



MANUFACTURED HOUSING CONSENSUS COMMITTEE
AGENDA
October 27-28, 2010
Holiday Inn Arlington at Ballston
Arlington, VA

WEDNESDAY THE 27TH	
8:00 am	Convene Meeting..... Designated Federal Official (DFO)
8:05 am	Call to OrderChair
	Welcome
	Roll call
	Introductions
	New Members/Guests
	Administrative Announcements
8:45 am	Minutes ApprovalMHCC
	April 28-30, 2010 Tulsa, OK Minutes (Agenda Attachment A, Page 3).....Chair
	HUD Update/Status Report from the Department.....DFO
	-Charter (Agenda Attachment B, Page 19)
	-Subcommittee Reorganization Status..... DFO
	-Report on September 2010 HUD-COSAA MeetingDFO
	- Status of Final Rules.....DFO
	-Third Group of Standards Updates.....DFO
10:05 am	Recess.....Break
10:20 am	HUD Update/Status Report from the Department (cont.).....DFO
11:00 am	Wind Task Group Status Report (Agenda Attachment C, Page 24)... William Farish
11:30 am	Public Comment Period.....Chair
	"
12:00 pm	Lunch
12:30 pm	Lunch Speaker.....Andrew Persily, NIST
	NIST Capabilities/Program Opportunities for Manufactured Housing
1:30 pm	HUD/MHCC Discussion and Recommended MHCC Actions-Long Term Issues (Agenda Attachment D, Page 27).....Chair
	- Formaldehyde
	- Energy Efficiency
	- Wind Design
	- Accessibility
	- Sprinklers
2:30 pm	Subcommittee Meetings
	Technical Systems Subcommittee (Agenda Attachment E, Page 50)
	-Fireplace Venting/Crawl Space Ventilation
	-Vented Gas Fire Space Heating Appliances-LOG # 70
	-Tankless Water Heaters-Log #71
	Technical Structures and Design Subcommittee (Agenda Attachment F, Page 54)
	-Residential Sprinklers-HUD Proposal (Tulsa) and LOG #76 (3280), Log # 3 (3285)
	-Ground Anchor Assembly Test Protocol-Log #1 (3280A)

.....J WF "Rtqr qucn"Kpuvcn vqp"qh"Cr r rkepegu"cpf "Etcy nr ceg"Xgpvr vqp"
hqt"Hkgr rnegu"cpf "Hkgr rneg"Uqxgu"*Ci gpf c"Cwcej o gpvI ."Rci g'82+
 7:00 pm RecessChair
 5:30 pm No Host Cash Bar at Hotel-Dinner

VJ WTUF C["VJ G"4: VJ "
 8:00 am Call to OrderChair
 8:05 am Public Comment PeriodChair
 9:00 am Subcommittee Meetings.....Chair
 Continuation of Topics from first Day

 10:00 am Recess.....Break
 12:00 pm Lunch
 1:00 pm Subcommittee Recommendations Requiring Input/Action by MHCCChair
 2:00 pm Recess.....Break
 2:15 pm Discussion of "Open Government" Regulations and Impact on MHCC.....DFO
 2:45 pm "Code Cycle" Process for MHCC.....DFO/AO/Chair
 3:30 pm 2011 MHCC Planning.....Chair/DFO
 - 2009/2010 Achievements
 -Projections for 2011
 -HUD Priorities for 2011
 -Impact on Subcommittees
 -In Person Meetings
 -Conference Call Meetings
 5:00 pm AdjournChair

ATTACHMENT A

**MHCC AGENDA
OCTOBER 27-28, 2010
ARLINGTON, VA**

APRIL 28-30, 2010 TULSA, OK MINUTES



Draft Minutes
HUD Manufactured Housing Consensus Committee
Marriott Tulsa Southern Hills
Tulsa, OK
April 28-30, 2010

Wednesday, April 28, 2010

Opening of the Meeting

DFO Cocke opened the meeting of the Manufactured Housing Consensus Committee. Mr. Gorman welcomed the Committee to Tulsa. Ms. Cocke noted that the Committee will be taking a field trip in the afternoon to visit Home-Mart, Inc., a retailer, and then to the Great Southwest Home Show. The Committee has also been invited to the Manufactured Housing Association of Oklahoma dinner meeting.

Ms. Cocke announced that this is a meeting of the Manufactured Housing Consensus Committee, a Federal Advisory Committee. She noted that public notice had been published in the Federal Register on April 13, 2010 and that time has been allotted on the meeting agenda for public comments. She also noted that the agenda will be followed. She introduced Theresa Payne, Associate Deputy Assistant Secretary for Regulatory Affairs and Manufactured Housing. Lastly, she thanked Mr. Gorman for arranging the field trip.

Chairwoman Brenton called the meeting to order. Mr. Toner called the roll; a quorum was present. See Page 15 for the attendance list. Ms. Brenton welcomed the members and called for self-introductions. She also asked the guests to introduce themselves.

DOE Presentation

Ms. Cocke introduced Mr. Robert Lucas, DOE Pacific Northwest National Laboratory, for an update on DOE's energy initiatives relating to manufactured housing. Mr. Lucas's presentation will be posted on the MHCC website. Mr. Lucas reported that DOE published an advanced notice of proposed rulemaking (ANOPR) on February 22, 2010 on energy efficiency standards for manufactured housing. A link to the ANOPR will be posted on the MHCC website. (<http://edocket.access.gpo.gov/2010/pdf/2010-3341.pdf>). Written comments were due March 24, 2010. He stated that ten comments have been received. Additional comments would be welcomed. He noted that he cannot discuss the details as DOE is now in "listening mode".

Mr. Lucas stated that DOE needs to work with HUD on integrating energy efficiency into the HUD

codes. Enforcement issues will also have to be worked out. Mr. Weinert asked whether DOE is considering allowing a manufacturer to design for site specific issues such as orientation. It was noted that the DOE climate zones are different from the HUD climate zones. Mr. Lubliner noted that the MHCC has addressed duct leakage testing. Mr. Wade asked whether DOE would use the 2012 International Energy Conservation Code. Mr. Lucas indicated that it would. He also indicated that the actual implementation date has not been determined or whether there will be a phase-in. Ms. Cocke noted that HUD and DOE have been in discussions about manufactured housing issues. Mr. Wade asked whether 3280 Subpart F would be superseded by the DOE regulations. Mr. Mendlen stated that no decisions have been made; some elements of Subpart F may not be dealt with by DOE. Ms. Starkey expressed a hope that DOE has a budget for data collection.

Mr. Weiss noted that MHARR has submitted comments on the ANOPR particularly questioning how DOE will address cost issues. Mr. Lucas noted that DOE has not yet addressed purchase costs versus life-cycle costs. He noted that DOE will be consulting with HUD. Mr. Weiss asked if DOE will come back to the MHCC for information sooner rather than later as this is an important issue. Mr. Lubliner noted that it is good for the MHCC to be proactive on this issue and asked for members to provide input to the MHCC Energy Efficiency Task Force.

Mr. Gorman noted two problems – credit for lower energy costs when there are higher initial costs for energy efficiency units; and, appraisals that do not factor in “comparables” to make the units affordable. Mr. Lubliner noted that HUD could help address issues of appraisals and financing. He indicated that chattel mortgage versus real property mortgage is a real issue. Ms. Cocke asked DOE, as it is considering the cost issue, to tell HUD and the MHCC what data regarding affordability is needed prior to issuing a standard and also, after issuing the standard, how HUD and FHA should address an “energy efficiency credit”. Ms. Cocke also noted that anyone with data should submit it to DOE as the agency will only react to data. Mr. Luttich noted that state energy offices have information, especially on site-built homes, and encouraged members to contact those offices.

Ms. Brenton thanked Mr. Lucas for his presentation and participation in the Q & A follow-up.

The Committee recessed for Subcommittee and Task Force meetings and the afternoon field trip.

Thursday, April 29, 2010

Call to Order

Chairwoman Brenton reconvened the Committee and called the meeting to order at 8:00 a.m. Mr. Toner called the roll; a quorum was present. Ms. Brenton, in the way of a heads up, noted that both she and Vice-Chair Lagano cycle off the Committee next year so the members should be thinking about future leadership.

Ms. Brenton opened the floor for public comments.

Public Comments

Mr. Stewart Larrabee addressed the Committee regarding inadequate set-up and installation methods

of manufactured housing employed in numerous instances. Mr. Larrabee's written comments will be posted on the MHCC website. Following Mr. Larrabee's comments Mr. Jewell asked whether HUD conducted audits of state installation programs. Ms. Cocke indicated that HUD is putting a plan for a procurement contract in place that would assist in the collection of such data. She did state that HUD will look at the allegations contained in Mr. Larrabee's comments. She noted that HUD may have limited options because the allegations involve second set ups. Mr. Sheahan reminded HUD that there is a need for a homeowners' bill of rights. Mr. Larrabee noted that it is a financial hardship for the elderly and veterans and the like to be forced to relocate within 30 days. It can cost up to \$10,000 to relocate a double-wide home. He also stated that these problems raise life safety issues.

Mr. Mark Weiss, MHARR, addressed the Committee on HUD's proposed fire sprinkler standard for manufactured housing. He urged that the proposal not be adopted. He stated that HUD should preempt states from imposing sprinkler requirements; manufacturers should be allowed to offer buyers sprinklers as an option; if sprinklers are mandated it should be in Part 3280 rather than 3285 because HUD states that 3285 is not preemptive. Mr. Weinert noted that California has a draft regulation in the works. Mr. Weiss stated that HUD should preempt state regulation or not address sprinklers at all. Mr. King stated that a more affordable option than NFPA 13D should be available.

Mr. Weiss addressed the Committee regarding its role, authority and functionality. He noted that, while the MHCC is a Federal Advisory Committee under FACA, it was given power beyond that of a normal FACA committee by the Manufactured Housing Improvement Act of 2000 (MHIA 2000). He stated that it was not Congress' intent that the MHCC be a "run-of-the-mill" advisory committee. HUD has essentially eliminated the catchall authority of the MHCC in MHIA 2000 section 604(b) (6).

Mr. Weiss also addressed the revised MHCC by-laws particularly as they pertain to non-MHCC members on Subcommittee membership. Traditionally, Subcommittee membership has been open as long as balance has been maintained. In addition, Subcommittee recommendations must be approved by the full MHCC and then approved by the Secretary. Limiting membership on Subcommittees is unnecessary.

Mr. Weiss' written comments will be posted on the MHCC website.

Mr. Gorman noted that the MHCC is unique in that it was created by Congress, not by the agency to which it provides advice. Membership on the MHCC has been an activity in which one took pride because the Committee was created by Congress.

HUD Report

Ms. Cocke thanked the Committee for its patience with the changes at HUD over the past three months. She noted that the rules have slowed down during that period, however new Commissioner David Stevens is 100% behind the Committee activity and wants to move the proposed rules to the Federal Register for public comment. Mr. Mendlen reported that the second set of standards, the roof truss rule, and the on-site completion rule are in the final stages of going to Congress for its required 15 day review. The 3rd group of standards is moving ahead. OMB has finished its review

after a fair amount of back and forth discussion. There will be a 60 day public comment period.

Subpart I is in Department clearance, and then it will go to OMB for its review (90 days), then back through HUD and on to Congress and the Federal Register.

The MHCC comments on the recreational/park trailer rule have been received and a draft rule is being developed.

The PIA rule is being discussed within the Department and with Counsel.

Mr. Lubliner moved that a status report of Committee activity be posted on the MHCC website with anticipated timelines. Motion seconded and carried.

Committee Organizational Issues

Ms. Brenton asked what prompted the Department to unilaterally make the changes to the Committee by-laws and Subcommittee. Ms. Cocke stated that all Federal Advisory Committees undergo an annual review by GSA. HUD and GSA have been working to reshape the MHCC structure and processes. In the process other agencies' advisory committee websites were reviewed to see how those committees function. GSA has requested HUD to make the MHCC similar to the other advisory committees. She noted that it is the responsibility of the Agency and not the MHCC to do so, hence, Mr. Matchneer undertook a process to revise the MHCC charter and by-laws. The revised charter and by-laws have been posted on the MHCC website. The documents will be sent to the Committee.

Mr. Walter noted that previously it would have been appropriate for such documents to be circulated to the Committee for comment as a courtesy. Ms. Brenton noted the uniqueness of the Congressional creation of the MHCC; the Committee is not the usual advisory committee. Ms. Cocke stated that the Department is aggressively working to ensure compliance with FACA. GSA emphasized that the agenda is developed by the agency; the MHCC is brought together to provide advice on subjects which the agency needs to hear about before developing or finalizing rules. Therefore, the agenda will be developed by the Department to address subjects on which the Agency needs to hear the advice and counsel of the Committee. She gave the example of the FDA advisory committee on IUDs. Mr. Gorman noted that the FDA advisory committees were not created by Congress, the MHCC was. Mr. Weiss stated that the MHIA 2000 established roles for the MHCC outside of the FACA.

It was noted that non-MHCC members have participated on Subcommittees (SC) with approval of the Secretary. Ms. Cocke stated that non-MHCC members may participate in discussions at the request of the Chair or the Committee. GSA told HUD it has to distinguish more between the MHCC and activities of the SCs. When they break into SCs, others can provide input to the technical discussion. It should be only the MHCC members around the table at an MHCC meeting. It should be very clear in the agenda between MHCC activities, SC activities, and public comment periods.

Mr. Lubliner noted that in the past over 20% of the Committee time has been spent on "power

issues". He recommended that a set time be allotted for such discussions and that the Committee move on. Ms. Nelson asked whether the MHCC would have an opportunity to review the by-laws. Ms. Cocke stated that FACA as implemented by the GSA gives the authority to the Agency. Mr. Lubliner moved that the discussion be tabled; motion seconded but failed to pass.

Mr. Lagano noted that in the initial five years the MHCC focused on the initial work to be done. Now time can be spent on establishing roles and responsibilities. He noted that the MHCC no longer has a Planning & Prioritization Subcommittee; this will be handled by HUD and the AO. Mr. Walter asked if HUD sets the agenda, how public proposals will be handled. Ms. Cocke indicated the public proposals will be reviewed by HUD and assigned to Subcommittees; HUD will do the prioritization. Mr. Walter stated that it would be appropriate for submitters of public proposals to participate when their proposals were being discussed. Ms. Cocke indicated that it would be appropriate at the Subcommittee deliberations but there would be no public comment during the MHCC discussion as a Committee of the whole unless the Committee requested it.

It was noted that the 3-year term limits should be reconsidered as it hurts continuity.

HUD was requested to send the charter and by-laws to the Committee again.

Mr. Walter asked how the Subcommittees are to be reorganized. Ms. Brenton indicated that HUD would be making the assignments for Subcommittees and Subcommittee chairs. Ms. Cocke indicated that the MHCC members will be polled for their interest in the four subcommittees. There is not a limit on the number of SCs you can serve on. SCs have to be balanced. Members should express their interest in serving as a chair.

A question was raised regarding Subcommittees meetings being held concurrently or in sequence. Sequentially was preferred. Ms. Cocke noted that most Subcommittee work was conducted by conference call. Until the Subcommittees are reconstituted the Subcommittees should proceed as they have been. New members can select where they wish to participate.

Approval of Minutes

Mr. Lubliner corrected the May 7, 2009 minutes to state that the CO death he mentioned was in Washington State, not Nebraska. The correction being made the minutes were approved.

Mr. Braun corrected the attendance sheet for the July 9, 2009 conference call to indicate that he was on the call. Ms. Brenton noted that "hard" was repeated in the next to last sentence of the third paragraph, section 1. The corrections being made the minutes were approved.

The July 28-30, 2009 minutes were corrected to note that Messrs. Jewell and Sheahan were in the User category. The correction being made the minutes were approved.

The March 23, 2010 conference call minutes were approved.

Mr. Mazz stated that it would be helpful if the minutes indicated topics discussed and actions or votes taken were highlighted. Mr. Walter suggested section titles would be helpful.

Committee Status Reports and Recommendations

Ms. Cocke stated that the Committee reports and Committee recommendations should be combined.

Technical Structure and Design

Wind Zone Task Force

Mr. Farish reported on the progress of the Wind Task Force. His presentation will be posted on the MHCC website. He noted that the work of the Task Force could have a major impact. He indicated that the work is not complete so there are no recommendations at this time. He reviewed the new wind tables, noting that there is now a table for each wind zone, the wind zone maps have been redrawn and a new wind zone, wind zone 4, has been created. He reviewed the alternatives considered and discussed the “Alabama Compromise” alternative which was chosen.

Mr. Jewell noted that deaths have been increasing in the last few years. It was noted that they were in wind zone 1. Mr. Walter noted that the new wind zones differ from those in ASCE 7. Mr. Scott asked if there would be any changes in structural design. Mr. Farish noted that the corner band is increased from 3’ to 4’. This area is still being worked on. Mr. Walter asked if manufacturers of modular homes and manufactured homes would follow the same standard. It was noted that modular home manufacturers follow ASCE 7. Manufacturers might be permitted to use ASCE 7 if they chose. Mr. Sheahan asked whether old wind zone 3 is the new wind zone 4. New zone 4 is slightly more conservative. Mr. Tompos noted that there would be more testing of cladding materials. It was noted that the Wind Task Force work has not been compared to the IRC. It might limit materials.

Mr. Farish stated that the draft will be sent to several manufacturers for costing. A weighted average of homes by wind zone will developed. A code change proposal in underline/strikeout format will developed. Ms. Cocke asked about a timeline. Mr. Farish indicated that a proposal might be ready for the next face-to-face MHCC meeting. Mr. Walter asked how this effort is being funded. Mr. Farish stated that Mr. Low is being funded by FEMA. Mr. Lubliner noted that solar panel manufacturers have done some uplift testing. He suggested that in the future manufacturers might want to offer solar-ready homes.

Technical Systems

Mr. Weinert noted that the Technical Systems has three Task Forces, Indoor Air, Energy Efficiency, and, Formaldehyde.

Energy Efficiency Task Force

Mr. Lubliner reported that the Energy Efficiency Task Force has two proposals that have not yet been considered by the MHCC.

A proposal on duct testing was favorably considered at the May 22-24, 2007 meeting. Unfortunately a numerical count of the vote was not recorded so it could not be shown that the required 2/3 majority was obtained although no objections were noted. Mr. Wade noted that many manufacturers are doing duct testing. It was noted that such testing was a good idea. Mr. Lubliner circulated a copy of a report from NIST titled "*Airtightness, Ventilation, and Energy Consumption in a Manufactured House: Pre-Retrofit Results*". Mr. Jewell moved that the discussion be tabled until the next day so that the duct testing proposal could be circulated to the Committee. Motion seconded and carried.

Mr. Lubliner reported that consideration of a proposal on U_o was rejected by the MHCC as it will be left to DOE.

Mr. Lubliner reviewed his earlier proposal to amend 3280.509(c) (2) regarding compression of insulation to clearly state how to minimize compression of the insulation. The proposal will be submitted to the Subcommittee for ballot.

It was noted that it would be helpful if the proposals were submitted in underline/strikeout format.

Formaldehyde Task Force

Mr. Weinert reported that the Task Force met and had a lengthy discussion of a proposal to align 3280.308 with the California Air Resources Board (CARB) restrictions on formaldehyde. The Task Force generally did not have a problem with the basic proposal. However there is a problem in that the 3280.308 requires certification of products coated with a surface finish while the CARB regulation only deals with the base wood product. Information will be sought on the composition of the surface coatings. Mr. Lubliner indicated that there may be information available from the NIST healthy house program and/or the University of Texas, Dr. Segall. Ms. Starkey noted that H.R.4805 is pending and S.1660 is on the Senate calendar that copy the CARB regulation.

Mr. Tompos noted that there may be a formaldehyde issue even if the CARB regulation is adopted because of the surface finish. Mr. Wade noted that in the HUD QC program manufacturers are required to verify that products meet the formaldehyde test requirement.

Mr. Walter moved that the AO/Department research the coating materials and emissions after being applied. Mr. Lubliner asked how the Manufactured Housing Research

Institute handles the issue in its green standards. He also suggested that the ASHRAE research program may be helpful. Walter motion seconded and passed with one opposed.

Indoor Air Task Force

The Indoor Air Task Force did not meet due to lack of time. Mr. Lubliner requested time to report to the MHCC on Indoor Air as MHCC time permits.

General Subcommittee

Mr. Lagano noted that Mr. Berger is Chair of the Subcommittee but could not attend the meeting. Mr. Lagano noted that there are no outstanding issues before the Subcommittee.

Accessibility Task Force

It was noted that Mr. Mazz requested that the Accessibility Task Force be reactivated for a discussion of the subject. Ms. Brenton noted on two previous occasions the Committee consensus was that every manufacturer made accessible homes available as an option for consumers and therefore nothing needed to be done. Mr. Walter asked how the MHCC would receive proposed changes to the standards. It was noted that a member could submit a proposal to the AO who would then forward it to HUD for consideration for placement on an MHCC agenda.

Mr. Mazz stated that there are two distinct issues for discussion – accessibility and visitability. Visitability means that the home would allow a wheelchair to enter the home and to visit the bathroom, i.e., no stairs and wider doorways. Accessibility means the former plus space to turn around in the kitchen, accessible countertops and other accessible requirements. Standards for each purpose would need to be developed. Ms. Nelson suggested creating a minimum standard requiring one floor, one bedroom, one bath, and one hallway be accessible so the home could “grow” with the homeowner. Mr. Mazz noted that jurisdictions are considering creating a standard for single family homes and a similar standard could be created for manufactured homes. Mr. Walter recommended that Mr. Mazz write up a proposed change and submit it to the AO. Mr. Walter also suggested that a standard be developed for grab bars.

Proposals

Ms. Cocke stated that the Department had tentatively assigned the HUD proposals to Subcommittees: Sprinklers to Technical Structures; Vent/Exhaust Outlets, Entertainment Outlets, and, Fireplace Venting/Crawl Space Ventilation to Technical Systems; Proposed Amendment-Ground Anchor Assembly Testing Protocol to Technical Structures. Ms. Cocke noted that because these are HUD proposals to the MHCC they fall under the 120 day response requirement of the MHIA 2000. However, she stated that the 120 day clock would not be started until Subcommittee member assignments were made and reviewed with Ms. Payne. The MHCC will be notified when the 120-day clock would start.

Ms. Cocke also stated that the Department had tentatively assigned the public proposals to Subcommittees: Venting System Terminations (Log 69), Tankless Water Heater (Logs 70 and 71), and, Receptacle Outlets (Log72) to Technical Systems and Tie Down System (Log 66) to Technical Structures. She noted that there is no time deadline for responding to the public proposals. However, she did note that a public proposal could be reworked by HUD and submitted as a HUD proposal and then would be subject to the 120-day response.

Mr. Farish asked whether Task Forces should be assigned to deal with each of the HUD proposals. Ms. Cocke stated that the full MHCC should have a 20-30 minute discussion of each proposal. Mr. Weinert noted that the NFPA Committee had done away with Task Force approach, handling all proposals at the Subcommittee level.

HUD Proposals

It was requested that HUD proposals be submitted in underline/strikeout format like public proposals. It was also requested that proposals be distributed and assigned to Subcommittees prior to meeting.

Vent/Exhaust Outlets

It was noted that this proposal was developed in response to Mr. Tom Rodgers' presentation at the July 28-30, 2009 meeting. The proposal was developed after reviewing the IMC and IRC.

Mr. Santana asked whether the proposal would apply to all vents. It could be interpreted to require a 10' stack. He moved that the proposal be reworded to indicate the three feet requirement applies when the vent is within 10' of an intake discharging into habitable areas. Motion seconded. Mr. Mazz recommended that ASHRAE 62.2 be referenced. Mr. Lubliner moved that the proposal be tabled as it is redundant with the work of the Indoor Air Task Force. Motion seconded. Mr. Walter noted that it could take years to implement ASHRAE 62.2. Mr. Luttich stated that it is important to address this current hazard. The motion to table was withdrawn. It was noted that the National Technology Transfer Act required agencies to consider nationally recognized standards; adoption of ASHRAE 62.2 should be considered. The Santana motion was amended to read "Venting systems, when located within 10 feet of any motor-driven air intake discharging into habitable areas, must terminate at least 3 feet above that intake". Amended motion seconded and passed unanimously.

Public proposal Log 69, which dealt with the same subject, was withdrawn by Mr. Jewell who was the proponent of the proposal.

Entertainment Outlet Receptacles

Mr. Mendlen indicated that this proposal deals with a concern with entertainment centers in baths where a TV could fall into a tub. Mr. Farish asked what the new language adds to the current code. Mr. King recommended that HUD issue an interpretive bulletin to address the concern. It was noted that the issue has been around for years. Mr. Weinert

stated that the current code is protective. It was moved and seconded that the proposal be rejected. Mr. Luttich noted that the HUD code is more protective than the codes for site built homes. Mr. Jewell noted that HUD already has the power to issue an interpretive bulletin. The motion to reject the proposal was approved without objection.

Fireplace Venting/Crawl Space Ventilation

Mr. Mendlen stated that the proposal was developed in response to a letter from Pennsylvania describing a situation where the fireplace air intake vent did not penetrate the skirting. Mr. Luttich moved that the proposal be accepted as written. Motion seconded. Mr. Weinert noted that he had never heard of a situation where the skirting was air tight and furthermore there is a large volume of air under a unit. Mr. King noted that consumers try to button up the space and improve the aesthetics. Mr. Santana stated that the proposal should be given a second look.

Mr. Walter noted three editorial corrections to 3280.709(g) (ii) – delete comma after “fireplace stove” on the 4th line, change “that” to “which” on same line, and, insert “duct” after “air inlet” on last line. Corrections approved. Motion to approve the editorially corrected proposal failed, 6 in favor, 9 opposed.

Mr. Santana asked whether crossover piers would be considered obstructions. Mr. Farish indicated a concern with 3285.505(f) (2). Mr. Weinert stated that the change to 3285.505 is poorly written. Mr. Santana moved that the proposal be sent to the Technical Systems Subcommittee for revision. Motion seconded and carried.

Sprinklers

It was noted that this is an entirely new Section for 3280. Mr. Walter moved that the proposal be referred to a Subcommittee because the Committee does not presently have access to NFPA 13D. Motion seconded. Mr. King recommended that the Subcommittee also look at the sprinkler requirements in the IRC as an alternative. The AO was requested to provide 6-8 copies of 13D to the Subcommittee. Mr. Weinert noted that a previous sprinkler proposal based on California regulation was shot down. He noted that NFPA 13D is very technical and questioned whether copies of 13D were necessary. He recommended that a previous sprinkler proposal be reviewed. Motion to refer the proposal to the Subcommittee carried.

Ground Anchor Assembly Testing Protocol

Mr. Mendlen provided a brief background of the proposal. Mr. Stamer asked who is to do the soil testing and where. Mr. Mendlen indicated that the installer could do the testing on-site. Mr. Mendlen noted that testing of the protocol has been conducted and a report has been provided. Mr. Braun moved that the proposal be referred to the Subcommittee or Ground Anchor Task Force. Motion seconded. Mr. King asked what is currently being done. Mr. Mendlen indicated that if a state has a program, whatever the state accepts, HUD accepts.

Ms. Cocke noted that before a proposal could be sent to a Subcommittee, the Department needs to re-compose the Subcommittees and Task Force membership.

DFO Cocke, with the Committee's approval, invited guests to speak to the subject.

Mr. Scott Oliver, Oliver Technologies, stated that he agrees with sending to the Subcommittee and they would like to participate as they have several additions or changes to recommend.

Mr. George Waechter, Minuteman Anchors, stated that anchor manufacturers, including Minuteman, Tie Down Engineering, Oliver Technologies and Stylecrest and others use a method that is similar and consistent. He agrees that a protocol is needed. He agrees that the protocol should be referred to the Subcommittee.

Motion to refer the proposal to the Subcommittee was approved.

DFO Cocke indicated that the public proposals and an Indoor Air Task Force update would be carried over to the Friday morning session.

The Committee recessed at 4:45 pm.

Friday, April 30, 2010

Call to Order

Chair Brenton reconvened the Committee and called the meeting to order at 8:00 a.m. Mr. Toner called the roll; a quorum was present.

Ms Cocke clarified the earlier discussion regarding FACA that in many instances GSA or the FACA may not have actual requirements; there are general guidelines. In training and dialogue with GSA staff, HUD has also been given advice. In many instances HUD is following this guidance. However, the FACA guidance may have been over-stated in the earlier discussions.

Energy Efficiency Task Force (cont'd)

Supply Duct Leakage Testing

Mr. Lubliner reviewed the proposed change to 3280.715(a) (4) regarding supply duct leakage testing. Mr. Weinert asked whether the test is part of the Energy Star program. Mr. Lubliner described the duct blaster tester. Mr. Tompos indicated that the cost of the tester is several thousand dollars. Mr. Weinert noted that duct leakage is a big issue in energy conservation. Mr. Santana indicated that he needed time to review the proposal. He moved that the discussion be tabled; motion seconded. Mr. Mazz asked the DFO to ask Mr. Lucas, DOE, to speak to the issue. Mr. Lucas noted that the EISA gives DOE the mandate to develop energy efficiency standards for manufactured housing. Motion to table called. Motion to table failed 7 in favor, 9 opposed. Mr. Tompos noted that there are a number of manufacturers that do leak testing. He said it needs to be done.

Mr. Toner noted that this proposal had been approved by the Committee at the May 22-24, 2007 meeting. Unfortunately a numerical count of the vote was not recorded so it

could not be shown that the required 2/3 majority was obtained although no objections were noted.

DFO Cocke stated that since the proposal was voted on at a previous meeting there was no need to do it again. Mr. Toner noted that there is a circulation ballot for members to confirm or change their vote.

A question was raised as to whether proposals voted on yesterday would be subject to a written ballot. Mr. Toner indicated that there would be a circulation ballot.

Mr. Walter moved that a written ballot that requires a 2/3 majority to pass be conducted. Motion seconded.

Ms. Cocke stated that there will be a written ballot and that the Committee could move ahead with the agenda.

Public Proposals

Venting System Terminations, Log 69

It was noted that Log 69 was withdrawn by the Mr. Jewell, proponent of the proposal as the matter was dealt with by the earlier HUD proposal accepted by the Committee.

Vented Gas-Fired Space Heating Appliances Log 70

It was noted that Log 70 was incorrectly titled Tankless Water Heater. Mr. Luttich asked if these appliances have been dealt with by AC letters. Ms. Cocke indicated that they have been.

Ms. Cocke noted that the MHCC has several options; accept and send to a Subcommittee; approve and forward to HUD; or, reject it. Mr. Weinert moved that it be accepted-in-principle and send to the Technical Systems Subcommittee; motion seconded. Motion carried unanimously.

Tankless Water Heater Log 71

Mr. Jewell moved that the proposal be combined with the previous proposal and sent to the Subcommittee. Motion seconded.

Ms. Cocke invited the proponent, Mr. Donald Emen, Rinnai America Corp., to speak to his proposal. He stated that the proposal would add tankless water heaters to the HUD code. The proposal references an ANSI standard and a DOE standard. A question was raised related to temperature and pressure relief valves and drain pan under the unit and the need for these components. Mr. Emen stated that his proposal did not address these components leaving that to local requirements. It was noted that electric tankless units should also be accounted for.

Motion to combine with Log 70 and send to the Subcommittee was approved unanimously.

Receptacle Outlets Log 72

Mr. Farish noted that tamper-resistant outlets are available and are included in the 2009 NEC. Mr. Weinert recommended that for the moment the MHCC should stay with the 2005 NEC and let the codes evolve. He moved that the proposal be rejected. Motion seconded and carried with one opposed.

Tie Down System Log 66

It was noted that this proposal was considered last year for inclusion in 3280. It was rejected. HUD has brought it back for consideration under 3285 as it was originally proposed. Mr. Weinert moved that the proposal be rejected as it does not provide a specific code proposal and also because it appears to be based on proprietary technology. Motion seconded. Mr. Jewell asked whether there is anything in the HUD code that would prohibit the use of the technology. It was noted that there was not. Manufacturers are free to use the technology if they see fit. Motion to reject approved unanimously.

Vented Gas-Fired Space Heating Appliances Log 70

Mr. Walter requested that Log 70 be reconsidered. Mr. Jewell moved that Logs 70 and 71 be uncombined. Motion seconded and carried unanimously. It was noted the Log 71 should go to the Subcommittee.

Mr. Weinert moved that the change to 3280.703 be accepted. Motion seconded and passed unanimously.

Mr. Weinert moved that the change to 3280.707(d) (2) be rejected as not sufficient information was provided to consider acceptance. Mr. Jewell asked Mr. Emen, the proponent, to provide additional technical support. Mr. Weinert suggested that DOE would address the subject. Mr. Lubliner indicated that DOE is not considering appliances, only building envelope. Motion to reject approved, 2 opposed.

Mr. Walter stated that many of the proposals were not presented in good code underline/strikeout format. He recommended that the AO return such proposals to the proponent for revision.

Upcoming Meetings, Closing Announcements and Adjournment

The Wind Task Force will schedule a conference call to follow-up on the progress made at this meeting.

Ms. Cocke stated that meetings of the Subcommittee will have to wait until the Subcommittee membership is established. The members will be polled for their Subcommittee interest(s).

Ms. Cocke stated that the budget for the Committee includes a meeting in the fall in the Washington DC area and indicated that that the first day of the meeting would possibly cover some type of evaluation of the Committee and a review of the GSA Advisory Committee guidelines. The Committee will be polled for potential meeting dates in November.

Ms. Cocke noted that she has heard the desire for more time for Subcommittee meetings and the desire to have them sequentially. She noted that a lot was accomplished at this meeting and would like to this type of speed continue.

Mr. Stamer thanked NFPA for providing one document with the minutes and proposals prior to the meeting.

Mr. Gorman thanked HUD and the Committee for coming to Tulsa.

Chair Brenton thanked Mr. Gorman for the arrangements.

Mr. Lubliner thanked Ms. Cocke and the HUD staff for their efforts through the transition.

The meeting was adjourned at 9:40 a.m.

ATTENDANCE MHCC APRIL 28-30, 2010

MHCC Members		
Susan Brenton, Chair	MHCA	X
William Lagano, Vice-Chair	Commonwealth Consulting Corp.	X
Jack Berger	Consultant; Berger Construction	-
Karl Braun	NAMH – MHOAA	X
Elizabeth Cocke	HUD, Designated Federal Official	X
Theresa Defosses	State Manufactured Homes, Inc	-
Bill Farish	Clayton Homes	X
Douglas Gorman	Home – Mart, Inc.	X
Kevin Jewell	Texas Low-Income Housing Information Service	X
Tim King	NY Department of State	X
Michael Lubliner	Washington State University /Energy	X
Mark Luttich	NE Public Service Commission, Housing & Recreational Vehicle Dept.	X
Mark Mazz	Architect	X
Terry Nelson	MHOA OF IL	X
Manny Santana	GSMOL/V.P. MHOAA	X
Gregory Scott	Scotbilt Homes	X
Timothy Sheahan	GSMOL/V.P. MHOAA	X
Robert Solomon	NFPA	-
William Stamer	Champion Enterprises	X
David Tompos	NTA	X
Pat Toner	NFPA	X
Michael Wade	Cavalier Home Builders, Inc.	X
Frank Walter	Consulting Civil Engineer	X
Richard Weinert	State of California	X
HUD Attendees		
Jim Everett		X
Rick Mendlen		X
Casey Podzius		X
AO/NFPA		
Pat Toner	NFPA	X
James Lyons	Newport Partners	X
Guests		
Robert Lucas	PNNL	X
Mark Weiss	MHARR	X
Stewart Larrabee	Self	X
Lois Starkey	MHI	X
Dan Pate	Dan Pate Enterprises	X
Sean Oglesby	Scotbilt Homes	X
Tony Kovach	MHMSM.com	X

ATTACHMENT B

**MHCC AGENDA
OCTOBER 27-28, 2010
ARLINGTON, VA

MHCC CHARTER**



CHARTER
MANUFACTURED HOUSING CONSENSUS COMMITTEE
a federal advisory committee

I. Official Designation

The federal advisory committee renewed by this Charter is known as the Manufactured Housing Consensus Committee (hereinafter the “Committee”).

II. Authority

The authority for the establishment and management of the Committee is the Manufactured Housing Improvement Act of 2000 (MHIA), 42 USC 5403, and the provisions of the Federal Advisory Committee Act (FACA), 5 U.S.C. App. (as amended).

III. Objectives and Scope

The objective of the Committee is to provide advice to the Department of Housing and Urban Development (HUD), Office of Manufactured Housing (OMH). The scope of such advice is prescribed by the MHIA as follows:

- (i) Provide periodic recommendations to the Secretary to adopt, revise, and interpret the Federal manufactured housing construction and safety standards.
- (ii) Provide periodic recommendations to the Secretary to adopt, revise, and interpret the procedural and enforcement regulations, including regulations specifying the permissible scope and conduct of monitoring.

IV. Duties

The duties of the Committee are solely advisory.

V. The Agency or Official to Whom the Committee Reports

The Committee shall submit advice and report to the Secretary, HUD, or the Secretary's designee.

VI. Support to Committee

Support shall be provided by HUD through the Office of Housing, Office of Manufactured Housing Programs.

VII. Estimated Annual Costs

The estimated annual operating cost of the Committee is \$1.3 million which includes 3.0 FTE.

VIII. Designated Federal Officer

A full-time or permanent part-time employee, appointed in accordance with agency procedures, and two or more alternates, appointed in accordance with HUD succession policy, will serve as the Designated Federal Officer. The alternate(s) shall serve only in the event of inability of the primary designee to serve and upon authorization of the Deputy Assistant Secretary for Risk Management and Regulatory Affairs.

The Designated Federal Officer will approve or call all of the advisory committee and subcommittee meetings, prepare and approve all meeting agendas, attend all Committee and subcommittee meetings, adjourn any meeting when the Designated Federal Officer or alternate, if an alternate duly appointed under this Section, is acting at the time, determines adjournment to be in the public interest, and chair meetings when directed to do so by the official to whom the Committee reports.

IX. Meetings

The estimated number of meetings anticipated within a fiscal year is two (2), at intervals as needed to render advice to the Secretary.

X. Duration

Continuing.

XI. Termination

Unless renewed by appropriate action prior to its expiration, the Manufactured Housing Consensus Committee will terminate two years from the date this charter is filed.

XII. Membership and Designation

The Committee shall be composed of twenty-one Representative voting members appointed by the Secretary and one non-voting Regular Government Employee member appointed by the Secretary to represent the Secretary on the Committee.

The voting members shall be drawn from the following interest categories:

Seven producers or retailers of manufactured housing

Seven persons representing consumer interests, such as consumer organizations, recognized consumer leaders, and owners who are residents of manufactured homes.

Seven general interest and public official members.

XIII. Subcommittees

The Secretary, or the Secretary's designee, shall have exclusive authority to create subcommittees. Subcommittees may report only to the Committee established by this Charter, and must not provide advice or work products directly to the agency.

XIV. Recordkeeping

The records of the Committee, formally and informally established subcommittees, or other subgroups of the committee, shall be handled in accordance with General Records Schedule 26, Item 2 or other approved agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

XV. Date of Filing

U.S. Senate Committee on Banking, Housing and Urban Affairs
U.S. House Committee on Financial Services
Library of Congress
Secretary, U.S. Department of Housing and Urban Development

August 27, 2010

ATTACHMENT C

**MHCC AGENDA
OCTOBER 27-28, 2010
ARLINGTON, VA**

WIND TASK GROUP STATUS REPORT

MHCC

Wind Task Force

Conference Call 9-30-10

Participants

Jason McJury - IBTS
Bill Farish, Chair - Clayton
Michael Wade - Cavalier
David Low – absent – still interested but unable to attend
Rick Mendlen - HUD
Joe Nebbia – Newport Partners /NFPA
Manny Santana - Cavco
Angelo Wallace – HUD

Action Items

- Chair to send August 20 draft, blank spreadsheet, sample spreadsheet, and specs to 3 to 4 manufacturers – including 1 small manufacturer
- Manufacturers to send info to MHI for compilation
- MHI to send anonymous data back to Chair
- Task Force to try to meet during the October meetings.

Discussion

The Chair called the meeting to order at 10:02 a.m. The meeting ran until 10:40 a.m.

The group discussed the upcoming economic analysis of changes recommended by the Task Force. The Chair introduced in general what the manufacturers will cost in analysis. The size of the units analyzed will be 16'x76' as well as 28'x76'. There was agreement in the group that those are the right sizes. The group wanted to specify no fancy things like dormers or porches would be used in the analysis – nothing out of the ordinary.

There was a question on how the roof slope cost would be estimated and the group agreed upon non-hinged.

There was agreement that 3 or 4 manufacturers would be adequate for the analysis. The manufacturers will stay anonymous throughout the process. On the first round, only wind zone 1, 2, and 3 will be analyzed. That is the manufacturers gathering information – no engineering involved. The only things that are new are the corner overhang as well as the 3 foot to 4 foot change.

One controversial thing is not just materials and labor, but they need a manufacturer's markup, installation cost, and retailer markup. Engineer wouldn't track that. Manufacturers can't share cost info directly. The manufacturers are going to send stuff to MHI. MHI is going to take name, plant location and model number out and then send the whole thing back to us.

The spreadsheet will contain a sample for one tab. The manufacturer will fill in numbers on a blank spreadsheet tab. They should fill in all the green sections. They should fill in whatever things are adding cost. We want to be able to collect lump sums under the categories. The baseline costs are the wind zone 1 costs for this exercise.

HUD commented that they wouldn't do much differently. In terms of trying to estimate the costs – economists do it in a somewhat different way, but this is a good first effort to collect the information and get a fundamental understanding of cost impacts. The group could estimate final cost to the consumer and original costs.

There was a comment that when it comes to total cost for installation – the proposed rule, would probably affect the construction and safety standards as well as the installation standards.

There was a comment that the charts would not have to change for wind zone 1 and 2. Wind zone 4 for installation is the same as wind zone 3. That will simplify things. Wind zone 4 starts the real changes in components and cladding.

The chair pointed out that the most up to date version of the changes is marked with an August 20 date. This was distributed to participants during the call.

Next step – Chair will send spreadsheet, the August 20 draft, and specs out to manufacturers. They will send to MHI who will return the populated spreadsheet to the task force.

There was discussion of the Task Force meeting at some point during the in-person meetings in October (either at lunch or in the evening)

There was a question regarding whether there is there a representative small manufacturer that wouldn't have the purchasing power that the large manufacturers have. Chair agreed to look for small manufacturer.

There was a comment that there is a misspelled word in the header (Chair to fix).

There was a suggestion to send sample as an example with the spreadsheet.

ATTACHMENT D

MHCC AGENDA

OCTOBER 27-28, 2010

ARLINGTON, VA

HUD/MHCC DISCUSSION AND RECOMMENDED MHCC ACTIONS LONG TERM ISSUES

Formaldehyde

Energy Efficiency

Wind Design

Accessibility

Sprinklers

3280HUD- Log #27
(3280.308)

Final Action:

Submitter: Tom Neltner, National Center for Healthy Housing

Recommendation: Add new paragraph (e) as follows:

(e) Manufactured housing constructed after January 1, 2012 shall use plywood and particleboard that complies with Title 17 Section 93120 to 93120.12 of the California Code of Regulations for airborne toxic control measure to reduce formaldehyde emissions from composite wood products.

Substantiation: Formaldehyde is a significant respiratory irritant and potential health threat to residents, especially residents with asthma. The HUD standards do not adequately protect residents. In April 2007, the California Air Resources Board adopted standards that set the most stringent standards for composite wood products. CARB expects to finalize those standards in December 2007 with a four-year, phase-in period. The California standards for these products will become the national norm. While it will cost more, all residents deserve additional protection from formaldehyde.

3280HUD- Log #31
(3280.308)

Final Action:

Submitter: Tom Neltner, National Center for Healthy Housing

Recommendation: Add new paragraph (e) as follows:

(e) Manufactured housing constructed after January 1, 2012 that contains plywood and/or particleboard must use only plywood and/or particleboard that complies with Title 17 Section 93120 to 93120.12 of the California Code of Regulations for airborne toxic control measure to reduce formaldehyde emissions from composite wood products.

Substantiation: Formaldehyde is a significant respiratory irritant and health threat to residents, especially residents with asthma or those who have been sensitized. In April 2007, the California Air Resources Board (CARB) adopted standards that achieve the lowest exposures from composite wood products. The CARB Standards have a four-year, phase-in period. The cost will be approximately 10% higher, and will be offset by fewer health related costs associated with exposure to formaldehyde.

3280HUD- Log #50
(3280.308(2)(b))

Final Action:

Submitter: Edward L. Keith, APA - The Engineered Wood Assn.

Recommendation: Revise text as follows:

S 3280.308 (2) (b) *Product certification and continuing qualification.* All plywood and particleboard materials to be installed in manufactured homes which are bonded with a resin system or coated with a surface finish containing formaldehyde, ~~other than an exclusively phenol formaldehyde resin system or finish~~ shall be certified by a nationally recognized testing laboratory as complying with paragraph (a) of this section. Panels or finishes that use an exclusively phenol-formaldehyde resin system and structural panels that are certified to PS 1 or PS 2 are exempt from this certification process.

Substantiation: Structural panel products certified as PS 1 or PS 2 permit only moisture resistant adhesive systems such as phenol-formaldehyde or methyldiisocyanate (MDI). These adhesive systems have been demonstrated to be ultra low emitters such that ongoing evaluation and certification is not necessary. The low formaldehyde emission levels of PS 1 and PS 2 panel products are documented in the following reports:

- APA Technical Report — Structural Wood Panels and Formaldehyde (APA Report SPE-1040). This report presents formaldehyde data on PS 1 and PS 2 panel products. All formaldehyde test data was well below 0.10 ppm when tested freshly after manufacturing and dropped to near zero levels shortly after. In fact, the emission levels were so low it was difficult to measure.

- The attached report of ASTM E1333 results on PS 2 OSB produced with various adhesive systems demonstrate emission levels consistently below 0.05 ppm.

Further justification for exemption of PS 1 and PS 2 panels is as follows:

- PS 1 permits only moisture resistant adhesive systems and they must be qualified to provide excellent bond performance after aggressive vacuum soak and boil conditions. PS 1 does not permit interior type adhesives. As a result, PS 1 plywood uses phenol-formaldehyde adhesive systems.

- PS 2 also permits only moisture resistant adhesive systems that must be qualified to PS 1 (in the case of plywood) or after demonstrating strength retention after aggressive vacuum soak cycles in the case of OSB.

- The *Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products* being promulgated by California's Air Resources Board (CARB) establishes formaldehyde emission levels more stringent than the levels in this HUD standard. Based on the justifications presented above, the CARB rules specifically exempt PS 1 and PS 2 panels.

The updating of the referenced document has no impact on the cost in either direction.

The benefit from the use of this updated document is that producers that manufacture known ultra-low formaldehyde emitters will not have to go through the certification process.

This is not original material; its reference/source is as follows:

This proposal is really just a clarification of current statements in the Standard. See Reason Statement above for technical justification.

3280HUD- Log #67
(3280.308(2)(b))

Final Action:

Submitter: Edward L. Keith, APA - The Engineered Wood Assn.

Recommendation: Revise text as follows:

S 3280.308 (2) (b) *Product certification and continuing qualification.* All plywood and particleboard materials to be installed in manufactured homes which are bonded with a resin system or coated with a surface finish containing formaldehyde, other than an exclusively phenol-formaldehyde resin system or finish or structural panel products certified as U.S. PS 1 or U.S. PS 2, shall be certified by a nationally recognized testing laboratory as complying with paragraph (a) of this section.

Substantiation: Structural panel products certified as PS 1 or PS 2 permit only moisture resistant adhesive systems such as phenol-formaldehyde or methyldiisocyanate (MDI). These adhesive systems have been demonstrated to be ultra low emitters such that ongoing evaluation and certification is not necessary. The low formaldehyde emission levels of PS1 and PS 2 panel products are documented in the following reports:

- APA Technical Report — Structural Wood Panels and Formaldehyde (APA Report SPE-1040).

This report presents formaldehyde data on PS 1 and PS 2 panel products. All formaldehyde test data was well below 0.10 ppm when tested freshly after manufacturing and dropped to near zero levels shortly after. In fact, the emission levels were so low it was difficult to measure.

- The attached report of ASTM E1333 results on PS 2 OSB produced with various adhesive systems demonstrate emission levels consistently below 0.05 ppm.

Further justification for exemption of PS 1 and PS 2 panels is as follows:

- PS 1 permits only moisture resistant adhesive systems and they must be qualified to provide excellent bond performance after aggressive vacuum soak and boil conditions. PS 1 does not permit interior type adhesives. As a result, PS 1 plywood uses phenol-formaldehyde adhesive systems.

- PS 2 also permits only moisture resistant adhesive systems that must be qualified to PS 1 (in the case of plywood) or after demonstrating strength retention after aggressive vacuum soak cycles in the case of OSB.

- The *Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products* being promulgated by California's Air Resources Board (CARB) establishes formaldehyde emission levels more stringent than the levels in this HUD standard. Based on the justifications presented above, the CARB rules specifically exempt PS 1 and PS 2 panels.

The updating of the referenced document has no impact on the cost in either direction.

The benefit from the use of this updated document is that producers that manufacture known ultra-low formaldehyde emitters will not have to go through the certification process.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #68
(3280.308(2)(b))

Final Action:

Submitter: Edward L. Keith, APA - The Engineered Wood Assn.

Recommendation: Revise text as follows:

Product certification and continuing qualification. All plywood and particleboard materials to be installed in manufactured homes which are bonded with a resin system or coated with a surface finish containing formaldehyde, ~~other than an exclusively phenol-formaldehyde resin system or finish~~ shall be certified by a nationally recognized testing laboratory as complying with paragraph (a) of this section. Panels or finishes that use an exclusively phenol-formaldehyde resin system and structural panels that are certified to PS 1 or PS 2 are exempt from this certification process.

Substantiation: Structural panel products certified as PS 1 or PS 2 permit only moisture resistant adhesive systems such as phenol-formaldehyde or methyldiisocyanate (MDI). These adhesive systems have been demonstrated to be ultra low emitters such that ongoing evaluation and certification is not necessary. The low formaldehyde emission levels of PS1 and PS 2 panel products are documented in the following reports:

- APA Technical Report — Structural Wood Panels and Formaldehyde (APA Report SPE-1040).

This report presents formaldehyde data on PS 1 and PS 2 panel products. All formaldehyde test data was well below 0.10 ppm when tested freshly after manufacturing and dropped to near zero levels shortly after. In fact, the emission levels were so low it was difficult to measure.

- The attached report of ASTM E1333 results on PS 2 OSB produced with various adhesive systems demonstrate emission levels consistently below 0.05 ppm.

Further justification for exemption of PS 1 and PS 2 panels is as follows:

- PS 1 permits only moisture resistant adhesive systems and they must be qualified to provide excellent bond performance after aggressive vacuum soak and boil conditions. PS 1 does not permit interior type adhesives. As a result, PS 1 plywood uses phenol-formaldehyde adhesive systems.
- PS 2 also permits only moisture resistant adhesive systems that must be qualified to PS 1 (in the case of plywood) or after demonstrating strength retention after aggressive vacuum soak cycles in the case of OSB.
- The *Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products* being promulgated by California's Air Resources Board (CARB) establishes formaldehyde emission levels more stringent than the levels in this HUD standard. Based on the justifications presented above, the CARB rules specifically exempt PS 1 and PS 2 panels.

The updating of the referenced document has no impact on the cost in either direction.

The benefit from the use of this updated document is that producers that manufacture known ultra-low formaldehyde emitters will not have to go through the certification process.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #28
(3280.103(C)(3))

Final Action:

Submitter: Mike Moore, Newport Ventures

Recommendation: Revise text to read as follows:

3280.103(C)(3): Each bathroom and separate toilet compartment shall be provided with an Energy Star labeled mechanical ventilation system capable of exhausting 50 cfm to the outside of the home. A separate toilet compartment may be provided with 1.5 square feet of openable glazed area in place of mechanical ventilation, except in Uo value Zone 3.

Substantiation: Traditionally, manufactured homes have been troubled by poor indoor air quality and moisture problems. The current code requires mechanical ventilation systems in bathrooms and toilet compartments, but does not regulate the efficacy of the system or the operational sound level of the system. By requiring Energy Star labeled fans to be used in these areas, the efficacy and sound level of these systems are addressed. Sound levels have been linked to user's willingness to operate fans, with noisier fans resulting in shorter run times. Typical Energy Star bathroom and utility room fans operate at 2 sones or less, increasing the change that run times are sufficient to reduce humidity to appropriate levels. This is accomplished at an efficacy of at least 1.4 cfm/Watt, resulting in energy savings of up to 65% off of standard models, according to EPA. A cost benefit analysis predicts a simple payback of 1.25 years for Energy Star fans when used within a whole house ventilation system, which is required by the MHSCC.

Cost Benefits: Based on first and operational cost comparisons between two market available fans (one baseline and one Energy Star), the estimated payback of an Energy Star fan is 1.25 years. Furthermore, the baseline fan is not rated for continuous operation, and so it will likely need to be replaced more often than the Energy Star fan, making the Energy Star fan that much more affordable. Key assumptions include: U.S. average electricity rate of \$0.104/kWh (source: 2006 U.S. DOE EIA), retail costs of bath fans (source: www.wamhomecenter.com), continuous operation (a likely condition if the fan is used for whole house ventilation), 1.336 lbs CO₂/kWh (source: U.S. DOE EIA). See table below for details.

Insert Table here

	Example Product	Exhaust Rate (CFM)	Noise Level (sones)	Initial Cost	Power Draw (Watts)	Annual Energy Consumed (kWh)	Annual Operational Cost (\$)	Simple Payback (years)	Estimated Annual CO ₂ Savings (pounds)
Energy Star Fan	Broan QTXE050	50	0.3	\$95.90	36	315	\$32.80	1.25	842.6
Baseline Fan	Broan 688	50	4	\$13.99	108	946	\$98.39	N/A	N/A

3280HUD- Log #57
(3280.506(a))

Final Action:

Submitter: Michael Lubliner, Washington State University Energy Program

Recommendation: Revise section MHCSS 3280.506 (a) Coefficient of Heat Transmission Uo values to reflect cost effective thermal efficiency levels comparable to IECC site built energy codes and consistent with NFPA-501 committee proposals CP- (Log #7):

<u>Zone</u>	<u>Maximum Uo Value</u>
1	0.097 Btu/hr/ft2/F
2	0.067 Btu/hr/ft2/F
3	0.062 Btu/hr/ft2/F

Substantiation: The Housing and Community Development Act of 1987 (HCDA) section 569 Manufactured Housing Construction and Safety Standards states that cost effective conservation standards should be established. It reads as follows:

(1) The federal manufactured home construction and safety standards established by the Secretary under this section shall include preemptive energy conservation standards in accordance with this subsection.

(2) The energy conservation standards established under this subsection shall be cost-effective energy conservation performance standards designed to ensure the lowest total construction and operating costs.

(3) The energy conservation standards established under this subsection shall take into consideration the design and factory construction techniques of manufactured homes and shall provide for alternatives practices that result in net estimated energy consumption equal to or less than the specified standard.

The HUD Uo values were last updated in 1994, and based on HUD sponsored research conducted in 1992. *Revision of the Energy Conservation Requirements in the Manufactured Housing Home Construction and Safety Standards, Pacific Northwest Laboratory (PNL-7109)*

In 2002 USDOE funded another study to update Uo values. *Update of Energy Efficiency Requirements for Manufactured Homes, Pacific Northwest Laboratory (PNL-SA-4119)*

In 2005, the NFPA-501 Committee adopted Uo values less stringent than found to be cost effective in the 2002 PNNL study. Both the 1992 and 2002 studies used fuel cost, fuel type and other economic assumptions which are now outdated.

I recently recommended to MHCC (May 2007) and NFPA 501 (June 2007) that the IECC Uo values should be adopted. My MHCC and NFPA presentation and research cited showed positive consumer monthly cash flow (lower life cycle costs), for IECC Uo values. It was shown that in the increased monthly principle and interest costs were less than the energy savings at current energy prices. The presentation also pointed out that consumer benefits increase as energy costs increase whereas the increase to the mortgage remains fixed, resulting in even higher positive monthly cash flow over the life of the home. Since that time the manufactured housing industry has not presented any cost or energy savings data to dispute this proposal.

Because HUD-code homes are less stringent and preempt state energy codes, Pacific Northwest (PNW) new construction energy conservation programs such as the Northwest Energy Efficient Manufactured Housing Program (using the Energy Star brand) were required to help avoid the construction of new expensive power plants. This utility industry partnership resulted in all 20 PNW manufacturing plants producing over 100,000 energy efficient manufactured homes with Uo values of less than 0.054 BTU/hr/ft2/F. NEEM homes have been shown to be cost effective to new homebuyers even without utility incentives or considering NADA Manufactured Housing Appraisal Guide added resale value. HUD code manufactured housing companies building Energy Star may qualify for \$1000 federal energy tax credits, which further increase consumer cost effectiveness if used to reduce first costs to the consumer.

Not only does the proposal benefit to new HUD-code homebuyers, but it also improves our nation's energy independence and helps to address climate change. Finally, the proposal will also reduce the burden on federal taxpayers who currently subsidize weatherization and utility fuel assistance payments made to low-income occupants of HUD code housing.

If manufacturers want HUD to treat them like site built homes than they should build to site built energy codes. I have submitted to NFPA and MHCC numerous research and analysis documents in support of this proposal. HUD financing (i.e. Fannie Mae, Freddie, FHA, VA etc.) should only be used to finance manufactured housing built to site built energy code levels.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #58
(3280.501(e))

Final Action:

Submitter: Michael Lubliner, Washington State University Energy Program

Recommendation: Revise text as follows:

Sec 501(e) *U-values for any glazing (e.g. window, skylights, and glazed portions of any door) shall be based on tests using NFRC 200, Procedures for determining Fenestration Product Thermal Properties.* This is consistent with NFPA-501 committee proposals CP- (Log #8).

Substantiation: Allowing the use of either AAMA or NFRC test methods guarantees inconsistent product performance and confusion in the marketplace. Unlike NFRC, AAMA does not require labeling of U-values, so neither customer, retailer, manufacturer staff or IPIA know the U-value for a given product. In addition, the IECC, as well as most state energy codes and programs such as Energy Star reference NFRC, not AAMA.

The National Fenestration Rating Council has developed a number of key elements that ensure the accuracy and credibility of its rating and certification program: as noted be low:

- NFRC reviews and approves up-to-date computer simulation tools and thermal testing procedures for obtaining accurate thermal ratings for fenestration products.
- NFRC maintains a list of accredited simulation and testing laboratories qualified to determine the thermal performance of fenestration products through computer modeling and thermal testing.
- NFRC provides for a third party Independent Agent (IA) to review documentation, conduct inspections and approve products for certification and labeling.
- NFRC licenses the manufacturers authorized to label products, permitting the use of the NFRC logo and ratings that appear on the certified product.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #61
(3280.103)

Final Action:

Submitter: Michael Lubliner, Washington State University Energy Program

Recommendation: Revise text as follows:

This proposal seeks to require Energy Star™ compliant energy efficient lighting systems:

Sec. 3280.103 Light and ventilation.

(a) Lighting. Each habitable room shall be provided with exterior windows and/or doors having a total glazed area of not less than 8 percent of the gross floor area.

(1) Kitchens, bathrooms, toilet compartments, laundry areas, and utility rooms may be provided with artificial light in place of windows.

(2) Rooms and areas may be combined for the purpose of providing the required natural lighting provided that at least one half of the common wall area is open and unobstructed, and the open area is at least equal to 10 percent of the combined floor area or 25 square feet whichever is greater.

(3) At least 80% of light bulbs or fixtures shipped with the home shall be Energy Star™ labeled.

Substantiation: The Housing and Community Development Act of 1987 (HCDA) section 569 Manufactured Housing Construction and Safety Standards states that cost effective conservation standards should be established. It reads as follows:

(1) The federal manufactured home construction and safety standards established by the Secretary under this section shall include preemptive energy conservation standards in accordance with this subsection.

(2) The energy conservation standards established under this subsection shall be cost-effective energy conservation performance standards designed to ensure the lowest total construction and operating costs.

(3) The energy conservation standards established under this subsection shall take into consideration the design and factory construction techniques of manufactured homes and shall provide for alternatives practices that result in net estimated energy consumption equal to or less than the specified standard.

I recently recommended to MHCC (May 2007) and NFPA 501 (June 2007) that Energy Star lighting should be adopted. All consumer information from HUD PATH, USDOE Building America and EPA Energy Star suggests positive consumer monthly cash flow for Energy Star lighting over standard incandescent lighting. The increased mortgage costs associated with Energy Star lighting are less than the incurred energy savings at current energy prices. Consumer benefits from Energy Star™ lighting increase as energy costs increase, whereas mortgage costs remain fixed, resulting in higher positive monthly cash flows over the life of the home. MHI has not presented any data to dispute the lighting facts in my presentations to the MHCC and NFPA-501.

Energy Star lighting will also reduce homeowner air conditioning costs because they provide less waste heat. Replacement costs are also less, since they last 5-10 times longer than incandescent bulbs. Current Energy Star lighting technologies are reliable and provide similar lighting quality and performance as incandescent bulbs. The proposal provides flexibility by allowing for 20% of the fixtures to use incandescent lighting.

Not only will the adoption of this proposal benefit new HUD-code homebuyers, but it will also help achieve the goals of energy independence and climate change mitigation. The proposal will also reduce the burden on federal taxpayers who currently subsidize weatherization and utility fuel assistance payments made to low-income occupants of HUD code housing.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #64
(3280.506(b))

Final Action:

Submitter: Michael Lubliner, Washington State University Energy Program

Recommendation: Revise text as follows:

This is consistent with NFPA-501 committee proposals CP- (Log #11). Adopt NFPA 501 appendix A-8.8.3 in MHCSS 3280 Section 506 (b) and change “should” to “shall” as follows:

All areas where insulation compression exists shall be addressed by plant quality control processes. This includes compression as a result of electric wiring and receptacles, plumbing, medicine cabinets, utility panels, and metal frames. To address this, batt-type wall insulation shall be cut around electrical and plumbing fixtures and electric wiring and plumbing runs. Batt type or blanket type shall be cut to fit to limit compression and comply with the insulation manufacturer stated R-value. Exceptions shall be limited to “thermal shorts” associated with penetrations from plumbing and ductwork.

Substantiation: This proposal requires the manufacturer to better address the specifics of insulation installation procedure and better define what is acceptable to plant staff, IPIA, DAPIA and HUD. This proposal will help to ensure that the desired “FTC approved” R-value is achieved by requiring specific installation practices that are recommended by many insulation manufacturer installation manuals.

Experience in the PNW has found that “the devil is in the details” when it comes to proper installation of insulation. This proposal will improved wall insulation performance with no additional material costs, just a commitment to installation quality that helps to level the playing field. The previous NFPA 501 committee indicated that “best practice” is suitable in the appendix; this is not a suitable energy standard in today’s manufactured housing.

The impact of voids and compression on insulation performance is significant. In laboratory testing thermal resistance values for walls with sloppy insulation installations vary as much as 14% from walls with good installations. In recognition of this fact, the Energy Star site built program requires raters and builders to evaluate insulation quality. The same requirement should apply to the HUD code home industry. Insulation quality is not addressable after the home leaves the plant, as there is no access to wall, ceiling or floor insulation. It is vitally important to address insulation details at the plant and do it right the first time!

Adoption of this proposal is critical, given the lack of HUD funding over the past few years to support oversight of in-plant QA by HUD’s contactor IBTS. Clarity between the DAPIA approved plan, in-plant QA process and IPIA can only help this difficult situation.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #65
(3280.508(e))

Final Action:

Submitter: Michael Lubliner, Washington State University Energy Program

Recommendation: Revise text as follows:

Adopt NFPA-501 A.8.7.1 in section MHCSS 3280.508 (e).

To minimize the cooling load of homes located in Zone 1 of figure 8.6, the use of overhangs, awnings, or other permanent shading devices or the use of glazing with 0.040 solar heat gain coefficient (SHGC) for double pane windows, and 0.060 SHGC for single pane windows with or without storm windows, shall be used. SHGC shall be based on tests using the NFRC 200, *Procedures for determining Fenestration Product Thermal Properties*. This is consistent with NFPA-501 committee proposals CP- (Log #9).

Substantiation: Research from a variety of sources suggests that window heat gain is a large part of cooling loads in hot climates. A recent carefully controlled experiment in Florida showed that low SHGC glazing reduced space conditioning needs by 15% in two otherwise similar homes. Savings in manufactured homes are likely to be greater, since there are typically no overhangs and often little in the way of site shading. The National Fenestration Rating Council (NFRC) rates manufactured window Solar Heat Gain Coefficients. Since windows are a very large part of cooling loads in hot climates, SHGC should be part of the standard used for manufactured homes sold in those locations. SHGC values of 0.6 can be achieved readily and inexpensively, while helping homeowners in hot climates to control space conditioning costs.

The previous NFPA-501 committee did not dispute above referenced research. The impact of adopting this proposal into the MHCSS is at least a 15% reduction in AC sizing in cooling climates. The Manufactured Housing Research Alliance (MRHA) sizing of AC systems in manufactured homes suggests a 1/2 ton AC savings from the use of SHGC values presented in this proposal. The cost savings in a half-ton reduction in air conditioning size will more than offset the incremental cost of lower SHGC windows. The proposal will also reduce the UV deterioration of furnishings and floor coverings.

Note: Supporting material is available for review at NFPA Headquarters.

3280HUD- Log #2
(3280.112)

Final Action:

Submitter: Earl A. Gilson, Rep. Olympic Area Agency on Aging

Recommendation: Revise text to read as follows:

Hallways shall have a minimum horizontal dimension of ~~26 inches~~ 30 inches (762 mm) measured from the interior finished surface to the opposite wall.

Substantiation: Hallways provide access to bedrooms, bath and utility areas. Narrow hallways make access for elderly, handicapped persons using walkers or wheelchairs very difficult.

Cost Benefit: Cost is negligible, in-factory assembly requires no additional man-hours.

3280HUD- Log #3
(3280.105.2(b))

Final Action:

Submitter: Earl A. Gilson, Rep. Olympic Area Agency on Aging

Recommendation: Revise text to read as follows:

All exterior ~~doors~~ swinging doors shall provide a minimum ~~28 inch wide by 74 inch high clear opening~~ 32 inch wide (788 mm) by 74 inch high clear opening. All exterior sliding glass doors shall provide a minimum ~~28 inch wide by 72 inch high clear opening~~ 32 inch wide (788 mm) by 72 inch high clear opening.

Substantiation: There are several million manufactured homes in the United States today. More than 60 percent are owned/occupied by senior citizens (60 years or older). Thousands of these persons have restricted mobility due to strokes, accidents, or other injury or infirmity.

Cost Benefit: Cost of installing larger doors will not exceed \$15.00 (fifteen dollars) per door, if installed at time of in-factory assembly.

3280HUD- Log #11
(3280.105.B(2))

Final Action:

Submitter: Earl A. Gilson, O3A Advisory Committee

Recommendation: Revise text as follows:

~~...minimum 28 in. wide by 74 in. high clear opening.~~ All exterior sliding glass doors shall provide a minimum ~~28 in. wide~~ by 72 in. high clear opening.

Add text to read as follows:

...minimum 32 in. wide by 74 in. high clear opening. All exterior sliding glass doors shall provide a minimum 32 in. wide by 72 in. high clear opening.

Substantiation: 28 in. doors interfere with entrance of persons and equipment, i.e., furniture, handicapped gear, wheel chairs and walkers.

Wider doors allow greater ease of entry and exit for persons and equipment. Quicker egress is possible in a crisis or emergency. The Older Americans Act and Americans with disabilities Act speak to this issue.

3280HUD- Log #76
(3280.4 and 328.210)

Final Action:

Submitter: Lois Starkey, Manufactured Housing Institute
Recommendation: 24 CFR Part 3280
Manufactured Home Construction Standards
Fire Sprinkler Systems

Add to Part 3280.4 the following reference.

NFPA 13D, Standards for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes, 2010 edition.

Add to Part 3280.2 the following definitions.

Multipurpose fire sprinkler system: A system that supplies domestic water to both plumbing fixtures and fire sprinklers.

Stand-alone fire sprinkler system: A system that is separate and independent from the water distribution system.

Add to Part 3280 new subpart 210 as follows:

§3280.210 Fire Sprinkler Requirements.

(a) *Preemption.* When a manufacturer elects to install a fire sprinkler system or a state or local authority having jurisdiction requires that a fire sprinkler system be installed for all detached single-family dwellings, this section establishes the requirements for the installation of a fire sprinkler system in a manufactured home.

(b) *General.* The design of the fire-sprinkler system itself shall be in accordance with NFPA 13D or this section (3280.210), which shall be considered equivalent to the design method used in NFPA 13D. This section applies to both stand-alone and multipurpose sprinkler systems that do not include the use of antifreeze. A back-flow preventer shall not be required to separate a stand-alone sprinkler system from the water distribution system.

(c) *Sprinkler Location.* Sprinklers shall be installed to protect all areas inside the manufactured home except:

1. Attics and normally unoccupied concealed spaces that do not contain fuel burning appliances. In attics and normally unoccupied concealed spaces containing fuel burning equipment, a sprinkler system shall be installed above the equipment; however, sprinklers shall not be required in the remainder of the space.
2. Linen closets, clothes closets and pantries not exceeding 24 square feet in area, with the smallest dimension not greater than 3 feet and having wall and ceiling surfaces of gypsum board.
3. Bathrooms not more than 55 square feet in area.
4. Garages, carports, exterior porches, unheated entry areas, such as mud rooms, that are adjacent to an exterior door, and other similar areas.

(d) *Sprinklers.* sprinklers shall be new listed residential sprinklers and shall be installed in accordance with the sprinkler manufacturer's installation instructions.

(e) *Temperature rating and separation from heat sources.* (1) Except as provided for in §3280.210(e)(1), sprinkler systems shall have a temperature rating of no less than 135°F (57°C) and not more than 170°F (77°C). Sprinklers shall be separated from heat sources as required by the sprinkler manufacturer's installation instructions.

(1) Intermediate temperature sprinklers. Sprinklers shall have an intermediate temperature rating not less than 175°F (79°C) and not more than 225°F (107°C) when installed in attics; concealed spaces located directly beneath a roof; directly under skylights where the sprinkler is exposed to direct sunlight; and within the distance to a heat source as specified in Table P2904.2.2 of IRC 2009.

(f) *Freezing areas.* Piping shall be protected from freezing as required by Part 24 CFR Section 3280.603 (b)(4). Where sprinklers are required in areas subject to freezing, dry-side-wall or dry-pendent sprinklers extending from nonfreezing

area into a freezing area, shall be installed.

(g) *Sprinkler coverage.* The area of coverage of a single sprinkler shall not exceed 400 square feet and shall be based on the sprinkler listing and the sprinkler manufacturer's installation instructions. Sprinkler discharge shall not be blocked by obstructions unless additional sprinklers are installed to protect the obstructed area. Sprinkler separation from obstructions shall comply with the minimum distances specified in the sprinkler manufacturer's instructions. Pendant sprinklers within 3 feet of the center of a ceiling fan, surface-mounted ceiling light or other similar object shall be considered to be obstructed and additional sprinklers shall be installed. Sidewall sprinklers within 5 feet of the center of a ceiling fan, surface-mounted ceiling light or other similar object shall be considered to be obstructed and additional sprinklers shall be installed.

(h) *Sprinkler installation on systems assembled with solvent cement.* The solvent cementing of threaded adapter fittings shall be completed and threaded adapters for sprinklers shall be verified as being clear of excess cement prior to the installation of sprinklers on systems assembled with solvent cement.

(i) *Painting, caulking or modifying sprinklers is prohibited.* Painted, caulked, modified or damaged sprinklers shall be replaced.

(j) *Sprinkler piping support.* Sprinkler piping shall be supported in accordance with §3280.608. Sprinkler piping shall comply with all requirements for cold-water distribution piping. For multipurpose piping systems, the sprinkler piping shall connect to and be part of the cold-water distribution piping system. Nonmetallic pipe and tubing, such as CPVC and PEX, shall be listed for use in residential fire sprinkler systems. Nonmetallic pipe and tubing systems shall be protected from exposure to the living space by a layer of not less than 3/8 thick gypsum wallboard, 1/2 inch thick plywood, or other material having a 15 minute fire rating. Pipe protection shall not be required where exposed piping is permitted by the pipe listing and in areas that do not require protection with sprinklers as specified in §3280.210(c).

(k) *Shutoff valves.* Shutoff valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers, except for shutoff valves installed for the entire water distribution system or a valve or valves required to drain the sprinkler system.

(l) *Means of drainage.* A means to drain the sprinkler system shall be provided on the system side of the water supply inlet.

(m) *Minimum flow.* The minimum required flow for each sprinkler shall be determined by using the sprinkler manufacturer's published data for the specific sprinkler model based on the area of coverage, ceiling configuration, temperature rating and any other conditions specified by the sprinkler manufacturer.

(n) *Design flow rate.* The design flow rate for the sprinkler system shall be based on the following:

1. The design flow rate for a room having only one sprinkler shall be the flow rate required for that sprinkler, as determined 3280.210(m).
2. The design flow rate for a room having two or more sprinklers shall be determined by identifying the sprinkler in that room with the highest required flow rate, based on 3280.210(m), and multiplying that flow rate by two.
3. Where the sprinkler manufacturer's instructions specify different criteria for ceiling configurations that are not smooth, flat and horizontal, the required flow rate for the room shall comply with the sprinkler manufacturer's instructions.
4. The design flow rate for the sprinkler system shall be the flow required by the room with the largest flow rate, based on 1, 2, and 3 above.
5. For the purposes of this section, it shall be permissible to reduce the design flow rate for a room by subdividing the space into two or more rooms, where each room is evaluated separately with respect to the required design flow rate. Walls and a ceiling shall bound each room. Openings in walls shall have a lintel not less than 8 inches in depth and each lintel shall form a solid barrier between the ceiling and the top of the opening.

(o) *Pipe sizing and minimum required supply pressure.* (1) The piping to sprinklers shall be sized for the flow required by 3280.210(n). The flow required to supply the plumbing fixtures shall not be required to be added to the sprinkler design flow. The minimum pipe size from the water supply inlet to any sprinkler shall be 3/4-inch nominal. Threaded adapter fittings at the point where sprinklers are attached to the piping shall be a minimum of 1/2 inch nominal.

(2) Piping shall be sized by determining the available pressure to offset friction loss in piping and identifying a piping material, diameter and length in accordance with the following:

Minimum Supply Pressure Required. Equation 210o shall be used to determine the required supply pressure at the fire sprinkler inlet.

$$P_{sup} = P_T + PL_E + P_{sp} \text{ (Equation 210o)}$$

Where:

P_{sup} = Pressure required at the fire sprinkler system supply inlet. [Note: This is the pressure which is entered on the Fire Sprinkler System Certificate under "Minimum Water Supply Required."]

P_T = Pressure loss in the fire sprinkler system piping.

PL_E = Pressure loss form elevation change. (Note: Normally 4.4 psi for single story houses and 8.7 psi for two story houses).

P_{sp} = Maximum pressure required by a sprinkler.

(3) Determination for P_{sup} shall be in accordance with the following procedure:

(i) Step 1. Determine P_T . For the specific design in question determine the distance (developed length) from the fire sprinkler system supply inlet to the most remote sprinkler. Refer to Tables P2904.6.2(4) through P2904.6.2(9) of the International Residential Code 2009 edition and select the correct table for the fire sprinkler system pipe material and pipe size used. Using the system design flow rate form P2904.4.2 find the "Allowable length of pipe" column which is closest to, but not less than, the developed length for the design in question. The "Allowable Pressure" in the column heading is P_T . [Note: Interpolation between "Allowable length of pipe" column which is closest to, but not less than, the developed length for the design in question. The "Allowable Pressure" in the column heading is P_T . [Note: Interpolation between "Allowable length of pipe" (developed length) and "Available Pressure" (P_T) is permitted. Example using Table P2904.6.2(4): Sprinkler Flow Rate - 16 gpm, developed length = 70 feet, Available Pressure (P_T) = 17.5 psi]

(ii) Step 2. Determine PL_E . Refer to Table P2904.6.2(3) of the International Residential Code 2009 edition. The elevation used in applying the table shall be the difference between the highest sprinkler and the fire sprinkler system supply inlet. Interpolation is permitted. [Note: if the highest sprinkler is lower than the fire sprinkler system supply inlet then subtract this value in equation 210o instead of adding it.]

(iii) Step 3. Determine P_{sp} . Determine the maximum pressure required by any individual sprinkler based on the flow rate for each sprinkler as set forth in 3280.210(m). The required pressure is provided in the data provided by the sprinkler manufacturer for the specific model based on the selected flow rate.

(p) *Testing.* The fire sprinkler system piping shall be subject to the same test as the water distribution system in 3280.612(a). For Multipurpose Fire Sprinkler Systems it shall be permitted to test the fire sprinkler system piping simultaneously with the domestic water distribution system.

(q) *Fire Sprinkler System Certificate.* The manufacturer must permanently affix a Fire System Certificate adjacent to the data plate. The manufacturer must specify on the Certificate, the minimum required pressure in pounds per square inch (psi) and flow rate in gallons per minute (gpm) for the water supply system. The Certificate is to include all the statements and required information arranged in substantially the same layout as shown in the following example.

INSERT FIGURE HERE

Fire Sprinkler System Certificate
3280_L76_R.docx

(Example Certificate)
Fire Sprinkler System Certificate

Note: This label contains important information about the fire sprinkler system installed in this home. Please do not remove, alter, or cover this label.

General Information

Name of Manufacturer: _____

Manufactured Home Serial Number: _____

The residential fire sprinkler system installed in this dwelling is in compliance with 24 CFR Part 3280.210 Fire Sprinkler System Requirements. The manufactured home installer must complete testing required below at the home site.

Warning: When necessary, replace components only with identical components or those determined to have equivalent performance characteristics with respect to flows and pressures.

Minimum Water Supply Required

Warning: For this system to operate properly, the following minimum supply of water must be available at the point of connection to the residential fire sprinkler system:

_____ gpm (gallons per minute) at not less than _____ psi (pounds per square inch)

The water supply shall have the capacity to provide the above required design flow rate for the sprinklers for a period of time as follows:

1. Seven minutes for manufactured homes one story in height and less than 2,000 square feet in area.
2. Ten minutes for manufactured home two or more stories in height or equal to or greater than 2,000 square feet in area.

Where a water supply tank, a well system or a combination thereof is used, any combination of tank storage or well system shall be permitted to meet the capacity requirement.

The home installer certifies that the fire sprinkler piping system has been tested on site in accordance with the home manufacturer's instructions and that the above listed required minimum water supply is available.

Company and/or Individual Name of Installer: _____

Address of Installer: _____

Date Home Installed: _____

Warning: This structure contains a residential fire sprinkler system. Do not alter or make additions to the water supply without first contacting the home manufacturer or a fire protection specialist.

Any control valve(s) on the water supply to the residential fire sprinkler system must be in the full open position for the system to operate properly. If the valves must be closed temporarily to service the sprinkler, verify that they are left fully open and secured when service is complete.

(r) Sign or valve tag. A sign or valve tag shall be installed at the fire system supply inlet stating the following:

Warning, the water supply system supplies fire sprinklers that require specific flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water filtration systems, water softeners and automatic shutoff valves, shall not be added to this system without first contacting the home manufacturer or a fire protection specialist. Please do not remove this sign.

(s) Component instructions. If the manufacturer of a fire sprinkler system component used in a system provides written instructions and procedures for the operation, maintenance, periodic testing, and/or repair of the component, a copy of the instructions and procedures shall be left in each home for the end user.

(t) Manufacturer's installation instructions for fire sprinkler systems. Manufacturer's installation instructions must provide the following:

1. Specific instructions for the inspection and testing of the fire sprinkler system during the installation of the home. Testing requirements are to be consistent with §3280.612(a) of this chapter.

2. The following statement:

If this manufactured home contains a fire sprinkler system the installer of the home shall verify that the water supply at the site meets the minimum conditions described on the Fire Sprinkler System Certificate in the home (located next to the data plate). The installer shall also complete the name, address and date on the Certificate.

Substantiation: The Manufactured Home Construction and Safety Standards (MHCSS) do not address fire safety and prevention through the use of fire sprinklers. HUD has taken the position that it cannot preempt state and local jurisdictions from requiring the installation of fire sprinkler systems in new manufactured homes. An increasing number of state and local jurisdictions have established ordinances requiring fire sprinklers in new single family dwellings including manufactured homes, and/or are adopting the 2009 International residential Code which includes fire sprinkler system requirements.

This proposal, therefore, adds a new subpart to Section 3280 providing for a preemptive fire sprinkler system when a manufacturer elects to install a fire sprinkler system or a state or local authority having jurisdiction require that a fire sprinkler system be installed for new manufactured homes.

The standard gives manufacturers the option of utilizing fire sprinkler systems designed in accordance with NFPA 13D or in accordance with a prescriptive method outlined in the new section 3280.210. This prescriptive method is based on the 2009 IRC code and specifically references the tables used in the IRC 2009 edition to determine pipe sizing and water pressure. One advantage of this method, as opposed to the NFPA 13D method, is that the actual design process is much simpler and can easily be done without the use of a complicated computer program. The proposal is also modeled closely from elements of the fire sprinkler standards for manufactured homes in the California code, Title 25, article 2.5, sections 4300-4318.

The proposed standard utilizes a design process that considers the production and distribution methods of factory built housing where the ultimate site location of the home is unknown. The proposal provides for the calculation of the minimum required water pressure and flow rate at the inlet to the home needed for the fire sprinkler system to operate properly, and then requires the information to be included on a certificate placed in the home. The NFPA 13D method uses a design approach whereby the water pressure in the street, pressure losses in the water meter, and the piping between the street and the home inlet must be known. This approach does not work for our industry. As noted, the proposal requires that the manufacturer permanently affix a Fire System Certificate adjacent to the data plate specifying the minimum required pressure in pounds per square inch (psi) and flow rate in gallons per minute (gpm) for the water supply system (Section 3280.210(q)).

The proposed standard also requires a valve tag to be placed on the inlet of the fire sprinkler system [210(r)]; a short statement to be added to the manufacturer's installation instruction [210(t)] and a copy of any fire system component written instructions to be shipped with the home [210(s)].

Under a new section 3285.603(g) the proposal would make the home installer responsible to do the following as part of the installation process:

1. Pressure test the fire sprinkler system piping system following instructions provided by the manufacturer,
2. Verify that the adequacy of the supply to the system against the minimum requirements call out on the Certificate provided by the manufacturer, and
3. Provide his company name, address and date of home installation on the Certificate.

Cost Impact:

The estimated cost impact for installing a sprinkler system in a new manufactured home on a "where required" basis should be minimal. In fact this proposal should reduce costs from current requirements to meet state and local fire sprinkler standards because the MHI proposal calls for design approval and installation in-house, using the procedures outlined in the Manufactured Home Procedural and Enforcement Regulations, (24 CFR Part 3282).

This proposal will minimize cost variances caused by local ordinances that go beyond the NFPA 13D minimum requirements for fire sprinkler systems.

According to a 2008 study prepared by the Fire Protection Research Foundation, *Home Fire Sprinkler Cost Assessment*, the cost of installing sprinkler systems to the site builder averaged \$1.61/per sprinklered square foot. Sprinklered square feet is the total area of spaces with sprinklers. This cost includes design, installation, and other costs such as permits, and water meter fees, to the extent they apply.

Since manufactured homebuilders will be able to utilize in-plant design and inspection procedures, it is estimated that the cost for this proposal would be between \$.50 and \$.75 per square sprinklered foot.

This is not original material; its reference/source is as follows:

IRC 2009

3285HUD- Log #3
(3285.4 and 3285.603(f) (New))

Final Action:

Submitter: Lois Starkey, Manufactured Housing Institute
Recommendation: 24 CFR Part 3285
Model Manufactured Home Installation Standards.

Add to 3285.4 the following reference.

(h)(4) NFPA 13D, Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes, 2010 edition.

Add to 3285.603 a new subsection (f).

3285.603(f) Fire sprinkler system water supply and testing verification by home installer. The adequacy of the water supply to the fire sprinkler system inlet is to be verified by the installer as meeting the minimum requirements identified of the Fire Sprinkler Certificate (located in the home next to the data plate). (See §3280.210(q) of the Manufactured Home Construction and Safety Standards.) The fire sprinkler system piping is to be tested in accordance with the home manufacturer's installation instructions. The home installer must provide its company (or individual if no company) name and address along with the date on the Fire Sprinkler System Certificate.

INSERT 2 FIGURES #1 & #2 for 3285HUD_L3_R.HERE

Substantiation: The Manufactured Home Construction and Safety Standards (MHCSS) do not address fire safety and prevention through the use of fire sprinklers. HUD has taken the position that it cannot preempt state and local jurisdictions from requiring the installation of fire sprinkler systems in new manufactured homes. An increasing number of state and local jurisdictions have established ordinances requiring fire sprinklers in new single family dwellings including manufactured homes, and/or are adopting the 2009 International residential Code which includes fire sprinkler system requirements.

This proposal, therefore, adds a new subpart to Section 3280 providing for a preemptive fire sprinkler system when a manufacturer elects to install a fire sprinkler system or a state or local authority having jurisdiction require that a fire sprinkler system be installed for new manufactured homes.

The standard gives manufacturers the option of utilizing fire sprinkler systems designed in accordance with NFPA 13D or in accordance with a prescriptive method outlined in the new section 3280.210. This prescriptive method is based on the 2009 IRC code and specifically references the tables used in the IRC 2009 edition to determine pipe sizing and water pressure. One advantage of this method, as opposed to the NFPA 13D method, is that the actual design process is much simpler and can easily be done without the use of a complicated computer program. The proposal is also modeled closely from elements of the fire sprinkler standards for manufactured homes in the California code, Title 25, article 2.5, sections 4300-4318.

The proposed standard utilizes a design process that considers the production and distribution methods of factory built housing where the ultimate site location of the home is unknown. The proposal provides for the calculation of the minimum required water pressure and flow rate at the inlet to the home needed for the fire sprinkler system to operate properly, and then requires the information to be included on a certificate placed in the home. The NFPA 13D method uses a design approach whereby the water pressure in the street, pressure losses in the water meter, and the piping between the street and the home inlet must be known. This approach does not work for our industry. As noted, the proposal requires that the manufacturer permanently affix a Fire System Certificate adjacent to the data plate specifying the minimum required pressure in pounds per square inch (psi) and flow rate in gallons per minute (gpm) for the water supply system (Section 3280.210(q)).

The proposed standard also requires a valve tag to be placed on the inlet of the fire sprinkler system [210(r)]; a short statement to be added to the manufacturer's installation instruction [210(t)] and a copy of any fire system component

written instructions to be shipped with the home [210(s)].

Under a new section 3285.603(g) the proposal would make the home installer responsible to do the following as part of the installation process:

1. Pressure test the fire sprinkler system piping system following instructions provided by the manufacturer,
2. Verify that the adequacy of the supply to the system against the minimum requirements call out on the Certificate provided by the manufacturer, and
3. Provide his company name, address and date of home installation on the Certificate.

Cost Impact:

The estimated cost impact for installing a sprinkler system in a new manufactured home on a "where required" basis should be minimal. In fact this proposal should reduce costs from current requirements to meet state and local fire sprinkler standards because the MHI proposal calls for design approval and installation in-house, using the procedures outlined in the Manufactured Home Procedural and Enforcement Regulations, (24 CFR Part 3282).

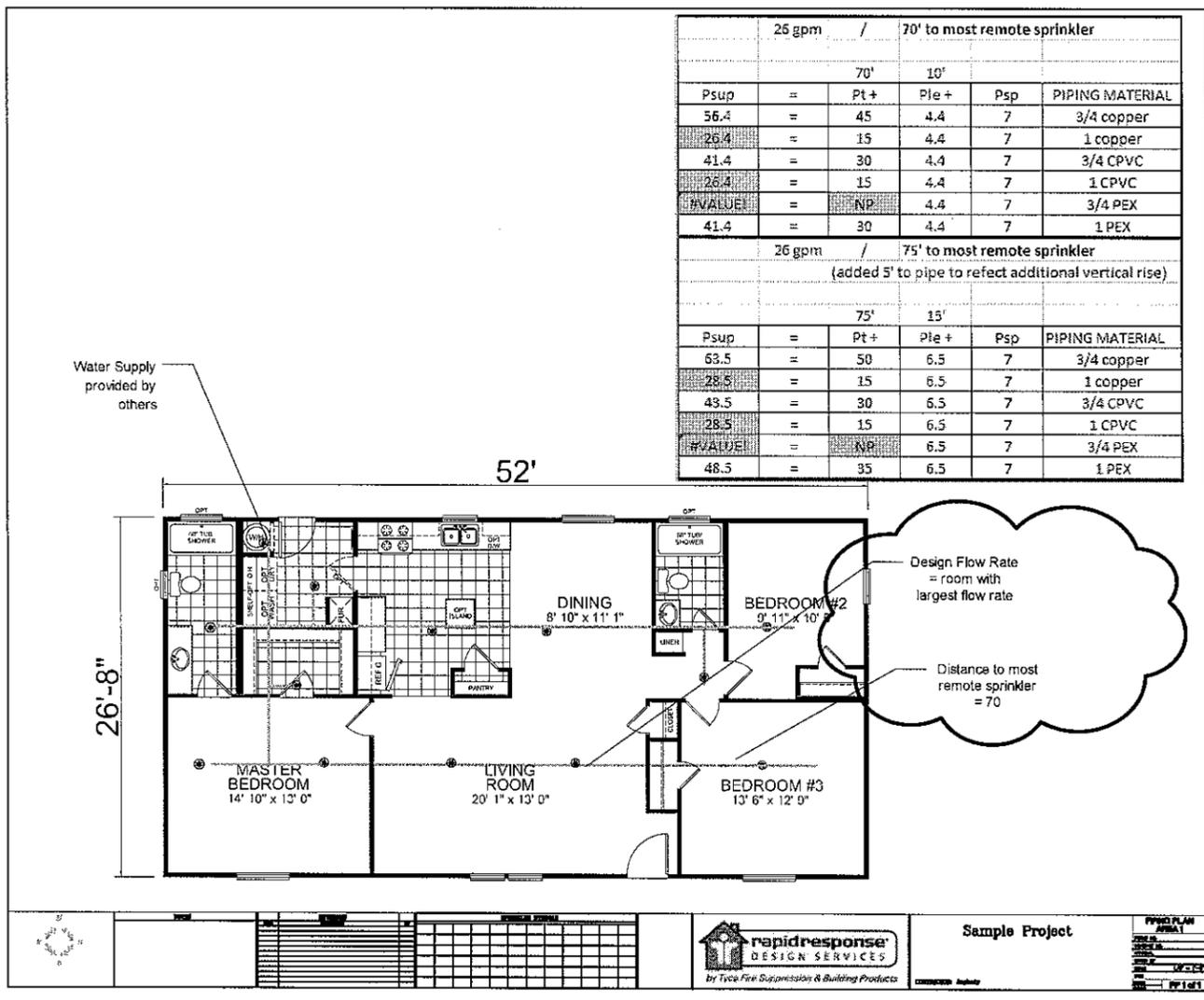
This proposal will minimize cost variances caused by local ordinances that go beyond the NFPA 13D minimum requirements for fire sprinkler systems.

According to a 2008 study prepared by the Fire Protection Research Foundation, *Home Fire Sprinkler Cost Assessment*, the cost of installing sprinkler systems to the site builder averaged \$1.61/per sprinklered square foot. Sprinklered square feet is the total area of spaces with sprinklers. This cost includes design, installation, and other costs such as permits, and water meter fees, to the extent they apply.

Since manufactured homebuilders will be able to utilize in-plant design and inspection procedures, it is estimated that the cost for this proposal would be between \$.50 and \$.75 per square sprinklered foot.

This is not original material; its reference/source is as follows:

IRC 2009



ATTACHMENT E

**TO MHCC AGENDA
OCTOBER 27-28, 2010
ARLINGTON, VA**

**TECHNICAL SYSTEMS
SUBCOMMITTEE**

3280HUD- Log #70
(3280.703, 3280.707(a)(2))

Final Action: Accept in Part

Submitter: Donald Emen, Rinnai America Corp.

Recommendation: Revise text to read as follows:

3280.703 Minimum standards. Under *APPLIANCES*. In this section, I would like to add ANSI Z21.86 standard. The justification for this addition is to include this standard for vented space heating appliances or direct heating equipment.

Vented Gas-Fired Space Heating Appliances - ANSI Z21.86-2008, with Addendum Z21.86a-2005 and Z21.86b-2007.

Under *APPLIANCES*. In this section, I would like to add ASHRAE Standard 103. The justification for this addition is to include the standard used in testing for the Annual Fuel Utilization Efficiency (AFUE) for vented space heating appliances or direct heating equipment:

Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers - ANSI/ASHRAE standard 103-2007 (Supersedes ANSI/ASHRAE Standard 103 - 1993)

3280.707 (a)(2) Heat producing appliances.

Revise this section to add the AFUE as required for Direct Heating Equipment as per the DOE standard 10 CFR 430 Part 32(i).

Gas and oil Burning comfort heating appliances shall have a flue loss of not more than 25 percent, ~~and~~ a thermal efficiency and annual fuel utilization efficiency of not less than that specified in nationally recognized standards (See 3280.703)

Substantiation: The purpose of this proposal is to add the ANSI Z21.86 for gas-fired space heating appliance to the MHCC. This standard covers a wide variety of products -- including direct-vent wall furnaces.

Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Accept in Part

Accept change to 3280.703.

Reject change to 3280.707(a)(2).

Committee Statement: The committee did not believe that it has sufficient documentation relating to the "...annual fuel utilization of efficiency..." criteria mentioned in the second part of the change. The proponent has been asked to provide additional information at a future meeting of the MHCC.

3280HUD- Log #71
(3280.703, 3280.707(d)(2))

Final Action:

Submitter: Donald Emen, Rinnai America Corp.

Recommendation: Add text to read as follows:

3280.703 Minimum standards. Under *APPLIANCES*. In this section, I would like to add ANSI Z21.10.3 volume III standard. The justification for this addition is to include the standard for tankless water heaters with input rate between 75,000 Btu/hr. and 400,000 Btu/hr:

Gas Water Heaters Vol. 1, Storage Water Heaters With Input Ratings of 75,000 BTU per hour or Less-ANSI Z21.10.1-1990, With Addendum Z21.10.1a-1991 and Z21.10.1b-1992.

Gas Water Heaters Vol. 3, Storage Water Heaters With Input Ratings Above 75,000 BTU per hour, Circulating and Instantaneous - ANSI Z21.10.3-2004, With Addendum Z21.10.3a-2007 and Z21.10.3b-2008.

3280.707(d)(2) Heat producing appliances.

Under Performance efficiency. After section 2, I would like to add a new section (3), dedicated to gas-fired tankless water heaters. The reason being that the tankless water heaters have separate efficiency performance table (as per DOE standard 10 CFR 430, Part 32, Section d) to the tank water heaters. Therefore, I believe combining the two efficiency tables would be confusing.

(3) All gas-fired instantaneous water heaters shall have an energy factor (EF), the rated volume in gallons (V) and thermal efficiency (E_t), as described below. The method of test of EF and V shall be as described in the DOE standard 10 CFR Part 430, Appendix E, and the method of test of E_t shall be as described in section 2.9 of Gas Water Heaters Vol.3, Storage Water Heaters With Input Ratings Above 75,000 BTU per hour, Circulating and Instantaneous - ANSI Z21.10.3-2004, With Addendum Z21.10.3a-2007 and Z21.10.3b-2008.

Insert table here

Substantiation: The purpose of this proposal is to add the ANSI Z21.10.3 Standard, Volume III for water heaters with input rate above 75,000 BTUH to the MHCC. This standard covers a wide variety of products -- including tankless water heaters. The tankless water heaters are classified as energy efficient water heaters.

Note: Supporting material is available for review at NFPA Headquarters.

Size Category (Input)	Subcategory or Rating Condition	Performance Required	Test Procedure
>50,000 Btu/h and <200,000 Btu/h	>4000 (Btu/h)/gal and <2 gal	0.62-0.0019V EF	DOE 10 CFR Part 430
>200,000 Btu/h	>4000 (Btu/h)/gal and <10 gal	80% E _t	ANSI Z21.10.3

ATTACHMENT F

**TO MHCC AGENDA
OCTOBER 27-28, 2010
ARLINGTON, VA**

**TECHNICAL STRUCTURES
AND DESIGN SUBCOMMITTEE**

4-6-2010

24 CFR Part 3280

Manufactured Home Construction and Safety Standards

§3280.210 Fire Sprinkler System Requirements.

(a) When a manufacturer elects to install a fire sprinkler system or a state or local authority having jurisdiction requires that a fire sprinkler system be installed for all detached single family dwellings and manufactured homes, this section establishes the requirements for the installation of a fire sprinkler system in a manufacturer home.

(b) Each fire sprinkler installed in a manufactured home must be designed, installed, and tested in accordance with NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2010 edition.

(c) The manufacturer must permanently affix a Fire Sprinkler System Certificate adjacent to the data plate. The manufacturer must specify on the Certificate, the minimum required pressure in pounds per square inch (psi) and flow rate in gallons per minute (gpm) for the water supply system. The Certificate is to read as follows:

FIRE SPRINKLER SYSTEM CERTIFICATE

Note: This label contains important information about the fire sprinkler system installed in this structure.
Homeowner: Do not remove, alter, or cover this label.

GENERAL INFORMATION:

(1) Name and address of home manufacturer _____

Manufactured home serial number: _____

(2) Name and address of fire sprinkler system installer (factory) installation if different from the home manufacturer: _____

Date of factory installation: _____

The residential fire sprinkler system installed in this dwelling is in compliance with NFPA 13D *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2010 edition*. This system has been verified through hydraulic analysis based on the operating characteristics of the specific components utilized. Note: The manufactured home installer must complete testing required by NFPA 13D at the home site.

Warning: When necessary, replace components only with identical components or those determined to have equivalent performance characteristics with respect to flows and pressures.

SPRINKLERS INSTALLED IN THIS STRUCTURE

<u>Manufacturer</u>	<u>Model</u>	<u>Year</u>	<u>Temp. (°F)</u>	<u>Design Coverage</u>	<u>Required Flow Rate</u>	<u>Location</u>
1. _____	_____	_____	_____	ft x ft	gpm @ psi	_____
2. _____	_____	_____	_____	ft x ft	gpm @ psi	_____
3. _____	_____	_____	_____	ft x ft	gpm @ psi	_____

MINIMUM WATER SUPPLY REQUIRED

Warning: For this system to operate properly, the following minimum supply of water must be available at the point of connection to the residential fire sprinkler system:

_____ gpm @ not less than _____ psi for not less than _____ minutes

The fire sprinkler system has been completed on site in accordance with the home manufacturer's installation instructions, and the above listed required water supply is available.

Name and address of site installer: _____ Date: _____

CONTROL VALUES

Warning: This structure contains a residential fire sprinkler system. Do not alter or make additions to the water supply without first contacting the home manufacturer.

The control valve(s) on the water supply to the residential fire sprinkler system must be in the full open position for the system to operate properly. If the valves must be closed temporarily to service the sprinkler, notify local authorities having jurisdiction and verify that they are left fully open and secured when service is complete.

(d) Manufacturer installation instructions must provide specific instructions for the inspection and testing of the fire sprinkler system during the installation of the home.

(e) The Manufacturer is to provide the following information in the consumer manual and the manufacturer's installation instructions describing the fire sprinkler system:

(i) Equipment and specifications.

(ii) Design information.

(iii) Operation.

(iv) Method and frequency of system testing:

(v) Proper fire sprinkler maintenance.

24 CFR Part 3285

Model Manufactured Home Installation Standards

§3285.4 Incorporation by reference (IBR).

* * * * *

(h)

* * *

(4) NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2010 edition.

* * * * *

§3285.603 Water supply.

(f) Testing procedures for factory installed fire sprinkler systems. Upon final connection at the home site of the fire sprinkler system to the water supply in accordance with the manufacturer's installation instructions, the adequacy of the water supply is to be verified and the system is to be tested in accordance with NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2010 edition. The site installer must provide its company name and address along with the date on the Certificate required by 3280.210(c) of the Manufactured Home Construction and Safety Standards.

3280AHUD- Log #1
(Entire Document (New))

Final Action:

Submitter: Mark A. Nunn, Manufactured Housing Inst.

Recommendation: Add text to read as follows:

This ground anchor test protocol is presented as criteria for consideration by the Manufactured Housing Consensus committee's Subcommittee on Planning & Prioritization. Ultimately,MHI would prefer that the Subcommittee on Standards address this issue. Since this test protocol is brand new material, underlining has been omitted for clarity.

Substantiation: At present, many States are using differing test protocols to certify ground anchors for the installation of manufactured homes. This proposal is an attempt to standardize the test protocol for ground anchor selection spacing. The test protocol provides a scope statement, definition, determination of soil class, test apparatus, test specimens, laboratory testing, field testing (three test methods depending on ground anchor Installation), failure criteria, ground anchor spacing determination, and test report information.

Include 3280A_L1.doc here

Cost Benefit: This proposal will increase the cost of ground anchor systems. The mains costs would be associated with all anchors having to be tested by this new standard test protocol for determining the anchor system's ultimate loads and load resistance design values (working loads). However, the anchor system's performance need only be determined once, as this test method would be standardized for the entire country. A ground anchor system tested in a Class 3 soil in the southeast will have the same working capacity as that for other Class 3 soils around the country (reciprocity of test values across State boundaries). Since no standard test protocol exists, this is an attempt to provide a level playing field for all ground anchor system suppliers, to have all ground anchor systems certified, and possibly listed/labeled, for the intended use.

ATTACHMENT G

TO MHCC AGENDA

OCTOBER 27-28, 2010

ARLINGTON, VA

**HUD PROPOSAL – INSTALLATION OF
APPLIANCES AND CRAWLSPACE
VENTILATION**

§ 3280.709(g) Installation of Appliances.

* * * * *

(g) * * *

(1) * * *

(ii) A fireplace or fireplace stove, air intake assembly, hearth extension and chimney is to be installed in accordance with the terms of their listing and their manufacturer’s instructions. The manufacturer is not required to install but is to ship with each home containing a fireplace or fireplace stove, an adequate extension of the air intake assembly that will allow the combustion air inlet to pass through any site installed skirting to the outside of the home.

* * * * *

§3285.505 Crawlspace Ventilation.

* * * * *

(f) Exhaust air from dryer vents, downdraft ranges and or/cooktops must pass through skirting, if installed, to the outside. Combustion air for fuel burning appliances including fireplace and fireplace stoves is to be provided by:

(1) A combustion air inlet that passes through the skirting, if installed, to the outside of the manufactured home that is provided by the manufacturer (see 3280.709(g)(1)(ii)); or

(2) A vented crawl space when the total net free area of the ventilation openings to the outside is equivalent to not less than the twice the required combustion air opening for each installed fuel burning appliance; the entire crawl space is at least 18” in height and is unobstructed except for chassis members; and, the ventilation openings are not of the closeable type.

(g) Any surface water running off from the furnace, air conditioning or water heater drains must be directed away from under the home or collected by other means identified in §3285.203.

* * * * *