MINUTES
MHCC MEETING

August 18-20, 2015

Holiday Inn Washington – Capitol | 550 C Street, SW | Washington, DC 20024

MINUTES
MANUFACTURED HOUSING CONSENSUS COMMITTEE (MHCC) MEETING

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DAY 1: Tuesday, August 18, 2015

Call to Order

MHCC Chairman, Richard Weinert, called the meeting to order at 9:00 a.m. (Eastern) and welcomed new committee members Joseph L. Anderson II, Joseph H. Sadler, Jr., Robin Roy, and John W. Weldy and asked that they introduce themselves to the committee. Chairman Weinert reminded committee members to keep on point and that after the committee has had a chance to discuss each topic and if time permits he would allow public comments.

Roll Call

Kevin Kauffman, Program Manager of the Administering Organization (AO) Home Innovation Research Labs, called the roll and announced that a quorum was present. Guests were asked to introduce themselves. See Appendix A for a list of meeting participants.

Introduction and Opening Remarks

Pamela Beck Danner, Administrator of the Office of Manufactured Housing Programs (DFO), welcomed the MHCC committee members. Ms. Danner noted that this is a meeting of the Manufactured Housing Consensus Committee (MHCC) and that the meeting notice was published in the July 24, 2015 Federal Register.
DFO Danner also provided background on the creation of the MHCC:

> Section 604(a) of the National Manufactured Housing Construction and Safety Standards Act of 1974, as amended by the Manufactured Housing Improvement Act of 2000 (42 U.S.C. 5401 et seq.) (the Act) establishes the MHCC. Among other things, the MHCC is responsible for providing periodic recommendations to HUD to adopt, revise, and interpret the manufactured housing construction and safety standards. HUD's Manufactured Home Construction and Safety Standards are codified at 24 CFR part 3280. According to Section 604(a)(4) of the Act, the MHCC is required to consider revisions not less than once during each 2-year period.

DFO Danner introduced Michael Henretty with SEBA Professional Services, LLC for the HUD-Administered Manufactured Home State Installation Program for the HUD administered states; and Shelby Giles with Savan Group for the HUD Manufactured Home Dispute Resolution Program (DRP) for the 23 states that do not have a dispute resolution program.

DFO Danner thanked Toni Price and Jane Hofilena, BLH Technologies, for providing the meeting planning logistics and turned the floor over to Kevin Kauffman (AO).

Mr. Kauffman provided a brief summary of meeting procedures to ensure compliance with MHCC Bylaws and Robert's Rules of Order are followed. He also noted that all voting items would be followed-up by letter ballot

and the vote would not be final until the letter ballot is complete providing members who were not present an opportunity to participate in the process.

Approval of the Minutes

MHCC Motion to approve the minutes of the December 2-4, 2014 MHCC Committee meeting.

Maker: Timothy Sheahan Second: Steven Anderson
Meeting Vote: Passed with 1 abstention.

Update on Approved Proposals

Richard Mendlen, Senior Structural Engineer, Office of Manufactured Housing Programs from HUD, provided a summary of Log Items previously approved or approved as modified by the MHCC. He also noted that actions taken at this meeting will be considered in the 4th Group of Standards Changes.

Subcommittee Reports to the MHCC

Technical Systems Subcommittee

Chairman of the Technical Systems Subcommittee, Manual Santana, stated that there was nothing to report.

Structure and Design Subcommittee

Chairman of the Structure and Design Subcommittee, David Tompos, presented the following Log Items to the committee for action:

LOG 78: **§ 3280.304 Materials**
MHCC Motion to approve Log 78 as modified.
Maker: Steven Anderson Second: Timothy Sheahan
Meeting Vote: 15-3-0

LOG 100: **§ 3280.204 Kitchen cabinet protection**
MHCC Motion to approve Log 100 as modified.
Maker: Ishbel Dickens Second: Debra Blake
Meeting Vote: 18-0-0

LOG 129: **§ 3280.4(e)(3) & § 3280.304**
MHCC Motion to approve Log 129.
Maker: Steven Anderson Second: Leo Poggione
Meeting Vote: 17-0-1

This concluded the Structure and Design Subcommittee's report.

BREAK

Public Comment Period

There were no public comments at this time.

Review Current Log and Actions Items (AI)

The committee proceeded to review Log Items.

LOG 87: **§ 3280.112 Hallways**

MHCC Motion to refer Log 87 to the Structure and Design Subcommittee.

Maker: Ishbel Dickens Seconded: Rick Hanger

Meeting Vote: 14-4-0

LOG 90: **§ 3285.2 Manufacturer installation instructions**

The AO provided a brief history of Log 90. Although Log 90 was approved as modified at the December 2014 MHCC meeting, it failed the required 2/3 majority in the ballot vote. As a result, Log 90 is still considered live at this time.

MHCC Motion to disapprove Log 90.

Maker: Steven Anderson Second: Timothy O'Leary

Meeting Vote: 11-8-0

LOG 106: **§ 3282.362 Labels**

MHCC Motion to disapprove Log 106.

Maker: David Tompos Second: Steven Anderson

Meeting Vote: 17-1-1

LUNCH BREAK

LOG 128: **§ 3280.603 General requirements**

David Tompos provided some background information on the process that went into creating Log 128 and following a discussion of its merits and whether or not it should be sent back to the General Subcommittee, the committee took action.

MHCC Motion to approve Log 128 as modified.

Maker: Steven Anderson Second: Michael Lubliner

Meeting Vote: 17-2-0

Guest Speaker

Ed Golding, Principal Deputy Assistant Secretary for Housing (HUD), addressed the committee and thanked them for their hard work and their commitment to ensure that manufactured homes remain affordable and of the highest quality.

Update on Energy Efficiency Standards for Manufactured Homes

DFO Danner welcomed Joseph Hagerman, Policy Advisor, Department of Energy (DOE), who gave a summary presentation of the Manufactured Housing Working Group (MHWG) (see Appendix B).

Mr. Hagerman stated that the creation of the MHWG was authorized under section 413 of the Energy Independence and Security Act of 2007 (EISA) and that they were tasked by the Appliance Standards and Rulemaking Federal Advisory Committee (ASRAC) to complete the Term Sheet for a proposed rule.

The Regulatory Text for this proposed rule is scheduled to be published in the *Federal Register* within the next few months and will be subject to public comment at that time.

The big issue continued to be cost, and how much it would increase the cost of manufactured homes. It was noted that DOE is developing calculation software similar to RES-Check for manufactured homes which it would

identify as MAN-Check. In response from a question by Mr. Weiss, DFO Danner stated that HUD had not received a regulatory cost-benefit analysis from DOE.

Since enforcement is not addressed in this proposed rule, DOE is considering issuing a RFI on enforcement options for the DOE energy standards. Mr. Hagerman answered questions from committee members and thanked them for their time.

BREAK

Review Current Log and Actions Items (AI)

LOG 107: **§ 3280.2 Definitions**
MHCC Motion to approve Log 107.
Maker: Steven Anderson Second: Leo Poggione
The motion carried.

LOG 108: **§ 3280.607 Plumbing fixtures**
MHCC Motion to table Log 108 until review of Log 23.
Maker: Manuel Santana Second: Leo Poggione
The motion carried.

LOG 109: **§ 3280.210, Subpart C**
MHCC Motion to disapprove Log 109.
Maker: Manuel Santana Second: Steven Anderson
Meeting Vote: 19-0-0

LOG 110: **§ 24 CFR 3280.211, Subpart C**
MHCC Motion to disapprove Log 110.
Maker: David Tompos Second: Leo Poggione
The motion carried unanimously.

LOG 111: **§ 3280.2 Definitions, 3280.105 Exit Facilities, 3280.205 Fire Blocking**
MHCC Motion to disapprove Log 111.
Maker: David Tompos Second: Steven Anderson
The motion carried unanimously.

LOG 112: **§ 3280.4(b) Incorporated by reference**
MHCC Motion to approve Log 112.
Maker: Leo Poggione Second: Steven Anderson
The motion carried unanimously.

LOG 113: **§ 3280.4(b)(1) Incorporated by reference**
MHCC Motion to table until the standard is reviewed by HUD.
Maker: David Tompos Second: Timothy O'Leary
Meeting Vote: 18-1-0

Following a motion to adjourn at 4:30 p.m., the committee was invited by HUD to attend a networking session.

DAY 2: Wednesday, August 19, 2015

Reconvene

MHCC Chairman, Richard Weinert, reconvened the meeting at 9:00 a.m.

DFO Danner welcomed and introduced Frank Vetrano, Deputy Assistant Secretary for Risk Management and Regulatory Affairs, HUD. Mr. Vetrano addressed the committee and acknowledged that it was a very diverse and passionate group. Mr. Vetrano stated that the FHA talks about serving the underserved and noted that the term "underserved" changes as the dynamics of the population changes. He stated that the aging-in-place community is an additional underserved group that is looking to the manufactured housing industry for solutions to their continuing housing needs.

Status of EPA's Final Rule on Formaldehyde Emissions from Composite Wood Products

Rick Mendlen introduced Erik Winchester, Acting Chief, Fibers and Organics Branch, National Program Chemicals Division of the EPA, who presented information regarding the EPA's Formaldehyde Emissions Final Rule (see Appendix C).

Mr. Winchester provided some background on the Toxic Substance Control Act (TSCA) Title VI and highlighted product emission standards in statutes and provided details of EPA's proposal. He informed the committee that EPA intends to issue a final rule by the end of 2015.

Review Current Log and Actions Items (AI)

The Committee turned its attention again to the list of Log Items.

LOG 114: **§ 3280.4(i)(20) Incorporation by reference**
MHCC Motion to table Log 114 pending review of reference standards.

Maker: Steven Anderson Second: Timothy O'Leary
The motion carried.

LOG 115: **§ 3280.4(ff)(21) Incorporation by reference**
MHCC Motion to refer Log 115 to the Structure and Design Subcommittee.
Maker: Ishbel Dickens Second: Debra Blake
The motion carried.

LOG 116: **§ 3280.4(aa)(2) Incorporation by reference**
MHCC Motion to table Log 116 until after the break.
Maker: Manuel Santana Second: Michael Lubliner
The motion carried.

Report on HUD Code Reference Standards Update

Jeffrey Legault provided a review of HUD Code reference standards in attempt to identity which updated reference standards, if adopted, would have the greatest impact on the industry and which would cause little or

no change to everyday practice. As an example, manufacturers frequently are already following the newest version of each standard, so they are most likely already complying with newer versions than what are listed in the HUD standards.

MHCC Motion to refer the following reference standards to the Structure and Design Subcommittee:

1. **AISC (2011), *Steel Construction Manual* [CFR § 3280.304(b)(1)];**
2. **NER 272 (2015), *National Evaluation Report, Power Driven Staples, Nails and Allied Fasteners for Use in All Types of Building Construction* [CFR § 3280.304(b)(1)]; and**
3. **APA H815E (2013), *Design & Fabrication of All-Plywood Beams* [CFR § 3280.304(b)(1)]**

Maker: Manuel Santana Second: Leo Poggione
The motion carried.

MHCC Motion to refer the following reference standards to the Technical Systems Subcommittee:

1. **ANSI/ASHRAE 62.2 (2013), *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings* [CFR § 3280.703];**
2. **ASTM E96 (2013), *Standard Test Methods for Water Vapor Transmission of Materials* [CFR § 3280.703]; and**
3. **NFPA 70 (2014), *National Electrical Code (NEC),* (new to the list)**

Maker: Steven Anderson Second: Timothy O'Leary
The motion carried.

BREAK

Review Current Log and Actions Items (AI)

LOG 108 was discussed and tabled again pending Manuel Santana's wordsmithing.

LOG 116: **§ 3280.4(aa)(2) Incorporation by reference**
MHCC Motion to refer Log 116 to the Technical Systems Subcommittee.
Maker: Steven Anderson Second: Joseph Sadler
The motion carried.

LOG 117: **§ 3280.4(aa)(5) Incorporation by reference**
MHCC Motion to approve Log 117.
Maker: Steven Anderson Second: Timothy O'Leary
Meeting Vote: 21-0-0

LOG 118: **§ 3280.4 Incorporation by reference and 3280.703 Minimum standards**
MHCC Motion to refer Log 118 to the Technical Systems Subcommittee.
Maker: Steven Anderson Second: Michael Lubliner
Meeting Vote: 21-0-0

LOG 119: **§ 3280.508(b) Heat loss, heat gain and cooling load calculations**
MHCC Motion to table Log 119 until the next MHCC meeting.
Maker: Steven Anderson Second: Leo Poggione
The motion carried unanimously.

LOG 120: **§ 3280.508(b) Heat loss, heat gain and cooling load calculations**
MHCC Motion to table Log 120 until the next MHCC meeting.
Maker: David Tompos Second: Steven Anderson
The motion carried unanimously.

LOG 121: **§ 3280.508(d) Heat loss, heat gain and cooling load calculations**
MHCC Motion to table Log 121 until the next MHCC meeting.
Maker: Michael Lubliner Second: Steven Anderson
The motion carried unanimously.

LOG 122: **§ 3280.511(a)(1) Comfort cooling certificate and information**
MHCC Motion to table Log 122 until the next MHCC meeting.
Maker: Steven Anderson Second: Rick Hanger
The motion carried unanimously.

LOG 123: **§ 3280.511(a)(2) Comfort cooling certificate and information**
MHCC Motion to table Log 123 until the next MHCC meeting.
Maker: Steven Anderson Second: Michael Lubliner
The motion carried unanimously.

LOG 124: **§ 3280.714(a)(1)(ii) Appliances, cooling**
MHCC Motion to approve Log 124 as modified.
Maker: Steve Anderson Second: Jeffrey Legault
The motion carried unanimously.

LUNCH BREAK

Amend By-Laws to Include 2-Year Revision Cycle

Richard Weinert provided some background on the additional language proposed to Section 9 of the by-laws (see Appendix D). The idea behind the change is to provide the MHCC the same structure as other code writing entities by operating on a 2-year cycle.

There was some concern expressed that the general public would have difficulty proposing language and submitting a Log Item.

MHCC Motion to Approve as Modified (a) through (i) of the proposed language to change by-laws.
Maker: Manuel Santana Second: Steven Anderson
The motion carried unanimously.

After more discussion that focused on the merits of item (j) the committee took the following action:

MHCC Motion to Approve (j) of the proposed language to change by-laws.
Maker: Steven Anderson Second: Manuel Santana
The motion carried unanimously.

Rick Mendlen brought the committee's attention to an item that pertains to Log 87 (§ 3280.112 Hallways – regarding width and depth requirements) that earlier had been referred to the Structure and Design Subcommittee. Mr. Mendlen reminded the committee that Log Items 2 and 3 previously had been approved in

principle in 2012 regarding hallway widths (30 inches). Rick Mendlen asked the committee how they would like to proceed. The committee agreed that each Log Item should stand on its own merit.

> **MHCC Motion to recommend that HUD move forward incorporating Log Items 2 and 3 in the next set of the standard updates.**
> Maker: Jeffrey Legault Seconded: Steven Anderson
> Meeting Vote: 21-0-0

Chairman Weinert adjourned the MHCC at 2:50 p.m. to allow the Regulatory Subcommittee to convene.

Chairman Weinert reconvened the MHCC at 3:20 p.m.

Installation Program Updates

DFO Danner introduced Erhiuvie Abu, President and CEO, and Michael Henretty, Project Manager, from SEBA; and Angelo Wallace, Manufactured Housing Specialist, HUD, serving as GTM on the project. Ms. Abu updated the committee on the progress of the HUD-Administered Manufactured Home State Installation Program (see Appendix E). The pilot training program officially launched in Maryland on July 14, 2015 requiring all installers in Maryland to be licensed by November 1, 2015. The installers are required to pay for their training but there is no fee for the license.

When asked how the inspections have gone so far, Ms. Abu noted that there have been none at this time. The ability of installers to obtain insurance has become a big hurdle. Also, installers are usually small independent contractors lacking the capital to obtain a bond.

Ms. Abu answered questions from the committee and noted that the program's website has launched with additional program information, forms, and FAQs at http://www.manufacturedhousinginstallation.com and thanked the committee members for their time.

DFO Danner informed the committee that because there were no subcommittee reports required for Day 3, the Agenda for Day 3 would be adjusted accordingly.

There was a motion to adjourn at 4:30 p.m.

DAY 3: Thursday, August 20, 2015

Chairman Weinert reconvened the meeting at 9:05 a.m. welcomed everyone back for the third and final day of the MHCC meetings. DFO Danner provided the committee with an updated Day 3 Agenda, requested that members pose for a group photo, and fill-out an evaluation form before leaving at the end of the day.

Review Current Log and Actions Items (AI)

LOG 108: **§ 3280.607 Plumbing fixtures**
MHCC Motion to approve Log 108 as modified.
Maker: David Tompos Second: Leo Poggione
Meeting Vote: 21-0-0

LOG 125: **§ 3280.714(a)(1)(iii) Appliances, cooling**
MHCC Motion to approve Log 125.
Maker: Steven Anderson Second: David Tompos
Meeting Vote: 21-0-0

LOG 126: **§ 3280.715(a)(3)(ii) Circulating air systems**
MHCC Motion to disapprove Log 126.
Maker: Steven Anderson Second: John Weldy
Meeting Vote: 21-0-0

LOG 127: **§ 3280.607(b)(3)(v) Shower compartment**
MHCC Motion to disapprove Log 127.
Maker: Steven Anderson Second: Leo Poggione
Meeting Vote: 11-8-2

Members of the committee were moved by Greg Scott's personal account in which he witnessed a child being treated in a burn unit due to a scalding incident. Everyone was in agreement that this is a VERY IMPORTANT issue, but were not in agreement regarding the best approach to a solution.

There was a discussion that included various potential solutions including the proposed labelling; installer, inspector, and homeowner education; and the fact that any action taken by the committee could take years to be incorporated into regulatory language and adopted into the code. As this was a consumer protection issue the committee looked for a more immediate answer.

Richard Mendlen informed the committee that a guidance memorandum on this topic was published by HUD on April 24, 2015 (see Appendix F).

MHCC Motion to direct HUD to prepare a Guidance Letter regarding the field adjustment of Automatic Compensating Valves and the importance of proper settings.
Maker: Debra Blake Second: Steven Anderson
Meeting Vote: 12-9-0

MHCC Motion to refer the issue of field adjustment of Automatic Compensating Valves to the Regulatory Subcommittee.
Maker: Debra Blake Second: Steven Anderson
The motion carried with a vote of 16-3-0

BREAK

SAA Payments From the Fees

Richard Mendlen and James Martin, HUD and Jason McJury, IBTS, provided a handout (included in Appendix G) summarizing proposed changes to State Administrative Agencies (SAA) compensation calculation.

OPTION A: Mr. Mendlen stated that after Option A was produced, it was clear that there would be significant disparities between states that would enjoy additional funding and states that would suffer less (risking the viability of those programs); therefore, Option B was proposed.

OPTION B: Provides for a guaranteed floor – not a ceiling.

DFO Danner thanked the presenters for their tireless work to produce these options and put before the committee as to which option it would prefer. Lois Starkey also commended HUD for acting in a timely manner.

MHCC Motion to refer SAA Payment Options to the Regulatory Subcommittee.
Maker: Timothy Sheahan Second: Steven Anderson
Motion carried with a vote of 20-1-0

Dispute Resolution Program Presentation

Shelby Giles, Savan Group, provided an update on the HUD Manufactured Home Dispute Resolution Program (DRP) activities (see Appendix H). Ms. Giles noted that the SAAs are doing an excellent job resolving issues before they become official disputes. She announced the launch of a new website that would be available over the next few weeks and that a video is in the works.

DFO Danner stated that she is very impressed with the effectiveness of the program and that many of the participants are retired industry officials. Debra Blake also noted that a colleague serves on a screening group and that the program is working well.

LUNCH BREAK

Chairman Weinert welcomed the committee back and asked if there were any additional items that need to be addressed.

The issue of bonding screws was raised and DFO Danner answered that there is a HUD letter in draft form on the subject. Steven Anderson suggested that MHI and MHARR should distribute it as much as possible upon receipt.

Solar Panel Presentation

James Turner and Aashish Shahani, IBTS, provided information on the status of today's solar technology (see Appendix I) with a focus on system components that are currently available and how this could affect the manufactured housing industry. The main issues regarding solar panels are proper flashing of the roof penetrations and the additional weight (5-10 psf) of the panels.

Following the presentation there was a discussion regarding if, how, and when should there be a section added to the standards, and to provide some guidance from HUD that would indicate how to make a house solar ready from the manufacturer and still be approved by the HUD code.

BREAK

Public Comment Period

Mark Weiss – Thanked HUD for being so responsive to the SAA issue. He also thanked Mark Mazz and David Tompos for moving the multifamily proposed change forward. Mr. Weiss urged the committee to review and act on the DOE ruling (see Appendix J) before it is published and thanked the committee for their work.

Lois Starkey – Thanked HUD and the committee for the great meeting and all of the hard work and stated that it is nice to see that the committee is actually getting things done. Ms. Starkey also noted that the committee should be looking at the AC issue. It was discussed at the last meeting and there were many recommendations; however, HUD considered the recommendations and proceeded as HUD saw appropriate. She noted that the solar panel problem needed to be reviewed and encouraged the committee to continue to work on this issue.

Wrap UP

DFO Danner congratulated the MHCC and thanked them for their time. She also recognized MHCC members who would be leaving the committee at the end of December 2015, presented them with letters of recognition, and thanked them for their service to the industry:

- David Tompos
- Timothy Sheahan
- Greg Scott
- Manuel Santana
- Michael Lubliner

It was announced that the next face-to-face meeting of the MHCC will take place during the Louisville Manufactured Housing Show on January 19-20, 2016 in Louisville, Kentucky. There would be 1 1/2 days of meetings and 1/2 day to attend the show. After some committee members expressed concern over the ability to get through the work load, it was decided that there most likely will be 2 1/2 days of meetings. There will be more details in the coming months.

Chairman Weinert thanked HUD, Kevin Kauffman, Home Innovation Research Labs (AO), and Toni Price and Jane Hofilena, BLH Technologies (Meeting Planner).

DFO Danner thanked Chairman Weinert for his work, the subcommittee chairs (Debra Blake, Manuel Santana, Mark Mazz, and David Tompos), and her staff Patricia McDuffie and Demetress Stringfield.

Toni Price, BLH Technologies, thanked participants for their time and provided information on how to complete and file expense reports.

Kevin Kauffman (AO) reminded the committee of the online submittal for both applications (http://mhcc.homeinnovation.com/Application.aspx) and proposed changes (http://mhcc.homeinnovation.com/)

Chairman Weinert again thanked the committee for their time and adjourned the meeting at 2:55 p.m.

MHCC MEETING

August 18-20, 2015

APPENDIX A: PARTICIPANT LIST

Postmeeting Participant List

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MHCC MEETING

August 18-20, 2015

APPENDIX B: DOE PROPOSED RULE PRESENTATION AND HANDOUT

By Joseph Hagerman

Energy Conservation in Manufactured Housing

Overview of the DOE Proposed Rule

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Joseph Hagerman
Building Technologies Office

The Proposed Rule

- In accordance with section 413 of the Energy Independence and Security Act of 2007, DOE's proposed rulemaking would establish energy conservation standards for manufactured homes manufactured on or after one year following issuance of a final rule.
- DOE developed its proposed standards based on the most recent version of the IECC, the purchase price of manufactured homes, total lifecycle construction and operating costs, and the consensus recommendations of the manufactured housing working group that was established to assist in the development of the proposed rule.
- Compliance and enforcement and the associated costs will be addressed in a separate rulemaking.

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Working Group Charter

- The purpose of the manufactured housing working group was to discuss and, if possible, reach consensus on recommendations for a proposed rule.
- The working group met in-person during six sets of public meetings in 2014 held August 4-5, August 21-22, September 9-10, September 22-23, October 1-2, and October 23-24. The working group included its recommendations in a term sheet that was finalized on October 31, 2014. The Appliance Standards and Rulemaking Federal Advisory Committee approved the working group's recommendations on December 1, 2014.

DOE MH Working Group Members

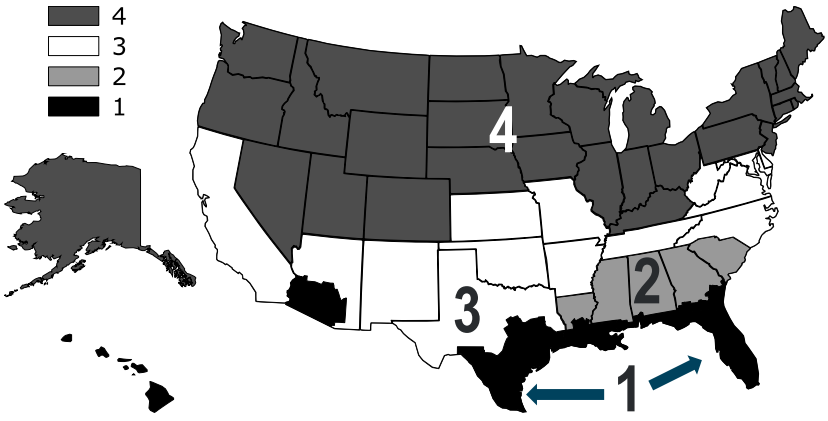
Name	Affiliation
Joseph Hagerman	Department of Energy
John Caskey	ASRAC, National Electrical Manufacturers Association
Bert Kessler	Palm Harbor Homes, Inc.
David Tompos	NTA, Inc.
Emanuel Levy	System Building Research Alliance
Eric Lacey	Responsible Energy Codes Alliance
Ishbel Dickens	National Manufactured Home Owners Association (NMHOA)
Keith Dennis	National Rural Electric Cooperative Association
Lois Starkey	Manufactured Housing Institute
Lowell Ungar	American Council for an Energy-Efficient Economy
Manuel Santana	Cavco Industries

Name	Affiliation
Mark Weiss	Manufactured Housing Association for Regulatory Reform
Michael Lubliner	Washington State University Extension Energy Program
Michael Wade	Cavalier Home Builders
Peter Schneider	Efficiency Vermont
Richard Hanger	Housing Technology and Standards
Richard Potts	Virginia Department of Housing and Community Development
Rob Luter	Lippert Components, Inc.
Robin Roy	Natural Resources Defense Council
Scott Drake	East Kentucky Power Cooperative
Stacey Epperson	Next Step Network
Mark Ezzo	Clayton Homes, Inc.

Climate Zones

Per Term Sheet, Recommendation 3

The proposed standards would establish four climate zones.



5

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Building Thermal Envelope

Per Term Sheet, Recommendation 4

- The building thermal envelope of a manufactured home would be required to meet either ***prescriptive requirements*** or ***performance requirements*****.**
- ***The prescriptive option*** would include requirements for key components of the manufactured home.
  - e.g., ceiling, wall, floor insulation and fenestration *U*-factor
- ***The performance option*** would include an overall thermal transmittance (U_o) requirement in lieu of individual component requirements.
  - Same metric as current HUD requirements (24 C.F.R. § 3280.506)

6

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Prescriptive Option

Per Term Sheet, Recommendation 5

The building thermal envelope would be required to achieve the following prescriptive requirements:

Climate Zone	Ceiling Insulation *R*-value	Wall Insulation *R*-value	Floor Insulation *R*-value	Window *U*-factor	Skylight *U*-factor	Door *U*-factor	Glazed Fenestration SHGC
1	30	13	13	0.35	0.75	0.40	0.25
2	30	13	13	0.35	0.75	0.40	0.33
3	30	21	19	0.35	0.55	0.40	0.33
4	38	21	30	0.32	0.55	0.40	Not Applicable

R-value: h • ft^2 • °F/Btu

U-Factor: Btu/h • ft^2 • °F

SHGC: Solar Heat Gain Coefficient

Prescriptive Option (continued)

Per Term Sheet, Recommendation 5

- For the purpose of compliance with the ceiling insulation *R*-value requirement, the truss heel height would be required to be a minimum of 5.5 inches at the outside face of each exterior wall.
- Ceiling insulation would be required to have either a uniform thickness or a uniform density.
- A combination of *R*-21 batt insulation and *R*-14 blanket insulation could be used for the purpose of compliance with the floor insulation *R*-value requirement for climate zone 4.
- An individual skylight that has an SHGC that is less than or equal to 0.30 would not subject to the glazed fenestration SHGC requirements.

Prescriptive Option (continued)

Per Term Sheet, Recommendation 5

As an alternative to the minimum prescriptive *R*-value requirements, ceilings, walls, and floors could achieve compliance by achieving the following component maximum *U*-factors:

Climate Zone	Ceiling *U*-factor	Wall *U*-factor	Floor *U*-factor
1	0.0446	0.0943	0.0776
2	0.0446	0.0943	0.0776
3	0.0446	0.0628	0.0560
4	0.0377	0.0628	0.0322

Performance Option

Per Term Sheet, Recommendation 6

- The building thermal envelope would be required to achieve a U_o that is less than or equal to the values specified in the following table:

Climate Zone	Single-Section U_o	Multi-Section U_o
1	0.087	0.084
2	0.087	0.084
3	0.070	0.068
4	0.059	0.056

U_o: Btu/h • ft^2 • °F

- U_o would be determined in accordance with the Battelle Method

Overall U-Values and Heating/Cooling Loads – Manufactured Homes, Conner C. C., Taylor, Z. T., Pacific Northwest Laboratory, published 1992, 800-245-2691, http://www.huduser.org/portal/publications/manufhsg/uvalue.html.

Performance Option (continued)

Per Term Sheet, Recommendation 6

- Windows, skylights ,and doors containing more than 50 percent glazing by area would be required to satisfy the SHGC requirements established in the prescriptive option on the basis of an area-weighted average.
- Area-weighted average vertical fenestration *U*-factor would be prohibited from exceeding 0.48 in climate zone 3 or 0.40 in climate zone 4.
- Area-weighted average skylight *U*-factor would be prohibited from exceeding 0.75 in climate zone 3 and climate zone 4.

Installation of Insulation

Per Term Sheet, Recommendation 2

- Manufacturers of manufactured housing would be required to install insulation according to the insulation manufacturer's installation instructions.
- DOE also would require prescriptive requirements for the installation of insulation in certain building thermal envelope components, including access hatches, eave vents, and baffles, to ensure that insulation is able to achieve its intended thermal performance.

Building Thermal Envelope Air Leakage

Per Term Sheet, Recommendation 7

- Manufactured homes would require sealing at all joints, seams, and penetrations associated with the building thermal envelope in accordance with the component manufacturer's installation instructions and DOE specifications.
- Mating line surfaces would be required to be equipped with a continuous and durable gasket.
- Sealing methods between dissimilar materials would be required to allow for differential expansion and contraction and establish a continuous air barrier upon installation of all opaque components of the building thermal envelope.
- All gaps and penetrations in the ceiling, floor, and exterior walls, including ducts, flue shafts, plumbing, piping, electrical wiring, utility penetrations, bathroom and kitchen exhaust fans, recessed lighting fixtures adjacent to unconditioned space, and light tubes adjacent to unconditioned space would require sealing with caulk, foam, gasket, or other suitable material.
- The rough openings around windows, exterior doors, and skylights would be required to be sealed with caulk or foam.
- Duct system register boots that penetrate the building thermal envelope or the air barrier would be required to be sealed to the air barrier or the interior finish materials with caulk, foam, gasket, or other suitable material.

Building Thermal Envelope Air Leakage (continued)

Per Term Sheet, Recommendation 2

- Requirements would be established for the installation of air barriers in various manufactured home components, such as ceilings, walls, and floors.

Duct Leakage and Hot Water Pipe Insulation

Per Term Sheet, Recommendation 7

- Each manufactured home would be required to be equipped with a duct system which is sealed to limit total air leakage to less than or equal to four cubic feet per minute per 100 square feet of conditioned floor area.
- All hot water pipes outside conditioned space or from a service water heating system to a distribution manifold would be required to be insulated to a minimum *R*-value of *R*-3.

Thermostats and Controls

Per Term Sheet, Recommendation 2

- Programmable thermostats would be required for each separate heating and cooling system installed by the manufacturer.
- Supplementary electric-resistance heat would be prohibited when the heat pump compressor is capable of meeting the heating load.

Service Water Heating

Per Term Sheet, Recommendation 2

- Service water heating systems installed by the manufacturer would be required to be installed according to the service water heating manufacturer's installation instructions.
- DOE would require any automatic and manual controls, temperature sensors, and pumps associated with service water heating systems to be accessible
- Heated water circulation systems would be required to include a circulation pump, would be prohibited from using gravity and thermosyphon circulation systems, and would be required to use energy saving controls.

Mechanical Ventilation Fan Efficacy

Per Term Sheet, Recommendation 2

- Whole-house mechanical ventilation system fans would be required to meet the following minimum efficacy requirements:

Fan Type Description	Minimum Efficacy (cfm/Watt)
Range hoods (all air flow rates)	2.8
In-line fans (all air flow rates)	2.8
Bathroom and utility room fans (10 cfm ≤ air flow rate < 90 cfm)	1.4
Bathroom and utility room fans (air flow rate ≥ 90 cfm)	2.8

- Mechanical ventilation fans integral to heating, ventilating, and air conditioning equipment would be required to be powered by an electronically commutated motor.

Equipment Sizing

Per Term Sheet, Recommendation 2

- Sizing of heating and cooling equipment installed by the manufacturer would be required to be determined in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J.

CEILING SUMMARY								
	Single				Double			
R	Total U	UA	Cost*	ΔS	Total U	UA	Cost*	ΔS
22	0.0607	56.10	$ 1,756.07	—	0.0565	88.63	$ 3,038.74	—
30	0.0446	41.22	$ 2,165.37	**$ 409.30**	0.0432	67.75	$ 3,684.88	**$ 646.14**
38	0.0367	33.88	$ 2,537.24	**$ 371.87**	0.0361	56.65	$ 4,201.84	**$ 516.96**
38 (XPS)	0.0367	33.88	$ 2,664.12	**$ 498.75**	0.0361	56.65	$ 4,384.58	**$ 699.70**

WALL SUMMARY								
	Single				Double			
R	Total U	UA	Cost*	ΔS	Total U	UA	Cost*	ΔS
11	0.1025	107.93	$ 1,292.00	—	0.1025	106.19	$ 1,271.14	—
13	0.0943	99.25	$ 1,353.86	**$ 61.86**	0.0943	97.64	$ 1,332.00	**$ 60.86**
19	0.0680	71.60	$ 1,902.79	**$ 548.93**	0.0680	70.45	$ 1,872.07	**$ 540.07**
21 HD	0.0628	66.08	$ 2,029.92	**$ 127.13**	0.0628	65.01	$ 1,997.15	**$ 125.08**
13+5	0.0613	64.50	$ 2,815.69	**$ 785.77**	0.0613	63.46	$ 2,782.76	**$ 785.61**
21 HD+5	0.0458	48.17	$ 3,491.75	**$ 676.06**	0.0458	47.40	$ 3,447.90	**$ 665.15**

FLOOR SUMMARY								
	Single				Double			
R	Total U	UA	Cost*	ΔS	Total U	UA	Cost*	ΔS
11	0.0891	82.31	$ 903.95	—	0.0891	139.69	$ 1,454.17	—
13‡	0.0776	71.69	$ 945.81	**$ 41.86**	0.0776	121.66	$ 1,525.21	**$ 71.03**
19	0.0560	51.72	$ 1,020.06	**$ 74.25**	0.0560	87.77	$ 1,651.20	**$ 126.00**
22	0.0491	45.36	$ 1,143.68	**$ 123.63**	0.0491	76.97	$ 1,861.00	**$ 209.79**
30	0.0322	29.75	$ 1,512.01	**$ 368.32**	0.0322	50.49	$ 2,459.43	**$ 598.43**
30 (XPS)	0.0322	29.75	$ 1,660.09	**$ 516.40**	0.0322	50.49	$ 2,616.27	**$ 755.27**
38 (XPS)	0.0270	24.98	$ 1,815.73	**$ 303.72**	0.0270	42.40	$ 2,880.39	**$ 420.96**

‡ Cost for R-13 blanket extrapolated

WINDOW SUMMARY						
			Single		Double	
Description	U-value	SHGC	Cost*	ΔS	Cost*	ΔS
Aluminum Frame with Clear Single Glazing	1.08	0.70	$ 1,362.64	—	$ 2,307.89	—
Aluminum Frame with Clear Single Glazing + Storm	0.50	0.60	$ 2,312.57	**$ 949.94**	$ 3,916.79	**$ 1,608.90**
Vinyl Frame with Clear Dual Glazing	0.49	0.71	$ 2,402.93	**$ 90.35**	$ 4,069.82	**$ 153.03**
Vinyl Frame with Low-E Dual Glazing	0.35	0.33	$ 2,717.95	**$ 315.02**	$ 4,603.37	**$ 533.54**
Vinyl Frame with Low-E Dual Glazing + Argon	0.32	0.33	$ 2,796.09	**$ 78.14**	$ 4,735.72	**$ 132.35**
Vinyl Frame with Enhanced Low-E Dual Glazing	0.35	0.25	$ 2,808.30	**$ 12.21**	$ 4,756.40	**$ 20.68**
Vinyl Frame with Enhanced Low-E Dual Glazing + Argon	0.31	0.25	$ 2,881.56	**$ 73.26**	$ 4,880.48	**$ 124.08**
Vinyl Frame with Low-E Dual Glazing + Argon + Enhanced Glass Spacer	0.31	0.31	$ 3,235.65	**$ 354.09**	$ 5,480.20	**$ 599.72**
Vinyl Frame with Enhanced Low-E Dual Glazing + Argon + Enhanced Glass Spacer	0.30	0.25	$ 3,308.91	**$ 73.26**	$ 5,604.28	**$ 124.08**

*Cost of materials to the consumer

ΔS Incremental cost

Prototype Home Characteristics

	SINGLE	DOUBLE	
Home Size	14x66	28x56	
Perimeter (ft)	160	168	
Wall Height (ft)	7.5	7.5	
Gross Wall Area (ft^2)	1200	1260	
Opaque wall area (ft^2)	1053	1036	
Window area (ft^2)	111	188	12% of floor area
Door area (ft^2)	36	36	
Ceiling Area (ft^2)	924	1568	
Floor Area (ft^2)	924	1568	
Total Envelope Area	**3048**	**4396**	

CEILING

SINGLE-SECTION

R-22

Fraction of ceiling with reduced insulation thickness **25.45%**

Description	At Trusses (Bottom Chord)			Between Trusses		Cost
Insulation coverage	None	Full	Partial	Full	Partial	
Percent of ceiling area	4.00%	4.47%	1.5%	67.09%	22.9%	
R-value of non-insulation materials	3.555	3.555	3.555	1.675	1.675	
Blown Fiberglass Insulation R-value	0	17.35	Variable	22	Variable	$ 275.16
Total path R-value	3.555	20.905	9.79	23.675	13.14	
Path U-factor	0.281	0.048	0.102	0.042	0.076	
Truss 16" o.c. 2.5" heel, 23.5" ridge						$ 1,295.91
Other materials costs						$ 184.99
OVERALL CEILING U-value	**0.0607**			UA ceiling	**56.10**	
CEILING COST						**$ 1,756.07**

R-30

Fraction of ceiling with reduced insulation thickness **23.55%**

Description	At Trusses (Bottom Chord)			Between Trusses		Cost
Insulation coverage	None	Full	Partial	Full	Partial	
Percent of ceiling area	4.00%	4.59%	1.4%	68.81%	21.2%	
R-value of non-insulation materials	3.555	3.555	3.555	1.675	1.675	
Blown Fiberglass Insulation R-value	0	25.35	Variable	30	Variable	$ 342.10
Total path R-value	3.555	28.905	19.81	31.675	22.71	
Path U-factor	0.281	0.035	0.050	0.032	0.044	
Truss 16" o.c. 5.5" heel, 26.5" ridge						$ 1,527.79
Other materials costs						$ 295.48
OVERALL CEILING U-value	**0.0446**			UA ceiling	**41.22**	
CEILING COST						**$ 2,165.37**

R-38 (dense pack at eaves)

Fraction of ceiling with reduced insulation thickness **26.18%**

Description	At Trusses (Bottom Chord)			Between Trusses		Cost
Insulation coverage	None	Full	Partial	Full	Partial	
Percent of ceiling area	4.00%	4.43%	1.6%	66.44%	23.6%	
R-value of non-insulation materials	3.555	3.555	3.555	1.675	1.675	
Blown Fiberglass Insulation R-value	0	33.35	Variable	38	Variable	$ 504.47
Total path R-value	3.555	36.905	29.54	39.675	33.97	
Path U-factor	0.281	0.027	0.034	0.025	0.029	
Truss 16" o.c. 7.5" heel, 28.5" ridge						$ 1,643.73
Other materials costs						$ 389.04
OVERALL CEILING U-value	**0.0367**			UA ceiling	**33.88**	
CEILING COST						**$ 2,537.24**
Foam sheathing related costs						$ 126.89
CEILING COST (XPS)						**$ 2,664.12**

CEILING

DOUBLE-SECTION

R-22

Fraction of ceiling with reduced insulation thickness **13.02%**

Description	At Trusses (Bottom Chord)			Between Trusses		Cost
Insulation coverage	None	Full	Partial	Full	Partial	
Percent of ceiling area	4.00%	5.22%	0.8%	78.28%	11.7%	
R-value of non-insulation materials	3.555	3.555	3.555	1.675	1.675	
Blown Fiberglass Insulation R-value	0	17.35	Variable	22	Variable	$ 490.83
Total path R-value	3.555	20.905	9.79	23.675	13.14	
Path U-factor	0.281	0.048	0.102	0.042	0.076	
Truss 16" o.c. 2.5" heel, 44.5" ridge						$ 2,334.73
Other materials costs						$ 213.18
OVERALL CEILING U-value	**0.0565**			UA ceiling	**88.63**	
CEILING COST						**$ 3,038.74**

R-30

Fraction of ceiling with reduced insulation thickness **12.05%**

Description	At Trusses (Bottom Chord)			Between Trusses		Cost
Insulation coverage	None	Full	Partial	Full	Partial	
Percent of ceiling area	4.00%	5.28%	0.7%	79.16%	10.8%	
R-value of non-insulation materials	3.555	3.555	3.555	1.675	1.675	
Blown Fiberglass Insulation R-value	0	25.35	Variable	30	Variable	$ 639.57
Total path R-value	3.555	28.905	19.81	31.675	22.71	
Path U-factor	0.281	0.035	0.050	0.032	0.044	
Truss 16" o.c. 5.5" heel, 47.5" ridge						$ 2,733.31
Other materials costs						$ 312.00
OVERALL CEILING U-value	**0.0432**			UA ceiling	**67.75**	
CEILING COST						**$ 3,684.88**

R-38 (dense pack at eaves)

Fraction of ceiling with reduced insulation thickness **13.40%**

Description	At Trusses (Bottom Chord)			Between Trusses		Cost
Insulation coverage	None	Full	Partial	Full	Partial	
Percent of ceiling area	4.00%	5.20%	0.8%	77.94%	12.1%	
R-value of non-insulation materials	3.555	3.555	3.555	1.675	1.49	
Blown Fiberglass Insulation R-value	0	33.35	Variable	38	Variable	$ 876.36
Total path R-value	3.555	36.905	29.54	39.675	33.97	
Path U-factor	0.281	0.027	0.034	0.025	0.029	
Truss 16" o.c. 7.5" heel, 49.5" ridge						$ 2,932.60
Other materials costs						$ 392.89
OVERALL CEILING U-value	**0.0361**			UA ceiling	**56.65**	
CEILING COST						**$ 4,201.84**
Foam sheathing related costs						$ 182.74
CEILING COST (XPS)						**$ 4,384.58**

WALLS

	Frame	Insulation
Fraction of wall	25%	75%
Constant R-value	1.505	1.505

R-11			**SINGLE**	**DOUBLE**
Description	Frame	Insulation	Cost	Cost
2" × 4" 16" o.c. wood stud	4.375	0	$ 1,084.55	$ 1,067.05
R-11 fiberglass batt	0	11	$ 207.45	$ 204.10
Path R-value	5.88	12.505		
Path U-value	0.17	0.08		
OPAQUE WALL U-value	**0.1025**	UA wall	**107.93**	**106.19**
OPAQUE WALL COST			**$1,292.00**	**$1,271.14**

R-13			**SINGLE**	**DOUBLE**
Description	Frame	Insulation	Cost	Cost
2" × 4" 16" o.c. wood stud	4.375	0	$ 1,084.55	$ 1,067.05
R-13 fiberglass batt	0	13	$ 269.30	$ 264.96
Path R-value	5.88	14.505		
Path U-value	0.17	0.069		
OPAQUE WALL U-value	**0.0943**	UA wall	**99.25**	**97.64**
OPAQUE WALL COST			**$1,353.86**	**$1,332.00**

R-19			**SINGLE**	**DOUBLE**
Description	Frame	Insulation	Cost	Cost
2" × 6" 16" o.c. wood stud	6.875	0	$ 1,550.38	$ 1,525.35
R-19 fiberglass batt	0	18	$ 352.41	$ 346.72
Path R-value	8.38	19.505		
Path U-value	0.119	0.051		
OPAQUE WALL U-value	**0.0680**	UA wall	**71.60**	**70.45**
OPAQUE WALL COST			**$1,902.79**	**$1,872.07**

R-21 HD (High Density)			**SINGLE**	**DOUBLE**
Description	Frame	Insulation	Cost	Cost
2" × 6" 16" o.c. wood stud	6.875	0	$ 1,550.38	$ 1,525.35
R-21 HD fiberglass batt	0	21	$ 479.54	$ 471.79
Path R-value	8.38	22.505		
Path U-value	0.119	0.044		
OPAQUE WALL U-value	**0.0628**	UA wall	**66.08**	**65.01**
OPAQUE WALL COST			**$2,029.92**	**$1,997.15**

WALLS

	Frame	Insulation
Fraction of wall	25%	75%
Constant R-value	1.505	1.505

R-13 + R-5/inch 1" XPS			**SINGLE**	**DOUBLE**
Description	Frame	Insulation	Cost	Cost
2" × 4" 16" o.c. wood stud	4.35	0	$ 1,084.55	$ 1,067.05
R-13 fiberglass batt	0	13	$ 269.30	$ 264.96
R-5/inch 1" XPS (incl. fasteners)	5	5	$ 1,461.83	$ 1,450.76
Path R-value	10.855	19.505		
Path U-value	0.092	0.051		
OPAQUE WALL U-value	**0.0613**	UA wall	**64.50**	**63.46**
OPAQUE WALL COST			**$2,815.69**	**$2,782.76**

R-21 HD + R-5/inch 1" XPS			**SINGLE**	**DOUBLE**
Description	Frame	Insulation	Cost	Cost
2" × 6" 16" o.c. wood stud	6.875	0	$ 1,550.38	$ 1,525.35
R-21 HD fiberglass batt	0	21	$ 479.54	$ 471.79
R-5/inch 1" XPS (incl. fasteners)	5	5	$ 1,461.83	$ 1,450.76
Path R-value	13.38	27.505		
Path U-value	0.075	0.036		
OPAQUE WALL U-value	**0.0458**	UA wall	**48.17**	**47.40**
OPAQUE WALL COST			**$3,491.75**	**$3,447.90**

FLOOR

	Frame		Non-Frame			
R-11 (blanket)	**Insulation**		**Insulation**		**SINGLE**	**DOUBLE**
heated subfloor	**Full**	**Partial**	**Full**	**Partial**	Cost	Cost
Fraction of floor area	0.00%	5.00%	50.00%	45.00%		
Constant R-value		1.84	1.84	1.84		
R-11 Roll insulation		2.75	11	9.625	$ 239.73	$ 406.82
Floor joists (2×6)		0	0	0	$ 538.05	$ 913.06
Path R-value		4.59	12.84	11.465		
Path U-value		0.2179	0.0779	0.0872		
Other materials costs					$ 126.16	$ 134.29
FLOOR U-value	**0.0891**			UA Floor	**82.31**	**139.69**
FLOOR COST					**$ 903.95**	**$ 1,454.17**

R-13 (blanket)	**Insulation**		**Insulation**		**SINGLE**	**DOUBLE**
heated subfloor	**Full**	**Partial**	**Full**	**Partial**	Cost	Cost
Fraction of floor area	0.00%	5.00%	50.00%	45.00%		
Constant R-value	0	1.84	1.84	1.84		
R-13 Roll insulation		3.25	13	11.375	$ 281.59	$ 477.86
Floor joists (2×6)		0	0	0	$ 538.05	$ 913.06
Path R-value		5.09	14.84	13.215		
Path U-value		0.1965	0.0674	0.0757		
Other materials costs					$ 126.16	$ 134.29
FLOOR U-value	**0.0776**			UA Floor	**71.69**	**121.66**
FLOOR COST					**$ 945.81**	**$ 1,525.21**

R-19 (blanket)	**Insulation**		**Insulation**		**SINGLE**	**DOUBLE**
heated subfloor	**Full**	**Partial**	**Full**	**Partial**	Cost	Cost
Fraction of floor area	0.00%	5.00%	50.00%	45.00%		
Constant R-value	0	1.84	1.84	1.84		
R-19 Roll insulation		4.75	19	16.625	$ 355.84	$ 603.85
Floor joists (2×6)		0	0	0	$ 538.05	$ 913.06
Path R-value		6.59	20.84	18.465		
Path U-value		0.1517	0.048	0.0542		
Other materials costs					$ 126.16	$ 134.29
FLOOR U-value	**0.0560**			UA Floor	**51.72**	**87.77**
FLOOR COST					**$ 1,020.06**	**$ 1,651.20**

R-22 (blanket)	**Insulation**		**Insulation**		**SINGLE**	**DOUBLE**
heated subfloor	**Full**	**Partial**	**Full**	**Partial**	Cost	Cost
Fraction of floor area	0.00%	5.00%	50.00%	45.00%		
Constant R-value		1.84	1.84	1.84		
R-11 Roll insulation (x2)		5.5	22	19.25	$ 479.47	$ 813.65
Floor joists (2×6)		0	0	0	$ 538.05	$ 913.06
Path R-value		7.34	23.84	21.09		
Path U-value		0.1362	0.0419	0.0474		
Other materials costs					$ 126.16	$ 134.29
FLOOR U-value	**0.0491**			UA Floor	**45.36**	**76.97**
FLOOR COST					**$ 1,143.68**	**$ 1,861.00**

FLOOR

	Frame		Non-Frame			
R-30 (batt + blanket)	**Insulation**		**Insulation**		**SINGLE**	**DOUBLE**
unheated subfloor	**Full**	**Partial**	**Full**	**Partial**	Cost	Cost
Fraction of floor area	5.00%	5.00%	45.00%	45.00%		
Constant R-value	3.66	3.66	3.66	3.66		
R-11 Roll insulation	11	2.75	11	9.625	$ 239.73	$ 406.82
Floor joists (2×8)	9.38	9.38	0	0	$ 742.73	$ 1,260.39
Air space above roll	1.14	0	1.14	0		
R-19 Batt insulation	0	0	19	17.67	$ 361.33	$ 613.17
Air space above batt	0	0	1.14	0		
Path R-value	25.175	15.785	35.94	30.955		
Path U-value	0.0397	0.0634	0.0278	0.0323		
Other materials costs					$ 168.21	$ 179.06
FLOOR U-value	**0.0322**			UA Floor	**29.75**	**50.49**
FLOOR COST					**$ 1,512.01**	**$ 2,459.43**
Foam sheathing related costs					$ 148.08	$ 156.84
FLOOR COST (XPS)					**$ 1,660.09**	**$ 2,616.27**

R-38 (batt + blanket)	**Insulation**		**Insulation**		**SINGLE**	**DOUBLE**
unheated subfloor	**Full**	**Partial**	**Full**	**Partial**	Cost	Cost
Fraction of floor area	5.00%	5.00%	45.00%	45.00%		
Constant R-value	3.66	3.66	3.66	3.66		
R-19 Roll insulation	19	4.75	19	16.625	$ 395.38	$ 670.95
Floor joists (2×8)	9.38	9.38	0	0	$ 742.73	$ 1,260.39
Air space above roll	1.14	0	1.14	0		
R-19 Batt insulation	0	0	19	15.77	$ 361.33	$ 613.17
Air space above batt	0	0	1.14	0		
Path R-value	33.175	17.785	43.94	36.055		
Path U-value	0.0301	0.0562	0.0228	0.0277		
Other materials costs					$ 168.21	$ 179.06
Foam sheathing related costs					$ 148.08	$ 156.84
FLOOR U-value	**0.0270**			UA Floor	**24.98**	**42.40**
FLOOR COST (XPS)					**$ 1,815.73**	**$ 2,880.39**

MHCC MEETING

August 18-20, 2015

APPENDIX C: FORMALDEHYDE STANDARDS FOR COMPOSITE WOOD PRODUCTS ACT IMPLEMENTING REGULATIONS PRESENTATION

By Erik Winchester

Formaldehyde Standards for Composite Wood Products Act Implementing Regulations

Update for
U.S. Department of Housing and Urban Development
Manufactured Housing Consensus Committee

August 2015

Overview

1. Background on TSCA Title VI
2. Background on CARB ATCM
3. Third-Party Certification
4. Manufactured-by-Date and Stockpiling
5. Labeling
6. Recordkeeping
7. NAF and ULEF Provisions
8. Laminated Products
9. Import Requirements
10. Other Provisions
11. Next Steps and Timeline

Background on TSCA Title VI

- July 7, 2010 - the Formaldehyde Standards for Composite Wood Products Act was signed into law to become the Toxic Substance Control Act (TSCA) Title VI.
- TSCA Title VI establishes numerical formaldehyde emission standards that are identical to the California Air Resources Board (CARB) Phase II limits for:
  - hardwood plywood
  - particleboard
  - medium-density fiberboard (MDF)
- TSCA Title VI directs the implementing regulations to cover a number of areas that help ensure compliance with the formaldehyde emission standards.

Emission Standards in Statutes

Product	Emission Standard in TSCA Title VI	Emission Standard in HUD Regulations
Hardwood Plywood – Veneer Core	0.05 ppm of formaldehyde	0.2 ppm in 24 CFR 3280.308(a)(1)
Hardwood Plywood – Composite Core	0.05 ppm of formaldehyde	0.2 ppm in 24 CFR 3280.308(a)(1)
Medium-Density Fiberboard	0.11 ppm of formaldehyde	N/A
Thin Medium-Density Fiberboard	0.13 ppm of formaldehyde	N/A
Particleboard	0.09 ppm of formaldehyde	0.3 ppm in 24 CFR 3280.308(a)(2)

Background on TSCA Title VI, Cont'

- Directs implementing regulations to address:
  - Labeling
  - Chain-of-custody and recordkeeping requirements
  - Manufactured-by date (sell-through provisions) and stockpiling
  - Ultra Low-emitting Formaldehyde resins (ULEF) and No-added Formaldehyde-based resins (NAF)
  - Finished goods
  - Third-party testing and certification (including auditing and reporting of third party certifiers)
  - Enforcement
  - De minimis (exceptions from implementing regulations, but not emission standards, for products containing very small amounts of composite wood)
  - Hardboard definition

Background on TSCA Title VI, Cont'

TSCA Title VI Section 4 – update HUD regulation on Manufactured Housing

"*Not later than 180 days after the date of promulgation of regulations pursuant to section 601(d) of the Toxic Substances Control Act (as amended by section 2), the Secretary of Housing and Urban Development shall update the regulation contained in section 3280.308 of title 24, Code of Federal Regulations (as in effect on the date of enactment of this Act), to ensure that the regulation reflects the standards established by section 601 of the Toxic Substances Control Act*."

TSCA Title VI and the CARB Airborne Toxics Control Measure (ATCM)

- EPA developed the proposed regulations in coordination with CARB.
- EPA harmonized with CARB regulations wherever practicable.
- CARB submitted comments on EPA's proposal covering topics such as:
  - Recordkeeping (suggesting EPA require distributors and retailers to obtain and keep records to document purchase of compliant products).
  - Definitions (raised panel, purchaser, veneer, etc).
  - Third-party certifiers (TPCs) approving NAF/ULEF applications (possible conflict of interests).
  - Laminated products (CARB is open to exploring options related to laminated products).
  - *De minims* (CARB is open to exploring a *de minimis* exemption).
- EPA attended CARB's workshops and is in continuing discussions with CARB regarding potential changes to the CARB ATCM.

Third-Party Certification

- EPA's proposed TPC program does not preempt CARB's TPC program.
- EPA has worked closely with CARB to harmonize the programs to the extent feasible and is engaged in ongoing dialogue with CARB on reciprocity and data sharing.
- EPA proposed to grandfather TPCs that are already CARB-approved and allow them to continue to certify panel producers for a period of one year after the effective date of the federal rule.
- EPA is currently reviewing and address public comments that encourage enhanced reciprocity with CARB.

Manufactured-by Date and Stockpiling

- **EPA's proposal:**
  - The manufactured-by date would be one year after publication of the final rule.
  - The reference period would be the 2009 calendar year.
  - "Significantly greater" would be defined as an average annual rate 20% greater than the amount manufactured or purchased during the base period.
  - Therefore, "stockpiling" would be defined as manufacturing or purchasing composite wood products between July 7, 2010 and 1 year after the final regulations are promulgated at an average annual rate 20% greater than the amount manufactured or purchased during the 2009 calendar year.
- **Comments:**
  - Comments opposed using 2009 as the reference period because production during that year was low due to the economic recession.
  - Comments correctly noted that importers are considered manufacturers under the TSCA definition of "manufacture. " So products imported after the designated date of manufacture would be subject to the emissions limits.

Labeling

- **EPA's Proposal:**
  - Panels or bundles of panels that are sold, supplied, or offered for sale in the United States would be labeled with:
    - the name of the panel producer;
    - the lot or batch number;
    - the number of the TSCA Title VI accredited TPC; and
    - markings indicating that the product complies with the TSCA Title VI emission standards.
  - Fabricators must label their finished goods with:
    - the fabricator's name;
    - the date the finished good was produced; and
    - a statement that the finished goods are TSCA Title VI compliant.
  - Fabricators may use barcodes.
  - Labels for products produced under the NAF or ULEF exemptions would also have to include the designation "no-added formaldehyde" or "ultra-low emitting formaldehyde."
  - EPA's proposed labeling requirements harmonize with CARB requirements and one label could be used provided the TSVA Title VI statement of compliance is present.

Labeling, cont.

- **Comments Included:**
  - Allow the use of barcodes.
  - Reduce the label to a simple text statement of compliance.
  - Many commenters objected to inclusion of the fabricator's name on the labels of finished goods.
  - Some comments objected to special labeling indicating a product is exempt from testing/certification under their NAF/ULEF provisions.
  - Allow products to be labeled by box or bundle rather than individually.

Recordkeeping

- **EPA proposal:**
  - Panel producers would maintain records of:
    - testing;
    - production, including dates, lot/batch numbers, and changes in materials or processes.
    - purchaser and transporter information;
    - disposition of non-complying lots/batches; and
    - information demonstrating eligibility for reduced testing for NAF products.
  - Laminators using a complaint platform and NAF resin, and those using the NAF or ULEF exemptions must maintain records demonstrating eligibility.
  - Importers and fabricators must maintain:
    - records identifying the panel producer and the date the products were produced and purchased; and
    - bills of lading or invoices that contain a supplier affirmation of compliance.
  - Distributors and retailers must retain invoices and bills of lading.
  - All would maintain copies of labels used.
  - Most records would have to be kept for a period of three years from the date that they are generated.

Recordkeeping cont.

- **Comments:**
  - Many comments suggested EPA match CARB's two year record retention period, another suggested a longer record retention period for upstream entities.
  - Most commenters believed EPA's recordkeeping requirements should be consistent with CARB's, but they did not object to EPA's reduced recordkeeping requirements for distributors and retailers.
  - Some commenters objected to the proposed requirement that panel producers provide test results to purchasers (e.g., fabricators); one comment stated that this testing information was important to fabricators and that smaller fabricators may have difficulties in contracting for this information.

Proposed NAF and ULEF Provisions

- **EPA's Proposal:**
  - Would provide producers of panels made with NAF-based resins with an exemption from TPC oversight and formaldehyde emissions testing for each qualifying product type after the statutory initial testing period of 3 months.
  - Would provide producers of panels made with ULEF resins with an exemption from TPC oversight and formaldehyde emissions testing for each qualifying product type after the statutory initial testing period of 6 months.
    - EPA requested and received public comments on research showing that when humidity and temperature increase, formaldehyde emissions from ULEF products can increase.
- **Comments Included:**
  - Most commenters supported EPA's proposal to match CARB's NAF and ULEF exemptions.
  - Some commenters believed EPA should take a performance based approach and not have special provisions based on technology.

Laminated Products

- **EPA's Proposal:**
  - EPA is proposing to exempt only those laminated products in which a wood veneer is attached to a certified platform without the addition of formaldehyde (i.e., by using a NAF resin).
    - Facilities making laminated products by attaching wood veneers to certified platforms using formaldehyde-based resins would be considered to be making hardwood plywood and would have to comply with the testing and third-party certification requirements.
  - EPA believes that the potential for formaldehyde emissions to increase from attaching a wood veneer to a platform exists regardless of whether a hardwood plywood panel producer or a laminator attaches the veneer.

Laminated Products, cont.

- **Comments Included:**
  - EPA should treat producers of laminated products as fabricators. This would align with CARB's ATCM as currently written.
  - Many newly affected laminated product producers will need more time to come into compliance with the regulations.
  - The proposal could lead to high cost burdens on laminated product producers, many of which are small businesses.

De Minimis Exception

- **EPA's Proposal:**
  - Does not include a proposed exemption from any of the regulatory requirements for products containing *de minimis* amounts of composite wood products.
  - EPA does not have data on the emission levels from "*de minimis*" products.
  - EPA is also unaware of any information indicating that such products would meet the statutory emission standards.

De Minimis Exception cont.

- Comments Included:
  - Most commenters supported a *de minimis* exception to the labeling and/or recordkeeping requirements.
  - One comment suggested *de minimis* exception for products with less than 144 square inches of regulated composite wood product.
  - Some commenters suggested a *de minimis* exception for finished goods/component parts with less than 0.02 cubic meters (20,000 cubic centimeters) of composite wood products, or (b) less than 15% by volume of composite wood products.

Import Requirements

- **TSCA Title VI:**
  - Directs EPA, in coordination with Customs and other federal agencies, to revise the TSCA § 13 regulations as necessary to ensure compliance, thereby "leveling the playing field" among domestic vs. imported products.
- **EPA's Proposal:**
  - TSCA § 13 import certification would be required for articles that are composite wood products and articles that contain composite wood products.

Import Requirements, cont.

- **Comments:**
  - Import certification is unnecessary given that importers are already subject to recordkeeping and labeling requirements.
  - EPA has not traditionally applied the import certification requirements to articles (such as composite wood products).
  - Some commenters believed that import certification would stigmatize their products.
  - Some commenters believed import certification would not result in added health benefits and would result in significant additional paperwork and training burdens.

Other Provisions

- **Non-Complying Lots**
  - EPA proposed to require panel producers to retain lots until test results verify they lot is in compliance with the emission standards.
  - Some commenters suggested this was unnecessary given the costs and the relative rarity of non-complying lots.
  - One commenter noted that downstream purchasers had occasionally received non-complying lots and that this requirement would rectify the problem.

Manufactured Housing Comments on Proposed Rule

- Received Comments from:
  - Manufactured Housing Institute
  - Manufactured Housing Association for Regulatory Reform
  - National Center for Healthy Housing (represented several groups)
- Comments highlighted inconsistencies between HUD (existing) and EPA (proposed) and suggested that HUD not have duplicative requirements when it amends its rule
- Other comments provided on wood veneers, synthetic laminated products, and labeling

Timeline and Next Steps

- Working to finalize the regulations by end of 2015.
- Will attend CARB's future workshops.
- Once final, will conduct outreach to both domestic and foreign composite wood industry and other regulated groups.

Questions?

Contact information:

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Chief, Fibers & Organics Branch

Office of Pollution Prevention & Toxics

202-564-6450

MHCC MEETING

August 18-20, 2015

APPENDIX D:
MHCC PROPOSED BY-LAWS CHANGE

MHCC Proposed By-Laws Change

SECTION 9. Submission of ~~Recommendations~~ Proposed Changes to the MHCSS

a. All Proposed Changes shall be submitted to the AO via an established process.

b. Proposed Changes may be submitted to the AO by anyone at anytime.

c. ~~Recommendations~~ Proposed Changes shall be in the form of a proposed rule, including ~~an~~a ~~economic~~ cost benefit analysis consisting of the costs associated with the proposal and related benefits that would result from the change. To satisfy this requirement, each ~~Committee recommendation~~ Proposed Change must:

   i. Provide a clear, detailed narrative of the proposal and identify the existing Standards that will be affected by the proposal;

   ii. Justify the recommendation as (i) reasonable and practical, (ii) meeting high standards of consumer protection consistent with the purposes of MHIA; and provide best estimates of the cost and economic effects on consumers of the proposal.

d. A Proposed Change can be withdrawn by the submitter up to the point the proposal has been formally transmitted to the Committee (e.g., as part of a committee meeting agenda or through a ballot).

e. Each duly authorized ~~recommendation~~ Proposed Change shall be submitted to HUD by the AO at the end of each two-year cycle.

f. Each two-year cycle will consist of two years (calendar years);

g. The deadline for submitting Proposed Changes for each two-year cycle shall be published in the Federal Register at least 45 days before the deadline.

h. Those Proposed Changes submitted after the published deadline shall be held by the AO until the beginning of the next two-year cycle.

i. At the discretion of the Committee Chair and the AO, a subcommittee or a committee member may submit a Proposed Change during the two-year cycle if that proposal is intended to specifically resolve an issue raised by another proposal submitted in accordance with the deadline for submitting proposals for that two-year cycle.

MHCC MEETING

August 18-20, 2015

APPENDIX E: HUD-ADMINISTERED MANUFACTURED HOME STATE INSTALLATION PROGRAM PRESENTATION AND HANDOUT

By Erhiuvie Abu

The U.S. Department of Housing and Urban Development

HUD-Administered Manufactured Home State Installation Program

Presented by

SEBA Professional Services, LLC

August 19, 2015

HUD Administered Manufactured Housing State Installation Program

Purpose

- The purpose of the program is to implement regulations:
  - 24 CFR Part 3285
  - 24 CFR Part 3286
- The Manufactured Housing Improvement Act of 2000, Model Manufactured Home Installation Standards were implemented in 2008.

HUD Administered Manufactured Housing State Installation Program

Purpose

- States must either operate their own installation program or participate in the federal program.
- State programs must meet or exceed the minimum requirements outlined in the regulations. All state programs must train and license installers working in that state.

HUD Administered Manufactured Housing State Installation Program

Purpose

At present the following states DO NOT have a HUD-approved program:

1. Alaska
2. Connecticut
3. Hawaii
4. Illinois
5. Maryland
6. Massachusetts
7. Montana
8. Nebraska
9. New Jersey
10. Rhode Island
11. South Dakota
12. Vermont
13. Wyoming

HUD Administered Manufactured Housing State Installation Program

Approach

HUD will implement the regulations by:

- Requiring that all manufactured home installers in HUD-Administered states receive a HUD Manufactured Housing Installer License.
- Evaluating and certifying installer training programs to become federally approved.
- Requiring that all manufactured home inspectors meet federal regulations for experience and/or education.
- Tracking the sale and inspection of homes in HUD-Administered states.
- Regulating and improving the installation and performance of manufactured homes within HUD-Administered States to improve the protection of their residents.

HUD Administered Manufactured Housing State Installation Program

Approach & Activities

The HUD-Administered Program Provides:

- Information and coordination for installer training programs.
- Program information packets for each of the HUD-Administered states.
- Conference calls to provide program information and facilitate open discussion with the manufactured housing industry.
- Assistance, coordination and review of installer license applications. Issuance of licenses with HUD approval.
- Communication with the local authority having jurisdiction to provide education.
- Bond and insurance information to meet licensing requirements.
- Assistance with special projects as needed.

HUD Administered Manufactured Housing State Installation Program

Approach: Installation Website

A website has been launched for the HUD-Administered Manufactured Home Installation program at:

http://www.manufacturedhousinginstallation.com/

Site includes program information, forms, FAQs and more.

HUD Administered Manufactured Housing State Installation Program

Approach

- The installation program is being implemented in 4 phases throughout the country.
- **Phases 1 and 2** involve implementing pilot programs in two (2) states (Maryland and Nebraska) in order to:
  - Test the standards and procedures for licensing, training and inspections prior to implementation in all default states.
  - Identify lessons learned and best-practices.
  - Provide insight into practices at the state-level that may affect the implementation of the installation program.
- **Phases 3 and 4** involve the national rollout of the program to Eastern and Western States.

HUD Administered Manufactured Housing State Installation Program

Phase 1 - Maryland

- Officially launched on **July 14, 2015.** Marked by an open industry conference call that had *31 participants*.
- In Maryland, all installers must be licensed by **November 1, 2015.** After this date, no new permits can be issued to installers that are not licensed.
  - Per 24 CFR 3286.107 (d), the only time an installer license is not required is when a home owner is installing their own home for personal use.
- Manufactured Housing Resources held a training session on July 29-30 in Lanham, Maryland. There were *30 attendees* with *14 installers* that took the test for licensing.

HUD Administered Manufactured Housing State Installation Program

Phase 2 - Nebraska

- Officially launches on **September 1, 2015.** Marked by an open industry conference call that is being promoted through several communication outlets.
- In Nebraska, all installers must be licensed by **December 1, 2015.** After this date, no new permits can be issued to installers that are not licensed.
- Manufactured Home Installation Online Training by MHEI will be available on **September 1, 2015**.

HUD Administered Manufactured Housing State Installation Program

Phase 3 - East

Phase 3 includes five (5) states in the east.

Eastern States Include:

- Connecticut
- Massachusetts
- New Jersey
- Rhode Island
- Vermont

Dates

- Program launches on December 1, 2015
- All installers must be licensed by May 1, 2016

HUD Administered Manufactured Housing State Installation Program

Phase 4 - West

Phase 4 includes six (6) states in the west.

Western States Include:

- Alaska
- Hawaii
- Illinois
- Montana
- South Dakota
- Wyoming

Dates

- Program launches on January 1, 2016
- All installers must be licensed by June 1, 2016

HUD Administered Manufactured Housing State Installation Program

Approved Installer Training Programs

- Manufactured Housing Resources presented by George Porter
  - In-person training available to any government, state or entity that would like to sponsor a session.
- Pennsylvania Manufactured Housing Program & Basic Installer Training (August 20 – 21; November 4 – 5 in Harrisburg, PA).
- Manufactured Home Installation Online Training by MHEI
  - Available online September 1, 2015.

HUD Administered Manufactured Housing State Installation Program

Next Steps

- Full implementation of the HUD-Administered Manufactured Home Installation Program in all required states by June 2016.
- Monthly open industry conference calls as follows:
  - September 8, 2015
  - October 13, 2015
  - November 10, 2015
  - December 8, 2015

HUD Administered Manufactured Housing State Installation Program

SEBA Contact Information

- Email: hudinfo@sebapro.com
- Phone: 202-552-7356
- Fax: 202-379-3340
- Address:

  Office of Manufactured Housing Installation Programs
  C/O SEBA Professional Services, LLC
  1325 G Street, NW Suite 500
  Washington, DC 20005

HUD-Administered Manufactured Home Installation Program
Presented by SEBA Professional Services, LLC

Purpose

- The purpose of the program is to implement regulations 24 CFR Part 3285 and 24 CFR Part 3286.
- States must either operate their own installation program or participate in the federal program.

Implementation

- *Phase 1*: Maryland – began on July 14, 2015. Installers licensed by November 1, 2015.
- *Phase 2*: Nebraska – begins September 1, 2015. Installers licensed by December 1, 2015.
- *Phase 3*: Eastern (Connecticut, Massachusetts, New Jersey, Rhode Island, Vermont) – begins December 1, 2015. Installers licensed by May 1, 2016.
- *Phase 4*: Western (Alaska, Hawaii, Illinois, Montana, South Dakota, Wyoming) – begins January 1, 2016. Installers licensed by June 1, 2016.
    - Phase 1 and 2 are pilot programs to test the standards and procedures for licensing, training and inspections, identify lessons learned, best-practices and provide insight into practices at the state-level that may affect the implementation of the installation program.
    - All program kick-offs include a conference call and webinar with HUD, SEBA and industry members in those states.

HUD-Approved Installer Training Programs

- *Manufactured Housing Resources* presented by George Porter. Information at george-porter.com.
    - In-person training available to any government, state or entity that would like to sponsor a session.
- *Pennsylvania Manufactured Housing Program & Basic Installer Training* (August 20 – 21; November 4 – 5 in Harrisburg, PA). Information at http://www.newpa.com/mh
- *Manufactured Home Installation Online Training* by MHEI. More information can be found at the SEBA installation website after the training availability date.
    - Available online September 1, 2015.

Open Industry Conference Calls

- Monthly open industry conference calls are being held to maintain open communication with the manufactured housing industry, provide program updates, clarify program requirements when needed and directly answer questions.
- Currently, calls are scheduled for September 8, October 13, November 10 and December 8, 2015.
- Dial-in: 712-775-7031, pass-code: 569-839. Visit the SEBA installation website to for more information.

Contact Us

- Email: hudinfo@sebapro.com
- Phone: 202-552-7356
- Fax: 202-379-3340
- Program Website: www.manufacturedhousinginstallation.com

MHCC MEETING

August 18-20, 2015

APPENDIX F:
HUD ANTI-SCALD VALVE LETTER (APRIL 24, 2015)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

WASHINGTON, DC 20410-8000

OFFICE OF HOUSING

APR 24 2015

MEMORANDUM FOR: All Manufacturers, PIAs and SAAs

FROM: Pamela Beck Danner
Administrator
Office of Manufactured Housing Programs

SUBJECT: Update -Installation of Mixing Valves and Water Temperature Limiting Devices (Anti-Scald Valves)

This is in follow-up to my memorandum of March 10, 2015, that clarified responsibilities and guidance for manufacturers, IPIAs, and DAPIAs pertaining to the installation of mixing valves and water temperature limiting devices (anti-scald valves) for shower and tub shower combinations and for bathtubs and whirlpool baths now required by the Manufactured Home Construction and Safety Standards. Specifically, §3280.607(b)(3)(v), requires:

- Shower and tub-shower combination valves to be either pressure balanced, thermostatic, or combination mixing valves that conform to the requirements of ASSE 1016 – 2005 and having a maximum temperature setting of 120°F, and

- Hot water supply for bathtubs and whirlpool bathtubs to be equipped with a water temperature limiting device that conforms to the requirements of ASSE 1070 – 2004 and will deliver hot water with a maximum temperature of 120°F.

- The installation, accessibility, and testing of the valves and fixtures are critical to ensuring the fixtures perform as required to limit the temperature of the water delivered from the fixture outlets to a maximum of 120° F. Since my prior memorandum was issued, the Department received information from one SAA and have again reviewed product manufacturers' instructions and verified with valve and fixture suppliers that these devices and fixtures are typically **not** being pre-set at the factory of the product suppliers for the maximum temperature setting of 120° F.

As previously indicated, manufacturers need to obtain DAPIA-approval of the product manufacturer installation instructions/specifications for the valves and fixtures as part of their construction design package. It is also the responsibility of the manufacturer to determine appropriate in-factory quality control measures that when followed will result in a home that complies with the above-emphasized standards requirements.

Accordingly, manufacturers must also include procedures in their quality assurance manuals for in-plant water testing in order to verify that the temperature setting for these devices does not exceed a maximum of 120° F. If the valves and fixtures are not temperature-set and verified by the manufacturer as indicated above, the manufacturer's DAPIA approved installation instructions must be amended to include and require that the temperature setting for these devices is to be water tested (24 CFR 3285.603(e)) and verified during the installation/setup of the home, so as to ensure compliance. Alternatively, home manufacturers may want to request that product suppliers pre-set their valves and devices and provide written verification to manufacturers that the setting will not allow hot water to exceed a maximum temperature of 120° F.

As a reminder, access must be provided in accordance with an approved design that will facilitate setting and adjustment of the devices as well as provide for ongoing maintenance in accordance with product manufacturer instructions.

Please forward this memorandum to your manufacturer clients and ensure they understand the importance of the proper installation, accessibility, and testing of these mixing valves and temperature limiting devices. If you have any questions regarding this issue, please contact your agency's HUD liaison of this office at (202) 708-6423.

MHCC MEETING

August 18-20, 2015

APPENDIX G: STATE ADMINISTRATIVE AGENCY (SAA) PAYMENTS PRESENTATION AND SUMMARY

By Richard Mendlen

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

State Administrative Agency (SAA) Payments

Office of Manufactured Housing Programs

August 20, 2015

Agenda

- Brief Overview
- SAA Payments from Fees – Current State
- SAA Payments from Fees – Potential Revision
- Questions

SAA Payments from Fees – *Current Status*

- Under the current HUD formula, SAAs are allocated $2.50 per transportable section produced in a state, and $9.00 per transportable section located in a state.

- **Fully Approved SAAs VS. Not Fully Approved SAAs**
  - States that were fully approved as of December 27, 2000 receive supplemental funding to match what that state received in the 12 months prior to December 27, 2000.
  - States that were not fully approved as of December 27, 2000 receive no supplemental payments to match what they received in the 12 months prior to December 27, 2000.

3

SAA Payments from Fees – *'Option A'*

- HUD is considering several methods to reorganize state payments.
- Under the "10-20-30" method, states would be allocated:
  - $10.00 per transportable section located in that state.
  - $20.00 per transportable section produced in a state and then exported from that state.
  - $30.00 per transportable section both produced and located in that same state.
- States would no longer be guaranteed funding levels equivalent to the 12 months prior to December 27, 2000.

4

SAA Payments from Fees – *'Option B'*

- Under an additional method being considered, HUD would guarantee all states (regardless of approval status before December 27, 2000) funding levels equivalent to those received in fiscal year 2014.
- Additional payments above those thresholds would be based upon per section rates, which would be $9.00 per section located in a state, $14.00 per section manufactured and exported from a state, and $23.00 per section manufactured and located in the same state, respectively.
- At this time, HUD has not formally proposed any SAA payment modification to the MHCC.

Questions?

STATE PAYMENT SUMMARY[1]

STATE	FY14 BASELINE INCLUDING SUPPLEMENTAL PAYMENT	OPTION A - 10/20/30 PAYMENTS BASED ON DISTRIBUTION OF $10.00 FOR EACH FLOOR IMPORTED, $20.00 FOR EACH FLOOR EXPORTED, AND $30.00 FOR EACH FLOOR STAYING IN PRODUCING STATE			OPTION B - 9/14/24 PAYMENTS BASED ON DISTRIBUTION OF: $14.00 FOR EACH FLOOR PRODUCED IN A STATE, $9.00 FOR EACH FLOOR LOCATED IN A STATE, AND SUPPLEMENTAL PAYMENT TO ENSURE NO LESS THAN FY14		
		FY16 OPTION A ESTIMATED ANNUAL PAYMENT	FY17 OPTION A ESTIMATED ANNUAL PAYMENT	FY18 OPTION A ESTIMATED ANNUAL PAYMENT	FY16 OPTION B ESTIMATED ANNUAL PAYMENT	FY17 OPTION B ESTIMATED ANNUAL PAYMENT	FY18 OPTION B ESTIMATED ANNUAL PAYMENT
Alabama	$272,914.00	$323,750.00	$339,950.00	$356,960.00	$272,914.00	$272,914.00	$272,914.00
Arizona	$160,599.00	$90,000.00	$94,510.00	$99,260.00	$160,599.00	$160,599.00	$160,599.00
Arkansas	$92,251.00	$24,230.00	$25,450.00	$26,730.00	$92,251.00	$92,251.00	$92,251.00
California	$174,248.00	$146,830.00	$154,180.00	$161,910.00	$174,248.00	$174,248.00	$174,248.00
Colorado	$10,188.00	$12,490.00	$13,120.00	$13,780.00	$11,241.00	$11,808.00	$12,402.00
Florida	$67,835.00	$169,760.00	$178,260.00	$187,190.00	$132,660.00	$139,302.00	$146,279.00
Georgia	$363,081.00	$149,350.00	$156,830.00	$164,680.00	$363,081.00	$363,081.00	$363,081.00
Idaho	$41,194.00	$37,680.00	$39,570.00	$41,560.00	$41,194.00	$41,194.00	$41,194.00
Illinois	$11,745.00	$14,400.00	$15,120.00	$15,880.00	$12,960.00	$13,608.00	$14,292.00
Iowa	$4,095.00	$5,020.00	$5,280.00	$5,550.00	$4,518.00	$4,752.00	$4,995.00
Kentucky	$31,212.00	$38,250.00	$40,170.00	$42,180.00	$34,425.00	$36,153.00	$37,962.00
Louisiana	$53,865.00	$66,000.00	$69,300.00	$72,770.00	$59,400.00	$62,370.00	$65,493.00
Maine	$32,890.00	$6,380.00	$6,700.00	$7,040.00	$32,890.00	$32,890.00	$32,890.00
Maryland	$13,977.00	$2,200.00	$2,310.00	$2,430.00	$13,977.00	$13,977.00	$13,977.00
Michigan	$25,326.00	$31,030.00	$32,590.00	$34,220.00	$27,927.00	$29,331.00	$30,798.00
Minnesota	$64,195.00	$38,410.00	$40,350.00	$42,390.00	$64,195.00	$64,195.00	$64,195.00
Mississippi	$118,845.00	$79,710.00	$83,710.00	$87,900.00	$118,845.00	$118,845.00	$118,845.00
Missouri	$122,849.00	$14,690.00	$15,430.00	$16,210.00	$122,849.00	$122,849.00	$122,849.00
Nebraska	$2,551.50	$10,850.00	$11,410.00	$11,990.00	$7,973.00	$8,385.00	$8,811.00
Nevada	$21,078.00	$4,610.00	$4,860.00	$5,120.00	$21,078.00	$21,078.00	$21,078.00
New Jersey	$10,962.00	$4,120.00	$4,330.00	$4,550.00	$10,962.00	$10,962.00	$10,962.00
New Mexico	$18,204.50	$45,570.00	$47,860.00	$50,260.00	$35,613.00	$37,402.00	$39,278.00
New York	$20,874.00	$35,740.00	$37,540.00	$39,420.00	$29,806.00	$31,306.00	$32,874.00
North Carolina	$44,530.50	$131,870.00	$138,480.00	$145,410.00	$100,727.00	$105,776.00	$111,069.00
North Dakota	$10,665.00	$13,080.00	$13,740.00	$14,430.00	$11,772.00	$12,366.00	$12,987.00
Oregon	$106,397.00	$83,600.00	$87,800.00	$92,200.00	$106,397.00	$106,397.00	$106,397.00
Pennsylvania	$149,042.00	$163,500.00	$171,690.00	$180,300.00	$149,042.00	$149,042.00	$149,042.00
Rhode Island	$126.00	$160.00	$170.00	$180.00	$144.00	$153.00	$162.00
South Carolina	$172,783.00	$37,920.00	$39,820.00	$41,820.00	$172,783.00	$172,783.00	$172,783.00
South Dakota	$5,553.00	$6,810.00	$7,160.00	$7,520.00	$6,129.00	$6,444.00	$6,768.00
Tennessee	$271,304.00	$357,030.00	$374,890.00	$393,660.00	$271,304.00	$271,304.00	$283,042.00
Texas	$591,708.00	$738,860.00	$775,820.00	$814,620.00	$591,708.00	$591,708.00	$617,662.00
Utah	$3,321.00	$4,080.00	$4,290.00	$4,510.00	$3,672.00	$3,861.00	$4,059.00
Virginia	$16,399.00	$31,130.00	$32,690.00	$34,340.00	$25,457.00	$26,733.00	$28,082.00
Washington	$82,831.00	$19,180.00	$20,160.00	$21,180.00	$82,831.00	$82,831.00	$82,831.00
West Virginia	$55,980.00	$20,500.00	$21,530.00	$22,610.00	$55,980.00	$55,980.00	$55,980.00
Wisconsin	$66,456.00	$10,270.00	$10,800.00	$11,360.00	$66,456.00	$66,456.00	$66,456.00
HUD-Alaska[2]	$333.00	$410.00	$440.00	$470.00	$369.00	$396.00	$423.00
HUD-Connecticut[2]	$1,206.00	$1,490.00	$1,570.00	$1,650.00	$1,341.00	$1,413.00	$1,485.00
HUD-Delaware[2]	$4,455.00	$5,460.00	$5,740.00	$6,030.00	$4,914.00	$5,166.00	$5,427.00
HUD-DC[2]	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
HUD-Hawaii[2]	$81.00	$110.00	$120.00	$130.00	$99.00	$108.00	$117.00
HUD-Indiana[2]	$25,513.50	$150,960.00	$158,520.00	$166,450.00	$108,064.00	$113,476.00	$119,153.00
HUD-Kansas[2]	$6,287.00	$17,340.00	$18,210.00	$19,140.00	$13,370.00	$14,041.00	$14,758.00
HUD-Massachusetts[2]	$2,223.00	$2,730.00	$2,870.00	$3,020.00	$2,457.00	$2,583.00	$2,718.00
HUD-Montana[2]	$5,094.00	$6,250.00	$6,570.00	$6,900.00	$5,625.00	$5,913.00	$6,210.00
HUD-New Hampshire[2]	$4,095.00	$5,020.00	$5,280.00	$5,550.00	$4,518.00	$4,752.00	$4,995.00
HUD-Ohio[2]	$17,534.50	$50,240.00	$52,770.00	$55,420.00	$38,540.00	$40,481.00	$42,514.00
HUD-Oklahoma[2]	$22,212.00	$27,220.00	$28,590.00	$30,020.00	$24,498.00	$25,731.00	$27,018.00
HUD-Vermont[2]	$1,989.00	$2,450.00	$2,580.00	$2,710.00	$2,205.00	$2,322.00	$2,439.00
HUD-Wyoming[2]	$2,502.00	$3,070.00	$3,230.00	$3,400.00	$2,763.00	$2,907.00	$3,060.00
HUD-Canada[2]	$14.00	$110.00	$140.00	$170.00	$83.00	$106.00	$129.00

Footnotes:

[1] - Amounts based on an assumed production increase of 5% per year from actual FY14 production and location floor counts.

[2] - HUD did not retains any fees for responsibilities in HUD SAA states in FY14 but is being shown for comparison purposes only.

Total Distributions:	FY14	FY16 OPTION A	FY17 OPTION A	FY18 OPTION A	FY16 OPTION B	FY17 OPTION B	FY18 OPTION B
Payments to SAA States:	$3,312,074.50	$2,969,060.00	$3,117,870.00	$3,274,120.00	$3,490,008.00	$3,515,334.00	$3,579,587.00
Retained for HUD States:	$93,539.00	$272,860.00	$286,630.00	$301,060.00	$208,846.00	$219,395.00	$230,446.00

MHCC MEETING

August 18-20, 2015

APPENDIX H: HUD MANUFACTURED HOME DISPUTE RESOLUTION PROGRAM (DRP) PRESENTATION

By Shelby Giles

HUD Manufactured Home Dispute Resolution Program (DRP)

U.S. Department of Housing and Urban Development (HUD)
Office of Manufactured Housing Programs (OMHP)

SavanGroup

2300 Clarendon Boulevard | Suite 250 | Arlington | VA | 22201 | (P) 703.672.0010 | (F) 866.819.5191 | www.savangroup.com | hq@savangroup.com

MHCC Meeting

DRP Presentation Agenda

1. DRP Update
2. New Education Tools
3. Questions

Section 1:
DRP Update

DRP Update

Recap: HUD Manufactured Home DRP

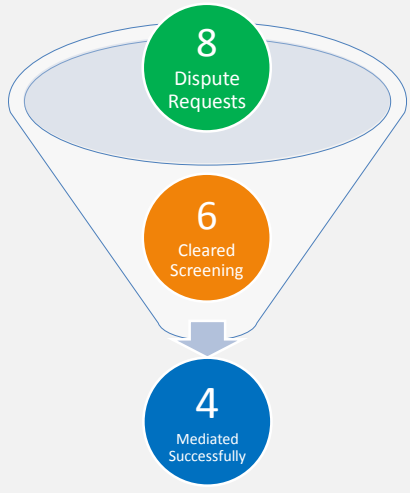
- Federal dispute resolution began in 2008
- Objectives
  - Provide timely resolution of manufactured home disputes
  - Identify and Determine Responsibility for Defects
  - Issue Appropriate Orders for Correction
- Requirements
  - Alleged defect must be reported during one-year period after date of installation
  - Must be in a HUD-administered DRP State (23)

DRP Update

Program Status

- **State Programs** still doing well with handling complaints before DRP
- DRP providing timely resolution for **manufacturers, retailers, and installers** and avoiding lingering issues
- New education tools for **industry and homeowners** to clarify benefits and purpose

April 2015 to August 2015



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Section 2:
New Education Tools

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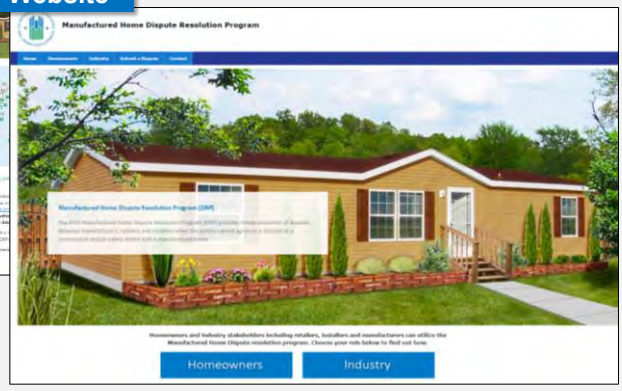
6

New Education Tools

Online

Online Fact Sheet

Website



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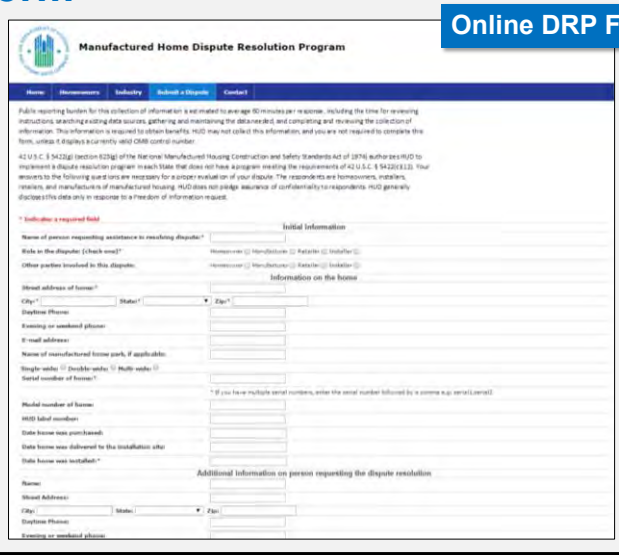
New Education Tools

DRP Form

Online DRP Form



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Section 3:
Questions

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Questions?

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MHCC MEETING

August 18-20, 2015

APPENDIX I: SOLAR ENERGY 101

By James Turner

Solar Energy 101

Summer 2015 MHCC Meeting

August 20, 2015

Presented by
James Turner and Aashish Shahani

The information provided herein is for reference only.

Solar Energy 101: General Background Information

- Solar energy has been used for over 2700 years. In 700 BC, glass lenses were used to make fire by magnifying the sun's rays.
- Solar power remains, after hydro and wind, the third most important renewable energy source in terms of globally installed capacity.
- More than 10,000 homes in the United States are powered entirely by solar energy.
- The production of PV panels has increased dramatically – particularly in the past 5 years. Projections from the U.S. Department of Energy (DOE) suggest we're headed to almost 1 million homes with rooftop solar by 2020.

2

Solar Energy 101: Did You Know?

1. Solar energy usually refers to ways the sun's energy can be used to directly generate all of the following except _____.

a. Heat

b. Water

c. Lighting

d. Electricity

3

Solar Energy 101: Did You Know?

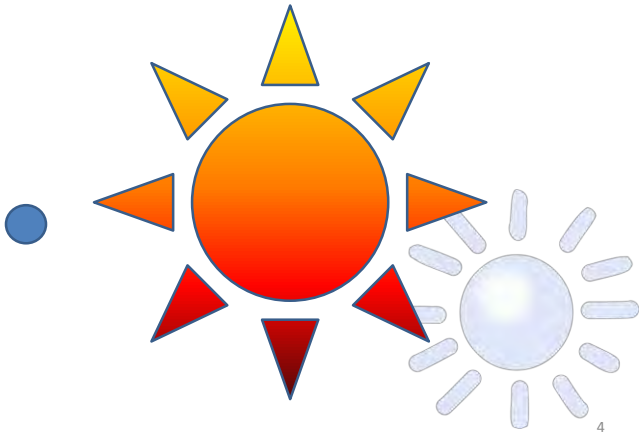
2. The sun is _____ times larger than the Earth.

a. 10

b. 100

c. 100,000

d. 1,000,000



4

Solar Energy 101: Did You Know?

3. Approximately, how long does it take for sunlight to travel to Earth?

a. 10 minutes

b. 8 hours

c. 1 day

d. Varies

5

Solar Energy 101: Did You Know?

4. Solar energy is measured in watts. Which is the largest measurement of solar energy from the following choices?

a. Gigawatt (GW)

b. Petawatt (PW) **= 1 X 10^{15}**

c. Megawatt (MW)

d. Terawatt (TW)

6

Solar Energy 101: Did You Know?

5. Currently, the world's largest solar energy project in operation is ____.

a. Solar Star - *USA*

b. Gujarat Solar Park - *India*

c. Mojave Solar Park - *USA*

d. Golmud Solar Park - *China*

7

Solar Energy 101: Advantages of Solar Energy

- Sunlight is free and renewable.
- Solar power produces no polluting emissions.
- Solar cells generally doesn't require much maintenance and run for a long time.
- Solar systems can be installed in remote locations where running power lines would be difficult or costly.

8

Solar Energy 101: PV Basics

Solar Photovoltaic Cells are the basic building blocks of a solar panel.

Solar Photovoltaic (PV) Cells

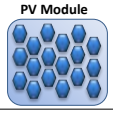
Solar Photovoltaic Strings are multiple panels electrically connected in series and secured to a frame.

Solar Photovoltaic (PV) String

Solar Photovoltaic Panels are pre-wired modules assembled as a field-installable units.

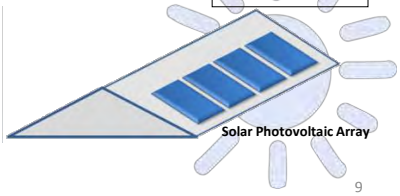
PV Panel

PV Module



Solar Photovoltaic modules are weatherproofed devices that house a collection of solar photovoltaic cells used to absorb and convert sunlight into electricity.

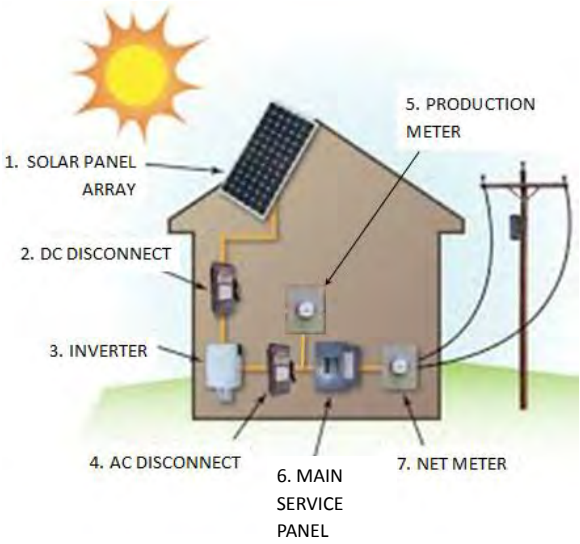
Solar Photovoltaic (PV) Array is the complete set of power-generating strings and panels that are mounted to the structure.



Solar Photovoltaic Array

9

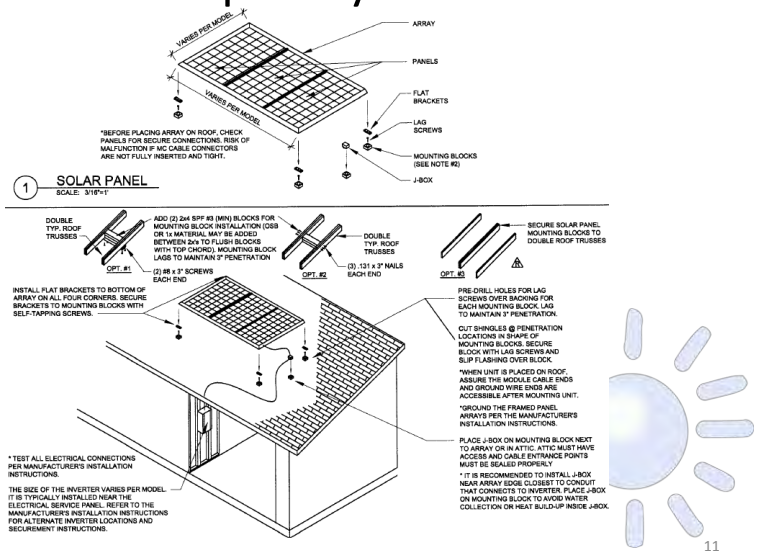
Solar Energy 101: System Components



1. The **solar panel array** collects and converts the sunlight to electricity.
2. The **DC disconnect** interrupts the flow of the DC electricity and is used to de-energize the system.
3. The **inverter** converts the DC power from solar array to AC power used in the home.
4. The **AC disconnect** interrupts the flow of the AC power and is used to de-energize the system.
5. The **production meter** measures the output of the generated electricity before it used in the home.
6. Solar power is supplied to the **main electrical panel**. The home uses solar power first and any excess is pushed back to the grid.
7. The **net meter** measures the power produced and consumed by the home, which the utility company uses for billing purposes.

10

Solar Energy 101: Sample Layouts



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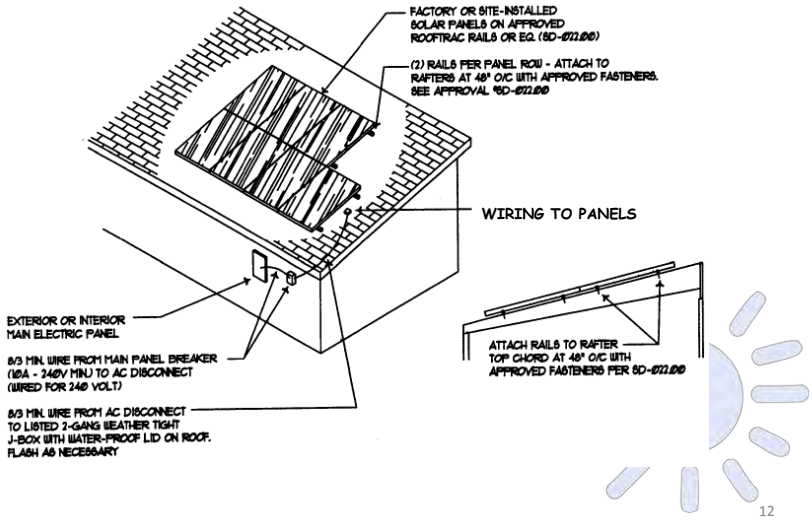
Solar Energy 101: Sample Layouts



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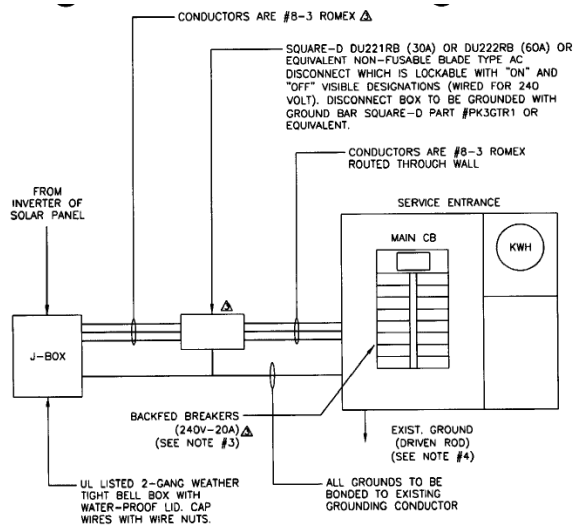
Solar Energy 101: Sample Layouts



13

MHCC MEETING

August 18-20, 2015

APPENDIX J: MANUFACTURED HOUSING ASSOCIATION FOR REGULATORY REFORM (MHRR) (HANDOUT)

By Mark Weiss

Manufactured Housing Association for Regulatory Reform

1331 Pennsylvania Avenue, NW • Suite 512 • Washington, DC 20004 • 202-783-4087 • Fax 202-783-4075 • mharrdg@aol.com

August 18, 2015

Members
Manufactured Housing Consensus Committee
U.S. Department of Housing and Urban Development
451 7th Street, S.W.
Washington, D.C. 20410

Re: DOE Manufactured Housing Energy Standards

Dear MHCC Members:

It is unfortunate that all you were not on a HUD conference call with Western and Mid-Western State Administrative Agencies (SAAs) on August 11, 2015.

If you had been, you would have heard a number of SAAs point out that shipments of new HUD Code homes to their respective states were falling, with potential HUD Code purchasers at the higher end of the market migrating to other types of housing. They speculated that, among other things, more costly below-frost-line foundations were increasing the final cost of manufactured homes to a point where other types of housing were becoming more competitive and attractive to consumers, particularly given more readily-available financing and lower interest rates for such homes.

These observations were particularly striking because they coincided – within a matter of days – with similar comments by a number of HUD Code manufacturers during in-person visits with MHARR. MHARR has made a point of visiting with a number of smaller and medium-sized manufacturers to assess the state of the HUD Code market and the specific current and future impacts of expanded and more costly federal regulation.

Those manufacturers – and others that MHARR has spoken with -- pointed to evidence of a retail price "glass ceiling" of approximately $60,000 (as installed) for manufactured homes, above which an increasing number of consumers were seeking options other than federally-regulated HUD Code homes.

This is significant because the latest data from the U.S. Census Bureau shows that the "average" sales price of a new manufactured home in the United States is $66,200.00 (with an "average" of $46,100 for single-section homes and $85,000 for multi-section homes).

With the "average" HUD Code home price hovering at or near the "ceiling" level reported by manufacturers, it is apparent that any significant increase in the retail cost of HUD code manufactured housing will accelerate not only the exclusion of lower-income purchasers for the industry's (currently) most affordable homes, but also the trend away from HUD Code homes and toward other types of homes among moderate-income consumers at the higher-end of the market.

All of this is particularly relevant to the market impact of the manufactured housing energy standards being developed by the U.S. Department of Energy (DOE) – a market impact that must be evaluated as part of a critical, independent MHCC review of any DOE proposed standard, following an irretrievably-tainted, illegitimate, scandal-ridden standards-development process at DOE, as documented by MHARR and as described in Attachments 1 and 2 attached hereto (which we ask that you carefully review).

Beyond the details of that non-credible DOE standards-development process, MHARR has already cited market elasticity research by the National Association of Home Builders (NAHB) -- presented to the DOE manufactured housing working group -- showing that for each $1,000.00 in additional regulatory compliance costs added to the price of a new manufactured home, 347,901 households would be disqualified from being able to afford a single-section manufactured home, while 315,385 households would be priced out of the multi-section market.

While these market exclusion statistics are bad enough, showing that millions of households would be completely excluded from the HUD Code market by DOE energy standards that the Agency Working Group itself concluded would add a minimum of $2,000 to $4,000 to the retail price of a manufactured home (a figure which MHARR calculations show would actually be closer to $4,000 to $6,000 or more, particularly for smaller producers and excluding additional testing and enforcement regulatory compliance costs that were never calculated by the DOE Working Group), what those statistics fail to reflect is cost-driven migration within the broader housing market, from one type of housing to another – in this case from HUD Code manufactured housing (and particularly the upper-end of the HUD Code market) to other types of homes or even rentals.

Even under the unrealistically low and incomplete cost-impact assumptions developed by the DOE Working Group, a retail cost increase that would push the price of an average manufactured home even farther above the "glass ceiling" level by a significant amount -- particularly in northern areas where a substantial number of regional manufacturers are based -- would exacerbate the loss of HUD Code consumers at all levels, including the middle and upper-segments of the market where proponents of this type of regulation have anecdotally asserted that there would be market gains. This is particularly the case given that HUD Code homes under the DOE Working Group proposal would still be subject to the most demanding elements of the 2015 International Energy Efficiency Code (IECC), while other homes are regulated under less demanding state and local building codes, including earlier, less stringent versions of the IECC, while only one state (Maryland) has adopted the 2015 IECC, based on the latest information available from the International Code Council (ICC).

As a result, manufactured homes, under DOE regulation, would be subject to energy mandates higher than those applicable to million or multi-million-dollar site built homes, even though resident-owned manufactured homes – currently -- according to U.S. Census Bureau statistics, have median monthly energy costs, per home, that are less than or equal to other types of residential construction.

Notwithstanding this fact, the total manufactured housing market, under the impending DOE standards, would hemorrhage customers -- at the lower-end of the market as a result of outright exclusion of less affluent purchasers who are already having difficulty obtaining financing now, and at the middle and higher-end of the market through migration of qualified purchasers to other types of housing – all for across-the-board energy mandates that: (1) are not life-safety measures; and (2) eliminate consumer choice and freedom by requiring measures that are already available on an optional basis for customers who want them. By eliminating such choice, and instead imposing a one-size-fits-all government mandate on consumers, the DOE standards – beyond driving customers out of the HUD Code market -- would impose a regressive de facto energy tax exclusively on manufactured housing and those consumers who do remain in the manufactured housing market, and would be among those least able to afford it.

HUD Code manufactured housing serves Americans who need and want affordable housing, and is specifically recognized in federal law as "affordable" housing. The HUD Code market and the millions of people who rely on HUD Code homes are not a social experiment to be engineered, manipulated or distorted by unaccountable special interests pursuing their own ideological agenda, while the American Dream of home ownership becomes an impossible dream for far too many hard-working and deserving Americans.

With home ownership already at a 20-year low, the MHCC should critically analyze any DOE proposal under the provisions and purposes of the Manufactured Housing Improvement Act of 2000 and reject any standard that would needlessly exclude substantial numbers of Americans from ownership of a manufactured home, while making it clear to Congress that this entire matter should be reconsidered as part of a process that includes testimony from all affected stakeholder groups.

Sincerely,

Mark Weiss
President & CEO

Attachments

ATTACHMENT 1

Manufactured Housing Association for Regulatory Reform

1331 Pennsylvania Avenue, NW • Suite 512 • Washington, DC 20004 • 202-783-4087 • Fax 202-783-4075 • mharrdg@aol.com

November 25, 2014

VIA FEDERAL EXPRESS

Hon. Ernest Moniz
Secretary
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: Energy Efficiency Standards for Manufactured Housing

Dear Secretary Moniz:

I am writing on behalf of the Manufactured Housing Association for Regulatory Reform (MHARR). MHARR is a Washington, D.C.-based national trade organization representing the views and interests of mostly smaller and medium-sized producers of manufactured housing subject to comprehensive federal regulation by the U.S. Department of Housing and Urban Development (HUD) pursuant to the National Manufactured Housing Construction and Safety Standards Act of 1974 (Act), as amended by the Manufactured Housing Improvement Act of 2000 (2000 reform law).

On October 31, 2014, a manufactured housing energy conservation standards "Working Group" (MHWG) operating under the auspices of the Department of Energy's (DOE) Appliance Standards and Rulemaking Advisory Committee (ASRAC) submitted recommendations to ASRAC for manufactured home energy conservation standards pursuant to section 413 of the Energy Independence and Security Act of 2007 (EISA) in the form of a "Term Sheet." ASRAC is scheduled to meet via telephone conference call on December 1, 2014 to consider that Term Sheet and whether it should be forwarded to you as the basis for proposed and final energy conservation standards for HUD-regulated manufactured homes.

MHARR participated as a member of the MHWG, where it voted against adoption of the Term Sheet -- for reasons fully documented in the MHWG record -- and now respectfully calls on you to reject those proposals, which will undermine the affordability of manufactured housing in violation of federal law and housing policy while providing no meaningful benefits to manufactured housing consumers, and halt any further DOE activity on this matter. By copy of this letter we are also advising the Secretary of HUD of our opposition to any proposed or final

standards based on the MHWG Term Sheet and our call for their rejection by HUD as well pursuant to the DOE-HUD "consultation" mandated by EISA.

The MHWG Term Sheet is the product of a flawed, discriminatory statute and an irretrievably tainted regulatory process at DOE.

The EISA manufactured housing provision would undermine the affordability of manufactured housing enshrined in federal law and federal housing policy under the Act and the 2000 reform law. Census Bureau data from the 2011 American Housing Survey shows that median energy operating costs for manufactured homes are already lower than those for other types of residential construction. EISA – and the specific recommendations of the MHWG -- would result in purchase price increases for manufactured homes that would exclude millions of mostly lower and moderate-income consumers from the manufactured housing market and the housing market altogether. Such devastating impacts are entirely unnecessary, as manufactured home builders already offer multiple enhanced energy packages, on an optional basis, as a matter of consumer choice. EISA, moreover, specifically discriminates against manufactured homebuyers by subjecting manufactured homes to the "most recent" -- and, therefore, most stringent and costly -- version of the International Energy Conservation Code (IECC), while site-built, modular and other types of more expensive homes, that are not specifically designated and protected under federal law as affordable housing, are regulated at the state and local level under earlier, less costly versions of the IECC (indeed, 35 states have not yet adopted even the 2012 IECC).

Furthermore, the DOE regulatory process in this matter is fundamentally flawed and cannot be rehabilitated or remedied by the MHWG or its recommendations. As is demonstrated by documents and testimony included in the MHWG record by MHARR, it is evident that the DOE conventional rulemaking initiated by an Advance Notice of Proposed Rulemaking on February 10, 2010 was irretrievably tainted by the selective leak of a "draft" proposed rule – and selective DOE interaction with – certain parties in interest. This "impermissible" activity led the Office of Management and Budget (OMB), as confirmed by the DOE Office of General Counsel (OGC), to reject the DOE draft rule and instruct DOE to "begin the [rulemaking] process anew." Instead of starting over, however, ASRAC, acting pursuant to March 14, 2014 and May 28, 2014 requests for "negotiated rulemaking" from recipients of the selectively-leaked "draft" rule rejected by OMB, simply devised a process to allow DOE to circumvent OMB's directive through an intentionally truncated process that was totally insufficient for the development of a major, complex rule and was designed -- like DOE's June 25, 2013 "Request for Information" -- to validate the pre-conceived results of the original, "impermissibly" disclosed draft proposed rule.

The Term Sheet recommendations resulting from that truncated process, based on non-public, unverified and unverifiable data provided by a party in interest, would increase the consumer purchase price of a single-section manufactured home by an average of $2,170.00 -- as calculated by the MHWG -- with cost recovery times for some measures ranging from 12-88 years. Even this large increase, however, significantly understates the true consumer-level cost impact of the MHWG proposal, as the MHWG cost information does not include testing, enforcement and regulatory compliance costs – insofar as ASRAC arbitrarily excluded

enforcement and compliance issues from the MHWG charter – and does not reflect supply costs across the full spectrum of the industry, especially for smaller manufacturers that do not receive high-volume discounts for materials and components comparable to larger manufacturers. Indeed, a more realistic assessment of compliance costs shows that the MHWG Term Sheet would require significant design and structural changes in manufactured homes, especially in northern areas, with correspondingly significant price increases. Thus, according to information provided to MHARR, in current HUD thermal Zone 3, the retail-level price increase to transition from the most basic, affordable, single-section current HUD Code home, to a level approximating 2015 IECC thermal zones 4 and 5, would be approximately $4,700.00 for a single-section home and up to $6,200.00 for a double-section home.

Based on all of these defects – as fully documented and addressed in the record of the MHWG – the MHWG-proposed Term Sheet for manufactured home energy conservation standards should be withdrawn from any further consideration. We also respectfully request that EISA section 413 be returned to Congress for re-evaluation, reconsideration, hearings and necessary reforms based on full and proper input from all stakeholders, including consumers of affordable housing, the states and the manufactured housing industry. We hope that you will seriously consider these requests to prevent this matter from being tied-up in litigation for years to come.

We will contact your office soon to schedule a meeting to address this crucial matter in much greater detail, with additional information.

Sincerely,

Mark Weiss
President-Elect

cc: Hon. Julian Castro, Secretary, Department of Housing and Urban Development
Hon. Shaun Donovan, Director, Office of Management and Budget
Chairman and Ranking Member, Senate Energy and Natural Resources Committee
Chairman and Ranking Member, House Natural Resources Committee
DOE Appliance Standards and Rulemaking Advisory Committee
HUD Code Industry Members

ATTACHMENT 2

The entire Department of Energy (DOE) rulemaking process for manufactured housing energy standards has been fatally and irretrievably tainted, and cannot be remedied administratively. The three month-long "Working Group" process established by DOE – which, among other things, did not consider or evaluate key elements of any rule, including the cost of testing, enforcement and regulatory compliance – did not cure the selective DOE leak of a draft proposed rule to parties in interest and manifestly did not comply with the subsequent directive of the Office of Management and Budget (OMB) to begin the entire manufactured housing energy rulemaking process "anew."

Instead, the entire DOE proceeding, including its "Working Group" phase, has been characterized by impermissible disclosures, collusion with special interests within and outside the industry, and deceptive, non-transparent DOE procedures and actions, including but not limited to the following:

1. The "impermissible distribution," as described on the record by DOE's Office of General Counsel (OGC), of a draft DOE manufactured housing energy standards rule to selected parties in interest, including the Manufactured Housing Institute (MHI) and special interest groups outside of the industry;

2. DOE's failure to admit or acknowledge that it had "impermissibl[y]" distributed that draft proposed rule to the same organizations and parties that requested a "negotiated rulemaking" process for the DOE manufactured housing energy standards -- and were appointed to the resulting manufactured housing energy standards "Working Group" -- until after a "negotiated rulemaking" had been approved by DOE and recipients of the "impermissibly" leaked draft had already been appointed to the DOE "Working Group."

3. DOE's failure to disclose contacts with such select recipients of the "impermissibly distributed" draft rule;

4. DOE's failure to identify all recipients of the selectively disclosed draft rule, although DOE-OGC admitted at the August 5, 2014 Working Group meeting that they included "many people in this room" (i.e., the Working Group meeting room);

5. DOE's failure to disclose any responsive information, materials, comments, statements or input (either written or verbal) received by that agency from these unidentified select recipients of the impermissibly-leaked draft proposed rule;

6. DOE's failure to disclose in advance that March 14, 2014 and May 28, 2014 written requests for "negotiated rulemaking" and creation of the DOE manufactured housing energy standards Working Group, were submitted either wholly or in substantial part by select recipients of the "impermissibly distributed" draft proposed rule;

7. DOE's failure to disclose in advance the appointment of recipients of the "impermissibly distributed," selectively-leaked draft rule as voting members of the Working Group;

8. DOE's failure to disclose interlocking control and/or affiliations or interests, and/or financial conflicts among multiple Working Group members;

9. DOE's failure to disclose the Office of management and Budget's (OMB) rejection of the selectively-leaked DOE draft proposed rule and directive to DOE to "begin the [rulemaking] process anew" (as described by DOE-OGC) until after authorization of negotiated rulemaking and formation of the DOE manufactured housing energy standards Working Group;

10. DOE's failure to disclose the specific basis for OMB's rejection of the draft rule and directive to start over;

11. DOE's failure to disclose the draft rule itself;

12. DOE's failure to disclose or explain how a negotiated rulemaking process with "a minimum of meetings" as specifically requested in the March 14 and May 28, 2014 triggering communications from parties in interest could be consistent with OMB's "start over" directive in relation to a rule that had been under development at DOE since 2007;

13. DOE's false denial, in response to specific inquiries from MHARR in 2013, that its draft proposed rule had been selectively leaked to arties in interest, including MHI; and

14. DOE's contention, in response to a Freedom of Information Act (FOIA) request by MHARR, that there were "no" responsive documents pertaining to the draft rule and its selective leak.

The entire record of this proceeding shows it to be illegitimate, improper, non-credible and in violation of the OMB mandate to "start-over." Unless DOE goes back and starts over with a proper rulemaking, this proceeding should be terminated without promulgation of a proposed rule and returned to Congress (together with complete disclosure of the DOE draft proposed rule and all related documents and communications) for further hearings and investigation based on testimony and input from all interested parties and stakeholders.