

Industrialized Buildings Commission

◆ An Interstate Compact ◆

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MINUTES - DRAFT

Rules Development Committee

Wednesday, July 20, 2016

Herndon, Virginia

In the absence of a RDC chairman, Barbara Bieganski called the meeting to order on Wednesday, July 20, 2016, at 9:00 a.m., at the Crowne Plaza Dulles Airport, 2200 Centreville Road in Herndon, Virginia. Attendance was taken as noted below.

Members	Barbara Bieganski, Vanguard Modular Building Systems
Present:	Denise Beer, Williams Scotsman
	Christine Kline, Whitley East
	Chuck Osterday, NTA
	Eric Leatherby, Commonwealth of Virginia

Others	Daniel G. Arevalo, Mobile Modular
Present:	Michael Baier, State of New Jersey
	Debbie Becker, Industrialized Buildings Commission
	Andrew Carlson, Pyramid1, Inc.
	Warren Ducharme, State of Rhode Island
	N. Kevin Egilmez, Industrialized Buildings Commission
	Robert Gorleski, PFS Corporation
	Bruce Hagen, State of North Dakota
	Tom Hardiman, Modular Building Institute
	Daren Lehman, TRA
	Scott McKown, State of Minnesota
	Dennis Quitschreiber, Dynamic Homes
	Harold Raup, PFS Corporation
	Brennen Snyder, Modspace
	Randy Soper, Sea Box, Inc.

The Committee was informed that Chairman Don Engle resigned on June 21, 2016 after leaving NRB (USA). The Committee unanimously elected Charles Osterday as chairman.

Approval of Minutes

On a motion by Barbara Bieganski, seconded by Christine Kline, the Committee approved the minutes of the July 15, 2015, meeting as submitted.

Correspondence

The Secretariat noted that a list of correspondence was available.

Old Business

There were no advisory reports given.

New Business

Chairman Osterday stated that there are vacancies in state and industry representative positions. Tom Hardiman indicated that Brian Carron from Ritz Craft was interested in the position. Attendees from Sea Box and Mod Space also expressed an interest in becoming members. Kevin Egilmez said that the interested parties should contact him to obtain a nomination form and submit it prior to next year's meeting.

Chairman Osterday noted that four RDC representatives' terms were due to expire. Christine Kline indicated that she would be interested in continuing but may have to send an alternate. On a motion by Barbara Bieganski seconded by Christine Kline, the Committee voted unanimously to renew the terms of the expiring members.

The work group formed to develop a procedure for approving used chassis (Attachment A) reported that the draft document was not ready to be presented to the Committee yet.

The work group formed to develop standards for assessing and approving reconfigured buildings (Attachment B) reported to the Committee. Denise Beer indicated that the group did not see a need to develop additional standards because it felt the current regulations were adequate. Kevin Egilmez stated various parties were not clear on how to apply certain requirements which was the reason for raising the issues at last year's meeting. The Committee agreed to continue the discussion at next year's meeting.

Kevin Egilmez reported that the current label fees, which were set in 2009, were based on the assumption that annual production would average around 10,000 modules (Attachment C). However, production has been averaging only 7,000 modules over the last ten years. Furthermore, the cost of fully funding the program has gone up from \$ 700,000 to \$ 711,000. As a result, label fees would need to be increased to \$ 82 for domestic and \$ 104 for foreign manufacturers to generate the required revenues. Even with a reduced staff, the Commission

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would need \$ 593,000 in revenues requiring label fees of \$ 68 and \$ 87 for domestic and foreign manufacturers respectively. The Committee discussed the reasons for charging domestic and foreign manufactures different fees. Kevin Egilmez said that it was due to the additional cost of auditing manufacturing facilities located in non-participating states (foreign manufacturers). It was also meant to serve as an incentive for states to join the program. Christine Kline moved and Barbara Bieganski seconded to recommend charging \$ 100 per label for all manufacturers. The motion carried unanimously.

The Committee discussed AC462, *Proposed Acceptance Criteria for Shipping Container Building Modules* (Attachment D) which describes ICC-ES's acceptance criteria for the reuse of shipping containers as building modules. The final version was approved in February 2016 with a revised title of *Acceptance Criteria for Structural Building Materials from Shipping Containers* with minor changes. Designated agencies generally accept ICC-ES reports as evidence that a product meets code requirements. However, the Commission has adopted a resolution prohibiting used shipping containers from being labeled under the program. A motion was made by Chuck Osterday, seconded by Denise Beer, and approved unanimously to recommend that the Commission withdraw the resolution so that shipping containers meeting ICC-ES AC462 acceptance criteria can be incorporated into industrialized buildings.

The Committee discussed label fees and inspection frequencies for certain types of exterior wall panels (Attachment E). The panels are typically open construction except for the exterior wall sheathing and the exterior finish. The rest of the building including roofs and floors are completed on site. The Committee agreed that one label should be required for every 125 linear feet of walls instead of one for every 600 square feet of enclosed floor area. Furthermore, they agreed that the inspection frequency should be such that not less than 20 percent of the panels in linear feet are inspected. Barbara Bieganski made a motion, seconded by Christine Kline, to approve the recommendations subject to approval of the final language by letter ballot. The motion carried unanimously.

The Committee discussed a proposal which would emphasize that certification labels are and remain the property of the Commission (Attachment F). Kevin Egilmez recommended that Part IV, Section 4(A)(2)(c) of the UAP be amended so that the words "IIBC Property" are printed on each certification label. He also recommended including language on the label order form stressing various UAP provisions and Commission policies regarding certification labels. A motion was made by Barbara Bieganski, seconded by Christine Kline, and approved unanimously to issue a formal interpretation subject to approval of the final language by letter ballot.

The Committee discussed a recommendation to set thresholds on auxiliary attachments and room additions based on aggregate gross floor area (Attachment G). Currently, one certification label is required whether there are one or multiple attachments and it is not always clear if a building section should be classified as a room addition or a module. The proposed formal interpretation would base label requirements on the aggregate floor area of the attachments setting a maximum limit of 600 square feet and exempting those under 50 square feet. A motion

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was made by Denise Beer, seconded by Christine Kline, and approved unanimously to issue a formal interpretation subject to approval of the final language by letter ballot.

Recommendations to the Commission

Chairman Osterday communicated the following RDC recommendations and actions to the Commission:

1. Set the label fee at \$100 for all manufacturers.
2. Withdraw the resolution prohibiting used shipping containers.
3. Issue a formal interpretation establishing exterior wall panel labeling and inspection frequency requirements on linear feet of construction. The Committee expects to approve the final wording by letter ballot.
4. Amend the UAP and revise label order form to clarify and emphasize various provisions regarding certification labels. The Committee expects to approve the final wording by letter ballot.
5. Issue a formal interpretation establishing labeling requirements for auxiliary attachments and room additions on aggregate gross floor area. The Committee expects to approve the final wording by letter ballot.

Date and Location of Next Meeting

The next RDC meeting was tentatively scheduled for July 19, 2017, third Wednesday in July. The secretariat stated that notice would be sent out regarding the meeting's location.

The motion to adjourn, made by Christine Kline and seconded by Barbara Bieganski, was approved and the meeting adjourned at 1:20 p.m.

Respectfully submitted,

N. Kevin Eğılmez
Secretariat Staff

Attachments

ATTACHMENT A

PYRAMID1, INC.

19260 C.R. 46, New Paris, IN 46553
Telephone (574) 831-4200 Fax (574) 831-4209
www.pyramid1inc.com

ENGINEERING * DESIGN * REVIEW & INSPECTION AGENCY

July 9, 2014

N. Kevin Engilmez
Industrialized Buildings Commission
505 Huntmar Park Drive
Herndon, VA 20170

RE: IBC Meeting - 7/16/2014 supplied info
ModSpace, Elizabethtown, PA

Dear Mr. Egilmez:

Enclosed please find justification for allowing previously used frames to automatically be evaluated and utilized in new construction:

References

International Building Code, IBC-12
Specification for Structural Steel Buildings, AISC 360-10
14th Edition of the AISC Steel Construction Manual
AISC Rehabilitation and Retrofit Guide, AISC Steel Design
Guide 15
Uniform Administrative Procedures, July 2007

Preface

Modular building are acquired, the existing building removed, with only the frame remaining. This allows a complete assessment of the frame component by Pyramid1 to approved plans. New construction to approved plans is then done on top of the recycled frame, to create a new modular building to be inspected and labeled.

Code Citations

IBC Section 2205.1 General.

The design, fabrication and erection of structural steel for buildings and structures shall be in accordance with AISC 360. ...

**AISC Steel Construction Manual, Part 2 - General Design
Consideration, Renovation Retrofit of Existing Structures.**

*The provisions in **AISC Specification** Section B6 governs the evaluation of existing structures. Historical data on available steel grades and hot-rolled structural shapes, including dimensions and properties, is available in **AISC Design Guide 15, Rehabilitation and Retrofit Guild** (Brockenbrough, 2002) and the companion database of historical shape properties from 1873-1999 available at www.aisc.org.*

AISC Design Guide 15, Section 1.1

AISC and other specification for the design of structural steel usually refer to standards published by the American Society for Testing and Materials (ASTM). Table 1.1a presents a historical summary of the pertinent ASTM standards for structural steels for buildings over the last century, with the relevant yield points and tensile strengths specified. ...

Code Compliance

If the approximate age of the unit is known, the steel can be calculated based on the AISC specification. To make sure the worst case specification is utilized, a +/- 10 year worst-case value from AISC Design Guide 15 Table 1.1a can be utilized to ensure structural compliance.

Pyramid1 proposes to separately inspect each frame component before introduction into the manufacturing process to assess that the frame can be proven to meet new construction. Any additional repairs to the frame will be done by a certified welder with new, traceable steel members.

Requested Variance

As all of the construction above the frame is new, ModSpace asks the Commission to allow this type of structure to be automatically allowed under UAP Part IV(A)(7)(h)(i), as the frame can be assessed thru the design evaluation and inspection agency.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

Andrew Carlson, CBO, MCP
Review and Inspection Services

ARC/arc

INTERNATIONAL BUILDING CODE 2012

Chapter 1. Scope and Administration

Section 104.1 Duties and Powers of Building Official

104.9.1 Used materials and equipment. The use of used materials which meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless *approved* by the *building official*.

Chapter 17. Special Inspections and Tests

Section 1701. General

1701.3 Used materials. The use of second-hand materials that meet the minimum requirements of this code for new materials shall be permitted.

UNIFORM ADMINISTRATIVE PROCEDURES

Part IV. Administration

Section 4(A)(7) Relocatable Buildings

When industrialized/modular buildings or building components are relocated, the local enforcement agency shall accept buildings labeled in accordance with these Uniform Administrative Procedures.

(a) – (f) ...

(g) If the previously insigniaed building has not been modified or altered, the building will be eligible for issuance of a new certification label without updating to current codes, since it was built before the effective date of these Uniform Administrative Procedures.

(h) If a previously insigniaed building is altered or modified, Subsection (A)(7)(a),(b),(c) will also be applicable.

(i) Industrialized/modular buildings that do not have a previously affixed state insignia(s), are not automatically eligible for re-labeling. Industrialized/ modular buildings that can be proven or assessed by a designated evaluation and inspection agency to meet these Uniform Administrative Procedures may be approved and labeled in accordance with these Uniform Administrative Procedures and the Model Rules and Regulations.

ANSI/AISC 360-10
An American National Standard

Specification for Structural Steel Buildings

June 22, 2010

Supersedes the
Specification for Structural Steel Buildings
dated March 9, 2005
and all previous versions of this specification

Approved by the AISC Committee on Specifications



AMERICAN INSTITUTE OF STEEL CONSTRUCTION
One East Wacker Drive, Suite 700
Chicago, Illinois 60601-1802

Specification for Structural Steel Buildings, June 22, 2010
AMERICAN INSTITUTE OF STEEL CONSTRUCTION

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APPENDIX 5

EVALUATION OF EXISTING STRUCTURES

This appendix applies to the evaluation of the strength and *stiffness* under static vertical (gravity) *loads* of existing structures by *structural analysis*, by load tests or by a combination of structural analysis and load tests when specified by the *engineer of record* or in the contract documents. For such evaluation, the steel grades are not limited to those listed in Section A3.1. This appendix does not address load testing for the effects of seismic loads or moving loads (vibrations).

The Appendix is organized as follows:

- 5.1. General Provisions
- 5.2. Material Properties
- 5.3. Evaluation by Structural Analysis
- 5.4. Evaluation by Load Tests
- 5.5. Evaluation Report

5.1. GENERAL PROVISIONS

These provisions shall be applicable when the evaluation of an existing steel structure is specified for (a) verification of a specific set of design loadings or (b) determination of the *available strength* of a *force* resisting member or system. The evaluation shall be performed by *structural analysis* (Section 5.3), by *load* tests (Section 5.4), or by a combination of structural analysis and load tests, as specified in the contract documents. Where load tests are used, the *engineer of record* shall first analyze the applicable parts of the structure, prepare a testing plan, and develop a written procedure to prevent excessive permanent deformation or catastrophic collapse during testing.

5.2. MATERIAL PROPERTIES

1. Determination of Required Tests

The *engineer of record* shall determine the specific tests that are required from Sections 5.2.2 through 5.2.6 and specify the locations where they are required. Where available, the use of applicable project records shall be permitted to reduce or eliminate the need for testing.

2. Tensile Properties

Tensile properties of members shall be considered in evaluation by *structural analysis* (Section 5.3) or *load* tests (Section 5.4). Such properties shall include the *yield stress*, *tensile strength* and *percent elongation*. Where available, certified material test reports or certified reports of tests made by the fabricator or a testing laboratory in accordance with ASTM A6/A6M or A568/A568M, as applicable, shall be permit-

ted for this purpose. Otherwise, tensile tests shall be conducted in accordance with ASTM A370 from samples cut from components of the structure.

3. Chemical Composition

Where welding is anticipated for repair or modification of existing structures, the chemical composition of the steel shall be determined for use in preparing a welding procedure specification (WPS). Where available, results from certified material test reports or certified reports of tests made by the fabricator or a testing laboratory in accordance with ASTM procedures shall be permitted for this purpose. Otherwise, analyses shall be conducted in accordance with ASTM A751 from the samples used to determine tensile properties, or from samples taken from the same locations.

4. Base Metal Notch Toughness

Where welded tension *splices* in heavy shapes and plates as defined in Section A3.1d are critical to the performance of the structure, the Charpy V-notch *toughness* shall be determined in accordance with the provisions of Section A3.1d. If the notch toughness so determined does not meet the provisions of Section A3.1d, the *engineer of record* shall determine if remedial actions are required.

5. Weld Metal

Where structural performance is dependent on existing welded *connections*, representative samples of *weld metal* shall be obtained. Chemical analysis and mechanical tests shall be made to characterize the weld metal. A determination shall be made of the magnitude and consequences of imperfections. If the requirements of AWS D1.1/D1.1M are not met, the *engineer of record* shall determine if remedial actions are required.

6. Bolts and Rivets

Representative samples of bolts shall be inspected to determine markings and classifications. Where bolts cannot be properly identified visually, representative samples shall be removed and tested to determine *tensile strength* in accordance with ASTM F606 or ASTM F606M and the bolt classified accordingly. Alternatively, the assumption that the bolts are ASTM A307 shall be permitted. Rivets shall be assumed to be ASTM A502, Grade 1, unless a higher grade is established through documentation or testing.

5.3. EVALUATION BY STRUCTURAL ANALYSIS

1. Dimensional Data

All dimensions used in the evaluation, such as spans, *column* heights, member spacings, *bracing* locations, cross section dimensions, thicknesses, and *connection* details, shall be determined from a field survey. Alternatively, when available, it shall be permitted to determine such dimensions from applicable project design or shop drawings with field verification of critical values.

2. Strength Evaluation

Forces (load effects) in members and connections shall be determined by *structural analysis* applicable to the type of structure evaluated. The load effects shall be determined for the static vertical (gravity) *loads* and *factored load* combinations stipulated in Section B2.

The *available strength* of members and connections shall be determined from applicable provisions of Chapters B through K of this Specification.

3. Serviceability Evaluation

Where required, the deformations at *service loads* shall be calculated and reported.

5.4. EVALUATION BY LOAD TESTS

1. Determination of Load Rating by Testing

To determine the *load* rating of an existing floor or roof structure by testing, a test load shall be applied incrementally in accordance with the *engineer of record's* plan. The structure shall be visually inspected for signs of distress or imminent failure at each load level. Appropriate measures shall be taken if these or any other unusual conditions are encountered.

The tested strength of the structure shall be taken as the maximum applied test load plus the in-situ dead load. The live load rating of a floor structure shall be determined by setting the tested strength equal to $1.2D + 1.6L$, where D is the nominal dead load and L is the nominal live load rating for the structure. The nominal live load rating of the floor structure shall not exceed that which can be calculated using applicable provisions of the specification. For roof structures, L_r , S or R as defined in ASCE/SEI 7, shall be substituted for L . More severe *load combinations* shall be used where required by *applicable building codes*.

Periodic unloading shall be considered once the *service load* level is attained and after the onset of inelastic structural behavior is identified to document the amount of permanent set and the magnitude of the inelastic deformations. Deformations of the structure, such as member deflections, shall be monitored at critical locations during the test, referenced to the initial position before loading. It shall be demonstrated that the deformation of the structure does not increase by more than 10% during a one-hour holding period under sustained, maximum test load. It is permissible to repeat the sequence if necessary to demonstrate compliance.

Deformations of the structure shall also be recorded 24 hours after the test loading is removed to determine the amount of permanent set. Because the amount of acceptable permanent deformation depends on the specific structure, no limit is specified for permanent deformation at maximum loading. Where it is not feasible to load test the entire structure, a segment or zone of not less than one complete bay, representative of the most critical conditions, shall be selected.

2. Serviceability Evaluation

When *load* tests are prescribed, the structure shall be loaded incrementally to the *service load* level. Deformations shall be monitored during a one hour holding period under sustained service test load. The structure shall then be unloaded and the deformation recorded.

5.5. EVALUATION REPORT

After the evaluation of an existing structure has been completed, the *engineer of record* shall prepare a report documenting the evaluation. The report shall indicate whether the evaluation was performed by *structural analysis*, by *load* testing, or by a combination of structural analysis and load testing. Furthermore, when testing is performed, the report shall include the loads and load combination used and the load-deformation and time-deformation relationships observed. All relevant information obtained from *design drawings*, material test reports, and auxiliary material testing shall also be reported. Finally, the report shall indicate whether the structure, including all members and *connections*, is adequate to withstand the *load effects*.

RECONFIGURING BUILDINGS

PART IV. ADMINISTRATION

SECTION 4. CERTIFICATION

(E) Alterations of Certified Units

Industrialized/modular buildings or building components certified and labeled pursuant to these Uniform Administrative Procedures shall not be altered in any way prior to the issuance of a certificate of occupancy without resubmission to the evaluation agency for approval of the alteration and of the unit which includes the alteration.

Background:

Certified modules are being combined to form new buildings that bear little resemblance to the original building. These modules may have been part of bigger or smaller buildings; manufactured to different codes; and classified under different use or occupancy groups. The reconfigured buildings may also incorporate newly manufactured modules.

Discussion:

1. What is the date of manufacture for determining applicable codes and standards?
2. Which on-site installation instructions/requirements apply?
3. How is the 50-percent alteration rule applied?
4. Which aspects of the plan review responsibilities are transferred to the local authority?

Recommendation:

Develop standards for addressing reconfigured buildings.

NOTES/COMMENTS:

Bump-outs:

1'x8' bump-out (2015-114), 2' x 5' ship-loose fireplace (2015-112); 14' x 14' Dining Room AND 9' x 22' Garage section (2015-110); (2) 2' x 8' bump-out (2015-099); PERFECT! 11x27 Dining & Great Room bump-out, 14 x 22 Bedroom bump-out, 6' x 14 Den bump-out, 6' x 14' bedroom bump-out (2015-091).

ATTACHMENT C

INTERSTATE INDUSTRIALIZED BUILDINGS COMMISSION

Model Budget

Program Costs:

Consolidated G&A Expenses	\$ 157,705	Reduced Staff	\$ 153,640
Consolidated Fringe Expenses	\$ 123,992		\$ 91,777
Task 3: Rules & Regulations Maintenance	\$ 2,948		\$ 3,291
Task 4: Certification Program	\$ 8,844		\$ 9,874
Task 5: Training Seminars	\$ 24,714		\$ 27,187
Task 6: Label Program	\$ 53,616		\$ 59,866
Task 7: Library Maintenance	\$ 43,496		\$ 48,567
Task 8: Plant Monitoring	\$ 185,857		\$ 199,377
Task 9: Headquarters Monitoring	\$ 18,874		\$ 20,958
Task 10: Design Review	\$ 219,275		\$ 67,381
Task 11: IT Services	\$ 20,386		\$ 21,574
Task 12: Marketing & Outreach	\$ 17,836		\$ 19,799
Total:	\$ 596,000		\$ 478,000
Label Fee Distribution:	\$ 115,000		\$ 115,000
Total Costs:	\$ 711,000		\$ 593,000

Revenue Sources:

Designation Fees	\$ 4,500	\$ 4,500
Seminar Fees	\$ 3,500	\$ 3,500
Certification Fees	\$ 2,000	\$ 2,000
HQ Audit Reimbursements	\$ 5,500	\$ 5,500
Misc. Income (interest, etc.)	\$ 3,600	\$ 3,600
Total Revenues exc. Label Fees:	\$ 19,100	\$ 19,100

Revenues from Label Fees: \$ 691,900

\$ 573,900

Label Fee Calculations

Annual Production (10-yr avg.):	7,000	7,000	10,000
Domestic Production (25%):	1,750	1,750	2,500
Foreign Production (75%):	5,250	5,250	7,500
Domestic Label Fee: \$	82	\$ 68	\$ 58
Foreign Label Fee: \$	104	\$ 87	\$ 73
<i>Foreign Label Fee multiplier = \$70/\$55 = 1.2727</i>			

INTERSTATE INDUSTRIALIZED BUILDINGS COMMISSION

Model Budget

Task 1: Consolidated G&A Expenses

Labor	\$	49,770
Fringes, G&A Labor	\$	24,839
Office Rent	\$	28,080
Telephone/Conf. Calls	\$	5,100
Equipment Rental, Maintenance	\$	1,000
Consulting, Accounting	\$	14,760
Professional Insurances	\$	2,666
Business License, Taxes	\$	150
Annual Meeting & Travel	\$	7,500
Financial Audit	\$	7,200
Label Supplies	\$	2,000
Legal Fees	\$	3,500
Liability Insurance	\$	4,250
Office Supplies	\$	1,500
Postage & Shipping	\$	750
Printing	\$	500
Depreciation, Computers	\$	1,500
Storage	\$	2,640
Total:	\$	157,705

Task 2: Consolidated Fringe Expenses

Tax, Unemployment, Workers comp.	\$	500
Tax, Social Security & Medicare	\$	26,572
Insurance, Life & Disability	\$	9,360
Insurance, Medical & Dental	\$	45,120
401k Contribution	\$	18,147
Leave, Vacation	\$	21,076
Leave, Sick & Emergency	\$	14,696
Leave, Holidays	\$	13,360
Fringes, G&A Labor	\$	(24,839)
Total:	\$	123,992

Task 3: Rules and Regulations Maintenance

Labor	Cost
	\$ 1,381
Fringe:	\$ 689
G&A:	\$ 877
Total:	\$ 2,948

Task 4: Certification Program

Labor	Cost
	\$ 4,144
Fringe:	\$ 2,068
G&A:	\$ 2,631
Total:	\$ 8,844

Task 5: Training Seminars

Labor	Cost
	\$ 9,942
Fringe:	\$ 4,962
G&A:	\$ 6,311
Travel Costs	\$ 2,000
Room rental & incidentals	\$ 1,500
Total:	\$ 24,714

INTERSTATE INDUSTRIALIZED BUILDINGS COMMISSION

Model Budget

Task 6: Label Control Program

Labor	Cost
	\$ 25,127
Fringe:	\$ 12,540
G&A:	\$ 15,949
Total:	\$ 53,616

Task 7: Library Maintenance

Labor	Cost
	\$ 20,384
Fringe:	\$ 10,173
G&A:	\$ 12,939
Total:	\$ 43,496

Task 8: In-Plant Monitoring

Labor	Cost
	\$ 74,447
Fringe:	\$ 37,154
G&A:	\$ 47,256
Direct Costs	
Auditor Consultant	\$ -
Travel Costs	
Secretariat	\$ 27,000
State	\$ -
Total:	\$ 185,857

Task 9: Headquarters Audits

Labor	Cost
	\$ 8,377
Fringe:	\$ 4,180
G&A:	\$ 5,317
Travel Costs	\$ 1,000
Total:	\$ 18,874

Task 10: Design Review

Labor	Cost
	\$ 91,983
Fringe:	\$ 45,905
G&A:	\$ 58,387
Direct Costs	
Engineer Consultant	400 \$ 23,000
Total:	\$ 219,275

Task 11: IT Services

Labor	Cost
	\$ 4,774
Fringe:	\$ 2,382
G&A:	\$ 3,030
Direct Costs	
Domain Name (.com, .org)	\$ 100
Web Hosting	\$ 600
Website Development	\$ 5,000
IT Consultant	\$ 1,500
Hardware & Software	\$ 3,000
Total:	\$ 20,386

Task 12: Marketing & Outreach

Labor	Cost
	\$ 7,890
Fringe:	\$ 3,938
G&A:	\$ 5,008
Travel	\$ 1,000
Total:	\$ 17,836

PROPOSED ACCEPTANCE CRITERIA FOR SHIPPING CONTAINER BUILDING MODULES

AC462

Proposed December 2015

PREFACE

Evaluation reports issued by ICC Evaluation Service, LLC (ICC-ES), are based upon performance features of the International family of codes. (Some reports may also reference older code families such as the BOCA National Codes, the Standard Codes, and the Uniform 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.

ICC-ES may consider alternate criteria for report approval, provided the report applicant submits data demonstrating that the alternate criteria are at least equivalent to the criteria set forth in this document, and otherwise demonstrate compliance with the performance features of the codes. ICC-ES retains the right to refuse to issue or renew any evaluation report, if the applicable product, material, or method of construction is such that either unusual care with its installation or use must be exercised for satisfactory performance, or if malfunctioning is apt to cause injury or unreasonable damage.

NOTE: The Preface for ICC-ES acceptance criteria was revised in July 2011 to reflect changes in policy.

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

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PROPOSED ACCEPTANCE CRITERIA FOR SHIPPING CONTAINER BUILDING MODULES (AC462)

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for shipping container building modules to be recognized in an ICC Evaluation Service, LLC (ICC-ES), evaluation report under the 2015 *International Building Code*[®] (IBC) and the 2015 *International Residential Code*[®] (IRC). The bases of recognition are IBC Section 104.11 and IRC Section R104.11.

1.2 Scope: The acceptance criteria is limited to the evaluation of the reuse of shipping containers as building modules, where the shipping containers are modified for each building project, with the steel components of the shipping containers designed for use in the construction of steel structures under Sections 104.9, 2204, 2205, 2210, and 2211 of the IBC and R104.9 and R301.1.3 of the IRC. The intent of the acceptance criteria is to evaluate the building module's quality control procedures to establish and verify the dimensions, chemical and physical properties of the steel components of the shipping containers being modified into building modules.

1.3 Codes and Referenced Standards:

1.3.1 2015 *International Building Code*[®] (IBC), International Code Council.

1.3.2 2015 *International Residential Code*[®] (IRC), International Code Council.

1.3.3 International Convention for Safe Containers, 1972, International Maritime Organization (IMO).

1.3.4 Rules for Certification of Cargo Containers, dated 1998, American
Bureau of Shipping (ABS).

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

2.1.1 Product Description: Description of the shipping containers,
including the names of each container manufacturer and the name of the agency
certifying the shipping container.

2.1.2 Packaging and Identification: A description of the method of field
identification of the shipping container building modules delivered to the jobsite for final
installation. Identification provisions shall include the evaluation report number.

3.0 REQUIRED DATA

3.1 Shipping Container Manufacturer: All shipping container manufacturers,
from which shipping containers are to be accepted for modification into building
modules, shall be identified.

3.2 Shipping Container Certification: The shipping containers shall have
been initially certified for compliance to the Rules for Certification of Cargo Containers
and the International Convention for Safe Containers (CSC) for use as shipping
containers by the American Bureau of Shipping (ABS). A current copy of the
certification, in English, shall be submitted.

3.3 Shipping Container Specifications: Copies of the shipping container
specifications and detail drawings for each shipping container manufacturer shall be
submitted in English.

3.4 Material Cross-Reference: Portions/items of the shipping container to be used in the building modules shall be identified. A cross-reference between the shipping container components, material specification applicable to each component, and the equivalent IBC reference standard shall be submitted. A copy of any standards not referenced directly by the IBC or not referenced by IBC referenced documents shall be submitted in English.

3.5 Quality Control Program: Used shipping containers shall have been inspected and accepted for seaworthiness in accordance with the International Convention for Safe Containers (CSC) ~~before being accepted for use as a structural building component~~ after removal from service as a shipping container and prior to conversion into a shipping container building module. ~~A~~The quality control program shall require a copy of the current inspection shall to be submitted for each shipping container. The quality control program for accepting shipping containers for use as a structural building component shall be submitted.

4.0 QUALITY CONTROL

4.1 Quality documentation complying with the ICC-ES Acceptance Criteria for Quality Documentation (AC10) shall be submitted. The submitted quality documentation shall include the information required under Sections 2.1.1, 2.1.2, and 3.1 through 3.5 of this acceptance criteria.

4.2 The shipping container building modules shall be manufactured under an approved quality control program with inspections by ICC-ES or by a properly accredited inspection agency that has a contractual relationship with ICC-ES.

4.3 A qualifying inspection shall be conducted at each building module manufacturing facility in accordance with the requirements of the ICC-ES Acceptance Criteria for Inspections and Inspection Agencies (AC304).

5.0 EVALUATION REPORT RECOGNITION

5.1 The evaluation report shall provide a statement indicating the scope of the report is limited to the evaluation of the steel used in the construction of the shipping containers for use in design in accordance with the applicable steel design standard.

5.2 The evaluation report shall require the submittal of plans and calculations to the authority having jurisdiction for the final structure being constructed from the shipping container modules. ■

PANELIZED CONSTRUCTION

PART IV. ADMINISTRATION

SECTION 4. CERTIFICATION

(A) Labels

(1) Number Required

(b) Closed panel construction shall require one certification label for every 600 square feet, or part thereof, of finished floor area.

PART VIII. RESPONSIBILITIES OF INSPECTION AGENCIES

SECTION 3. PRODUCTION SURVEILLANCE

(B) Frequency. The inspection agency shall inspect each unit for which it is responsible under its implementing contract with the manufacturer in at least one stage of its production.

Background:

There are companies that manufacture panelized exterior walls that are open except for the exterior finish that is applied over wood structural panels. The walls are placed on concrete slabs poured on site and the roof is constructed on site.

Discussion:

- Labeling requirements (one per 600 SF of floor area) for such manufacturers may be overly burdensome.
- The method of specifying the minimum frequency of inspections based on units is difficult to apply to manufacturers of panelized exterior walls.

Recommendation:

- Labeling requirements for manufacturers of panelized walls only should be based on linear feet of walls per project (e.g., one label per 125 linear feet).
- Inspection frequency should be based on a percentage of the linear feet of wall produced per project.

PANELIZED CONSTRUCTION



LABEL – IIBC PROPERTY

PART IV. ADMINISTRATION

SECTION 4. CERTIFICATION

(A) Labels

(2) Contents. A certification label shall bear the following information:

(c) The words, “See Data Plate.”

(4) Issuance. The label shall be issued in accordance with the following.

(a) ... Certification labels are attached only to buildings or building components manufactured pursuant to an approved building system and inspected pursuant to an approved compliance assurance program.

(b) ... If the conditions of custody are violated, the inspection agency shall immediately regain possession of all certification labels.

(C) Violations and Remedial Actions

(3) Program Nonconformance

(c) ... The manufacturer shall return all certification labels allocated ... to the issuing agency within ten calendar days of the effective date of the suspension.

Background:

Over the years, a number of manufacturing facilities where unused certification labels were being kept have closed or declared bankruptcy. Many of the labels were never recovered because the buildings could not be accessed. Furthermore, stating explicitly that certification labels are the property of the Commission may help in the recovery of the labels if a manufacturer declares bankruptcy.

Recommendations:

- Insert the following language to the Label Order Form or to Part IV, Section 4(A)(4) of the UAP adding the following sentence: “Assigned certification labels are not transferable and shall remain the property of the Commission. Certification labels may be confiscated if conditions of custody are violated and are void when not affixed in accordance with the Uniform Administrative Procedures.”
- Amend Part IV, Section 4(A)(2)(c) of the UAP by adding the following : “IIBC PROPERTY”

LABEL – AUXILIARY ATTACHMENTS

PART IV. ADMINISTRATION

SECTION 4. CERTIFICATION

(A) Labels

(1) Number Required

(a) All industrialized/modular buildings shall require one certification label per module except:

4. Auxiliary attachments or room additions to a labeled dwelling shall require one certification label regardless of the number of pieces shipped.

(From the definitions: "MODULE" means a closed wall structure or substantial part of a closed wall structure incorporating one or more rooms used as habitable, occupiable, or mechanical/equipment space.)

Background:

Many custom homes have one or more attachments of varying sizes – from (1) 1' x 8' to (5) with an aggregate gross floor area of nearly 800 square feet. Many of the larger sections fit the description of a module, an auxiliary attachment and a room addition making it difficult to apply the above provisions.

Discussion:

It would be impractical to develop guidelines to distinguish a module from a room addition or an auxiliary attachment since they all contain the same elements. A better approach would be to base label requirements on the aggregate gross floor area similar to panelized construction (i.e., one label per 600 square feet). An exemption should be granted if the one or more attachments are small (e.g., an aggregate floor area of less than 50 square feet).

Recommendation:

Issue a Formal Interpretation that the maximum aggregate gross floor area of room additions and auxiliary attachments per label is 600 square feet with an exemption for those that are less than 50 square feet.