

Manufactured Home Update

Oregon Department of Consumer & Business Services Building Codes Division

September 1998

Two-story home shown at fair

One of the first two-story manufactured homes in the state was on display at the Oregon State Fair. Built by Silvercrest and installed by Conser Homes of Albany, the 1,400-square-foot "TS-3 Townhome" drew crowds of homebuyers. The two-story model could be sign of things to come for the manufactured-housing industry.

According to Matthew Conser, Conser Homes, two TS-3 Townhomes have been sold, both in the Salem area. Conser said, "The cost of the TS-3 is "incrementally less, but not orders of magnitude less than two-story site-built homes."

The main advantage, he said, is the shorter construction time. Conser Homes is the exclusive distributor of the TS-3 in Oregon and is the only firm in the state certified by Silvercrest to install these homes.

New aspects of the home include the two-story design and a wider (15-foot, 6-inch) floor system made of steel. The TS-3 has one unit down and one unit up. Wall frames and headers are beefed up to handle increased loads. Conser said the TS-3 requires a crane to set the second story and described the installation as much more involved than simply setting a home over a basement. Future variations on the TS-3 may be two units down and one up, or two down and two up.

The fair display by Conser Homes featured first- and second-floor decks. The second-floor deck and outdoor stairway may not be typical of actual installations, but were needed to accommodate fair traffic. Conser mentioned the "wonderful partnering" from subcontractors and trade allies that made the fair display possible. The contemporary-looking home featured horizontal lap siding, a 4.5/12 first floor roof and a 6/12 second-floor roof. The three-bedroom design is being marketed as "land efficient" and suitable for single-family or investment (multi-family) applications. ■

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Conser Homes displayed this two-story manufactured home at the Oregon State Fair. The company has begun filling orders for the single- or multi-family buildings.

Photo courtesy of Janet Nagele

Get ready for winter

by Albert Endres

Winter is approaching, so it's time for manufacturers, dealers, and installers to prepare. Some of the situations Building Codes Division deals with each winter are shingle loss, rainwater in the bellies of homes, leaky close-up material, waterline and toilet freeze-ups, door leaks, homes sunk in the mud, ridgecaps blown off, and rain damage to homes during installation. The number of such problems can be significantly reduced with a little planning.

To prevent shingle- and ridgecap-loss, dealers, manufacturers, and installers can offer homeowners the option of hand-tabbed shingles. The proper application of an approved asphalt cement can prevent the roof problems we see. Hand-tapping may well be cost-efficient, considering the hassle of dealing with winter storm damage. A strong sales pitch for hand-tapping can save relationships later. Installers could incorporate the cost of hand-tapping the last few field-installed rows. Installers also need to be prepared to avoid weather damage to the home during installation. Extra visqueen or poly tarps can prevent damage. As insurance against bad weather, cover the home with tarps if the roof isn't complete at the end of the day.

In factories and at dealerships, attention to the application and repair of the close-up material on double-wides, tip-out windows, and pod connections can save

the grief of dealing with flooded homes and water in the belly. Homeowners do not appreciate it when their homes are delivered full of water. Rain damage during storage or transit gets the whole transaction off on the wrong foot.

Check the water in toilets and waterlines of unsold homes. Blow out the plumbing lines and add approved antifreeze to the toilets and P-traps. Offering storm doors to homeowners who live in particularly stormy areas could prevent wind-driven water leakage around exterior doors and avoid hard feelings.

Storage of homes should be monitored. Proper supports should be in place, with homes parked on stable landings and close-up material frequently checked.

Dealers and installers should check access roads and home sites more closely during winter. Too many homes are damaged trying to drag them into unprepared areas.

These situations should be considered all year, but winter's harshness calls for extra attention. Most of these problems are preventable with a little attention to detail, so please do your best to protect homes from weather damage. Help make this winter one of the least-eventful for the consumer assistance section. ■

Earthquake bracing retrofits require inspection

Building Codes Division was recently asked if permits and inspections are required on retrofit earthquake-resistant bracing installations under manufactured dwellings.

The answer is not easy to find as Sections 201 and 204 of the 1997 Oregon Manufactured Dwelling Standard (OMDS) dealing with permits and inspections do not specifically address earthquake-bracing systems. However, Section 305(e) of the OMDS states: Manufactured dwelling earthquake-resistant bracing system installations shall be considered part of the manufac-

ture dwelling installation and shall conform to Sections 201, 202, 203, and 204 of this standard.

Because Sections 201 and 204 of the OMDS require permits and inspections of manufactured dwelling installations and Section 305 considers earthquake-resistant bracing systems part of the manufactured dwelling installation and requires them to conform with these two sections, state and municipalities administering the manufactured dwelling installation program are required to issue permits for *all* earthquake-resistant bracing system installations, whether they're part of the original installation or as a retrofit installation. ■

Recessed-porch tie-downs revisited

by Anthony Clifton

A few installers and dealers still seem confused about tie-down requirements for homes with recessed porches or decks. A “recessed porch or deck” is a porch or deck that has a roof over it and is built by the home manufacturer.

Tie-down requirements for homes with recessed porches and decks are straightforward: If the roof over the deck is 70 square feet or larger, tie-downs are required. It doesn't matter if the home is in a wind or flood zone. Homes installed anywhere in Oregon that have a roof over a deck or porch are required to be tied down if the roof area is 70 square feet or greater. If the roof over a recessed deck is less than 70 square feet, no tie-down is required. Requirements are listed in 1997 OMDS 307(d).

In windy weather, roofs over recessed decks act as wind scoops, subjecting homes to uplift forces that they have to resist. Lacking exterior walls, covered decks weigh less than other parts of a home and are more likely to be affected by wind uplift. Tie-downs keep homes with covered decks from moving and help avoid interior finish cracking and other wind uplift damage.

If a home is a single-wide with a full-width porch roof over 70 square feet, two tie-downs are required, one at each corner. If the home is a multi-wide and has a porch roof over 70 square feet on one side only, a single tie-down at the outermost corner is required. If the home is a multi-wide with a full width porch roof

over 70 square feet, 2 tie-downs are required: one at each corner.

If the home manufacturer provides specific instructions for installation of tie-downs for covered porches and decks, those instructions govern how the tie-downs are to be installed and attached. If the home's installation manual lacks specific information about tie-downs at covered decks, the 1997 OMDS requires ties to be attached to the main frame — not to outriggers — as close as possible to the vertical column support posts at the outermost corners of the deck or porch.

In some instances, we see tie-downs that are correctly placed but that do not have the required 3,150-pound minimum load-bearing capacity or 50 percent overload capacity [OMDS 307(e)] or that are not installed according to the tie-down manufacturer's instructions. In particular, if ground anchors are used, they're sometimes drilled into the ground at the wrong angle from the I-beam, making them useless. Also worth noting: The load carrying portion of a ground anchor must extend below the local frost line. Tie-down installation instructions are to be left onsite so they can be checked by the local inspector.

Who is responsible for installing tie-downs for porch roofs over 70 square feet? When a home has such a porch roof, the required tie-down is considered part of the home's “support system” and is the responsibility of the MDI doing the home installation. ■

Good installations recognized

by Al Rust

On behalf of the manufactured housing industry in Oregon, Building Codes Division recognizes the following installers and their crews for having installed homes during the past quarter without non-conformances:

Shawn Brumbaugh, Oregon City; John Shaffer, Portland; Carl Schaumburg, Albany; Wyatt Ledbetter, Eugene; Greg Krenz, Eugene; William Stoko, Albany; William Jacobsen, Eugene; Troy Fillis, Canby; Charley

Harrison, Medford; Rene Menchaca, Hermiston; William Rand II, Gold Hill; Rex Hurd, Bend; Daniel Lancaster, Hermiston; Keith Johnson, Bend; Gary Larsen, Bend; and Tracy Watson, Woodburn.

You help give our industry a good name. Thanks for your good work!

Homes were selected at random and inspected by the OSU Installation Monitoring Project. ■

Maintain required overhead electrical feeder clearances

by Anthony Clifton

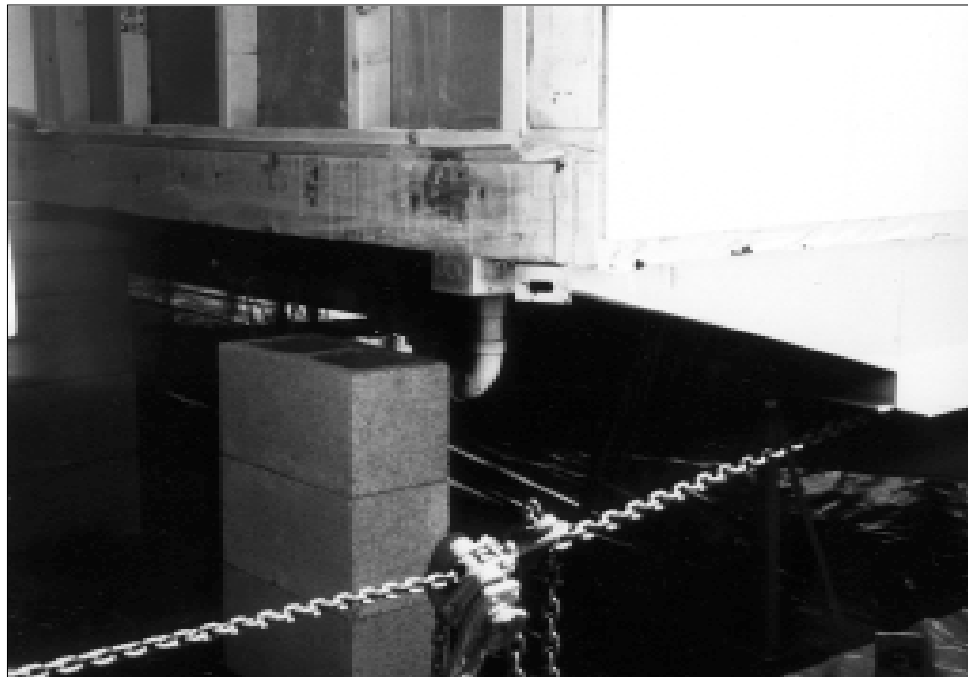
To reduce the possibility of serious injury or death, the 1997 OMDs and its reference standard, the 1993 National Electric Code (NEC) require electrical feeder lines and electrical service lines to maintain certain clearances above the ground and above buildings. Clearances from electrical lines provide important protection to people working around or living in the home.

When electrical service conductors travel over a roof, and the voltage does not exceed 300 volts, the minimum clearance between the roof and the service conductor is 8 feet. An exception provides for a minimum 3-foot clearance above the roof peak. If the service or feeder drop is 6 feet from the edge of the roof, clearance above the roof can be reduced to 3 feet. If the drop is within 4 feet of the roof edge, clearance can be further

reduced to 18 inches above the roof. Clearances are listed in sections 225-18 and 230-24 of the 1993 NEC.

Above a walkway, a minimum clearance of 10 feet must be maintained. Above a private driveway, 12 feet. When lines above private driveways exceed 300 volts, minimum clearance is raised to 15 feet. Above public driveways, minimum clearance is 15 feet. Above alleys and streets, minimum clearance is 18 feet.

The maximum distance that service equipment can be placed from a manufactured dwelling is 30 feet. Minimum and maximum heights for service equipment installed on manufactured homes or pedestals are as follows: The bottom of the service panel must be at least 2 feet above grade and at least 4 feet, and not more than 6 feet, to the center of the meter. ■



This photo shows that some factory electricians still do not know that they cannot place electrical equipment where support piers will need to be located once the home is set. In this case, the electrical J-box for the crossover wiring is right where the end pier at the centerline needs to be.

Photo courtesy of B and B Superior Construction

Ensure fire protection around microwaves

by Patrick D. Lewis, Technical Advisory Group

The Technical Advisory Group (TAG) was recently asked if $\frac{5}{16}$ -inch gypsum board is required between a microwave oven and an overhead cabinet when the microwave oven is serving as the range hood over a cooking range in a manufactured home.

Federal standards, 24 CFR 3280.204(a) require the bottoms and sides of combustible kitchen cabinets over cooking ranges to be protected by three elements: with $\frac{5}{16}$ -inch gypsum board or equivalent limited combustible material, with a metal hood and with a $\frac{3}{8}$ -inch air space. When a microwave oven is used in this location, it may satisfy the requirement for a metal range hood. However, it does not satisfy the requirements for the $\frac{3}{8}$ -inch airspace or the $\frac{5}{16}$ -inch gypsum board and is not listed among the acceptable alternatives in HUD's Interpretive Bulletins C-1-76 or C-3-76.

Even though it may be reasonable to assume a particular brand of microwave oven exceeds the fire protective properties of both the airspace and the gypsum board, it is not within the IPIA's authority to perform evaluations or make these determinations. HUD may make evaluations and provide a determination through an interpretive bulletin that microwave ovens meet the three requirements in 24 CFR 3280.204(a) for fire protection, or the DAPIA may evaluate a specific microwave oven and approve it as an alternative method for meeting the requirements of 24 CFR 3280.204(a), based on its research.

Until either HUD or the DAPIA provides such information, the Oregon IPIA must continue requiring $\frac{5}{16}$ -inch gypsum board and a $\frac{3}{8}$ -inch airspace above microwave ovens located between a cooking range and an overhead cabinet in manufactured homes. ■

Avoid exposed NM cable under homes

by Al Rust

Inspectors and installers should be aware of code requirements regarding electrical cables under manufactured homes.

During the construction process, electrical cable, called non-metallic sheathed — or NM — cable, is secured and protected inside a manufactured home's wall, ceiling, and floor systems. When a manufactured home is installed onsite, the crossover wires need to be placed back inside the floor system of the home for protection. Cables that power equipment such as heat pumps and air conditioners installed in or on manufactured homes must also be protected for the safety of homeowners and others, according to HUD and NEC codes.

HUD 3280.808(2)(k) and NEC 550-10(i)(1)(2) address the protection and securement of line voltage wiring under the home chassis. HUD code requires the

following: When outdoor or under-chassis line voltage wiring is exposed to moisture or physical damage, it shall be protected by rigid metal conduit. The conductors shall be suitable for wet locations. Electrical metallic tubing may be used when closely routed against frames and equipment enclosures. The cables or conductors shall be type NMC, TW, or equivalent.

NEC code on under-chassis wiring requires the following: Where outdoor or under-chassis line voltage (120 volts or higher) wiring is exposed to moisture or physical damage, it shall be protected by rigid metal conduit or intermediate metal conduit. The conductors shall be suitable for wet locations. Exception: Electrical metallic tubing or rigid nonmetallic conduit shall be permitted where closely routed against frames and equipment enclosures. The cables or conductors shall be type NMC, TW, or equivalent. ■

Placing crawlspace access holes and vents

by A. B. Boe and Larry Giardina

People who build and inspect crawlspace enclosures know that the state installation standard (1997 OMDS) requires a certain amount of crawlspace venting and an 18-inch x 24-inch minimum-crawlspace access hole.

Vents help keep the crawlspace dry and are needed to keep wood siding warranties intact. Access is needed for repairs and maintenance below the home. The state standard doesn't dictate where crawlspace access holes should be located, but there are a few guidelines about the placement of crawlspace vents: A vent needs to be placed as near to each corner and as high as practical in the enclosure wall — except in flood zones, where vents are to be no more than 12 inches above finished grade. Vents are required to be placed on at least two sides of an enclosure system to provide cross-ventilation. Other than that, it's pretty much up to the MDI or LSI doing the enclosure to decide where the access and vents go.

There is one location where crawlspace access holes or crawlspace vents should not be placed: directly below the centerline at the endwalls. It may appeal to your sense of the symmetrical to place a vent right in the middle of the end wall, and the header beam and outriggers are out of the way and seem to provide a natural entry point. However, for structural reasons, the worst-possible place to locate a vent or an access hole is in the center of the enclosure below the marriage line. In most homes, a ridgebeam column is built into the center of the endwall right at the marriage line. To support the roof load that this column carries, we need solid bearing directly below the wall column all the way to the footing.

1997 OMDS Table 304 specifically calls for perimeter support walls (block, concrete, or framed) to be shimmed tight to the home directly below the centerline at the end wall. If there is no perimeter support wall, a centerline pier is required as close as possible to each end of the home. If non-rated blocks are used for a perimeter support wall, the block directly

below the center of the endwall must be filled with concrete to provide solid, continuous bearing all the way to the footing. If a perimeter support wall system is used, crawlspace vents or access holes directly below the endwall column make continuous load transfer to the footing impossible. If the endwall column will be supported by a pier, the pier will end up smack dab in the middle of any access hole located in the center of the endwall — effectively nullifying the intent of the access requirement.

One recently inspected southern Oregon home illustrates the problem: The master bedroom was at one end of a double-wide home. The bedroom contained a waterbed. The open span at the bedroom was 20 feet. The endwall at the bedroom contained a ridgebeam column that needed continuous, solid bearing all the way to the footing. Because of roof loading, it was critical that wedges be placed directly below the wall column. When the inspector checked for support in that location, he found a crawlspace access directly below the centerline, and found a centerline pier more than 12 inches from the endwall column support location. Lacking solid bearing at the enclosure wall, the ridgebeam column loads were cantilevering (teeter-tottering) from the pier.

When MDIs know that a perimeter support wall will be constructed for a home, they often leave the centerline end piers out, making the dangerous assumption that the skirting installer will supply solid bearing at the end of the centerline and will place wedges or shims at that location to transfer roof loads to the ground. If the LSI is not licensed or doesn't remember his training, that detail can be missed entirely.

To provide support for ridgebeam columns in the endwall, we need solid bearing directly below the center of each endwall. If we can all keep vents and access holes away from the center of the endwall, we'll be able to provide ridgebeam columns the support they need. ■

On-site training benefits installers and trainer

by A. B. Boe, OSU Installation Monitoring Program

Ron Reynolds, an installer for B and B Superior Construction in Eugene, recently accepted our offer of on-site state installation standards training. Because I check installations all over the state, Ron thought he and his crew could benefit from hearing about what I look for when I do inspections.

I spent most of a day working with Ron's crew on a set west of Roseburg. The crew members and I discussed state code requirements for each element of the set as the set proceeded. I learned at least as much as I taught.

We discussed centerline pier placement as we watched the home going together, and we could see the ridgebeam columns that needed support. Being able to see the columns made it easier to figure out how to support them. Sure enough, an outrigger below one column caused us to offset a pier. When I talked about the state requirement that each side of an open span be supported, the installers asked about columns not located at each side of the opening, but set back in the wall. We discussed the placement of the centerline end piers. We found that factory electricians had mounted an electrical J-box and conduit where the end pier needed to go.

I took pictures, and promised to show the pictures to the factory production manager. I asked if the crew ever contacted the factory about such problems. They said, no, they were too busy with their own work to spend time talking to the factory. They said that even though it might help avoid the problem on some future home, we were stuck with it on this one.

We discussed the new administrative requirement that column locations on the centerline be marked. Although the marking requirement went into effect in July, the centerline columns on this home weren't marked.

The home we set had a longitudinal floor system, so we talked over the pros and cons of using floor clips vs. lagging the centerline to tie sections together. The installers preferred to lag the floor because all the floor clips didn't line up and they were able to get a smoother floor with lags – no bumps at the centerline. The installers acknowledged the possibility of hitting electrical wire with lags. They also wondered why wiring couldn't be installed one floor-joist cavity back from the centerline so that lagging into wires could be completely avoided.

I promised to ask the factory production manager about it. We talked over the need for at least one set of floor clips to be bolted together with star washers to provide the electrical-frame bond.

While we did the I-beam piercing, we discussed pier spacing. When we did the perimeters, we talked over support beam issues and maximum inset from the edge and ends of the home. We talked about door-support issues and ideas for avoiding door-closure problems.

As we got ready to lag the roof, we talked over lag spacing and special bolting patterns for tying the ridgebeams together when ridgebeam columns are only on one half of the home. When we took the last row of roof sheathing off, we found outlookers at the peak on each end of the home that prevented us from accessing the first 4 feet of each beam. We couldn't get the lag gun into that area. The outlookers supported the barge rafters and overhang. To reach the first 4 feet of ridgebeam, we had to tear off the factory roofing at each end and cut back additional roof sheathing.

When we did the heat crossover duct, we considered the need for mechanical fasteners — this crew used zip ties — on both the inner and outer liners. They carried extra ties with them because they anticipated that the factory wouldn't ship enough. They asked about the R-4 vs. R-8 duct issue. I told them about energy loss from loose ducts and about health and safety concerns in homes with fireplaces or woodstoves. They weren't aware that a bad job of connecting the crossover duct could backdraft a fireplace and harm inhabitants of the home. We discussed the need to repair or report factory ducting damaged in transit and the need to insulate V-boxes and splices when no insulating materials are provided.

A couple of the crew members knew most of this stuff, but they appreciated my help working with newer crew members that didn't have the same level of experience. I appreciated feedback on things the factory could do to make it easier for installers to meet state requirements. I also got some good pictures for the MDI training courses.

Ron was appreciative of this training opportunity. It's still available. Give us a call: 541-682-7322. ■

Our thanks ...

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

Installers Phil Bond, John Schaffer, and Clinton Reed — For their patience with BCD and for improved installation tag reports.

Jeff Corff, service manager, SMS Homes — For working closely with BCD in all industry situations.

Shawn Brumbaugh, installer — For general all-around cooperation with BCD.

Nand Lal, Fleetwood Homes — For consistent involvement with consumer assistance cases and for

presenting a positive image of the industry and his company.

Allison Taylor, Golden West Service Department — For excellent responses to BCD on consumer issues.

Candie Wise, McMinnville Factory Homes — For doing a great job on installation tag reports.

All other installers and dealers who worked diligently with Jackie Gordon and Irene Lickiss to improve reporting and clear up old certification tag reports.

Building officials and jurisdictional inspectors who called BCD's Manufactured Home Section to ask for opinions, suggestions, interpretations — and to those who have offered suggestions. ■



When the last row of sheathing was removed so the ridgebeams could be bolted, a 2x6 outlooker supporting the barge rafter did not allow room for the installer to get his arm or the bolt gun into the roof at the ends of the ridgebeam. See photo below.



To meet OMDS bolting requirements, factory roofing and additional roof sheathing had to be removed so the ends of the ridgebeams could be bolted.

Photo courtesy of B and B Superior Construction

Training for retail sales centers: How to sell energy-efficient manufactured homes

by A. B. Boe

Oregon Office of Energy (OOE) is offering a new training program to help retail sales centers do a better job of marketing energy-efficient homes.

The program supports the sale of Super Good Cents and Natural Choice homes manufactured in the Northwest Energy-Efficient Manufactured Home Program. Super Good Cents (SGC) homes heat with electricity and Natural Choice (NC) homes heat with gas, but both types of homes meet the same high standard for energy-efficient construction. Super Good Cents and Natural Choice homes exceed energy standards for site-built housing in Oregon and are the most efficient manufactured homes in the United States.

Before manufactured home retailers can be endorsed by OOE to sell Super Good Cents and Natural Choice homes, they must go through a certification process. The process includes an intensive energy-efficient home-construction course that enables retailers to clearly understand the benefits and advantages that SGC and NC homes provide to consumers.

According to Nancy Bond, director of Energy's SGC/NC project, many retail salespeople don't understand

all the components and benefits of SGC/NC homes. Without training, sales staff can be poor sources of information to consumers considering an energy-efficient home. Nancy hopes that better sales information will help increase the percentage of SGC/NC homes produced and sold in the Northwest.

"Super Good Cents/Natural Choice is more than just an insulation package," says Nancy. "Retail sales training includes a complete picture of how SGC/NC homes are different from homes produced to typical industry standards. Trainees learn about window, door, and skylight insulation and ventilation products that make SGC/NC homes more efficient than standard manufactured homes. They learn about the approval, inspection, and certification process used by OOE to verify that every SGC/NC home meets program technical standards. In general, SGC/NC homes have higher appraisals and higher resale value than HUD homes. Plus, they have a really cool medallion."

The sales training typically takes 30-45 minutes. Call Nancy Bond, 1-800-221-8035, or Mike Fruzzetti, 503-364-4127, if you want to become a OOE -certified Super Good Cents/Natural Choice home retailer. ■

Feds require homeowner registration cards

by Mark Campion

Federal standards require manufacturers to supply homes with "information cards." Manufacturers put their name, serial number, model designation, and build-date of the home on each card.

The retailer is responsible for filling in the homeowner's name, address, purchase date, and dealership name and for sending cards back to the manufacturer. (CFR 3282.211 and 255)

Almost without exception the manufacturer knows who the homebuyer is through other internal records such as purchase order, service records, etc. However, in rare instances, the information card serves as the only record of the homeowner's identity and location.

If a serious defect or safety hazard involving the home is discovered, and the dealership is no longer in business, the information card could be the only means for the manufacturer to contact the homeowner.

Building Codes Division audits manufacturers' service records to ensure that information cards are present. Beginning this summer, BCD is putting an increasing emphasis on compliance with the CFR requirement. Please ensure that your firm completes and sends information cards to the factory. ■

Don't lose that label!

by Tom Nicolai

At Building Codes Division, we receive calls throughout the year concerning HUD labels. Consumers wanting to sell or refinance their homes need to produce these labels. In some cases they do not know where to look for the labels or even what the labels look like. Once they learn where to look, they discover the labels are missing.

According to the Manufactured Home Construction and Safety Standards (3280.11), a permanent label must be affixed to each transportable section of each manufactured home for sale or lease in the United States and must be approximately 2 inches by 4 inches, permanently attached to the manufactured home by any means that makes it difficult to remove without defacing it.

Tags must be etched in 0.32-inch-thick aluminum plate and the label number must be etched or stamped with a three-letter designation that identifies the primary inspection agency such as RAD (Radco) or the state in which it was manufactured, such as ORE (Oregon), WAS (Washington), or IDA (Idaho).

The label should read: "As evidenced by this label No. ABC 000000, the manufacturer certifies to the best of the manufacturer's knowledge and belief that this manufactured home has been inspected in accordance with the requirement of the Dept. of HUD and is constructed in conformance with the Federal Manufactured Home Construction and Safety Standards in effect on the date of manufacture. See data plate."

The label must be located at the tail-light end of each transportable section of the manufactured home, approximately one foot up from the floor and one foot in from the road side, or as near to that location on a permanent part of the exterior of the manufactured home unit as practicable.

A variety of reasons account for missing labels. Sometimes the labels are removed by painting contractors or

by homeowners prior to repainting, and are not re-installed. In other instances, the home is re-sided and the labels are covered with siding. The piece of siding to which the label is attached may have been discarded because it's defective. In some cases homeowners just don't like the appearance of the labels — and not realizing their importance — they remove them, throw them out, or misplace them.

If removed, labels should be reinstalled. Until they are, they should be kept in a safe place. Most lending institutions require these labels when financing a manufactured home.

When homeowners discover they need labels, they often contact Building Codes Division for replacements; however, only the manufacturer of the home can replace HUD labels. BUT — they are not *required* to do so. Because of the amount of paperwork involved, manufacturers rarely issue new labels. Instead, they often refer homeowners to the state, which currently can only substitute an Oregon *insignia of compliance* for the missing HUD label. The insignia of compliance certifies that the home was originally a HUD-labeled home. BCD is exploring with HUD a more efficient method for getting replacement HUD labels.

In most instances, homeowners who have lost their labels *can* get financing, but only after much time, paperwork, and frustration.

A possible solution for the "Case of the Missing Label" is to educate homeowners about the importance of the label at time of sale. During this process, salespeople should point out the HUD label and explain its purpose.

As of this writing, the Division is working with COSAA and HUD to develop a process where each state may replace lost HUD labels. An update will be printed when this process is approved. ■

Are storm doors needed?

by Tom Nicolai

In the last couple of years, tough winter weather has increased the number of incidents of water leaking through exterior doors. Windstorms have been more frequent than in the past, with higher average speeds and stronger gusts. Add to this an increased amount of rainfall. Together, these conditions can cause exterior door leakage.

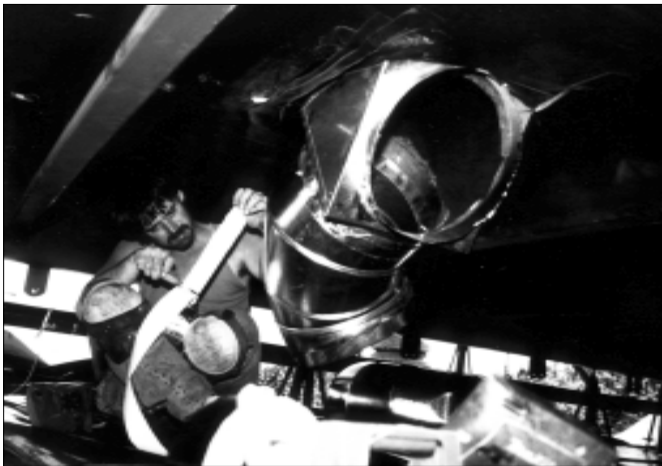
Doors may be installed in the factory or onsite by the installer. When doors leak, homeowners typically call the dealer or home manufacturer. They suspect that doors were not installed properly or that doors are defective. Homeowners steadfastly believe that exterior doors should withstand any kind of weather.

Our investigations have revealed many reasons why exterior doors leak. In some cases, faulty installation or door defects are involved. But the majority of exterior door leakage problems are found in particularly windy and rainy areas of the state when homes are sited so that doors face the prevailing winds.

Can we site homes so that exterior doors do not face prevailing winds? Probably not always, but providing the right information when the buyer first sits down with the sales representative would help. Most exterior door manufacturers supply notices with their doors stating that they won't warrant the door when it is subjected to extreme weather conditions, including wind and rain, unless it is protected with a storm door or other adequate protection.

It is even suspected that negative air pressure inside the home draws water into small voids in sealant.

The sales representative could ask the buyer whether the home will be located in a high-wind area, for example at the coast or on the Columbia River. If so, the buyer and sales representative could discuss home orientation and the possible need for a storm door. A short time spent explaining door issues when the home is purchased could prevent water damage and frustration later. ■



Heat crossover connection details: Installer applying metal foil tape to seal joints at the V-box and sheet metal elbow. Tape provides the required air seal. Screws provide the required mechanical connection between the V-box and the furnace plenum and between the V-box and the elbow. Manufacturers that use V-boxes usually do not ship R-8 insulation for the V-box, but the OMDS requires all bare metal fittings to be insulated to R-8.



Heat crossover connection details: The inner liner is mechanically secured to the elbow with a zip tie. Note use of the appropriate strap tightening tool. Hand tightening doesn't work. The inner liner will be air-sealed to the elbow with tape. To complete the connection, the outer liner will be drawn up over the elbow to the V-box and mechanically fastened/strapped in place. V-box insulation should be installed and tape/sealed to close the V-box penetration through the belly fabric and the seal the V-box insulation to the outer liner of the flex duct. These seals keep Mickey Mouse from moving into the belly. Excess pieces of the outer liner with vapor barrier are acceptable materials for insulating the V-box.

Photos courtesy of B and B Superior Construction

Creswell hired

The customer assistance section of Building Codes Division is pleased to announce that Leon Creswell has been hired to fill a vacancy in the section. Leon comes to us from the OSU Installation Monitoring Program, where he was active in monitoring and training activities. Mr. Creswell will be doing consumer assistance inspections, factory investigations, and dealer and storage lot inspections as his primary duties. Leon's role as an instructor in the MDI/LSI/MHI licensing and certification classes will be phased out by the end of the year. Leon's new phone number: 503-378-3731. ■

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