

# CODE LINK

STATE OF OREGON • BUILDING CODES DIVISION

SEPTEMBER/OCTOBER 1999

## First building permit fee increase in 20 years



Fees charged for structural and mechanical building permits issued by the state Building Codes Division increased July 1. This is the first increase since the 1979 fees were adopted. Money collected from the fees pays for structural and mechanical building project inspections. The Oregon Legislature approved the 30 percent increase early in June with passage of Senate Bill (SB) 287.

The permit fee increase directly affects consumers and builders only in communities where the state operates an inspection program. Cities or counties operating their own building programs must adopt their own fee increase if they choose to match the state fee schedule.

SB 287 also increased by two percent the surcharge that the state applies to structural, mechanical, plumbing, electrical, and manufactured home placement permits issued by cities or counties. The surcharges pay for training and education programs and defray the cost of state inspections and administration of the uniform statewide building code. With the increase, surcharges rose from five percent to seven percent. In addition, the surcharge the state applies to permits for recreational vehicle parks and manufactured home parks increased from four percent to six percent. ■

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# 1999 Legislative summary



**House Bill 2020.** 1999 Oregon Laws, Chapter 402. Changes the construction contractor registration to a licensing requirement. Applicants will now have to take an examination relating to business practices prior to being licensed as a construction contractor. The bill exempts those registered as construction contractors before July 1, 2000, from the examination requirements, but requires applicants seeking initial registration on or after July 1, 2000, or who allow their licenses to lapse for more than a year, to comply with the examination requirements in addition to all other licensing requirements. Effective October 23, 1999. Must become operative by July 1, 2000. No BCD rulemaking required.

**House Bill 2062.** 1999 Oregon Laws, Chapter 32. ORS 671.520 allows registered landscape contractors to perform certain construction activities that are not strictly landscaping work such as building fences and decks. This bill creates a bonding requirement for registered landscape contractors and allows work on driveways and arbors. Effective October 23, 1999. No BCD rulemaking required.

**House Bills 2240 and 2241.** 1999 Oregon Laws, Chapters 858 and 743 respectively. These are Child Care Division (CCD) bills relating to day-care occupancies. House Bill 2240 requires CCD to investigate complaints and take corrective actions against providers, and it requires any state agency that receives a complaint to inform CCD. House Bill 2241 clarifies the difference between family child-care and group child-care homes, and other types of day-care facilities. Occupancy classifications remain unchanged. It requires family and group child-care homes for 12 or fewer children be provided in the caretaker's house or a facility constructed as a single-family residence. Effective October 23, 1999. No BCD rulemaking required.

**House Bill 2489.** 1999 Oregon Laws, Chapter 173. Requires the Construction Contractors Board to periodically review the qualifications of private organizations that provide training to construction contractors. Requires the board to develop and make available to the public a list of public and private training providers the board has determined is qualified to provide training. Effective October 23, 1999. No BCD rulemaking required.

**House Bill 2490.** 1999 Oregon Laws, Chapter 174. Requires the Construction Contractors Board to maintain and make publicly available records of grievances made to the board against registered contractors. Separate records shall be kept of the following:

- 1) Inquiries that result in no investigation.
- 2) Current claims being processed.
- 3) Claims that have been voluntarily settled.
- 4) Claims that have been resolved by a final order. Effective October 23, 1999. No BCD rulemaking required.

**House Bill 2525.** 1999 Oregon Laws, Chapter 849. Creates a hearings officer panel within the Employment Department to conduct contested-case hearings for various agencies. The use of the panel is mandatory for the Building Codes Division in contested cases arising from violations of ORS Chapters 455 and 693. All other contested cases may be heard by staff or the panel at the division's discretion. A municipality may use the panel to conduct their contested cases for a fee to be established by rule. Effective August 1, 1999, to become operative January 1, 2000. Act sunsets January 1, 2004. No BCD rulemaking required.

**House Bill 2586.** 1999 Oregon Laws, Chapter 307. Distinguishes between smoke alarms and smoke detectors, as defined by national standards correcting current inaccuracies in statute. This bill clarifies that there

are many acceptable types of smoke alarms, some of which do not require the hush feature and 10-year battery. The legislation also distinguishes ionization smoke alarms from photoelectric smoke alarms and exempts photoelectric units from the hush feature and 10-year battery requirements. Three parts of the bill went into effect upon signing by the governor: Only ionization smoke alarms sold in Oregon are required to have the hush feature, only solely battery-powered ionization alarms sold in Oregon must be packaged and sold with a 10-year battery, and smoke detectors for fire alarm systems no longer require the hush feature and 10-year battery. Effective January 1, 2002, ionization smoke alarms in all tenant-occupied dwellings, lodging houses, and hotel rooms must include the hush feature, and, if solely battery-powered, the 10-year battery. Smoke alarms in any dwelling or structure containing a dwelling must meet the same requirements before the property is sold. Effective October 23, 1999. Rulemaking required.

**House Bill 2589.** 1999 Oregon Laws, Chapter 733. The intent of this bill is to hold plumbing business owners accountable for plumbing work performed by their employees. The new language provided in this legislation will assist the agency's compliance program and the State Plumbing Board in enforcing plumbing licensing provisions. Current statute language allows employers to use non-licensed plumbers when they are not "employed" as journeyman plumbers. Therefore, when the employee states that he is employed for other reasons, such as a laborer, the company cannot be found in violation. Under this bill, any company that permits or suffers an employee to do plumbing work without a license can be found in violation. Effective October 23, 1999. No rulemaking required.

**House Bill 2665.** 1999 Oregon Laws, Chapter 329. Directs the Building Codes Division to review developments in communications and cable service technology and establish standards for providing technology

to newly constructed one- and two-family dwellings. Effective October 23, 1999. Rulemaking required.

**House Bill 2683.** 1999 Oregon Laws, Chapter 847. The bill requires the use of volunteer labor for school improvements that are made under a community foundation program to save money. This does not exempt the workers from possessing required licenses for such work as plumbing and electrical. Effective October 23, 1999. Sunsets January 1, 2006. No BCD rulemaking required.

**House Bill 2812.** 1999 Oregon Laws, Chapter 597. This bill adds ORS Chapter 693 plumbing licensing laws to the statutes under which Building Codes Division is authorized to investigate and enforce the state building code. If employers refuse to follow current licensing laws, the division may take further actions to gain compliance. This legislation gives BCD the authority to seek a temporary injunction, restraining order, or writ of mandamus from a circuit court judge. It allows the division to subpoena records from plumbing businesses. Effective October 23, 1999. No rulemaking required.

**House Bill 2819.** 1999 Oregon laws, Chapter 598. Allows the chief boiler inspector to *temporarily* suspend for cause a certificate of competency pending hearing before the Board of Boiler Rules. ORS 480.575 currently allows the board only to revoke certificates of competency, after hearings. Effective October 23, 1999. Rulemaking required.

**House Bill 2822 and House Bill 2824.** 1999 Oregon Laws, Chapter 712 and 713. House Bill 2822 eliminates requirements in ORS 480.557 that also exist in the plumbing program statutes. The boiler program does not regulate the equipment referred to in the repealed statute. House Bill 2824 reduces confusion and clarifies the exemption of domestic water heaters from the boiler law. Effective October 23, 1999. No rulemaking required.

**House Bill 2826.** 1999 Oregon Laws, Chapter 599. Allows lay representation for any person or entity, including corporations, in contested-case hearings conducted by the Department of Consumer and Business Services, provided DCBS adopts a rule that would allow such representation during contested-case hearings. This enables corporations or associations to represent themselves in contested-case proceedings without incurring attorney costs that often exceed the proposed assessment of civil penalties. Effective October 23, 1999. Rulemaking required.

**House Bill 2827.** 1999 Oregon Laws, Chapter 714. Under current statutes, enforcement of some Oregon electrical safety law violations must go before two specialty code boards. For example, nearly all licensing and permit violations are under the jurisdiction of the Electrical and Elevator Board, while the permit violations involving one- and two-family dwellings for the same activities are under the jurisdiction of the Building Codes Structures Board. Thus, a person committing electrical permit and licensing violations at a residence would be brought before both boards. This duplication results in separate orders and deliberation by two boards for the same act. This bill eliminates duplication by having both violations deliberated by the Electrical and Elevator Board, which has the expertise to administer and enforce the electrical safety law. Effective October 23, 1999. Rulemaking required.

A similar bill, House Bill 2590, which was requested by the plumbing industry and which failed, would have moved the authority for the One and Two Family Dwelling Code change approval from the Building Codes Structures Board to the Plumbing and Electrical and Elevator Boards for their respective amendments.

**House Bill 3035.** 1999 Oregon Laws, Chapter 334. Requires the Building Codes Division to give notice of rulemaking 49 days

before the proposed effective date to the legislator who introduced the bill and chair and co-chair of the committees who heard the bill, if the rule is enacted within two years of the legislation (or their successors if more than two years have passed). This, for the most part, is already being done by the Building Codes Division. The bill also allows a legislator or others to contact the legislative committee that received notice of the rulemaking to request review of the proposed rules. The committees submit their comments to the adopting agency. Effective October 23, 1999. No rulemaking required.

**House Bill 3144.** 1999 Oregon Laws, Chapter 744. Creates a new category of engineering license in Oregon: "Structural Engineer," for the design of significant structures. The legislation requires a structural engineer to design buildings housing hazardous occupancies, special occupancies as defined in ORS 455.447, essential facilities greater than 4,000 square feet and 20 feet in height, irregular structures as defined by departmental rule, and occupied buildings taller than 45 feet. Effective October 23, 1999. Rulemaking required.

**House Bill 3234.** 1999 Oregon Laws, Chapter 721. Extends open enrollment period during which those with prior experience may apply for a limited maintenance electrician license. 1997 Oregon Laws, Chapter 209, paragraph 3, codified as ORS 479.633, provided an open enrollment period through December 31, 1997. However, the opportunity to apply was not widely communicated in the industry. Building Codes Division has about 200 applicants who will be able to qualify for examination under this legislation. Effective October 23, 1999. No rulemaking required.

**House Bill 3278.** 1999 Oregon Laws, Chapter 640. Amends ORS 215.213 to allow recreational vehicles to be used for temporary hardship dwellings on land zoned for agricultural, marginal forest or farm, and

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forest use. The bill requires recreational vehicles used as temporary hardship dwellings to be removed within three months after the end of the hardship. Applies regulations for manufactured dwellings used as temporary hardship dwellings to recreational vehicles. Effective October 23, 1999. Rulemaking required.

**House Bill 3383.** 1999 Oregon Laws, Chapter 823. Grants additional authority to the Board of Boiler Rules to write rules regulating systems for chemical, refrigeration, petroleum, and other pressure piping, and references appropriate national standards. Effective October 23, 1999. Rulemaking required.

**House Bill 3384.** 1999 Oregon Laws, Chapter 723. Brings the Oregon Plumbing Specialty Code in line with other states' plumbing codes by expanding the definition of "plumbing" to include medical gas, waste anesthetic gas (WAG), and vacuum systems, and requires the division to define license and code provisions that would apply to these installations. Effective October 23, 1999. Rulemaking required.

**House Bill 3556.** President and speaker of the house signed. This bill creates a separate licensing program for individuals performing mechanical repairs on elevators. It has provisions that "grandfather" in persons who can document prior mechanical experience on elevators. The bill also exempts limited elevator journeymen under the Electrical Safety Law from continuing education requirements and establishes a fee for the limited elevator journeyman license. Currently there are no requirements for anyone to possess qualifications to work on the mechanical aspects of passenger and freight elevators, escalators, moving walks, dumbwaiters, wheelchair lifts, and other types of vertical transportation. The only license required to work on an elevator is the limited elevator journeyman to perform electrical installations on new and existing

elevators. Effective October 23, 1999. Rulemaking required.

**House Bill 3558.** 1999 Oregon Laws, Chapter 852. Exempts from State Fire Marshal licensing requirements journeyman and apprentice plumbers who perform liquid petroleum gas (LPG) installation and repairs. This exemption does not extend to the connection or installation of LP gas tanks. Effective October 23, 1999. Rulemaking required.

**House Bill 3580.** 1999 Oregon Laws, Chapter 846. Increases the maximum civil penalties for violations of the boiler, plumbing, and electrical codes from \$1,000 to \$5,000. The bill requires that the boards assess the maximum penalty when a pattern of violations exists. Effective October 23, 1999. Rulemaking required.

**House Bill 3590.** 1999 Oregon Laws, Chapter 609. Expands the scope of work a licensed limited pump installation specialty contractor may perform. Allows limited pump installation specialty contractors to work on ground water and agricultural pumps in addition to residential potable water and septic tank pumps. Effective October 23, 1999. No rulemaking required.

**House Bill 5012.** 1999 Oregon Laws, Chapter 404. This bill contains the departmental budget for the Department of Consumer and Business Services, which includes the Building Codes Division. The Building Codes Division will examine building codes regulation in Oregon by convening a group of city and county officials, builders and contractors, tradespeople and laborers, state building code officials, consumers, and others to identify problems and develop solutions. Effective July 1, 1999. No rulemaking required.

*Please see "1999 Legislative summary", Page 14*

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# Why building codes?



Building codes are adopted as laws and regulations. They apply to new construction and to existing buildings that undergo reconstruction, rehabilitation, alteration, or a material change in occupancy. Building codes establish minimum acceptable standards necessary to preserve public health, safety, and welfare, and to protect property.

The purpose of building codes is to build safe buildings, thereby reducing deaths, injuries, and property damage. Building codes:

- promote a fair and predictable marketplace for designers, suppliers, and builders
- provide some level of comfort for buyers, who rely on minimum construction standards for the safety and soundness of a building

- allow economies of scale in the production of building materials and construction of buildings
- contribute to the durability of buildings
- help maintain quality of life and property values

Good building codes have little value if they are not enforced. Independent studies of damage following Hurricane Andrew and the Northridge earthquake revealed that lax code enforcement contributed to the total damage.

Plan reviewers and building inspectors are key to the success of building codes. These functions must be adequately funded and staffed with qualified, trained, tested, and certified personnel, so the full value of building codes will be realized. ■

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## Notice of editorial correction in OSSC

Table 23-II-I-1, “Allowable Shear for Wind or Seismic Forces,” in Volume 2 of the 1998 Oregon Structural Specialty Code contains an editorial error. This error relates to the size of the framing member required when 10d nails are spaced three inches or less on center. Footnote 6 to this table requires that the minimum size of the framing member in such cases shall be three-inch nominal or wider. This footnote wasn’t part of the 1997 UBC model code language. A code change submitted by the Structural

Engineering Committee proposed inserting this footnote in the text of Table 23-II-I-1 and was approved by the Building Codes Structures Board during the public hearing. However, a reference to Footnote 6 for 10d nails in two places in the column titled “Nail Size (Common or Galvanized Box)” in this table was omitted during the printing process. Add the reference to Footnote 6. This will be corrected in the next printing of our amendments. ■

# Corrections in OSSC Tables 13-D and 13-E

During the last code adoption process, a few errors occurred in Chapter 13, Tables 13-D and 13-E of the 1998 Oregon Structural Specialty Code. The following editorial corrections assure that the “minimum assembly” column is consistent with the “maximum code value” column, and clarifies the meaning of “low-e” glazing. The tables are under the review by the Building Codes Structures Board’s Energy Committee and, if approved, the changes will likely be effective October 1, 2000. The proposed corrections to these two tables are provided below for the information of the users.

**TABLE 13 -D - ENVELOPE PRESCRIPTIVE PATH, OTHER BUILDINGS - CLIMATE ZONE 1**

COMPONENT	MAXIMUM CODE VALUE		MINIMUM ASSEMBLY
Windows			
U-factor	0.54	or	Double glazed with 0.5 inch air space, low e-0.4 <b>emmissivity coating, &lt; 0.40</b>
Shading Coefficient <sup>2</sup>	0.57 <sup>1</sup>	or	Tinted outdoor pane
Skylights and glazed smoke vents <sup>3</sup>			
U-factor	1.23	or	Double glazed with 0.5 inch airspace <sup>4</sup>
Shading coefficient	0.57 <sup>1</sup>	or	Tinted outdoor pane

**Note: Remainder of Table 13-D unchanged.**

**TABLE 13 -E - ENVELOPE PRESCRIPTIVE PATH, OTHER BUILDINGS - CLIMATE ZONE 2**

COMPONENT	MAXIMUM CODE VALUE		MINIMUM ASSEMBLY
Windows			
U-factor	<del>0.54</del> <b>0.50</b>	or	Double glazed with 0.5 inch air space <b>argon filled</b> , low e-0.4 <b>emmissivity coating, &lt; 0.40</b>
Shading Coefficient <sup>2</sup>	0.57 <sup>1</sup>	or	Tinted outdoor pane
Skylights and glazed smoke vents <sup>3</sup>			
U-factor	1.23	or	Double glazed with 0.5 inch airspace <sup>4</sup>
Shading coefficient	0.57 <sup>1</sup>	or	Tinted outdoor pane

**Note: Remainder of Table 13-E unchanged.**

# OMDS Q & A



by Patrick Lewis

The following are questions submitted to the division regarding the Oregon Manufactured Dwelling Standard (OMDS). If you have questions you would like to see addressed in this publication, fax them to Patrick Lewis, (503) 378-4101.

## Question

Our underwriting department only considers manufactured dwellings with perimeter block foundation walls as having a permanent foundation. Is this an accurate assumption?

## Answer

The block foundation walls around the perimeter of manufactured dwellings are not required in the OMDS. Though they provide the look of permanence, the block foundation walls are usually non-structural elements of the home's installation, used only as an alternative to wood, vinyl, or aluminum skirting. Even when the block skirting is required by a municipality or is the preferred choice of the homeowner, it is usually used for aesthetic purposes only.

Though the OMDS requires perimeter supports under most manufactured dwellings, most installers don't use the perimeter block-wall skirting to accomplish this. The norm is to use individual piers recessed just behind the block-wall skirting for support of the home.

## Question

What does Oregon consider a permanent foundation for manufactured dwellings?

## Answer

The state does not have a definition of "permanent foundation"; however, we do consider any foundation system built according to the 1997 OMDS as being a permanent foundation capable of lasting the life of the home. This would include a foundation made of prefabricated metal piers or concrete block piers.

## Question

As an installer of earthquake-resistant bracing systems on manufactured dwellings, I was rather shocked when I went to one of the larger cities in Oregon to get a permit and found that no one in the building department knew anything about permitting the installation of earthquake-resistant bracing systems. Aren't the local building departments trained and tested on this just like the installers?

## Answer

Permits and inspections are required for all installations of manufactured dwelling earthquake-resistant bracing systems (ERBs) whether installed on new or existing manufactured dwellings. The division does provide mandatory training and administer examinations on this subject to all manufactured dwelling installation inspectors. It's possible that while the inspectors were all in the field, you talked to someone who was either not certified in this area or just not aware of the specific permitting requirements for ERBs. Earthquake-resistant bracing has been a frequent subject in this publication and the subject of several direct mailings to building officials. However, your concerns have been forwarded to the building officials, to pass along to their inspectors and counter personnel.

## Question

I have seen advertisements for different types of adjustable outriggers meant to transfer the load from the perimeter floor joists of manufactured dwellings diagonally down to the bottom of the main I-beams. Can these adjustable outriggers be used in Oregon under the OMDS?

## Answer

Adjustable outriggers do not comply with the prescriptive methods of perimeter support for manufactured dwellings according to the 1997 OMDS. However, Section 303(g) of

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the OMDS does permit a person to design for unusual installations not provided for in the OMDS or the manufacturer's installation instructions, if the design and engineering have prior approval from the local authority having jurisdiction.

If adjustable outriggers were used, the spacing of the piers under the I-beam would have to be adjusted to compensate for the extra loads being applied at the main beams.

### Question

The Technical Advisory Group has been asked what the term "*substantially level*" means, as used in the 1997 OMDS.

### Answer

The term "*substantially level*" is used in Section 304(c)(3) of the OMDS regarding the placement of precast or poured-in-place footings. It is the intent of the OMDS for all footings to be level in order to provide a good base for the piers. If the footings are not level, the piers can lean and cause the vertical loads to shift, possibly resulting in failure of the piers and collapse of the home's foundation system.

Piers should be vertically aligned so that the center of the top of the pier is directly over the center of the bottom of the pier. This can be checked with a plumb bob on prefabricated metal piers or with a level on concrete block piers.

Realizing that it may not be possible to achieve absolute perfection in the pouring and leveling of concrete flat work, the OMDS was written in a manner to allow both the installer and inspector some discretion in what constitutes "*substantially level*" for a particular job site. For instance, a slight angle may not be critical *on* a footing supporting an 18-inch-high pier but may be very significant *on* a 48-inch pier. An inspector would probably accept a pier aligned within 1/4-inch or so vertically from top to bottom, regardless of height. However, this is a judgment call that can only be made on site.

The main thing to remember is that the term "*substantially level*" does not mean perfectly level, but does imply "*as close to level as reasonably possible.*"

### Question

The Technical Advisory Group has been asked what the term "*substantially smooth*" means, as used in the 1997 OMDS and how to evaluate it.

### Answer

The term "*substantially smooth*" is used in Section 304(c)(2) of the OMDS regarding the condition of the top surface of a concrete footing. It is the intent of the OMDS for all poured-in-place footings to have a smooth-troweled surface for the even support of piers. If the top surface of the footing is irregular, with chunks of concrete or gravel sticking up, it can cause a concrete pier block to crack or a prefabricated metal pier to bend under the weight of the manufactured dwelling. Either one can substantially weaken the foundation system and result in the possible failure of the piers and the collapse of the home's foundation system. Rough-textured footings or broomed surfaces should not be used. The top surface of a footing should have no protrusions that hold the bottom of the pier above the natural plane of the footing, resulting in gaps or daylight between the footing and the bottom of the pier.

Authors of the OMDS, realizing that it might not be possible to achieve absolute perfection in the pouring and leveling of all concrete flat work, allowed the installer and inspector some discretion in deciding what "*substantially smooth*" should be for a particular job site. For instance, if the footing is trowel finished but has an occasional protrusion of gravel or concrete, the installer can chisel the protrusions to provide a good supporting surface, even though it is not technically "*smooth.*" If the irregularities are holes or pitted concrete, the footing may be acceptable as long as the holes are small

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## Q & A, continued

enough that the pier is still evenly and adequately supported. If a footing is too rough, based on the judgment of the installer or inspector, the installer could add a wood footing block under the piers to absorb the irregularities so the footing would be able to provide even support for the pier.

Most footings would be acceptable as long as they are level, properly sized and troweled smooth with no irregularities detrimental to the support of the piers. However, this is a judgment call to be made on site. The main thing to remember is that the term “*substantially smooth*” does not mean perfectly smooth, but implies “*as smooth as reasonably possible.*”

### Question

Are accessory structures and buildings required to have permits when they are used as accessories to manufactured dwellings or recreational vehicles inside parks?

### Answer

Manufactured dwelling and recreational vehicle accessory structures and buildings are regulated by the Oregon One and Two Family Dwelling Specialty Code. Section 111.1 of the dwelling code requires permits to be obtained before beginning construction. However, the dwelling code also lists 18 exceptions to the permit requirements, some of which affect manufactured dwelling and recreational vehicle accessory structures and buildings and other construction on a manufactured dwelling or recreational vehicle lot. Those items on manufactured dwelling or recreational vehicle lots inside or outside parks that are exempt from permit requirements include concrete slabs, driveways and sidewalks, porches and decks 30 inches or less above grade and more than three feet from a property line, patio covers not exceeding 120 square feet in area, gutters and downspouts, non-habitable accessory buildings not exceeding 120 square feet in area, fences not over six feet high,

and retaining walls not over four feet high. (See the Oregon One and Two Family Dwelling Specialty Code for more specific requirements.)

### Question

Are accessory structures and buildings required to meet the codes when they are exempt from the permits?

### Answer

Yes. The Oregon One and Two Family Dwelling Specialty Code specifically states, “*Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in violation of the provisions of this code or any other laws or ordinances.*”

### Question:

Can an inspector still inspect accessory structures and buildings that are exempt from permits?

### Answer

Yes. The Oregon One and Two Family Dwelling Specialty Code exemptions are for permit and permit fees; that does not preclude an inspector from inspecting exempt items to ensure that they meet the construction and safety requirements of the code.

### Question

Because the skirting is a non-structural component of a manufactured dwelling, can concrete block be dry-stacked for skirting around the perimeter of the manufactured dwelling without any reinforcement?

### Answer

Section 802(b)(1) of the OMDS states that “*skirting shall be constructed of a durable rigid material.*” Section 802(b)(3) states that “*skirting shall be adequately secured to assure stability, to minimize vibration and susceptibility to wind damage.*” Though the OMDS does not specifically require steel reinforcement or mortared joints on concrete block, it does require securement, stability,

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and resistance to wind and vibration that could be difficult to achieve without some kind of positive connections. It is possible to have some type of interlocking block system that could meet the intent of the code, but dry-stacking ordinary cell blocks by themselves would not. In this case, it would be the installer's responsibility to prove to the authority having jurisdiction how the skirting system will comply with the intent of the OMDS.

### *Question*

Can a wood-burning cooking stove be used or installed in a manufactured dwelling?

### *Answer*

The OMDS does not preclude the use of a wood-burning cooking stove; however, it

does require it to be listed and approved for manufactured home use according to UL 737, Eighth Edition, 1996.

The exemptions allowed under DEQ rules for antique stoves do not waive the manufactured home listing requirements of the OMDS or the federal Manufactured Home Construction and Safety Standards 24 CFR 3280.703. Though the OMDS does allow wood-burning cooking stoves in manufactured dwellings, finding one that complies to the requirements of these codes could be quite a challenge. To our knowledge, there are no wood-burning cooking stoves on the market today listed for manufactured home use. ■

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## Product recalls



### **Fluorescent light fixtures:**

GE Home Electric Products Inc. is recalling about 9,100 under-cabinet fluorescent light fixtures. These fixtures were improperly assembled and could present a serious electrical shock hazard to consumers.

These lights are GI "Ultra Thin Line" 12-inch and 24-inch direct-wire, fluorescent, under-cabinet fixtures. All the fixtures are white, and there is no writing on the outside of the fixture. Before examining the fixture, the power should be turned off at the breaker switch. Under the plastic bulb guard, "GE Lighting" and the model number appear on a sticker. Model numbers subject to this recall are 23039, 27278, 23045, and 27281.

Numerous home center and hardware stores nationwide sold these light fixtures between February 1998 and April 1999.

Consumers should not touch these fixtures, whether on or off, as long as the breaker switch is on. Consumers with these recalled light fixtures should call GE Home Electric Products to have a qualified electrician

come to their home to replace the fixture. For more information or to have your fixture replaced, call 800-517-9602.

### **Magnetic base work lights:**

Harbor Freight Tools is voluntarily recalling more than 48,500 magnetic base work lights, which present electric shock and fire hazards.

The 75-watt light, measuring about 12 inches long, is made of black plastic with a metal bulb reflector. A magnet is connected to a flexible arm. Labeling on the arm reads in part, "WARNING! LAMP IS HOT ... MADE IN CHINA." The light was sold in a white box that contained a warranty notice. The box was labeled in part, "SKU# P 32263 MAGNETIC BASE LIGHT-75 WATT MADE IN CHINA."

Consumers should stop using the recalled lights immediately and return them for refund to the store where they were purchased. Catalog customers are being sent written notice of the refund. Consumers with questions should call 800-444-3353. ■

# Board appointments

**Board of Boiler Rules. Nelson White, John Endicott, Russell Williams, and John Pyle** were appointed to the board effective July 1 for four years.

**White** occupies the practical steam operating engineer position on the board. He has more than 20 years of experience in the operation and installation of high-pressure steam plants and boilers. For the past nine years, he has been employed at Good Samaritan Hospital in Portland. He is a boiler operator safety training class instructor and replaces Loren Lorenzen, whose term expired June 30.

**Endicott** occupies the steamfitter position. He has been the business agent for Plumbers and Steamfitters Local 290 since 1992. He was an instructor for the local from 1979-1986 and has more than 25 years in the heating and air-conditioning field as an installer, instructor, and supervisor. He replaces Matt Walters, whose term expired June 30.

**Williams** occupies the owner/user of low-pressure boilers position. He has held several positions at Oregon Health Sciences University since 1986: stationary engineer, plant superintendent, and project coordinator. He has 35 years of experience as a boiler technician. He first served as a boiler technician in the U.S. Navy from 1964 to 1985. He replaces Thomas Lindberg, whose term expired June 30.

**Pyle** fills the insurance inspector position. He has been employed by The Hartford Steam Boiler Inspection and Insurance Company for 18 years. His experience includes field inspection of boilers, pressure vessels, and other machinery, and loss control and prevention. He replaces Fred Armstrong, whose term expired June 30.

**Building Codes Structures Board. Jim Schwager** occupies the fire protection agency position. He brings 27 years of fire protection experience to the board. Prior to joining the Portland Bureau of Fire, Rescue and Emergency Services in 1989, he spent six years with the Salem Fire Department. He replaces Claire Keith, whose term expired June 30. **Dan Kovtynovich**, owner/manager of commercial and office building representative, was reappointed to the board July 1 for another four-year term.

**Electrical and Elevator Board. Sara Medlock, Gordon Grote, and Brian Christopher** were reappointed to the board effective July 1 for four-year terms. **Medlock** occupies the fire and casualty underwriter position; **Grote** the owner/manager of commercial office building position; and **Christopher** the electrical contractor position.

**Plumbing Board. Ken Carlson and Judy Bauman** were both reappointed to the board July 1. **Carlson** occupies the plumbing inspector position and **Bauman** the public member position. ■



## Help from the access board

Do you or your customers have questions about the ADA's design requirements? Are the drawings in the current ADAAG not as clear as you would like? A solution is as near as your phone. Call the Disability and Business Technical Assistance Center, (800) 949-4232 (voice or TTY) and ask for the new ADAAG manual developed by the U.S. Access Board in July 1998. You can also contact the Government Printing Office, (202) 512-1800 (GPO stock number 052-003-01478-5). The manual has been available since May. ■

# Updated phone numbers



The following is an updated list of people to call for answers to manufactured dwelling and manufactured dwelling park questions. If you have code questions, call the people in **bold**. If you want a written interpretation, send a written request to the **Patrick Lewis**. The area code for all numbers listed below is 503.

Manufactured dwelling compliance issues .....	Andra McDaniel .....	378-6988
Manufactured dwelling consumer assistance (SAA) .....	Albert Endres .....	378-5975
<b>Manufactured dwelling dealer/manufacture alteration codes ...</b>	<b>Albert Endres .....</b>	<b>378-5975</b>
<b>Manufactured dwelling federal codes (IPIA) .....</b>	<b>Kurt Pugh .....</b>	<b>378-6065</b>
<b>Manufactured dwelling home owner alteration codes .....</b>	<b>Patrick Lewis .....</b>	<b>373-1326</b>
Manufactured dwelling insignias and visual inspections .....	Albert Endres .....	378-5975
<b>Manufactured dwelling installation codes (OMDS) .....</b>	<b>Albert Endres .....</b>	<b>378-5975</b>
Manufactured dwelling installation training classes .....	Allen Rust.....	378-8053
Manufactured dwelling installer licensing .....	Heather Gravelle .....	373-1249
<b>Manufactured dwelling park construction codes .....</b>	<b>Monte Taylor .....</b>	<b>373-7542</b>
Manufactured dwelling OSU monitoring .....	Allen Rust.....	378-8053
Manufactured Structures and Parks Board secretary .....	Patrick Lewis .....	373-1326
Manufactured structures and parks operations manager .....	Dana Roberts .....	378-8450
Manufactured structures and parks operations assistant manager ..	Vacant .....	378-2306
MSP inspector certification continuing education .....	Debbie Barnes-Woods.	378-3702
MSP code changes and advisory committee business .....	Patrick Lewis .....	373-1326
MSP code, rule or statute changes and continuing education .....	Patrick Lewis .....	373-1326
MSP code, rule or statute copies .....	Louann Rahmig .....	373-7438
MSP inspector and plan review certifications .....	Vicky Narkon .....	373-1248
<b><u>Manufactured dwelling and park written interpretations</u> .....</b>	<b><u>Patrick Lewis</u> .....</b>	<b><u>373-1326</u></b>

Send code- or rule-change proposals for manufactured dwelling or manufactured dwelling park codes or rules to Building Codes Division, attn. Patrick Lewis, PO Box 14470, Salem, Oregon 97309 or fax them to (503) 378-4101. ■

## 1999 Legislative summary, *continued*

**House Bill 5013.** 1999 Oregon Laws, chapter 338. As required by law, ratifies various fees changed by rule since last session:

- Increases in manufactured dwelling inplant inspection fee from \$33.50 to \$40 per floor inspected.
- Increases in state code development/training/monitoring fee from \$20 to \$30.
- Increases various electrical permit and inspection fees paid by contractors or homeowners.
- Reduces total plumbing plan review fees. The fee schedule was changed to recover actual cost, hourly rate times time spent for plan review, up to a maximum of 30 percent of the plumbing permit fee, rather than a flat rate of 25 percent of the plumbing permit fee, which could exceed the cost of work performed.
- Increases in water heater installer and water treatment installer license fees from \$50 to \$100 per two-year period.
- Clarifies the method used to calculate plan review fees for prefabricated structures. The method for calculating fees using the 1979 UBC Table 3-A is based on 65 percent of building valuation. The method used by customers had been 65 percent of fee calculated on 100 percent of building valuation, minus 11 percent for foundation plan review.

Effective July 1, 1999. No rulemaking required.

**Senate Bill 12.** Passed both House and Senate. This bill initially included a requirement for the Building Codes Division to amend the state building code to help mitigate rapidly moving landslides. This provision was removed in committee and in its place, the departments of Forestry and Geology and Mineral Industries are to provide support to local municipalities during the building permit process. They will map

high-hazard landslide areas — starting in western Oregon — and help evaluate building plans for these areas. Allows a municipality to deny the applicant and allow the applicant to trade zoning allowances to build on another similarly zoned property. Effective October 23, 1999. No rulemaking required.

**Senate Bill 287.** 1999 Oregon Laws, Chapter 432. Allows the Building Codes Division to increase fees collected by the division pursuant to ORS 455.210. This fee increase is crucial to the division maintaining customer service levels this biennium. Permits for structural, mechanical, prefabricated structures, and one- and two-family dwelling structural and mechanical permits were increased 30 percent by temporary rule on July 1, 1999. This is the first increase in structural and mechanical permits since the 1979 schedule was adopted. The bill also increases the administrative surcharge on all permits sold throughout the state from two percent to four percent. The administrative surcharge helps defray the division's cost of administering building code programs. Without the fee increases contained in the bill, the division would have to reduce technical staff providing services statewide, and inspection services in areas of the state served by the division. Temporary rules filed and effective on July 1, 1999. Permanent rules to be in place by October 1, 1999.

**Senate Bill 312.** 1999 Oregon Laws, Chapter 316. Transfers the responsibility for licensing child foster homes for children with disabilities from the Child Care Division to the Mental Health and Developmental Disability Division. Current rules will remain in place until new rulemaking is completed by the new agency. Effective July 1, 1999. No BCD rulemaking required.

**Senate Bill 433.** 1999 Oregon Laws, Chapter 116. Allows Building Codes Division to adopt rules under ORS Chapters 447, 455,

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and 479 four times a year. This change should decrease the number of temporary rules needed. It will allow the division to better serve its stakeholders in adopting rules and structural, mechanical, plumbing, and electrical codes. Effective October 23, 1999. No rulemaking required.

**Senate Bill 459.** 1999 Oregon Laws, Chapter 484. Establishes the manufactured dwelling park construction code as a preemptive statewide standard to provide uniformity and consistency in park development and construction. This will keep the development costs predictable for park owners and affordable for consumers. It also eliminates discrimination against residents, developers, and owners of low-income housing and housing for the elderly by eliminating the practice of discouraging the development of manufactured dwelling parks by increasing requirements until the park becomes financially unfeasible. Effective October 23, 1999. Rulemaking required.

**Senate Bill 512.** President and Speaker signed. Establishes a Tri-County Building Industry Service Center and related board to consistently provide a limited set of services to the construction industry across approximately 27 jurisdictions in the Multnomah, Clackamas, and Washington tri-county area. Proposed services would provide a program for minor installations; consistent forms and procedures across jurisdictional boundaries; criteria and methodology for establishing consistent fees; maintenance of a list of those qualified to perform plan review and technical inspections in the area; evaluation of the qualifications of candidates for inspector certification; developing and making available training; administration of prepaid permit cost accounts; code interpretations, and a process for dispute resolution. The bill requires a service center, staffed by state employees, to be established in the tri-county area. The Building Codes Division will be responsible for conducting building inspection program reviews for all of the programs in the tri-county area and provid-

ing the results to the Tri-County Building Industry Service Board. In response, the board may make recommendations to the division that will ensure the effective and efficient administration of the state building code. Any rulemaking done by the Tri-County Building Industry Service Board will require the concurrence of the director.

Establishes an additional one percent surcharge on permit fees collected in Clackamas, Multnomah, and Washington Counties to partially defray the administration and operation costs of the board. This surcharge shall be collected by local municipalities and remitted to the division with the other surcharges. The surcharges will be deposited in a Tri-County Building Industry Service Center Account. Effective October 23, 1999. No rulemaking required.

**Senate Bill 577.** 1999 Oregon Laws, Chapter 518. Establishes a Manufactured Structures and Parks Education Account in the Consumer and Business Services Fund. Dedicates revenue from certain fees for deposit in the account. Directs that money in the account be spent on training and education for those producing, selling, installing, delivering, and inspecting manufactured dwellings and recreational vehicles and those developing, operating, and inspecting manufactured dwelling parks, recreation parks, and organizational camps. Effective October 23, 1999. Rulemaking required.

**Senate Bill 587.** Passed both House and Senate. Under this legislation, local government inspection agencies retain primary responsibility for the issuance of building permits and inspections. In carrying out their duties, local government agencies must ensure permit applications are issued within certain time lines. When the time line cannot be met, applicants have the option of seeking plan review and inspection services from state-licensed plans examiners and inspectors. Third-party licensees are paid for by the applicant. Applicants also pay reasonable administrative permit fees charged by the local agency. The Building

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Codes Division will license and oversee the activities of third-party plan review and inspection providers.

This bill creates a statewide code interpretation and appeal process. It clarifies that state surcharges are to be collected on hourly inspection fees in lieu of typical permit fees. Effective October 23, 1999. Rulemaking required.

**Senate Bill 686.** Passed both House and Senate. This bill has a relating clause that allows consideration of issues relating to prison construction. This “gut and stuff” legislation now directs the Department of Corrections to propose a site for a women’s correctional facility and intake center with various siting criteria. Establishes a siting process in the proposed region, which will include public hearing. Prohibits Dammasch State Hospital from being used as the facility. Requires all applicable construction permits to be issued by the Building Codes Division. All plan review for a new facility that has undergone the siting process must be approved within 60 days. Effective when signed. No rulemaking required.

**Senate Bill 785.** 1999 Oregon Laws, Chapter 527. Directs the Building Codes Division to adopt rules allowing a practical field evaluation of knowledge, skills, and abilities to substitute for a written description of the applicant’s actual work experience. The division currently has authority to establish the procedures and qualifications for certification of construction inspectors and plans examiners. This change will allow someone who is qualified to be an inspector or plans examiner, but who cannot prove actual hours of experience, to take the certification examination. This addresses a need for certified inspectors and examiners to perform work in Oregon. Effective October 23, 1999. Rulemaking required.

**Senate Bill 803.** 1999 Oregon Laws, Chapter 643. Incorporates the provisions of Senate Bill 1026 and creates a task force to

study the feasibility of combining the Board of Boiler Rules, Plumbing Board, and Electrical and Elevator Board into a single board; transference of certain duties from the Building Codes Structures Board; organization of this board; and the advantages and disadvantages of consolidating the boards. The study will examine whether the functions and efficiency of the boards can be improved. Effective October 23, 1999. No rulemaking required.

**Senate Bill 882.** 1999 Oregon Laws, chapter 758. This bill incorporates House Bill 3082 that allows recreation structures to be used as transitional housing for the homeless. The bill exempts transitional housing from any toilet, bathing, and cooking facilities, and allows centralized, shared toilet, bathing, and cooking facilities to be provided on the premises. Parking facilities and walkways are required for the transitional housing. The bill limits the transitional housing facilities to not more than two parcels in each county, giving preference to urban locations near grocery stores and public transit services. The bill allows no more than one-third, or a maximum of 10, campsites, whichever is smaller, and may include yurts. The bill authorizes counties to limit the maximum time that an individual or family may use transitional housing. Transitional housing is exempt from Health Division licensing and inspections.

It creates a new building code classification for recreation structures intended to be used on a limited time basis for recreational, seasonal, emergency, or transitional housing purposes. The classification will enable rules to be developed to remove these structures from regulation under the Oregon One and Two Family Dwelling Specialty Code. This will allow certain code requirements to be modified or waived for dwellings designed for a very limited use (i.e., eliminating the energy code requirements for structures that are used only during the summer or eliminating kitchen and rest-

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room facilities where common facilities are available within the campground). Effective October 23, 1999. Rulemaking required.

**Senate Bill 914.** 1999 Oregon Laws, Chapter 508. Currently, the statutes allow a municipality to establish alternative inspection programs using a master permit that is valid for a specific period of time. Under a master permit, the purchaser receives inspections charged on an hourly basis. These inspections are performed under a so-called “alternative inspection program.” This bill expands the alternative inspection program to allow more types of projects, such as tenant improvements, accessibility upgrades, and change of occupancy to an occupancy that is no more hazardous, to take advantage of a periodic inspection process. It also requires any jurisdiction that creates a program to have a licensed and certified plan review engineer on staff. The City of Portland has effectively implemented a program and requested BCD support in expanding it to include a broader scope of remodeling. It reduces plan review time and allows an hourly inspection charge based on services provided. Effective October 23, 1999. Rulemaking required.

**Senate Bill 1034.** 1999 Oregon Laws, Chapter 519. Modifies the definition of restricted energy electrical activity for the purpose of electrical licensing exemption under Electrical Safety Law for registered landscapers. Allows landscape contractors to install certain low-voltage landscape lighting systems that meet certain requirements and that do not exceed 300 volts. Effective October 23, 1999. Rulemaking required.

**Senate Bill 1081.** 1999 Oregon Laws, Chapter 794. Under current law, cities and counties that make electrical inspections within their building inspection programs are not required to perform inspections of industrial electrical equipment. Thus, companies that purchase industrial electrical equipment may be required to have the equipment

undergo an expensive evaluation by third-party contractors in order to place in service. Requires those cities and counties administering the Electrical Specialty Code to offer field inspection services under certain circumstances. Effective October 23, 1999. Rulemaking required.

**Senate Bill 1184.** 1999 Oregon Laws, Chapter 838. Requires local governments to adopt public facilities strategy or moratorium on construction or land development in certain circumstances. Requires local governments to approve or deny permits based on compliance with comprehensive plans and applicable land use regulations and allows denial of those not consistent with regulations. Effective October 23, 1999. No rulemaking required.

**Senate Bill 1117.** 1999 Oregon Laws, Chapter 830. Provides exception to engineering regulations for those making plans or specifications for construction of single-family dwelling or farm building and related appurtenances and certain other buildings. Architect’s law has always exempted certain buildings from design by professionals. This exemption includes buildings of less than 4,000 square feet or less than 20 feet high, single-family residential structures and their accessory structures, and farm buildings. This bill has incorporated the same exemptions of architect’s law into engineering law statute to clarify that the exemptions apply to both professions. Effective October 23, 1999. No rulemaking required. ■

# Interpretive rulings signed



One new interpretive ruling (99-1) and two revised rulings (95-7 and 95-8) were approved by the Building Codes Structures Board, signed by the administrator in July, and copies were sent to building officials.

The board has authorized staff to make needed editorial changes to all existing rulings to reflect current code references. Interpretive Rulings 95-7 and 95-8 were updated to the 1998 Oregon Structural Specialty Code.

All current interpretive rulings can now be found on the Web at: <http://www.cbs.state.or.us/external/bcd/tag/interp/index.htm>. As rulings are updated, the revisions will be posted on this Web site. Copies of new rulings will continue to be mailed to building officials, as required by statute.

Following is the complete text of the three recently signed rulings.

## Interpretive Ruling No. 99-1 Residential Slab Edge Insulation

**Requested by:** Building Codes Structures Board Energy Committee

**Ruling:** An interpretive ruling is requested to clarify how the slab-on-grade perimeter insulation requirements are applied to slab-on-grade construction when portions of the slab extend to below-grade conditions.

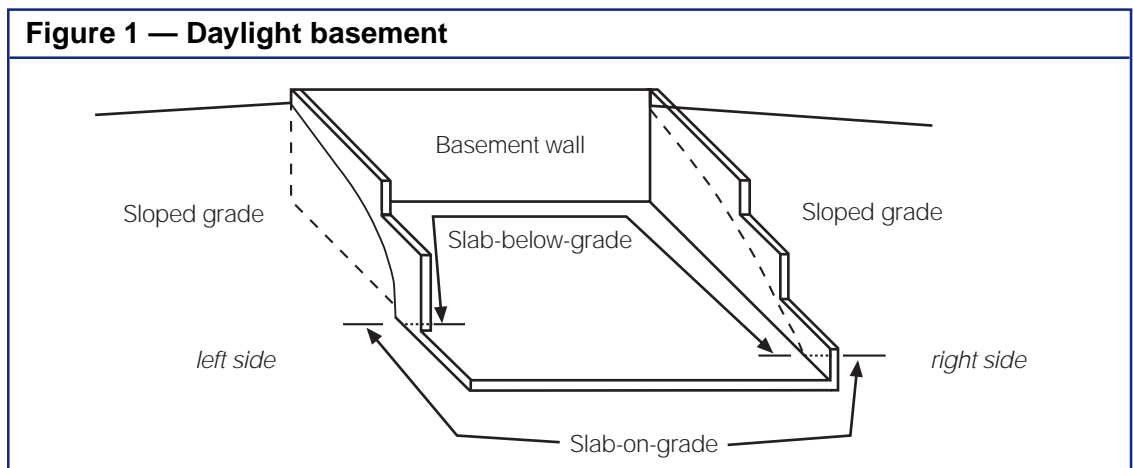
**Code sections:** 1998 Oregon Structural Specialty Code (OSSC), Section 1307.1.6 and 1996 Oregon One & Two Family Dwelling Code (OTFDC), Section E401.7.

**Background and discussion:** The energy code provisions of Oregon building codes require perimeter insulation to be in place below slab-on-grade construction.

“The insulation shall extend downward from the top of the slab for a minimum of 24 inches or downward to the bottom of the slab, then horizontally beneath the slab for a minimum total of 24 inches.

**Exception:** For monolithic slabs, the insulation shall extend downward from the top of the slab to the bottom of the thickened edge.”

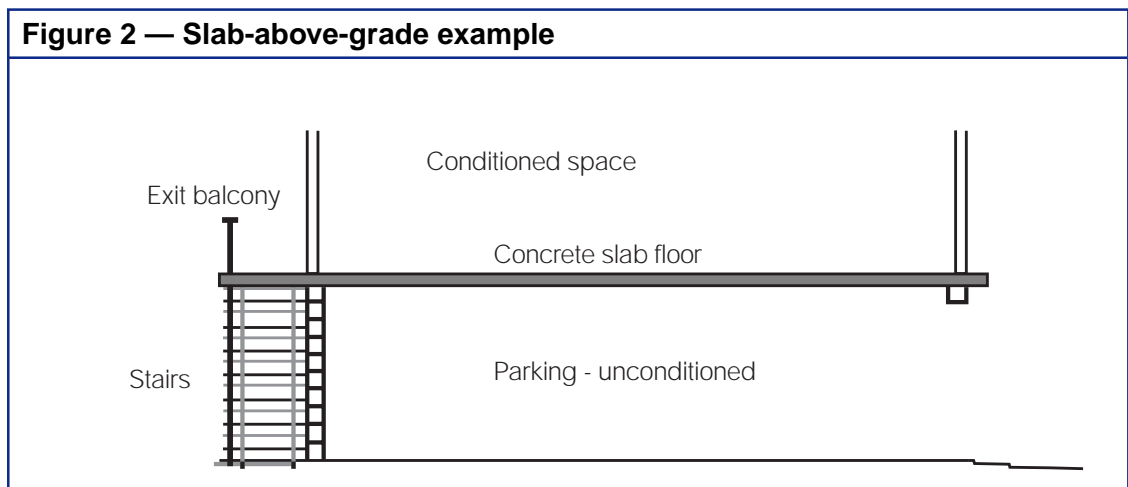
The question arises how to apply the code requirements in the case of daylight basements wherein only a portion of the slab is located on-grade and the rest of the slab is below grade as shown in Figure 1 below. As per the Oregon building codes, “slab on grade” perimeter is required to be insulated whereas “slab below grade” perimeter is not required to be insulated. The problem with applying this requirement is: Where does “on-grade” end and “below-grade” begin (see left and right side on Figure 1)? If slab-on-grade insulation does not extend far enough, there will be an exposed uninsulated slab edge.



The Washington State Energy Code handles this problem by defining SLAB-ON-GRADE differently than SLAB-BELOW-GRADE. It defines SLAB-BELOW-GRADE as “any portion of a slab floor in contact with the ground which is more than 24 inches below the final elevation of the nearest exterior grade” and SLAB-ON-GRADE as “any portion of a slab floor in contact with the ground which is less than or equal to 24 inches below the final elevation of the nearest exterior grade.” This distinction prevents confusion between basements that have wall insulation down to the top of the slab-below-grade and slab-on-grade applications that may have one or more corners located below grade.

a slab-above-grade extends beyond the exterior building envelope, such as for an exit balcony or deck in a residential occupancy (Figure 2). Is the perimeter of the slab at edge of exterior envelope required to be insulated?

Under this condition the slab should be treated as a floor above grade and should be insulated as per the code requirements. If the floor is located above a conditioned space, then it needs to be insulated as a roof to a conditioned space. Unfortunately, when the slab extends beyond the building envelope, as shown in Figure 2, it may not be possible for structural reasons to provide a thermal break. In effect, the slab may



The second problem is how to estimate where final grade is prior to the settling of any backfill. Because the exact heat loss characteristics of the soil are unknown, precision in this estimation is unnecessary. The depth of the stem walls or basement walls should provide some indication as to the future depth of the backfill. Jurisdiction staff should be able to estimate the depth of the final grade with sufficient accuracy. Erring on the side of extra insulation may require several extra feet of insulation. Erring on the side of less insulation may result in colder portion of the slab, but would unlikely have any significant negative impact.

The third problem is how to apply the Oregon Energy Code requirements when

unavoidably behave as a “radiator fin” through which heat is conducted to the outside environment.

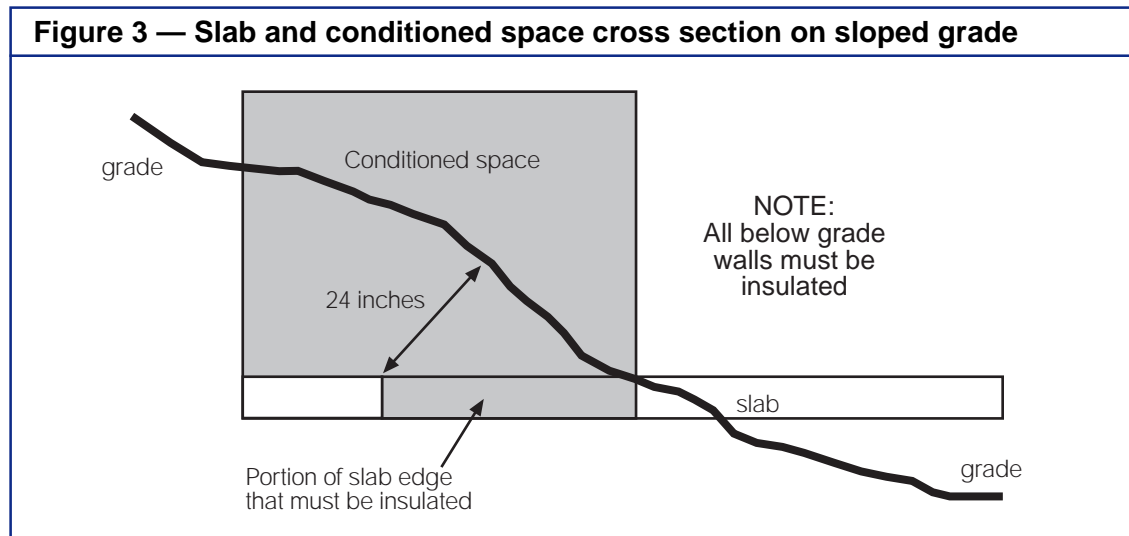
### *Findings:*

- The purpose of perimeter slab-edge insulation is to reduce heat conduction through the ground to the upper layer of soil and/or ambient air. Perimeter insulation which extends to a depth of 24 inches from the closest point of exterior grade can dramatically reduce heat loss.
- Partial insulation of the slab-on-grade is necessary on all slabs that are less than or equal to 24 inches below the final elevation of the nearest exterior grade. See Figure 3.

- The perimeter of a concrete slab in a basement 24 inches or greater below grade does not need to be insulated, as it does not classify as a “slab-on-grade” under Section 1307.1.6 of OSSC
- All below-grade walls should be insulated in accordance with the energy code provisions.
- Where slabs extend beyond the building envelope, they shall be treated as a floor or roof depending on the proximity of conditioned spaces. See Figure 3. No thermal break is necessary.

- The building inspector shall have authority to estimate the location of grade for the purpose of determining the extent of the slab edge.
- Monolithic slabs need only be insulated downward to the bottom of the thickened edge of the slab, as per the code exception

**Conclusion:** The Building Codes Structures Board accepts the recommendation of the Energy Committee and the findings as related to the residential slab edge insulation.



## Interpretive Ruling No. 95-7

(Revised May 25, 1999)

### Whole Building Approach Under the 1998 Oregon Structural Specialty Code Chapter 13, Section 1311.1

*Approval of means and method for demonstrating compliance with the whole building approach design method*

**Question:** Should the public domain energy simulation computer program DOE2.1E and the Oregon Department of Energy, May 1995 publication *Methodology for Compliance Using the Whole Building Approach* be approved to demonstrate and verify energy conservation compliance for build-

ings and structures other than Group R occupancies, three stories or less in height, under Section 1311.1 of the Oregon Structural Specialty Code.

**Requested by:** Oregon Building Officials Association

**References:** 1998 Oregon Structural Specialty Code – Chapter 13, Energy Conservation - Section 1311.1

**Background:** Oregon Structural Specialty Code (OSSC), Chapter 13, “Other Building provisions” regulates energy conservation requirements within buildings and structures, other than Group R occupancies, three stories and less in height. The code requirements cover the building or structural

envelope; mechanical systems including heating, ventilating and air conditioning systems; and lighting systems. These provisions became effective October 1, 1998.

Chapter 13 allows energy conservation compliance in two ways:

- Prescriptive provisions are in Sections 1312 through 1316. Under this path the builder follows predetermined requirements that are matched to provide the necessary energy efficiency designed into the code.
- Section 1311.1 allows an alternate design method using a “whole-building approach” (WBA). Under WBA a building or structure must be designed so the entire building or structure’s annual energy consumption will not exceed that of a similar building using similar forms of energy modeled according to prescriptive requirements of the code. The WBA allows innovative and unique building design.

DOE2.1E and the Oregon Department of Energy, May 1995 publication, *Methodology for Compliance Using the Whole Building Approach*, has been proposed as a method to demonstrate and verify compliance with the WBA in Chapter 13.

**Findings:** (1) To determine compliance with the alternate design method under the new code, the Technical Work Group (TWG) established criteria for evaluating computer programs to simulate annual energy usage. The criteria required that programs:

- Provide an hourly thermal simulation which models all of the energy related systems in the building, including envelope components, HVAC systems, lighting systems, transportation, refrigeration, water heating and other equipment.
- Compute the thermal loads and the system’s energy consumption and central plant energy usage for each hour of the year for a full 8,760 hours.
- Be readily available and cost effective to run.

- Have algorithms and input structures that are in the public domain, making the items available for public review.
- Be able to compute the cost of energy to the end user.
- Have verification by actual building energy consumption.
- Have capability to model day-lighting of buildings.

(2) The TWG reviewed various programs designed to simulate annual energy usage. DOE2.1 E met all criteria established by TWG for comparing energy measures.

(3) DOE2.1E is a nationally-recognized standard computer program for performing energy analysis on buildings.

- DOE2.1 has 20 years of development and has been widely used by industry for over 15 years.
- DOE2.1 is accepted for determining energy efficiency by the American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE) Standard 90.1 1997, State of California (Title 24, Part 6, Chapter 1 Building Energy Efficiency standards); and State of Washington (Non-Residential Code — Reference Standard 29).
- Oregon utilities have used DOE2 for work on commercial design programs for more than 10 years and use the program to verify energy efficiency and justify its energy efficiency loans.

(4) The DOE2.1 program is validated for accuracy both in controlled laboratory studies and in comparison with actual detailed building metered energy use.

- DOE2.1E accuracy is detailed in the DOE2.1E Users Manual, 1994. Actual building metered energy use is documented through *Commercial Hourly End-Use Study*, Seattle City Light, 1984-1987 and *Energy Edge Program*, Bonneville Power Administration, 1985-1994.

- DOE2 is also validated by comparisons with actual building total energy use throughout the Northwest in utility program evaluations. Utility program evaluations include *Pacific Corp Energy Fin Answer Impact Evaluation 1994*; Portland General Electric *Energy Smart Design Program Impact Evaluation 1994*; *Northwest New Commercial Evaluation Project*, Bonneville Power, Puget Power, Seattle City Light and Idaho Power, 1994.

(5) Additionally, DOE2.1E provides the necessary level of detail to adequately model all energy consuming systems in the building. Specifically:

- DOE2 provides detailed modeling of all envelope components, virtually all commercially available HVAC systems, and central plant systems such as chilled water and steam systems.
- Version 2.1E, the latest version, includes day-lighting, evaporative cooling, and refrigeration systems. Other features have been refined and verified on an ongoing basis over the years.

(6) DOE2.1E has literally hundreds of input parameters, most of which cover items that are not directly regulated by the Energy Code. As a result, it is difficult to interpret whether the proposed building design uses equivalent amounts of energy due to improvements in the building design or whether this simply reflects changes in non-related inputs such as occupancy levels and operation schedules. There are also many different ways to model code-related features which may have unintended and inappropriate impacts on the modeling results.

In order to focus the issue to energy conservation, industry standards, utility programs and other state code agencies produced detailed modeling specifications.

- The Building Energy Cost Budget Method contained in ASHRAE Standard 90.1-1997 is an accepted industry standard.

- Utility programs include *Guidelines for Energy Simulation of Commercial Buildings*, Bonneville Power Administration, March 1992 and *Pacific/Utah Power Energy Fin Answer ECM Modeling Guidelines*, February 1994.

- Other state code agency guidelines include *Alternate Calculation Method for Compliance with Title 24*, California Energy Commission, 1992 and Reference Standard 29, *Commercial Building Design by Systems Analysis*, Washington Non-Residential Energy Code, April 1994.

(7) The TWG developed the following protocols to assure that the DOE2.1E modeling demonstrates compliance with the code. It must:

- Provide clear identification of components used to trade against non-complying components.
- Spell out field inspection protocols for traded components.
- Check non-traded components for compliance with code, agreement with standard engineering practice and for similarity between the base case code building and the proposed building design.
- Review each input to the simulation to ensure that it complies with standard DOE2.1E modeling practice.
- Be able to remodel the building if the building design changes during construction, to determine if the building still complies with code.
- Evaluate all custom algorithms to ensure that appropriate engineering practice was used.

(8) A method to focus the modeling to Oregon Energy Code compliance was developed by the WBA Subcommittee of the TWG incorporating procedures from ASHRAE, California, Washington and northwest utility programs. The publication entitled *Methodology for Compliance Using the*

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*Whole Building Approach*, published by ODOE in connection with both the TWG and Energy Committee, meets the guidelines.

(9) Special skills are required to review a building design for compliance based on modeling using DOE2.1 E and the Methodology. These include:

Demonstrated ability in using the DOE2.1E (or prior versions of DOE2) simulation program.

- Ability to model basic commercial features, such as internal gains, multiple zones, central HVAC, envelope measures which affect thermal transmission, window shading coefficients, and more complex systems such as refrigeration system heat recovery, heat pumps, and building mass.
- Experience in the use of building simulation models.
- Proficiency in the application of energy code requirements.
- Familiarity with code enforcement practices.
- Demonstrated direct involvement in the design of constructed office type buildings, commercial or institutional buildings or equivalent experiences.

### *Discussion and conclusions:*

**Authority:** ORS 455.060 authorizes the Division to issue binding interpretative rulings regarding building code provisions and acceptability of materials, design or method of construction, including alternate methods of construction.

This interpretation deals with approving a means and method to demonstrate compliance with an alternate design and construction method and is within the scope of ORS 455.060.

**Choice of means and method for demonstrating compliance.** The means and method selected must allow compliance with the whole building approach in 1998 OSSC Section 1311.1. As relevant, it provides, “[ap-

plicants using alternate building systems and equipment design shall demonstrate that the whole building annual energy consumption will not exceed that used by similar buildings using similar forms of energy designed in accordance with the prescriptive requirements of 1998 OSSC Chapter 13].”

The criteria established by the TWG was reasonably designed to evaluate and select a computer program that would reasonably model code regulated items to determine annual building energy consumption as specified under 1998 OSSC Section 1311.1.

**Selection of DOE 2.1E.** The board relies on the fact the program has credibility based on its use by ASHRAE, various states and industry and its use by utilities to justify funding of energy conservation measures. It has gone through testing, review and improvements over its 20 years of use.

The board believes the program is adequate and accurate based on studies comparing DOE2.1 modeled energy consumption with actual building energy use under a variety of conditions and buildings across the north-west region.

**Selection of focus mechanism.** DOE2.1E must be focused to provide data that will demonstrate compliance with WBA. This is accomplished by the ODOE Methodology by specifying input parameters that are used in the simulation.

The ODOE “methodology” was developed specifically for use with 1998 OSSC Section 1311.1 and is based on similar processes used in California, Washington and the ASHRAE standard.

The guidelines adopted for the development of the Methodology are reasonably designed to focus on the Oregon requirements.

The methodology is reasonable.

Knowledge and skills required by persons reviewing DOE2.1E and the Methodology are provided so a jurisdiction can examine the qualifications of persons reviewing

supporting documentation or providing verifications.

The board recommends that the enforcing jurisdictions ask for and review the qualifications of persons reviewing WBA documentation for code compliance and act accordingly.

**Recommendation:** (1) Recognize DOE2.1E and Oregon Department of Energy, *Methodology for Compliance Using the Whole Building Approach, June 1995* as an approved method to demonstrate and test compliance with the alternate method of energy conservation compliance for buildings other than Group R occupancies, three stories or less in height under 1998 Oregon Structural Specialty Code, Chapter 13, Section 1311.1.

(2) Inspecting jurisdictions should review the qualifications of persons providing review and compliance documentation for DOE2.1E and methodology.

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## Interpretive Ruling No. 95-8

(Revised May 25, 1999)

### Simplified Trade-Off Approach

**Requested by:** Energy Committee and the Oregon Office of Energy.

**Request for ruling:** An interpretive ruling is requested to establish a methodology for the Simplified Trade-off Approach specified in 1998 Oregon Structural Specialty Code (OSSC), Chapter 13, Section 1312.2.2.

**Code section:** 1998 Oregon Structural Specialty Code Section 1312.2.2, provides for a simplified trade-off approach to determine compliance with thermal performance standards for Other Buildings.

**Background:** The Oregon Structural Specialty Code (OSSC), Chapter 13, other building provisions regulate energy conservation requirements within buildings and structures. In general, Other Building refers to buildings and structures other than Group R Occupancies three stories or less in height.

When the 1996 energy conservation requirements for Other Buildings was adopted, various performance requirements allow the designer and builder flexibility in construction methods. Performance standards deal with end results. Performance standards do not show the designer or builder how to achieve the result. Nor do they show the plan reviewer how to determine whether the performance result was achieved. It was intended that methods for reviewing and verifying compliance would be developed later. OSSC Chapter 13, Section 1312.2.2, Simplified Trade-off Approach (STA) was one of those provisions. It allows envelope components to be substituted based on a building's overall thermal performance.

*The Methodology for Compliance Using the Simplified Trade-off Approach* and the computer program Code Comp, published by Oregon Office of Energy January 31, 1997, has been proffered as a method of demonstrating and verifying that proposed trade-offs comply with the Simplified Trade-off Approach in OSSC, Section 1312.2.2.

The Technical Working Group (TWG) of the Energy Conservation Board (ECB) was responsible for drafting the 1996 energy conservation requirements for other buildings. The requirements were adopted December 30, 1994 and became effective on April 1, 1996. When ECB was merged into the Building Codes Structures Board (BCSB) in 1993, the TWG became affiliated with BCSB.

**Discussion: Choice of means and method for demonstrating compliance.** The means and method selected must allow for compliance of envelope measures with the Simplified Trade-off Approach in OSSC 1312.2.2. As relevant it provides, "The STA is an analytical method to determine if a proposed building has no larger annual heating load through the exterior envelope and no larger annual cooling load through the exterior envelope than a similar building meeting the Prescriptive Path Approach."

The limitations placed on trade-offs are reasonable in order to keep STA simple enough to be widely applicable and still provide design flexibility. The criteria for selection of the computer program was reasonably designed to select an algorithm and appropriate computer program to demonstrate equivalent heating and cooling thermal performance for the elements of the building envelope as specified under OSSC Section 1312.2.

**Selection of the Thermal Performance Calculation Algorithm and Computer Program.** *The Modified Bin Method* and ASEAM have credibility based on development and use by ASHRAE and design professionals across the country. ASEAM has credibility based on its use by the Federal Energy Management Program to estimate energy impacts of energy conservation measures.

The algorithm and computer program are adequate and accurate based on studies comparing *Modified Bin Method* and ASEAM to a variety of algorithms and computer programs which evaluate thermal performance of envelope components.

**Selection of Code Comp.** In order to limit the trade-offs to the approved code regulated items, it is necessary to check the building descriptions for consistency with standard engineering practice. To minimize the cost of code enforcement for buildings using this approach, it is necessary to provide standardized documentation and reporting protocols. Code Comp is established in the State as the computer tool meeting these requirements. Code Comp has been revised to incorporate the thermal performance calculation algorithm and details of the *Methodology for Compliance Using the Simplified Trade-off Approach*. The revised computer program Code Comp reasonably meets the criteria developed by ECB/TWG to implement OSSC Section 1312.2.2.

### **Findings:**

(1) The STA allows design flexibility and energy efficiency by allowing trade-offs between elements of the building envelope.

(2) Since a significant amount of energy is used for cooling in commercial buildings, the trade-off approach recognizes reduced cooling load provided by shading devices and increased building wall mass. The STA also requires equivalency with the Prescriptive Path for HVAC systems and lighting. Trading-off between heating and cooling use is too burdensome for STA because it requires analysis of the interaction of HVAC and lighting systems and the cost of fuels. Allowing trade-offs between envelope, HVAC systems and lighting are only allowed by the Whole Building Approach, Interpretive Ruling 95-7, and is beyond the intent of this simplified approach.

(3) A computer program is the only practical means to establish compliance with the requirements in order to support the different trade-off possibilities among elements of the building envelope. Appropriate criteria for selection of a computer program to perform the trade-offs include:

- A program simple enough to run on an IBM-PC compatible or Apple Macintosh computer.
- A user interface and reports that are easy to use and assist in uniform enforcement and inspection.
- Algorithms in the public domain.
- Accuracy of algorithms established in the literature.
- Algorithms that account for effect on energy use of fixed external shading devices.
- Algorithm that accounts for effect of wall mass.
- A computer program that is accurate for range of climate conditions in Oregon.
- A computer program that uses industry standard inputs as defaults for envelope thermal characteristics.

(4) The Code Comp computer program, developed and published by the Oregon Office of Energy, is widely accepted as a computer

compliance program for commercial buildings. Code Comp provides an appropriate user interface for STA because Code Comp:

- Provides default values for most envelope components and checks user entered inputs for consistency with standard engineering practice.
- Includes default values for elements not covered by the code in order to provide consistency across buildings of similar type.
- Provides reports in a succinct and uniform format that jurisdictions are already familiar with.
- Is in the public domain.

(5) The *Modified Bin Method* published by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) provides algorithms for computing envelope heating and cooling loads that meet the established criteria:

- The *Modified Bin Method* was developed in the late 1970's to aid design engineers and is simple enough to run quickly on virtually any desktop computer in use today.
- The *Modified Bin Method* is supported on an on-going basis through the ASHRAE Technical Committee (TC 4.7) process and is in the public domain.
- The *Modified Bin Method* has been shown to be accurate within reasonable ranges of construction types and climates (Kusuda, T. 1981, "Comparison of the TC4.7 simplified energy calculation procedure and seven comprehensive computer simulation energy calculation procedures," ASHRAE Journal 23:8).
- The *Modified Bin Method* accounts for the cooling loads resulting from solar heat gains making shading device trade-offs possible.
- The *Modified Bin Method* uses the Cooling Load Temperature Difference (CLTD) method which accounts for thermal mass effects on cooling loads.

(6) ASEAM is a computer program that was developed by the US Department of Energy (USDOE):

- ASEAM provides a relatively straight forward link to the Code Comp interface.
- ASEAM computer code is in the public domain.
- ASEAM is supported by USDOE and Battelle Pacific Northwest Laboratories.
- ASEAM's input structure is sufficiently detailed to allow modeling of appropriate elements of the building envelope.
- ASEAM is currently used by the Federal Energy Management Program (FEMP) as the primary tool to estimate energy savings resulting from efficiency measures.
- ASEAM allows integration of requirements specified in (5) and (7).

(7) The *Methodology for Compliance Using the Simplified Trade-off Approach* published by Oregon Office of Energy in connection with the TWG and the Energy Committee provides a methodology for connecting the Code Comp program to ASEAM and also incorporates the restrictions on trade-offs developed by ECB.

(8) Code Comp was revised by Oregon Office of Energy to implement the *Methodology for Compliance Using the Simplified Trade-off Approach* including the Modified Bin Method and the ASEAM computer program.

(9) 1998 Oregon Structural Specialty Code Section 104.2.8, Alternate Materials, Alternate Design and Methods of Construction, allows acceptance of an alternate which achieves the intent of the code and provides equivalent effectiveness and safety for occupants and property.

(10) This interpretation is authorized by ORS 455.060, Rulings on Acceptability of Materials, Designs or Methods of Construction, and Attorney General's Opinion OP-5208, issued October 1, 1981, which

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advised the statute permits authoritative interpretations of code requirements.

(11) This interpretive ruling provides the equivalent energy effectiveness of thermal performance standards required in the 1998 Oregon Structural Specialty Code Section 1312.2.2 for any structure, except:

1. Group R Occupancies three stories or less in height;
2. Group SR Occupancies constructed to the requirements for Group R Occupancies three stories or less in height;
3. Detached Group U, Division I Occupancies containing habitable rooms built

to the One and Two Family Dwelling Specialty Code; and

4. Group U, Division I Occupancies attached to:
  - a. Group R Occupancies three stories or less in height; or
  - b. Group SR Occupancies constructed to the requirements for Group R Occupancies three stories or less in height.

**Conclusion:** The Building Codes Structures Board accepts the recommendation of the Energy Committee, and the findings listed above. ■

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## Lawsuit filed for roof damage caused by corrosive roof insulation



A lawsuit filed in federal district court in Boston, Massachusetts, alleges that a roof insulation product that was popular in the 1980s and early 1990s has been found to produce acids that can corrode steel roof decks and the metal components of roofing systems.

A legal motion was filed seeking to certify a class of building owners in the U.S. whose roofs contain Phenolic Foam Roof Insulation (PFRI) manufactured by Johns Manville Corporation of Denver, Colorado, and Koppers Industries (later acquired by Beazer East, Inc.). The motion states that hundreds of millions of square feet of PFRI were installed in buildings across the country between 1981 and 1992.

A motion was filed to certify the case as a class action to bring it to the attention of thousands of building owners who may not know that they have PFRI in their roofs. PFRI was installed in high-occupancy and

commercial buildings, including more than 1,000 schools in the U.S. and Canada.

Plaintiffs request that Manville and Beazer East mail a comprehensive notice regarding the corrosive effects of PFRI to all owners of affected buildings and that they pay for independent inspections of all roofs insulated with PFRI, removal of all PFRI, and repair of all roofing systems and roof decks damaged by PFRI.

Building owners may be able to determine whether they have PFRI in their roofs by examining their roofing system warranties or the original roof specifications for the type of insulation used. PFRI was sold in the U.S. under the brand names “Exeltherm Xtra,” “Rx,” “Ultraguard Premier,” “Weathertite Premier,” “Insul-Base Premier,” and “InsulShield Premier.” However, PFRI was frequently substituted for a specified insulation such as polyisocyanurate insulation. ■

# OSSC amendments effective October 1



The Building Codes Structures Board and the division administrator approved the following amendments to the 1998 Oregon Structural Specialty Code effective October 1, 1999. Insert pages were copied and sent to building officials.

904.2.9 Group R, Division 1 Occupancies. An automatic sprinkler system shall be installed throughout every apartment house three or more stories in height or containing 16 or more dwelling units, every congregate residence three or more stories in height or having an occupant load of 20 or more, and every hotel three or more stories in height or containing 20 or more guest rooms. Residential or quick-response standard sprinklers shall be used in the dwelling units and guest room portions of the building.

**See the Fire Code for distance requirements to access roads and fire hydrants.**

**The provisions of Appendix Chapter 9, Division III, supersede this section when adopted by the authority having jurisdiction.**

**1003.3.3.10 Protection of exterior wall openings.** All openings in the exterior wall below and within 10 feet (3048 mm), measured horizontally, of openings in an interior exit stairway serving a building over two stories in height or a floor level having such openings in two or more floors below, shall be protected by fixed or self-closing fire assemblies having a three-fourths-hour fire protection rating. See Section 1006.3.3.1.

**EXCEPTIONS:** 1. Group R, Division 3 Occupancies.

2. Protection of exterior wall openings is not required where the exterior openings in the interior stairway are protected by fixed or self closing fire assemblies having a three-fourths-hour fire-protection rating.

3. Protection of openings is not required for open parking garages conforming to Section 405.

**4. In buildings of two or fewer stories with a basement containing either apartment or congregate residence occupancies, protection of outside openings is not required, provided:**

**4.1 The buildings are equipped throughout with an automatic sprinkler system complying with UBC Standard 9-1 or 9-3; and**

**4.2 Quick-response or residential sprinkler heads are installed over the center or the exterior side of each door or window opening into the means of egress system. Where openings are greater than 6 feet (1829 mm) in width, each 6-foot (1829 mm) interval, or portion thereof, shall be provided with a separate sprinkler head. The sprinkler shall provide full wetting of the window or door.**

**4.3 Automatic sprinkler protection need not be provided at doors or windows which:**

**4.3.1 Are located in exterior walls which are 90 degrees (perpendicular) to the means of egress system; and**

**4.3.2 Are not covered with a roof system or other overhead covering within 10 feet (3048 mm), measured horizontally, of the means of egress system;**

**4.3.3 Do not open directly into an alcove space or area containing a path of egress travel; and**

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**4.3.4 Have eaves or overhangs over them which project less than 18 inches (457 mm) from the building.**

**1005.3.3.1 General.** Exit enclosures serving as an exit in a means of egress system shall comply with the requirements of Section 1005.3.3. Exit enclosures shall not be used for any purpose other than as a means of egress. Interior stairways, ramps or escalators shall be enclosed as specified in this section.

**EXCEPTIONS:** 1. In other than Groups H and I Occupancies, an exit enclosure need not be provided for a stairway, ramp or escalator serving only one adjacent floor. Any two such atmospherically interconnected floors shall not communicate with other floors. For enclosure of escalators serving Group B, F, M and S Occupancies, see Sections 304.6, 306.6, 309.6 and 311.6.

2. Stairways in Group R, Division 3 Occupancies and stairways within individual dwelling units in Group R, Division 1 Occupancies need not be enclosed.

3. Stairs in open parking garages, as defined in Section 311.9, need not be enclosed.

**4. In Group H, Division 2, 3 and 4 Occupancies, an exit enclosure need not be provided for a stairway, ramp or escalator serving a mezzanine which is open to the room below.**

**1006.3.2.3 Construction.** Exterior exit balconies projecting from the walls of buildings of Type I or II construction shall be of noncombustible construction. Exterior exit balconies projecting from the walls of buildings of Type III, IV or V construction may be of combustible or noncombustible construction.

Walls of exterior exit balconies serving a Group R, Division 1 or Group I Occupancy having an occupant load of 10 or more shall not be less than one-hour fire-resistive construction and ceilings shall not be less than that required for a one-hour fire-resistive floor or roof system.

**EXCEPTIONS:** 1. Exterior sides of exterior exit balconies.

2. In other than Type I or II construction, exterior exit balcony roof assemblies may be of heavy-timber construction without concealed spaces.

**3. In Group R, Division 1 buildings containing either apartment or congregate residence occupancies, fire-resistive walls and ceilings of exterior exit balconies is not required, provided:**

**3.1 The balconies do not provide exiting from more than three levels of habitable space.**

**3.2 The buildings are equipped throughout with an automatic sprinkler system complying with UBC Standard 9-1 or 9-3; and**

**3.3 Where the automatic sprinkler system standard used is UBC 9-3, all portions of the means of egress system shall be protected in accordance with UBC Standard 9-1 using quick response sprinkler heads.**

**1006.3.3.3 Protection of exterior wall openings.** All openings in the exterior wall below and within 10 feet (3048 mm), measured horizontally, of an exterior exit stairway serving a building over two stories in height or a floor level having such openings in two or more floors below shall be protected by fixed or self-closing fire assemblies having a three-fourths-hour fire-protection rating.

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**EXCEPTIONS:** 1. Group R, Division 3 Occupancies

2. Openings may be unprotected where two separated exterior stairways are served by a common exterior exit balcony.

3. Protection of openings is not required for open parking garages conforming to Section 311.9.

**4. In buildings of two or fewer stories with a basement containing either apartment or congregate residence occupancies, protection of outside openings is not required, provided**

**4.1 The buildings are equipped throughout with an automatic sprinkler system complying with UBC Standard 9-1 or 9-3;**

**4.2 Quick-response or residential sprinkler heads are installed over the center of the exterior side of each door or window opening into the means of egress system. Where openings are greater than 6 feet (1829 mm) in width, each 6-foot (1829 mm) interval, or portion thereof, shall be provided with a separate sprinkler head. The sprinkler shall provide full wetting of the window or door.**

**4.3 Automatic sprinkler protection need not be provided at doors or windows which:**

**4.3.1 Are located in exterior walls which are 90 degrees (perpendicular) to the means of egress system;**

**4.3.2 Are not covered with a roof system or other overhead covering within 10 feet (3048 mm), measured horizontally, of the means of egress system;**

**4.3.3 Do not open directly into an alcove space or area containing a path of egress travel; and**

**4.3.4 Have eaves or overhangs over them which project less than 18 inches (457 mm) from the building.**

**1101.2 Design.** The design and construction of affected building and covered multifamily dwelling elements shall be in accordance with this chapter. For a building, structure or building element to be considered to be accessible, it shall be designed and constructed to the minimum provisions of this chapter. The uses of area separation walls in Section 504.6 does not limit the obligation to comply with accessibility requirements of this chapter.

Measurements adjusted for children's dimensions and anthropometrics are acceptable as complying accessible features in areas specifically designed for children.

**Dimensions that are not marked "minimum" or "maximum" are absolute, unless otherwise indicated in the text or captions.**

**1104.3 Group R, Division 1 Occupancies.** Where parking is provided at covered multifamily dwellings, not less than 2 percent or one space, whichever is greater, of the public and tenant parking spaces shall be accessible. Accessible parking for tenants shall comply with ORS 447.233(2)(b) through (2)(f), (3), (4), (5) and (7). Signs at accessible parking for tenants may be marked "Private" or "For Tenant Use Only." Public parking spaces shall comply with Section 11 04. 1.

**EXCEPTION:** Signs need not be installed at accessible spaces for tenants, provided the parking space size and striping are in accordance with ORS 447.233.

**Where different types of parking spaces (i.e., open, carport, garage) are**

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**provided for covered multifamily dwellings, 2 percent of each type space shall be adaptable.**

**EXCEPTIONS: 1. Van accessible spaces may all be open, uncovered parking spaces.**

**2. Garage doors to accessible parking spaces need not comply with Section 1109.9.9.**

**1106.1.10.3 Mixed occupancies.** Where the ground floor of a building is not a Group R, Division 1, Apartment Occupancy, the first level of the Group R Occupancy, which includes dwelling units, shall be considered the ground floor and shall be served by a building entrance on an accessible route. Dwelling units located on this level shall be adaptable dwelling units.

**EXCEPTION: Group R Occupancies exempted by Section 1106.1.10.2.**

**1106.1.10.4 Hotels, motels, inns, boarding houses, dormitories, resorts, lodging houses and other places of transient lodging.** In all hotels, motels, inns, boarding houses, dormitories, resorts, lodging houses and other places of transient lodging, except those that are owner occupied and contain not more than five rooms for rent or hire, accessible guest rooms, including associated bathing, shower and toilet facilities, shall be provided in accordance with Table 11 -B. In addition, sleeping rooms or suites for persons with hearing impairments shall be provided in accordance with Table 11-C. **In addition to accessible guest rooms, entry doors and doorways into other guest rooms shall comply with Section 1109.9.2.**

In addition, public-use and common-use areas of all hotels, motels, inns, boarding houses, dormitories, resorts, lodging houses and other places of transient lodging shall be accessible, except those that are owner occupied and contain not more than five rooms for rent or hire.

Required sleeping rooms for persons with hearing impairments shall have visual alarms complying with Section 1109.14. Such rooms shall have installed telephones complying with Section 1109.13, and an electrical outlet installed within 48 inches (1219 mm) of the telephone connection. Such rooms shall have devices separate from the visual alarm system which provide visual notification of incoming telephone calls and doorbell actuation.

Where provided in accessible guest rooms, the following facilities shall be accessible: dining areas, kitchens, kitchenettes, wet bars, patios, balconies, terraces or similar facilities.

**1108.4.4 Swimming pools.** Where common- or public-use swimming pools, hot tubs, spas and similar facilities are provided, they shall be accessible by transfer tier, transfer device, ramp or other means. Hot tubs and spas need to be accessible only to the edge of the facility. **Dressing rooms provided accessory to swimming pools shall comply with Section 1109.23.1.**

**EXCEPTION:** Swimming pools for covered multifamily dwellings may be adaptable.

**1109.14.2 Visual alarms.** Visual alarm signal appliances shall be integrated into the building or facility alarm system. Where single-station audible alarms are provided, single-station visual alarm signals shall be provided.

At a minimum, visual signal appliances shall be provided in buildings and facilities in each of the following areas: restrooms and any other general usage areas (e.g., meeting rooms, **classrooms, etc.**), hallways, lobbies, and any other area for common use.

Visual alarms shall be located not less than 80 inches (2032 mm) and not more than 96 inches (2438 mm) above floor level. When a low ceiling exists, the visual alarm shall be mounted within the dimensions stated above and at least 6 inches (152 mm) below the ceiling.

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In general, no place in a room or space required to have a visual signal appliance shall be more than 50 feet (15 240 mm) from the signal (in the horizontal plane). In large rooms and spaces exceeding 100 feet (30 480 mm) across, without obstructions 6 feet (1829 mm) above the finished floor, such as auditoriums, devices may be placed around the perimeter, spaced a maximum 100 feet (30 480 mm) apart, in lieu of suspending appliances from the ceiling.

No place in common corridors or hallways in which visual alarm signaling appliances are required shall be more than 50 feet (15 240 mm) from the signal.

Visual alarm signals shall have the following minimum photometric features:

1. The lamp shall be a xenon strobe type or equivalent.
2. The color shall be clear or unfiltered white light.
3. The maximum pulse duration shall be two-tenths of one second (0.2 second) with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final points of 10 percent of maximum signal.
4. The intensity shall be a minimum of 75 candelas.
5. The flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz.

**1109.18.2 Knee clearances.** Knee spaces at tables and counters shall be provided according to Section 1109.2.3.3. ~~No projection which might obstruct the arm of a wheelchair may intrude into this clearance height within 24 inches (610 mm) horizontally from the table edge.~~

**1109.23.1.3 Benches.** Every Accessible dressing or fitting room **rooms** shall have a bench installed adjacent to the longest wall in the room. The bench shall be at least 24 inches (610 mm) wide and 48 inches (1219 mm) long, and shall be mounted not less than 17 inches (432 mm) or more than 19 inches (483 mm) above the finished floor.

Clear floor space shall be provided adjacent to the bench to allow for parallel transfer, and the structural strength of the bench shall comply with Section 1109.10.11.

Where benches are installed in dressing and fitting rooms in wet locations, the surface of the bench shall be slip-resistant and shall not accumulate water.

**1312.1.3.1 U-factors.** U-factors for exterior windows and doors shall include the effects of the window frame and shall be determined using the commercial size category values listed in Chapter 27, 1993 **29, 1997** ASHRAE *Handbook of Fundamentals*, Table No. 5, or rated according to the National Fenestration Rating Council (NFRC) ~~100-91~~ **100-97** Procedure for Determining Fenestration Product Thermal Performance ~~with amendments through January 1, 1994.~~ When using the NFRC approach, the U-factors shall be certified through the NFRC Fenestration Thermal Performance Rating Certification and Labeling Program described in NFRC program documents LAP 1-92 **Second Edition April 20, 1996**, PCP 1-92 and CAP 1-92 ~~with amendments through January 1, 1994~~ **Second Edition May 2, 1998, and PCP 1-92 with Program Interpretations through April 23, 1998.**

**1312.1.3.2 Shading coefficient.** For calculations, opaque portions of doors shall have a shading coefficient of zero. Shading coefficients for glazing shall be taken from Chapter 27, 1993 **29, 1997** ASHRAE *Handbook of Fundamentals*; or manufacturers test data; or certified according to NFRC 200-93 **July 1997 Edition** Procedure for Determining Solar Heat Gain Coefficient (SHGC) at normal incidence. **The center of glass values for the shading coefficient at normal incidence may be converted from the SHGC value by dividing the SHGC by a factor of 0.87.** SHGC shall be certified through the NFRC Certification and Labeling Program.

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**2320.11.4 Alternate braced wall panels.** Any braced wall panel required by Section 2320.11.3 may be replaced by an alternate braced wall panel constructed in accordance with the following:

1. In one-story buildings, each panel shall have a length of not less than 2 feet 8 inches (813 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with 3/8-inch-minimum-thickness (9.5 mm) plywood sheathing nailed with 8d common or galvanized box nails in accordance with Table 23-II-B-1 and blocked at all plywood edges. Two anchor bolts installed in accordance with Section 1806.6, shall be provided in each panel. Anchor bolts shall be placed at panel quarter points. Each panel end stud shall have a tie-down device fastened to the foundation, capable of providing an approved uplift capacity of not less than 1,800 pounds (816.5 kg). The tie-down device shall be installed in accordance with the manufacturer's recommendations. The panels shall be supported directly on a foundation or on floor framing supported directly on a foundation which is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No. 4 bar top and bottom. **In situations where only a single alternate braced panel is used in a braced wall line, the reinforcement shall extend on each side of the panel at least 10 feet (3048 mm). In lieu of the continuous footing, a minimum 12-inch x 12-inch (305 mm x 305 mm) turned down slab edge, reinforced with two continuous No. 4 bars lapped with two No. 4 bars placed in the top and bottom of the panel footings, may be provided across the garage door and other openings in the brace wall line. Where the frost depth is greater than 12 inches (305 mm), the greater depth shall be used for the turned down slab edge. Refer to Section 1806.7 for the Seismic Zone 3 and 4 reinforcement requirements in foundations.**

2. In the first story of two-story buildings, each braced wall panel shall be in accordance with Section 2320.11.4, Item 1, except that the plywood sheathing shall be provided on both faces, three anchor bolts shall be placed at one-fifth points, and tie-down device uplift capacity shall not be less than 3,000 pounds (1360.8 kg).

#### **SECTION 3004 - HOISTWAY VENTING**

Shafts (hoistways) housing elevators with a height of 25 feet (7.62 m) or more shall be vented to the outside. The height shall be measured from the lowest landing floor level to the underside of the ceiling of the hoistway. The area of the vent shall not be less than 31/2 percent of the area of the elevator shaft, provided a minimum of 3 square feet (0.279 m<sup>2</sup>) per elevator is provided. **Vents may be operated automatically providing that the vent defaults to the open position in the event of a failure of the operating mechanism or loss of control power thereto. Vents shall be capable of manual operation. Vents used in conjunction with hoistway pressurization shall default open in the event power is lost to the pressurization system.**

**EXCEPTION:** Where hoistway pressurization is used, vents shall be capable of manual operation only.

The venting of each individual hoistway shall be independent from any other hoistway venting, and the interconnection of separate hoistways for the purpose of venting is prohibited.

**Venting through an elevator machine room or elevator machinery space is prohibited unless provided with duct-work capable of preventing smoke from entering the machine room or machinery space. Duct work used for pressurization or hoistway venting located in an elevator machine room or machinery space shall not encroach on any electrical or working clearances required by either the Oregon Electrical Specialty Code or the Oregon Elevator Specialty Code.**

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## APPENDIX CHAPTER 3

### SECTION 324 - MEANS OF EGRESS

**324.7 Guardrail Openings.** In day rooms not accessible to the public, open guardrails shall have intermediate rails or an ornamental pattern such that a sphere 12 inches (305 mm) in diameter cannot pass through. All other guardrails shall comply with Section 509.

## APPENDIX CHAPTER 9

**907.2.8 Group R, Division 1 Occupancies.** An automatic sprinkler system shall be installed throughout every apartment house three or more stories in height or containing 16 or more dwelling units, every congregate residence three or more stories in height or having an occupant load of 20 or more and in every hotel three or more stories in height or containing 20 or more guest rooms.

Residential or quick-response standard sprinklers shall be used in the dwelling unit and guest room portions of the building.

**See the Fire Code for distance requirements to access roads and fire hydrants.**

**The provisions of Appendix Chapter 9, Division III supersede this section when adopted by the authority having jurisdiction.**

## APPENDIX CHAPTER 9

### DIVISION III - ALTERNATIVE GROUP R, DIVISION 1 FIRE SPRINKLER REQUIREMENTS

**Adopted by the State of Oregon for optional use in municipalities.**

### SECTION 914 - GROUP R, DIVISION 1 OCCUPANCIES

**Group R, Division 1 Occupancies.** An automatic sprinkler system shall be installed throughout every apartment house and every congregate residence classified as Group R, Division 1 Occupancy. An automatic sprinkler system shall be installed throughout every hotel three or more stories in height or containing 20 or more guest rooms classified as Group R, Division 1 Occupancy.

**EXCEPTION:** Automatic sprinklers are not required in apartments or congregate residence buildings that are one story in height and not containing a basement or mezzanine. Such buildings shall contain not more than 16 dwelling units in apartment buildings and shall not have an occupant load of more than 20 in congregate residence buildings.

**Residential or quick-response automatic sprinkler heads shall be used in the dwelling unit and guest room portions of the building.**

**See the Fire Code for distance requirements to access roads and fire hydrants.**

**The provisions of this section apply when adopted by the authority having jurisdiction.**

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## Part III-FASTENINGS

### SECTION 2318 - TIMBER CONNECTORS AND FASTENERS

**2318.3.1 Allowable lateral loads.** Allowable lateral design values, Z, for common wire and box nails driven perpendicular to the grain of the wood, when used to fasten wood members together, shall be as set forth in Tables 23-III-C-1 and 23-III-C-2.

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A wire nail driven parallel to the grain of the wood shall not be subjected to more than two thirds of the lateral load allowed when driven perpendicular to the grain. Toenails shall not be subjected to more than five sixths of the lateral load allowed for nails driven perpendicular to the grain.

**In Seismic Zones 3 and 4, toenails shall not be used to transfer lateral forces in excess of 150 pounds per foot (2188 N/m) from diaphragms to shear walls, drag struts (collectors) or other elements, or from shear walls to other elements.**

**EXCEPTION: Structures built in accordance with Section 2320 or to the One and Two Family Dwelling Specialty Code.**

**(Volume 2)**

**2320.11.4 Alternate braced wall panels.** Any braced wall panel required by Section 2320.11.3 may be replaced by an alternate braced wall panel constructed in accordance with the following:

1. In one-story buildings, each panel shall have a length of not less than 2 feet 8 inches (813 mm) and a height of not more than 10 feet (3048 mm). Each panel shall be sheathed on one face with 3/8-inch-minimum-thickness (9.5 mm) plywood sheathing nailed with 8d common or galvanized box nails in accordance with Table 23-II-B-1 and blocked at all plywood edges. Two anchor bolts installed in accordance with Section 1806.6, shall be provided in each panel. Anchor bolts shall be placed at panel quarter points. Each panel end stud shall have a tie-down device fastened to the foundation, capable of providing an approved uplift capacity of not less than 1,800 pounds (816.5 kg). The tie-down device shall be installed in accordance with the manufacturer's recommendations. The panels shall be supported directly on a foundation or on floor framing supported directly on a foundation which is continuous across the entire length of the braced wall line. This foundation shall be reinforced with not less than one No. 4 bar atop at top and bottom. **In situations where only a single alternate braced panel is used in a braced wall line, the reinforcement shall extend on each side of the panel at least 10 feet (3048 mm). In lieu of the continuous footing, a minimum 12-inch x 12-inch (305 mm x 305 mm) turned down slab edge, reinforced with two continuous No. 4 bars lapped with two No. 4 bars placed in the top and bottom of the panel footings, may be provided across the garage door and other openings in the brace wall line. Where the frost depth is greater than 12 inches (305 mm), the greater depth shall be used for the turned down slab edge. Refer to Section 1806.7 for the Seismic Zone 3 and 4 reinforcement requirements in foundations.**

2. In the first story of two-story buildings, each braced wall panel shall be in accordance with Section 2320,11.4, Item 1, except that the plywood sheathing shall be provided on both faces, three anchor bolts shall be placed at one-fifth points, and tie-down device uplift capacity shall not be less than 3,000 pounds (1360.8 kg). ■

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# Staff advisories issued

**Program:** Structural Program  
**Subject:** Classification of infant day-care  
**Source:** 1998 Oregon Structural  
Specialty Code (OSSC)

**Reference:** Sections 305.1 and 308.1

**Date of issue:** July 12, 1999

**Prepared by:** Ravindra K. Mahajan P.E.  
Facilities engineer  
(503) 373-1354

## Question

What is the appropriate occupancy classification (Group E, Division 3 or Group I, Division 1.1) for child day-care facilities where the occupant load includes more than six infants and typical operating hours are 7 a.m. to 6 p.m.?

## Determination

The appropriate occupancy classification for the above-described situation is Group E, Division 3, because more than six occupants are provided day care for a period of time less than 24 hours in a day.

## Analysis

Section 308.1 of the OSSC defines a nursery for the full-time care of children under the age of six, each accommodating more than five children, as a Group I, Division 1.1 occupancy. The key word in this definition is "full-time care." For the application of code purposes, full-time care means care provided for a continuous period of 24 hours or more and the children cared for would dine and sleep in the building.

Section 305.1 of the OSSC defines a Group E, Division 3 occupancy as any building, or portion thereof, used for day-care purposes for more than six persons. A day-care facility providing care for only eight or 12 hours is not considered "full-time" care. Section 305.1 does not specify a minimum age. Therefore, facilities providing day care for less than 24 hours in a day for children or

adults of any age group would be classified as a Group E, Division 3 occupancy when the occupant load is more than six persons.

This interpretation is consistent with a June 7, 1999, written response received from ICBO. The question was raised by the Child Care Division because some jurisdictions have classified child day-care facilities as Group I, Division 1.1 assuming infants to be non-ambulatory. ICBO's latest response is based on the language of the code and on the fact that there have been failed code-change proposals to limit the age of children in Group E, Division 3 occupancies.

**Program:** Structural Program  
**Subject:** Structural plan review of buildings containing mix of conventional and non-conventional structural elements  
**Source:** 1998 Oregon Structural Specialty Code (OSSC) and 1996 Oregon One and Two Family Dwelling Specialty Code (OTFDSC)

**Reference:** Section 2320.2 of OSSC and Section 301.1 of OTFDSC

**Date of issue:** June 1, 1999

**Prepared by:** Ravindra K. Mahajan P.E.  
Facilities engineer  
(503) 373-1354

## Question

How is plan review of structures of otherwise conventional construction containing non-conventional structural elements done?

## Determination

Non-conventional structural elements shall be designed for compliance with OSSC provisions and should be compatible with the performance of the conventional-framed elements.

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## Analysis:

Buildings containing structural elements in compliance with the prescriptive requirements of the conventional light-frame construction of the OSSC and/or of the OTFDSC are assumed to comply with design requirements of the building codes. When the structure contains non-conventional structural elements in addition to the conventional elements, only the non-conventional elements need to be designed to resist the forces stipulated in the building codes.

Section 2320.2 of the OSSC and Section 301.1 of the OTFDSC state that the non-conventional elements of a building containing otherwise-conventional structural elements should be *designed in accordance with the design provisions contained in the code or per the accepted engineering principles*. When the non-conventional structural

elements are designed per the code provisions, care shall be taken to make sure that design is compatible with the anticipated performance of the conventional structural elements. This may require an analysis to determine the loads transferred to or from the non-conventional structural members.

This issue has been reviewed by the structural engineering reviewers in the tri-county area of Clackamas, Multnomah, and Washington counties. Structural engineering reviewers from these areas were of the consensus opinion that their plan review policies for such structures are consistent with the above requirements. This group meets regularly to discuss problems and propose solutions associated with the design and review of such structures. Their recommendations will be published in the appropriate form in the future. ■

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## Code effective dates

Sun	Mon
1	2
8	9

The 1999 Oregon Mechanical Specialty Code (1998 International Mechanical Code with Oregon amendments) will be effective October 1. The Oregon amendment package is now available for purchase.

The 2000 One- and Two-Family Dwelling Specialty Code (1998 International One- and Two-Family Dwelling Code with Oregon amendments) will be effective April 1, 2000. The Building Codes Structures Board held the public hearing on the Oregon amendments September 1. Their work session will be October 6 and printed amendments are tentatively expected to be available by February 1, 2000.

The effective dates for the plumbing and electrical codes will coincide with the adoption of the new dwelling code. The 2000 Oregon State Plumbing Specialty Code (1997 Uniform Plumbing Code with Oregon amendments) is being printed. The effective date for this code is April 1, 2000.

The 2000 Electrical Specialty Code (1999

National Electrical Code with Oregon amendments) will be effective April 1, 2000. The Electrical and Elevator Board has conducted the public hearing and work session. The printed code should be available around the first of the year.

EI and CAE electrical inspectors can take code-change classes prior to the effective date of the new electrical code, but not later than, six months after April 1, 2000 (by October 1, 2000). Mechanical inspectors and CAS, CAM, and CAX one and two family dwelling inspectors need to take one code change class per type of certification held within one year of the new dwelling code effective date (by April 1, 2001). PI and CAP plumbing inspectors are required to take a code-change class within nine months of the April 1, 2000, effective date of the new plumbing code (by January 1, 2001). Training taken in the fall of 1999 will be counted toward the continuing education requirement for all these inspection categories. ■

# 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 manufactured dwelling parks and certification of plan examiners in July 1999:

CITY .....	NAME .....	VIOLATION .....	CIVIL PENALTY ASSESSED
Bend .....	Scott Harbick Scott Harbick Construction Co.	Submitted incomplete certification tag report	\$250
Boring .....	Thomas E. New Trailer Villa	No permit for expansion of manufactured dwelling park	\$250
Hermiston .....	Heath A. Schiller	No manufactured dwelling installation permit	\$250
Portland .....	Rodney F. Shramek	Does not qualify for certification as an A-level structural plans examiner	N/A

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

Astoria .....	Town-N-Country Floors and More Inc.	No mechanical permit (second violation)	\$500
Boring .....	Thomas E. New Trailer Villa	No electrical permit/no plumbing permit	\$500
Eugene .....	Home Comfort Heating & Air Conditioning Inc.	No electrical permit	No penalty
Gold Hill .....	Robert J. Field	No electrical permit (two violations)	\$500
Gold Hill .....	Robert Field Construction Inc.	No plumbing permit	\$250
Hermiston .....	Brian Arriola B & R Contractors	No building permit	\$250
Hermiston .....	Brian Arriola B & R Contractors	No building permit (3-day continuing violation)	\$750
Hillsboro .....	Bob Carlson Inc.	No building permit	\$250
Pendleton .....	Michael Booth	No building permit	\$250
Portland .....	Donald M. Beckwith LBO Development Corporation	No electrical, plumbing, or mechanical permits	\$750
Portland .....	Ronald Edwin Dyer	No electrical, plumbing, building or mechanical permits	\$1,000
Roseburg .....	William H. Frank Forest Air & Heating	No electrical permit	\$250
Salem .....	Coyle Contracting Inc.	No building permit	\$250

Salem .....	Barbara A. Rich .....	No electrical, plumbing, .....	\$750
	Holiday Cleaning	or building permits	
Salem .....	Jimmie Lee Wolfer .....	Covered fire sprinkler .....	\$250
	Jim Wolfer Builder	system without inspection	
Springfield .....	Marshall W. Dannen II .....	No electrical permit .....	\$250
	Marshall's Heating & Air Conditioning		
The Dalles .....	Michael Brace .....	No building permit .....	\$250
The Dalles .....	Richard W. Haring .....	No building permit .....	\$750
		(two violations)/no electrical permit	
Tygh Valley .....	Carl Merritt .....	No electrical, plumbing .....	\$750
		or building permits	
Vida .....	McKenzie Valley Pump & .....	No electrical permit .....	\$250
	Electric Inc.		
Fruitland, ID .....	Kirkland Cochran .....	No mechanical permit .....	\$250
	Fruitland Heating & Cooling		
Kelso, WA .....	Jerald A Russell, Aquafix .....	No electrical permit .....	\$250

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

Bend .....	Gary L. Dale .....	Did not ensure individual .....	\$500
		was licensed to make electrical .....	
		installation (two violations)	
Bend .....	Springtime Irrigation Inc. ....	No electrical contractor's license .....	\$500
Eugene .....	John C. Koon .....	No electrical supervising or .....	\$750
		journeyman's license/ no electrical permit	
Junction City .....	Tony Ceniga .....	No electrical supervising or .....	\$1,000
		journeyman's license (two violations)	
Junction City .....	Bob Drongensen .....	No electrical supervising .....	\$500
		or journeyman's license	
Junction City .....	John Perdue .....	No electrical permit .....	\$250
Keizer .....	James Robert Dunkin .....	No electrical supervising or .....	\$750
		journeyman's license/made .....	
		unsafe electrical installation	
Portland .....	Ronald Edwin Dyer .....	No electrical supervising or .....	\$750
		journeyman's license (two violations)/ .....	
		made unsafe electrical installation	
Redmond .....	Donald R. Bulkley .....	No electrical supervising .....	\$500
		or journeyman's license	
Reedsport .....	Bob Traina .....	No electrical supervising .....	\$750
		or journeyman's license/no electrical permit	
Roseburg .....	William H. Frank .....	No electrical contractor's license .....	\$500
	Forest Air & Heating		
Salem .....	Ryan W. Ford .....	No electrical supervising .....	\$500
		or journeyman's license	
Salem .....	Barbara A. Rich .....	No electrical contractor's license .....	\$250
	Holiday Cleaning		

Springfield .....	Kevin Wesley Centers .....	No electrical supervising or journeyman's license/no electrical permit	\$750
Springfield .....	Cary Ramsey .....	No electrical supervising or journeyman's license	\$500
St. Helens .....	Jason E. Moore .....	No electrical permit	\$250
Tygh Valley .....	Chris Merritt .....	No electrical supervising or journeyman's license	\$500
Tygh Valley .....	Carl Merritt .....	No electrical contractor's license/no electrical supervising or journeyman's license	\$1,000
Hayward, CA .....	Sensomatic Electronics Corporation .....	No electrical permit	\$250

## The Plumbing Board found the following violations of the Plumbing Specialty Code in June 1999:

Clackamas .....	Ronald Cubista dba Artistic Tile Company .....	No business certificate of gistration/ no journeyman's certificate of competency	\$1,000
Gold Hill .....	Robert Field Construction, Inc. ....	No business certificate of registration	\$100
Gold Hill .....	Robert Field .....	No journeyman's certificate of competency	\$500
Portland .....	LBO Development Corporation .....	No business certificate of registration	\$500
Portland .....	Donald M. Beckwith .....	No journeyman's certificate of competency	\$500
Portland .....	Green City Builders, Inc. ....	No business certificate of registration	\$500
Portland .....	Scott M. Lucas dba Scott Lucas Services .....	No business certificate of registration (four violations)	\$2,000
Portland .....	Mark Alexander .....	No journeyman's certificate of competency	\$500
Portland .....	Matt Nelson dba Legacy Plumbing .....	Allowed an unlicensed individual to make a plumbing installation	\$500
Portland .....	Mark Alexander .....	No journeyman's certificate of competency	\$500
Portland .....	Ronald Edwin Dyer .....	No journeyman's certificate of competency	\$500
Rockaway .....	Albert Richard Jones dba A. Richard Jones Plumbing .....	Revocation of plumbing business certificate of registration	
Roseburg .....	Mark W. Merrell dba Happy Valley Plumbing .....	Allowed an unlicensed individual to make a plumbing installation	\$500
Roseburg .....	Duane Brinker .....	Advertised to make plumbing installations without a business certificate of registration	\$500
Salem .....	Barbara A. Rich dba Holiday Cleaning .....	No plumbing business certificate of registration	\$500
Springfield .....	John William Garrelts .....	No journeyman's certificate of competency (second violation)	\$1,000

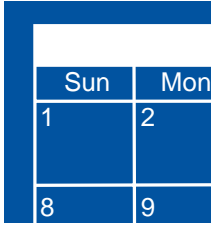
Talent .....	Lawrence E. Bryant .....	Denial of application for plumbing journeyman's certificate of competency	NA
Tygh Valley .....	Chris Merritt .....	No journeyman's certificate of competency	\$500
Tygh Valley .....	Carl Merritt .....	No journeyman's certificate of competency/no plumbing business certificate of registration	\$1,000
Mission Viejo, CA .....	Hoffman Southwest Corp. ....	No plumbing permit (two violations)	\$1,000
Benton City, WA .....	Douglas J. McDonald .....	No journeyman's certificate of competency	\$500
Benton City, WA .....	Richard E. Worley dba Worley Plumbing	Employed an unlicensed individual to make a plumbing installation	\$500

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

Bend .....	Chris Orlich .....	No electrical supervising or journeyman's license (two violations)	\$1,000
Bend .....	Reception Connection Inc. ....	No electrical permit/allowed unlicensed individual to make electrical installation (two violations)	\$1,250
Bend .....	Tom Wilson Central Oregon Petroleum Equip. Construction	No electrical supervising or journeyman's license/ no electrical permit	\$750
Glide .....	Four Seasons Heating & Cooling Specialists Inc.	No electrical contractor's license	\$500
Gresham .....	James P. Spicer .....	No electrical supervising or journeyman's license/ no electrical permit	\$750
Salem .....	Allyn T. Brown .....	No electrical supervising or journeyman's license	\$500
Salem .....	Sharpcor Inc. ....	No electrical permit	\$250
Eureka, CA .....	Gerald Betts .....	Did not ensure individual was properly licensed to make electrical installation (two violations)	\$1,000
Eureka, CA .....	Robert Colburn Electric Inc. dba Colburn Electric .....	Allowed unlicensed individual to make electrical installations (two violations)	\$1,000
Eureka, CA .....	Mark Spencer .....	No electrical supervising or journeyman's license	\$500

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# Fire marshal's round table



The annual Fire Marshal's Round Table will be October 21-22 at the Oregon State Fairgrounds. This is an opportunity for fire prevention personnel, building contractors, plans examiners, inspectors, designers, and others to come together to exchange ideas, discuss new technologies, and solve common problems. It is an open forum, and attendees will supply discussion topics.

Registration deadline is October 12. For registration information and questions, contact Office of Oregon State Fire Marshal, (503) 373-1540, John Caul, ext. 269, or Carol Robinson ext., 204. ■

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# Stakeholder meetings

The September 28 meeting will be held in the Douglas County Courthouse, Room 310, 6 p.m. The October meetings will be in Lake and Curry counties. Those dates and meeting places have not yet been set. This information will be mailed to building officials. ■

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# Fall code forum

The next round of BCD Code Forums will be October 19, 20 and 26, in Salem. Forum location is BCD conference room A for all sessions.

These meetings provide a forum for discussion of code questions in order to improve the uniformity of code application statewide. Building officials, inspectors, plans examiners, designers, and contractors are welcome to attend.

**Please fill out a copy of the following registration form and return it to BCD by October 1, if you plan to attend.** Confirmations will be mailed. Results of the forum discussions will be distributed to building officials. Some of the issues may become technical advisories and be posted on the BCD Web site.

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**YES**, please enroll me in the **October 1999 Code Forum**. I understand I will receive confirmation and a map, approximately two weeks before the meeting.

Attending code forum for:  Plumbing (Oct. 19)  Structural/Mechanical (Oct. 20)  Electrical (Oct. 26)

Participant name: \_\_\_\_\_

Please print clearly

Address: \_\_\_\_\_  
Street City State Zip

Suggested topic for discussion: \_\_\_\_\_

---

• Please send registration to ANITA CRENSHAW at BCD or fax it to her, (503) 378-2322 •

# 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:

- September 23
- October 28

## BUILDING CODES STRUCTURES BOARD \_\_\_\_\_

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

- September 1
- October 6

## MANUFACTURED STRUCTURES & PARKS ADVISORY BOARD \_\_\_\_\_

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

- October 14

## STATE PLUMBING BOARD \_\_\_\_\_

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

- October 15

## BOARD OF BOILER RULES \_\_\_\_\_

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

- September 7

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



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- Address correction — Send to:  
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City/State/ZIP: \_\_\_\_\_

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# Important information sent to building officials

The following information was recently sent to all building officials. See your building official for copies.

- Fire and life safety interpretations for manufactured dwellings
- Memorandum on prefabricated pier labeling
- Memorandum on Oregon insignias of compliance
- Waiving code and insignia requirements for manufactured dwellings
- Shimming materials for manufactured dwellings
- Public notice of surcharge increase
- Memorandum on manufactured dwelling permanent foundations
- Staff advisory on classification of infant day care
- Letters from Joe Brewer and Jim Hanson regarding fees
- Staff advisory on manufactured dwelling gas lines
- Amendments to the 1998 Oregon Structural Specialty Code
- Interpretive Rulings 95-7 (revised), 95-8 (revised), and 99-1. (Note: See complete text in this issue)
- Temporary rules adopting new state fees effective July 1

440-2666 (9/99/COM)



**Building Codes Division**  
1535 Edgewater St. NW  
PO Box 14470  
Salem, OR 97309-0404

Address Correction Requested

## CODE LINK

STATE OF OREGON • BUILDING CODES DIVISION

*CodeLink* is the bimonthly publication of the Oregon Department of Consumer & Business Services Building Codes Division.

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