



# Manufactured Home Update

Oregon Department of Consumer & Business Services Building Codes Division

January 1999

## One less inspection now required

By Patrick D. Lewis

New administrative rules effective January 1, 1999, eliminate the requirement for a site inspection prior to siting a manufactured dwelling, reducing required inspections from three to two. The changes to OAR 918-500-0065 supersede requirements in 1997 OMDS section 204(f). The 2000 OMDS will incorporate the 1999 administrative rules changes.

The site inspection required until January 1 has been replaced in rule with a requirement for a plot plan. Inspections now required are the installation and final inspection.

Local building jurisdictions may require site inspections, according to OAR 918-500-0065. Dealers or installers may request "optional" site inspections, the criteria for which are in OAR 918-599-0065. For copies of the new administrative rules, call Louann Goffin, (503) 373-7438.

*Administrative rule... continued on page 2*

## Inside

One less inspection now required .....	1
Interested in reducing service costs? .....	1
BCD warns installers, dealers about certification tag reports .....	3
A reminder: heat tape .....	4
OAR changes installation tag reporting .....	5
John Collins joins installation monitoring program .....	5
OMDS Q & A .....	6
Tag reporting mailing procedures updated ..	8
Reintroducing factory investigations .....	9
Hardboard siding woes .....	9
Aschim and Lewis reassigned .....	10
Manufactured home electrical alert .....	11
What's new in manufactured homes?.....	11
Storage requirements noted .....	12

## Interested in reducing service costs?

By Laurene Bates, Emerald Lifestyle Homes, Springfield

For the last eleven years, a major portion of my job has been supervising set-up and service crews. I feel that dealers who want satisfied customers have to develop policies, procedures and lines of communication that ensure a quality set, service, and an informed customer.

I'll describe the major elements of Emerald Lifestyle Homes' set-up and service programs so that new dealers and service managers may have an easier time than mine — learning by guess and by golly. Translation: I made lots of mistakes.

The most important thing I do is have service talks with customers. During the service talk, I discuss the following:

- The schedule of events: who is going to be in the house doing what and how long each activity should take.
- If the customer is doing his or her own improvements, I find out how much construction experience he or she has and I give the customer hand-outs about inspections and various code issues.

*Service costs ... continued on page 4*

## Administrative rule *continued from page 1*

The intent of the optional site inspection and the plot plan requirement is to discover whether or not the site is suitable for home placement before a home is sited. Site issues such as drainage, potential for surface water accumulation, presence of controlled fill, and bearing capacity of soil are crucial to home placement and stability over time.

## Plot plan requirements

- Approximate elevations at each corner of the lot
- Location of all cuts and fills on the lot
- Location of the manufactured dwelling and all accessory buildings and structures, including retaining walls
- Setbacks from property lines, lot lines, streets, public sidewalks, easements of record and other structures on the same or adjacent lots
- Intended finish grade
- Location and type of all site drainage, including rain drains
- Where there is more than a 12-inch difference in elevation between two adjacent corners of a site, the plot plan shall include contour lines or shall be submitted with a cross-sectional drawing of the lot showing the approximate elevations of the lot
- When installed outside a manufactured dwelling, other information such as location of wells, septic tanks, leach lines, petroleum tanks, natural water ways, easements of record and other information necessary to assure health and safety may be required by the municipality

**Exception:** Plot plans are not required for the installation of anchoring devices, earthquake-resistant bracing systems or skirting on an existing home.

**Note:** Administrative rules specifically state that the plot plan drawing is not required to be prepared by a professional engineer.

## Installation inspections

### Foundation installation:

- Verification of the plot plan information, permits, and soil compaction tests or soil investigation reports where required
- Stand preparation, vegetation removal, and vapor barrier
- Pier and footing type, size, and spacing
- Earthquake-resistant bracing

- Marriage line connections

### Multi-section connections:

- Weather stripping and weather seals
- Exposed structural connections
- Tie-down anchor approval, location, attachment, and installation (when required)

### Plumbing connections:

- Shut-off and pressure deducing valves
- Heat tape and pipe insulation
- Pipe size, material, grade, and support
- Pipe fitting type, size, use, and direction
- Crossover pipe connections
- Water supply connections
- Sewer or septic pipe connection
- Mechanical connections and installations
- Heat duct crossover material, R-value, size, clearance, and connections
- Flue, chimney and vent material, size, clearance, connections, and terminations
- Fuel gas piping
- Pipe type, size, material, and support
- Pipe fitting type, size, material, and use
- Pipe crossover connection
- Gas supply connections

### Electrical connections:

- Feeder type, size, clearance, and installation
- Service type, size, clearance, and installation
- Fixture type, support, and connection
- Cross-over connection
- Conduit and fitting type, size, material, and support
- Wiring type, size, material, and securement
- Wiring methods and connections

### Exterior finish and weather seal:

- Bottom board repair
- Fire separation between adjacent structures (i.e. garages)
- Temporary steps in place and supported on footings
- Installer certification tag(s)

### HUD-approved alternate construction:

- Permits obtained
- DAPIA approval available

- Construction matches DAPIA-approved plans

## Final inspections

- Skirting or perimeter foundation installation
- Underfloor access provisions
- Underfloor ventilation
- Temporary step removal
- Permanent step or ramp installation
- Site grading and drainage
- Sidewalks and driveways
- Door and window adjustment, caulking, and securement
- Accessory building and structure permits (i.e. deck, awning, carport, garage, etc.)
- Underfloor dryer and range duct installation and termination
- Smoke detector location, installation, and test
- Ground fault circuit interrupter (GFCI) test

## Optional site inspections

- Installation, plumbing, and electrical permit verification
- Minimum setbacks
- Stand leveled
- Site graded and drained
- Controlled fill tested and report submitted
- Vapor barrier installed (if under footing)
- Poured-in-place footings and slabs, forms, reinforcement

**Note:** Site inspections are not required by BCD, but may be required by the jurisdictional authority prior to the installation of a manufactured dwelling according to OAR 918-500-0065. Site inspections may also be required by the jurisdictional authority when specifically requested by the manufactured dwelling installer.

For more information, call Pat Lewis, (503) 373-1326. Copies of the rules were sent to the building officials. ■

## BCD warns installers, dealers about certification tag reports

By *Albert Endres*

It has been just over one year since the installer certification tag report program was assigned to the Customer Assistance Section. When first given the assignment, we mailed all installers a notice of the change in assignment and information about what the Building Codes Division expected on monthly tag reports. Since that time, we have recovered 6,300 tags not previously reported. This is a direct result of installer and dealer responsiveness to our requests. We appreciate your efforts.

Unfortunately, there are a few installers who have elected not to make much of an effort to clear up missing reports. They may be thinking that the division is not serious about tag-reporting requirements. I assure you, we are serious and we are in it for the long haul. We will continue to require compliance and strive to make improvements.

We are starting to take action against installers and dealers who are failing to cooperate, communicate, or make a documented effort to comply with requirements for tag reporting. It is our policy to work with installers and dealers prior to taking regulatory action, but I want everyone to be aware of the system.

Dealers and installers are required to submit a complete report of each tag used during the month. If no tags were used, no report is required. If you only set one house each month for six months, there should be six individual monthly reports, not one report with six installations listed. When we see reports that are not properly completed, Irene Lickiss will send personal reminders about the requirements and, at times, return improperly completed reports so that required corrections can be made. People who fail to respond to Irene's request receive an impersonal letter from me indicating the problems we are noting. My letter requires you to provide a proper report by a certain date. Chronic violators of reporting requirements will also be notified and asked to contact the division directly to make arrangements to rectify inaccurate reports or lack of reporting.

We're willing to make every effort to assist installers and dealers; however, if they fail to comply with the request in my letter, this office files a preliminary compliance report with regulatory services, and civil penalties may be assessed. ■

## Service costs continued from page 1

- I go over the Oregon Lien Law and have the customer sign the state's brochure so that I have physical evidence of having complied with the disclosure required by the state.
- I also make disclosures of my own regarding rough-grade backfill, concrete care and cracking, and storm doors.
- I go through the manufacturer's manual with each customer and discuss warranties.
- I inform customers what regularly scheduled services are included with their home purchases and how to obtain additional service if they need it.
- I try to answer customers' questions regarding home purchases.

Customer anxiety levels seem to be significantly lower after the service talk. The number of phone calls the staff has to answer is also greatly reduced.

### Improving on set-up

The Oregon Manufactured Dwelling Standard has greatly improved the quality of sets and the professionalism of set-up crews. There are additional things set-up crews can do to reduce service costs:

- Lag the underside of the ridgebeam. (Since we started this practice, we have had zero ridgebeam drywall cracks.)
- Lag all walls at the column supports. By reducing movement in the walls, drywall cracks are also reduced.
- Lag outside end walls to help reduce wall movement.
- Support the marriage line floor four feet on center in open spans as well as under walls. (This has greatly reduced floor problems and squeaks.)
- On triple-wide roofs, span the marriage line with a two-foot (can be as much as a four-foot) section of sheathing. Spanning the roof seam accomplishes two things: It evens out the roof line when the sections have a height difference, and it reduces roof leaks.

### Service

We exclusively use contractors to do our initial service. While there are advantages and disadvantages to using contractors, I feel that dealers have every right to establish quality standards and require contractors to meet those standards. We require our contractors to cut back sheet rock wherever the rock crosses a marriage line. The adjacent studs on the marriage line are screwed and a new piece of drywall installed, running from stud to stud across the marriage line. Again, we are reducing the possibility of drywall cracks.

Our contractors are responsible for surveying the entire home for factory repairs that need to be completed.

A flood test is conducted on each plumbing system, and all electrical components are checked.

The initial service contractor walks the roof to look for leaks and crawls the house to snug up piers that may have loosened since the set.

Our service manager conducts a walk-through with each customer one week after the customer moves into the new home. She shows the customer how to operate the heating system, change the filters, check smoke alarms, etc. She also has a 142-item check list that she completes to make sure every element of the home is functioning properly.

The final key to having happy customers is monitoring open service work orders for both factory and dealer items. We have found that 30 days is a maximum for completing repairs. All open work orders are reviewed with the factory and each contractor weekly.

Those are the basics. I hope you find them helpful. ■

## A reminder: heat tape

By Al Rust

If you use heat tape to ensure that a water system is freeze-protected, OMDS and HUD standards both require that the heat tape be listed for use with manufactured homes. Please check with your supplier to be sure you are using the correct product. ■

## John Collins joins installation monitoring program

---

By A. B. Boe

John Collins, an installer from Wenatchee, Wash., took over Leon Creswell's duties with the OSU Installation Monitoring Program in November. Creswell recently moved from the monitoring program to a position with Building Codes Division in factory investigations and problem solving. (See article, page 9)

Collins was selected as the top candidate from five who applied for the job. He has 20 years of experience working in the manufactured housing industry. He started as a lot boy and worked his way up. Since 1978, Collins has worked for numerous dealers in Washington, including nine years for one of the largest dealers in eastern Washington as service and set-up manager. About a year and a half ago, Collins went into business for himself doing site work (concrete, septic systems, excavation, drainage,) and installing homes. Collins is a licensed installer in Oregon, Washington, and Idaho. In addition to running his own business, Collins also worked as a consultant for First Home United Contractors doing installer training and spot inspections for a network of nine private contractors. First Home United Contractors served about 40 dealerships in Washington and Idaho.

Because Collins had some work to do in Oregon, he came to training in Pendleton in August 1998 to get his Oregon license. He liked the area and the program. In his former position he spent a lot of time working with inspectors and installers to resolve set-up issues. Every manufacturer had a different manual and every county or city seemed to

have a different interpretation of the manual. Collins liked the concept of one set-up standard. Collins said he feels Oregon cares where the industry is headed. In the other states, there is no ongoing training or support for installers or others in the industry.

In addition to being impressed with Oregon's approach to manufactured housing, Collins also felt that doing OSU monitoring program work at Building Codes Division would give him more opportunities for growth than the private sector. He looks forward to learning more about the Oregon standard as well as HUD code and factory issues. Collins says he also hopes the job will help him become as good a computer operator as his daughters are. John will be moving his family to Oregon — wife Cheri, two daughters and his father — as soon as possible.

To learn the inspection and reporting process of the monitoring project, Collins has cross-trained with Leon Creswell, A. B. Boe, and Larry Giardina, so that his field inspections will be as consistent as possible with the work of other installation monitors.

Collins is in the process of contacting dealers in the northern portion of the state to introduce himself and to pick up homes in progress for the monitoring project. In the near future, he will be teaching installer and inspector licensing classes and other classes. "I feel good about having an opportunity to help the industry grow forward, not downward," Collins said. ■

## OAR changes installation tag reporting

---

By Albert Endres

As of January 1, 1999, OAR 918 has some significant changes relating to installation tag requirements. Installers should be particularly pleased with the changes in installation certificate reporting.

The monthly form has been simplified, and far less information is required. Starting with tags installed during January, you will no longer be required to indicate the permit number, HUD label numbers, address and jurisdiction.

We will be providing the new forms to installers. The old forms can be used until you receive new forms. At

a minimum, forms must include the following: the certification tag number, the city and county in which the home is installed, the date of installation, the name of the manufacturer, the manufacturer's serial number of the home, and the dealer's name. You must indicate whether the home is a single-wide, double-wide, triple-wide, multi-wide or two-story home. And you must include your name and license number. If you have questions about the new form, please call Irene Lickiss, (503) 373-1257. ■

# OMDS Q & A

By Patrick D. Lewis

This article answers our readers' questions about the Oregon Manufactured Dwelling Standard (OMDS). If you have questions about the OMDS and would like to see them addressed in future issues of this publication, send them to Patrick Lewis, Technical Advisory Group, Building Codes Division, P.O. Box 14470, Salem, OR 97309-0404.

## Manufactured dwelling foundations

**Question:** *Are the wood wedges used on recessed perimeter piers required to be installed parallel or perpendicular to the wood beams on top of a concrete pier?*

**Answer:** The 1997 OMDS is not specific about the direction of the wood wedges in relationship to the wood beams. Section 304(d)(3)(B) states: "When wood wedges are used with these wood beams, they shall be installed at each end between the top of the pier shim material and the bottom of the horizontal beam."

The wood wedges can be installed perpendicular to the beam as depicted in Figure 304.5 of the OMDS or may be installed parallel to the beam. However, if installed parallel to the beam, they would need to be 16 inches long and driven from opposite ends of the pier to provide a minimum full-bearing surface of 54 square inches. Regardless of the method used, all wedges need to be driven tight to the support beam.



### Wedges used with perimeter pier support beams:

Wedges may be parallel to the support beam, if they are driven from either end and provide a full bearing service

**Question:** *How should manufactured dwelling skirting be constructed when supporting more than 8 inches, but less than 48 inches, of backfill?*

**Answer:** According to OMDS section 304(m), when skirting supports more than 8 inches of unbalanced fill against one side, it shall be built as a retaining wall to 1996 Oregon Structural Specialty Code (OSSC) specifications. The retaining wall can be built of concrete block, poured-in-place concrete, foundation-grade lumber or other approved materials, but the actual design is up to the permittee, provided he or she has jurisdictional approval.

**Question:** *Is rebar required to connect masonry units to a 4-inch slab? And would the masonry units need to be grouted?*

**Answer:** According to OMDS section 304(e)(1) & (2), masonry units used as piers are not required to be grouted or reinforced with rebar unless they are over 80 inches in height. Piers made of masonry units that are over 80 inches in height shall be laid in steel-reinforced concrete footings with vertical #4 steel-reinforcing bars inserted in each cell, and the block cells filled with concrete according to OMDS section 304(e)(3). Masonry units used as cosmetic skirting are not required to be grouted or reinforced with rebar, according to OMDS section 802(b). If skirting is supporting more than 8 inches of unbalanced fill against one side, OMDS section 304(m) requires it to be built as a retaining wall according to Oregon Structural Specialty Code, which may require both grout and rebar. The actual design of the retaining wall would be up to the permittee, with the approval of the authority having jurisdiction.

**Question:** *Can the local inspector prevent me from pouring cement or laying block skirting for a manufactured dwelling just because the outdoor temperatures are below freezing?*

**Answer:** While the OMDS does not prevent concrete work from being done during freezing weather, OMDS section 303(f)(4) does specify that all poured-in-place concrete have a minimum compressive strength of 2,500 pounds per square inch when cured. It may be difficult to obtain these results if the cement is being poured in below-freezing conditions, without some kind of added protection. If a contractor is not taking action to protect the concrete from freezing conditions, the inspector may turn down the inspection. If the contractor does not take corrective action, the contractor takes the risk of having to remove and replace the

concrete or have it tested to ensure compliance with the OMDS.

**Question:** *If a manufactured dwelling has one of the new floor systems without the traditional twin I-beam chassis (see “What’s new in manufactured homes” on Page 11) what elevation would the home have to set to and where would the measurement be taken from in order to be one foot above the base flood level?*

**Answer:** OMDS section 308(c) requires that the underside of manufactured dwelling floors be elevated 12 inches above the base flood level. Unlike the traditional twin I-beam chassis, where the one-foot dimension is taken from the top of the chassis or the bottom of the wood floor joists, the new perimeter-steel-framed floor system would take its measurement from the bottom of the perimeter steel frame, which is now the bottom of the floor.

**Question:** *Can approved fibers be put in a continuous concrete footing to take the place of the required rebar?*

**Answer:** No. OMDS section 303(a)(8-10) allow fibers to be put into a continuous concrete footing and used as an alternate to wire fabric when the footing is a minimum of 48 inches wide, such as those used in three-pad pours, but it does not permit fibers to be used in place of rebar in continuous footings less than 48 inches wide. Until testing substantiates that fiber provides strength equivalent to rebar, BCD will continue to restrict its use in the OMDS.

**Question:** *Can footing types be mixed under a manufactured dwelling?*

**Answer:** Yes. There is nothing in the OMDS that prohibits using multiple footing types under a manufactured dwelling. However, mixed footings under a single pier are not allowed unless expressly permitted as an alternate method of construction by the jurisdiction in which the home is sited. Mixed footings under a single pier happen quite often when concrete is poured in the wrong location.

**Question:** *Is a manufactured dwelling installation permit required for the installation of earthquake-resistant bracing systems (ERBs)? Is an installer’s license required, too?*

**Answer:** Yes. OMDS section 201(a) specifically requires permits for ERBs on new homes or as retrofits to an existing home regardless of when the installation takes place. OAR 918-515-0005(1) requires any person engaging in the business of installing ERBs to have an Oregon manufactured dwelling installer’s license.

## Natural gas in manufactured dwellings

**Question:** *With what code or standard do gas room heaters have to comply when field-installed in manufactured dwellings?*

**Answer:** All heat-producing appliances field-installed in manufactured dwellings shall comply with the OMDS. OMDS section 1101(e) requires that gas heaters, gas stoves, and gas fireplaces be listed for use in manufactured homes and that they be installed according to the listing and the appliance manufacturer’s installation instructions. To be listed for manufactured-home use, these appliances must meet the federal Manufactured Home Construction and Safety Standard 24 CFR 3280. 24 CFR 3280.709(d)(1) requires these appliances to have sealed combustion systems and be listed to UL Standard 307B.

**Question:** *Are ventless gas room heaters or fireplaces permitted in manufactured dwellings?*

**Answer:** No. OMDS section 1101(e) requires that gas room heaters or fireplaces be listed for use in manufactured homes and that they be installed according to the listing and the appliance manufacturer’s installation instructions. To be listed for manufactured-home use, these appliances have to meet the federal Manufactured Home Construction and Safety Standard 24 CFR 3280. 24 CFR 3280.707(b) specifically requires fuel-burning, heat-producing appliances to be of the vented type and vented to the outside. Therefore, ventless gas room heaters or fireplaces are not permitted in manufactured dwellings.

**Question:** *Can you explain why the OMDS requires a 6-foot flexible gas connector as opposed to a 2-foot flex or even hard piping like a site-built house?*

**Answer:** OMDS section 702(b) states that each natural-gas supply shall be connected to the manufactured dwelling with an approved 6-foot flexible connector or gas piping equipped with a swing joint and a listed earthquake-activated gas shut-off device. The purpose of these two types of connectors is to prevent the gas line from breaking during an earthquake, in the event a manufactured dwelling falls off its foundation. Unlike site-built housing, manufactured dwellings are not normally secured to their foundations. During a severe earthquake, it is possible for a manufactured dwelling to fall two to three feet. If the gas lines were rigid, they could break and lead to a leak, fire, or explosion. The OMDS provides two methods to minimize this danger.

**Question:** *Can you provide an explanation or an example of the swing joint configuration required for manufactured dwelling gas connections?*

**Answer:** OMDS section 702(b) states that each natural-gas supply shall be connected to the manufactured dwelling with an approved 6-foot flexible gas connector or gas piping equipped with a swing-joint and a listed earthquake-activated gas shut-off device. The swing-joint configuration is a method of allowing some flexibility to a rigid gas-supply pipe during a severe earthquake, when the home could fall off its piers. The swing joint is usually made up of one ell and one street ell fitting. One of the ells should always be in the horizontal position so that if the manufactured dwelling falls, the threads of the ell will allow the pipe to move downward with the home, rather than breaking.

**Question:** *What is the size and rating of the 6-foot flexible gas connector?*

**Answer:** The rating of a flexible gas connector required by OMDS section 702(b) depends on the diameter and length of the connector. The most common connector for manufactured dwellings is 6 feet long, 3/4 inches inside diameter (I.D.) with a rating of about 173,900 British thermal units per hour (BTUH).

**Question:** *The OMDS requires an approved 6-foot flexible gas connector for manufactured dwellings. How do I tell when a flexible connector is an approved connector?*

**Answer:** For natural gas, the approved flexible gas connectors required in OMDS section 702(b) should be labeled indicating the following information: the BTUH rating of the connector; that it is approved for manufactured (mobile) home use, approved for outdoor use, and certified to AGA Requirement No. 3-87. The connector should also be sized equal to or greater than the total BTUH rating shown on the label attached to the side of the home near the gas supply inlet. For LP gas, the flexible gas connector labeling information above would be the same, except the LP gas connector would be certified to UL Standard 569.

**Question:** *Can the 6-foot gas flex be buried for the connection to pit-set manufactured dwellings (ground level installations)?*

**Answer:** No. The listings of 6-foot flexible gas connectors prohibit the connectors from being buried or in contact with the ground.

**Question:** *Can the flex connector be run through the skirting of a manufactured dwelling?*

**Answer:** No. The listings of 6-foot flexible gas connectors prohibit the flex connectors from being run through skirting. If the manufactured dwelling gas inlet does not protrude past the plane of the exterior wall of the manufactured dwelling, it must be extended with rigid pipe before the flexible gas connector is installed.

**Question:** *Can a flex connector be re-used for a secondary set of a manufactured dwelling?*

**Answer:** No. The listings of 6-foot flexible gas connectors prohibit the connectors from being used again once they have been disconnected or damaged. ■

## Tag reporting mailing procedures updated

---

By Irene Lickiss

You have all made some very valiant efforts to get your 1996 tag reports cleared up by the end of this year, and I want to thank you for going through all that you have to get the job done. I know there have been times when you have been ready to tear your hair out. Now that there is only one person handling this desk, I hope the tag report process will be smoother for everyone.

I will be working to keep reports up to date. Please check your records and finalize any unreported tags that were issued between January 1, 1997 and June 30, 1998. Please return reports to me by March 1, 1999.

We have proposed some changes to the 1997 Oregon Administrative Rules that should make it easier to keep tag reports up to date. If they are approved, the tag reporting process should be a little easier.

Due to budget constraints, I am no longer able to send your tags by UPS. A post office box is now OK to use as a mailing address. It is important that you indicate correctly on the order form the address to which your tags should be mailed. Have a wonderful new year! ■

# Reintroducing factory investigations

---

By Leon Creswell

I'd like to introduce myself and to reintroduce the factory investigation program to you. Building Codes Division's Customer Assistance Section provides a service that may be helpful if you're seeing repeated problems with manufactured homes: factory investigations.

The service consists of gathering information from consumer-assistance cases about problems that repeatedly occur at the manufacturing level. The factory investigation program has been in suspension for several months because of personnel changes, but is now ready to resume business as usual.

**Who:** Leon Creswell  
SAA Factory Investigation Coordinator  
Building Codes Division  
P.O. Box 14470  
Salem, OR 97309-0404  
Phone: (503) 378-3731  
Fax: (503) 378-4101

**When:** Any time a repetitive problem is recognized

**Where:** In the field or in the factory

**Why:** To correct chronic construction problems at the factory, reduce service costs, and raise customer satisfaction

Anyone can use the service. Here's an example of how it works: If an installer in the field is experiencing a consistent problem with interior wall alignment on a certain model home, he or she should contact me. My job is to see that the problem is researched and corrected. Provide me with all the information you can: model number, serial number, photos, and any other information that might help me solve the problem. I need the most complete and specific description I can get. (Simply saying that a water connection below a home is not properly located is not sufficient to get the problem solved.)

Given good information, there are few problems that can't be corrected through engineering changes, training, or changes to a building process or materials. We can't offer magical solutions, and we won't be able to correct things overnight, but if we communicate and provide good information, we should be able to fix most problems. ■

# Hardboard siding woes

---

By Mark Campion

Buckled or warped siding, mold and mildew that can't be cleaned off — almost without reason or pattern, hardboard siding in some areas of the Northwest has not been performing well. One home may be affected while the home next door shows no signs of siding failure.

Masonite, already part of a class-action lawsuit, was joined in litigation this April by Cladwood, one of the major suppliers to the manufactured housing industry. Cladwood has ceased all inspections and warranty repairs. If homeowners inquire about their siding, they should be given this telephone number so they can join the class-action lawsuit, if they so desire: (888) 572-3897.

It is my understanding that under the terms of the Masonite settlement, home inspections were just starting this September. Settlement amounts, terms, and timelines have not yet been determined. The telephone number to join the Masonite class-action lawsuit is (800) 330-2722.

Although Building Codes Division primarily looks at hardboard siding failure as a product-liability issue (whether it is Cladwood, Masonite, or Weyerhaeuser), this is not to say that other factors can't cause or make siding problems worse. Examples may include a flooded crawlspace, poor homeowner maintenance (failure to re-paint or failure to maintain caulking), or a bowed wall stud at a panel seam. For this reason, Building Codes Division Consumer Assistance Program staff will talk with homeowners about siding problems. Many homeowners want to know whether or not they should leave the siding on their home or re-paint while awaiting settlement. The Consumer Assistance Section can assist homeowners with these and other questions. If necessary, we will inspect on-site and try to identify any deficiencies. Contact Albert Endres, (503) 378-5975. ■

# Aschim and Lewis reassigned

Patrick Lewis and Allen Aschim of Building Codes Division have been reassigned. Allen Aschim received a promotion and is now in the Regulatory Services Section. He is no longer available to answer code questions or help with licensing issues. Pat Lewis has been transferred to the Statewide Services Section so he can be more accessible to the Division's manufactured dwelling, recreational vehicle and park/camp inspection and plan review staff. Pat will remain a member of the Technical Advisory Group (TAG), though his physical location

and telephone number have changed. Pat will continue providing many of the same services for the manufactured structures and parks programs; however, the TAG responsibilities for prefabricated structures have been transferred to Doug Alexander.

In an attempt to help Pat concentrate on code development efforts and training, we are redirecting calls on the following subjects to the people listed below. All listed phone numbers are in the 503 area code.

Program area	Contact	Phone
<b>Manufactured dwelling:</b>		
Consumer assistance (SAA) .....	Albert Endres .....	378-5975
Federal codes (IPIA) .....	Kurt Pugh .....	378-6065
Installation codes .....	Allen Rust .....	378-8053
Installer training classes .....	Allen Rust .....	378-8053
Installer licensing .....	Susan Phillips .....	378-3115
OSU monitoring .....	Allen Rust .....	378-8053
Compliance issues .....	Andra McDaniel .....	378-6988
Alterations: under federal standards (IPIA) .....	Albert Endres .....	378-5975
under 1&2 FDSC/OMDS .....	Patrick Lewis .....	373-1326
Park construction codes .....	Ben Benson .....	373-1235
Park trailer construction codes .....	Ben Benson .....	373-1235
<b>Prefabricated structure:</b>		
Inspections, permits or plans .....	Mary Jane Whittemore .....	378-6237
Modular code .....	Bob Buckles .....	378-2833
Formal interpretive rulings .....	Doug Alexander .....	378-4538
Modular code change committee .....	Doug Alexander .....	378-4538
Modular operations .....	Etta Foote .....	378-1983
	<b>or</b> Mark Long .....	373-1227
<b>Building Codes Structures Board secretary</b> .....	Ravindra Mahajan .....	373-1354
<b>Recreational vehicle:</b>		
Construction codes .....	Ben Benson .....	373-1235
Park & organizational camp codes .....	Ben Benson .....	373-1235
<b>Manufactured Structures and Parks:</b>		
Operations .....	Dana Roberts .....	378-8450
	<b>or</b> Rick Lloyd .....	378-2306
Inspector and plan review certifications .....	Heather Gravelle .....	373-1249
Certification continuing education .....	Debi Barnes-Woods .....	378-3702
Code, rule or statute copies .....	Louann Goffin .....	373-7438
Code, rule or statute changes & continuing education .....	Patrick Lewis .....	373-1326
Code change & advisory committee business .....	Patrick Lewis .....	373-1326
Formal interpretive rulings .....	Patrick Lewis .....	373-1326
Advisory Board business .....	Patrick Lewis .....	373-1326

To submit code or rule change proposals for manufactured dwelling, recreational vehicle, park trailer, recreation park, organizational camp or manufactured dwelling park codes or rules, send your proposals to Pat Lewis, Building Codes Division, P.O. Box 14470, Salem, OR 97309-0404 or fax to (503) 378-4101.

To submit code or rule change proposals for prefabricated structure codes or rules, send your proposals to Doug Alexander, Building Codes Division, P.O. Box 14470, Salem, OR 97309-0404 or fax to (503) 378-2322. ■

## Manufactured home electrical alert

---

Traditionally, manufactured homes in Oregon have been all-electric, with a 200-ampere service. Though there is a trend toward building more manufactured homes heated by natural gas, the majority of homes are still all-electric. As the size of manufactured homes continues to increase, so does the electrical demand. In some triple-wide and two-story manufactured homes, the electrical demand has increased to 225 or 300 amperes. Unfortunately, this is not always realized by the utility company or even by the local inspector, which means 200-ampere services are getting hooked up to manufactured homes with a 225-ampere or higher demand.

To avoid this problem, the utility company and inspectors need to pay closer attention to the information provided by the manufacturer. Federal Manufactured Home Construction and Safety Standards 24 CFR 3280.804 require each manufacturer to permanently mark the total amperage requirements on a tag located on the exterior of the home near the feeder or service entrance to the home. Utility companies and inspec-

tors should be looking at this tag to ensure the service has been sized correctly. The division has discovered through audits undersized service equipment on some of the larger manufactured homes.

To compound the problem, 225-ampere or higher demand does not take into consideration other loads such as the garage, the well, or other outdoor accessories. In most cases, the main panels are not large enough to handle additional circuits or loads to meet external needs. If the service equipment is attached to and part of the manufactured home, the only remedy may be to add a second service just for the outdoor accessories. Section 403(c) of the OMDS states, “When multiple service equipment is used on a manufactured dwelling site, a permanent warning prominently displayed on the equipment shall identify the equipment to indicate the structure or accessories served.”

For comments or questions about this alert, contact Patrick Lewis, (503) 373-1326; Kearby Sprague, (503) 373-1353; or Gary Wilson, (503) 373-7509. ■

## What's new in manufactured homes?

---

*By Patrick Lewis*

Oregon's manufactured home industry has been booming with innovations this year. The industry started building the first 16-foot-wide manufactured homes in Oregon, developed a new floor system that incorporates floor framing and chassis into one single component, and sold the first two-story manufactured homes in the Northwest. If you attended the Oregon State Fair this fall, you may have seen a home on display that incorporated all three of these innovations.

It always takes awhile for codes to catch up to construction innovations and new technologies. The Oregon Manufactured Dwelling Standard is no exception. The innovations we saw this year have raised numerous questions about how to apply the OMDS. For instance, 16-foot-wide manufactured homes weren't contemplated when the original OMDS was written, so Table 304 (pier capacity, footing size, and spacing schedule) does not take into consideration the additional dead and live loads imposed by the extra two feet of width. Neither does Table 304 account for the almost-doubled loads on the foundation from a two-story manufactured home. Nor does it tell how to support a manufactured home that doesn't have a typical double-I-beam chassis.

Fortunately, authors of the OMDS planned ahead: Section 301(e) of the OMDS states, “Manufactured dwellings with unique installation requirements not specifically addressed in this standard shall be installed to the manufacturer's installation instructions but only for that specific portion on the installation.”

This means that homes with the above innovations would have to use the manufacturer's instructions for the construction of the foundation system, but that all other portions of the installation, such as plumbing, electrical, mechanical, ventilation, etc., would still have to comply with the OMDS.

When the manufacturer's installation instructions are used for a portion of the installation, installers should be aware that section 301(f)(1) of the OMDS specifically requires certain communications take place with the local jurisdictional authority prior to the installation. Section 301(f)(2) requires that when the manufacturer's instructions are used for any portion of the installation, the instructions are to be left on site, temporarily attached to the pier located closest to the utility connection or underfloor access. ■

# Storage requirements noted

By Mark Campion

Inclement winter and early spring weather can bring about delays in setting homes. Open stock production during these times can mean an increase in the number of homes on transporter and manufacturer storage lots. Homes in storage must meet temporary placement standards in OMDS 301(o). If a home is to be stored beyond 30 days, supports are required under the I-beams within two feet of each end and within eight feet of the front and rear axles. Please make sure shipping plastic is intact and that all windows and doors are secured.

If you receive written notice that one of your homes is out of compliance with the storage standard, please make the required corrections and notify Building Codes Division. Failure to do so could result in the home being "red tagged." Please keep track of your homes and inspect them periodically. If you have questions, please contact me, Mark Campion, (503) 378-4530. ■

**Manufactured Home Update** is a regular publication of the Building Codes Division of the Oregon Department of Consumer & Business Services and the Oregon State University Extension Program.

## Editor

A.B. Boe, OSU Extension Energy Program

## Design & Production

DCBS Communications

## BCD Administrator

Joseph A. Brewer III



All information in this newsletter is in the public domain and may be reprinted without permission.

In compliance with the Americans with Disabilities Act (ADA), this publication is available in alternative formats. Call DCBS Communications, (503) 947-7894.

If you want to be included on our *Manufactured Home Update* mailing list, please call Albert Endres, (503) 378-5975.



## Building Codes Division

1535 Edgewater NW

Salem, OR

Mailing address:

P.O. Box 14470

Salem, OR 97309-0404

Bulk Rate  
U.S. Postage  
PAID  
Salem, OR  
Permit no. 24