

CODE LINK

STATE OF OREGON • BUILDING CODES DIVISION

MAY/JUNE 1999



Window bars cause deaths

With crime awareness high in cities across the United States, crime-busting window bar units are being applied to more and more residences to keep occupants safer. There is a serious problem with protecting homes from crimes through the use of window or burglar bars: people are dying.

As many as 20 people died in this country last year because they couldn't get out of their burning homes. The bars, designed to keep burglars out, kept residents in.

Window or burglar bars can be serious code violations. They eliminate required routes of egress that allow people to get out in the event of fire or natural catastrophe. Few cities have enforced codes for existing buildings that require egress not be impeded.

Provisions for window bar releases are contained in the Oregon Structural Specialty Code (Section 310.4) and One and Two Family Dwelling Specialty Code (Section 310.2.2). Window bar releases need to be obvious and must be configured to avoid blocking fire escapes. The length of screw securing the window bar is limited to allow the bar to be pulled out in an emergency.

Jurisdictions should look for code violations that threaten life safety. Children and the elderly are often the ones trapped inside when burglar bars prohibit escape. ■

From *Code Alert*, published by The Code Compliance Council

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Roof, deck, and overflow drain connections



Sections 1105.2 in the *Oregon Plumbing Specialty Code (OPSC)* and 3805.2 in the *Oregon One and Two Family Dwelling Specialty Code* address the code requirements to make proper connections to roof, deck and overflow drains.

Recently, someone requested clarification of these sections and an explanation of why the requirements are necessary. The following information defines the terms used in the sections and the intent of the code provisions.

Connections between a roof and any drain into the interior of the building should be made watertight by a properly installed flashing material. Installation of the securing methods for these connections should be in compliance with the manufacturer's recommendations. Usually these are achieved by using a clamping ring or by pouring the drain assembly in place on concrete roofs.

Expansion and contraction occur at the roof penetration, requiring either an expansion joint or a horizontal section of pipe to absorb the pipe movement. The OPSC and

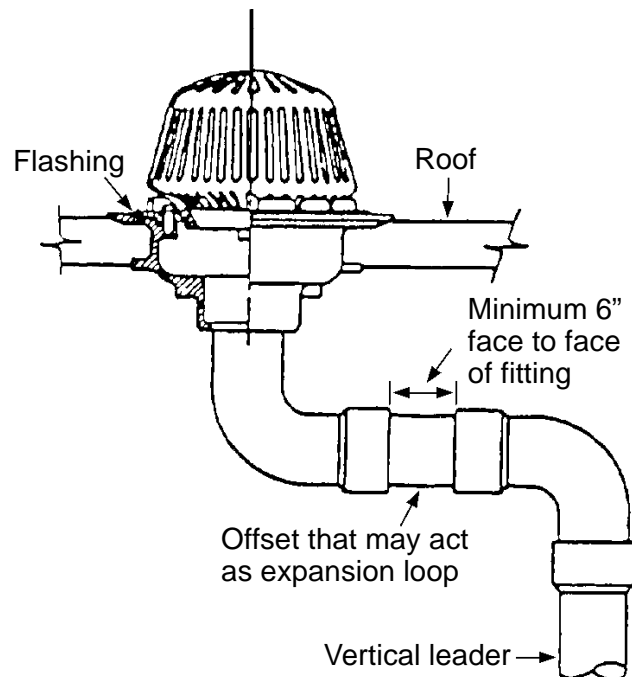
dwelling code contain nearly identical language on expansion and contraction. The OPSC language:

“Connections between inside conductors and roof, deck and overflow drains shall be made with approved adapter fittings as required by this Code. Such connectors shall be provided with an expansion or approved swing joint.”

What is not clear in this code section is the definition of an “approved swing joint.” Neither code defines “swing joint.” Many manufacturers of roof, deck, and overflow drains recommend their products be installed with manufactured expansion joints. In fact, many manufacturers provide their product with such a joint as an integral part of the drain assembly. Obviously, these products meet the code provisions. Products installed without the expansion joints must be installed with an “approved swing joint.”

The following illustration shows an “approved swing joint” under both the codes. It is important to note that the minimum 6-inch measurement, from the face of the first fit-

Please see “Roof,” Page 3



Is my copy of ADAAG up to date?



The original Americans with Disabilities Act Accessibility Guidelines (ADAAG) (July 26, 1991) is current, for the most part, despite considerable rulemaking activity. It is important that one comply with the enforceable design standards issued under the Americans with Disabilities Act (ADA). Published guidelines serve as the basis for those standards that are issued by the departments of Justice and Transportation.

The ADA requires that these standards be consistent with the Access Board's guidelines. Thus, the Access Board's guidelines do not directly affect the public, but instead serve as the basis for enforceable standards, which do. There have been only two limited changes to ADAAG that also are reflected in the standards: revision of specifications for automatic teller machines and suspension of requirements for detectable warnings at curb ramps, hazardous vehicu-

lar areas, and reflecting pools (extended to July 26, 2001).

The ADAAG supplements published last year, which covered courthouses, prisons, and building elements for children's use, have not yet been adopted into the standard by the Department of Justice. This leads to another common question: Can the Access Board's new guidelines be used at this time? They can provide **guidance** on access to the types of facilities and elements they cover; however, consultation with DOJ is advisable until the guidelines are adopted.

A new ADAAG reprint (publication S08) is available from the Access Board, 1331 F St. NW, Suite 1000, Washington, DC 20004-1111, phone 1-800-872-2253. The S08 publication includes all guidelines issued last year, highlighted as changes not yet reflected in the standards. ■

Roof, continued

ting to that of the second, is to ensure that the horizontal branch can take up the movement of the vertical pipe without affecting the roof connection. The second fitting may also be a tee and is not required to be a 90° ell as in the illustration. However, it is not acceptable to use two 45° offsets in place of the two ells, or an ell-and-tee connection.

This code requirement is directed not at the materials used for the piping or drain assemblies, but the roof itself. Reference to an "approved swing joint" for roof, deck, and

overflow drains should not be confused with the old-style double-swing joint often used in hydronic and steam piping to allow movement in two directions and relieve the strain on rigid screwed-steel piping caused by thermal expansion and contraction. This code provision is intended to allow very limited up-and-down movement with the expansion and contraction of the roof itself.

Questions about this interpretation should be referred to Terry Swisher, (503) 373-7488. ■

Staff advisories issued



Program: Structural Program
Subject: Using Table A-29-A
Source: 1998 Oregon Structural Specialty Code (OSSC)
Reference: Chapter 29, Appendix Chapter 29 and Table A-29-A
Date of issue: January 28, 1999
Prepared by: Doug Alexander
Code specialist
(503) 378-4538

Question

How do you apply Appendix 29 to determine number of fixtures?

Determination

To determine the number of fixtures for buildings constructed under the 1998 Oregon Structural Specialty Code, both Chapter 29 and Appendix Chapter 29 will be applicable.

Analysis

Chapter 29 is used to determine the number of fixtures required in any given occupancy governed by the OSSC. Section 2903 refers to Appendix Chapter 29 as an alternate method to determine numbers of fixtures and, when adopted, will take precedence over Chapter 29. Oregon has adopted Appendix 29 and because an Oregon amendment in the appendix refers the reader back to Chapter 29 for drinking fountains, the use of both chapters is necessary.

To apply Appendix Table A-29-A:

1. Determine the occupancy classification in column one.
2. Find the occupant load factor in the row above each occupancy classification.
3. Divide the floor area of the occupancy under consideration by the load factor to determine the number of occupants.

4. Using Appendix Section 2905, divide the total number of occupants by two (assuming 50 percent male and 50 percent female).
5. Apply the resulting number of occupants to the appropriate fixture column and row within the column to determine the number of fixtures required.

It is important to use the occupant load factors given in Table A-29-A to determine the number of fixtures. **Do not** use Chapter 10 occupancy load requirements. Table 10-A load factors are based on the assumption that the entire building is occupied to full capacity to provide a worst-case scenario for sizing the means of egress.

The International Conference of Building Officials provided the same interpretation in the March/April 1996 issue of *Building Standards* magazine.

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Program: Structural
Subject: Visual Alarms
Source: 1998 Oregon Structural Specialty Code (OSSC)
Reference: Sections 1109.14 and 1109.14.2, paragraph 5.
Date of issue: February 12, 1999
Prepared by: Doug Alexander
Code specialist
(503) 378-4538

Question

Are all visual alarms required to be rated at a minimum of 75 candelas (cd) regardless of location and room size?

Determination

No. The **intensity** of light generated by the alarm is required to be equivalent to 75 cd. See OSSC Section 1109.14.2, Item 4.

Analysis

Oregon set the 75-cd minimum light intensity based on the standard in the federal *Americans with Disabilities Act* guidelines. Alarm manufacturers produce alarms to comply with a national standard such as the National Fire Protection Association (NFPA) Standard 72, so when alarms are installed to the standard, they will function as intended. NFPA 72 is adopted indirectly by the building code through Fire Code Standard 10-2, which is a modified NFPA Standard 72, 1993 edition. Fire Code Standard 10-2 is enforceable when the building code makes a reference to the fire code as the installation standard. When not referenced by the code, it is reasonable to refer to Fire Code Standard 10-2 or NFPA 72 as an appropriate alternate to install alarms and to determine compliance with OSSC Section 1109.14.2, Item 4.

Alarm manufacturers have expressed concern about jurisdictions attempting to enforce a 75-cd minimum in each room. The manufacturers are telling us this is not correct and, for certain individuals, over-sizing alarms can trigger photosensitive reactions. The manufacturers provide alarms for smaller rooms with ratings such as 15/75 candela, which is a 15-candela alarm giving a light intensity equivalent to 75 candelas in a room no larger than 20 feet by 20 feet. Criteria for sizing alarms can be found in Fire Code Standard 10-2, Chapter 6, Tables 6-4.1.1(a), 6-4.1.1(b), 6-4.4.2.1, 6-4.4.3.2 and Figure 6-4.1.1, to guide code officials checking the appropriateness of alarm devices for given room sizes and locations.

If alarms are **not** required by Section 1108.4.10, and people want to install audible alarms for personal convenience, such alarms should be installed to the appropriate standard. However, they are **not** required to install the visual alarms. Conversely, if people want to install visual alarms when they are not required, they need not install audible alarms.

Staff recommends designers, building officials, and inspectors refer to Fire Code Standard 10-2 to evaluate the appropriateness of visual and audible alarm installations.

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Program: Structural Program

Subject: Landings at the Top of Ramps

Source: 1998 Oregon Structural Specialty Code (OSSC)

Reference: Section 1003.3.4.4, Landings

Date of issue: January 29, 1999

Prepared: Doug Alexander
Code specialist
(503) 378-4538

Question

Does the provision in Section 1003.3.4.4 (requiring doors in any position to not reduce the minimum landing dimension for ramps to less than 42 inches) apply to accessible ramps? If so, do the ADAAG illustrations found on page 1-134.45 illustrate those clearances?

Determination

The answer to the first question is yes. Landing dimensions are specified in Sections 1003.4.4. and 1003.2.3 and apply in all cases where landings occur in conjunction with a ramp.

Please see "Staff advisories," Page 18

Manufactured dwelling Q & A



by Patrick Lewis

The following questions were submitted by inspectors and contractors from throughout the state. If you have questions concerning manufactured dwellings, you can fax them to Patrick Lewis, (503) 378-4101.

Question

My inspector counted the number of plumbing fixtures in the manufactured dwelling I was installing and said the pipes were undersized and needed to be replaced with larger ones. Can he do that?

Answer

No, the pipe sizing of the manufactured dwelling plumbing system is based on the federal preemptive Manufactured Housing Construction and Safety Standards 24 CFR 3280 and cannot be changed by state or local governments. The size of the building supply line to the manufactured dwelling cannot be based on the number of plumbing fixtures inside the home. The inspector is required to use Table 6-3 of the Oregon Plumbing Specialty Code, which assigns 12 fixture units for every manufactured dwelling regardless of size of home or total number of plumbing fixtures. This does not include fixtures added on site.

Question

Why are inspectors required to perform smoke detector and GFCI tests on manufactured dwellings? Doesn't the manufacturer check these before the home leaves the plant?

Answer

Yes. These are tested at the plant and again on site by the installer; however, as a result of numerous homeowner complaints about GFCI circuits and smoke detectors not functioning, the Manufactured Structures and Parks Advisory Board decided to have the inspectors perform a final test before the installation inspection is approved.

Question

Is copper tubing with a loop in it allowed for a main gas supply connection to a manufactured dwelling in place of the approved flexible gas connector?

Answer

Though copper can be bent during installation, it is neither suitable nor approved as a flexible connector for this purpose.

Question

Can counties require that electrical disconnecting means, such as the meter main, be installed one foot above the base flood level?

Answer

Yes, the jurisdiction can require this. When the service disconnect is elevated, an actuator can be used to switch the breaker on and off or a platform can be built to access the switch.

Question

The new Oregon One and Two Family Dwelling Specialty Code eliminates the requirements for a 20-minute certification on the door between a dwelling and the attached garage. Will the Oregon Manufactured Dwelling Standard do the same?

Answer

Yes! The next issue of the Oregon Manufactured Dwelling Standard, which is tentatively scheduled to be effective October 1, 2000, will read the same as the Oregon One and Two Family Dwelling Specialty Code.

Question

Can a manufactured dwelling electrical service pedestal be located more than 30 feet from the home?

Answer

Yes, the service disconnect is required to be within 30 feet of the manufactured dwelling, but the pedestal or pole containing the meter base can be located farther away. However, the licensed manufactured dwelling installer can only make feeder connections within 30 feet of the home.

Question

Several jurisdictions have asked if it's allowable to brace skirting horizontally or laterally off piers, pier footings, or pier shims under the 1997 *Oregon Manufactured Dwelling Standard*.

Answer

While there may be no problem anchoring skirting to a concrete slab or bracing it off a continuous concrete footing, there is definitely a problem with skirting being 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, the method is considered detrimental to the foundation supports and doesn't meet the intent of the OMDS.

Question

Is there more than one method of electrically bonding two or more chassis between multi-section manufactured dwellings?

Answer

The OMDS requires a solid or stranded No. 8 copper conductor or an equal bonding method to bond the chassis of multi-section manufactured dwellings. If the prescribed No. 8 conductor is used, it should be attached to each chassis through a bonding lug, as shown in Figure 404.3 of the OMDS. (Lugs are usually supplied and attached to the home by the manufacturer.) The bonding lugs should be attached to the steel chassis with self-tapping screws or with a nut and bolt, using a star washer between the bonding lug and the chassis to break the surface of the chassis paint. There is another method of bonding chassis that may be an option with Golden West or Liberty homes, as shown in Figure 306.5 of the OMDS. This method bonds the steel outriggers of two chassis by bolting them together at the centerline. It also requires star washers (or equivalent) under the bolt and nut to penetrate the chassis paint. If you doubt the bonding between the two chassis, you can check it easily with an inexpensive continuity tester.

Please see "Q & A," Page 8

Board appointments

Stacie Strauss and **Clint Hilman** were appointed to the Electrical and Elevator Board effective February 1. **Strauss** occupies the electrical equipment manufacturing position vacated by Dean Erickson who resigned. She worked for Westinghouse Electric for four years after graduation from State

University of New York, then joined General Electric in 1994. **Hilman** occupies the municipal building official position vacated by Bob Kelly's resignation. He has been the City of Gresham building official since 1983. Their terms expire June 30, 2000, and June 30, 2002, respectively. ■

Q & A, continued

Question

What constitutes an attached structure on a manufactured dwelling?

Answer

For manufactured dwellings, an attached structure could be a garage, carport, cabana, or awning. This definition can be misleading, because garages and cabanas are to be self-supported according to the OMDS and are not permitted to be structurally attached to the manufactured dwelling except by flashings and roofing materials.

Question

Can the service entrance (SE) cable be used as a feeder between the manufactured dwelling and the service?

Answer

No. Article 550-24 of the National Electrical Code requires a manufactured dwelling feeder to consist of four insulated, color-coded conductors. Because SE cable does not have four insulated conductors, it cannot be used as a feeder for a manufactured dwelling. And, no, the cable sheathing does not count as insulation for the bare conductors.

Question

If a centerline wall of a manufactured dwelling is only on one side of a multi-section home, does the centerline wall still need to be supported by piers under the floor?

Answer

Yes, even though the centerline wall is only on one side, the loads are still transferred through the roof and floor connections so that both sides of the centerline need support.

Question

If a centerline wall does not extend all the way up to provide support to the ceiling or ridge beam, does it still need to be supported by piers under the floor?

Answer

Yes, even without roof loads, there are still substantial loads at the centerline. The pier supports below the centerline walls are also designed to support the dead loads of the centerline wall, the approximately 6 feet of cantilevered floor, plus all wall and floor live loads from built-in cabinets, their contents, and the home's furnishings. These combined loads usually exceed the roof loads by two to three times; therefore, the support is still necessary.

Question

What is the proper water-pipe size for the building supply line to a triple-wide manufactured dwelling with three bathrooms, a utility room with washer, and a kitchen with two sinks?

Answer

Regardless of the number of fixtures or the size of the manufactured dwelling, the water supply line to all manufactured dwellings is based on 12 fixture units, according to the Oregon Plumbing Specialty Code, Section 610.7, Table 6-3, and must always be a minimum of $\frac{3}{4}$ -inch diameter. However, if the building supply line extends more than 100 feet from the meter or another water source to the manufactured home, Table 6-4 of the Oregon Plumbing Specialty Code would be used to determine the proper pipe size. Assuming pressure of 30 to 45 pounds per square inch (psi), Table 6-4 allows the building supply line to be $\frac{3}{4}$ -inch-diameter pipe for up to 100 feet, 1-inch diameter for up to 400 feet, and $1\frac{1}{4}$ -inch diameter for up to 800 feet. Assuming 46 to 60 psi, Table 6-4 allows the building supply line to be $\frac{3}{4}$ -inch-diameter pipe for up to 150 feet, 1-inch diameter for up to 600 feet, and $1\frac{1}{4}$ -inch diameter for up to 1,000 feet. Assuming more than 60 psi, Table 6-4 allows the building supply line to be $\frac{3}{4}$ -inch diameter pipe for up to 200 feet, 1-inch diameter for up to 900 feet, and $1\frac{1}{4}$ -inch diameter for up to 1,000

feet. Hose bibs, sprinkler systems, and water fixtures in accessory buildings or structures that were not part of the original manufactured dwelling water system would increase the fixture load beyond the 12 fixture units and increase the pipe size-to-length ratio according to Tables 6-3 and 6-4.

Question

What is the required fire rating for materials used on the exterior of manufactured dwellings?

Answer

The roofing material is usually class-A fire-rated; however, the federal Manufactured Housing Construction and Safety Standard 24 CFR 3280 does not require a fire rating on either the siding or the roofing material used on the exterior of manufactured dwellings. ■

New OARs available

The 1998 administrative rule compilation for BCD has been printed and distributed to all building officials. All rules filed through March 12, 1999, were included. All previous copies of Chapter 918 should be destroyed.

Amendments filed during the remainder of 1999 will be printed on colored paper and sent to building officials in their weekly mailing for insertion in the compilation. ■

Manufactured home code information on the Web

The BCD manufactured home installation Web page is up and running. Want to see if an installer is licensed? Don't have your copy of the Oregon Manufactured Dwelling Standard handy? Want to see how to register for an inspector or installer training course? Want to know the inspection requirements for an alternate-construction home? Check us out at:

www.cbs.state.or.us/bcd/s_ws/saahome.htm



GFCI, smoke detector tests required on manufactured dwellings



by Patrick Lewis

Because of the number of failures reported by homeowners, the Manufactured Structures and Parks Advisory Board adopted OAR 918-500-0065 requiring manufactured dwelling installation inspectors to test the ground-fault circuit interrupter (GFCI) and smoke detectors on each manufactured dwelling installed.

Several jurisdictions have requested more information on the testing procedures required by the rule. It was the intent of the board to keep the testing simple.

The only smoke detector test necessary is for the inspector to press the test button on the device for five to ten seconds. If pressing the test button sets off the alarm, the test is a success. If the alarm doesn't sound, the test is unsuccessful and the failure needs to be identified as a code violation on the inspection report and requires correction.

On GFCIs, the inspector only needs to plug a GFCI/receptacle tester into each GFCI-protected receptacle and push the test button. If the test trips the GFCI, it is successful. If the GFCI does not trip, the GFCI failed the test and the inspector needs to identify the failure as a code violation on the inspection report and require a correction.

GFCI receptacles include receptacles located on the outside of an exterior wall, over a kitchen counter within six feet of a sink, and at each bathroom lavatory. If there are several receptacles protected by one GFCI, the inspector needs to reset the GFCI after each test until the whole circuit is tested. GFCI testing devices are available at most building supply stores and generally cost between \$5 and \$10 each.

For both tests, the inspector should make sure circuit breakers are in the "on" position for the circuits being tested. These same tests are also performed at the factory by the manufacturer of the home and again in the field by the installer.

These two tests fall under "final inspection duties." However, if the inspector has access to the home during the installation, the tests may be performed at any time, as long as there is power to the home. If the inspector **cannot** enter the home to perform these tests, the permittee should be informed that the final inspection cannot be approved until the tests take place. Jurisdictions may charge additional fees if inspectors are required to make additional trips to the home site for testing. Permittees should be told when permits are issued that the interior of the house must be accessible for the inspection and tests. ■

1998 ADAAG rules issued



Last year the Access Board issued three final rules and one proposed rule supplementing its ADAAG for buildings and facilities:

- **Building Elements Designed for Children's Use.** These final amendments provide alternate specifications based on children's dimensions for various building elements and fixtures, such as drinking fountains, toilets, and sinks designed for use primarily by children ages 12 and younger.
- **State and Local Government Facilities.** These final guidelines cover public sector facilities and provide new chapters on judicial facilities and detention and correctional facilities.

- **Detectable Warnings.** The existing suspension of ADAAG requirements for detectable warnings at curb ramps, hazardous vehicular areas, and reflecting pools was extended an additional three years, to July 26, 2001.
- **Play Areas.** These proposed guidelines covering access to play facilities were published for public comment April 1998. The Access Board will revise the guidelines based on its review of comments and will publish them in final form. ■

Editorial error in OSSC



ORS 455.315, as reprinted in a box in Appendix 3, Section 326.2 of the 1996 and 1998 editions of the Oregon Structural Specialty Code, contains an error. Subsection (d) should read: "A structure used by the public; or" and the current subsection (d) should be changed to (e).

The portions of statute reprinted in code are not part of the code but are provided for convenience. When referring to statutory limitations, it is wise to use the actual printed statute. ■

Editorial corrections to dwelling code



The 1996 One and Two Family Dwelling Specialty Code needs these changes:

Section 401.6.1.4 : Change first sentence to read "On graded sites, the top of any exterior foundation ..."

Footnote 2, Table 301.2a : Change reference to Section 1613 to Volume II, Division III, Section 1615. ■

Wall bracing requirements



Building Codes Division has received many calls from contractors asking if the wall bracing requirements for wood-frame wall construction have been revised. The requirements for wall bracing haven't changed; however, engineering design requirements changed in the 1998 OSSC. There also appears to be a need to review the provisions contained in the current Oregon building codes. The four paths available for the construction of wall bracing panels are:

1. Prescriptive requirements contained in the Oregon One and Two Family Dwelling Specialty Code (OTFDC) and the Oregon Structural Specialty Code (OSSC).
2. Alternate braced panel (ABP) requirements contained in each of these codes.
3. Portal frame requirements contained in Interpretive Ruling 97-1 issued by the division.
4. If the site conditions or the design don't allow the braced wall panel to be built per the prescriptive paths provided by any of the above, then **engineered wall bracing panels (EBP)** should be provided.

Short descriptions of each path:

1. **Prescriptive requirements.** The minimum width of the braced wall panel required by Section 602.9 of the OTFDC and Section 2320.11.3 of the OSSC varies from 4 feet to 10 feet, depending on the method of bracing selected. The minimum wall panel width required when using the 1-inch by 4-inch let-in bracing is 5 feet 9 inches when the height of the wall panel is 10 feet. If the height of the wall panel is not 10 feet, then the panel width of the wall using let-in braces will be different than 5 feet 9 inches.
2. **ABP requirements.** The minimum wall panel width required is 32 inches, and the maximum height of the panel permitted is 10 feet. Structures containing an ABP are

restricted to two stories, and an ABP can only be located on the first story of the structure, according to the OTFDC and OSSC. An ABP is not allowed to be installed above the first floor. The holding capacity of tie-down devices is required to be 3,000 pounds per ABP when installed on the first floor of a two-story structure and 1,800 pounds per ABP for a one-story structure.

3. **Interpretive Ruling 97-1 requirements.** This interpretive ruling provides an alternative for wall bracing using portal wall frames. The minimum required wall panel width is 22½ inches. Other restrictions are applicable when using IR 97-1 provisions. Under the current ruling the braced wall panels are restricted to the first floor of a two-story structure. OBIA has submitted a proposed dwelling code change to allow such panels. The BCSB Structural Engineering Committee is reviewing this ruling to determine if any revisions are appropriate.
4. **EBP requirements.** When site conditions or design requirements are such that none of the alternatives above can be used for wall bracing, wall panel systems need to be engineered for wind, seismic, and other applicable loads. There are changes in the design formulas in the 1997 UBC that affect the construction of wall bracing, especially in seismic zones 3 and 4. No changes to the prescriptive paths provided by the three alternatives should be allowed unless the changes are engineered. In the absence of engineering, all of the provisions contained in the prescriptive path alternatives described earlier need to be included in the design and installation.

Questions concerning this article should be forwarded to Ravindra Mahajan, P.E., (503) 373-1354. ■

Smoke detectors in manufactured dwellings



by Patrick Lewis

Based on the number of phone calls to the Technical Advisory Group (TAG), there is obviously a great deal of confusion regarding Section 906 of the 1997 Oregon Manufactured Dwelling Standard, which establishes standards for smoke detectors in manufactured dwellings.

What confuses people is that there are two standards, one for manufactured dwellings with smoke detector outlets provided by the manufacturer and one for manufactured dwellings built without provisions for smoke detectors.

Section 906(1) of the OMDS states: *“If the manufactured dwelling has been provided with an electrical circuit and outlets for smoke detectors, listed and approved smoke detectors shall be permanently wired to the electrical supply at each smoke detector outlet provided.”* This refers to those homes built to the federal Manufactured Home Construction and Safety Standards (HUD code) since 1976. If the home already has provisions for smoke detectors, then the inspector is only required to ensure they are installed and working at the locations provided by the manufacturer.

The HUD code is quite different from any of the other model codes regarding smoke detector locations. 24 CFR 3280.208(b) of the HUD code states: *“A smoke detector shall be installed on any wall in the hallway or space communicating with each bedroom area between the living area and the first bedroom door unless a door(s) separates the living area from the bedroom area, in which case the detector(s) shall be installed on the living area side as close to the door(s) as practicable.”* This means in most manufactured dwellings only one smoke detector would be required outside the bedroom area, unless there were two bedroom areas, at opposite ends of the manufactured dwelling.

24 CFR 3280.208(d) of the HUD code states: *“The top of the detector shall be located on a wall 4 inches to 12 inches, or at a distance permitted by the listing, below the ceiling. However, when a detector is mounted on an interior wall below a sloping ceiling, it shall be located 4 inches to 12 inches below the intersection of the connecting exterior wall and the sloping ceiling (cathedral ceiling).”* This means that even if the manufactured dwelling has a 10-foot ceiling height at the peak of a cathedral ceiling, the smoke detector may only have to be located at a height of 7 feet, if the ceiling at the side wall intersection is 7½ feet high.

The main things to remember about the HUD code:

- There may be only one or two smoke detectors for the whole house.
- The smoke detectors may appear to be too low but are most likely in compliance.
- Where there are two or more smoke detectors, they are not required to be interconnected.
- There are no requirements for smoke detectors in the bedrooms.

Section 906(2) of the OMDS states: *“If the manufactured dwelling was manufactured without provisions for smoke detectors or provided outlets are no longer functional, listed and approved battery operated smoke detectors shall be installed according to their listing inside each bedroom and outside each bedroom area.”* This section refers to manufactured dwellings built prior to 1976 (pre-HUD-code homes) that may not have smoke detectors provided by the original manufacturer, or whose smoke detector outlets are no longer functional. In these two cases, the inspector is responsible for ensuring that smoke detectors are installed

Smoke detectors, *continued*

inside each bedroom and outside each bedroom area. In a three-bedroom home in which all bedrooms are off the same hallway, a total of four smoke detectors is required. This section does not specify the location of the smoke detector on the wall or ceiling; however, it does require the smoke detector to be installed according to its listing, which would be reflected in the device's installation instructions.

When are these smoke detectors required? Inspectors aren't required to ensure that every manufactured dwelling in their jurisdiction has operating smoke detectors. In fact, there are only two instances when an inspector must check for smoke detectors in a manufactured dwelling. Section 1001(c) of the OMDS states: "*When a manufactured dwelling is being altered, it shall have smoke detectors added according to Section 906... .*" If a manufactured dwelling alteration requires

a permit and inspection, the inspector is obligated to require that smoke detectors be installed according to the requirements described. Section 301(p) of the OMDS states: "*When a manufactured dwelling is being installed, it shall have smoke detectors installed according to Section 906... .*" Any time a new or relocated older manufactured dwelling is installed, the inspector is obligated to require the smoke detectors according to Section 902(1) or (2) of the OMDS. Since most manufactured dwelling installations involve HUD-code homes, the inspector only needs to check that the home has the smoke detector(s) installed and operational. The field inspector doesn't need to verify the proper location of smoke detectors in HUD-code homes, as this has already been done by the state's in-plant inspectors.

Questions should be referred to Patrick Lewis, (503) 373-1326. ■

Photo identification licenses available

BCD is pleased to announce that photo identification license cards are replacing paper license cards. The photo ID will be more durable and will help inspectors and the public more easily identify properly licensed workers.

Beginning with the journeyman plumber renewals in February/March 1999, licensees were asked to include a passport photo with

their license fee. This process will continue through future renewals. New licenses bear a photo, issue and expiration dates, and license trade title. A coating protects the license from fading.

If you are in the Salem area, you can have your photo taken at the division office, 1535 Edgewater NW. ■

Compliance report

The Building Codes Division is responsible for the enforcement of Manufactured Dwellings and Structures, Plumbing, Structural/Mechanical, Electrical and Boiler/Pressure Vessel Specialty Codes to protect the health and safety of the people of Oregon.

The director of the Department of Consumer and Business Services found the following violations of the regulations governing amusement rides and devices in February 1999:

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Camas, WA	Cascade Amusements Inc.	Operated unsafe amusement ride	\$500

The Electrical and Elevator Board found the following violations of the Oregon Electrical Safety Law in February 1999:

Banks	Brent S. Rowberry	No electrical supervising or journeyman's license	\$500
Bend	Michael M. Breen/Breen Electric	No electrical permit	\$250
Coquille	Charles E. Garland	No electrical supervising or journeyman's license	\$500
Corbett	James F. Stein	No electrical permit	\$250
Pendleton	Greg McLaughlin/McLaughlin Landscaping	No electrical permit	\$250
Portland	Paul D. Gesch/Power Support Services	No electrical permit	\$250
Salem	Salem Heating and Sheet Metal Inc.	No electrical contractor's license/ no electrical permit/allowed unlicensed individual to make electrical installation/ made unsafe electrical installation	\$1750
Salem	Walter E. Steinbrook	Did not ensure individual was properly licensed to make electrical installation (four violations)	\$1,000
Salem	T.E.C.O. The Electric Company Inc.	No electrical contractor's license	\$500
Talent	Yasem Altunel	No electrical supervising or journeyman's license (fourth violation)	\$1,000
Warren	Scott Koller Advanced Security Alarms	No electrical contractor's license (third violation)	\$1,000
Vancouver, WA	Brian D. Atkins	No electrical supervising license (two violations)	\$1,000
Vancouver, WA	John Harm	No electrical supervising license (two violations)	\$1,000

The Plumbing Board found the following violations of the Oregon Plumbing Specialty Codes in February 1999:

Bend	Gary D. Knight dba Knight Mechanical	No plumbing permit	\$500
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CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Portland	DeTemple Company, Inc.	Employed unlicensed individual to make a plumbing installation	\$500
Salem	Ferrando Plumbing Inc.	Allowed unlicensed individual to make a plumbing installation (two violations)	\$1,000
Salem	Ferrando Plumbing, Inc.	Suspend plumbing business certificate of registration	
Salem	Richard Newcomb	No journeyman's certificate of competency	\$500
Warren	David Sass dba Northwest Plumbing Services	No plumbing permit	\$500
Columbus, OH	Aquameter, Inc.	No plumbing business certificate of registration (two violations)	\$1,000
Lynnwood, WA	Steve Oellien	No journeyman's certificate of competency	\$500
Vancouver, WA	Guy William Andrews	No journeyman's certificate of competency	\$500

The director of the Department of Consumer and Business Services found the following violations of the Oregon Specialty Codes in March 1999:

Cornelius	Detail Roofing, Inc.	No building permit	\$250
Eugene	Eric Beins	No electrical permit	No civil penalty
Eugene	Garibay Heating, Inc. dba Garibay Heating	No mechanical permit/no electrical permit	\$500
Grants Pass	Comfort Control Inc.	No mechanical permit/no electrical permit	\$500
Hillsboro	Eugene Zurbrugg Const. Co.	No building permit (two violations)	\$750
Joseph	David Lewis	Failed to comply with order to submit revised structural plans	\$250
Lake Oswego	Sentralarm Inc. dba Sentinel Alarm	No electrical permits (seven violations)	\$1,750
Maupin	Theodore Kuhnhausen	No building permit	\$250
Molalla	Bruce Little dba Bruce Little Construction	No building permit	\$250
Oregon City	Dushan Lukovich	No building permit	\$250
Pendleton	Paul C. Rogers dba Wally's Heating and Air	No electrical permit	\$250
Roseburg	Western Commercial Refrigeration Inc. dba Wescom	No electrical permit	\$250
Salem	Lloyd M. Byler/Best Repair & Assoc.	No building permit	\$250
Salem	Capitol Heating Inc.	No mechanical permit	\$250
Salem	Verlon L. Gates dba Verlon L. Gates Construction & Mgmt.	No building permit	\$250
Salem	James Gulick	No building permit	\$250
Salem	Ray Ossenkop dba Ray Ossenkop Builder	No building permit	\$250
Salem	Salem Heating and Sheet Metal Inc.	No mechanical permit	\$250
Seneca	City of Seneca	No building permit	\$250

CITY NAME VIOLATION CIVIL PENALTY
 ASSESSED

The Dalles Thomas Landry aka Thomas Joe Landry Jr. No building permit/
 dba Tom & Tom Construction & Pest Control no electrical permit \$500

Columbus, OH Aquameter Inc. No plumbing permits (five violations) \$1,250

Yakima, WA Jim Bergin Roofing Inc. No building permit \$250

The Board of Boiler Rules found the following violations of the Oregon Specialty Codes in March 1999:

Lake Oswego Turco Engineering, Inc. No installation permit \$500

Milton-Freewater Carter Plumbing, Inc. No installation permit (four violations) \$2,000

Oregon City Timber Valley Plumbing, Inc. No installation permit \$500

Portland Able, Inc. No boiler/pressure vessel business license/
 no installation permit \$1,000

Portland Ariston Sheet Metal Co, Inc. No boiler/pressure vessel business license/
 no installation permit \$1,000

Denver, CO Bateman Engineering, Inc. No boiler/pressure vessel business license/
 no installation permit (eleven violations) \$5,500

Kent, WA Key Mechanical Co. of Washington No boiler/pressure vessel business license/
 no installation permit (fifteen violations) \$3,000

The Electrical and Elevator Board found the following violations of the Electrical Safety Law in March 1999:

Amity Larry Gannaway No electrical supervising or journeyman's license \$500

Carlton Brad Savage No electrical contractor's license/no electrical
 supervising or journeyman's license \$1,000

Eugene Eric Beins No electrical supervising or journeyman's license \$250

Forest Grove Jeffrey Allan Higdon No electrical supervising or journeyman's license \$500
 dba Jeffrey Higdon Construction

Pendleton Paul C. Rogers No electrical supervising or journeyman's license \$500
 dba Wally's Heating and Air

Portland Dmitri Vladimirovich Zakharov No electrical supervising or journeyman's license \$500

Roseburg Pacific Air Comfort Inc. No electrical permit \$250

Salem JGCM Inc. dba Northside Electric Allowing unlicensed individual to
 make electrical installation (fourth violation) \$1,000

Salem Shawn Monroe No electrical supervising or journeyman's license/
 made an unsafe electrical installation \$1,000

The Dalles Thomas Landry aka Thomas Joe Landry Jr. No electrical supervising or \$500
 dba Tom & Tom Construction & Pest Control journeyman's license

CITY	NAME	VIOLATION	CIVIL PENALTY ASSESSED
Veneta	James Robe	No electrical contractor's license (two violations)/no electrical supervising or journeyman's license (three violations)/no electrical permit	\$1,750
	dba Blackhawk Construction		
Jamul, CA	Gerald Schnell/Schnell Co. ...	No electrical contractor's license/no electrical permit	\$750
Boise, ID	Romar Electric Company Inc.	Allowed unlicensed individual to make electrical installation	\$500
Fruitland, ID	Clayton Pennington	No electrical supervising or journeyman's license	\$500
Spokane, WA	Aztech Electric Inc.	No electrical permit	\$250
Tukwila, WA	National Alarm and Protection LLC	Allowed unlicensed individual to make electrical installation	\$500

Staff advisories, *continued*

The answer to the second question is no, because the clearances given in ADAAG Figure 25 are maneuvering clearances and are not to be used to determine minimum landing dimensions.

Analysis

Minimum sizes for top, intermediate, and bottom landings are specified in OSSC Section 1003.3.4.4. This section is model code language and is adopted without amendment. Clarification of this section can be found in the 1997 Handbook to the Uniform Building Code, Page 191, Section 1003.3.4.4, paragraph two:

“In all cases, where doors enter onto or swing over ramps, the doors may not, during the course of their swing, reduce the minimum dimension of the landing to less than 42 inches.”

This statement is repeated, emphasizing the intent is to apply to all cases. The phrase “in all cases” is not defined, but is interpreted to mean: “top, intermediate, bottom, accessible,” or “nonaccessible.” The illustration provided in the handbook demonstrates the requirement and shows the 42-inch minimum plus the door width on an intermediate landing. Special provisions are identified for landings at the bottoms of ramps and landings that need to comply with accessibility requirements.

For those ramps required to be accessible, an additional requirement is made in Section 1003.3.4.4 for landings to be extended on the latch side of doors 24 inches. This will add width to accessible landings compared to nonaccessible landings and is necessary for additional room that is required for a wheelchair to maneuver. ■

Board meeting dates

	Sun	Mon
1		2
8		9

ELECTRICAL & ELEVATOR BOARD _____

Meets at 9:30 a.m. on the fourth Thursday of each month:

- May 27
- June 24

STATE PLUMBING BOARD _____

Meets at 9 a.m. on the third Friday of every other month:

- June 18

BUILDING CODES STRUCTURES BOARD _____

Meets at 9 a.m. on the first Wednesday of each month:

- May 5
- June 2

BOARD OF BOILER RULES _____

Meets at 9:30 a.m. on the first Tuesday of each quarter:

- June 1

MANUFACTURED STRUCTURES & PARKS ADVISORY BOARD _____

Meets at 9:30 a.m. on the second Thursday of each quarter:

- July 8

MEETINGS ARE HELD
IN THE
SALEM BCD
CONFERENCE ROOM AT
1535 EDGEWATER ST. NW

CODE LINK

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What does it take to build a house?



The National Association of Home Builders estimates construction of a typical 2,085-square-foot single-family home will require the following amounts of materials:

- Framing lumber — 13,127 board ft.
- Sheathing — 6,212 sq. ft.
- Concrete — 13.97 tons
- Exterior siding — 2,325 sq. ft.
- Roofing — 3,100 sq. ft.
- Insulation — 3,061 sq. ft.
- Internal wall material — 6,144 sq. ft.
- Ducting — 120 linear ft.
- Flooring — 2,085 sq. ft.
- Exterior doors — 2, and interior doors — 12
- Patio door — 1 and closet doors — 7
- Windows — 15
- Garage doors — 2

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STATE OF OREGON • BUILDING CODES DIVISION

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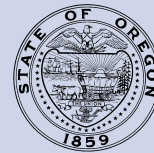
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