



August 1, 2008

TO: PARTIES INTERESTED IN EXTERIOR CONTINUOUS THERMAL INSULATION (ECTIS)

SUBJECT: Proposed ICC-ES Acceptance Criteria for Exterior Continuous Thermal Insulation System (ECTIS), Subject AC397-0808-R2 (RG/RK)

Dear Madam or Sir:

The enclosed proposed new acceptance criteria is being posted on the ICC-ES web site to allow for public comment.

The proposed criteria is a slightly revised version of the criteria presented at the May 28, 2008, ICC-ES Evaluation Committee hearing under Subject AC397-0508-R1, which was held for further study. The enclosed criteria includes the drawings and figures that were missing from AC397-0508-R1. Also, Sections 1.3.30 and 1.3.31 of the criteria have been editorially revised to reference the editions of UL standards referenced in the 2006 *International Building Code*® (IBC).

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.

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.

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 3275, or Russ Krivchuk, Senior Staff Engineer, at extension 3275. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,



Ram Gnanasekaran
Evaluation Specialist

RG/RK/cm:raf

Enclosure

cc: Evaluation Committee



PROPOSED ACCEPTANCE CRITERIA FOR EXTERIOR CONTINUOUS THERMAL INSULATION SYSTEMS (ECTIS)

AC397

Proposed August 2008

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 ACCEPTANCE CRITERIA FOR EXTERIOR CONTINUOUS THERMAL INSULATION SYSTEMS (ECTIS)

1 1.0 INTRODUCTION

2 1.1 **Purpose:** The purpose of this acceptance criteria is to establish
3 requirements for exterior continuous thermal insulation systems (ECTIS) to be
4 recognized in an ICC Evaluation Service, Inc. (ICC-ES), evaluation report under the
5 2006 *International Building Code*[®] (IBC), the 2006 *International Residential Code*[®]
6 (IRC), the BOCA[®] *National Building Code/1999* (BNBC), the 1999 *Standard Building*
7 *Code*[®] (SBC), and the 1997 *Uniform Building Code*[™] (UBC). The bases of recognition
8 are IBC Section 104.11, IRC Section R104.11, BNBC Section 106.4, SBC Section
9 103.7 and UBC Section 104.2.8.

10 The reason for the development of this criteria is to allow evaluation of the
11 systems as alternates to what is specified in the code.

12 1.2 **Scope:** This acceptance criteria applies to an ECTIS used as an exterior
13 nonload-bearing wall covering providing a weather-resistant envelope on walls required
14 to be of combustible or noncombustible, fire-resistance-rated or nonfire-resistance rated
15 construction.

16 The systems under this criteria are intended for installation on wood or steel
17 framed walls, or concrete and concrete masonry walls. The systems do not provide a
18 mechanism for drainage of water. As a result, for installations on residential
19 occupancies, this criteria is limited to installations on concrete and concrete masonry
20 walls.

21 1.3 Codes and Referenced Standards:

22 1.3.1 2006 *International Building Code*[®] (IBC), International Code

23 Council.

24 **1.3.2** 2006 *International Residential Code*[®] (IRC), International Code

25 Council.

26 **1.3.3** BOCA[®] *National Building Code*/1999 (BNBC).

27 **1.3.4** 1999 *Standard Building Code*[®] (SBC).

28 **1.3.5** 1997 *Uniform Building Code*[™] (UBC).

29 **1.3.6** 1997 UBC Standard 26-3, Room Fire Test Standard for Interior of
30 Foam Plastic Systems.

31 **1.3.7** 1997 UBC Standard 26-4, Method of Test for the Evaluation of
32 Flammability Characteristics of Exterior, Nonload-bearing Wall Panel Assemblies Using
33 Foam Plastic Insulation.

34 **1.3.8** ANSI A118.9-1999, Test Methods and Specifications for
35 Cementitious Backer Units, American National Standards Institute.

36 **1.3.9** ASTM B 117-90, Practice for Operating Salt-spray (Fog)
37 Apparatus, ASTM International.

38 **1.3.10** ASTM C 79-04a, Standard Specification for Treated Core
39 and Nontreated Core Gypsum Sheathing Board, ASTM International.

40 **1.3.11** ASTM C 150-04, Standard Specification for Portland
41 Cement, ASTM International.

42 **1.3.12** ASTM C 297-94, Standard Test Method for Flatwise Tensile
43 Strength of Sandwich Constructions, ASTM International.

44 **1.3.13** ASTM C 897-00, Standard Specification for Aggregate for
45 Job-Mixed Portland Cement-Based Plasters, ASTM International.

46 **1.3.14** ASTM C 920-98, Standard Specification for Elastomeric
47 Joint Sealants, ASTM International.

48 **1.3.15** ASTM C 1063-03, Standard Specification for Installation of
49 Lathing and Furring to Receive Interior and Exterior Portland Cement–Based Plaster,
50 ASTM International.

51 **1.3.16** ASTM C 1177-04, Standard Specification for Glass Mat
52 Gypsum Substrate for Use as Sheathing, ASTM International.

53 **1.3.17** ASTM C 1396-02, Standard Specification for Gypsum
54 Wallboard, ASTM International.

55 **1.3.18** ASTM D 2247-97, Standard Practice for Testing Water
56 Resistance of Coatings in 100% Relative Humidity, ASTM International.

57 **1.3.19** ASTM E 84-04, Standard Test Method for Surface Burning
58 Characteristics of Building Materials, ASTM International.

59 **1.3.20** ASTM E 119-00, Standard Test Method for Fire Tests of
60 Building Construction and Materials, ASTM International.

61 **1.3.21** ASTM E 330-02, Standard Test Method for Structural
62 Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air
63 Pressure Difference, ASTM International.

64 **1.3.22** ASTM E 331-00, Standard Test Method for Water
65 Penetration of Exterior Windows, Skylight, Doors and Curtain Walls by Uniform Static
66 Air Pressure Difference, ASTM International.

67 **1.3.23** ASTM E 2110-00, Standard Terminology for Exterior
68 Insulation and Finish Systems (EIFS), ASTM International.

- 69 **1.3.24** ASTM G153-00a,1 Standard Practice for Operating
70 Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials, ASTM
71 International.
- 72 **1.3.25** ASTM G 155-04, Standard Practice for Operating Xenon Arc
73 Light Apparatus for Exposure of Non-Metallic Materials, ASTM International.
- 74 **1.3.26** FM 4880-01, American National Standard for Evaluating
75 Insulated Wall or Wall and Roof/Ceiling Assemblies, Plastic Interior Finish Materials,
76 Plastic Exterior Building Panels, Wall/Ceiling Coating Systems and Interior or Exterior
77 Finish Systems, Factory Mutual.
- 78 **1.3.27** NFPA 259-04, Test Method for Potential Heat of Building
79 Materials, National Fire Protection Association.
- 80 **1.3.28** NFPA 268-01, Standard Test Method for Determining
81 Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source, National
82 Fire Protection Association.
- 83 **1.3.29** NFPA 285-98, Standard Method of Test for the Evaluation of
84 Flammability Characteristics of Exterior Components, Using the Intermediate-scale,
85 Multistory Test Apparatus, National Fire Protection Association.
- 86 **1.3.30** UL 1715-97, with Revisions through October 2002, Fire Test
87 of Interior Finish Material, Underwriters Laboratories Inc.
- 88 **1.3.31** UL 1040-96, with Revisions through April 2001, Fire Test of
89 Insulated Wall Construction, Underwriters Laboratories Inc.
- 90 **1.3.32** U.S. DOC PS-1-95, Construction and Industrial Plywood,
91 United States Department of Commerce.

92 **1.3.33** U.S. DOC PS-2-92, Performance Standard for Wood-based
93 Structural-use Panels, United States Department of Commerce.

94 **1.4 Definitions:**

95 **1.4.1 ECTIS:** The exterior continuous thermal insulation system is a wall
96 covering system that consists of a sprayed, continuous layer of thermal insulation
97 (closed-cell, spray-applied, polyurethane foam plastic) self-adhered to a solid substrate,
98 and an ECTIS lamina applied over the foam plastic.

99 The ECTIS shall include flashing at wall openings and penetrations. The
100 ECTIS may also include primers and accessories, such as termination, window and
101 corner profiles, and profiles for expansion joints.

102 **1.4.2 ECTIS Lamina:** ECTIS lamina is two or three layers of a trowel-
103 applied, thin, synthetic base coat, a nonmetallic reinforcing mesh and finish coat.

104 **1.4.3 Applicant:** The applicant is the party seeking an evaluation report
105 on an ECTIS.

106 **1.4.4 Certified Installer:** A certified installer, in this document, is a
107 person who has received required training on the installation of the ECTIS, passed an
108 examination and been granted a certificate (with photo ID) by the evaluation report
109 applicant.

110 **1.4.5** See ASTM E 2110, the IBC and the IRC for other definitions.

111 **2.0 BASIC INFORMATION**

112 **2.1 Product Description:** Complete information shall be submitted
113 concerning the ECTIS components, including material specifications, dimensions, and
114 the manufacturing process. Material specifications shall comply with following

115 requirements:

116 **2.1.1 Base-coat Components:**

117 **2.1.1.1 Field-mix:**

118 1. Cement: Type and description shall comply with ASTM C

119 150.

120 2. Sand: Shall be clean and free from deleterious amounts of

121 loam, clay, silt, soluble salts and organic matter. Sampling and testing shall comply with

122 ASTM C 897. Limits for grading sand shall be specified when added in the field.

123 3. Admixtures: Description and purpose are needed for each

124 product.

125 4. Mix ratio: Ratio of materials and water added at the jobsite.

126 **2.1.1.2 Factory-mix:** A description is needed of the factory-

127 blended materials.

128 **2.1.2 Finish Coat:** Specific description is needed, including any field-

129 mixing instructions.

130 **2.1.3 Nonmetallic Reinforcing Mesh:** Description shall include type,

131 weight, thread count, strength, weave, and treatments for compatibility with coating.

132 **2.1.4 Sheathing Substrates:** The sheathing substrates that can be

133 considered under this criteria are Exterior or Exposure 1 wood-based panel sheathing

134 complying with U.S. DOC PS-1 or PS-2; water-resistant core gypsum sheathing

135 complying with ASTM C 79 or ASTM C1396; glass mat gypsum sheathing complying

136 with ASTM C 1177; and cementitious backer units complying with ANSI A118.9.

137 **2.1.5 Thermal Insulation:** Description of spray-applied foam plastic

138 insulation shall include type, density, description of components, mix ratio, installed
139 thickness and description of application method.

140 **2.1.6 Accessories:** Expansion joints, screeds, corner reinforcement and
141 similar items, when required by the applicant, shall be described. Accessories shall be
142 described as to type of material, dimensions, thickness and corrosion-resistant
143 treatment.

144 **2.1.7 Primers and Adhesion Intermediaries:** Specific description is
145 necessary, including type, use, specification, location and application method.

146 **2.1.8 Joint Sealants:** Sealants used at control joints, intersections or
147 terminations of the ECTIS at dissimilar materials, wall/eave interfaces, penetrations and
148 openings shall be minimum Type S or M, minimum Grade NS, minimum Class 25, and
149 Use O, in compliance with ASTM C 920, and be compatible with the applicant's ECTIS.
150 Under the Use O classification, the sealant needs to be qualified for each of the
151 materials to which the sealant will be applied, such as the ECTIS material, copper
152 piping, galvanized steel and vinyl window frames, by the adhesion and cohesion under
153 cyclic movement test and adhesion-in-peel tests of Sections 8.8 and 8.9 of ASTM C
154 920. The details of sealant installation, including the width and thickness of the sealant,
155 shall be designed by the registered design professional, designer, builder, or ECTIS
156 evaluation report applicant, in that order, to the satisfaction of the code official. An
157 installation card, in the format shown in Figure 7, completed by the sealant installer,
158 shall be presented to the building official, with the ECTIS contractor declaration (Figure
159 6), at the completion of each project. The sealant declaration shall state that the sealant
160 installation conforms to the ECTIS evaluation report and the sealant manufacturer's
161 installation methods and procedures.

162 **2.1.9 Installation Instructions:** Installation instructions shall include the
163 information noted in Sections 2.1.9.1 through 2.1.9.8:

164 **2.1.9.1 Illustrated Details:** Details shall be of camera-ready
165 quality, for inclusion in the evaluation report, and shall be consistent with required
166 application instructions. The following are the illustrations to be supplied, at a minimum:

167 1. Flashing and/or sealing around heads, sills and jambs of
168 windows and doors, and at the top of exposed walls.

169 2. Closures and flashing at other terminations, such as eaves
170 and sills, and at other dissimilar exterior wall coverings.

171 3. Typical conditions within the field of the wall covering,
172 showing substrates and control joints.

173 4. Parapet at top and termination on backside.

174 5. Flashing and/or sealing at wall penetrations.

175 6. Installation over sheathing.

176 7. Other details deemed necessary for an evaluation report.

177 **2.1.9.2** Information on any variation from recognized
178 proportions or content of field-mixed components described in Section 2.1.1.

179 **2.1.9.3** Installation instructions for the jobsite application of
180 the foam plastic, including a description of the method used to result in a flat foam
181 plastic surface for application of the ECTIS lamina. The installation instructions shall
182 specify the conditions and duration prior to covering of the foam plastic with ECTIS
183 lamina.

184 **2.1.9.4** Curing instructions of the foam plastic and ECTIS
185 lamina.

186 **2.1.9.5** Limitations, such as angle of installation and
187 installation in interior locations, shall be specified. Treatments that can reduce
188 resistance to water penetration are prohibited.

189 **2.1.9.6** The applicant shall provide supporting documentation
190 in accordance with IBC Section 106.1.3 that the proposed penetration and termination
191 details described in the construction documents maintain weather resistance of the
192 exterior wall envelope. The installation instructions shall be consistent with the exterior
193 wall system that is tested under this criteria.

194 **2.1.9.7** Accessories shall be installed in accordance with the
195 applicant's recommendations and as specified in the project design specifications
196 (documents).

197 **2.1.10 Packaging and Identification:** A description needs to be
198 provided of the method of packaging and field identification of the foam plastic
199 insulation and ECTIS lamina components (including the finish coat, base coat and
200 reinforcement). Labeling for field identification shall include the following:

- 201 1. Name and address of manufacturer.
- 202 2. Identification of components.
- 203 3. Lot or batch number.
- 204 4. Quantity of material in packaged mix.
- 205 5. Storage instructions.
- 206 6. Shelf life (when applicable).
- 207 7. Expiration date (when applicable).
- 208 8. ICC-ES evaluation report number (ICC-ES ESR-xxxx).
- 209 9. Foam plastic insulation components shall be identified as required

210 by the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377).

211 **2.2 Testing Laboratories:** Testing laboratories shall comply with Section 2.0
212 of the ICC-ES Acceptance Criteria for Test Reports (AC85) and Section 4.2 of the ICC-
213 ES Rules of Procedure for Evaluation Reports.

214 **2.3 Test Reports:** Test reports shall comply with AC85.

215 **2.4 Product Sampling:** The ECTIS lamina components used in the qualifying
216 tests shall be sampled in accordance with Section 3.2 of AC85. Sampling of
217 components used to produce the foam plastic insulation for testing under this criteria
218 shall comply with Section 3.1 of AC85. Preparation of test assemblies including the
219 foam plastic insulation shall be in accordance with Section 3.3 of AC85.

220 **3.0 TEST AND PERFORMANCE REQUIREMENTS**

221 **3.1 Performance Requirements for the ECTIS Lamina with Foam Plastic:**

- 222 1. Salt-spray-resistance tests as set forth in Section 4.1.
- 223 2. Tensile-bond tests as set forth in Section 4.2.
- 224 3. Freeze-thaw tests as set forth in Section 4.3.
- 225 4. Water-resistance tests as set forth in Section 4.4.
- 226 5. Fire tests as set forth in Section 4.5.
- 227 6. Water vapor permeance tests as set forth in Section 4.6.
- 228 7. Structural performance tests as set forth in Section 4.7.
- 229 8. Durability, hygrothermal and structural testing as set forth in Section 4.8.
- 230 9. Accelerated-weathering material tests as set forth in Section 4.9.

231 **3.2 Thermal Insulation:** Reports of tests of the foam plastic insulation
232 demonstrating compliance with AC377 shall be provided. When used on walls required

233 to be of noncombustible construction, foam plastic insulation shall have a flame spread
234 index not exceeding 25 and shall be identified in accordance with Section 2603.5.6 of
235 the IBC.

236 **3.3 Joints:** The need for, and locations of, expansion and control joints shall
237 be determined and specified by the registered design professional; where a registered
238 design professional is not involved, the designer, builder, or applicant shall be
239 responsible. All expansion and control joint materials shall be corrosion-resistant. If
240 used, expansion and control joints shall be a part of test specimens for durability and
241 structural tests.

242 When the ECTIS is placed over platform-frame construction with
243 dimensional lumber, control joints are required at each floor level.

244 **3.4 Structural Considerations:** Structural tests in accordance with Section
245 4.7 are required to determine allowable positive and negative wind loads that may be
246 imposed on the ECTIS. The test program shall incorporate the following:

247 **3.4.1** ECTIS test specimens shall represent minimum conditions of
248 installation, including such items as material thickness and density. Section 4.7
249 provides additional requirements.

250 **3.4.2** Maximum allowable deflection of structural wall components shall
251 be specified and shall be limited to a maximum $1/180$ of span, except where more
252 restrictive requirements prevail.

253 **3.4.3** Only negative load tests are required to establish wind resistance
254 of the ECTIS applied to concrete or masonry walls. The resistance of the concrete or
255 masonry shall be established in accordance with applicable requirements in Chapters
256 19 and 21 of the applicable code, or Chapter 6 of the IRC, as applicable.

257 **3.5 Weather-resistive Consideration:**

258 **3.5.1 Solid Concrete and Masonry Walls:** Based on Exception 1 of IBC
259 Section 1403.2, the ECTIS may be installed on solid concrete and masonry walls
260 without a water-resistive barrier, provided the concrete and masonry walls are designed
261 and constructed in accordance with Chapters 19 and Chapter 21, respectively, of the
262 IBC, BNBC, SBC, and UBC, or Chapter 6 of the IRC, as applicable.

263 **3.5.2 Framed Walls:** Installation over sheathing on framed walls shall be
264 based on testing in accordance with Section 4.8.

265 **3.5.3 Flashing:** Corrosion-resistant flashing shall be provided as part of
266 the weather-resistant exterior wall envelope as set forth in Section 1405.3 of the IBC or
267 Section R703.8 of the IRC. The flashing shall extend to the surface of the ECTIS and
268 be installed in such a manner as to prevent water entry into the building interior, wall
269 cavity, or wall framing structural components. Flashing installation shall be as
270 determined and specified by the registered design professional; where a registered
271 design professional is not involved, the designer, builder, or applicant shall be
272 responsible. As a minimum, approved corrosion-resistant flashing shall be installed at
273 the following locations:

- 274 1. The heads, jambs, and sills of all window and door openings.
- 275 2. The wall and roof intersections.
- 276 3. The intersection of chimneys or other concrete or masonry
277 construction with frame walls.
- 278 4. Where exterior porches, decks, or stairs intersect exterior walls.
- 279 5. At built-in gutters.
- 280 6. Continuously above all projecting trim.

281 7. Penetrations and terminations of exterior wall assemblies.

282 **3.6** Plans, details and specifications, concerning proper installation of the
283 exterior coating system, that are applicable to the specific building under consideration,
284 shall be a part of documents submitted to the code official for approval.

285 **3.7 Impact Resistance:** Impact resistance is beyond the scope of this
286 criteria.

287 **3.8 Thermal Barrier:** The ECTIS shall be separated from the interior of the
288 building with a thermal barrier having a minimum thermal-barrier index of 15, such as
289 minimum 1/2-inch-thick (12.7 mm) gypsum wallboard installed in accordance with the
290 applicable code, unless specific recognition is granted based on IBC Section 2603.4.1
291 or 2603.9 or IRC Section R314.1.2 or R314.3.

292 **4.0 TEST METHODS**

293 **4.1 Salt Spray Resistance:**

294 **4.1.1 Test Specimen:** Three samples, 4 inches by 6 inches (102 mm by
295 152 mm) by the minimum thickness of the ECTIS lamina and foam plastic insulation as
296 specified by the applicant, are applied to minimum 1/2-inch-thick (12.7 mm) gypsum
297 sheathing or equivalent and cured in accordance with the evaluation report applicant's
298 instructions. The back and sides of the specimens shall be sealed with an impervious
299 material.

300 **4.1.2 Test Procedure:** Testing shall comply with ASTM B 117. The
301 testing period shall be 300 hours.

302 **4.1.3 Conditions of Acceptance:** There shall be no deleterious effects

303 from salt spray after the 300-hour exposure.

304 **4.2 Tensile Bond:**

305 **4.2.1 Test Specimens:**

306 **4.2.1.1** For each combination of ECTIS lamina, foam plastic
307 insulation and substrate for which recognition is sought, fifteen specimens are to be
308 tested. The back surface of the substrate may be sealed with an impervious material.
309 The tensile bond tests shall be carried out on the complete system (i.e., substrate with
310 spray-applied polyurethane foam plastic, base coat and finish).

311 **4.2.1.2** Each test specimen shall be a minimum of 1.96 by
312 1.96 inches (50 by 50 mm). Adhesives used to bond the test specimens to the test
313 apparatus plates shall be appropriate to the apparatus.

314 **4.2.1.3** The specimens shall be cured for a period of 14 days
315 at ambient conditions of $75^{\circ}\text{F} \pm 2^{\circ}\text{F}$ ($24^{\circ}\text{C} \pm 2^{\circ}\text{C}$) and $50\% \pm 5\%$ R.H.

316 **4.2.2 Conditioning States:**

317 (a) Initial State: Five of the fifteen specimens shall be conditioned at the
318 ambient conditions specified in Section 4.2.1.3 for an additional 24 hours.

319 (b) Wet State: The edges of five of the fifteen specimens shall be sealed
320 to prevent water absorption through the edges of the specimens. The lamina surface of
321 the specimens shall be immersed $\frac{1}{4}$ inch (6 mm) into water at $70^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ($21^{\circ}\text{C} \pm 5^{\circ}\text{C}$)
322 for 48 hours. The specimens shall be removed from the water and dried for two hours in
323 the above- specified ambient conditions. The tensile bond tests shall be conducted
324 within 30 minutes after the two-hour drying period.

325 (c) Final State: Conditioning of the remaining five specimens shall follow

326 the procedure in Section 4.2.2 (b), but after the water immersion, the specimens shall
327 be dried for seven days at the specified ambient conditions.

328 **4.2.3 Test Procedure:** The tensile bond strength of each specimen shall
329 be determined in accordance with ASTM C 297.

330 **4.2.4 Conditions of Acceptance:** The foam plastic insulation of each
331 specimen shall fail cohesively.

332 **Exceptions:**

- 333 1. Maximum 25 percent adhesive failure is acceptable.
- 334 2. Where the tensile bond strength of all specimens is 15 psi (105 kPa) or
335 greater, adhesive failure up to 100 percent is acceptable.

336 **4.3 Freeze-thaw Tests:**

337 **4.3.1 Test Specimens:** Five 6-inch-square (23 226 mm²) specimens for
338 each combination of ECTIS lamina, foam plastic insulation and substrate shall be
339 prepared by applying the thermal insulation to the substrate, then applying the lamina to
340 the front face and edges of the thermal insulation. The back of the sample shall be
341 sealed with an impervious material that need not be the coating. Specimens shall
342 contain insulation accessories that are representative of those used in actual
343 construction.

344 **4.3.2 Freeze-thaw Cycling Conditions:** All specimens shall be
345 subjected to ten freeze-thaw cycles. Each cycle shall consist of air-drying at a
346 temperature of 120°F (49°C) for a minimum of eight hours, followed by total immersion
347 of the specimen in water at 70°F to 80°F (21.1°C to 26.7°C) for eight hours, and
348 exposure to a temperature of -20°F (-28.9°C) for 16 hours.

349 **4.3.3 Conditions of Acceptance:** Failure is defined as surface changes,
350 as viewed by minimum 5x magnification, such as cracking, checking, crazing, erosion,
351 or other characteristics that may affect performance as a wall cladding.

352 Failure is also defined as delamination, or indications of
353 delamination between components.

354 **4.4 Water-resistance Tests:**

355 **4.4.1 Test Specimens:** Three specimens for each combination of ECTIS
356 lamina and foam plastic insulation, a minimum of 4 inches by 6 inches (102 mm by 152
357 mm) in size, shall be used. The back and sides of the specimens shall be sealed with
358 an impervious material.

359 **4.4.2 Test Procedure:** Testing shall comply with ASTM D 2247. Periodic
360 inspections shall be conducted. Testing shall be concluded after 14 days, or after
361 deleterious effects of exposure to water are observed.

362 **4.4.3 Conditions of Acceptance:** There shall be no deleterious effects
363 from 14 days of exposure to water.

364 **4.5 Fire Tests:**

365 **4.5.1 Fire-resistance-rated Construction (Optional):** This test is
366 required for recognition for fire-resistance-rated construction. Unless a report of
367 successful testing of an assembly in accordance with ASTM E 119 is submitted, the
368 ECTIS is limited to non-fire-resistance-rated construction. In this regard, the application
369 of the ECTIS to a recognized noncombustible fire-resistive assembly negates the
370 assembly's fire-resistance rating, unless: (1) the assembly is tested in accordance with
371 the specified standard; or (2) an analysis is submitted of the effect of installation of the

372 ECTIS on the fire resistance and heat dissipation of the fire-resistance-rated assembly.
373 The data comprising the analysis needs to include reports of fire-resistance tests on
374 wall assemblies with and without the ECTIS installed, and an analysis of the effect of
375 the ECTIS on fire resistance and the capacity for heat dissipation. Recognition of the
376 ECTIS in fire-resistance-rated assemblies shall consider type of assembly, whether
377 bearing or nonbearing, and thermal insulation thickness.

378 **4.5.2 Noncombustible Construction (Optional):** Requirements for
379 noncombustible construction in this section (Section 4.5.2) are based on IBC Section
380 2603.5. Without compliance, ECTIS is limited to combustible (Type V) construction.
381 Test procedures include:

382 1. Flammability Characteristics: This test of the ECTIS lamina and
383 foam plastic insulation shall be conducted in accordance with, and the results shall
384 comply with conditions of acceptance of, either NFPA 285, as set forth in IBC Section
385 2603.5.5, or UBC Standard 26-4.

386 2. Fire-resistance-rated Construction: This test is required for
387 recognition of the ECTIS on walls required to have a fire-resistance rating. The test is
388 conducted in accordance with, and the results shall comply with the conditions of
389 acceptance of, ASTM E 119; additional considerations are in Section 4.5.1 of this
390 criteria.

391 3. Potential Heat: This test of the foam plastic insulation shall be
392 conducted in accordance with NFPA 259. See IBC Section 2603.5.7.

393 4. Ignition: This test of the ECTIS lamina and foam plastic insulation
394 shall be conducted in accordance with NFPA 268. Additional considerations are in
395 Section 4.5.3.

396 5. Flame-spread and Smoke-developed Indices: This test of the foam
397 plastic insulation and exterior coating tested separately shall be conducted in
398 accordance with ASTM E 84.

399 **4.5.3 Ignition:** Tests in accordance with NFPA 268 are required for
400 exterior wall coverings in accordance with IBC Section 1406.2, unless the ECTIS is
401 limited to use on Type V construction.

402 **4.6 Water Vapor Permeance:** The water vapor permeance of the ECTIS
403 lamina applied to foam plastic insulation at the intended thickness shall be tested in
404 accordance with ASTM E 96, water method. If the test assembly has a permeance
405 rating of greater than 1 perm (5.7×10^{-11} kg/Pa-s-m²), the evaluation report shall state
406 that the assembly is a vapor retarder. If the test assembly has a permeance rating of 1
407 perm (5.7×10^{-11} kg/Pa-s-m²) or less, the evaluation report shall state that the assembly
408 is not a vapor retarder and a vapor retarder shall be installed when required by the
409 applicable code.

410 **4.7 Structural Performance Tests:**

411 **4.7.1.1** Testing shall be in accordance with ASTM E 330,
412 Procedure B. For each combination of ECTIS lamina, foam plastic insulation, substrate
413 and framing, at least three positive and three negative load tests shall be conducted
414 with the ECTIS lamina, foam plastic, and sheathing prepared and installed in
415 accordance with the applicant's published instructions. Test specimen fabrication shall
416 be done with verification by the testing laboratory or its authorized representative.
417 Specimens shall have minimum nominal dimensions of 4 feet by 8 feet (1219 mm by
418 2438 mm), and shall include vertical-control joints, scored joints and any other
419 architectural features located midway between the stud framing, if these features are to

420 be recognized in the evaluation report. The load shall be applied in at least six
421 increments, with a 10-second load duration for each increment.

422 **4.7.1.2** Specimens shall be mounted in accordance with
423 ASTM E 330. Framing supporting the ECTIS shall be located at the maximum spacing
424 for which recognition is sought. In most instances, this will result in triple 16-inch (406
425 mm) spans or double 24-inch (610 mm) spans. ICC-ES staff shall be contacted by the
426 applicant in the event that spans vary from those required herein. Since the test
427 specimens establish the basis of acceptance, the specimens shall be constructed using
428 minimum conditions, including the base steel thickness of steel framing, specific gravity
429 of wood framing, connections of substrate sheathing to framing, fastener edge
430 distances, sheathing bearing width on framing, orientation of sheathing on framing, and
431 treatment of horizontal sheathing joints.

432 **4.7.1.3** In addition to test report requirements specified in
433 Section 2.3, load-deflection readings shall be reported of the ECTIS midway between
434 wall framing members at panel midheight.

435 **4.7.1.4 Conditions of Acceptance:** Allowable loading will be
436 based on a minimum factor of safety of 3.0 applied to the average ultimate load, if all of
437 the following are satisfied:

438 **4.7.1.4.1** No single test result varies by more than 15
439 percent from the average of three tests. Variations exceeding this limit require larger
440 safety factors.

441 **4.7.1.4.2** The allowable load does not exceed
442 established values for mechanical connectors such as nails, screws and staples.

443 **4.8 Durability and Hygrothermal Test:**

444 **4.8.1 General:** The test method consists of three stages
445 (preconditioning, environmental cycling, and assessment). In the preconditioning stage,
446 the full-scale test specimen is conditioned by applying a specified amount of water on
447 the exterior side of the specimen, in the area just below the top of the wall. There is a
448 continuous horizontal cut with a width of 1 inch (25.4 mm) and a depth of 50 percent of
449 the insulation thickness made on a 45- degree angle. See Figure 1.

450 **4.8.2 Test Apparatus:** This description of the test apparatus is general
451 in nature and any arrangement of equipment capable of performing the test procedure
452 within the allowable tolerances is permitted.

453 The test apparatus for the environmental cycling stage consists of a room
454 environmental chamber and a weather environmental chamber.

455 The room chamber shall be capable of maintaining static environmental
456 conditions with an air temperature of $75.2 \pm 2^{\circ}\text{F}$ ($24 \pm 2^{\circ}\text{C}$) and a relative humidity of 50
457 $\pm 5\%$.

458 The weather chamber shall conform to ASTM E 331, except that it shall
459 be capable of maintaining a static air pressure difference of ± 26 psf (± 1250 Pa) across
460 the test specimen. The weather chamber shall also be capable of maintaining the air
461 temperature inside the chamber between $-4 \pm 1^{\circ}\text{F}$ ($-20 \pm 1^{\circ}\text{C}$) and $150.8 \pm 1^{\circ}\text{C}$ ($66 \pm$
462 1°C), and of ramping the temperature inside the chamber between these temperatures
463 at a rate of $140 \pm 2^{\circ}\text{F/h}$ ($60 \pm 2^{\circ}\text{C/h}$).

464 **4.8.3 Test Specimen:** The evaluation consists of two simultaneously
465 tested walls:

466 1. A 4-foot-wide and 8-foot-high (1.21 m wide and 2.43 m high) section of
467 tested wall built in accordance with Figure 2, with glass mat gypsum sheathing

468 complying with ASTM C 1177.

469 2. A 4-foot-wide and 8-foot-high (1.21 m wide and 2.43 m high) section of
470 tested wall built in accordance with Figure 2, with OSB sheathing.

471 The specimens shall be constructed using 2-by-4 wood framing members with
472 double top plates and a single bottom plate, and incorporating the following:

473 1. One vertical and one horizontal expansion joint of the ECTIS lamina.

474 2. Window frame representative of end use conditions.

475 3. Representative service penetrations consisting of a 3.9-inch (100 mm)
476 square galvanized duct and a 1.5-inch-diameter (38 mm) PVC pipe.

477 4. One hexagonal electrical junction box.

478 The backside of the 2-by-4 wood framing shall be covered with a layer of
479 polyethylene and gypsum wallboard complying with ASTM C 1396.

480 **Note:** The dimensions of the test specimen may be up to 3.9 inches (100 mm)
481 less than those stated, to accommodate a space for adding preconditioning water at the
482 top, and at junctions designed to maintain moisture and structural integrity at the sides.

483 The wood wall framing members and sheathings shall be conditioned in the
484 room chamber for two weeks prior to assembly of the test specimen. The wall framing
485 shall be assembled with a rough window opening for a window frame 11.8 inches
486 (300mm) from the top and side of each specimen.

487 The sheathing shall be installed on the test specimen according to the ECTIS
488 applicant's instructions and Figure 3 of this criteria.

489 Each specimen shall have a horizontal expansion joint a minimum of 11.8 inches
490 (300 mm) from the bottom edge of the specimen. The foam plastic insulation and
491 ECTIS lamina to be recognized in the evaluation report shall be applied to the substrate

492 sheathing in accordance with the report applicant's published installation instructions,
493 except the finish coat shall be applied to only 50 percent of the face of the specimen as
494 shown in Figure 4.

495 The rough window opening shall be flashed and finished in accordance with the
496 ECTIS applicant's instructions. A representative fixed window frame shall be installed in
497 the opening in accordance with the ECTIS applicant's instructions.

498 Service penetrations shall be located in the top portion of each specimen
499 according to the requirements of each penetration and sealed to the ECTIS lamina in a
500 manner representative of end use conditions.

501 Sealant shall be applied to the perimeter of the window, service penetrations
502 and expansion joints in accordance with the evaluation report applicant's instructions.

503 Details of specimen components and construction must be presented in
504 the test report.

505 **4.8.4 Test Procedure:**

506 **4.8.4.1 General:** Preconditioning and cycling must be
507 performed on the specimens in the same apparatus in order to avoid manipulating the
508 wall after preconditioning, and in order to commence cycling immediately following
509 preconditioning.

510 The test procedure has three stages – preconditioning, environmental cycling
511 and assessment.

512 **4.8.4.2 Preconditioning:** Preconditioning may be carried out
513 inside or outside the test chamber. The preconditioning shall be carried out following
514 installation and sealing of the test specimen and immediately prior to environmental
515 cycling. The test specimen shall be mounted between the room and weather chambers

516 with the ECTIS lamina facing the weather chamber. The test specimen shall be
517 positioned vertically and in a manner such that it can be observed from all sides during
518 the preconditioning stage. A supply tank shall be installed above the test specimen and
519 filled with a quantity of water that represents at least 0.4 gallon (1.5 L) for each square
520 meter of specimen area. The full area of the specimen must be used to determine the
521 quantity of water. The supply tank shall be located such that the water can drain to a
522 supply manifold that will distribute the water uniformly over the entire width of the
523 specimen at the top of the specimen.

524 The water shall be supplied at a rate such that no more than a 0.4-inch (10 mm)
525 head builds up at the top of the supply holes, but no faster than 3.96 gallons (15 L) per
526 hour per meter of specimen width. The water supply shall be stopped at 120 minutes.
527 Water remaining in the container and supply header shall be removed and the quantity
528 recorded.

529 **4.8.4.3 Environmental Cycling:** All of the water retained in
530 the specimen in the preconditioning stage shall remain in the specimen. The specimen
531 shall be attached and sealed to the weather chamber. Temperature and relative
532 humidity at the start of the environmental cycling stage on both sides of the test
533 specimen shall be $70 \pm 5^{\circ}\text{F}$ ($21 \pm 5^{\circ}\text{C}$), 50 ± 5 percent. Weather seals must be
534 watertight and must be capable of maintaining their integrity throughout the test.

535 Water shall be supplied and maintained at a temperature of $68 \pm 3^{\circ}\text{F}$ ($20 \pm 3^{\circ}\text{C}$).
536 The specimen shall be mounted in such a manner that the exterior face is exposed to
537 the weather chamber with the base of the specimen not exposed to standing water. In
538 either case, the specimen shall be fastened at the top and bottom edges against the
539 load that will be imposed by the applied air pressure difference.

540 Temperature and relative humidity inside the wall cavity shall be measured in the
541 wall cavity behind all penetrations.

542 The environmental conditions in the room chamber shall be controlled to a
543 temperature of $75.2 \pm 2^\circ\text{F}$ ($24 \pm 2^\circ\text{C}$) and $50 \pm 5\%$ relative humidity. The environmental
544 conditions in the weather chamber (temperature, pressure difference and water spray)
545 shall be controlled according to the cycles shown in Figure 5 for forty cycles.

546 Each environmental cycle shall have a period of six hours, with four cycles
547 applied per day. The total elapsed time for the environmental cycling is 10 days.

548 **4.8.4.4** Visual observations of any failure or damage to the
549 finish system, insulation, and sheathing shall be included in the test report.

550 **4.8.4.5 Assessment:** After the environmental cycling is
551 terminated, the specimens shall be examined for deterioration.

552 **4.8.5 Conditions of Acceptance:** The finish coat shall remain adhered
553 to the base coat with no detachment or blistering. There shall be no cracking, blistering
554 or sagging of the base coat, nor shall the base coat exhibit any crazing or separation
555 from the insulation. There shall be no changes in color or texture of the finish coat or
556 base coat. All sealant shall remain adhered to the base coat. Water shall not penetrate
557 beyond the foam plastic of the system. At the end of the 10-day environmental cycling
558 stage of the test period, the relative humidity sensors cannot indicate an average
559 relative humidity equal to, or higher than, 80 percent.

560 **4.8.6 Tensile Strength Test:** At the conclusion of the durability and
561 hygrothermal test, six specimens shall be cut from each wall test specimen to a depth,
562 and in sufficient dimensions, to undergo the tensile bond tests (see Section 4.2). Three
563 specimens shall be cut from the base coat only area, and three specimens cut from the

564 finish coat area. The tensile bond strength specimens shall be sampled from the
565 durability and hygrothermal specimens at least 23.62 inches (600 mm) from the top and
566 bottom edge of the specimen. Specimens shall be sampled near penetrations. The
567 specimens shall not be subjected to the water immersion step of the bond test. The
568 tensile bond strength of each specimen is measured and the average of the
569 measurements is calculated. The conditions of acceptance of tensile bond strength
570 tests are the same as noted in Section 4.2 of this criteria.

571 **4.9 Accelerated Weathering Test (Weatherometer):**

572 **4.9.1 Test Specimens:** Five specimens of each combination of ECTIS
573 lamina and foam plastic insulation shall be prepared as for the freeze-thaw test (Section
574 4.3.1), except that sample size is as necessary to fit the chamber. Tests of each
575 substrate sheathing are not required. The back and sides of the sample shall be sealed
576 with the appropriate impervious seal.

577 **4.9.2 Test Procedure:** Either Section 4.9.2.1 or Section 4.9.2.2 is to be
578 used.

579 **4.9.2.1** Tests shall be in accordance with ASTM G 153. The
580 operating schedule shall be Cycle 1 set forth in Table X1.1 of ASTM G 153.

581 **4.9.2.2** Tests shall be in accordance with ASTM G 155. The
582 operating schedule shall be either Cycle 1, 5, or 9 as set forth in Table X3.1 of ASTM G
583 155.

584 **4.9.3 Test Duration:** The test shall be for a minimum of 2,000 hours.

585 **4.9.4 Conditions of Acceptance:** There shall be no failure, with failure
586 defined as surface changes as viewed by minimum 5x magnification, such as cracking,

587 checking, crazing, erosion, or other characteristics that might affect performance as an
588 exterior wall covering.

589 **5.0 QUALITY CONTROL**

590 **5.1 Thermal insulation:** Foam plastic components shall be manufactured
591 under an approved quality control program with inspections by an inspection agency
592 accredited by the International Accreditation Service (IAS) or otherwise acceptable to
593 ICC-ES. Sections 2.1.5 and 3.2 have additional details.

594 **5.2 Exterior Coating:** The ECTIS lamina components shall be recognized in
595 a current evaluation report, or quality documentation complying with the ICC-ES
596 Acceptance Criteria for Quality Documentation (AC10) shall be submitted. At a
597 minimum, viscosity, pH level and specific gravity tests shall be conducted on all liquid
598 components. Third-party follow-up inspections of coating materials are not required
599 under this acceptance criteria.

600 **5.3 Field Inspections and Reporting:**

601 **5.3.1** Installation of the ECTIS, including the foam plastic and ECTIS
602 lamina, shall be by an installer certified by the applicant as being trained to perform
603 such installations. A list of the names and addresses of recognized installers shall be
604 made available to the code official or ICC-ES upon request.

605 **5.3.2** An installation card, having the format shown in Figure 6 and
606 completed by the ECTIS applicator, and the sealant installer declaration (such as
607 shown in Figure 7), shall be presented to the code official at the completion of each
608 project.

609 **5.3.3 Special Inspection:** For recognition under the IBC and BNBC,

610 special inspections are required in accordance with IBC Sections 1704.1 and 1704.12
611 or BNBC Sections 1406.8 and 1705.13, respectively. The special inspector shall furnish
612 inspection reports to the code official, and to the registered design professional in
613 charge, in accordance with Section 1704.12 of the IBC and Sections 1406.8 and
614 1705.13 of the BNBC.

615 The criteria for the special inspections shall be based upon the
616 items contained in the manufacturer's installation instructions, and as a minimum shall
617 include the following items.

618 1. Conditions of substrate (flatness, cleanliness, condition of
619 sheathing or substrate surface[s], including proper attachment of the sheathing
620 substrate to the building framing).

621 2. Foam plastic material components labeled in accordance
622 with the evaluation report on the foam plastic and the manufacturer's requirements.

623 3. Application of the foam plastic in accordance with the
624 evaluation report and the foam plastic manufacturer's instructions.

625 4. Application of coating (foam plastic board surface rasped
626 prior to application of base coat; mix proportions; ambient and surface temperatures;
627 cure/dry temperature and time; and thickness of coating layer[s]).

628 5. Application of mesh (fully embedded in base coat, fully
629 covered in accordance with manufacturer's instructions, and material meeting
630 manufacturer's specifications).

631 6. Penetration details (installation in accordance with the
632 details tested for the durability and hygrothermal test and shown in the evaluation
633 report).

634 7. Application of sealants (in accordance with specified
635 configuration; sealants and primers as specified; application of sealants and primers;
636 shelf life not exceeded; joint configurations in accordance with construction documents;
637 and cure temperature and time).

638 **6.0 EVALUATION REPORT RECOGNITION**

639 **6.1** The evaluation report shall include the following information:

640 **6.1.1** Description of the substrates, flashing, sealants, penetrations, and
641 ECTIS lamina and foam plastic components that have been evaluated under this
642 acceptance criteria.

643 **6.1.2** Allowable wind loads, based on tests described in Section 4.7

644 **6.1.3** Description of fire-resistance-rated assemblies, if tested in
645 accordance with Section 4.6.

646 **6.1.4** Installation certificate and special inspection requirements, based
647 on Sections 5.3.2 and 5.3.3.

648 **6.2** The evaluation report shall state the construction types for which the
649 system has been evaluated.

650 **6.3** The report shall state that the ECTIS system shall be separated from the
651 interior of the building by an approved 15-minute thermal barrier complying with the
652 requirements of IBC Section 2603.4.1 or 2603.9 or IRC Section R314.1.2 or R314.3.

653 **6.4** The report shall state that impact resistance is beyond the scope of the
654 report. ■

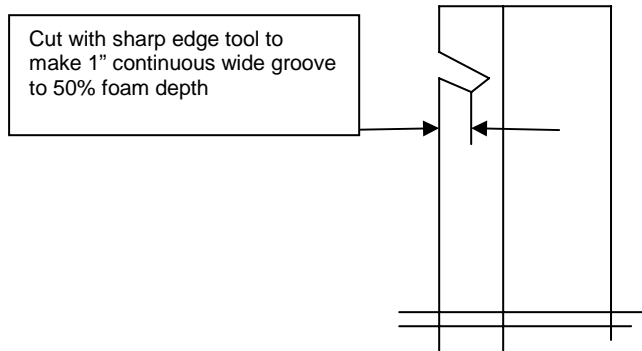


FIGURE 1—CROSS-SECTION IN THE TOP OF THE ECTIS (50% OF THE FOAM THICKNESS) TO SUPPLY WATER AT THE RATE SPECIFIED BY THE DURABILITY AND HYGROTHERMAL TEST

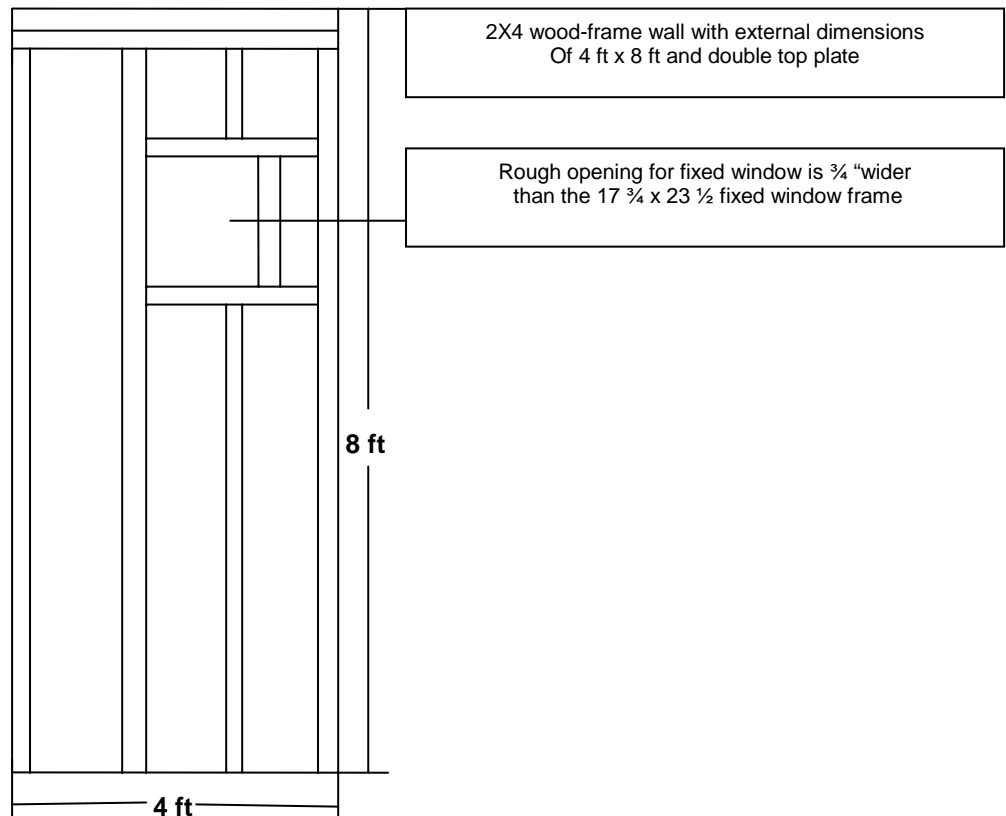


FIGURE 2—WOOD-FRAME ASSEMBLIES FOR DURABILITY AND HYGROTHERMAL TEST

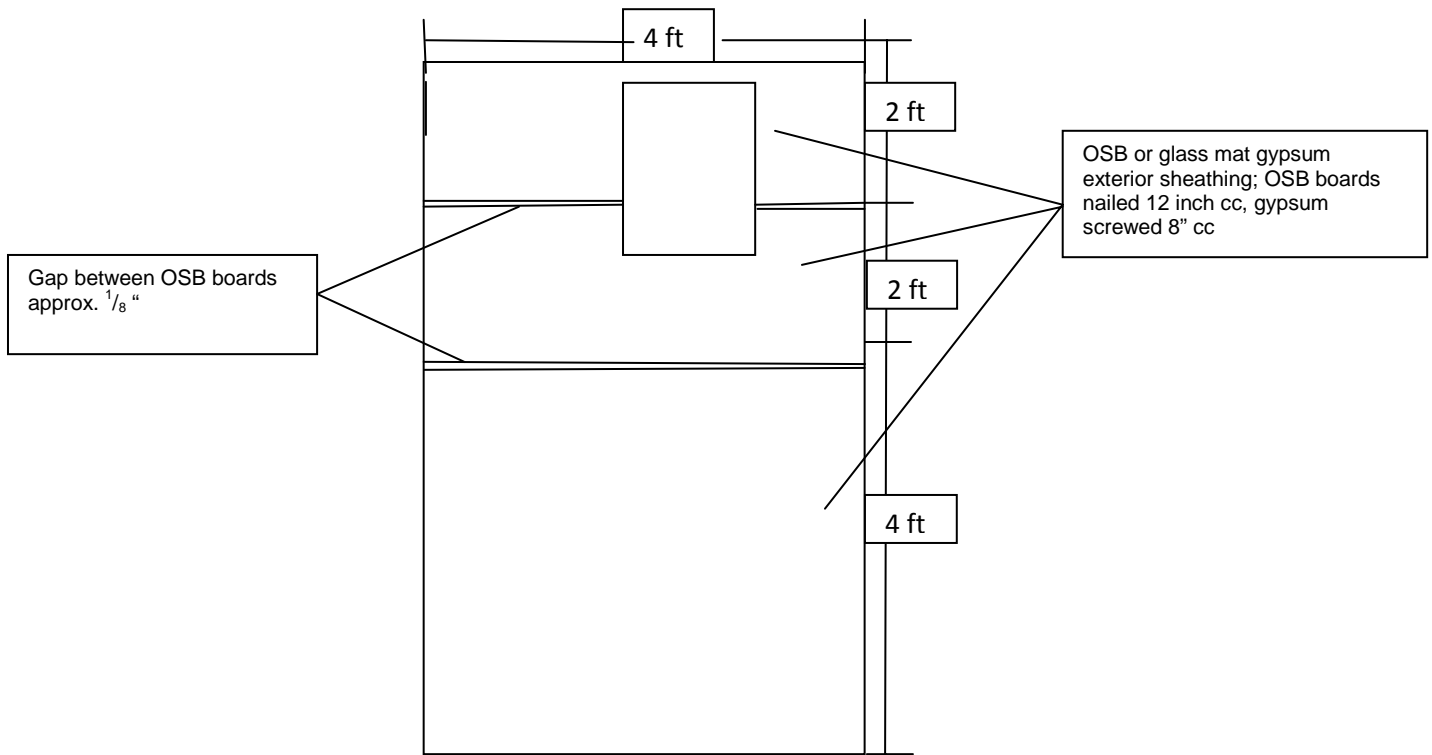


FIGURE 3—PLACEMENT OF EXTERIOR SHEATHING BOARDS (2X4 AND 4X4 FT) ON DURABILITY AND HYGROTHERMAL TEST SPECIMEN

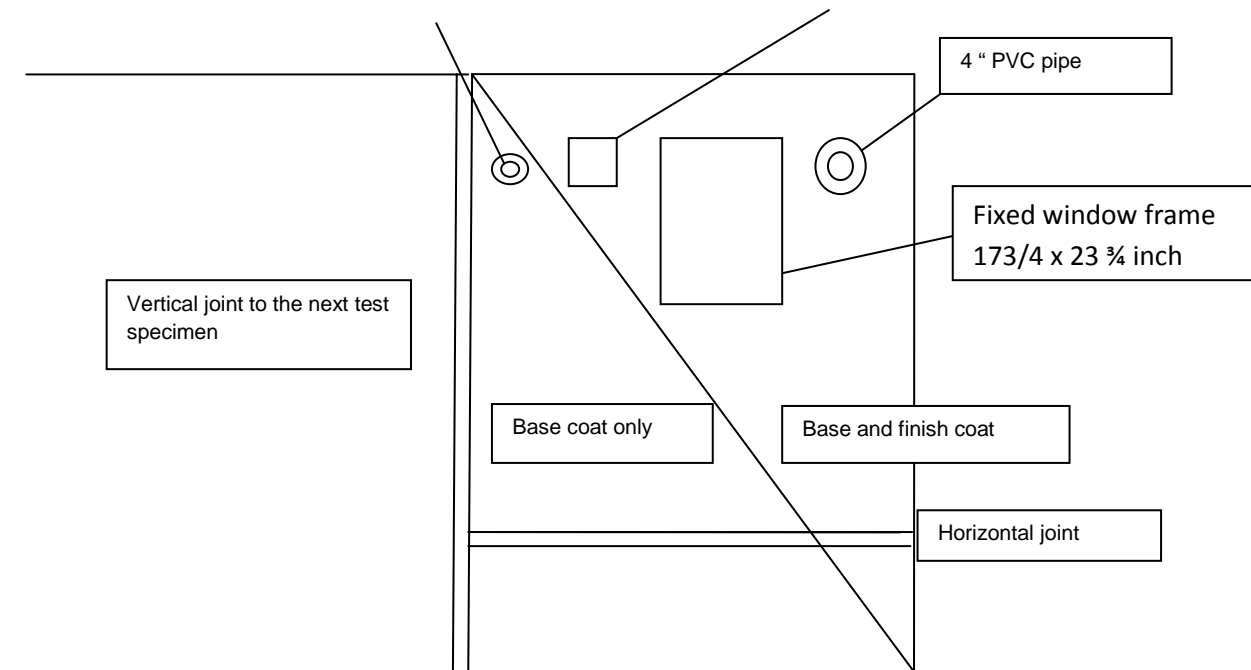


FIGURE 4—PLACEMENT OF JOINTS AND PENETRATIONS ON DURABILITY AND HYGROTHERMAL TEST SPECIMEN

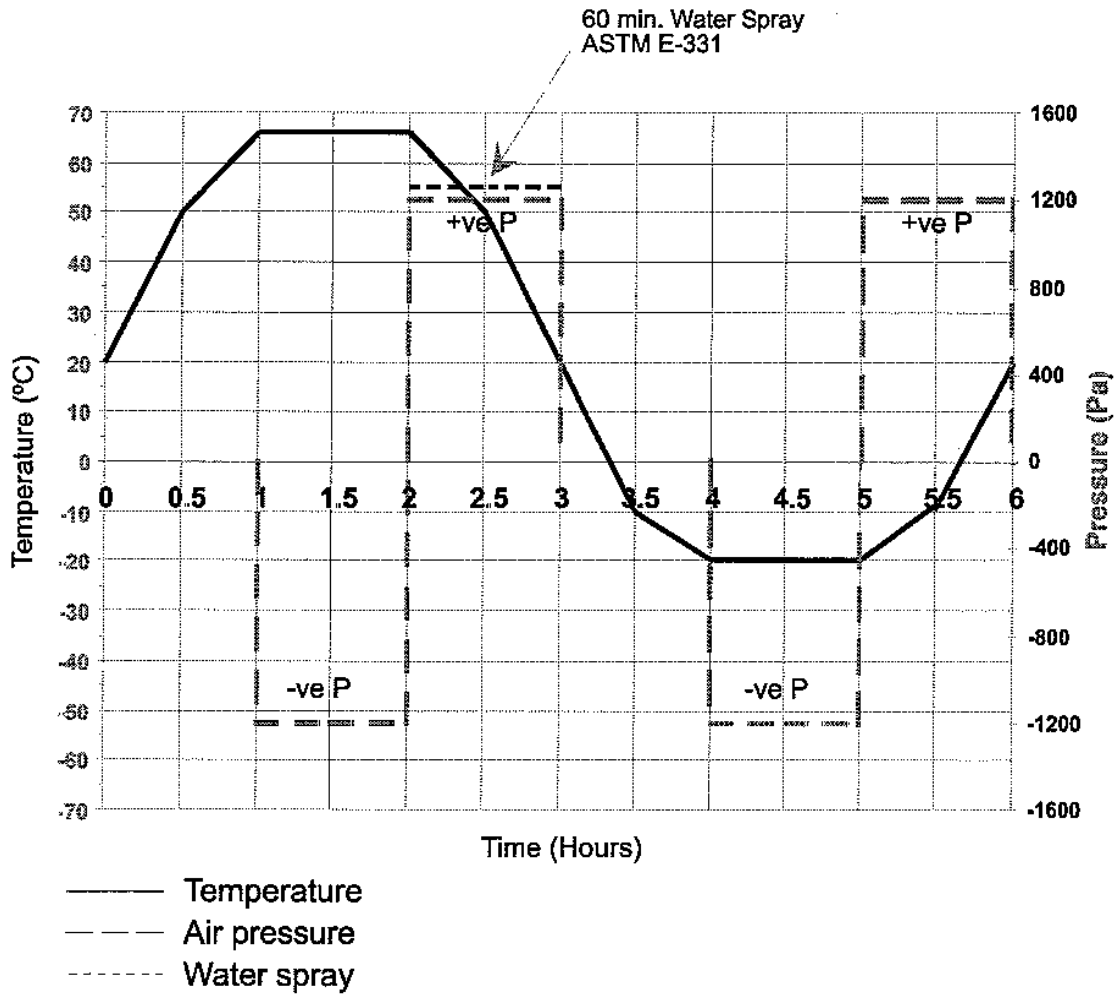


FIGURE 5—ONE OF 40 CYCLES OF TEMPERATURE AND AIR PRESSURE OSCILLATION COMBINED WITH WATER SPRAY APPLICATION IN ENVIRONMENTAL CHAMBER OF DURABILITY AND HYGROTHERMAL TEST

Proposed Acceptance Criteria for Exterior
Continuous Thermal Insulation Systems (ECTIS)

AC397-0808-R1
Page 33
August 2008

[ECTIS CONTRACTOR NAME]

Completion Date: _____

THE ECTIS INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS

INDICATED BELOW: _____ CONFORMS

TO [ECTIS MANUFACTURER NAME] RECOMMENDED INSTALLATION PRACTICES AND SECTION (S) _____ OF ICC-ES,
INC., EVALUATION REPORT ESR-_____.

Address of Structure: Product Component Names:

_____ Adhesive(s) _____

_____ Fasteners (mech) _____

_____ Base Coat _____

_____ Reinforcing Mesh _____

Finish Coat(s) _____

INSTALLATION CONFORMS

A. Substrate Type and Tolerance _____

B. Weather-resistive Barrier _____

C. ECTIS

1. Adhesive and/or Fasteners _____

2. Insulation _____

3. Reinforcing Mesh _____

4. Base Coat _____

5. Finish _____

D. The information entered above is offered in testimony that the ECTIS installation conforms with the ECTIS manufacturer's installation methods and procedures, and the ECTIS manufacturer's ES report.

NOTE: An installation card shall be received from the Sealant Installer indicating that the sealant installation conforms with the ECTIS evaluation report and sealant manufacturer's installation methods and procedures shall accompany this declaration.

ECTIS Contractor Company Name and Address:

Signature of Responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

cc: Original: Building Department (Shall be submitted with sealant manufacturer installer declaration.)

Copy: ECTIS

FIGURE 6—ECTIS INSTALLATION CARD

[SEALANT INSTALLER NAME]

Completion Date: _____

THE SEALANT INSTALLED IN CONJUNCTION WITH AN ECTIS INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW: CONFORMS_____

TO [ECTIS MANUFACTURER NAME] AND [SEALANT MANUFACTURER'S NAME] RECOMMENDED INSTALLATION PRACTICES AND SECTION(S) _____ OF ICC-ES, INC., EVALUATION REPORT ESR-_____.

Address of Structure: Product Component Names:

_____ Primer(s) _____
_____ Sealers _____
_____ Bond Breakers _____
_____ Sealant Materials _____

INSTALLATION CONFORMS

- A. Designer's requirements, details and instructions _____
- B. Sealant manufacturer's details and requirements _____
- C. Exterior insulation manufacturer's requirements _____
- D. The information entered above is offered in testimony that the Sealant installation conforms with the sealant manufacturer's installation methods and procedures, and the ECTIS manufacturer's evaluation report.

Sealant Installer Company Name and Address:

Signature of Responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

cc: Original: Building Department (Shall be submitted with ECTIS contractor declaration.)

Copies: ECTIS Manufacturer

ECTIS Contractor

Sealant Manufacturer

FIGURE 7—SEALANT INSTALLER INSTALLATION FORM