

Industrialized Buildings Commission

◆ An Interstate Compact ◆

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MINUTES

Industrialized Buildings Commission
Wednesday, July 16, 2014
Herndon, Virginia

Warren Ducharme called the annual meeting of the Industrialized Buildings Commission to order on Wednesday, July 16, 2014, at 1:35 p.m. at the Crowne Plaza Dulles Airport, 2200 Centreville Road in Herndon, Virginia. Attendance was taken as noted below:

Members Present:	Michael Baier, State of New Jersey Warren Ducharme, State of Rhode Island Bruce Hagen, State of North Dakota Steve Hernick, State of Minnesota Dennis Quittschreiber, Dynamic Homes
Others Present:	Debbie Becker, Industrialized Buildings Commission Denise Beer, Williams Scotsman Barbara Bieganski, Vanguard Modular Andrew Carlson, Pyramid1, Inc. Jeffrey Clouse, T. R. Arnold & Associates, Inc. N. Kevin Egilmez, Industrialized Buildings Commission Donald Engle, NRB (USA), Inc. Robert Gorleski, PFS Tom Hardiman, MBI Christine Kline, Mark Line Chuck Osterday, NTA James Rothman, PFS Norman Wang, State of Maryland David Wyancko, Industrialized Buildings Commission

Approval of Minutes

On a motion by Steve Hernick, seconded by Mike Baier, the minutes of the July 17, 2013, meeting were unanimously approved as submitted.

Correspondence

The secretariat noted that a list of correspondence received since the last meeting was available.

Commissioners' Reports:

Steve Hernick reported that Minnesota adopted the 2014 edition of the National Electrical Code (NEC) effective July 1, 2014 and expects the 2012 I-codes to take effect on January 24, 2015. He added that Minnesota expects to update their codes with the 2018 editions of the I-codes bypassing the 2015 editions.

Warren Ducharme reported that Rhode Island has adopted the 2014 edition of the NEC with an effective date of August 1, 2014.

Bruce Hagen announced that the North Dakota Electrical Board will be adopting new Wiring Standards based on the 2014 edition of the NEC effective September 1, 2014.

Mike Baier informed that New Jersey is currently working on adopting the 2015 editions of the I-codes which would go into effect early next year. He informed the Commission that the Whitlock Mills project is currently in litigation.

As directed at last year's meeting, Kevin Egilmez briefed the Commissioners on each state's status on adopting the 2007 editions of the UAP and MRR. He stated that both Minnesota and Rhode Island regulations adopt the MRR and the UAP by reference. Minnesota's regulations (1361.0300) specifically adopt the July 9, 1993 edition whereas Rhode Island's does not specify an edition. Warren Ducharme indicated that the latest editions are adopted automatically under their rules. North Dakota regulations (Article 108-02) are based on the 1993 edition and would need to be updated to the 2007 edition. Both North Dakota and Minnesota asked for assistance in revising their regulations.

Kevin Egilmez updated the Commission on the progress in collecting registration information from manufacturing facilities. In May 2014, partially completed registration forms were mailed to over 300 manufacturing facilities with instructions to return completed forms within 30 days. To date, 158 facilities have registered and 148 have not replied including 19 mailings that were returned as undeliverable. After a brief discussion, the Commission directed the secretariat to notify designated agencies that client-manufacturers that do not register within 30 days will have their documents removed and their labeling privileges suspended.

New Business

The Commission was made aware that certain code enforcing jurisdictions in North Dakota have adopted code amendments that make the State Building Code less stringent (Attachment A). Kevin Egilmez recommended that a bulletin be issued to provide direction to evaluation agencies and to clarify the type of information that must be included on data plates. A motion was made by Mike Baier, seconded by Bruce Hagen, and approved unanimously to draft the bulletin and solicit comments from the Commissioners prior to issuance.

The Commission discussed the acceptability of foreign-certified steel. On September 26, 2013, New Jersey issued a letter indicating that non-ASTM steel could be used in building

construction subject to certain conditions (Attachment B). Steve Hernick and Warren Ducharme were not in full agreement and indicated that they would need to confer with the appropriate people before casting a vote. Kevin Egilmez suggested that the petitioner request a Formal Technical Opinion in accordance with Part III Section 3 of the UAP which is designed to ensure uniformity in code interpretations between participating states. He informed the Commission that the regulations require a decision within 30 calendar days in most cases which would most likely necessitate a conference call.

The Commission reviewed draft Formal Interpretation 14-XX, CA Documents per Manufacturing Facility (Attachment C). Manufacturers that consolidate their operations or outsource their excess orders have caused some facilities to have more than one compliance assurance manual. According to Kevin Egilmez, processes, procedures and methods described in different manuals are not always consistent and there is no mechanism to reconcile differences or to prevent incompatible modifications by different evaluation agencies. The Formal Interpretation would address these concerns by limiting each manufacturing facility to one compliance assurance manual that would be approved by all applicable evaluation agencies. A motion was made by Mike Baier, seconded by Steve Hernick, and approved unanimously, to issue Formal Interpretation 14-XX pending approval of language clarifying that separate manufacturing lines within a building would be permitted to have separate compliance assurance manuals.

The Commission considered a proposal that would allow used chassis to be incorporated into new construction (Attachment D). Warren Ducharme indicated that codes address the use of "used materials" and recommended researching each state's code as well as any amendments to see if it's possible. Kevin Egilmez added that chassis are not basic construction materials but steel assemblies that are welded and bolted together. The consensus was that used chassis could be approved provided a reasonable process beyond a visual inspection was developed to assess their structural integrity. The Commission recommended that a procedure be developed with input from all interested parties and submitted to IBC and RDC for approval by letter ballot. The responsibility for the task was assigned to Andrew Carlson.

The Commission discussed "Procedures for Labeling Existing Buildings" (Attachment E) which was an attachment to the 2013 IBC and RDC minutes. RDC recommended amending item 3 by striking "current codes" and inserting "codes in effect at the time of the date of manufacture in the receiving state" and adding a new sentence "If the date cannot be determined, it must meet the current codes." The Commissioners agreed to the changes provided buildings manufactured prior to the program are excluded and those without labels are required to meet current codes. A motion was made by Steve Hernick, seconded by Mike Baier, and approved unanimously for the secretariat to draft a revised document incorporating the changes for review and approval by RDC and IBC.

Kevin Egilmez presented a revised bulletin which consolidated various guidelines and interpretations issued on "Application of Building Systems Documents". To avoid confusion with "building systems documents" as defined in the Model Rules and Regulations, the new bulletin uses the term "Master Approval Package (MAP)" (Attachment F), when referring to a set of documents that provides manufacturers the ability to develop custom plans and incorporate optional features. A motion was made by Mike Baier, seconded by Steve Hernick, and approved

unanimously to issue the bulletin.

Financial Report and Approval of FY '15 Budget

The Commission discussed proposed budget for fiscal year 2015, and the audited financial statements and annual report for fiscal year 2013. A motion was made by Mike Baier, seconded by Bruce Hagen, and approved unanimously to accept the audited financial statements for fiscal year 2013.

A motion was made by Bruce Hagen, seconded by Mike Baier, and approved unanimously to accept the 2013 Annual Report as drafted.

A motion was made by Mike Baier, seconded by Steve Hernick, and approved unanimously to adopt the fiscal year 2015 budget as proposed.

Mike Baier made a motion to enter an executive session to discuss designated agency renewals and a request for waivers. The motion, seconded by Steve Hernick, carried and the IBC entered an executive session. The motion to reconvene into an open session, made by Mike Baier and seconded by Steve Hernick, carried unanimously.

A motion was made by Mike Baier, seconded by Steve Hernick, to redesignate ABI, HWC, Minnesota, MCC, NTA, PEI, PFS, Pyramid1, RADCO, and TRA subject to limitations or conditions, if any, established during the executive session. The motion carried.

A motion not to renew A. N. Vendola's designation was made by Steve Hernick, seconded by Mike Baier, and approved unanimously.

A motion to issue a waiver as requested by Paul Sachdeva was made by Steve Hernick, seconded by Warren Ducharme and approved unanimously.

Election of Officers

Mike Baier made a motion, seconded by Dennis Quittschreiber, to elect Rhode Island commissioner as chairman; North Dakota commissioner as vice chairman; and Minnesota commissioner as treasurer. The motion carried unanimously.

Secretariat's Work Assignments

Kevin Egilmez reviewed secretariat's work assignments:

1. Assist Minnesota and North Dakota with regulations adopting of 2007 UAP.
2. Provide designated agencies with a list of client-manufacturers that have not registered including a notice of pending suspension.
3. Draft bulletin regarding ND local code amendments for review by IBC.
4. Issue a Formal Interpretation regarding CA Documents per Manufacturing Facility.
5. Draft bulletin incorporating amendments to procedures for labeling existing buildings

- for RDC and IBC's review and approval.
6. Issue the revised bulletin regarding "Master Approval Package (MAP)" – formerly "Application of Building Systems Documents".

Date and Location of Next Meeting

The next IBC annual meeting is tentatively scheduled for July 15, 2015. The secretariat reported that notice would be sent regarding the location.

Steve Hernick, seconded by Dennis Quittschreiber, moved to adjourn the meeting and the motion carried. The meeting adjourned at 5:00 p.m.

Respectfully submitted,

N. Kevin Eğılmez
Secretariat Staff

Attachments

Proposed Local Building Code Policy Amendments McKenzie County

The intent of these amendments is to provide provisions for allowing the construction and occupancy of multi-family residential structures without sprinkler systems and to provide limitations on commercial structures for fire safety. Sprinkler systems are currently required by the International Building Code (IBC) and International Fire Code (IFC), specific to section 903.2.8 and in addition to North Dakota state amendments. These amendments are to be temporarily used until the concerns listed below are addressed.

Rationale

The challenges associated with the sprinkler system requirements are unique to this area and include the following:

- Lack of available water and sufficient fire flows to accommodate sprinkler systems and hydrants.
- Lack of a certified fire marshal; therefore, necessary annual fire inspections as required by the IFC are not completed.
- Lack of necessary fire-fighting equipment (ladder trucks, pump trucks, etc) owned and operated by the townships and county.

Actual functionality of fire sprinkler systems is doubtful, without the required fire flows and the assurance of properly installed, maintained, inspected, and functioning systems.

The provisions of the code generally result in trade-offs when sprinkler systems are provided. The trade-offs generally involve passive fire protection elements including fire stops, draft stops, and occupancy and area separation requirements within the building.

Suggested Alternative Design Requirements (*Offsetting fire sprinkler requirements*)

1. Multi-family units with ground level egress.
 - Buildings limited to 24 units.
 - Minimum separation of 20-feet between buildings
 - Maximum height of 36-feet.
 - Unless otherwise determined by the local Fire Chief.
 - 1-hour rated walls between buildings (Must be continuous from footing to roof deck).
 - 1-hour rated walls and ceilings between units are required throughout. 5/8" Type "X" gypsum board or equal must be continuous from footing to roof deck.
 - All units must be equipped with individual smoke detectors.
 - An emergency evacuation/safety plan must be provided and posted in each unit.
 - Provide occupancy provisions prohibiting smoking indoors, the use of cooking hot plates, and open flames.
 - Each unit must have its own individual egress door at grade level.

- Individual units must be limited to 500 square feet maximum.
- Fire lanes and turn-around-spaces for fire apparatus' must be provided, marked, and maintained.
- Buildings with Group-R fire areas must provide a monitoring system installed per IBC 903.4.1.
- Alarms shall sound in all dwelling units within the building.

2. Commercial Buildings in general

- No buildings greater than two-stories
 - Buildings greater than two stories must be equipped with full fire protection and sprinklers in accordance with the IBC and the IFC. The local fire district must be supplied with proper training and equipment needed to properly protect the structure and its occupants.
- Maximum height of 54-feet.
 - Or this may be determined by the Fire Chief.
 - IBC 903.2.11.3 states that buildings 55 ft. and above require sprinkling.
- An emergency evacuation /safety plan must be provided.

ADOPTED AUGUST 13, 2013



State of New Jersey
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CHRIS CHRISTIE
 Governor

KIM GUADAGNO
 Lt. Governor

RICHARD E. CONSTABLE, III
 Commissioner

September 26, 2013

Andrew Carlson
 Pyramid1, Inc.
 19260 C.R. 46
 P.O. Box 463
 New Paris, Indiana
 46553

RE: Non ASTM Steel

Dear Mr. Carlson:

I am responding to your question about the use of steel that does not meet ASTM standards referenced under the 2009 International Building Code. Specifically, you are interested in using material that is intended for the construction of steel shipping containers to be assembled to meet ISO 1496. Once assembled, the units will be used as building components.

The International Building Code (IBC) does not reference standards for the manufacture of steel directly. The IBC refers to American National Standards Institute/American Institute of Steel Construction (ANSI/AISC) 360 for the use of steel in building construction. The question is then, does ANSI /AISC 360 (Specification for Structural Steel Buildings) allow the use of steel that does not meet ASTM standards, but that meets some other standard.

While the ANSI/AISC 360 does not explicitly address the use of standards other than ASTM, it does infer that the designer can specify steel that meets other standards if the material will perform satisfactorily for the intended application. In section A4 of the standard, it states that:

“The design drawings and specifications shall meet the requirements in the Code of Standard Practice for Steel Buildings and Bridges, except for deviations specifically identified in the design drawings and/or specifications.”

This section implies that the designer may use other standards that are not specifically referenced in the ANSI/AISC 360 standard. The Code of Standard Practice for Steel Buildings and Bridges (AISC 303-05) contains information in section 5.2 about the specification for stock materials that are at variance with the ASTM standards. The materials in this case are not being manufactured for a specific job, but are stock components of shipping containers. AISC 303-05 includes provisions for materials that are equivalent in quality to ASTM standards and those that meet specifications that are less rigorous than the applicable ASTM standard provided that the “Owners Designated Representative for Design” approves the material.



Carlson
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Based on this, it is our position that non ASTM steel can be used in building construction provided that the specification for the steel is in accordance with AISC 303-05. If you have additional questions, please call me at (609) 984 – 7974.

Very truly yours,

Michael Baier
Bureau of Code Services

c: Kevin Egilmez, Industrialized Buildings Commission

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FORMAL INTERPRETATION No. 14-XX

Subject: CA Documents per Manufacturing Facility
Reference: UAP, Part V, Section 2(C)
Effective Date:

DRAFT

ISSUE

Can a single manufacturing facility have more than one set of approved compliance assurance documents?

INTERPRETATION

A manufacturer must have approved compliance assurance documents (i.e., building systems documents, compliance assurance manual and on-site installation instructions) for the product(s) it proposes to manufacture at its manufacturing facility. A manufacturer may develop separate building systems documents and on-site installation instructions for different products produced at the same facility and have them approved by different evaluation agencies. However, a manufacturing facility can have only one compliance assurance manual that must be approved by all applicable evaluation agencies.

BACKGROUND

The following describe cases that illustrate the need to clarify requirements for compliance assurance documents.

1. Company A closes its own manufacturing facility and arranges to have its product manufactured at an affiliated company's facility. Both companies are under contract with the same evaluation agency. Company A wants to continue to maintain a separate building systems documents, installation instructions and a compliance assurance manual.
2. A manufacturing facility contracts with two separate evaluation agencies for different products. It maintains separate building systems documents and installation instructions for each product.
 - a. In one case, only one of the evaluation agencies approves the compliance assurance manual.
 - b. In another case, each evaluation agency approves its separate compliance assurance manual.

DISCUSSION

UAP and MRR define compliance assurance documents as the approved buildings systems documents, compliance assurance manual and on-site installation instructions. According to MRR, Part V, Section 1, building systems documents "...describe in detail the product and manufacturing processes employed to produce industrialized buildings or building components." Section 2 adds "The compliance assurance program is a system employed by the manufacturer to assure conformance with the approved building systems documents."

A compliance assurance program for a given manufacturing facility describe various methods and procedures for materials control, production control and finished product control or define processes that cannot be easily altered or be made to conform to different products. Furthermore, changing part of the program for one product has the potential to have an adverse effect on another product.

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PYRAMID1, INC.

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

PROCEDURES FOR LABELING EXISTING BUILDINGS

1. Only industrialized buildings bearing a participating-state label issued prior to the effective date of the UAP are automatically eligible for a Commission certification label.
 - a. Prior to affixing certification labels, the inspection agency is required to ensure the buildings have not been modified, altered or damaged.
 - b. Commission certification labels must be permanently attached next to the existing participating-state labels. Except for certification label numbers, information on the new and existing data plate must be identical.
 - c. Inspection agency is required to submit a completed relabeled module report form along with pictures of the existing labels, data plates, and the exterior and interior of the modules, copies of inspection reports and new data plates to the Commission. The complete report must be submitted no later than 15 days after receiving Commission authorization to release labels.
2. Industrialized buildings bearing a participating state label that are altered or modified are required to comply with additional requirements specified under (a) through (c) of this subsection.
3. Industrialized buildings bearing a non-participating state label must be proven by a designated agency to meet the destination state's current codes before being eligible to have a Commission certification label affixed.
 - a. Evaluation agencies must perform a full and complete review of the documents approved by or on behalf of the non-participating state. A deviation report must identify the differences between the applicable provisions of the non-participating and the destination state's codes. Complete documents of any modification necessary to bring the buildings into compliance with the new codes must be submitted to the evaluation agency for review and approval.
 - b. Inspection agency must perform an initial inspection to ensure the original building has not been altered or damaged. All subsequent modifications must be inspected by an inspection agency to ensure compliance with applicable codes and approved designs.
 - c. The inspection agency must inspect construction elements, methods or materials for compliance, and require removal of permanent construction where necessary, if the non-participating state approved documents do not conclusively demonstrate compliance with a provision of the destination state's code.
 - d. Designated agency shall submit a completed relabeled module report form, along with copies of all relevant documents – such as inspection reports, data plates, and approved designs – and pictures of existing labels to the Commission.
4. The Commission will authorize the release of certification labels to the custody of the inspection agency after receiving proper payment. Certification labels shall only be affixed by the inspection agency to completed, code-compliant industrialized buildings.

The following white paper incorporates the various Commission guidelines and requirements issued in the last few years on Bulletin B11.14.95 Application of Building Systems Documents.

The term "Master Approval Package" will replace "Building Systems Documents" to eliminate any confusion.

MASTER APPROVAL PACKAGE

INTRODUCTION

A Master Approval Package (MAP) is a set of documents that provides manufacturers the ability to develop custom plans within established limits and to incorporate various optional features. It eliminates or reduces the need to have each individual plan reviewed and approved by an evaluation agency.

MAPs do not relieve manufacturers from developing required construction details specified under Model Rules and Regulations Part V, Section 1(B). Additionally, they cannot be set up in a manner that permits manufacturers to perform structural calculations or design building elements without evaluation agency oversight.

DEVELOPMENT

A MAP for one- and two-family dwelling buildings may contain several subsystems for different building configurations such as ranch, cape, and two-story. The following describes a ranch subsystem to illustrate various – but not all – options that may be included in a MAP.

A typical ranch subsystem could contain a single floor plan that includes standard information such as window and door sizes, minimum light and ventilation requirements, smoke detector and electrical outlet locations, etc. Information would have to be specific where necessary. It would not be permissible to cite or reference codes or code sections as a method to demonstrate compliance.

The package would show or describe various parameters to ensure permitted plan configurations do not exceed the limits of applicable codes and approved calculations. Typical parameters could include, but are not limited to, allowable width, length, height of modules or buildings; maximum live, dead and other loads, maximum wind speeds and exposures, etc.

Any structural and architectural options including restrictions on their use or application would be made part of the approved documents. The set could contain custom charts and tables for various structural members similar to prescriptive joist, header and girder tables provided in building and other codes. Some typical options are identified below:

- A. Optional window and door schedules
- B. Header charts for optional windows, doors and other openings
- C. Mate line girder charts for various spans and loading conditions
- D. Interior and exterior column and stud charts

- E. Optional stair configurations
- F. Optional bath and kitchen configurations including:
 - 1. Island kitchens
 - 2. U-kitchen
 - 3. L-kitchen
 - 4. Half- and full-baths

“AS-BUILT” PLAN SUBMITTALS

Buildings designed using a MAP would be identified on monthly production reports by entering “yes” under the “[MAP/System] Yes/No” column. Manufacturers would file copies of “as-built” documents monthly with the Commission which would generally consist of a cover page, dimensioned floor plans, elevations and cross sections. Additional documents or information would be submitted when necessary to identify or verify the selection of various building elements.

MANUFACTURER AND DESIGNATED AGENCY RESPONSIBILITIES

Compliance assurance manual would include relevant internal document controls and identify by title person(s) responsible for developing specific documents from MAPs.

Inspection agencies would be responsible for monitoring manufacturers’ ability to develop specific plans and related designs from MAPs. Manufacturers that are unwilling or unable to develop conforming designs would be required to obtain individual approvals from their evaluation agencies.

Evaluation agencies would be responsible for ensuring MAPs are not overly complex or burdensome on inspection agency inspectors.