

Manufactured Home Update

Oregon Department of Consumer & Business Services ■ Building Codes Division

April 1999

Inspecting homes to see if they are “substantially equivalent” to HUD homes

by Mark Campion

Older manufactured homes are an excellent affordable housing option in today’s high-priced housing market. However, owners and prospective purchasers of pre-HUD homes may have problems siting the homes because many local building officials and planning departments are concerned the homes do not meet HUD standards. Additionally, many finance companies are hesitant to carry contracts on pre-HUD homes.

Although no one can turn a pre-HUD home into a labeled HUD home, most post-1969 homes that have not already been substantially altered can be made “substantially equivalent” to HUD homes by making minor modifications. Building Codes Division can inspect an older home to determine if it can be made substantially equivalent to a HUD home. After required modifications are made, BCD will issue a report attesting to the fact that the home passed inspection by us and that it is substantially equivalent to a HUD home. In most cases, our inspection report will satisfy hesitant local jurisdictions and finance companies. Just to be sure, we urge prospective buyers of older homes to check with the

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Manufactured dwelling skirting support clarified

by Patrick Lewis

A question has been raised about the acceptability of bracing skirting horizontally or laterally off piers, pier footings, or pier shims. Several jurisdictions have asked if this situation is permitted by the 1997 Oregon Manufactured Dwelling Standard. While there may be no problem with skirting anchored to a concrete slab or braced off a continuous concrete footing, there is defi-

nitely a problem with skirting braced against other footing types, piers, and pier shims. Because horizontal pressures transferred from the skirting could move or loosen the footings, piers, or shims, these bracing methods are considered detrimental to the foundation supports and don’t meet the intent of the OMDS. ■

Training the repairman

by Tom Nicolai

Frustration: one of the many reasons homeowners contact the State Consumer Assistance Program for help. Frustration experienced by homeowners often stems from repairs to their homes that for some reason do not meet their expectations or — in some cases — do not correct the problem. Sometimes it seems that repairs make the problem worse. When the same problem keeps recurring, the homeowner questions everything about the home.

Some of the most-reported items include tub cracks and chips, floor vinyl cuts or patches, damaged Formica tops and self-edges, and tape and texture cracking. These products and many others are frequently “improved,” changed, or updated. Each time the product changes, the method of installation and repair can change, too. In some cases, repair methods that worked in the past simply don’t work anymore. However, it should always be the goal of the repairman to correct the problem and satisfy the homeowner.

One manufacturer has made a major effort to provide updated training to service representatives. This ensures that service representatives have the most current information and repair methods for the products they use. With the help of product suppliers, the home manufacturer has created a series of videotapes on such products as roofing, carpet, vinyl flooring, Formica, windows, entry doors, and bathtubs. Each tape explains the product, its installation, maintenance and correct repair methods. The tapes are being sent to dealers for service technician training. The manufacturer also shows these tapes to in-house service technicians and outside contractors during semi-annual service forums at the factory.

Seeing product and repair methods on video, in addition to hearing them explained, helps service technicians to better understand the product. This type of improved training makes it more likely that repair efforts will be right the first time. Training certainly prevents many return trips, cuts down on service costs, and helps service technicians achieve their goal of satisfied customers. ■

Inspecting homes *continued from page 1*

local jurisdiction or finance company before any modifications are made or an inspection is requested.

Here are some of the major items that will be inspected:

- Water heater and furnace compartments must be fully lined — walls and ceiling — with minimum 3/8-inch drywall.
- The cabinet above the range and the wall behind the range must be fully lined with 3/8-inch drywall, and 3/8-inch drywall must also be installed for 6 inches on each side of the range.
- The kitchen range hood fan must be operational.
- Smoke detectors are needed in the bedrooms and in halls adjoining bedrooms.

- Bathroom electrical receptacles and any exterior receptacles need to be GFI protected.
- The receptacles for the range and dryer must be 4 wire.
- At least one window in each bedroom must provide egress in case of fire and have a minimum of a 5-square-foot opening, with at least one dimension being 22 inches. The window sill cannot be more than 36 inches above the floor.

The inspection fee is \$95, regardless of location within Oregon. If State of Oregon labels are needed, an additional \$25 per section will be charged. Questions? Please call us at 503-378-5975. ■

Help the buyer

by Tom Nicolai

Buying a manufactured home is a unique experience for the first-time buyer. In fact, with all the changes to manufactured homes in past years, buying a manufactured home can be a unique experience for **any** buyer. Buyers can become overwhelmed when examining floor plans or details of interior design or interior finish and can forget to ask important questions about the home. That's where the dealer sales representative comes in. He or she is there to represent the dealership, the manufacturer of the home, and the industry as a whole. With buyers more conscious of quality and price than ever, it is important to supply as much information as possible to them during the sale.

Sometimes, in haste to make a sale, information is omitted. A common complaint of homeowners is that they get the run-around when trying to get service on their new home. At the time of sale, the salesperson should tell the buyer which services will be handled by the dealer and which by the manufacturer. This would

prevent much buyer frustration. The manufacturer's and dealer's warranties should be explained in detail, telling the buyer exactly what warranties cover and how long they last.

It's important that the buyer be told during the sale what to expect from products and what not to expect, what is standard and what is not. If you don't educate buyers, their expectations can seem quite unreasonable. Many buyers expect much more for the money they are spending than any product can deliver. It is critical to bring those expectations in line with the purchase. Let buyers know that it is common for homes to settle, and that cracks can appear in the drywall finish. If you educate buyers about normal occurrences, they won't panic and think their home is falling apart.

Covering these important issues with the buyer at time of sale will surely help make the transition to home ownership smoother. ■

Educate homeowners about maintenance

by Tony Clifton

How many homeowners really know what it takes to maintain their houses? How many homeowners know how to operate the home's ventilation system? How many homeowners truly know how to operate and maintain factory- and dealer-installed appliances? How many know what the warranties on those appliances cover or how long the warranties last?

Our field investigators routinely ask homeowners these questions. Our investigations reveal that homeowners are not aware of what they really need to know when it comes to these issues. It's amazing what the homeowner **does not know** about routine exterior and interior maintenance of the home.

Doing a better job of educating the homeowner and dealer sales staff can dramatically reduce the number of

unhappy homeowners and dealer and factory service calls. Some dealers and factories train their sales staff to educate the homeowner about maintenance during walk-through. To do this effectively, salespeople must be knowledgeable about all aspects of maintenance and able to effectively teach consumers about areas that must be maintained.

One factory service manager who has a homeowner education program said the program has helped. He said service costs are considerably lower and that he has considerably fewer unhappy customers since the education program started. Educated homeowners do a better job operating and maintaining their homes and are happier with their purchase over the long haul. That's good for the industry. ■

Crawling the inspection trail

by A.B. Boe

When you're crawling the inspection trail, you never know what is going to jump out at you and bite. I remember a crawlspace in Coos Bay that had so much water in it that I was bit by a chinook salmon and had to be air-lifted to a local hospital. This quarter, I was fighting with sewer cleanouts and piers located near "in-floor heat crossover ducts."

Sewer cleanouts

I've seen homes that don't have sewer cleanouts, but that's rare; I believe most of us are in agreement that cleanouts are important and need to be installed. Some of us, however, are not aware of where the cleanout is supposed to be located. Think about this: Wouldn't it be a wonderful world if you didn't have to go under a home to clear the drain? That is precisely what the state installation standard attempts to accomplish. OMDS section 504(b) says sewer cleanouts "shall be located outside the manufactured dwelling and underfloor enclosure and made accessible." This requirement is usually met by putting the two-way cleanout fitting outside the enclosure, between the home and the site sewer inlet. The fitting pokes through the finished grade a little bit so it's easy to locate and use if the drain lines upstream or downstream from the fitting need to be cleaned.

Most of the problems with sewer cleanouts occur when the site sewer inlet is under the home instead of near the street. So, the OMDS provides an exception to deal with such situations: "The sewer cleanout may be located under the manufactured dwelling **if accessible within 12 inches of a 6-inch-by-6-inch underfloor hand hole exterior access through the underfloor enclosure.**" To meet this requirement, it is often necessary to "extend" the cleanout to within 12 inches of the perimeter. Extensions are often overlooked. The issue is accessibility: Can someone use the cleanout without going under the home?

Sometimes plumbers do extend the cleanout to within 12 inches of the perimeter but LSIs (licensed skirting installers) or ULSIs (unlicensed skirting installers) forget about the minimum 6-inch-by-6-inch access. On the downside, it is particularly difficult to install a sewer line access hole in a block foundation wall, if it isn't done when the wall is built. On the upside, that's the kind of mistake that usually only happens once. One reason Oregon provides training and licenses

skirting contractors is so things like sewer cleanout access are done right. The 2000 OMDS will provide additional details about cleanouts for sewer lines with underfloor site sewer inlets. Meantime, rule of thumb: If you can't physically use the cleanout without going under the home, chances are, it's wrong.

Centerline piers and in-floor heat-duct crossovers

One manufacturer, Marlette Homes, uses an "in-floor heat-duct crossover connection" instead of the typical underfloor insulated crossover duct. To make the crossover connection, the rim joist at the joist cavity containing the duct is cut away. To stabilize the cut rim, a 2-inch-by-2-inch cleat is fastened to the bottom of the rim joist, spanning the cutout. According to Tom Jeppe, Marlette service manager, when floor sections are moved together, the in-floor crossover ducts should be carefully aligned. Any belly fabric that blocks the duct connection should be removed, and the crossover point should be securely lagged on each side of the duct to pull the rims together tightly. If the rims are tightly joined, a gasket material surrounding the duct cutout will prevent air leakage at the crossover point.

Obviously, the cutout is a weak point in the rim. Jeppe says that the plant engineers have worked hard to avoid placing column supports and doorways directly above the in-floor duct crossover points. Tom says installers like to lag the rim below centerline doors to keep the floor stable. Having a duct in that location would be in the way of door lags and could contribute to floor problems later. A column support bearing directly over an in-floor crossover could crush the duct or cause other structural damage.

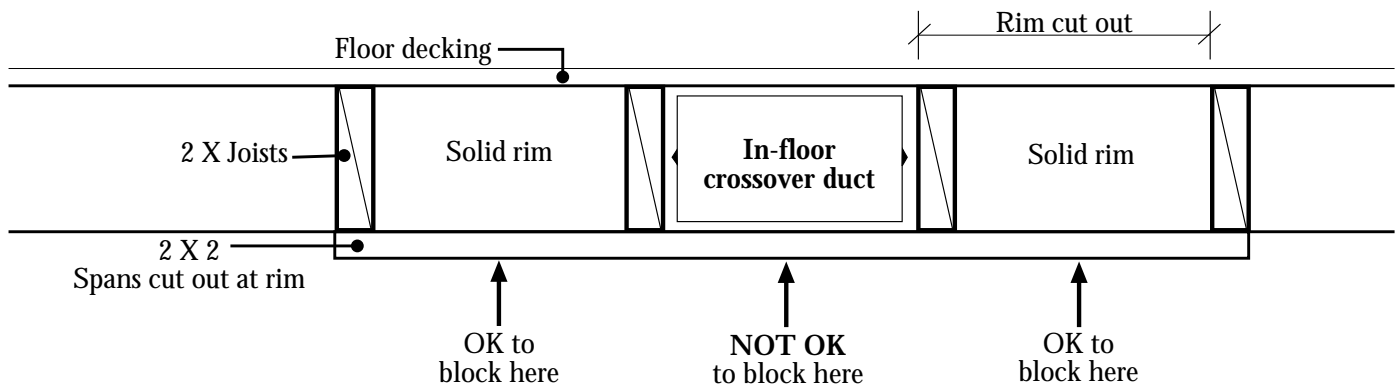
Installers must not place centerline piers directly below in-floor crossover ducts. According to Jeppe, it is OK to place them to either side of the cavity containing the duct, as long as they bear on a part of the cleat that is connected to solid rim material on either side of the cutout. So, even though OMDS requires piers at 4 feet on center below centerline walls, if this layout results in a pier below the in-floor crossover duct, move the pier to one side or the other. Protect the duct connection from potential crushing. Because the installer can see where the ducts are located before the floors go together, this should be easy to do.

Inspection trail *continued*

Inspectors have a harder time determining if the heat duct is properly connected and if piers in that location are going to be OK. When I inspect a Marlette home and don't see a typical insulated underfloor crossover duct, I look for 2-inch-by-2-inch cleats below each of the in-floor crossover points along the centerline. If I see a pier bearing on one of 2-inch-by-2-inch cleats, I tap around to find which cavity the duct runs through

so I can be sure the pier is not bearing on the duct. Sometimes I cut the belly fabric to find the duct and repair the belly with tape. Sometimes I can see the gaskets that seal the duct connection, but sometimes the floor is tight or a pier is in the way. If a pier is bearing directly on the cavity containing the duct, I require it to be moved to one side or the other. ■

In-floor crossover duct at centerline



Web site

The manufactured home section of Building Codes Division now has a Web site. Please take time to visit us at:

www.cbs.state.or.us/bcd/sws/

Most-common service activities reported

by Albert Endres

In the October 1997 *Update*, we ran an article listing the most-common field repairs from our database. The numbers published in October were taken from all inspections from 1992 through October 1997 and are shown in column 1, below. For comparison, column 2 shows the most-common field repairs encountered

during the 13 months from January 1, 1998, through January 1999. In addition, we routinely poll factory service managers for “off the top of your head” perceptions of worst problems. The service managers’ items, not in any particular order, are shown in column 3.

Most-common problems January 1992 - October 1997	Most-common problems January 1998 - February 1999	Service managers’ list
1. Tape and texture 27%	1. Tape and texture 38%	Tape and texture
2. Floor decking 22%	2. Interior trim 31%	Floor vinyl
3. Interior trim 19%	3. Floor vinyl 15%	Interior doors
4. Floor joists 17%	4. Interior doors 15%	Interior trim
5. Registration card 17%	5. Registration card 13%	Floor squeaks
6. Floor vinyl 15%	6. Floor squeaks 13%	Exterior door adjustment
7. Cabinets 10%	7. Exterior door adjustments 10%	Window adjustment
8. Countertops 9%	8. Exterior door installation 9%	Exterior siding
9. Interior doors 9%	9. Window adjustment 9%	Sales orders
10. Water pressure leaks 8%	10. Floor joists 8%	Water pressure leaks

These categories represent some interesting connections and certainly indicate some areas in which we could all improve. Some problems will probably always be near the top of the list, but certainly we can take action to reduce their frequency. ■

Dry-stacked block walls

by Al Rust

In the course of doing our installation survey, one of our home manufacturers asked us to check home installations in a local subdivision. OSU inspectors found that homes in the subdivision were being installed with dry-stacked block foundations. The foundation wall was supporting over 14 inches of back fill and was covered with a mortar product on one side only.

Upon further investigation, I found that the mortar product was designed for this use, but after talking with the product engineers, I learned that the mortar must be of a specific thickness and must be applied to both sides of the wall to be effective.

Instead of being installed according to the manufacturer’s instructions, mortar was applied to one side of the wall only. Perimeter blocking installed by the MDI had been

removed to make room for the dry stack block wall. Support blocks had been installed on the block wall, but were not supporting the home. No LSI tag was posted, but the skirting contractor was eventually located and the proper information was passed on to him.

The point I want to make is that dry-stacked block walls can be installed with this type of mortar product, but unless the engineering requirements are followed, you are installing the product incorrectly and do not have an approved application. Because the installation requirements are critical to the correct application of the mortar product, they must be left on site for the local inspector to review. It is also a good idea to review this product information with the local building official before starting the project. ■

Keep plumbing out of harm's way

by *Larry Giardina*

An installer recently asked me if he is responsible for repairing a water supply pipe that was broken by another contractor while grading for a driveway. I responded that as long as his installation of the water supply met the requirements referenced in the Oregon Manufactured Dwelling Standards, he had fulfilled his responsibilities.

Section 503(a) (7) (D) on Page 55 of the OMDS states, "Water piping shall be buried a minimum of 18 inches (46 cm) below grade and at least 12 inches (30 cm) below the frost line." The frost line depth can be determined from table 301 on Page 11 of the OMDS. The frost depth is 12 inches in the county where the installation in question occurred, so the installer needed to bury the water supply at least 24 inches (60 cm) below the final grade to protect it from freezing and from damage from surface activity. Any shut-off valves outside also needed to be buried, but accessible, such as through a yard box.

If the installer met these requirements, he is off the hook for repairing the broken pipe.

Who is responsible for the repair of the broken pipe is more of an issue because the damage was not discovered until the driveway had been poured. Now the replacement pipe needs to be routed around the driveway. It might have been even more costly if the leaking pipe had undermined the driveway. Less costly — but still inconvenient — repairs may be required for water supply pipes that freeze and break because they are not buried deep enough. Homeowners who experience the inconvenience of water outages and the difficulties of determining who is responsible for fixing broken pipes aren't likely to provide positive word-of-mouth advertising.

The burial depth of drain lines is also referenced in the OMDS. Section 504(a) (4) (C) states, "All drain pipe shall be a minimum of 12 inches (30 cm) below grade." This requirement can be impossible to meet if the placement of a septic tank or a sewer line does not allow adequate depth for grading and burial of the drain line. It is essential that whoever sets sewage receptacles knows about minimum burial depth requirements for drain lines in order to keep drain lines out of harm's way. ■

Recognition

by *Albert Endres*

Building Codes Division commends the following individuals and businesses this quarter for exemplary work on behalf of the manufactured housing industry in Oregon.

Dana Woods, *service manager, Westwind Homes*
For taking over a service program and working with the Division to resolve consumer issues.

Neil Watson, *installer*
For assistance beyond the call of duty to a Division staff member on very wet day in a parking lot.

Wilbur Wilson, *installer*
For locating and turning in the use of outstanding installation certification tags.

John Collins, *OSU installation monitoring program*
For extraordinary adaptation to a new job and program and for assistance in rewriting the installation licensing/certification training course material.

Larry Giardina, *OSU installation monitoring program*
For his input and work on rewriting the installation licensing/certification training course material.

Larry Osborn, *Prestige Homes*
For outstanding response to consumer concerns.

Tim Clarambeau, *Redman Homes*
For help handling consumer assistance cases in a consistent, timely, and professional manner.

Mike Glaser, *Palm Harbor Village*
For handling a difficult situation with true professionalism. ■

Installer recognition

by Al Rust

Building Codes Division would like to recognize the following manufactured dwelling installers for their good work last quarter. Although we tried hard, when we inspected these homes, we couldn't find a single thing to complain about. Random inspections by the OSU installation monitoring inspectors found no nonconformances with the state installation standard. The installation monitoring program makes random inspections on a certain percentage of home installations throughout Oregon.

Carl Schaumberg, Albany; **Todd Bayless**, Canby; **Wayne Brown**, Florence; **Kenneth Kearney**, Roseburg; **Bert Hodges**, The Dalles; **Gary Tuer**, Coos Bay; **Steve Russel**, Bend; **Robert McHargue**, The Dalles; **Eugene Cash**, Winston; **Matthew Chaney**, Coos Bay; **Wyatt Ledbetter**, Eugene; **Lynn Estenson**, Klamath Falls.

Your good work helps give the industry a good name in Oregon. We appreciate your commitment to quality home installations. ■

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