm) plastic washers. The membrane is unrolled around the building and fastened into each vertical stud line with fasteners spaced between 12 and 18 inches (305 to 457 mm); and into top and bottom sill plates with fasteners spaced 8 inches (203 mm) on center. The printed side must be installed facing the outside. A minimum overlap of 8 inches (203 mm) must be provided for vertical and 6 inches (152 mm) for horizontal seams. Inside and outside corners must be wrapped a minimum of 8 inches (203 mm) to create a double layer at all corners. When used over wood-based sheathing in exterior plaster applications, two layers of the product must be applied over sheathing or installation must be in accordance with the exception to IBC Section 2510.6 or IRC Section R703.6.3, as applicable.

For cementitious coatings or exterior insulation and finish systems, application must be in accordance with the ICC-ES evaluation report on the exterior coating.

5.0 CONDITIONS OF USE

The G & E Houseguard, G & E Houseguard2, EasyGard, EasyGard2, CodeWrap and Grip Rite® Commercial Grade Weather Barrier water-resistive barriers described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The manufacturer's published installation instructions and this report must be strictly adhered to. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.

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- Evidence that product complies with code or code referenced standards
- Proof that new or innovative products can be used in construction projects
- ICC codes are used in all 50 states and internationally
- ICC-ES and ICC back code compliance of the evaluated product
- Reflect use of unique, easily identifiable listing marks

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Updates

- ✓ EPA recognition of ICC-ES as a third party certifier under the Formaldehyde Emission Standards for Composite Wood Products Rule

- ✓ Combined listing program with APA – The Engineered Wood Association to PRG-320 for Cross-Laminated Timber products

- ✓ LADBS recognition of ICC-ES reports as proof of compliance to seismic requirements of the California and City of Los Angeles building codes. ICC-ES now issuing Evaluation Report Supplements to the LABC and LARC.

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Updates

- ✓ ICC-ES received California Air Resources Board Approval to Conduct Third Party Certification Services for Composite Wood Products (CARB Approval)

- ✓ Cooperation with Twining, Inc. for Testing and Certification of Supplementary and Alternative Cementitious Materials to help contribute to reduction of CO_2 Emissions Enhancing Sustainability

- ✓ Continued cooperation with Innovation Research Labs for one-stop testing, listing and product evaluation service for Building, Energy and PMG product manufacturers

CALIFORNIA AIR RESOURCES BOARD

TWINING

ES ICC EVALUATION SERVICE
In Cooperation with Innovation RESEARCH LABS

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Closing Comments

- Visit the ICC-ES website and sign up for the mailing list. Stay informed of ES updates.
- Require ESRs from product manufacturers as part of enforcement in your jurisdiction
- Provide feedback to ICC-ES as part of the AC process or when questions arise regarding ESRs or AC.
- Questions?

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ICC-ES Contacts

www.icc-es.org or link from

www.iccsafe.org

CONNECT + CUSTOMER CARE

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es@icc-es.org

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William Gould, P.E.

ICC Evaluation Service, LLC

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