



# Manufactured Home Update

Oregon Department of Consumer & Business Services ■ Building Codes Division

January 2006

## AC allows creative work, requires extra inspections

By Albert Endres

The alternate construction program allows manufacturers to produce some creative designs in product lines. I am certain the sales managers know about the benefits of AC from a sales standpoint, but evidence is overwhelming that there is little attention directed toward the after-sale details.

From the Building Codes Division perspective, there are two primary issues sales departments should note: additional costs and additional inspection. There are also three issues that need to be taken care of after installation: response to inspection, payment for inspection, and compliance with inspection.

### Sales

First, all sales personnel should be aware that there are additional costs when installing an AC home, due to additional labor during installation and to the additional inspections required. However you do it, you should account for the costs. Currently, the Building Codes Division or an authorized agent of the division inspects all AC homes, wherever they may be. These inspections can be costly, depending

*Continued on Page 2*

## Inside

AC allows creative work, requires extra inspections .....	1
New law changes status of RVs in parks.....	1
Ship-loose plumbing can cause headaches if you don't take care.....	2
Seismic tie downs required in Zone 4 only for some homes .....	3
ODE identifies top 10 problems found with NEEM homes .....	4
When is it best to refer questions to local building officials? .....	4
Avoiding the "shingle salute" .....	5
Quizzin corner .....	5
Water-heater pans aren't required yet, but they are a good idea.....	6
National installation, dispute-resolution programs delayed.....	6
Winter brings special problems for homes on lots .....	7
Quiz key .....	7

## New law changes status of RVs in parks

By Monte Taylor

The 2005 Legislature has changed state law to allow the placement and occupation of recreational vehicles in manufactured dwelling parks, mobile-home parks, and RV parks, as long as the RV is properly connected to water, power, and sewer systems.

The legislation also prohibits cities, counties, and other jurisdictions from imposing limits on how long RVs in parks can be occupied.

The text of House Bill 2247, section 12: "A state agency or local government may not prohibit the placement or occupancy of a recreational vehicle, or impose any limit on the length of occupancy of a recreational vehicle, solely on the grounds that the occupancy is in a recreational vehicle, if the recreational vehicle is: (a) Located in a manufactured dwelling park, mobile home park or a recreational vehicle park; (b) Occupied as a residential dwelling; and (c) Lawfully connected to water and electrical supply systems and a sewage disposal system.

*Continued on Page 3*

# Ship-loose plumbing can cause headaches if you don't take care

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By Dan Jones

HUD standards indicate that some sections of the drain system designed to be located underneath the manufactured home are not required to be factory installed. In these cases, the manufacturer designs the system for site assembly and provides all of the materials and components, including piping, fittings, cement, supports, and instructions; all this is known as ship-loose plumbing.

Some home models are standard with ship-loose plumbing; this is indicated on the manufacturer's approved plumbing floor-plan print.

Occasionally, floor plans have been modified to redesign or upgrade different rooms of the home; this includes adding and or relocating plumbing fixtures, and the subsequent reconfiguring of the drain-line system.

When this happens, sections of the drain-line system that are usually completed at the factory are instead shipped loose. Some piping is installed to test the drain line and some is shipped loose; it seems to vary, but it is required that the ship-loose plumbing print be specific to the model.

## Bathtubs outside the I-beam

It appears that when a bathtub or shower is located over or outside the I-beam, problems may arise when the piping is routed under, over or around the I-beam or other structural members. The two main problem areas are trap-arm installation and venting of the fixture — use of excessive fittings causes a horizontal change of more than 180 degrees in trap arms, turning fittings horizontal to vertical makes S-type traps, fittings for dry vents may be turned so they will not enter above the center line of the pipe.

Manufacturers, installers and set-up personal should take a moment and verify that the home is provided with the materials needed to complete the plumbing installation. Look closely at areas located near or over frame members, and make your installations according to the drain-line print. It is important for the drain-line system to be installed correctly for the system to perform properly and insure consumer safety. ■

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## AC inspections *continued from Page 1*

on home location and the ability to consolidate inspections. You should price this in when you are selling the home.

Second, make absolutely certain that others involved know that when the home is sold, they need to call either the division or the authorized agent in their area to say that delivery of the home is scheduled. This allows the division or agent to coordinate inspection with installation.

### Installation and inspection

After installation and inspection, the dealership or the factory must respond to the inspection report concerning any needed repairs. This involves coordination between the installer, dealer, and factory to ensure all repairs are completed properly.

When the repairs are done, a report that indicates completion of the repairs must be submitted to the Building Codes Division.

As a part of the inspection process, a bill will be submitted to either the dealer or the factory, depending on individual processes. This bill must be paid to the inspecting party.

Failure to comply with the correction and reporting requirements can result in reinspection, which can be costly. Therefore, it is essential that there is proper follow-up to the requirements of the inspection reports.

If you have any questions concerning AC inspections, please contact Dwight West, (503) 378-2620, or Albert Endres, (503) 378-5975. ■

# Seismic tie downs required in Zone 4 only for some homes

By Albert Endres

Occasionally I receive a call about Section 3-2.5.3 of the Manufactured Dwelling and Park Specialty Code. The caller asks if a home in Seismic Zone 4 is required to be braced or anchored. The answer is if the home is installed at a height exceeding 2 feet as measured from the top of the footing to the bottom of the main frame for 75 percent of the under-floor area, it must be braced or anchored. Anything 2 feet or less in height does not require seismic anchoring.

This section speaks only of seismic requirements. There may also be tie-down requirements for wind, flood, manufacturer's warranty, or lending institutions that are in addition to the seismic requirements. Responsible parties must make certain that all applicable requirements are met. ■



Seismic map of Oregon

Source: 2002 Manufactured Dwelling and Park Specialty Code.

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## New law *continued from Page 1*

The law, which took effect Jan. 1, 2006, will now allow recreational vehicles to be placed on any lot within a manufactured dwelling, mobile home or combination park.

State or local government cannot dictate length of occupancy within a recreational vehicle as long as the criteria in (a), (b), and (c) under section 12

are complied with. Park owners or operators in compliance with landlord and tenant laws under ORS 90 will determine length of stay or occupancy.

Please direct any questions to Monte Taylor, (503) 373-7542. ■

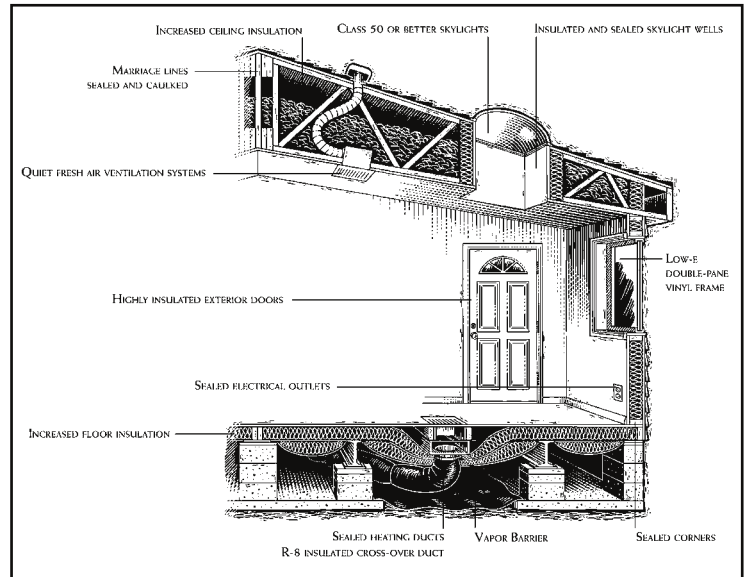
# ODE identifies top 10 problems found with NEEM homes

By Al Rust

These are the 10 problems most commonly found in Oregon Department of Energy audits, part of the Northwest Energy Efficient Manufactured Home (NEEM) program:

1. Missing parts that were shipped loose, and missing homeowner information.
2. Electrical box not sealed at exterior wall.
3. Ceiling baffle at top plate misplaced or dislodged.
4. Ceiling penetrations not sealed.
5. Furnace filter dirty or missing.
6. Gaps in the insulation in ceiling, walls, or floor.
7. Failed branch-duct attachment.
8. Voids in insulation around rough openings for windows or doors.
9. Bottom covering not cut at crossover collar.
10. Damage or gap at heat duct boot.

Information about the NEEM program is available from the Oregon Department of Energy, [energy.oregon.gov](http://energy.oregon.gov). Click on "Program list," then on "Manufactured home," and select "Northwest Energy Efficient Manufactured Home Program: A House Full of Savings." ■



*NEEM homes are state certified to provide excellent energy efficiency. They feature increased insulation and seals.*

## When is it best to refer questions to local building officials?

By Albert Endres

Just recently I was taken to task by a building official for an answer I gave to a question posed to me by someone from outside the code-enforcement circle. I gave the answer based upon the information provided; it seemed like a simple question as well as a routine answer. Apparently it wasn't so simple; the building official asked me to admit to an error.

The purpose of sharing this is not to establish who was right or wrong but simply to illustrate how departments can get the reputation of inconsistent answers. It all boils down to how the question is asked and what information is provided.

At the Building Codes Division, we answer many questions every day. With each question asked comes certain information. We base the answer on the information provided, and at the same time attempt to ask back a few "what else" or "what if"

questions. Once we have the information we need, we give the answer and cite the code.

We do refer the caller to the appropriate jurisdiction if we feel it is a site-specific question relating to local ordinance or issues. In this case, it was a routine question, and the building official suggested that, prior to answering, we should have contacted the building official and asked about the case.

That seems to imply that we should check with the building official before answering questions, or refer the person asking the question to the local building official. I am certain that for most questions this is not practical and not wanted, but I'm curious whether it's what you want. If you have any input on this, please let me know. I can be reached at (503) 378-5975 or [Albert.G.Endres@state.or.us](mailto:Albert.G.Endres@state.or.us). ■

# Avoiding the “shingle salute”

By Gary Hart

One of our inspectors was on a recent trip through the Columbia Gorge when he observed a manufactured home heading in the opposite direction. Several shingles on this home were standing at attention as it passed, giving him the “shingle salute.” This always seems to be more of an issue this time of year because of the drop in temperature.

Shingles are generally stored outside the production building prior to installation and shingling is usually one of the last jobs to be completed prior to the home being moved outside the building.

The asphalt adhesive strips sometimes may not have exposure to a climate inside or outside the production facility that creates an environment conducive to the shingles self tabbing between successive rows.

Manufacturers generally install a strip across the front rake end and either netting or plastic across the front side of dormer areas to keep shingles in place during transit. Remember, during installation all of these fasteners need to be removed and the holes sealed. Install the least amount possible that

*Continued on back page*

# Quizzin’ corner

By Irene Lickiss

It’s time for another name game. I have picked out the names of 30 active installers completely at random. Is it you? Do you know someone by that name? Have you heard of any of these installers? Can you find them all? You can go right to left, left to right, bottom up, top down, horizontal, backward and forward. There is also a secret message — see if you can find it! Have fun!

B	Z	X	C	V	H	B	N	M	A	S	D	F	P	G	E	K	N	A	J
I	A	G	V	H	A	J	K	L	Q	W	C	H	A	N	E	Y	E	R	T
S	Y	A	E	U	W	I	M	O	P	M	O	N	R	E	L	Y	O	D	H
S	B	C	R	X	K	Z	A	L	J	H	L	G	K	F	D	S	A	A	Q
O	P	O	K	S	I	I	N	S	T	A	L	L	E	R	S	U	R	V	Y
N	T	R	I	E	T	W	E	Q	Z	C	I	C	R	V	B	D	B	I	N
E	M	L	S	O	K	A	Y	J	G	F	N	D	S	A	A	Q	W	D	E
T	W	Q	T	Q	C	W	D	E	Y	G	S	N	R	C	T	Y	U	S	I
T	O	P	A	L	S	A	D	F	A	R	O	G	K	H	J	O	K	O	L
E	Z	X	K	E	C	V	M	I	B	N	U	E	N	A	M	I	L	N	K
J	H	G	O	K	F	D	T	P	G	S	R	B	A	Q	N	L	W	E	R
T	Y	U	P	R	I	T	O	A	O	L	P	A	R	M	N	G	B	V	R
C	X	Z	I	E	E	A	G	R	E	E	N	L	P	E	O	I	A	I	E
U	Y	T	T	Z	R	E	S	E	W	V	Q	L	A	L	T	F	S	S	D
D	F	G	Z	H	F	I	J	K	L	E	Z	A	X	D	C	N	V	B	N
M	P	A	K	L	R	I	M	R	U	L	E	R	N	E	J	O	A	I	A
O	M	B	E	R	H	U	N	Y	G	V	C	D	F	R	T	B	R	C	X
D	X	Z	U	S	E	W	A	C	Q	H	E	N	R	Y	T	G	B	Y	E
H	A	B	E	R	S	T	I	C	H	R	F	V	C	D	E	W	S	X	L
Q	M	T	W	A	Y	Q	D	H	A	U	R	N	O	S	K	C	A	J	A

- |            |            |        |            |          |            |
|------------|------------|--------|------------|----------|------------|
| Alexander  | Burris     | Doyle  | Haberstich | Janke    | Mazzettiag |
| Baarstad   | Canterbury | Elder  | Hardacker  | Kangas   | Ocampo     |
| Ballard    | Chaney     | Finch  | Hawk       | Kopitzke | Parker     |
| Bissonette | Collins    | Gagnon | Henry      | Level    | Verkist    |
| Bonfiglio  | Davidson   | Green  | Jackson    | Maney    | Zerkel     |

# Water-heater pans aren't required yet, but they are a good idea

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By Tom Nicolai

Water heaters are usually installed in manufactured homes in their own compartment resting directly on the floor. The Manufactured Home Construction and Safety Standards section 3280.305(g)(2) allows this, stating that wood, wood-fiber, or plywood floors in areas that may be subject to excessive moisture shall be moisture-resistant or shall be made moisture-resistant by sealing the floor or by overlaying the floor with nonabsorbent material applied with water-resistant adhesive.

In most cases manufacturers seal the floor decking, install linoleum in these areas, or do both.

Lately, some manufacturers have started installing water-heater pans in the water-heater compartments. Although this is not yet a requirement, it adds protection if there is a leak. Installing a pan does not mean the floor in the compartment does not have to be made moisture resistant with sealant or protected with linoleum. A pan will be required according to a change in the HUD standards effective May 30, 2006.

As stated in 3280.609(c)(1)(iii), the relief valve drainpipes installed on the water heater must be directed downward and discharge beneath the manufactured home. This still holds true even if a water-heater pan is installed. The relief drainpipe must extend through the floor so it can discharge under the manufactured home. It cannot be installed to discharge into the pan.

## Drain outlet

The water-heater pan is equipped with a drain outlet on the side of the pan for any water to drain in case there is a leak. The drain is incomplete and must be

installed during the manufacturing process. Drain size may vary depending on the pan manufacturer; the one I saw was 1½ inches wide.

There are a few issues concerning the installation of the drainpipe that will fall under the 3280 code.

First, 3280.305(2)(iv)(D) states that on any penetration through the floor decking, such as the one for the drainpipe to exit under the home, the vertical edges of the decking must be coated with a water-resistant sealer. Second, 3280.506(a)(1) indicates that any penetrations of the pressure envelope for various installations, including plumbing, must be sealed with an approved sealer to prevent air infiltration. The floor decking and the bottom board will be penetrated so the water-heater drain-pan plumbing can reach the underside of the home.

Finally, 3280.307(d) requires exterior surfaces to be sealed to resist the entrance of rodents into the home. This means the water-heater drainpipe extending through the bottom board will need to have some kind of screening installed on the end.

## Super Good Cents

Since the water heater's pan drainpipe allows additional air into the home through the water-heater compartment, does that affect the Super Good Cents standards? The answer was it has no effect on the Super Good Cents rating. The manufacturer's installation instructions indicate the drainpipe from the water-heater pan must drain to the outside of the home. The future HUD change also requires the drain to be routed to the exterior of the home or to a drain. ■

# National installation, dispute-resolution programs delayed

By Albert Endres

Implementation of the national installation program and dispute-resolution program has been delayed. Both programs had been slated to take effect in January 2006. A new date for implementation has not yet been established, but will probably be sometime in mid-2006.

The nationalization of the programs will not affect Oregon to any large extent. The law passed in

2000 established that states that have approved and operational programs will continue to run in accordance with the state program. The national program is set up for those states that do not have or want a state program.

If you have any questions about these two programs, please contact me at (503) 378-5975 or [Albert.G.Endres@state.or.us](mailto:Albert.G.Endres@state.or.us). ■



## Shingle salute *continued from Page 5*

will still do the job, keeping all fasteners out of the valley areas. It might help to store the next days' worth of shingles in a warmer atmosphere.

Some manufactures have installed overhead heaters to help this process. Others apply an asphalt cement tab between each row of shingles. If you are hand tabbing shingles, the *Residential Asphalt Roofing Manual* states that the asphalt-cement application must comply with ASTM E D-4586, Type II: Two spots the size of a quarter are to be placed under each tab, check individual shingle manufacturer's recommendations for hand tabbing. More cement may eventually create more harm than good: Shingles may blister if too much is used when the temperatures rise, or excessive cement could ooze out, which could be unsightly.

When applying the shingles at the peaks during installation, take into consideration the weather, location of the home, and the prevailing wind direction and exposure.

Do what you can at both at the manufacturer facility and during installation to prevent shingles from blowing off in transit. It's winter, it's cold, it's a continuing problem. ■

440-2667 (1/06/COM)

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

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