The Wisconsin Department of Commerce proposes an order to repeal ss. Comm 21.18 (1) (c) 1., 21.25 (3) (c), 22.03 (title), 22.06 (14), Table 22.07-1, Table 22.23 column 2 and footnote 1, 22.35 (4) (a) 4., and 23.04 Note;

to renumber ss. Comm 21.04 (4) (c) 1. to 3., 21.18 (1) (d), 21.28 (6) (a) to (c), 22.03 (1) and (2), Table 22.07-2, and 22.35 (4) (a) 5.;

to renumber and amend ss. Comm 21.04 (4) (c) (intro.), 21.04 (4) (c) 4., and 21.28 (6) (intro.);

to amend ss. Comm 20.05 (5), 20.24 (1), (2) and (2) Note, 21.02 (1) and 21.02 (1) (d), 21.03 (1) (a), 21.03 (5) (a) (intro.), 21.03 (10) (b), 21.04 (2) (b) 1.,21.04 (2) (e), 21.04 (3) (a), 21.045 (3) (c), 21.05 (1) (a) and 21.05 (5) (b), 21.08 (title), 21.08 (1) (a) 1., 21.08 (2) (title), and 21.08 (2) (a) to (c), 21.085 (1) (b), 21.10 (4) (a), 21.12, Table 21.18-A, Table 21.18-C, Table 21.18-F, 21.18 (4) (intro.) and 21.18 (4) (b), 21.22 (5) (b) 1., 21.30 (7) (b) and (d), 22.06 (15), 22.06 (31), 22.24, 22.31 (3), 22.34 (2), 22.35 (7) (b), and 23.14 (2) (a);

to repeal and recreate ss. Comm 20.07 (29) and 20.07 (35), 20.24 (4) to (17), 21.03 (1) (e), 21.03 (5) (b) 1., 21.04 (3) (b) 3., Table 21.18-A footnote e, 21.203 (2), 21.205, 21.22 (6), 21.27 (3) (b), 21.28 (1) (a), 21.28 (6) (b) and (c), 22.07, 22.21 (1), 22.30 (2), 22.35 (2), 22.35 (4) (a) 3., 22.35 (4) (b) and Table 22.35-1, 22.35 (6), and 23.16 (1);

and to create ss. Comm 20.07 (10t), 21.03 (1) (f) to (h), 21.04 (2) (f), 21.04 (3) (c) 3., 21.125 (4), 21.18 (1) (d), 21.24 (1) (title), Comm 21.24 (2) (title) and Comm 21.24 (3), 22.02 (3), 22.03 (title) and (1) to (3), 22.20, 22.21 (3), 22.335, 22.35 (4) (c) and (d), Table 22.35-3, and 25.01 Note.

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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), Stats., require the department to review these rules on a biennial basis. 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. There are new requirements proposed for exit distribution on the first floor. The section on adopted standards is reformatted and updated. New requirements are proposed for floor framing and floor overhangs. Various changes are made to the energy conservation requirements in chapter Comm 22 to bring the Wisconsin requirements in line with the national model energy code. Code sections that are substantially changed under this order are listed below:

Comm 20.24 - Reformats and revises adopted standards;

Comm 21.02 - Adds performance language related to total load path;

Comm 21.03 (1) (a) - Clarifies that the two required exits from the first floor must be doors;

Comm 21.03 (1) (e) - Adds requirements for exit separation on the first floor;

Comm 21.03 (1) (h) - Exempts very small dwellings from the previous 2 requirements;

Comm 21.04 (3) (b) 3. - Allows handrails to be placed on either side of a winding stairway if certain conditions are met;

Comm 21.05 (5) (b) - Clarifies a condition where safety glazing is required;

Comm 21.12 - Clarifies grading requirements;

Comm 21.125 (4) - Clarifies that the owner is responsible for removing erosion control measures once the site is stabilized;

Comm 21.18 (1) (d) - Adds requirements for fastening floor framing to the sill plate;

Comm 21.22 (6) - Adds requirements for cantilevered floors;

Comm 21.24 (3) - Adds and clarifies locations that require flashing;

Comm 22.02 (3) - Allows most additions to dwellings to meet less stringent energy requirements.

Comm 22.03 - Clarifies requirements for determining R-values for materials;

Comm 22.24 - Adds and clarifies requirements for skylight shaft walls;

Comm 22.35 (4) (b) - Simplifies the input values for HVAC controls; and

Comm 22.35 (7) - Clarifies air infiltration allowances

SECTION 1. Comm 20.05 (5) is amended to read:

Comm 20.05 (5) ACCESSORY BUILDINGS. With the exception of s. Comm 21.08 ~~(5)~~ (1), the provisions of this code do not apply to detached garages or to any accessory buildings detached from the dwelling.

SECTION 2. Comm 20.07 (10t) is created to read:

Comm 20.07 (10t) "Carport" means a structure used for storing motorized vehicles that is attached to a dwelling and that has at least 2 sides completely unenclosed.

SECTION 3. Comm 20.07 (29) and Comm 20.07 (35) are repealed and recreated to read:

Comm 20.07 (29) "Exit" means a direct, continuous, unobstructed means of egress from inside the dwelling to the exterior of the dwelling.

Comm 20.07 (35) "Garage" means a structure used for storing motorized vehicles that has any more than 2 sides completely enclosed.

SECTION 4. Comm 20.24 (1), (2) and (2) Note are amended to read:

Comm 20.24 Adoption of standards. (1) CONSENT. Pursuant to s. 227.21 (2), Stats., the attorney general and the revisor of statutes have consented to the incorporation by reference of the standards listed in ~~subs. (4) to (17)~~ Tables 20.24-1 to 20.24-12.

(2) ADOPTION OF STANDARDS. The standards referenced in ~~subs. (4) to (17)~~ Tables 20.24-1 to 20.24-12 are incorporated by reference into this chapter.

Note: Copies of the adopted standards are on file in the offices of the department, the secretary of state and the revisor of statutes. Copies of the standards may be purchased through the respective organizations listed in ~~subs. (4) to (17)~~ Tables 20.24-1 to 20.24-12.

SECTION 5. Comm 20.24 (4) to (17) are repealed and recreated to read:

Table 20.24-1

ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333
Standard Reference Number	**Title**
1. 318-99	Building Code Requirements for Structural Concrete
2. 530-99	Building Code Requirements for Masonry Structures
3. 530.1-99	Specification for Masonry Structures

Table 20.24-2

AF&PA	American Forest & Paper Association

	1111 19th Street, N.W., Suite 800 Washington, D.C. 20036
Standard Reference Number	**Title**
1. NDS-2001	National Design Specification For Wood Construction Including 2001 Supplement
2. Technical Report # 7 January, 1987	The Permanent Wood Foundation System, Basic Requirements, except for section 3.3.1

Table 20.24-3

AISC	American Institute of Steel Construction One E. Wacker Drive, Suite 3100 Chicago, IL 60601
Standard Reference Number	**Title**
1. ASD	Specification For Structural Steel Buildings, Allowable Stress Design And Plastic Design, with Commentary, June 1, 1989

Table 20.24-4

	American Log Builders' Association PO Box 28608 Bellingham, WA 98228
Standard Reference Number	**Title**
1996	Log Building Standards for Residential, Handcrafted, Interlocking, Scribe-fit Construction

Table 20.24-5

ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
Standard Reference Number	**Title**
1. C 62-01	Standard Specification For Building Brick (Solid Masonry Units Made From Clay Or Shale)
2. C 90-02	Standard Specification For Hollow Load-Bearing Concrete Masonry Units
3. C 216-02	Standard Specification For Facing Brick (Solid Masonry Units Made From Clay Or Shale)
4. C 270-01a	Standard Specification For Mortar For Unit Masonry
5. C 476-01	Standard Specification For Grout For Masonry
6. C 652-01a	Standard Specification For Hollow Brick (Hollow Masonry Units Made From Clay Or Shale)
7. D 225-01	Standard Specification For Asphalt Shingles (Organic Felt) Surfaced With Mineral Granules
8. D 226-97a	Standard Specification For Asphalt-Saturated Organic Felt Used In Roofing And Water Proofing
9. D 3462-02	Standard Specification For Asphalt Shingles Made From Glass Felt And Surfaced With Mineral Granules

10. D 4869-02	Standard Specification For Asphalt-Saturated Organic Felt Shingle Underlayment Used In Roofing

Table 20.24-6

ASHRAE	American Society of Heating, Refrigerating, and Air-conditioning Engineers, Inc. 1791 Tullie Circle, N.E. Atlanta, GA 30329
Standard Reference Number	**Title**
1. 2001 Fundamentals	ASHRAE Handbook, Fundamentals
2. 1995 HVAC Applications	ASHRAE HVAC Applications Handbook
3. 1996 HVAC Systems & Equipment	ASHRAE HVAC Systems & Equipment Handbook

Table 20.24-7

NAIMA	North American Insulation Manufacturers Association 44 Canal Canter Plaza, Suite 310 Alexandria, VA 22314
Standard Reference Number	**Title**
1. 3rd Edition, 1998	Fibrous Glass Duct Construction Standards

Table 20.24-8

NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02269
Standard Reference Number	**Title**
1. NFPA 54-1999, chapters 1 to 4	National Fuel Gas Code

Table 20.24-9

NIST	National Institute of Standards and Technology U.S. Department of Commerce Washington, D.C. 20234
Standard Reference Number	**Title**
1. NBS Building Science Series 87, July 1976	Model Documents for the Evaluation, Approval, and Inspection Of Manufactured Buildings

Table 20.24-10

NWWDA	National Wood Window and Door Association 1400 East Touhy Avenue, Suite 470 Des Plaines, IL 60018
Standard Reference Number	**Title**
1. AAMA/NWWDA 101/I.S.2-97	Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors

Table 20.24-11

SMACNA	Sheet Metal and Air Conditioning Contractors National Association Vienna, VA 22180
Standard Reference Number	**Title**
1. Seventh Edition, 1998	Residential Comfort System Installation Standards Manual
2. Second Edition, 1995, Including Addendum No. 1, November 1997	HVAC Duct Construction Standards – Metal And Flexible
3. Sixth Edition, 1992	Fibrous Glass Duct Construction Standards

Table 20.24-12

TPI	Truss Plate Institute, Inc. 583 D'Onofrio Drive Madison, WI 53719
Standard Reference Number	**Title**
1. ANSI/TPI 1-1995	National Design Standard for Metal Plate Connected Wood Truss Construction

SECTION 6. Comm 21.02 (1) and 21.02 (1) (d) are amended to read:

Comm 21.02 (1) DESIGN LOAD. Every dwelling shall be designed and constructed to support the actual dead load, live loads and wind loads acting upon it without exceeding the allowable stresses of the material. The construction of buildings and structures shall result in a system that provides a complete load path capable of transferring all loads from point of origin through the load-resisting elements to the foundation.

Comm 21.02 (1) (d) *Fasteners*. All building components shall be fastened to withstand the dead load, live load and wind load. ~~Where the effect of the dead load exceeds the wind load effect, the dwelling need not be anchored to the foundation.~~

SECTION 7. Comm 21.03 (1) (a) is amended to read:

Comm 21.03 (1) (a) ~~Every~~ Except as allowed under par. (h), every dwelling unit shall be provided with at least 2 ~~exits~~ exit doors accessible from the first floor.

SECTION 8. Comm 21.03 (1) (e) is repealed and recreated to read:

Comm 21.03 (1) (e) Except as allowed under pars. (f) and (h), the 2 required exit doors shall be separated by at least the greater of the following distances:

1. One-third the length of the longest diagonal of the floor in plan view, exclusive of an attached garage.

2. 20 feet.

SECTION 9. Comm 21.03 (1) (f) to (h) are created to read:

Comm 21.03 (1) (f) 1. First floor levels that do not meet the separation requirements under par. (e), shall have at least one egress window complying with sub. (6) on that floor level.

2. An egress window to comply with subd. 1. shall be separated from at least one door on the first floor by one of the distances under par. (e).

3. If first floor levels that do not meet the separation requirements under par. (e) contain one or more sleeping rooms, each sleeping room shall have at least one egress window complying with sub. (6).

(g) 1. The exit separation distance required under par. (e) shall be calculated or measured as a straight line from the midpoint of one doorway to the midpoint of the other doorway.

2. For exiting through an attached garage, the separation distance shall be measured using the door connecting the garage and the dwelling. Distance within the garage shall be ignored.

(h) 1. Dwellings consisting of no more than a first floor with a maximum floor area of 250 square feet and a loft area not exceeding half of the first floor area, shall be provided with at least one exit door leading directly to the exterior and at least one egress window that complies with sub. (6).

2. a. Dwellings that meet the size restrictions under subd. 1., are not required to meet the exit separation requirements under subs. (e) or (f).

b. If a dwelling that meets the size restrictions under subd. 1., has more than one room on the first floor, the door and the egress window shall be located in different rooms.

SECTION 10. Comm 21.03 (5) (a) (intro.) is amended to read:

Comm 21.03 (5) (a) *General.* ~~All~~ Except as provided in par. (b), all basements and ground floors shall be provided with at least one exit of the following types:

SECTION 11. Comm 21.03 (10) (b) is amended to read:

Comm 21.03 (10) (b) Balconies shall be provided with guardrails in accordance with s. Comm 21.04 ~~(2)~~ (3).

SECTION 12. Comm 21.04 (2) (b) 1. is amended to read:

Comm 21.04 (2) (b) 1. a. Except for spiral staircases under subd. 2., risers may not exceed 8 inches in height measured vertically from tread to tread.

b. At the top and bottom of a flight, measurement shall be taken from the top of the nosing to the finished floor surface unless the finished surface is carpeting, in which case measurement shall be made to the hard surface below the carpeting.

SECTION 13. Comm 21.04 (2) (e) 1. is amended to read:

Comm 21.04 (2) (e) *Uniformity*. 1. Within a stairway flight, tread ~~widths~~ depths and riser heights may vary by a maximum of 3/16 inch.

SECTION 14. Comm 21.04 (2) (f) is created to read:

Comm 21.04 (2) (f) *Open risers*. Stairways with open risers shall be constructed to prevent the through-passage of a sphere with a diameter of 6 inches or larger between any 2 adjacent treads.

SECTION 15. Comm 21.04 (3) (a) is amended to read:

Comm 21.04 (3) (a) *General.* 1. ~~Stairs~~ Stair flights with more than 3 risers shall be provided with at least one handrail for the full length of the ~~stairs~~ stair flight.

2. Handrails or guardrails shall be provided on all open sides of ~~stairs~~ stair flights consisting of more than 3 risers and on all open sides of areas that are elevated more than 24 inches above the floor or exterior grade.

3. Handrails and guardrails shall be constructed to prevent the through-passage of a sphere with a diameter of 6 inches or larger.

4. Handrails and guardrails shall be designed and constructed to withstand a 200 pound load applied in any direction.

5. Exterior handrails and guardrails shall be constructed of metal, decay resistant or pressure-treated wood, or shall be protected from the weather.

SECTION 16. Comm 21.04 (3) (b) 3. is repealed and recreated to read:

Comm 21.04 (3) (b) 3. 'Winders.' a. Except as provided under subpar. b., the required handrail on winder steps shall be placed on the side where the treads are wider.

b. Where all winder steps in a flight have a tread depth of at least 9 inches from nosing to nosing measured at a point 12 inches from the narrow end of the tread, the required handrail may be located on either side of the stairway.

SECTION 17. Comm 21.04 (3) (c) 3. is created to read:

Comm 21.04 (3) (c) 3. 'Opening size.' Guardrails shall be constructed to prevent the through-passage of a sphere with a diameter of 6 inches or larger.

SECTION 18. Comm 21.04 (4) (c) (intro.) and 1. to 3. are renumbered Comm 21.04 (4) (c) 1. (intro.) and a. to c. and Comm 21.04 (4) (c) 1. (intro.), as renumbered, is amended to read:

Comm 21.04 (4) (c) 1. Except as provided in ~~subds. 1. to 4.~~ subpars. a. to c., level landings shall be provided on each side of any door located at the top or base of a stairs, regardless of the direction of swing. In the following exceptions, stairways to attached garages, carports or porches are considered interior stairs:

SECTION 19. Comm 21.04 (4) (c) 4. is renumbered Comm 21.04 (4) (c) 2. and amended to read:

Comm 21.04 (4) (c) 2. The exterior landing, platform or sidewalk at an exterior doorway shall be located a maximum of 8 inches below the interior floor elevation~~. The landing, platform or sidewalk~~ and shall have a length ~~at least equal to the width of the door~~ of at least 36 inches in the direction of travel out of the dwelling.

SECTION 20. [Deleted under germane modification]

SECTION 21. Comm 21.05 (1) (a) and 21.05 (5) (b) are amended to read:

Comm 21.05 (1) (a) *Exception*. Habitable rooms, other than bedrooms, located in basements or ground floors ~~need not be provided with~~ do not require natural light.

Comm 21.05 (5) (b) In a wall that comprises part of a tub or shower enclosure where the glazing is within 5 feet vertically of the lowest drain inlet and within 3 feet horizontally of the nearest part of the inner rim of the tub.

SECTION 22. Comm 21.08 (title), 21.08 (1) (a) 1., 21.08 (2) (title), and 21.08 (2) (a) to (c) are amended to read:

Comm 21.08 (title) **Fire separation and ~~living~~ dwelling unit separation.**

Comm 21.08 (1) (a) 1. The walls and ceiling between an attached garage and any portion of the dwelling, including attic or soffit areas, shall be ¾-hour fire-resistive construction or shall be constructed as specified in any of the following:

Comm 21.08 (2) (title) ~~LIVING~~ DWELLING UNIT SEPARATION.

Comm 21.08 (2) (a) *General*. In 2-family dwellings, ~~living~~ dwelling units shall be separated from each other, from common use areas, from shared attics, and from exit access corridors.

Comm 21.08 (2) (b) *Doors*. Any door installed in the ~~living~~ dwelling unit separation shall have the door and frame assembly listed by an independent testing agency as having a minimum fire-resistive rating of 20 minutes. The test to determine the 20-minute rating is not required to include the hose stream portion of the test.

Comm 21.08 (2) (c) *Walls*. Walls in the ~~living~~ dwelling unit separation shall be protected by not less than one layer of ½-inch gypsum wallboard or equivalent on each side of the wall with joints in compliance with sub. (1) (a) 2.

SECTION 23. Comm 21.085 (1) (b) is amended to read:

Comm 21.085 (1) (b) At all interconnections between concealed vertical and horizontal spaces including the attachment between a carport and a dwelling.

SECTION 24. Comm 21.10 (4) (a) is amended to read:

Comm 21.10 (4) (a) All pressure-treated wood and plywood shall be identified by a quality mark or certificate of inspection of an approved inspection agency which maintains

continued supervision, testing and inspection over the quality of the product ~~in accordance with the adopted standards of the American Wood Preservers Association~~.

SECTION 25. Comm 21.12 is amended to read:

Comm 21.12 Grade. The finished grade of the soil shall slope away from the dwelling at a rate of at least 1/2-inch per foot ~~to provide drainage away from the dwelling~~ for a minimum distance of 10 feet, or to the lot line, whichever is less.

SECTION 26. Comm 21.125 (4) is created to read:

Comm 21.125 (4) DISMANTLING OF EROSION CONTROL PROCEDURES. Except for permanent erosion control systems, the owner shall be responsible for dismantling and removing erosion control procedures once the soil on the site is stabilized.

SECTION 27. Comm 21.18 (1) (c) 1. is repealed.

SECTION 28. Comm 21.18 (1) (d) is renumbered Comm 21.18 (1) (e).

SECTION 29. Comm 21.18 (1) (d) is created to read:

Comm 21.18 (1) (d) *Floor framing*. 1. Floor framing shall be fastened to the sill plate by one of the following methods:

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

b. In accordance with structural analysis.

c. In accordance with the fastener table printed in the appendix to this code.

2. a. Where the floor framing is parallel to the foundation wall, solid blocking or bridging shall be installed in at least the first adjacent joist space at a spacing of no more than 32 inches on center.

b. Solid blocking shall be of the same depth as the joist.

c. Fastening of the blocking or bridging shall be in accordance with structural analysis or the fastener table printed in the appendix to this code.

SECTION 30. Table 21.18-A, line 14 is amended to read:

Table 21.18-A (line 14) (partial table)

Description of Backfill Material[e]	**Unified Soil Classification**	**Design Lateral,** etc.
Inorganic clayey silts, elastic silts	MH	~~b~~ 60[d]

SECTION 31. Table 21.18-A, footnote "e" is repealed and recreated to read:

[e] Soil classes are in accordance with the Unified soil Classification System, ASTM D2487, and design lateral loads are for moist soil conditions without hydrostatic pressure.

SECTION 32. Table 21.18-C, headings for columns 3 to 5 are amended to read:

Table 21.18-C (headings) (partial table)

GW, GP, SW and SP soils 30	**GM, GC, SM, SM-SC~~,~~ and ML~~, inorganic CL and ML-CL~~ soils 45**	**~~GC,~~ SC, ~~and~~ MH, ML-CL and inorganic CL soils 60**

SECTION 33. Table 21.18-F, column 3, line 14 is amended to read:

Table 21.18-F (partial table)

Maximum Wall Height (ft-in)	**Height of unbalanced backfill (ft)**	**GW, GP, SW and SP soils 30**
9-1	4 (or less)	#4 at 72" o.c.
	5	#4 at 72" o.c.
	6	#4 at 72" o.c.
	7	#4 at 56" o.c.
	8	#4 at ~~64~~ 40" o.c.
	9	#5 at 56" o.c.

SECTION 34. Comm 21.18 (4) (intro.) and 21.18 (4) (b) are amended to read:

Comm 21.18 (4) (intro.) Wood foundations shall be designed and constructed in accordance with "The Permanent Wood Foundation System, Basic Requirements, Technical Report No. 7", as adopted under ~~s. Comm 20.24 (5) (b)~~ s. Comm 20.24, Table 20.24-2 and the following exception. The thickness of the foundation shall be no less than the thickness of the wall it supports.

Comm 21.18 (4) (b) *Materials*. All lumber and plywood shall be pressure treated with preservative and labeled to show conformance with AWPA C-22 ~~as adopted under s. Comm 20.24 (9)~~.

SECTION 35. Comm 21.203 (2) is repealed and recreated to read:

Comm 21.203 (2) CONFIGURATION. The floor shall be sloped such that water is removed in accordance with one of the following:

(a) Water drains toward the overhead door or to exterior grade such that no damage will be caused to any structural member or wall covering of the garage or the dwelling.

(b) Water drains into an interior floor drain that complies with the requirements of ch. Comm 82.

Note: See s. Comm 82.34 for floor drain requirements.

SECTION 36. Comm 21.205 is repealed and recreated to read:

Comm 21.205 Wood floors in contact with the ground. Wood floors in contact with the ground shall comply with the requirements under s. Comm 21.18 (4).

SECTION 37. Comm 21.22 (5) (b) 1. is amended to read:

Comm 21.22 (5) (b) 1. 'General.' A hole may not be bored in a floor joist within 2 inches of a notch or another hole. In no case shall the distance between adjacent holes be less than the diameter of the larger hole.

SECTION 38. Comm 21.22 (6) is repealed and recreated to read:

Comm 21.22 (6) OVERHANG OF FLOORS. (a) *General.* Except as provided in pars. (b) and (c), a floor joist overhang shall be cantilevered beyond the outer edge of the supporting wall below it by no more than the actual depth of the joist or shall be designed through structural analysis in accordance with s. Comm 21.02 (3).

(b) *Joist overhangs parallel to the main floor framing system*. Joist overhangs that are extensions of, and parallel to, the main floor framing system may extend beyond the depth of the joist without structural analysis provided they meet all of the following conditions:

1. The overhang is cantilevered no more than 2 feet beyond the outer edge of the supporting wall below it.

2. a. The overhang supports a uniform load limited to the weight of the bearing wall and the tributary roof area above it.

b. The tributary length of the roof area, excluding the eave overhang, is no more than 2 feet greater than the actual length of the joist directly below.

c. The eave overhang is no more than 2 feet.

Note: The tributary length is usually half the span of the joist or rafter

3. The joist overhang does not support any concentrated loads. For the purposes of this subsection, a framed opening in the wall with a rough opening of 4 feet or less shall be considered uniform loading.

4. a. The cantilevered joist is doubled at the supporting wall.

b. The doubled joist length extends inward beyond the inner edge of the supporting wall by the same distance as the cantilever.

c. The added joist member is secured to the main joist as stated in the nailing schedule in the appendix, under the heading for "floor framing, built-up girder and beams, top loaded".

(c) *Joist overhangs perpendicular to the main floor framing system*. Joist overhangs that are perpendicular to the main floor framing system, or lookout joists, may extend beyond the depth of the joist without structural analysis provided they meet all of the following conditions:

1. The joist overhang is cantilevered no more than 2 feet beyond the outer edge of the supporting wall below it.

2. a. A double floor joist is used to support the lookout joist.

b. The double floor joist is located a distance of at least 2 times the cantilever length inward from the outer edge of the supporting wall below.

c. The lookout joists are fastened to the double joist with metal hangers.

3. The joist overhang supports no more than either a non-bearing wall or a wall that supports only a roof which spans no more than the floor overhang cantilever length plus the eave overhang**.**

(d) All overhangs longer than the depth of the supporting joist that do not meet all of the conditions under pars. (b) or (c) shall be designed through structural analysis.

SECTION 39. Comm 21.24 (1) (title), Comm 21.24 (2) (title) and Comm 21.24 (3) are created to read:

Comm 21.24 (1) (title) GENERAL.

Comm 21.24 (2) (title) DURING CONSTRUCTION.

Comm 21.24 (3) FLASHING. (a) Corrosion-resistant flashing shall be installed in the exterior wall to prevent water from entering the wall cavity or coming in contact with the structural framing components.

(b) The flashing shall extend to the surface of the exterior wall finish and prevent water from reentering the exterior wall.

(c) Flashing shall be provided at all of the following locations:

1. At the top of all exterior door and window openings, unless using self-flashing windows that provide at least one inch of flashing around the opening, including the corners.

2. At the intersection of chimneys or other masonry construction with frame walls.

3. Under and at the ends of masonry, wood or metal copings and sills.

4. Continuously above all projecting wood trim.

5. Where porches, decks or stairs attach to a wall or floor assembly of wood frame construction.

6. At wall and roof intersections.

7. At built-in gutters.

SECTION 40. Comm 21.25 (3) (c) is repealed.

SECTION 41. Comm 21.26 (7) (a) 4. is amended to read:

Comm 21.26 (7) (a) 4. Weep holes shall be provided at the bottom masonry course at maximum intervals of ~~3~~ 2 feet.

SECTION 42. Comm 21.27 (3) (b) is repealed and recreated to read:

Comm 21.27 (3) (b) *Ice dam protection*. 1. Shingled or shake roofs that extend over a heated area of a dwelling or attached garage and that have a slope of 4:12 or less shall be provided with ice dam protection in the form of sheet metal or a product labeled as meeting the requirements of ASTM D 1970.

2. The ice dam protection shall extend at least 30 inches up the roof slope from the roof edge and at least 12 inches up the roof slope beyond the inner face of the exterior wall.

SECTION 43. Comm 21.28 (1) (a) is repealed and recreated to read:

Comm 21.28 (1) (a) *Ridge boards*. 1. Where rafters meet to form a ridge, the rafters shall be attached to a ridge board.

2. The ridge board shall have a depth at least equal to the length of the cut end of the rafter abutting it.

3. Where all rafters are placed directly opposite each other or are offset at the ridge board by less than the thickness of the rafter, the ridge board shall have a nominal thickness of at least 1 inch.

4. Where one or more rafters are offset at the ridge board by more than the thickness of the rafter, the ridge board shall have a nominal thickness of at least 2 inches.

SECTION 44. Comm 21.28 (6) (a) to (c) are renumbered Comm 21.28 (6) (b) to (d).

SECTION 45. Comm 21.28 (6) (intro.) is renumbered Comm 21.28 (6) (a) and amended to read:

Comm 21.28 (6) (a) (title) *General.* 1. Notching or boring of beams or girders is prohibited unless determined through structural analysis.

2. Notching and boring of ceiling joists and rafters shall comply with pars. ~~(a) and (b)~~ (b) and (c).

SECTION 46. Comm 21.28 (6) (b) and (c), as renumbered, are repealed and recreated to read

Comm 21.28 (6) (b) *Notching*. 1. Notches located in the top or bottom of ceiling joists and rafters are prohibited from all of the following:

a. Having a depth exceeding 1/6 the depth of the member.

b. Having a length exceeding 1/3 the depth of the member.

c. Being located in the middle 1/3 of the span of the member.

2. Where ceiling joists or rafters are notched at the ends, the notch may not exceed ¼ the depth of the member.

3. Bird mouth cuts may not exceed 1/3 the depth of the rafter unless the seat cut bears fully on the wall plate.

Comm 21.28 (6) (c) *Boring*. 1. Holes bored within 2 inches of the top or bottom of ceiling joists or rafters may not be located in the middle 1/3 of the span of the member.

2. The diameter of a hole may not exceed 1/3 the depth of the member.

3. A hole may not be bored within 2 inches of a notch or another hole.

4. The distance between adjacent holes may not be less than the diameter of the larger hole.

SECTION 47. Comm 21.30 (7) (b) and (d) are amended to read:

Comm 21.30 (7) (b) All flue liners shall be laid in a full ~~mortar~~ bed of refractory mortar or refractory cement.

Comm 21.30 (7) (d) There shall be a minimum clearance of ½-inch and a maximum clearance of 1-inch between the flue liner and the chimney walls.

SECTION 48. Comm 22.02 (3) is created to read:

Comm 22.02 (3) (a) Additions to dwellings may follow the energy code that was in effect at the time the current dwelling was originally constructed, provided the footprint of the addition has an area equal to 50% or less of the area of the footprint of the current dwelling.

(b) Portions of garages, porches and decks without living space directly above them are excluded from consideration under sub. (a).

SECTION 49. Comm 22.03 (title) is repealed and recreated to read:

Comm 22.03 (title) **Materials, equipment and systems installation.**

SECTION 50. Comm 22.03 (1) and (2) are renumbered (4) and (5).

SECTION 51. Comm 22.03 (1) to (3) are created to read:

Comm 22.03 (1) GENERAL. When available, information and values on thermal properties, performance of building envelope sections and components, and heat transfer shall be obtained from the ASHRAE Handbook of Fundamentals.

(2) LABORATORY OR FIELD TEST MEASUREMENTS. (a) *General thermal envelope materials.* When information specified under sub. (1) is not available, or when a different value is claimed, supporting data shall be obtained using one of the following test methods:

a. ASTM C177, Test method by guarded hot plate apparatus.

b. ASTM C236, Standard test method by means of a guarded hot box.

c. ASTM C335, Test method of horizontal pipe insulation.

d. ASTM C518, Test method by means of the heat flow meter apparatus.

e. ASTM C976, Standard test method by means of a calibrated hot box.

(b) *Foam plastic insulation.* 1. When information specified under sub. (1) is not available, or when a different value is claimed, foam plastic insulation that uses a gas other than air as the insulating medium shall use laboratory or field tests conducted on representative samples that have been aged for the equivalent of 5 years or until the R–value has stabilized.

2. The tests shall be conducted by an independent third party using the standards listed under par. (a) and shall be submitted for department review and approval in accordance with s. Comm 20.18.

(c) *Concrete masonry units.* Systems using integrally-insulated concrete masonry units shall be evaluated for thermal performance in accordance with one of the following:

1. Default values as approved by the department with no extrapolations or interpolations.

2. Laboratory or field test measurements specified under par (a).

3. The material approval process specified in s. Comm 20.18.

(3) GENERAL INSTALLATION. (a) Materials, equipment and systems shall be identified in a manner that will allow a determination of their compliance with the applicable provisions of this chapter.

(b) All insulation materials, caulking and weatherstripping, fenestration assemblies, mechanical equipment and systems components, and water-heating equipment and system components shall be installed in accordance with the manufacturer's installation instructions.

(c) Manufacturer's installation instructions shall be available on the job site at the time of inspection.

SECTION 52. Comm 22.06 (14) is repealed.

SECTION 53. Comm 22.06 (15) is amended to read:

Comm 22.06 (15) "Gross exterior wall area" means the normal projection of the dwelling envelope wall area bounding interior space which is conditioned by an energy-using system including opaque wall, window and door area. The gross area of exterior walls consists of all opaque wall areas, including between floor spandrels, box sills, window area including sash, and door areas when they are exposed to outdoor air or unconditioned spaces and enclosed heated or mechanically cooled space, including interstitial area between 2 such spaces. The gross exterior wall area includes the total basement wall area if it is less than 50% below grade. The gross exterior wall area includes non-opaque areas such as windows and doors of all basement walls. Any skylight shaft walls that are 12 inches or more in depth, measured from the ceiling plane to the roof deck, shall be considered in the gross area of exterior walls and are excluded from consideration in the roof assembly.

SECTION 54. Comm 22.06 (31) is amended to read:

Comm 22.06 (31) "Roof assembly" means all components of the roof and ceiling envelope through which heat flows, thus creating a building transmission heat loss or gain, where such assembly is exposed to outdoor air and encloses a heated or mechanically cooled space. The gross area of a roof assembly consists of the total interior surface ~~of the assembly, including skylights exposed to the heated or mechanically cooled spaced.~~ of all roof or ceiling components, including opaque surfaces, dormer and bay window roofs, treyed ceilings, overhead portions of an interior stairway to an unconditioned attic, doors and hatches, glazing and skylights exposed to conditioned space, that are horizontal or sloped at an angle less than 60 degrees from the horizontal. A roof assembly, or portions thereof, having a slope of 60 degrees or greater from horizontal shall be considered in the gross area of exterior walls and shall be excluded from consideration in the roof assembly. Any skylight shaft walls less than 12 inches in depth, as measured from the ceiling plane to the roof deck, shall be considered in the roof assembly and are excluded from consideration in the gross area of exterior walls.

SECTION 55. Comm 22.07 is repealed and recreated:

Comm 22.07 Indoor and outdoor temperatures. (1) GENERAL. The indoor temperatures listed in sub. (2) and the outdoor temperatures listed in Table 22.07 shall be used to determine the total dwelling heat loss and to select the size of the of the heating equipment.

(2) INDOOR DESIGN TEMPERATURES. Unheated, non-habitable basement areas shall use a design temperature of less than 50°F. All other areas of a dwelling shall use a design temperature of 70°F.

SECTION 56. Table 22.07-1 is repealed.

SECTION 57. Table 22.07-2 is renumbered Table 22.07.

SECTION 58. Comm 22.20 is renumbered Comm 22.20 (1).

SECTION 59. Comm 22.20 (1) (title) is created to read:

Comm 22.20 (1) (title) APPLICATION.

SECTION 60. Comm 22.20 (2) is created to read:

Comm 22.20 (2) PRESCRIPTIVE PATH FOR ADDITIONS. (a) As an alternative to demonstrating compliance with ss. Comm 22.23 to 22.28, dwelling additions with a conditioned floor area less than 500 square feet shall meet the prescriptive envelope component criteria in Table 22.20.

(b) The U-factor of each individual fenestration product shall be used to calculate an area-weighted average fenestration product U-factor for the addition, which may not exceed the listed values in Table 22.20.

(c) The total area of fenestration products may not exceed 25 percent of the gross exterior wall area of the addition.

(d) The R-values for opaque thermal envelope components shall be equal to or greater than the applicable listed values in Table 22.20.

TABLE 22.20
PRESCRIPTIVE ENVELOPE COMPONENT CRITERIA FOR ADDITIONS TO AND REPLACEMENT WINDOWS FOR EXISTING SINGLE-FAMILY DWELLINGS

DESIGN ZONE [a]	MAXIMUM	MINIMUM					
	Fenestration U-factor [b, c]	Ceiling R-value [d]	Wall R-value	Floor R-value [d]	Basement wall R-value [e]	Slab perimeter R-value and depth [f]	Crawl space wall R-value [g]
2-4	0.35	R-38	R-21	R-21	R-11	R-13,4 ft.	R-20
1	0.35	R-38	R-21	R-21	R-19	R-18, 4 ft.	R-20

a. Refer to Figure 22.07 for design zone boundaries.
b. Exception: replacement skylights shall have a maximum U-factor of 0.50.
c. Fenestration shall meet s. Comm 22.05.
d. Floors over outside air shall meet Ceiling R-value requirements.
e. Basement wall insulation shall be installed in accordance with s. Comm 22.28.
f. Slab perimeter insulation shall be installed in accordance with s. Comm 22.26. An additional R-2 shall be added to Slab perimeter R-value in the table if the slab is heated.
g. Crawl space wall R-value shall apply to unventilated crawl spaces only. Crawl space insulation shall be installed in accordance with s. Comm 22.27.

SECTION 61. Comm 22.21 (1) is repealed and recreated to read:

Comm 22.21 (1) GENERAL. (a) The stated U_o- , U- or R-value of an assembly may be increased or decreased, provided the total thermal transmission heat gain or loss for the entire dwelling does not exceed the total U_o- ,U- or R-value of an assembly resulting from conformance to the values specified in ss. Comm 22.23 to 22.28.

(b) Where basement and crawl space walls are part of the building envelope, their U-factors shall be based on the wall components and surface air films. Adjacent soil may not be considered in the determination.

Note: Foundation insulation techniques can be found in the DOE Building Foundation Design Handbook.

SECTION 62. Comm 22.21 (3) is created to read:

Comm 22.21 (3) APPLIANCE CREDITS. The maximum overall heat loss allowance may be increased when an equivalent amount of energy savings is provided by the following types of high efficiency heating equipment:

(a) A furnace with an AFUE of 90% or greater.

(b) A boiler with an AFUE of 81% or greater.

Note: AFUE means annual fuel utilization efficiency.

(c) An air-source heat pump with an HSPF of 7.8 or greater.

Note: HSPF means heating seasonal performance factor.

(d) A geothermal heat pump.

(e) A radiant electric heat panel that meets all of the following requirements:

1. The panel delivers at least 50% of its heat output by radiation.

2. The panel reaches its operating temperature in 15 minutes or less.

3. a. The panel is surface mounted.

b. The panel is not located behind finish material, such as paneling or carpeting and is not located within a wall, floor or ceiling assembly.

Note: The UDC Energy Worksheet and WIScheck software will determine the amount of credit available.

SECTION 63. Comm 22.21, Table 22.21, footnote g is repealed.

SECTION 64. Comm 22.22 (6) is amended to read:

Comm 22.22 (6) WOOD FOUNDATIONS. Vapor retarders for wood foundations shall be in accordance with the standards adopted under s. ~~Comm 20.24 (5) (b)~~ Comm 20.24, Table 20.24-2 2.

SECTION 65. Comm 22.23, Table 22.23, column 2 (entitled "Gage of Stud") and footnote 1 are repealed.

SECTION 66. Comm 22.24 is amended to read:

Comm 22.24 Roof and ceiling. The combined thermal transmittance value, or U_o, of the gross area of the roof or ceiling assembly may not exceed the value given in Table 22.21. Equation 2 in s. Comm 22.31 (1) shall be used to determine acceptable combinations to meet this requirement. Skylight shafts, 12 inches in depth and greater, shall be provided with cavity insulation of R-13 and continuous insulation over framing of R-5, or have an equivalent assembly U-value.

SECTION 67. Comm 22.30 (2) is repealed and recreated to read:

Comm 22.30 (2) WINDOW AND DOOR ASSEMBLIES. (a) *General.* Except as specified in par. (b), window and door assemblies installed in the building envelope shall comply with the following maximum infiltration rates, determined in accordance with ASTM E 283:

1. Windows and sliding doors shall have a maximum infiltration rate of 0.3 cfm per square foot of window area.

2. Swinging doors shall have a maximum infiltration rate of 0.5 cfm per square foot of area of the door assembly.

(b) *Exception.* Site-constructed doors and windows shall be sealed with gasketing or weatherstripping or shall be covered with a storm door or storm window.

SECTION 68. Comm 22.31 (3) is amended to read:

Comm 22.31(3) EQUATION 3.

$$U_0 = \frac{\left(U_{f1} \times A_{f1}\right) + \left(U_{f2} \times A_{f2}\right) + \left(U_{fn} \times A_{fn}\right)}{A_0}$$

where:

U_o = the overall thermal transmittance of the floor assembly.
A_o = the gross area of the floor assembly.
U_{fn} = the thermal transmittance of the various heat transfer paths through the floor.
A_{fn} = the area associated with the various paths of heat transfer.

(a) Unless exact areas are calculated, wood frame floors shall be assumed to be 7% framing area for joists 24-inches on center and 10% framing area for joists 16-inches on center.

(b) Access doors or hatches in a floor assembly shall be calculated as a separate element of the floor assembly using equation 3.

SECTION 69. Comm 22.335 is created to read:

Comm 22.335 Definitions. In this subchapter:

(1) "Glazing area" means the total area of the glazed fenestration measured using the rough opening and including sash, curbing or other framing elements that enclose conditioned space. For doors where the daylight opening area is less than 50 percent of the door area, the glazing area is the daylight opening area. For all other doors, the glazing area is the rough opening area for the door including the door and the frame.

(2) "Proposed design" means a description of the proposed building design used to estimate annual energy costs for determining compliance based on total building performance.

(3) “Standard design” means a dwelling whose enclosure elements and energy-consuming systems are designed in accordance with subchs. V and VI.

(4) "Substantially leak free" means the condition under which the entire air distribution system, including the air handler cabinet, is capable of maintaining a 0.1-inch water gage, or 25 Pa, internal pressure at 5 percent or less of the air handler's rated airflow when the return grilles and supply registers are sealed off, using a test method approved by the department.

Note: The department will accept tests conducted using the SMACNA HVAC Air Duct Leakage Test Manual, or other, similar test methods.

SECTION 70. Comm 22.34 (2) is amended to read:

Comm 22.34(2) For a proposed alternate dwelling design to be considered similar to a standard design, it shall utilize the same energy sources for the same functions and have equal conditioned floor area and the same ratio of dwelling envelope area to floor area, exterior design conditions, climate data, and usage operational schedule.

SECTION 71. Comm 22.35 (2) is repealed and recreated to read:

Comm 22.35 (2) INPUT VALUES FOR GLAZING AND SHADING SYSTEMS. (a) *Orientation of standard design*. The orientation of the standard design shall have equal area on the north, northeast, south, southwest, east, southeast, west, and northwest exposures.

(b) *Shading calculations for proposed design.* Results from shading calculations on a proposed design may not be used for groups of buildings, unless those results constitute the worst possible building orientation in terms of annual energy use, considering all eight of the orientations under par. (a) for a group of otherwise identical proposed designs.

(c) *Exterior shading for standard design.* 1. Glazed areas in the standard design may not be provided with extra exterior shading such as roof overhangs.

2. The energy performance impacts of added exterior shading for glazing areas may be accounted for in the proposed design for a specific dwelling, provided that the actual installation of such systems is approved by the department.

(d) *Fenestration system solar heat gain coefficient, standard design.* 1. The fenestration system solar heat gain coefficient, or SHGC, inclusive of framed sash and glazing area, of the glazing systems in the standard design shall be 0.68 during periods of mechanical heating and cooling operation.

2. a. The fenestration system SHGC values shall be multiplied by interior shading values of 0.70 for summer and 0.90 for winter to arrive at an overall SHGC for the glazing system.

b. Where the SHGC characteristics of the proposed fenestration products are not known, the default SHGC values given in Table 22.35-3 shall be used for the proposed design.

(e) *Interior shading for standard and proposed designs.* 1. a. Except as specified in subd. 2., the same schedule of interior shading values, expressed as the fraction of the solar heat gain admitted by the fenestration system that is also admitted by the interior shading, shall be assumed for the standard and proposed designs.

b. The values used for interior shading shall be 0.70 in summer, and 0.90 in winter.

2. South-facing solar gain apertures on passive heating proposed designs analyzed using interior shading values for interior shading specific to those shading measures may be specified in the proposed design, with values above used in the standard design.

(f) *Passive solar designs.* Passive solar designs shall provide documentation acceptable to the department, that fixed external or other acceptable shading is provided to limit excessive summer cooling energy gains to the dwelling interior.

SECTION 72. Comm 22.35 (4) (a) 3. is repealed and recreated to read:

Comm 22.35 (4) (a) 3. a. The exterior door area of the standard design shall have an equal exterior door area to that of the proposed design with a U-factor of 0.2 Btu/h. $ft.^2$ ^oF.

b. The U_d of the standard design shall be selected to permit calculated U_o wall compliance of the standard design.

SECTION 73. Comm 22.35 (4) (a). 4. is repealed.

SECTION 74. Comm 22.35 (4) (a) 5. is renumbered Comm 22.35 (4) (a) 4.

SECTION 75. Comm 22.35 (4) (b) and Table Comm 22.35-1 are repealed and recreated to read:

Comm 22.35 (4) (b) *HVAC controls*. Heating and cooling thermostats shall be set to the default settings in Table 22.35-1 for the standard and proposed designs. The input values, specific to heating and cooling controls, shall be used in calculating annual energy performance.

TABLE 22.35-1
INPUT VALUES FOR HVAC CONTROLS

Parameter	Value
Heating	68°F (20°C)
Cooling	78°F (26°C)
Set back or set up	5°F (2.8°C)
Set back or set up duration	6 hours per day
Number of set back or set up periods per unit	1
Maximum number of zones per unit	2
Number of thermostats per zone	1

SECTION 76. Comm 22.35 (4) (c) and (d) are created to read:

Comm 22.35 (4) (c) *Internal heat gains.* The input value of 3,000 Btu/hr per dwelling unit, specific to internal heat gains, shall be used in calculating annual energy performance.

(d) *Domestic hot water*. The following input values, specific to domestic hot water, shall be used in calculating annual energy performance:

1. The temperature set point is 120°F.

2. Daily hot water consumption in gallons = (30 x a) + (10 x b) where a = number of dwelling units in standard and proposed designs and b = number of bedrooms in each dwelling.

SECTION 77. Comm 22.35 (6) is repealed and recreated to read:

Comm 22.35 (6) DISTRIBUTION SYSTEM LOSS FACTORS. (a) The heating and cooling systems efficiency shall be proportionally adjusted for those portions of the ductwork located outside or inside the conditioned space using the following equations:

1. Adjusted Efficiency = Equipment Efficiency x Distribution Loss Factor

2. Total Adjusted System Efficiency = (Adjusted Efficiency x percent of ducts outside) + (Adjusted Efficiency x percent of ducts inside).

3. Distribution loss factors shall be determined using Table 22.35-2.

TABLE 22.35-2
DISTRIBUTION LOSS FACTORS

Mode	Duct Location *	
	Outside	Inside
Heating	0.75	1.00
Cooling	0.80	1.00

***** Ducts located in a heated or cooled space are considered to be in an inside location.

(b) Impacts from an improved distribution loss factor, or DLF, shall be accounted for in the proposed design only if the entire air distribution system is specified on the construction documents to be substantially leak free, and is tested after installation to ensure that the installation is substantially leak free.

(c) Where test results show that the entire distribution system is substantially leak free, the seasonal DLF shall be calculated separately for heating and cooling modes using engineering methods or programs capable of considering the net seasonal cooling energy heat gain impacts and the net seasonal heating energy heat loss impacts that result from the portion of the thermal air distribution system that is located outside the conditioned space.

(d) Once these heating and cooling season distribution system energy impacts are known, the heating and cooling mode DLF for the proposed design shall be calculated using the following two equations:

1. Total Seasonal Energy = Seasonal Building Energy + Distribution System Energy Impacts

2. DLF = Seasonal Building Energy ÷ Total Seasonal Energy

(e) Once the DLF for the heating and cooling seasons are known, the total adjusted system efficiency is calculated using the following equations and conditions:

1. Adjusted System Efficiency = (Equipment Efficiency x DLF x Percent of Duct Outside) + (Equipment Efficiency x DLF x Percent of Duct Inside)

2. a. This equation shall be used to develop adjusted system efficiency for each heating and cooling system included in the standard design.

b. Where a single system provides both heating and cooling, efficiencies shall be calculated separately for heating and cooling modes.

SECTION 78. Comm 22.35, Table 22.35-3 is created to read:

PRODUCT	SINGLE GLAZED				DOUBLE GLAZED			
	Clear	Bronze	Green	Gray	Clear + Clear	Bronze + Clear	Green + Clear	Gray + Clear
Metal Frame								
Operable	0.75	0.64	0.62	0.61	0.66	0.55	0.53	0.52
Fixed	0.78	0.67	0.65	0.64	0.68	0.57	0.55	0.54
Nonmetal Frame								
Operable	0.63	0.54	0.53	0.52	0.55	0.46	0.45	0.44
Fixed	0.75	0.64	0.62	0.61	0.66	0.54	0.53	0.52

SECTION 79. Comm 22.35 (7) (b) is amended to read:

Comm 22.35 (7) (b) If the proposed design takes credit for a reduced air change per hour level, documentation of the measures providing ~~such a~~ the reduction or the results of a post-construction blower door test conducted in accordance with ASTM ~~standard~~ E 779 shall be provided to the department. In no case, shall the air exchange per hour value be less than 0.20.

SECTION 80. Comm 23.04 Note is repealed.

SECTION 81. Comm 23.14 (2) (a) is amended to read:

Comm 23.14 (2) (a) Gas-fired clothes dryers shall be provided with metal venting that terminates outside the ~~dwelling~~ structure.

SECTION 82. Comm 23.16 (1) is repealed and recreated to read:

Comm 23.16 (1) LP GAS STORAGE TANKS. (a) All LP gas storage tanks shall be constructed, installed and maintained to conform with the applicable sections of ch. Comm 40.

(b) LP gas tanks may not be located inside dwellings.

(c) LP gas tanks shall have welded steel supports and be permanently installed on concrete pads or foundations.

SECTION 83. Comm 25.01 Note is created to read:

Comm 25.01 **Note:** For notice of plumbing inspection refer to s. Comm 82.21 (1).

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EFFECTIVE DATE

Pursuant to s. 227.22 (2) (b), Stats., these rules shall take effect on August 1, 2003

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