

Manufactured Home Update

Oregon Department of Consumer & Business Services ■ Building Codes Division

January 2004

Missing installation tags? Call us.

By Albert Endres

We love to get calls from jurisdictional inspectors inquiring about installer tags that were posted on the homes. It shows that the inspectors are looking to see if the tags are present. Checking to see that the tags are present is one of the best ways to guarantee accountability and ensure that the installers are licensed.

The issue that came up recently — one that comes up a few times a year — is what to do when there is no tag, yet the installer says a tag was installed on the home. A simple phone call to our insignia desk, (503) 373-1257, or to me, (503) 378-5975, can tell you whether or not a tag was reported on the home in question.

Administrative rules do not require an installer to place a second tag on the home if the original tag was removed or came off. Rules require only that one be affixed to the home. Verification through our office that a tag was assigned and reported used on the home, meets the intent of the rule.

If an installer were to cheat and report the same tag used on different homes, we would catch it when we enter the information in the database. We do hold installers accountable for irregularities in reporting and use of the tags. ■

Building official training

By Al Rust

In the past three months this division has conducted trainings with several of our state building officials and their staffs.

Twenty-five jurisdictions and staff members went through update training on the new Manufactured Dwelling and Park Specialty Code. The training focused on the changes in manufactured housing construction, new code interpretations, and general information to keep our building officials and staff up to speed in this ever-changing industry.

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The Powerpoint-based class takes about 1.5 hours to complete. The class presenter holds the class at the jurisdictional office.

Comments about the class have been positive and fruitful information has been passed between local jurisdictions and this division.

We plan to continue these classes during the coming year with updated information and a modified presentation. To request another session or to meet with me about other issues, call Al Rust, (503) 378-8053. ■

Plumbing and electrical systems: Why test?

By Tom Nicolai

Plumbing

On numerous field inspections, we have seen the effects of the electrical and water systems not tested after the house has been installed. These systems are tested at the factory, but because of various transportation and installation related issues, many of the manufacturers and the OMDS require these systems to be tested after the house has been set and the connections made.

A recent consumer case involved a supply leak at a fitting. The system was not tested after the home was installed and the leak was not detected for a few days. To repair the damage cost several thousand dollars. If the water-supply system had been tested, the leak would have been discovered, and it would have cost no more than the price of a fitting, some glue, and five minutes of time.

The 2002 OMDS details required plumbing tests, including tests of the water and drain line, and what to do when systems or parts of systems fail the tests. (See Section 5-4.1, 5-4.2 and 5-4.3).

Electrical

When conducting inspections in the field, we uncover electrical issues that could have been found easily if the system had been properly inspected after the installation was complete. Like water systems, electrical systems are tested at the factory when the home is produced. There have been instances of sections of houses not being energized because of improperly installed crossovers or transportation-related disruptions. If electrical systems are properly tested after crossovers are connected, most of the electrical issues we get involved with would not occur.

A qualified party could conduct both these tests in less than an hour — a short amount of time that is a cost-effective investment.

There are those in the industry who do not consider testing a priority, but there are good reasons for these tests. The key words are “safety” and “health.” Think about the answers to these questions:

- Can the homeowner be assured that crossovers are properly connected?
- Can the homeowner be assured there is no transportation-related damage that may cause electrical shorts or a fire?
- Can the homeowner be assured the contents of the drain system are not leaking into the floor cavity or onto the ground?
- Can homeowners be assured the supply system has been correctly connected and that it has no leaks?
- What are the chances the homeowners are going to be satisfied if they find out there are sections of their new house that are not energized, that water-supply lines are leaking, or that the site-installed drain-line connections are leaking?

The 2002 OMDS requires that the person making the water and electrical connections test the systems to ensure there is no evidence of leakage under normal operations. If you have questions about plumbing and electrical testing, please call me, (503) 378-5975. ■

Knowing the roof load of your home

By Dwight West

All dealers and contractors should know the roof loads of the homes they are selling or installing. Remember that the Oregon Manufactured Dwelling and Park Specialty Code (OMD&P) was written for the installation of homes with a maximum live-roof load of 30 pounds.

If you are installing a home that has a roof load higher than 30 pounds, you will have to use the manufacturers' installation instructions. You will also need to let the local jurisdiction know that you have used these instructions, so that when it is time for the jurisdiction to inspect, it will know to use the manufacturers' installation instructions rather than the OMD&P for reference. ■

Can ornamental block be used in piers?

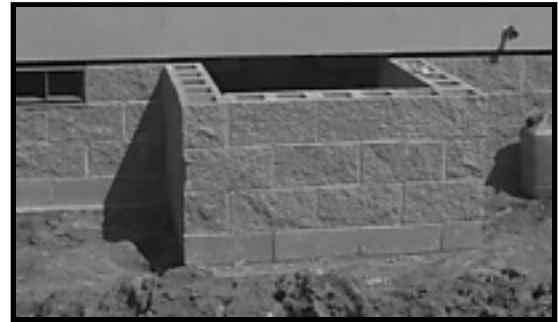
By Mark Campion

When a local building inspector runs across a home that has been set using pre-cast concrete masonry blocks for piers and a few of the blocks are decorative “cut-face” blocks, the question that logically follows is, “Do these blocks meet code?”

The short answer is yes.

Under MD&P 3-5.7(a), pre-cast concrete masonry hollow-core cell blocks (or CMUs, for concrete masonry units) must conform to ASTM C-90-96, ASTM C-33, and ASTM C-331. Because we allow cut-face CMUs to support the home on the perimeter, we by default allow them to be used for piers.

This is a rare situation because cut-face CMUs are more expensive. What seems to happen is that the installer runs out of regular blocks and substitutes a few cut face blocks that are handy, thereby saving a trip to the supply store. ■



Skirting access well with cut-face blocks

Edit electrical table 4-B

By Albert Endres

About a year ago, we discovered an error in the electrical table 4-B in the Manufactured Dwelling and Park Specialty Code concerning wire size for a 200-amp, grounded conductor in the aluminum wire size. This information was passed on, but newly licensed installers and inspectors may not have been told of the correction.

In the aluminum wire size for the 200-amp service, the grounded conductor is shown as a # 3/0. It should actually be a # 2/0. Please make a note of this in your codebook.

Clarification of Plumbing Table 5-C

In Plumbing Table 5-C of the Manufactured Dwelling and Park Specialty Code, you may want to make the following note concerning the type of piping that is approved for pressure line applications.

The table shows that PVC, ABS, and PE are approved for the utility connection from the meter to the home. In actuality, these types of ASTM-approved pipes can be used only for the utility connection up to the building line of the home. Once the piping goes inside the building line, the piping must change to one of the other approved pipes shown in the table. ■

Get crossover help if you need it; don't skip testing _____

By Dwight West

Even though manufacturers are required to identify all electrical circuits that cross from one section of a manufactured home to another, our inspectors frequently find incorrect electrical crossover connections. Inspectors have discovered furnace circuits crossed, furnace circuits crossed with water-heater circuits, water-heater circuits crossed with dryer circuits, and GFCI circuits wired into general lighting circuits — all are hazardous to the homes' occupants.

Inspections have uncovered GFCI circuits wired incorrectly at the crossovers. Receptacles required to be protected by the GFCI were not protected, and other receptacles that did not require protection were on the GFCI circuits. Manufactured dwelling installer licenses allow installers to connect crossover circuits; however, installers who don't know how to do it correctly should get help. Guessing wrong could cause an injury or fire.

The frequency of improper crossover-wire connections underscores the importance of testing the electrical system once all the connections have been made. Testing is the responsibility of the person performing the electrical connections. Electrical tests will uncover all the problems previously mentioned.

If a manufacturer provides AMP connectors for completing crossover circuits, the person making the connection must verify that the connectors have been completely joined or snapped together. If the AMP connector is not completely joined, the conductors may begin to arc, creating a fire hazard.

Important things to remember:

- Know what you are doing by reviewing the manufacturer's installation manual.
- Know exactly how the manufacturer identifies each circuit.
- Know how to perform required tests.
- Test the home once all connections have been made.

And remember: Electrical code requires that crossover wires shall not be left exposed below the home. Wiring should be protected in conduit and J-boxes or covered by access panels after connections have tested out as operating correctly.

If there are questions about how to make the crossover connections, call Dwight West, (503) 378-2620. ■

Installation survey information, year to date _____

By Al Rust

This installation survey information is taken from field inspections around the state and sent monthly to building officials. The information is also shared with the students in the contractor and inspector training class. The information below are the top ten problem areas reported in 2003. Homes surveyed: 257.

1. Belly holes not sealed by MDI
2. Water supply not insulated
3. Water supply line not supported
4. Freshwater line is of wrong material
5. DWV: green tracer wire missing
6. DWV: not supported
7. Electrical conduit not secured
8. No frame bonding
9. Lacks feeder protection
10. MDI certification tag missing

We need to concentrate on these items next year in the installation and inspection of manufactured homes.

Even with these problem areas, our contractors and inspectors did an outstanding job of installation and inspection, with an overall score of 92.3 points out of 100 for the installations this year.

Good job! And thank you. ■

How putting it in writing can avert trouble

By Tom Nicolai

Oral communications and written contracts among contractors, installers, dealers, and other parties in the manufactured home business need to accurately describe what is to be done and who is responsible for doing it.

In the course of inspecting and mediating requests for assistance, BCD customer-assistance staff members frequently see unpleasant situations that could have been avoided if communication between all parties had been better.

Contracts need to be written carefully with the full understanding of all the parties who are signing. If contracts were prepared and signed in this manner, BCD inspectors could more readily assign responsibility and accountability when asked to do so. The following two scenarios are common:

What are upgraded appliances?

A potential homebuyer, while being shown homes on display on a dealer's lot, asks if the kitchen appliances (range, dishwasher, and side-by-side refrigerator) that he sees are standard. The salesman indicates that they are upgrades and would have to be ordered as so. The homeowner says that these are "what he wants" but he does not specifically request a side-by-side refrigerator.

When the home is delivered, the refrigerator is not the side-by-side that the homeowner saw displayed on the lot. When he questions the dealership about the problem, he is told that the refrigerator in the home is upgraded from what is standard; to have gotten a side-by-side, the homeowner would have had to specify a side-by-side in the sales contract.

The salesperson and the homebuyer share the responsibility for this unhappy situation. If either had taken more time or given or asked for more specifics, this could have been prevented.

What is included in a park package?

Many homeowners have their newly purchased homes installed in developments offered by the dealer who sold them the home. They may be offered a "park package" for some amount beyond the cost of the home. Items included in such packages include driveways, carports, sidewalks, gutters, etc. Even though each of the items included in the homeowner's park package is listed in the sales agreement, homeowners often are not happy with what they receive – it's just not what they had pictured. For instance, even though the driveway is poured according to the sales agreement, it is a single-car driveway when the homeowner expected a double-car driveway. According to the agreement, a driveway was supplied.

Again, the salesperson and the homebuyer share the responsibility for going over each item in park pack. If the buyer is allowed to leave the sales meeting with a picture in his head that differs from what the salesperson has on paper, the scene is set for customer dissatisfaction.

Tips:

Take the time to be sure you understand one another and you are "talking the same language."

Put in writing what will be delivered to and received by the homeowner. Each party should sign and keep a copy of the agreement.

To eliminate potential contract misunderstandings, take the time to understand one another, to be specific, and to put it in writing for all concerned parties. ■

Seal exteriors to prevent water damage

By Tom Nicolai

One of the most important protective measures for preventing water damage is to ensure that the home's exterior is adequately sealed with the correct type and grade of sealant.

In most cases, exteriors of manufactured homes are sealed by the manufacture during production, prior to shipping. During installation or set-up, workers usually seal or reseal the front and rear entry doors, upper and lower horizontal trim, and various exterior fixtures. Whenever repair or service work is done, resealing the exterior should be a regular part of the job.

The most crucial sealing for the longevity and soundness of the home is sealing on a regular maintenance schedule after the home is set up, which is the responsibility of the homeowner unless the home is set up on a dealer's lot as a display model; in that case, it is the dealer's responsibility until the home is sold.

Consumer-assistance inspectors see firsthand the damage that occurs when home exteriors are not sealed properly or have been sealed with the wrong type or grade of sealant. In one case, when an exterior door was reinstalled after the home was completely set up, the crew didn't seal the top corner of the entry-door brick mold where it met the siding. Water entered the wall cavity and traveled to the floor, damaging the wall panels and floor decking. The floor needed extensive repair.

This is just one example of how improper sealing can lead to damage from water penetration. Make sure the sealant you are applying is continuous, covers the area it needs to, and adheres to both surfaces. Use high-quality sealant that is the correct product for the application, even if it costs a little more. After all, a little extra cost now may save you a lot of grief and money later. ■

Unlicensed installers

By Albert Endres

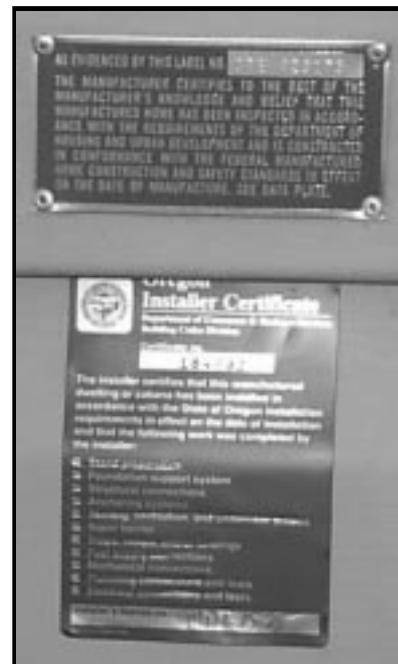
Recently, one of our installers came into the office to ask if a home mover was licensed. Of course, without a name, we have no way of knowing. The installer said that he had done re-levels on recently installed homes and observed that installation work was not up to code.

When the installer checked to see which installer had placed his installation tag on the home, there was no tag. When the homeowner was asked who set the home, he didn't know the individual's name.

As I mentioned in another article in this publication, it is important to check each home for installation tags. Failure to install or report tags used exceeds the acceptable range in the statistics we keep.

This is an issue everyone can help with. Installers must place tags on homes and report their use. Inspectors are required by MD&P 1-8.13.2(c)14 to ensure that tags are installed. Our Building Codes insignia specialist is responsible for ensuring that tags are being reported consistently before she issues additional tags. We need to improve in all phases of this process to help protect homeowners as well as those installers who comply with the requirements.

The picture below is generally what you should see during a final inspection. If you have any questions, please call me, (503) 378-5975. ■



HUD label

Installer certificate

How to deal with setbacks on steep sites

By Mark Campion

Under the code, MD&P 3-4.3(h) and (i) mention slope and setbacks of cut or fill surfaces. See the Oregon One & Two Family Dwelling Specialty Code, Section 401.6, Slopes.

This area of the Oregon One & Two Family Dwelling Code is fairly complex, but, in a nutshell, the following applies: a) a home must be set back from the face and the toe of a slope or cut (hill, cliff, etc); b) this distance is determined by the height of the slope in front of or behind the home; c) slopes can be almost vertical, but the local building official can require a report from a certified engineer before accepting the site and the cut; and d) retaining walls in these applications always require a permit, and sometimes require design (when taller than four feet).

For example, if you cut a hillside to create a flat building site, and the hillside behind and in front of the home is a hundred feet high in both instances (imagine a homesite cut into the middle of a 200-foot-high hill, overlooking the valley floor), there are two setbacks to deal with.

The first setback is that from the front of the home to the lower hill (from the home to the valley floor). The simple formula for this is to divide the height of the hill in front of the home by three. In this example, 100 feet divided by three equals 33.3 feet. However, the front side of the home does not have to be more than 40 feet from the lower hillside, as 40 feet is the maximum.



Ascending-slope setback

The formula for the setback at the back of the home to the base, or toe, of the hill behind it is the height of the hill divided by two. In this case, 100 feet divided by two equals 50 feet. However, a 15 foot maximum applies to this measurement.

Confused? Don't be surprised. Many people are. In both setbacks, the slope is assumed to be two feet horizontal for each foot

in elevation (this is the slope, identical to a 6/12 roof... one foot horizontal rise) to six inches in height gain (run). Anything steeper than this, and the local building official can require a developer, contractor, homeowner, or dealer to provide an engineer's report, and may require a retaining wall or other improvements.

And how do you measure the slope? Use a 2x4 that is 12 feet long or even shorter — a four-foot level works in a pinch — a roof pitch gauge, and a GPS for elevation change, or a USGS map that shows elevation.

Although complex, these rules exist to prevent hillsides from sliding down on homes or sloughing off at the front, endangering the home's occupants and the structure itself, along with outbuildings and other improvements. ■

Request to installers regarding certification-tag purchases

In an effort to conserve funds in the manufactured-home budget, we are asking installers to order a minimum of five installation tags. Some installers order one tag at a time. The accounting department charges the manufactured home program \$15 for each financial transaction. When we get one tag at \$8, we lose \$7, not counting the handling costs. Thank you for your consideration.

Albert Endres

Water shut-off requires full way valves

By Mark Campion

Under MD&P 5-2 Water Installation Requirements, subpart (f) deals with the main shut-off valve for the water service. The valve must be the “full way” type, a fact that is often overlooked. This means that the inside diameter of the valve is the same diameter as the pipe when the valve is fully open. Many valves do not meet this standard. When they don’t, water flow or volume to the home is restricted, although pressure may be a good 40 to 80 pounds, and the homeowner notices a significant decrease in flow when he or she uses two or more appliances or fixtures.

Among unacceptable valves, only the globe-type valve (identified by a dome on the bottom of the valve) can be identified visually. Ask your supplier if the shutoff valve you’re using is of the “full way” design. ■

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BCD Administrator

Mark Long

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Building Codes Division

1535 Edgewater NE, Salem, Oregon

Mailing address:

P.O. Box 14770, Salem OR 97309-0404

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