

OCT 30 2000



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Tommy G. Thompson, Governor
Brenda J. Blanchard, Secretary

October 30, 2000

Senate Chief Clerk
Room 501
119 Martin Luther King Blvd
Madison, Wisconsin 53703

Assembly Chief Clerk
Room 402
1 East Main Street
Madison, Wisconsin 53703

Dear Chief Clerks:

**TRANSMITTAL IN FINAL DRAFT FORM OF ADMINISTRATIVE
RULES AND REPORT**

CLEARINGHOUSE RULE NO.: 00-073

RULE NO.: Chs. Comm 20-25

RELATING TO: Uniform (1-2 Family) Dwelling Code

Pursuant to section 227.19, Stats., agencies are required to submit, in triplicate, copies of the proposed administrative rules in final draft form together with a rule report and an analysis. The recommendations received from the Legislative Council are also to be submitted.

At this time, this material, together with cover letters to the President of the Senate and the Speaker of the Assembly, is being transmitted for referral to the standing committees for legislative review.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Brenda J. Blanchard', is written over a horizontal line.

Brenda J. Blanchard
Secretary

October 30, 2000

Senator Fred Risser
President of the Senate
Room 220 South, State Capitol
Madison, Wisconsin 53702

Representative Scott Jensen
Speaker of the Assembly
Room 211 West, State Capitol
Madison, Wisconsin 53702

Dear Senator Risser and Representative Jensen:

NOTICE OF ADMINISTRATIVE RULES IN FINAL DRAFT FORM

CLEARINGHOUSE RULE NO.: 00-073

RULE NO.: Chs. Comm 20-25

RELATING TO: Uniform (1-2 Family) Dwelling Code

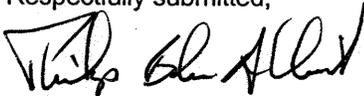
Section 227.19, Stats., requires agencies to submit proposed rules in final draft form to the presiding officer of each house for referral to the appropriate legislative standing committees.

The following information, as required by law, is being submitted to you.

1. Rules in final draft form (in triplicate).
2. Report consisting of:
 - a) Rule Report.
 - b) Public Hearing Attendance Record.
 - c) Public Hearing Comment and Agency Response Form.
 - d) Legislative Council Rules Clearinghouse Report.
 - e) Response to Legislative Council Rules Clearinghouse Report.
 - f) Fiscal Estimate.
 - g) Final Regulatory Flexibility Analysis.

If you have any questions regarding this matter, please do not hesitate to contact us.

Respectfully submitted,



Brenda J. Blanchard
Secretary

FINAL REGULATORY FLEXIBILITY ANALYSIS

Department of Commerce

CLEARINGHOUSE RULE NO.: 00-073

RULE NO.: Chs. Comm 20-25

RELATING TO: Uniform (1-2 Family) Dwelling Code

1. **Reason for including or failing to include the following methods for reducing impact of the rule on small businesses: Less stringent compliance or reporting requirements; less stringent schedules or deadlines for compliance or reporting requirements; simplification of compliance or reporting requirements; establishment of performance standards to replace design or operational standards; exemption from any or all requirements.**

The Uniform Dwelling Code, per statute, applies uniformly throughout the state, regardless of the size of the business involved. The Uniform Dwelling Code Council, whose membership is determined per statute, has a majority of the members representing small businesses. The rules herein proposed represent the consensus of that Council.

2. **Issues raised by small businesses during hearings, changes in proposed rules as a result of comments by small businesses and reasons for rejecting any alternatives suggested by small businesses.**

Comments received at public hearings consist of opinions on the best way to provide safe, economical and energy efficient housing in the state. These comments are reviewed with the Uniform Dwelling Code Council, whose membership has a majority representing small businesses. Those that achieve consensus through the Council are included in the proposed rules.

(Continued on next page)

3. Nature and estimated cost of preparation of any reports by small businesses.

There are no additional reporting requirements contained in these rules.

4. Nature and estimated cost of other measures and investments required of small businesses.

There are no other measures or investments required of small businesses contained in these rules.

5. Additional cost to agency of administering or enforcing a rule which includes any of the methods in 1. for reducing impact on small businesses.

There would be no additional costs. However, none of the methods in 1. are relevant to these proposed rules.

6. Impact on public health, safety and welfare caused by including any of the methods in 1. for reducing impact on small businesses.

None of the methods in 1. are relevant to these proposed rules.

RULE REPORT

Department of Commerce

Rule No.: Chapters Comm 20-25

Relating to: Uniform Dwelling Code

Agency contact person for substantive questions:

Name Larry Swaziek

Title Program Manager

Telephone Number 267-7701

Agency contact person for internal processing:

Name Duane Hubeler

Title Code Consultant

Telephone Number 266-1390

1. Agency statutory authority under which the agency intends to promulgate the rule(s).

101.02 (1), 101.63 (1), 101.64 (3), 101.72 and 101.74

2. Citation of federal regulations which require adoption or which are relevant to the proposed rule(s).

Section 304 (a) of the Energy Policy Act of 1992

3. Citation of court decisions which are applicable to the proposed rule(s).

None known.

4. Description of the proposed rule(s).

The proposed rules consist of various changes to chapters ILHR 20 to 23 relating to the Uniform Dwelling Code. Most of the changes are made for general clarification. There are some new, substantive changes proposed that were discussed with the UDC Council in accordance with the scoping statement.

The new, substantive changes relate to smoke detector location and masonry foundation requirements. Both changes are intended to bring the requirements in line with national standards.

5. Reason for the proposed rule(s).

Section 101.63 (5), Stats., requires the department to review the rules contained in the Uniform Dwelling Code on a biennial basis.

FISCAL ESTIMATE
DOA-2048 (R06/99)

ORIGINAL
 CORRECTED

UPDATED
 SUPPLEMENTAL

LRB or Bill No./Adm. Rule No.
Chapters Comm 20-25
Amendment No. if Applicable

Subject

Miscellaneous changes to Uniform Dwelling Code, Chapters Comm 20-25.

Fiscal Effect

State: No State Fiscal Effect

Check columns below only if bill makes a direct appropriation or affects a sum sufficient appropriation

- Increase Existing Appropriation Increase Existing Revenues
 Decrease Existing Appropriation Decrease Existing Revenues
 Create New Appropriation

- Increase Costs - May be Possible to Absorb Within Agency's Budget Yes No
 Decrease Costs

Local: No local government costs

1. Increase Costs
 Permissive Mandatory
 2. Decrease Costs
 Permissive Mandatory

3. Increase Revenues
 Permissive Mandatory
 4. Decrease Revenues
 Permissive Mandatory

5. Types of Local Governmental Units Affected:
- Towns Villages Cities
 Counties Others _____
 School Districts WTCS Districts

Fund Sources Affected

- GPR FED PRO PRS SEG SEG-S

Affected Ch. 20 Appropriations

Not applicable

Assumptions Used in Arriving at Fiscal Estimate

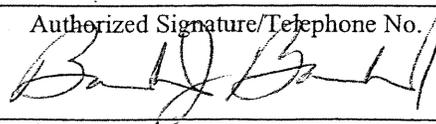
The Uniform Dwelling Code has been in effect since 1980. There are no new regulation schemes contained in these proposed changes. Although there is a time lag or learning curve involved in any administrative rule change, we do not expect revenues to be affected.

Long-Range Fiscal Implications

None known or anticipated

Agency/Prepared by: (Name & Phone No.)
Commerce, Safety & Buildings Division
Duane Hubeler (608)266-1390

Authorized Signature/Telephone No.



Date

4/10/00

FISCAL ESTIMATE WORKSHEET
 Detailed Estimate of Annual Fiscal Effect
 DOA-2047(R06/99)

ORIGINAL
 CORRECTED
 UPDATED
 SUPPLEMENTAL

LRB or Bill No./Adm. Rule No. Amendment No.
 Chapters Comm 20-25

Subject
 Miscellaneous Changes to Uniform Dwelling Code, Chapters Comm 20-25.

I. One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):
 None

II. Annualized Costs:	Annualized Fiscal impact on State funds from:	
	Increased Costs	Decreased Costs
A. State Costs By Category	\$	\$ -
State Operations - Salaries and Fringes		
(FTE Position Changes)	(0 FTE)	(- 0 FTE)
State Operations - Other Costs		-
Local Assistance		-
Aids to Individuals or Organizations		-
TOTAL State Costs By Category	\$ 0	\$ -0
B. State Costs By Source of Funds	\$	\$ -
GPR		
FED		-
PRO/PRS	0	-0
SEG/SEG-S		-
III. State Revenues- Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)	\$	\$ -
GPR Taxes		
GPR Earned		-
FED		-
PRO/PRS		-
SEG/SEG-S		-
TOTAL State Revenues	\$ 0	\$ -0

NET ANNUALIZED FISCAL IMPACT

	<u>STATE</u>	<u>LOCAL</u>
NET CHANGE IN COSTS	\$ 0	\$ 0
NET CHANGE IN REVENUES	\$ 0	\$ 0

Agency/Prepared by: (Name & Phone No.) Commerce, Safety & Buildings Division Duane Hubeler (608) 266-1390	Authorized Signature/Telephone No. 	Date 4/10/00
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DEPARTMENT OF COMMERCE
PUBLIC HEARING COMMENT AND AGENCY RESPONSE

Clearinghouse Rule No.: 00-073		Hearing Location: Madison	
Rule Number: Chs. Comm 20-25		Hearing Date: May 15, 2000	
Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
1	David Downs Dream Homes & Winnebago Home Builders Neenah, WI	Disagrees with the proposal to prohibit a single winder step. A single winder should be safe if built according to code.	The requirements for single winders approved by the UDC Council after public hearings have been added.
	Len Linzmeier Windsor Homes Madison	1) Smoke detector battery backup requirements should be clarified. 2) Individual winder steps should be allowed. 3) Council needs to discuss the 40% requirement for sizing intake air ducts that was dropped from the draft.	1) The proposal is to require battery backup for all required detectors. 2) The requirements for single winders approved by the UDC Council after public hearings have been added. 3) The mechanical ventilation requirements will remain as in the current code pending further discussion.
	Jane Witt Wisconsin Builders Assoc. Madison	1) Winder requirements need to be enforced uniformly and a single winder should be allowed. 2) Smoke detector requirements will increase costs. Cost increases must be kept to a minimum.	1) The requirements for single winders approved by the UDC Council after public hearings have been added. 2) Agree. However, the department and many commenters believe the added safety of the additional smoke detectors justify the cost. The smoke detector proposal was discussed at the August UDC Council meeting and approved as proposed.

**DEPARTMENT OF COMMERCE
PUBLIC HEARING COMMENT AND AGENCY RESPONSE**

Clearinghouse Rule No.: 00-073		Hearing Location: NA - Written Comments	
Rule Number: Chs. Comm 20-25		Hearing Date:	
Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
2	Dave Osborne Conserv Products Oregon, WI	The code should be clarified so only long term or "aged" values can be used to determine the R-value of insulation. This is especially important for foundation insulation where exaggerated claims for the aboveground R-values can allow foundation insulation to be eliminated.	Agree. This was intended to be included in the last update of chapter 22. It follows the national standard and is required for commercial buildings. It will be added to s. Comm 22.31.
3	Craig Vretenar City of St. Francis	<ol style="list-style-type: none"> 1) Section Comm 23.02 (3) (a) 4. should not be repealed. His experience shows that homes provided with this makeup air perform better than those that have no makeup air. 2) Section Comm 23.02 (3) (a) 2. should not be repealed. Infiltration should not be allowed to be used as makeup air for balancing purposes. 3) All range hoods should be exhausted to the outside. Recirculating fans should not be allowed 4) Supports proposed change to s. Comm 21.04 (3) (a) for irregular landings. 5) Supports a requirement for minimum separation distance between exits. Recommends 1/3 of the longest diagonal as a good minimum. 6) Supports the inclusion of the proposed new tables in s. Comm 21.18 for masonry block foundation walls. 	<ol style="list-style-type: none"> 1) & 2) Agree. The mechanical ventilation requirements will remain as in the current code, although infiltration requirements will be amended in dwellings with naturally vented appliances. 3) This topic will be discussed by the Council for possible inclusion in the next regular code update. 4) Support is noted. 5) This topic will be discussed by the Council for possible inclusion in the next regular code update. 6) Support is noted.
4	John Lautz Lautz Custom Builders West Salem, WI	Disagrees with the proposal to require 2 winders in a series. In many cases a single winder is required to efficiently use the space and to make the stairway safe.	The requirements for single winders approved by the UDC Council after public hearings have been added.
5	Len Moes, Richard Eiberger and Lori Jenks Town of Menasha	<ol style="list-style-type: none"> 1) Disagrees with the proposal to remove ss. Comm 23.02 (3) (a) 2. and 4 relating to mechanical ventilation. 2) Kitchens should require exhaust to the outside either by an exhaust fan through the wall or roof or via an exhaust hood. 3) Supports a requirement for minimum separation distance between exits. 	<ol style="list-style-type: none"> 1) Agree. The mechanical ventilation requirements will remain as in the current code. 2) This topic will be discussed by the Council for possible inclusion in the next regular code update. 3) This topic will be discussed by the UDC Council for possible inclusion in the next regular code update.
6	Nicole Krahn City of Oshkosh	<ol style="list-style-type: none"> 1) Supports a requirement for minimum separation distance between exits. 2) Is in favor of requiring at least 2 adjacent winder steps. One winder is non-uniform and awkward to use. 3) Supports the proposal for irregular landings. 4) Minimum sizing for makeup air ducts and prohibition on using infiltration for makeup air should not be repealed. 	<ol style="list-style-type: none"> 1) This topic will be discussed by the UDC Council for possible inclusion in the next regular code update. 2) The requirements for single winders approved by the UDC Council after public hearings have been added. 3) Support is noted. 4) The mechanical ventilation requirements will remain as in the current code. Infiltration will be amended.

**DEPARTMENT OF COMMERCE
PUBLIC HEARING COMMENT AND AGENCY RESPONSE**

Clearinghouse Rule No.: 00-073		Hearing Location: NA - Written Comments	
Rule Number: Chs. Comm 20-25		Hearing Date:	
Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
7	Richard Holden Village of Plover Community Development	Supports the proposed changes specifically the expansion of smoke detector locations and the stairway clarifications.	Support is noted. The requirements for single winders approved by the UDC Council after public hearings have been added.
8	Roger Strege Building Inspectors Assoc of NE Wisconsin	1) Supports a requirement for minimum separation distance between exits. 2) Minimum sizing for makeup air ducts and prohibition on using infiltration for makeup air should not be repealed. The Council needs to discuss these issues. 3) The UDC Council voted to send a proposal to public hearings that would prohibit recirculating fans from being used in kitchens. This is a good idea and should have been in the public hearing package.	1) This topic will be discussed by the Council for possible inclusion in the next regular code update. 2) Agree. The mechanical ventilation requirements will remain as in the current code. There will be considerable future discussion on this topic. 3) This topic needs further discussion by the Council for possible inclusion in the next regular code update.
9	Roger Strege, Sandy Hogan and Jim Aznoe City of Sturgeon Bay	1) Supports a requirement for minimum separation distance between exits. 2) Minimum sizing for makeup air ducts and prohibition on using infiltration for makeup air should not be repealed. The Council needs to discuss these issues. 3) The UDC Council voted to send a proposal to public hearings that would prohibit recirculating fans from being used in kitchens. This is a good idea and should have been in the public hearing package.	1) This topic will be discussed by the Council for possible inclusion in the next regular code update. 2) Agree. The mechanical ventilation requirements will remain as in the current code. There will be considerable future discussion on this topic. 3) This topic needs further discussion by the Council for possible inclusion in the next regular code update.
10	Mike Lotto Lotto Homes Greenleaf, WI	Disagrees with the proposal to require 2 winders in a series. There is no proof of problems with one winder.	The requirements for single winders approved by the UDC Council after public hearings have been added.
11	Jack Van Der Weele & Patrick Eirich City of Sheboygan	1) Supports a requirement for minimum separation distance between exits. 2) Minimum sizing for makeup air ducts and prohibition on using infiltration for makeup air should not be repealed. The Council needs to discuss these issues. 3) The UDC Council voted to send a proposal to public hearings that would prohibit recirculating fans from being used in kitchens. This is a good idea and should have been in the public hearing package.	1) This topic will be discussed by the Council for possible inclusion in the next regular code update. 2) Agree. The mechanical ventilation requirements will remain as in the current code pending further discussion. There will be considerable future discussion on this topic. 3) This topic needs further discussion by the Council for possible inclusion in the next regular code update.

**DEPARTMENT OF COMMERCE
PUBLIC HEARING COMMENT AND AGENCY RESPONSE**

Clearinghouse Rule No.: 00-073		Hearing Location: NA - Written Comments	
Rule Number: Chs. Comm 20-25		Hearing Date:	
Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
12	Bill Amend Comfort Foam Minneapolis, MN	Supports the department's proposal to allow foam plastic without a thermal barrier in the box sill area of the basement. He includes copies of research reports, independent lab tests and model code amendment proposals in support.	Support is noted.
13	Tim Short, Brian Welch and Brian Culhane	As builders in Illinois and Wisconsin, they support the following proposals as written: 1) Section 20.10 (1) (b) 4. on final inspection time limits; 2) Section 21.04 (1) (d) on stairway winders; and 3) Section 21.18 (3) on masonry foundation walls. 4) They are opposed to the proposal to change section 23.02 (3) relating to mechanical ventilation.	Support is noted for item # 1 and # 3. 2) The requirements for single winders approved by the UDC Council after public hearings have been added. 4) Agree. The mechanical ventilation requirements will remain as in the current code.
14	Robert Stedman, Chair of Wisconsin Department of Commerce Fire Safety Code Council	Supports the department's proposal to require smoke detectors inside of bedrooms. The Council further recommends that NFPA 72 - National Fire Alarm Code be adopted for all aspects of smoke detector use.	The adoption of all NFPA 72 requirements will require further discussion. The current proposal includes the NFPA 72 requirements for battery backup and location inside of sleeping rooms.
15	Mike Green City of Eau Claire	1) The proposed section 21.10 (2) (e) requiring siding to be treated if it is within 8 inches of earth should be expanded to include any wood sheathing under the siding. 2) The proposed section 21.10 (2) (h) requiring bottom plates of garage walls that rest on concrete and are within 8 inches of the floor to be treated is overly strict. There is no evidence of any problems in the Eau Claire area. Garage floors typically slope extensively, so measuring the 8 inches is a problem. The exterior walls are often constructed before the floor is poured, so correction is extremely difficult. At the very least, the requirement should be within 4 inches of the floor. 3) The proposed section 21.10 (2) (g) would require only bottom plates of bearing walls that rest on slabs to be treated. This means the studs could be within 1.5 inches of the floor which is not consistent with the previous proposal. 4) He proposes that section 21.10 (2) (j) not exclude the decking from being treated. Decking is expensive to replace and is an important safety item.	1) This topic will be discussed by the Council for possible inclusion in the next regular code update. It was also note the code draft should say within 6 inches as in the current code. 2) Agree. The proposal should require treated plates that are within 8 inches of exterior grade not within 8 inches of the floor. 3) This problem is also corrected by the correction for item #2 above. 4) Agree. The UDC Council discussed this proposal at the August meeting and agreed also. It will be added.

DEPARTMENT OF COMMERCE
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Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
15 (cont.)	Mike Green (cont.)	5) Can the flashing or water-resistant membrane material mentioned in section 21.01 (4) (b) be used under a wall bottom plate that rests on a slab? The wall bottom plate is a structural member. It should be clarified.	5) The intent is to have it apply only to wood girders. It will be clarified.
16	J. A. Schnabl Town of Stephenson (Marinette County)	Opposes any change to section Comm 23.02 (3) (a) relating to mechanical ventilation without further research and discussion with the UDC Council.	Agree. The mechanical ventilation requirements will remain as in the current code. The Council agreed in the August meeting to amend the infiltration requirements where there are no naturally-vented appliances.
17	Stephen Kasten	Agrees with the proposed legislation.	Support is noted.
18	Frank Madden Mequon, WI	Opposes changes to the stairway winder requirements.	The requirements for single winders approved by the UDC Council after public hearings have been added.
19	Paul Ditter Jassby-Ditter Custom Homes Racine, WI	Disagrees with proposed section 20.10 (1) (b) on limitations for final inspection.	The UDC Council discussed this item at length and agreed the 5 day limit was the best alternative to no limit as in the current code.
20	Roy Lund Lund Builders, Inc. River Falls, WI	Supports the following proposed changes: 1) Section 20.10 (1) (b) on limitations for final inspection. 2) Section 21.03 (6) (d) on platform dimensions under egress windows. 3) Section 21.11 (1) (c) on allowing foam plastic in the box sill without a thermal barrier covering. 4) Opposes changes to stairway winder requirements in section 21.04 (3).	Support is noted for items #1-3. 4) The requirements for single winders approved by the UDC Council after public hearings have been added.
21	Michael Krings Krings Construction Wisconsin Rapids, WI	Supports the following proposed changes: 1) Section 20.10 (1) (b) on limitations for final inspection. 2) Section 21.03 (6) (d) on platform dimensions under egress windows. 3) Section 21.04 (3) on winder and landing requirements. 4) Section 21.09 (1) on smoke detector requirements. Opposes the following proposed changes: 5) Section 21.11 (1) (c) on thermal barrier exemptions for foam plastic. 6) Section 22.18 on duct and plenum sealing.	Support is noted for items #1,2 and 4. 3) The requirements for single winders approved by the UDC Council after public hearings have been added. 5) Most comments and UDC Council discussion have been strongly in favor of adding the thermal barrier exemption for the box sill area. 6) The department is moving toward following national standards relating to duct and plenum sealing.

DEPARTMENT OF COMMERCE
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Clearinghouse Rule No.: 00-073		Hearing Location: NA - Written Comments	
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Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
22	Phil Simon Simon Builders, Inc. Waunakee, WI	Disagrees with proposed section 21.04 (3) that would prohibit a single winder step.	The requirements for single winders approved by the UDC Council after public hearings have been added.
23	Ric Aultman Nelson Lumber Hayward, WI	Disagrees with proposed section 21.04 (3) on winder steps. He states it isn't what was discussed at the UDC Council meetings.	The proposed language was not changed between the public hearing draft and the UDC Council discussion. The requirements for single winders approved by the UDC Council after public hearings have been added.
24	Charles Elliott Middleton, WI	Supports the following proposed changes: 1) 20.10 (1) (b) on limitations for final inspection. 2) 21.03 (6) (d) on platform dimensions under egress windows. 3) 21.09 (1) on smoke detector requirements. 4) 23.06 on changes to combustion air requirements. Opposes the following proposed changes: 5) 21.04 (3) on winder and landing requirements. 6) 21.11 (1) (c) on thermal barrier exemptions for foam plastic. 7) 22.18 on duct and plenum sealing.	Support is noted for items #1-4. 5) The requirements for single winders approved by the UDC Council after public hearings have been added. 6) Most comments and UDC Council discussion have been strongly in favor of adding the thermal barrier exemption for the box sill area. 7) The department is moving toward following national standards relating to duct and plenum sealing.
25	Peter Stebbins Badger Abstract & Title Madison, WI	1) Disagrees with proposed section 21.04 (3) on winder steps. 2) Also wants road and curve construction addressed.	1) The requirements for single winders approved by the UDC Council after public hearings have been added. 2) Road and curve construction is outside the scope of the UDC.
26	Rick Riemer Nekoosa, WI	Requests further research and Council discussion on the following: 1) 21.04 (3) on winder steps. 2) 23.06 on combustion air. 3) Wants to know when unvented products will be allowed in Wisconsin.	1) The requirements for single winders approved by the UDC Council after public hearings have been added. 2) The changes will be added as proposed. More discussion will occur with a specialty council. 3) Use of unvented products would need considerable Council and public input.
27	John Shaline Green Bay, WI	1) Supports section 20.10 (1) (b) on limitations for final inspection. 2) Recommends further research and Council discussion on sections 21.09 on smoke detector requirements and 23.06 on combustion air requirements.	1) Support is noted. 2) These two proposals were discussed and approved as proposed by the UDC Council at the August meeting.

**DEPARTMENT OF COMMERCE
PUBLIC HEARING COMMENT AND AGENCY RESPONSE**

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Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
28	Darrell Steinke	Tempered glass should not be required within 2 feet of a door when the glass is on a different wall from the door.	This topic was not included in the proposed changes. It will require further Council discussion.
29	Joel Gmack DePere, WI	Supports the following proposed changes: 1) 21.03 (6) (d) on platform dimensions under egress windows. 2) 21.11 (1) (c) on thermal barrier exemptions for foam plastic. 3) 21.18 on masonry foundation walls. Opposes the following proposed changes: 4) 20.10 (1) (b) on limitations for final inspection. 5) 21.09 (1) on smoke detector requirements. 6) 22.18 on duct and plenum sealing. 7) Recommends further research and Council discussion on sections 21.04 (3) on winder and landing requirements and 23.06 on changes to combustion air requirements.	Support is noted for items 1-3. 4) Most comments and UDC Council discussion have been strongly in favor of adding the thermal barrier exemption for the box sill area. 5) The smoke detector proposal was discussed at the August UDC Council meeting and approved as proposed. 6) The department is moving toward following national standards relating to duct and plenum sealing. 7) The requirements for single winders approved by the UDC Council after public hearings have been added. The proposal on combustion air requirements was discussed and approved as proposed by the UDC Council at the August meeting.
30	Lawrence Babb Okauchee, WI	1) Supports the proposed changes on winder steps, aggregate specifications for bedding of drain tile, and ventilation changes. 2) Opposes the proposed changes to smoke detector requirements and the 5 day limitation for final inspection.	1) Support is noted. The requirements for single winders approved by the UDC Council after public hearings have been added. The proposed changes to ventilation were removed pending further Council discussion. 2) The smoke detector proposal was discussed at the August UDC Council meeting and approved as proposed. The UDC Council discussed final inspections at length and agreed the 5 day limit was the best alternative to no limit as in the current code.
31	Dan Katers Green Bay, WI	Opposes the following proposed changes: 1) 21.04 (3) on winder steps. 2) 21.09 (1) on smoke detector requirements. Recommends further research and Council discussion: 3) 21.18 on masonry foundation wall requirements 4) 23.06 on changes to combustion air requirements.	1) The requirements for single winders approved by the UDC Council after public hearings have been added. 2) The smoke detector proposal was discussed at the August UDC Council meeting and approved as proposed. 3) Masonry issues were extensively researched and discussed by the UDC Council to get these proposals. 4) The combustion air requirements will be implemented as proposed. Further discussion will take place.

**DEPARTMENT OF COMMERCE
PUBLIC HEARING COMMENT AND AGENCY RESPONSE**

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Relating to: Uniform Dwelling Code			
Comments: Oral or Exhibit No.	Presenter, Group Represented, City and State	Comments/Recommendations	Agency Response
32	Michael Miller Green Bay, WI	Opposes the proposed changes to section 21.09 on smoke detector requirements.	Opposition is noted. The smoke detector proposal was discussed at the August UDC Council meeting and approved as proposed.
33	Mark Kwaterski Oneida, WI	1) Opposes the proposed changes to section 20.10 (1) (b) on limitations for final inspection. The proposed 5 day limit is too long. 2) Recommends further research and Council discussion on section 21.04 (3) on winder and landing requirements.	1) The UDC Council discussed this item at length and agreed the 5 day limit was the best alternative to no limit as in the current code. 2) The requirements for single winders approved by the UDC Council after public hearings have been added.
34	Kevin Fager Fager Homes, Inc. Green Bay, WI	1) Supports the proposed changes to section 21.11 (1) (c) on thermal barrier exemptions for foam plastic. Opposes the following proposed changes: 2) 20.10 (1) (b) on limitations for final inspection. 3) 22.18 on duct and plenum sealing.	1) Support is noted. 2) The UDC Council discussed this item at length and agreed the 5 day limit was the best alternative to no limit as in the current code. 3) The department is moving toward following national standards relating to duct and plenum sealing.
35	Ron Derrick New Richmond, WI John Loberger Green Bay, WI Jim Reed DePere, WI Robert Borneman Wausau, WI Keith Weller, Weston, WI Steven Peter Ringle, WI	All disagree with the Code Commentary on section 21.04 (3). One winder step should be acceptable.	The requirements for single winders approved by the UDC Council after public hearings have been added.

RESPONSE TO LEGISLATIVE COUNCIL CLEARINGHOUSE REPORT

Department of Commerce

CLEARINGHOUSE RULE NO.: 00-073

RULE NO.: Chs. Comm 20-25

RELATING TO: Uniform (1-2 Family) Dwelling Code

Agency contact person for substantive questions.

Name: Larry Swaziek

Title: Program Manager

Telephone No. 267-7701

Legislative Council report recommendations accepted in whole.

Yes

No

2. Review of rules for form, style and placement in administrative code [s. 227.15(2)(c)]

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

All suggested changes were implemented as suggested.

(Continued on next page)

4. **Review rules for adequate references to related statutes, rules and forms [s. 227.15(2)(e)]**

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

All suggested changes were implemented as suggested.

5. **Review language of rules for clarity, grammar, punctuation and plainness [s. 227.15(2)(f)]**

- a. Accepted
- b. Accepted in part
- c. Rejected
- d. Comments attached

Comments:

- b. The commentary will provide examples of what is meant by "critical" in this context.
- d. Many products have received material approval from the department. Other products are known to be unsatisfactory based on builder's experience, but a comprehensive list is not possible.
- f. It is the size of the post or column based on the load-carrying capacity of the material. This will be clarified.
- g. It is the structural support that must be provided by the 4 inches of concrete. This will be clarified in the draft.
- h. This section was rewritten because of other issues. The term "balanced" is generally understood to be the equalization of exhaust air with fresh intake (makeup) air.
- i. Subd. 3. was determined to be redundant and was deleted from the draft.
- k. There is no conflict. Sub. (4) (a) will be amended to clarify that bringing air in from outside the building is one of the options allowed under sub (2). The exclusion under sub. (1) (b) still applies as written.
- m. "The operating requirements of the system" means the proper mix of air and fuel gas to maximize combustion efficiency and thereby minimize production of carbon monoxide. The performance requirement is clearly stated without this unwieldy definition.

All other suggested changes were implemented as suggested.



State of Wisconsin \ Department of Commerce

RULES in FINAL DRAFT FORM

Rule No.: Chs. Comm 20-25

Relating to: Uniform (1-2 Family) Dwelling Code

Clearinghouse Rule No.: 00-073

The Wisconsin Department of Commerce proposes an order to repeal ss. Comm 20.04 (3) and (4), 20.05 (8), 20.07 (4m), 20.07 (28) and (28r), 20.07 (41m) and (45), 20.07 (56m) and (60), 20.07 (73m), 21.02 (3) (a) 2. Note and 3., 21.03 (6), 21.04 (1), 21.08 (1) to (4), 21.09 (2), 21.10 (1) and (2), 21.18 Table 21.18-B, 21.25 (1) (b) and (c), 22.06 (19) Note, 23.04 (1) (e), and 23.045 (2) (b);

to renumber ss. Comm 20.04 (1), 20.04 (5), 20.05 (6) to (8), 20.24 (1), 20.24 (4) (f) to (i) and (j) to (p), 21.03 (6m), 21.04 (2) and (3), 21.08 (5) to (7), 21.09 (3) and (4), 21.10 (3), 21.18 Table 21.18-A, 21.25 (1) (d), and 23.02 (3) (b) and (c);

to renumber and amend ss. Comm 20.04 (4), 21.04 (intro.), and 23.045 (2) (c);

to amend ss. Comm 20.07 (47), 20.07 (61), 21.03 (2) (b), 21.04 (title), 21.08 (title), 21.15 (1) (e), 21.17 (3) (d) 4., 21.18 (2) (a), 21.25 (1) (title), 21.25 (3) (b) 3., 21.27 (3) (a) 1. a., 21.30 (9) (c), 22.06 (5) and (15), 22.07 Table 22.07-1, 22.17 (1), 22.25, and 23.04 (title);

to repeal and recreate ss. Comm 20.05 (9) as renumbered, 20.07 (17), 20.07 (36), 20.10 (1) (b) 4., 21.03 (1), 21.03 (5), 21.03 (6) (d) and (e) as renumbered, 21.03 (7), 21.03 (8), 21.04 (4) (a), 21.09 (1), 21.11, 21.18 (1) (b), 21.18 (3), 21.18 Table 21.18-C and Table 21.18-D, 21.22 (1m) and (4), 21.22 (5) (b), 21.24, 21.25 Table 21.25-A (title), 21.25 (2), 21.25 (6), 21.25 Tables 21.25-E and 21.25-F, 21.29 (6) and (9), 21.30 (7) (a), 22.20 Note, 22.27 (2), 22.28 (2), 22.31 (5), 22.33 Note, 23.02 (3) (a), and 23.06;

and to create ss. Comm 20.04 (1) (b) and (c), 20.04 (3), 20.05 (6), 20.07 (10m) and (15g), 20.07 (24m), 20.07 (24r), 20.07 (33m) and (34f), 20.07 (53), (53m) and (55m), 20.24 (1) (b), 20.24 (4) (f) and (k), 21.02 (3) (e), 21.04 (2), 21.08 (1) (c) Note, 21.08 (2) (e), 21.085, 21.09 (4) and (5), 21.10 (1) to (2) and (4), 21.18 (1) (c) and (d), 21.18 Table 21.18-A, 21.18 Tables 21.18-E and 21.18-F, 21.30 (7) (d) and (e), 22.04, 22.08 (1) (d), 22.12 (3), 22.18, 23.02 (3) (b), 23.04 (4), 23.045 (3) (a) 1. Note, 23.062, and 23.14 (3).

.....

Analysis of Proposed Rules

Statutory Authority: ss. 101.02 (1), 101.63 (1), 101.64 (3), 101.72 and 101.74 Stats.

Statutes Interpreted: ss. 101.02 (1), 101.63 (1), 101.64 (3), 101.72 and 101.74 Stats.

Under the statute sections listed above, the Department of Commerce has the responsibility to adopt rules that establish standards for the construction of 1- and 2-family dwellings. Sections 101.63 (5) and 101.73 (8) require the department to biennially review these rules. This proposed order is the result of the latest review. The vast majority of these proposed rule changes are intended to clarify current policies and requirements. The code sections that are substantially changed under this order are listed below:

S. Comm 20.10 (1) (b) 4. - Adds a limit of 5 business days for the final inspection to be completed prior to occupancy of a dwelling;

S. Comm 21.03 (6) (d) - Allows additional permanent fixtures to be installed under an egress window;

S. Comm 21.04 (3) - Adds rules for curved or irregular landings and winder steps;

S. Comm 21.09 (1) - Adds the requirement for a hard-wired smoke detector with battery backup to be placed inside each bedroom in new construction;

S. Comm 21.11 (1) (c) - Allows foam plastic to be used in the box sill area of the basement without the need to be covered with a thermal barrier;

S. Comm 21.18 is completely recreated to use the latest national standards for masonry block foundation walls;

S. Comm 22.18 - Adds requirements for duct and plenum sealing;

S. Comm 22.31 - Clarifies that nationally-accepted R-values for insulation products must be used to calculate thermal envelope performance; and

S. Comm 23.06 is completely recreated to use national standards for the provision of combustion air for fuel-fired appliances.

SECTION 1. Comm 20.04 (1) is renumbered Comm 20.04 (1) (a).

SECTION 2. Comm 20.04 (1) (b) and (c) are created to read:

Comm 20.04 (1) (b) All dwellings covered under par. (a) shall meet the requirements of ch. Comm 21.

(c) 1. The installation of heating, air conditioning, plumbing or electrical systems is not required.

2. If any of the systems under subd. 1. are installed, the systems and their installation shall comply with this code.

3. If a heating or air conditioning system is installed, the dwelling shall comply with ch. Comm 22.

SECTION 3. Comm 20.04 (3) and (4) are repealed.

SECTION 4. Comm 20.04 (3) is created to read:

Comm 20.04 (3) BED AND BREAKFAST ESTABLISHMENTS. The following portions of a bed and breakfast establishment shall comply with the provisions of this code:

(a) The third floor when used for other than storage.

(b) A structural addition, for which no use other than as a bed and breakfast establishment is proposed.

Note: See s. 254.61, Stats., for further conditions and limitations relating to bed and breakfast establishments.

SECTION 5. Comm 20.04 (5) is renumbered 20.04 (4).

SECTION 6. Comm 20.05 (8) is repealed.

SECTION 7. Comm 20.05 (6) and (7) are renumbered Comm 20.05 (7) and (8).

SECTION 8. Comm 20.05 (6) is created to read:

Comm 20.05 (6) DETACHED DECKS. The provisions of this code do not apply to detached decks provided the deck does not serve an exit from the dwelling.

SECTION 9. Comm 20.05 (9) is created to read:

Comm 20.05 (9) RECREATIONAL VEHICLES AND MANUFACTURED OR MOBILE HOMES. The provisions of this code apply only to onsite installation or construction of an addition or alteration to a recreational vehicle or manufactured or mobile home, such as a stoop, deck, porch or exterior stairs, provided the recreational vehicle or manufactured or mobile home was produced after June 1, 1980.

Note: Chapter Comm 27 applies to the installation of piers if the manufacturer does not specify the pier requirements.

SECTION 10. Comm 20.07 (4m) is repealed.

SECTION 11. Comm 20.07 (10m) and (15g) are created to read:

Comm 20.07 (10m) "Business day" means any day other than Saturday, Sunday or a legal holiday.

(15g) "Coarse aggregate" means granular material, such as gravel or crushed stone, that is predominately retained on a sieve with square openings of 4.75 mm or 0.18 inch.

SECTION 12. Comm 20.07 (17) is repealed and recreated to read:

Comm 20.07 (17) "Combustion air" means the total amount of air necessary for the complete combustion of a fuel.

SECTION 13. Comm 20.07 (24m) is created to read:

Comm 20.07 (24m) "Dilution air" means air that is provided for the purpose of mixing with flue gases in a draft hood or draft regulator.

SECTION 14. Comm 20.07 (24r) is created to read:

Comm 20.07 (24r) "Direct-vent appliance" means a gas-burning appliance that is constructed and installed so that all air for combustion is derived directly from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

SECTION 15. Comm 20.07 (28) and (28r) are repealed.

SECTION 16. Comm 20.07 (33m) and (34f) are created to read:

Comm 20.07 (33m) "Fireblocking" means a material or device used to retard or prevent the spread of flame or hot gases through concealed spaces into adjacent rooms or areas.

(34f) "Flight" means a continuous series of steps with no intermediate landings.

SECTION 17. Comm 20.07 (36) is repealed and recreated to read:

Comm 20.07 (36) "Gas appliance" means any device that uses gas as a fuel or raw material to produce light, heat, power, refrigeration or air conditioning.

SECTION 18. Comm 20.07 (41m) and (45) are repealed.

SECTION 19. Comm 20.07 (47) is amended to read:

Comm 20.07 (47) "Landing" means the level portion of a stairs located ~~within a flight~~ between flights of stairs or located at the ~~base~~ top and foot of a stairs.

SECTION 20. Comm 20.07 (53), (53m) and (55m) are created to read:

Comm 20.07 (53) "Mechanical draft venting system" means a venting system for a gas burning appliance that is designed to remove flue or vent gases by mechanical means, such as a fan, which may consist of an induced draft portion under non-positive static pressure or a forced draft portion under positive static pressure.

(53m) "Multiple station smoke alarm" means an assembly that incorporates the smoke detector, the control equipment and the alarm-sounding device in one unit that is capable of being interconnected with one or more additional alarms so that the actuation of one alarm causes the operation of all interconnected alarms.

(55m) "Naturally vented appliance" means an appliance with a venting system designed to remove flue or vent gases under non-positive static vent pressure entirely by natural draft.

SECTION 21. Comm 20.07 (56m) and (60) are repealed.

SECTION 22. Comm 20.07 (61) is amended to read:

Comm 20.07 (61) "Repair" means the act or process of restoring to original soundness, including, ~~but not limited to,~~ redecorating, refinishing, nonstructural repairs or maintenance, repairs or the replacement of existing fixtures, systems or equipment with the equivalent fixture, system or equipment.

SECTION 23. Comm 20.07 (73m) is repealed.

SECTION 24. Comm 20.10 (1) (b) 4. is repealed and recreated to read:

Comm 20.10 (1) (b) 4. 'Final inspection.' a. Except as provided under subd. 4. b., the dwelling may not be occupied until a final inspection has been made that finds no critical violations of this code that could reasonably be expected to affect the health or safety of a person using the dwelling.

b. Occupancy may proceed in accordance with local ordinances if the inspection has not been completed within 5 business days after notification or as otherwise agreed between the applicant and the department or municipality.

SECTION 25. Comm 20.24 (1) is renumbered (1) (a).

SECTION 26. Comm 20.24 (1) (b) is created to read:

Comm 20.24 (1) (b) BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, ACI-530-99 and SPECIFICATION FOR MASONRY STRUCTURES, ACI 530.1-99.

SECTION 27. Comm 20.24 (4) (f) to (i) are renumbered (g) to (j) and (j) to (p) are renumbered (L) to (r).

SECTION 28. Comm 20.24 (4) (f) and (k) are created to read:

Comm 20.24 (4) (f) STANDARD SPECIFICATION FOR GROUT FOR MASONRY, ASTM C 476-99.

(k) STANDARD CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION SYSTEM), ASTM D 2487-98.

SECTION 29. Comm 20.24 (9) is amended to read:

Comm 20.24 (9) National Fire Protection Association, (NFPA), Batterymarch Park, Box 9101, Quincy, Massachusetts 02269. NATIONAL FUEL GAS CODE, NFPA 54-1996 1999, Parts Chapters 2, 3, and 4.

SECTION 30. Comm 21.02 (3) (a) 2. Note and 3. are repealed.

SECTION 31. Comm 21.02 (3) (e) is created to read:

Comm 21.02 (3) (e) *Engineered structural components*. Engineered structural components shall be used in accordance with structural analysis or with load tables supplied by the manufacturer, provided those load tables were developed using structural analysis or load testing.

SECTION 32. Comm 21.03 (1) is repealed and recreated to read:

Comm 21.03 (1) EXITS FROM THE FIRST FLOOR. (a) Every dwelling unit shall be provided with at least 2 exits from the first floor.

(b) At least one of the exits shall discharge to grade. This exit may include interior or exterior stairs.

(c) An additional exit may discharge to an outside balcony that complies with sub. (10).

(d) An additional exit may discharge into an attached garage provided the garage has an exit door that discharges to grade. An overhead garage door may not be used as an exit door.

(e) The 2 required exits shall be located as far apart as practical.

Note: See appendix for examples of exit separation design.

SECTION 33. Comm 21.03 (2) (b) is amended to read:

Comm 21.03 (2) (b) Except as provided in par. (c), windows which comply with sub. ~~(6m)~~ (6) may be provided in each second floor bedroom in lieu of the second exit from the floor.

SECTION 34. Comm 21.03 (5) is repealed and recreated to read:

Comm 21.03 (5) EXITS FROM BASEMENTS AND GROUND FLOORS. (a) *General*. All basements and ground floors shall be provided with at least one exit of the following types:

1. A door to the exterior of the dwelling.
2. A stairway or ramp that leads to the floor above.

(b) *Basements and ground floors used for sleeping*. 1. Basements and ground floors used for sleeping shall be provided with at least 2 exits.

2. The exits shall be located as far apart as practical.
3. The exits may not be accessed from the same ramp or stairway.
4. In addition to the exit type required under par. (a), the second exit from a basement or ground floor used for sleeping shall be one of the following types:
 - a. A door to the exterior of the dwelling.
 - b. A stairway or ramp that leads to the floor above.
 - c. A stairway that leads to a garage provided the garage has an exit door other than the overhead door.
 - d. An egress window that complies with sub. (6), located in each bedroom.

SECTION 35. Comm 21.03 (6) is repealed.

SECTION 36. Comm 21.03 (6m) is renumbered (6).

SECTION 37. Comm 21.03 (6) (d) and (e), as renumbered, are repealed and recreated to read:

Comm 21.03 (6) (d) 1. For any window used for exiting, the lowest point of clear opening shall be no more than 60 inches above the floor.

2. If the lowest point of clear opening is more than 46 inches above the floor, a permanent platform or fixture shall be installed such that a flat surface at least 20 inches wide and 9 inches deep is located no more than 46 inches directly below the clear opening.

3. The topmost surface of the platform or fixture shall be no more than 24 inches above the floor.

4. The topmost surface of the platform or fixture shall support a live load of at least 200 pounds.

5. A step used for the sole purpose of reaching the top of the platform or fixture is exempt from the requirements of s. Comm 21.04.

(e) 1. An egress window with any point of clear opening below adjacent grade shall be provided with an areaway in accordance with this section.

2. The width of the areaway shall be at least equal to the width of the window.

3. The areaway shall be a minimum of 36 inches measured perpendicular from the outer surface of the below-grade wall.

4. If the bottom of the areaway is more than 46 inches below adjacent grade or the top of the areaway enclosure, the areaway shall be provided with a ladder or at least one additional step to aid egress. Steps used to comply with this section are exempt from the requirements of s. Comm 21.04.

5. Ladders or other steps used to comply with subd. 4. may infringe on the required area of the areaway by a maximum of 6 inches.

6. The areaway shall be constructed such that water entering the areaway does not enter the dwelling.

SECTION 38. Comm 21.03 (7) is repealed and recreated to read:

Comm 21.03 (7) DOORS USED FOR EXITING. Doors used for exiting shall comply with the following requirements:

(a) One of the exit doors from a dwelling unit shall be a swing-type door at least 36 inches wide by 80 inches high.

(b) 1. Except as allowed under subd. 2., all other required exit doors shall be at least 32 inches wide by 76 inches high.

2. Sliding patio doors used as a required exit shall have a clear opening of at least 30 inches.

(c) Where double doors are used as a required exit, each door leaf shall be at least 30 inches wide and the doors may not have an intermediate mullion.

(d) All exit doors shall be openable from the interior without the use of a key.

SECTION 39. Comm 21.03 (8) is repealed and recreated to read:

Comm 21.03 (8) INTERIOR CIRCULATION. All doors or openings to the following areas shall be at least 80 inches high and either provide a minimum net clear opening width of 30 inches or be a 32-inch door:

(a) At least 50 % of the bedrooms.

(b) All common use areas including kitchens, dining rooms, living rooms, family rooms, basements and garages.

(c) At least one full bathroom, including doors or openings to the sink, toilet and tub or shower.

SECTION 40. Comm 21.04 (title) is amended to read:

Comm 21.04 (title) ~~Stairs~~ **Stairways and elevated areas.**

SECTION 41. Comm 21.04 (1) is repealed.

SECTION 42. Comm 21.04 (intro.) is renumbered Comm 21.04 (1) and amended to read:

Comm 21.04 (1) (title) **SCOPE.** Every interior and exterior ~~stairs~~ stairway, including tub access steps but excluding non-required basement ~~stairs~~ stairways which lead directly to the building exterior and ~~stairs~~ stairways leading to attics or crawl spaces, shall conform to the requirements of this section.

SECTION 43. Comm 21.04 (2) and (3) are renumbered Comm 21.04 (3) and (4).

SECTION 44. Comm 21.04 (2) is created to read:

Comm 21.04 (2) DETAILS. (a) *Width*. 1. Except for spiral staircases under subd. 2., stairways shall measure at least 36 inches in width. Handrails and associated trim may project a maximum of 4.5 inches into the required width at each side of the stairway.

2. Spiral staircases shall be at least 26 inches wide measured from the outer edge of the supporting column to the inner edge of the handrail.

(b) *Riser height*. 1. Except for spiral staircases under subd. 2., risers may not exceed 8 inches in height measured vertically from tread to tread.

2. Risers in spiral staircases may not exceed 9.5 inches in height measured vertically from tread to tread.

(c) *Tread depth*. 1. 'Rectangular treads.' Rectangular treads shall have minimum tread depth of 9 inches measured horizontally from nosing to nosing.

2. 'Spiral staircase treads.' Spiral staircase treads shall have a minimum tread depth of 7 inches from nosing to nosing measured at a point 12 inches from the narrow end of the tread.

3. 'Winder treads in series.' Two or more winder treads may be placed immediately adjacent to each other anywhere in a stairway provided both of the following conditions are met:

a. The winder treads shall have a minimum tread depth of 7 inches measured at a point 12 inches from the narrow end of the tread.

b. The depth of the immediately adjoining winder treads shall be equal at a point 12 inches from the narrow end.

4. 'Individual winder treads.' a. An individual winder tread may be placed between rectangular treads or at the end of a flight of rectangular treads provided the tread depth, measured at a point 12 inches from the narrow end, is equal to the tread depth of the rectangular steps in the flight.

b. There may be more than one individual winder tread in a stairway or in a flight of stairs.

(d) *Headroom*. 1. Stairways shall be provided with a minimum headroom clearance of 76 inches measured vertically from a line parallel to the nosing of the treads to the ceiling, soffit or any overhead obstruction directly above that line.

2. The headroom clearance shall be maintained over an intermediate landing.

3. The headroom clearance shall be maintained over a landing that is at the top or bottom of a stairway for a minimum distance of 36 inches in the direction of travel of the stairway.

(e) *Uniformity*. 1. Within a stairway flight, tread widths and riser heights may vary by a maximum of 3/16 inch.

2. The allowed variation in uniformity under subd. 1. may not be used to exceed the maximum riser height under par. (b) or to decrease the minimum tread depth under par. (c).

SECTION 45. Comm 21.04 (4) (a), as renumbered, is repealed and recreated to read:

Comm 21.04 (4) (a) *Intermediate landings*. 1. A level intermediate landing shall be provided in any stairway with a height of 12 feet or more.

2. Intermediate landings that connect 2 or more straight flights of stairs, or 2 flights of stairs at a right angle, shall be at least as wide as the stairway and shall measure at least 36 inches in the direction of travel.

3. Curved or irregular landings shall have a radius of at least 36 inches.

4. Curved or irregular landings shall have a minimum straight line measurement of 26 inches between the nosing of the 2 connecting treads measured at a point 18 inches from the narrow end of the landing measured along the nosing of the 2 treads.

SECTION 46. Comm 21.08 (title) is amended to read:

Comm 21.08 (title) ~~Firestopping, draftstopping and fire~~ Fire separation and living unit separation.

SECTION 47. Comm 21.08 (1) to (4) are repealed.

SECTION 48. Comm 21.08 (5) to (7) are renumbered (1) to (3).

[Note to Revisor: Please remove the "3/4" that appears at the end of the (renumbered) 21.08 (1) (intro).]

SECTION 49. Comm 21.08 (1) (c) Note is created to read:

Comm 21.08 (1) (c) **Note:** Acceptable tests for fire rating of door assemblies include ASTM E-152, UL 10B, and NFPA 252.

SECTION 50. Comm 21.08 (2) (e) is created to read:

Comm 21.08 (2) (e) *Attics and concealed roof spaces*. 1. Attic areas, mansards, overhangs and other concealed roof spaces shall be totally separated above and in line with the tenant separation wall.

2. Acceptable attic separation materials include:

- a. 2-inch nominal lumber.
- b. Two layers of one-inch nominal lumber.
- c. 1/2-inch nominal plywood or wood structural panel.
- d. 1/2-inch gypsum board.
- e. Fiberglass or mineral wool batt insulation may be used in an unsupported condition provided the least dimension of the opening does not exceed 4 inches.

SECTION 51. Comm 21.085 is created to read:

Comm 21.085 Fireblocking. (1) FIREBLOCKING LOCATIONS. Fireblocking shall be provided in all of the following locations:

(a) In concealed spaces of walls and partitions, including furred spaces, at the ceiling and floor levels.

(b) At all interconnections between concealed vertical and horizontal spaces.

(c) In concealed spaces between stair stringers at the top and bottom of the run and at any intervening floor level.

(d) At all openings around wires, cables, vents, pipes, ducts, chimneys and fireplaces at ceiling and floor level.

(2) FIREBLOCKING MATERIALS. Fireblocking shall consist of one of the following:

(a) 2-inch nominal lumber.

(b) Two layers of one-inch nominal lumber.

(c) One thickness of 3/4-inch nominal plywood or wood structural panel with any joints backed with the same material.

(d) One thickness of 1/2-inch gypsum wallboard, face nailed or face screwed to solid wood, with any joints backed with the same material.

(e) Fiberglass or mineral wool batt insulation may be used if both of the following conditions are met:

1. The least dimension of the opening may not exceed 4 inches.
2. The batt shall be installed to fill the entire thickness of the opening or stud cavity.

(f) For wires, cables, pipes and vents only, non-shrinking caulk, putty, mortar, or similar material may be used provided no dimension of the opening exceeds 1/2 inch around the penetrating object.

(g) For chimneys, fireplaces and metal vents, fireblocking shall be metal, cement board or other noncombustible material.

SECTION 52. Comm 21.09 (1) is repealed and recreated to read:

Comm 21.09 (1) A listed and labeled multiple-station smoke alarm with battery backup shall be installed in all of the following locations:

- (a) An alarm shall be installed inside each sleeping room.
- (b) On floor levels that contain one or more sleeping areas, an alarm shall be installed outside of the sleeping rooms, in the vicinity of each sleeping area.
- (c) On floor levels that do not contain a sleeping area, an alarm shall be installed in a common area on each floor level.

[Note to Revisor: Please retain the 3 footnotes under sub. (1).]

SECTION 53. Comm 21.09 (2) is repealed.

SECTION 54. Comm 21.09 (3) and (4) are renumbered Comm 21.09 (2) and (3).

SECTION 55. Comm 21.09 (4) and (5) are created to read:

Comm 21.09 (4) Smoke alarms and detectors shall be maintained in accordance with the manufacturer's specifications.

Comm 21.09 (5) For envelope dwellings, at least 3 smoke alarms shall be placed in the air passageways. The alarms shall be placed as far apart as possible.

SECTION 56. Comm 21.10 (1) and (2) are repealed.

SECTION 57. Comm 21.10 (3) is renumbered Comm 21.10 (5).

SECTION 58. Comm 21.10 (1) to (2) and (4) are created to read:

Comm 21.10 (1) Wood used in any of the locations specified under this section shall meet both of the following requirements:

(a) The wood shall be pressure treated with preservative or shall be a naturally durable and decay-resistant species or shall be engineered to be decay resistant.

(b) The wood shall be pressure treated with preservative or shall be naturally termite-resistant unless additional steps are taken to make the wood termite-resistant.

(2) Wood used in the following locations shall be as required under sub. (1):

(a) Embedded in earth.

(b) Floor joists that span directly over and within 18 inches of earth.

(c) Girders that span directly over and within 12 inches of earth.

(d) Sills and rim joists that rest on concrete or masonry and are within 8 inches above exterior grade.

(e) Siding within 6 inches of earth.

(f) Ends of wood structural members built into masonry or concrete walls and having clearances of less than 1/2 inch on the top, sides and ends.

(g) Bottom plates of load bearing walls on slab floors in basements or garages.

(h) Bottom plates of garage walls that rest on concrete or masonry and are within 8 inches of exterior grade.

(i) Columns in direct contact with concrete or masonry unless supported by a structural pedestal or plinth block at least 3 inches above the floor.

(j) Any structural part of an outdoor deck, including the decking.

(4) Wood girders that rest directly on exterior concrete or masonry shall be protected by one of the following methods:

(a) The wood shall be pressure treated with preservative or shall be a naturally durable and decay-resistant species.

(b) Material, such as pressure-treated plywood, flashing material, steel shims, or water resistant membrane material shall be placed between the wood and the concrete or masonry.

SECTION 59. Comm 21.11 is repealed and recreated to read:

Comm 21.11 Foam plastic. (1) (a) *General.* Foam plastic insulation shall have a flame-spread rating of 75 or less and a smoke-developed rating of 450 or less when tested in accordance with ASTM E-84.

(b) *Thermal barrier.* Except as provided in par. (c), foam plastic shall be separated from the interior of the dwelling by one of the following thermal barriers:

1. 1/2-inch gypsum wallboard.
2. 1/2-inch nominal wood structural panel.
3. 3/4-inch sawn lumber with tongue-and-groove or lap joints.
4. 1-inch of masonry or concrete.
5. A product or material shown by an independent laboratory to limit the temperature rise on the unexposed surface to 250°F for 15 minutes when tested in accordance with ASTM E-119.
6. For doors only, sheet metal with a minimum thickness of 26 standard steel gauge or aluminum with a minimum thickness of 0.032-inch.

Note: Number 26 standard steel gauge is approximately equal to 0.018-inch.

(c) *Exemptions from thermal barrier requirement.* The following applications of foam plastic do not require a thermal barrier:

1. On overhead garage doors.
2. In the box sill of the basement or ground floor, above the bottom of the floor joists.

(2) Insulation that does not meet the requirements of this section may be approved by the department in accordance with s. Comm 20.18. Approval will be based on tests that evaluate materials or products representative of actual end-use applications.

SECTION 60. Comm 21.15 (1) (e) is amended to read:

Comm 21.15 (1) (e) Floating slabs. Any dwelling supported on a floating slab on grade shall be designed through structural analysis. Structures supported on floating slabs may not be physically attached to structures that are supported by footings that extend below the frost line unless ~~a control~~ an isolation joint is used between the structures.

SECTION 61. Comm 21.17 (3) (d) 4. is amended to read:

Comm 21.17 (3) (d) 4. The tile or pipe shall be placed upon at least 2 inches of ~~washed rock~~ coarse aggregate and shall be covered on the top and the side facing away from the dwelling with at least 12 inches of ~~washed rock~~ coarse aggregate that meets all of the following criteria:

- a. 100% of the aggregate shall pass a 1 inch sieve.
- a. b. 90-100% of the ~~rock~~ aggregate shall pass a 3/4 inch sieve.
- b. c. ~~20-25%~~ 0-55% of the ~~rock~~ aggregate shall pass a 3/8 inch sieve.
- d. 0-5 % of the aggregate shall pass a #8 sieve.

Note 1: A #8 sieve has square openings of 2.36 mm or 0.09 inch.

Note 2: These specifications encompass aggregate sizes #6 and #67 per ASTM standard C 33. Of the two sizes, #6 is coarser.

SECTION 62. Comm 21.18 (1) (b) is repealed and recreated to read:

Comm 21.18 (1) (b) *Lateral support at base.* Lateral support such as floor slabs or framing shall be provided at the base of foundation walls.

SECTION 63. Comm 21.18 (1) (c) and (d) are created to read:

Comm 21.18 (1) (c) *Lateral support at top.* Lateral support shall be provided at the top of the foundation walls by one of the following:

1. 'Ledger blocks.' Ledger blocks at the perimeter of the floor consisting of 2 inch thick nominal lumber attached with at least two 16d nails at each joist such that the dwelling meets the requirements of s. Comm 21.02 (1) (d).

2. 'Structural analysis.' A system designed through structural analysis.

3. 'Anchor bolts.' a. Structural steel anchor bolts, at least 1/2 inch in diameter, embedded at least 7 inches into the grouted masonry with a maximum spacing of 72 inches and located within 18 inches of wall corners.

b. A properly sized nut and washer shall be tightened on each bolt to the plate or sill.

c. When vertical-reinforcing steel is provided in masonry construction, as required under sub. (3), the location requirements under subd. 3. a. shall be modified as necessary so anchor bolts are placed in the same core as the reinforcement without exceeding the limits of subd. 3. a.

4. 'Other mechanical fasteners.' a. Mechanical fasteners used in accordance with the manufacturer's testing and listing.

b. When vertical-reinforcing steel is provided in masonry construction, as required under sub. (3), the location requirements under subd. 4. a. shall be modified as necessary so the fasteners are placed in the same core as the reinforcement without exceeding the limits of subd. 4. a.

(d) *Soil lateral load.* Unless designed through structural analysis, soil lateral loads shall be determined from Table 21.18-A.

SECTION 64. Comm 21.18 (2) (a) is amended to read:

Comm 21.18 (2) CONCRETE FOUNDATION WALLS. (a) Except as provided in par. (b), unless designed through structural analysis, the minimum thickness of concrete foundation walls shall be determined from Table ~~21.18-A~~ 21.18-B, but in no case shall the thickness of the foundation wall be less than the thickness of the wall it supports.

SECTION 65. Comm 21.18 (3) is repealed and recreated to read:

Comm 21.18 (3) MASONRY FOUNDATION WALLS. (a) *Dampproofing.* Masonry foundation walls shall be dampproofed by applying to the exterior surface from footing to finished grade, a continuous coating of one of the following:

1. Portland cement and sand coat mortar, at least 3/8 inch thick.

2. Type M or S mortar, at least 3/8 inch thick.

3. Structural surface bonding material, at least 1/4 inch thick.
4. Equivalent dampproofing material, applied in accordance with the manufacturer's instructions and acceptable to the department.

(b) *Structural requirements.* Unless designed through structural analysis, the masonry foundation walls shall be constructed in accordance with ACI 530.1 and the following requirements:

1. The minimum thickness of unreinforced masonry foundation walls shall be determined by Table 21.18-C, but in no case shall the thickness be less than the thickness of the wall it supports.

2. Reinforced masonry walls shall be reinforced in accordance with the requirements of Tables 21.18-D, 21.18-E or 21.18-F. Vertical reinforcement shall be provided on each side of any opening and at intervals indicated in the appropriate table.

3. Vertical reinforcement shall have a minimum yield strength of 60,000 psi.

4. Solid-grouted hollow units or cores containing vertical reinforcement shall be filled with masonry grout that complies with ASTM C 476.

5. In lieu of the reinforcement provisions of Tables 21.18-D, 21.18-E and 21.18-F, alternative reinforcing bar size and spacing having an equivalent cross-sectional area or reinforcement per linear foot of wall is permitted, provided the spacing of the reinforcement does not exceed 72 inches and reinforcing bar size does not exceed No. 11.

6. The depth below grade, wall height and reinforcement spacing may exceed the maximum values indicated in Tables 21.18-D, 21.18-E and 21.18-F only if the design is based on structural analysis.

SECTION 66. Comm 21.18, Table 21.18-B is repealed.

SECTION 67. Comm 21.18, Table 21.18-A is renumbered Table 21.18-B.

SECTION 68. Comm 21.18, Table 21.18-A is created to read:

**TABLE 21.18-A
SOIL LATERAL LOAD**

Description of Backfill Material^c	Unified Soil Classification	Design Lateral Soil Load^a PSF per Foot of Depth
Well-graded, clean gravels; gravel-sand mixes	GW	30 ^c
Poorly graded clean gravels; gravel-sand mixes	GP	30 ^c
Silty gravels, poorly graded gravel-sand mixes	GM	40 ^c
Clayey gravels, poorly graded gravel-and-clay mixes	GC	45 ^c
Well-graded, clean sands; gravelly sand mixes	SW	30 ^c
Poorly graded clean sands; sand-gravel mixes	SP	30 ^c
Silty sands, poorly graded sand-silt mixes	SM	45 ^c
Sand-silt clay mix with plastic fines	SM-SC	45 ^d
Clayey sands, poorly graded sand-clay mixes	SC	60 ^d
Inorganic silts and clayey silts	ML	45 ^d
Mixture of inorganic silt and clay	ML-CL	60 ^d
Inorganic clays of low to medium plasticity	CL	60 ^d
Organic silts and silt clays, low plasticity	OL	^b
Inorganic clayey silts, elastic silts	MH	^b
Inorganic clays of high plasticity	CH	^b
Organic clays and silty clays	OH	^b

a. Design lateral soil loads are given for moist conditions for the specified soils at their optimum densities. Actual field conditions shall govern. Submerged or saturated soil pressures shall include the weight of the buoyant soil plus the hydrostatic loads.

b. Unsuitable as backfill material.

c. For relatively rigid walls, as when braced by floors, the design lateral soil load shall be increased for sand and gravel type soils to 60 psf per foot of depth. Basement walls extending not more than 8 feet below grade and supporting flexible floor systems are not considered relatively rigid walls.

d. For relatively rigid walls, as when braced by floors, the design lateral load shall be increased for silt and clay type soils to 100 psf per foot of depth. Basement walls extending not more than 8 feet below grade and supporting flexible floor systems are not considered relatively rigid walls.

e. The definition and classification of soil materials shall be in accordance with ASTM D2487.

SECTION 69. Comm 21.18, Table 21.18-C and Table 21.18-D are repealed and recreated to read:

**Table 21.18-C
PLAIN MASONRY FOUNDATION WALLS ^d**

Maximum Wall Height (ft - in)	Depth of unbalanced backfill height (ft)	Minimum nominal wall thickness (inches)		
		Soil classes and lateral soil load ^a (psf per foot of depth)		
		GW, GP, SW and SP soils 30	GM, SM, SM-SC, ML, inorganic CL and ML-CL soils 45	GC, SC and MH soils 60
7 - 0 7 - 8	4 (or less)	8	8	8
	5	8	10	10
	6	10	12	10 (solid ^b)
	7	12	10 (solid ^b)	12 (solid ^b)
8 - 4	4 (or less)	8	8	8
	5	8	10	12
	6	10	12	12 (solid ^b)
	7	12	12 (solid ^b)	Note c
9 - 1	8	10 (solid ^b)	12 (solid ^b)	Note c
	4 (or less)	8	8	8
	5	8	10	12
	6	12	12	12 (solid ^b)
	7	12 (solid ^b)	12 (solid ^b)	Note c
	8	12 (solid ^b)	Note c	Note c
	9	Note c	Note c	Note c

a. For design lateral soils and descriptions of soil classes, see s. Comm 21.18(1)(d). Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist soil conditions without hydrostatic pressure.

b. Solid grouted hollow units.

c. An analysis in compliance with ACI 530 or reinforcement in accordance with Table 21.18-D, 21.18-E or 21.18-F is required.

d. Mortar shall be Type M or S and masonry shall be laid in running bond.

TABLE 21.18-D ^{b,c,d}

8, 10 OR 12 IN. REINFORCED MASONRY FOUNDATION WALLS WHERE $d > 5$ in.^e

Maximum Wall Height (ft - in)	Height of unbalanced backfill (ft)	Vertical reinforcement		
		Soil classes and lateral soil load ^a (psf per foot of depth)		
		GW, GP, SW and SP soils 30	GM, GC, SM, SM-SC and ML soils 45	SC, MH, ML-CL and inorganic CL soils 60
7 - 0 7 - 8	4 (or less)	#4 at 48" o.c.	#4 at 48" o.c.	#4 at 48" o.c.
	5	#4 at 48" o.c.	#4 at 48" o.c.	#4 at 40" o.c.
	6	#4 at 48" o.c.	#5 at 48" o.c.	#5 at 40" o.c.
	7	#4 at 40" o.c.	#5 at 40" o.c.	#6 at 48" o.c.
8 - 4	4 (or less)	#4 at 48" o.c.	#4 at 48" o.c.	#4 at 48" o.c.
	5	#4 at 48" o.c.	#4 at 48" o.c.	#4 at 40" o.c.
	6	#4 at 48" o.c.	#5 at 48" o.c.	#5 at 40" o.c.
	7	#5 at 48" o.c.	#6 at 48" o.c.	#6 at 40" o.c.
	8	#5 at 40" o.c.	#6 at 40" o.c.	#7 at 40" o.c.
9 - 1	4 (or less)	#4 at 48" o.c.	#4 at 48" o.c.	#4 at 48" o.c.
	5	#4 at 48" o.c.	#4 at 48" o.c.	#5 at 48" o.c.
	6	#4 at 48" o.c.	#5 at 48" o.c.	#6 at 48" o.c.
	7	#5 at 48" o.c.	#6 at 48" o.c.	#7 at 48" o.c.
	8	#5 at 40" o.c.	#7 at 48" o.c.	#8 at 48" o.c.
	9	#6 at 40" o.c.	#8 at 48" o.c.	#8 at 32" o.c.

a. For design lateral soil loads, see s. Comm 21.18(1)(d). Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist soil conditions without hydrostatic pressure.

b. Provisions for this table are based on construction requirements specified in s. Comm 21.18 (3) (b).

c. For alternative reinforcement, see s. Comm 21.18 (3) (b).

d. Mortar shall be Type M or S and masonry shall be laid in running bond.

e. The specified location of the reinforcement shall equal or exceed the effective depth distance, d , measured from the face of the soil side of the wall to the center of vertical reinforcement.

SECTION 70. Comm 21.18, Tables 21.18-E and 21.18-F are created to read:

TABLE 21.18-E ^{b,c,d}

10 OR 12 IN. REINFORCED MASONRY FOUNDATION WALLS WHERE $d \geq 6.75$ in.^e

REINFORCED MASONRY				
Maximum Wall Height (ft – in)	Height of unbalanced backfill (ft)	Vertical reinforcement		
		Soil classes and lateral soil load^a (psf per foot below natural grade)		
		GW, GP, SW and SP soils 30	GM, GC, SM, SM-SC and ML soils 45	SC, MH, ML-CL and inorganic CL soils 60
7 – 0 7 – 8	4 (or less)	#4 at 56" o.c.	#4 at 56" o.c.	#4 at 56" o.c.
	5	#4 at 56" o.c.	#4 at 56" o.c.	#4 at 56" o.c.
	6	#4 at 56" o.c.	#4 at 48" o.c.	#4 at 40" o.c.
	7	#4 at 56" o.c.	#5 at 56" o.c.	#5 at 40" o.c.
8 – 4	4 (or less)	#4 at 56" o.c.	#4 at 56" o.c.	#4 at 56" o.c.
	5	#4 at 56" o.c.	#4 at 56" o.c.	#4 at 48" o.c.
	6	#4 at 56" o.c.	#4 at 48" o.c.	#5 at 56" o.c.
	7	#4 at 48" o.c.	#4 at 32" o.c.	#6 at 56" o.c.
9 – 1	8	#5 at 56" o.c.	#5 at 40" o.c.	#7 at 56" o.c.
	4 (or less)	#4 at 56" o.c.	#4 at 56" o.c.	#4 at 56" o.c.
	5	#4 at 56" o.c.	#4 at 56" o.c.	#4 at 48" o.c.
	6	#4 at 56" o.c.	#4 at 40" o.c.	#4 at 32" o.c.
	7	#4 at 40" o.c.	#5 at 48" o.c.	#6 at 48" o.c.
	8	#4 at 32" o.c.	#6 at 48" o.c.	#4 at 16" o.c.
	9	#5 at 40" o.c.	#6 at 40" o.c.	#7 at 40" o.c.

a. For design lateral soil loads, see s. Comm 21.18 (1) (d). Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist soil conditions without hydrostatic pressure.

b. Provisions for this table are based on construction requirements specified in s. Comm 21.18 (3) (b).

c. For alternative reinforcement, see s. Comm 21.18 (3) (b).

d. Mortar shall be Type M or S and masonry shall be laid in running bond.

e. The specified location of the reinforcement shall equal or exceed the effective depth distance, d , measured from the face of the soil side of the wall to the center of vertical reinforcement.

TABLE 21.18-F^{b,c,d}
12 IN. REINFORCED MASONRY FOUNDATION WALLS WHERE $d \geq 8.75$ in.^e

REINFORCED MASONRY				
Maximum Wall Height (ft - in)	Height of unbalanced backfill (ft)	Vertical reinforcement		
		Soil classes and lateral soil load^a (psf per foot below natural grade)		
		GW, GP, SW and SP soils 30	GM, GC, SM, SM-SC and ML soils 45	SC, MH, ML-CL and inorganic CL soils 60
7 - 0 7 - 8	4 (or less)	#4 at 72" o.c.	#4 at 72" o.c.	#4 at 72" o.c.
	5	#4 at 72" o.c.	#4 at 72" o.c.	#4 at 72" o.c.
	6	#4 at 72" o.c.	#4 at 64" o.c.	#4 at 48" o.c.
	7	#4 at 72" o.c.	#4 at 48" o.c.	#5 at 56" o.c.
8 - 4	4 (or less)	#4 at 72" o.c.	#4 at 72" o.c.	#4 at 72" o.c.
	5	#4 at 72" o.c.	#4 at 72" o.c.	#4 at 72" o.c.
	6	#4 at 72" o.c.	#4 at 56" o.c.	#5 at 72" o.c.
	7	#4 at 64" o.c.	#5 at 64" o.c.	#4 at 32" o.c.
9 - 1	8	#4 at 48" o.c.	#4 at 32" o.c.	#5 at 40" o.c.
	4 (or less)	#4 at 72" o.c.	#4 at 72" o.c.	#4 at 72" o.c.
	5	#4 at 72" o.c.	#4 at 72" o.c.	#4 at 64" o.c.
	6	#4 at 72" o.c.	#4 at 56" o.c.	#5 at 64" o.c.
	7	#4 at 56" o.c.	#4 at 40" o.c.	#6 at 64" o.c.
	8	#4 at 64" o.c.	#6 at 64" o.c.	#6 at 48" o.c.
	9	#5 at 56" o.c.	#7 at 72" o.c.	#6 at 40" o.c.

a. For design lateral soil loads, see s. Comm 21.18 (1) (d). Soil classes are in accordance with the Unified Soil Classification System and design lateral soil loads are for moist soil conditions without hydrostatic pressure.

b. Provisions for this table are based on construction requirements specified in s. Comm 21.18 (3) (b).

c. For alternative reinforcement, see s. Comm 21.18 (3) (b).

d. Mortar shall be Type M or S and masonry shall be laid in running bond.

e. The specified location of the reinforcement shall equal or exceed the effective depth distance, d , measured from the face of the soil side of the wall to the center of vertical reinforcement.

SECTION 71. Comm 21.22 (1m) and (4) are repealed and recreated to read:

Comm 21.22 (1m) FLOOR JOISTS ON MASONRY WALLS. (a) On masonry walls, the floor joists shall rest upon one of the following:

1. A mortar-filled or grout-filled core masonry block.
2. A solid top masonry block.
3. A sill plate at least as wide as the nominal width of the wall.

Note: See s. Comm 21.10 (4) for treatment requirements for wood in contact with masonry.

(4) BEARING AND END CONFIGURATION. (a) *Sawn lumber.* 1. 'Joists.' Wood joists made of sawn lumber shall meet the following bearing requirements:

a. Wood joists supported on wood or metal shall have a bearing surface of at least 1 1/2 inches measured from the end of the joist.

b. Wood joists supported on masonry or concrete shall have a bearing surface of at least 3 inches measured from the end of the joist.

c. The tail end of a floor joist may not extend past the edge of a beam by more than the depth of the floor joist.

d. Wood floor joists with ends that intersect over a beam shall have the ends overlap at least 3 inches and be securely fastened together with at least two 12d common nails or the ends shall be butt-jointed or face-jointed and fastened with ties, straps, plates or solid blocking.

2. 'Beams and girders.' Beams and girders made of sawn lumber shall have a bearing surface on their supports of at least 3 linear inches parallel to the beam or girder and be at least as wide as the beam or girder.

(b) *Engineered wood products.* Bearing surface for engineered wood products shall be in accordance with the manufacturer's instructions provided those instructions were developed through structural analysis or product testing and are applicable to the configuration.

SECTION 72. Comm 21.22 (5) (b) is repealed and recreated to read:

Comm 21.22 (5) (b) *Boring of floor joists.* 1. 'General.' A hole may not be bored in a floor joist within 2 inches of a notch.

2. 'Holes near the edge.' Holes bored in the top or bottom 2 inches of a joist shall follow the limitations for notching under par. (a).

3. 'Other holes.' Holes bored in floor joists that are not within 2 inches of the top or bottom of the joist shall have their diameter limited to 1/3 the depth of the joist.

SECTION 73. Comm 21.24 is repealed and recreated to read:

Comm 21.24 Exterior covering. (1) The exterior walls shall be covered with a permanent weather resistant finish.