

## **ARTICLE 19. ENERGY CONSERVATION CODES**

### **Rule 1. Indiana Energy Conservation Code (Repealed)**

*(Repealed by Fire Prevention and Building Safety Commission; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1143)*

### **Rule 2. Modifications to the Model Energy Code (Repealed)**

*(Repealed by Fire Prevention and Building Safety Commission; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1143)*

### **Rule 3. Indiana Energy Conservation Code, 1992 Edition**

#### **675 IAC 19-3-1 Adoption by reference**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 1. That certain document, being titled the Model Energy Code, 1992 edition, published by the Council of American Building Officials, 5203 Leesburg Pike, Falls Church, Virginia 22041, is hereby adopted by reference as if fully set out in this rule save and except those revisions made in this rule. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1126; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

#### **675 IAC 19-3-2 Section 101.1; title; availability**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 2. (a) Delete section 101.1 and substitute the following: This rule shall be known as the Indiana Energy Conservation Code, 1992 Edition and shall be published, except incorporated documents, by the Fire and Building Services Department for general distribution and use under that title. Wherever the term "this code" is used throughout this rule, it shall mean the Indiana Energy Conservation Code, 1992 Edition.

(b) This rule and incorporated documents therein are available from the Fire and Building Services Department, Indiana Government Center-South, 402 West Washington Street, Room E243, Indianapolis, Indiana 46204. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-2; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1126; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

#### **675 IAC 19-3-3 Section 101.2; intent**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 3. Delete the last sentence in section 101.2. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-3; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1126; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

#### **675 IAC 19-3-4 Section 101.3; scope**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 4. Change the second paragraph in SECTION 101.3 to read as follows: Class 1 structures, except townhouses, shall be designed to comply with the requirements of one (1) of the following: Chapter 4, Chapter 5, or Chapter 6. 675 IAC 19 is not applicable to Class 2 structures and townhouses. Class 2 structures and townhouses shall be designed to comply with 675 IAC 14, the Indiana Residential Code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1126; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; filed Feb 23, 2004, 8:34 a.m.: 27 IR 2278; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-5 Section 101.3.2.2; historic buildings**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 5. Delete section 101.3.2.2. (*Fire Prevention and Building Safety Commission; 675 IAC 19-3-5; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-6 Section 101.3.2.3; change of occupancy**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 6. Delete section 101.3.2.3. (*Fire Prevention and Building Safety Commission; 675 IAC 19-3-6; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-7 Section 102.2; maintenance information**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 7. Delete section 102.2. (*Fire Prevention and Building Safety Commission; 675 IAC 19-3-7; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-8 Section 103; alternate materials - methods of construction, design, or insulating systems**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13-2-11; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 8. Delete section 103 and substitute the following:

103.1 General: The provisions of this code are not intended to limit the appropriate use of materials, appliances, equipment or methods of design or construction not specifically prescribed by this code.

103.2 Class 1 Buildings or Structures: For Class 1 buildings or structures, alternate materials, methods of construction, design or insulating systems shall be as required by 675 IAC 12-6-11, the General Administrative Rules.

103.3 Class 2 Buildings or Structures: Proposed alternate materials, appliances, equipment or methods of design or construction shall be at least equivalent of that prescribed in this code in suitability, quality, strength, effectiveness, fire resistance, durability, dimensional stability, safety and sanitation.

The building official may require that evidence or proof be submitted to substantiate any claims that may be made regarding the proposed alternate.

103.4 Tests: Determination of equivalence shall be based on design or test methods or other such standards approved by such building official. The building official may accept as supporting data, to assist in this determination, duly authenticated reports from the Building Officials and Code Administrators International, Inc., Southern Building Code Congress International, Inc., International Conference of Building Officials, the National Evaluation Service Committee of the Council of American Building Officials, acceptance documents from the U. S. Department of Housing and Urban Development or from those specified in 675 IAC 12-6-11, the General Administrative Rules.

103.5 Variances: This section shall not authorize a variance from or modification of any rule of the commission except pursuant to the commission's variance authority provided for in IC 22-13-2-11.

(*Fire Prevention and Building Safety Commission; 675 IAC 19-3-8; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-9 Section 104; plans and specifications**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 9. Delete section 104. (*Fire Prevention and Building Safety Commission; 675 IAC 19-3-9; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-10 Section 105; inspections**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 10. Delete section 105 and substitute the following: Any permit required by the local unit of government shall be obtained before beginning construction or alterations, using application forms furnished by the building official. (*Fire Prevention and Building Safety Commission; 675 IAC 19-3-10; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-11 Section 106; validity**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 11. Delete section 106. (*Fire Prevention and Building Safety Commission; 675 IAC 19-3-11; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA*)

**675 IAC 19-3-12 Section 201; general definitions**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 12. (a) Change the following definitions in section 201.1 to read as follows:

Building official means: (1) For Class 1 buildings or structures the state building commissioner or officer of a local unit of government empowered by law to administer and enforce the rules of the Fire Prevention and Building Safety Commission; or

(2) For Class 2 buildings or structures it shall be an officer of a local unit of government as designated by local ordinance; or

(3) For Class 1 and 2 buildings or structures that are industrialized building systems under 675 IAC 15, Industrialized Building Systems, it shall be the state building commissioner.

Comfort envelope means the area on a psychrometric chart enclosing all of the conditions as identified in Figure No. 1 in Standard RS-4 listed in Chapter 7, as being comfortable.

Conditioned space means space within a building which is provided with heated and/or cooled air or surfaces and where required, with humidification or dehumidification means so as to be capable of maintaining a space condition falling within the comfort zone as identified in Standard RS-4 listed in Chapter 7.

Shading coefficient (SC):

$$SC = \frac{\text{Solar Heat Gain of Fenestration}}{\text{Solar Heat Gain of 1/8'' clear glass}}$$

means the ratio of solar heat gain through fenestration, with or without integral shading devices, to that occurring through unshaded one-eighth (1/8) inch thick clear glass.

Note 1. For comparison under the same conditions. See Chapter 26 of Standard RS-1.

Note 2. Fenestration means windows, skylights and glazing in doors for one and two family detached dwellings.

(b) Add the following definitions in section 201.1 to read:

Annual Fuel Utilization Efficiency (AFUE): Means the total heating output of a furnace during its normal annual usage period, as measured using the United States Department of Energy test procedures divided by the total fuel input to the furnace in BTU's during the same period.

Approved: Means approval by the building official as the result of investigation and tests conducted by him, or by reason of accepted principles or tests by nationally recognized organizations.

Gross volume: Means the sum of the volumes of the several areas of the building, including basements, cellars, mezzanine and intermediate floored tiers, penthouses of headroom height, and attics measured from the outside faces of exterior walls or from the centerline of walls separating buildings, and from the lowest floor level to the roof peak. Covered walkways, open roofed-over areas, and open porches shall be excluded. The gross floor area does not include such features as pipe trenches, exterior terraces, steps, chimneys, etc.

Heat loss or gain: Means transfer of heat from or into a building expressed in BTU's per hour.

Heat pump: See the definition of unitary heat pump.

Heating Season Performance Factor (HSPF): Means the total heating output of a heat pump in BTU's during its normal annual usage period for heating divided by the total electric power in watt/hours during the same period.

R-value: Means resistance to heat flow ( $R=1/U$ ). See the definition of thermal resistance.

Seasonal Energy Efficiency Ratio (SEER): Means the total cooling output of an air conditioner in BTU's during its normal annual usage period for cooling divided by the total electric power in watt/hours during the same period.

U-value: See the definition of thermal transmittance ( $U=1/R$ ).

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-12; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1127; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

#### 675 IAC 19-3-13 Section 302.1; exterior design conditions

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 13. Change section 302.1 to read as follows: The outdoor design temperature may be selected from the columns of ninety-seven and one-half percent (97.5%) values for winter and two and one-half percent (2.5%) values for summer from the 1989 ASHRAE Handbook of Fundamentals for the specific locality listed therein, or selected from this generalized table. (See Figure No. 3-1)

	northern	central	southern
WINTER Design Dry-Bulb °F	1°	2°	9°
SUMMER Design Wet-Bulb °F	73°	74°	75°
SUMMER Design Dry-Bulb °F	89°	90°	93°
DEGREE DAYS HEATING	6300	5700	5000

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-13; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1128; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

#### 675 IAC 19-3-14 Figure No. 3-1; design zones

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 14. Add Figure No. 3-1 to read as follows:

FIGURE NO. 3-1



(Fire Prevention and Building Safety Commission; 675 IAC 19-3-14; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1129; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

#### **675 IAC 19-3-15 Section 302.2.1; indoor design temperature**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 15. Change the exception in section 302.2.1 to read as follows:

Exception: Other design temperatures may be used providing that other building components are improved beyond the requirements of this code so that the energy consumption is less than or equal to the energy consumption which would result from conformance to the requirements of this section.

(Fire Prevention and Building Safety Commission; 675 IAC 19-3-15; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1129; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

#### **675 IAC 19-3-16 Section 302.2.2; humidification**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 16. (a) Change the last sentence in section 302.2.2 to read as follows: When comfort air conditioning is provided, the actual design relative humidity within the comfort envelope as defined in Standard RS-4 listed in Chapter 7 may be selected for minimum total HVAC system energy use.

(b) Add a second paragraph in section 302.2.2 to read as follows: Other special humidification designs may be used under section 103 of this code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-16; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1129; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-17 Section 303.1; mechanical ventilation criteria**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 17. Delete section 303.1 and substitute the following: The specific ventilation values of 675 IAC 13, the Indiana Building Code, and 675 IAC 14, the Indiana One and Two Family Dwelling Code, shall be used for basic design. A reduction of up to thirty-three percent (33%) of the specified minimum outdoor air requirement in recirculating HVAC systems is permitted with a minimum of five (5) C.F.M. per person of outdoor air.

Outdoor air quantities other than those specified may be approved because of special occupancy or processing requirements (i.e., hospitals, schools, etc.), under section 103 of this code. If approved, such outdoor air quantities shall be used as the basis for calculating the heating and cooling design loads. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-17; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1129; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-18 Section 303.2; modified design conditions**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 18. Add section 303.2 to read as follows: Deviations from sections 302 and 303 of this code are permitted if the resulting heating and cooling loads are shown not to require the expenditure of additional energy. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-18; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-19 Section 402.3; analysis procedure**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 19. Change the last sentence in section 402.3 to read as follows: The calculation procedure shall be based upon 8,760 hours of operation of the building and its service systems and may utilize the design methods specified in Standards RS-1, RS-11, RS-12, and RS-13 listed in Chapter 7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-19; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-20 Section 403.2; documentation**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 20. Change the first paragraph in section 403.2 to read as follows: Proposed alternative designs submitted as requests for exception to the standard design criteria shall be accompanied by an energy analysis, as specified in section 402 of this code. The report shall provide technical detail on the alternative building and system designs and on the data employed in and resulting from the comparative analysis as to verify that both the analysis and the design meet the criteria of sections 401 through 403 of this code, as applicable. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-20; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130;*

*readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-21 Table No. 502.1.2a; thermal transmittance and R-Values**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 21. Delete the last line of the second column heading of Table No. 502.1.2a "AND FIGURE NO. 1" and substitute the following: SEE TABLE NO. 502.2.1. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-21; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-22 Table No. 502.1.2b; thermal transmittance and R-Values**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 22. Delete the last line of the second column heading of Table No. 502.1.2b "AND FIGURE NO. 1" and substitute the following: SEE TABLE NO. 502.2.1. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-22; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-23 Table No. 502.1.2c; thermal transmittance and R-Values**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 23. Delete the last line of the second column heading of Table No. 502.1.2c "AND FIGURE NO. 1" and substitute the following: SEE TABLE NO. 502.2.1. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-23; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-24 Section 502.1.4; vapor retarder**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 24. Change section 502.1.4 to read as follows:

502.1.4: In all frame walls and floors and ceilings not ventilated to allow moisture to escape, an approved vapor retarder having a maximum perm rating of 1.0, when identified as conforming to Standard RS-23 listed in Chapter 7, Procedure A, shall be used on the warm-in-winter side of the thermal insulation.

Exceptions:

1. In construction where moisture or its freezing will not damage the materials.
2. In hot and humid climate areas where the following condition(s) occur: sixty-seven degrees Fahrenheit (67°F) or higher wet-bulb temperature for three thousand (3,000) or more hours during the warmest six (6) consecutive months of the year, and/or seventy-three degrees Fahrenheit (73°F) or higher wet-bulb temperature for one thousand five hundred (1,500) or more hours during the warmest six (6) consecutive months of the year.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-24; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-25 Section 502.2; criteria for Group R residential buildings**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 25. Change section 502.2 to read as follows: For the purpose of this code, Group R residential buildings shall include all residential buildings, three (3) stories or less in height. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-25; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1130; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-26 Section 502.2.1.3; floors over unheated spaces**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 26. Change the last sentence in section 502.2.1.3 to read as follows: For floors over outdoor air, i.e., overhangs,  $U_o$  values for heating shall meet the same requirements as shown for floors over unheated spaces in Table No. 502.2.1 of section 30 of this rule. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-26; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1131; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-27 Section 502.2.1.4; slab-on-grade floors**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 27. Change section 502.2.1.4 to read as follows: For slab-on-grade floors, the R-Value of the insulation around the perimeter of the floor shall not be less than the value given in Table No. 502.2.1 of section 30 of this rule. The insulation shall extend downward from the top of the slab to the bottom of a trench footing or from the top of the slab to the top of the inverted tee of a spread footing, or from the top of the slab downward to the bottom of the slab and then horizontally for a minimum total distance of forty-eight (48) inches and shall be a moisture resisting insulation with an absorption rate of less than five percent (5%) by volume. The top edge of the insulation installed between the exterior wall and the edge of the interior slab may be cut at a forty-five (45) degree angle away from the exterior wall. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-27; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1131; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-28 Section 502.2.1.5; crawl space walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 28. Change section 502.2.1.5 to read as follows: The exterior walls of crawl spaces below uninsulated floors shall have a thermal transmittance value not less than the value given in Table No. 502.2.1 of section 30 of this rule. Foam plastic insulation used in crawl spaces shall conform to the thermal barrier requirements of 675 IAC 13, the Indiana Building Code, or 675 IAC 14, the Indiana One and Two Family Dwelling Code.

Crawl space ventilation shall conform to 675 IAC 13, the Indiana Building Code, or 675 IAC 14, the Indiana One and Two Family Dwelling Code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-28; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1131; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-29 Section 502.2.1.6; basement walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 29. Change section 502.2.1.6 to read as follows: The exterior walls of basements below uninsulated floors shall have a thermal transmittance value not less than the value given in Table No. 502.2.1 of section 30 of this rule to a depth of ten (10) feet below the outside finish ground level, or to the level of the basement floor, whichever is less. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-29; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1131; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-*



675070388RFA)

**675 IAC 19-3-30 Table No. 502.2.1; Thermal Transmittance and R-Values**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 30. Delete Table No. 502.2.1 including the footnotes and substitute the following:

TABLE NO. 502.2.1  
RESIDENTIAL BUILDINGS  
REQUIRED THERMAL TRANSMITTANCE VALUES  
AND R-VALUES

			(6300 HDD) NORTHERN	(5700 HDD) CENTRAL	(5000 HDD) SOUTHERN
Walls <sup>3</sup>	Heating or Cooling	U <sub>o</sub>	0.12	0.13	0.14
Roof/Ceiling <sup>1</sup>	Heating or Cooling	U <sub>o</sub>	0.026	0.027	0.031
Floors over unheated spaces <sup>2</sup>	Heating or Cooling	U <sub>o</sub>	0.05	0.05	0.05
Slab-on-grade (Perimeter insulation)	Heating or Cooling	R	7.5	7.5	7.5
Crawl Spaces <sup>2</sup> (Perimeter wall insulation)	Heating or Cooling	U <sub>o</sub>	0.10	0.10	0.10
Basement Walls (Perimeter wall insulation)	Heating or Cooling	U <sup>o</sup>	0.095	0.097	0.099

<sup>1</sup> Cathedral ceilings of limited area may have U<sub>o</sub> value of .08, but the walls and/or other ceilings must have the U<sub>o</sub> decreased to balance the additional loss.

<sup>2</sup> In lieu of insulating the floor, the perimeter of the foundation shall be insulated as required by this table with a moisture resisting insulation, having an absorption rate of less than five percent (5%) by volume from the underside of the floor, including the band joist space, down to the top of the footing or to a minimum distance twenty-four (24) inches below the exterior finished grade. A ground vapor retardant having a maximum perm rating of one (1) shall be installed and shall be identified as having been tested in accordance with Standard RS-23 listed in Chapter 7.

<sup>3</sup> For residential construction a continuous vapor retardant having a maximum perm rating of one (1) and identified as having been tested in accordance with Standard RS-23 listed in Chapter 7, shall be installed on the winter heated side of the wall insulation or alternate means may be used under section 103 of this rule [*sic.*, section 103 of this code]. The vapor retardant shall be installed as follows or alternate means may be used under section 103 of this rule [*sic.*, section 103 of this code]:

- (a) Protect the vapor retardant integrity during all construction stages particularly during dry wall or utility installation;
- (b) Vapor retardant joints shall occur only over a solid backing;
- (c) Overlap all seams or seal seams and edges with an approved sealant or adhesive to ensure an airtight seal;
- (d) Integrate preparatory vapor barrier installation into all framing work; and
- (e) Seal vapor retardant around doors, windows, outlets, pipes, vents, chimneys, and any other penetrations.

(Fire Prevention and Building Safety Commission; 675 IAC 19-3-30; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1131; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-31 Section 502.3.1.4; slab-on-grade floors**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 31. Change section 502.3.1.4 to read as follows: For slab-on-grade floors, the R-Value of the insulation around the perimeter of the floor shall not be less than the value given in Table No. 502.3.1 of section 34 of this rule. The insulation shall extend downward from the top of the slab to the bottom of a trench footing or from the top of the slab to the top of the inverted tee of a spread footing or from the top of the slab downward to the bottom of the slab and then horizontally for a minimum total distance of forty-eight (48) inches, and shall be a moisture resisting insulation with an absorption rate of less than five percent (5%) by volume. The top edge of the insulation installed between the exterior wall and the edge of the interior slab may be cut at a forty-five (45) degree angle away from the exterior wall. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-31; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1132; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-32 Section 502.3.1.5; crawl space walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 32. Change section 502.3.1.5 to read as follows: The exterior walls of crawl spaces below uninsulated floors shall have a thermal transmittance value not less than the value given in Table No. 502.3.1 of section 34 of this rule. Foam plastic insulation used in crawl spaces shall conform to the thermal barrier requirements of 675 IAC 13, the Indiana Building Code. Crawl space ventilation shall conform to 675 IAC 13, the Indiana Building Code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-32; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1132; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-33 Section 502.3.1.6; basement walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 33. Change section 502.3.1.6 to read as follows: The exterior walls of basements below uninsulated floors shall have a thermal transmittance value not less than the value given in Table No. 502.3.1 of section 34 of this rule to a depth of ten (10) feet below the outside finish ground level, or to the level of the basement floor, whichever is less. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-33; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1132; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-34 Table No. 502.3.1; thermal transmittance and R-Values**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 34. Delete Table No. 502.3.1 including the footnotes, and substitute the following:

TABLE NO. 502.3.1  
ALL OTHER BUILDINGS  
REQUIRED THERMAL TRANSMITTANCE VALUES  
AND R-VALUES

			(6300 HDD) northern	(5700 HDD) central	(5000 HDD) southern
Walls 3 Stories or Less	Heating	$U_o$	0.27	0.28	0.29

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	Cooling	OTTV	33.8	33.4	33.0
		SF	128	127	126
Walls Over 3 Stories	Heating	$U_o$	0.32	0.34	0.35
	Cooling	OTTV	33.8	33.4	33.0
		SF	128	127	126
Roof/Ceiling	Heating or Cooling	$U_o$	0.074	0.078	0.084
		OTTV	8.5	8.5	8.5
Floors Over <sup>1</sup> Unheated Spaces	Heating or Cooling	$U_o$	0.05	0.05	0.05
Slab-on-Grade (Perimeter Insulation)	Heating or Cooling	R	7.5	7.5	7.5
Crawl Spaces <sup>1</sup> (Perimeter Wall Insulation)	Heating or Cooling	$U_o$	0.10	0.10	0.10
Basement Walls (Perimeter Wall Insulation)	Heating or Cooling	$U_o$	0.095	0.097	0.099

<sup>1</sup> In lieu of insulating the floor, the perimeter of the foundation shall be insulated as required by this table with a moisture resisting insulation, having an absorption rate of less than five percent (5%) by volume, from the underside of the floor, including the band joist space, down to the top of the footing or to a minimum distance twenty-four (24) inches below the exterior finished grade. A ground cover vapor retardant having a maximum perm rating of one (1) shall be installed and shall be identified as having been tested in accordance with Standard RS-23 listed in Chapter 7. Foundation vents shall be installed as required by 675 IAC 13, the Indiana Building Code.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-34; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1133; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-35 Table No. 502.4.2**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 35. Change footnote number 2 in Table No. 502.4.2 to read as follows: Compliance with the criteria for air leakage may be determined by Standard RS-2 listed in Chapter 7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-35; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-36 Section 503.2.1; calculation procedures**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 36. Change section 503.2.1 to read as follows: Heating and cooling design loads for the purpose of sizing systems may be determined in accordance with one of the procedures described in Chapters 25 and 26 of Standard RS-1 listed in Chapter 7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-36; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-37 Section 503.2.2; infiltration**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 37. Change section 503.2.2 to read as follows: Infiltration for heating and cooling design loads may be calculated for all buildings except one and two family dwellings by the procedures in Chapter 22 of Standard RS-1 listed in Chapter 7. Calculations for one and two family dwellings may use the methods identified in section 503.2.1 of this code or other approved engineering practices. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-37; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-38 Section 503.4.2; HVAC system heating equipment heat pump-heating mode**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 38. Change section 503.4.2 to read as follows:

503.4.2. HVAC system heating equipment heat pump-heating mode: Heat pumps whose energy input is entirely electric shall have a coefficient of performance (COP) or a heating season performance factor (HSPF) heating, not less than the values in Table No. 503.4.2.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-38; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-39 Table No. 503.4.2; heat pumps**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 39. Delete Table No. 503.4.2 and footnote and substitute as follows:

TABLE NO. 503.4.2  
MINIMUM COP AND HSPF FOR HEAT PUMPS,  
HEATING MODE

Source	MINIMUM COP	MINIMUM HSPF
Air Source	na	6.8
Water Source	3.0	na

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-39; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-40 Section 503.4.3; Table No. 503.4.2a**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 40. (a) Delete Table No. 503.4.2a.

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(b) Change section 503.4.3 to read as follows: Gas and oil-fired comfort heating equipment as listed below shall have an AFUE of not less than the values in Table No. 503.4.3. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-40; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-41 Table No. 503.4.3; HVAC fuel utilization**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 41. Delete Table No. 503.4.3 and footnotes and substitute as follows:

TABLE NO. 503.4.3  
HVAC SYSTEM HEATING EQUIPMENT GAS AND OIL-FIRED MINIMUM  
ANNUAL FUEL UTILIZATION EFFICIENCY (AFUE)

FURNACES OF CAPACITIES OF 225,000 BTU/H AND LESS BOILERS OF CAPACITIES OF 300,000 BTU/H AND LESS		ALL OTHER COMMERCIAL INDUSTRIAL FURNACES AND BOILERS
Types of equipment	Percent	Percent
Forced-air furnaces and low-pressure steam or hot-water boilers	78	80
All other vented heating equipment	74	—

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-41; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1134; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-42 Section 503.4.5; HVAC system equipment, electrically operated, cooling mode**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 42. Change section 503.4.5 to read as follows:

503.4.5: HVAC system equipment, electrically operated, cooling mode: HVAC system equipment whose energy input in the cooling mode is entirely electric, shall have a Seasonal Energy Efficiency Ratio (SEER) cooling not less than the values in Table No. 503.4.5.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-42; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1135; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-43 Table No. 503.4.5; HVAC energy efficiency**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 43. Delete Table No. 503.4.5 and footnotes and substitute as follows:

TABLE NO. 503.4.5  
MINIMUM SEER FOR ELECTRICALLY  
DRIVEN HVAC-SYSTEM EQUIPMENT - COOLING

STANDARD RATING CAPACITY	(SEER)
Split Systems	10

Single Package	9.7
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*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-43; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1135; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-44 Table No. 503.4.5a**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 44. Delete Table No. 503.4.5a. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-44; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1135; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-45 Section 503.7; cooling with outdoor air (economizer cycle)**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 45. (a) Change the last sentence of the first paragraph of section 503.7 before the exceptions to read as follows: Activation of economizer cycle shall be controlled by sensing outdoor air enthalpy and dry-bulb temperature jointly or outdoor air dry-bulb temperature alone or by alternate means may be used under section 103 of this code.

(b) Change Exception number 1 in section 503.7 to read as follows: The fan system capacity is less than 5,000 cfm or total cooling capacity is less than 134,000 BTU/hour.

(c) Delete Exception number 6 in section 503.7.

(d) Delete Exception number 8 in section 503.7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-45; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1135; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-46 Section 503.8.1; temperature control**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 46. Change section 503.8.1 to read as follows: Each heating and/or cooling system shall be provided with at least one adjustable thermostat for the regulation of temperature. Each thermostat shall be capable of being set by adjustment or selection of sensors as follows: *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-46; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1135; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-47 Section 503.8.2; humidity control**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 47. Change the exception in section 503.8.2 to read as follows: Exception: Special occupancies requiring different relative humidities may be permitted under section 103 of this code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-47; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1136; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-48 Section 503.9.1; air-handling duct system insulation**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 48. (a) Change Exception number 2 in section 503.9.1 to read as follows: When supply or return air ducts are installed in basements, cellars, ventilated crawl spaces or unventilated crawl spaces, having insulated walls in one or two family dwellings or townhouses.

(b) Add to the end of section 503.9.1 to read as follows: Duct insulation materials for one and two family dwellings and townhouses shall conform to the following:

1. Duct insulation when required for residential construction shall have a minimum R-value of six (6).
2. Coverings and linings, including adhesives when used, shall have a flame-spread rating not over twenty-five (25) without evidence of continued progressive combustion and a smoke-developed rating not over fifty (50).
3. Duct coverings and linings shall not flame, glow, smolder or smoke when tested, and the duct covering shall be labeled as being in accordance with ASTM C411, at the temperature to which it is exposed in service. In no case shall the test temperature be below two hundred fifty degrees Fahrenheit (250°F).
4. Linings shall be interrupted for a minimum of eighteen (18) inches upstream and thirty (30) inches downstream from electric-resistance and fuel-burning heaters within a duct system.
5. Listed equipment internally lined shall be considered as meeting the requirements of this section.
6. Duct coverings shall not penetrate a wall or floor required to have a fire-resistive rating or required to be firestopped.
7. Service openings shall not be concealed by duct coverings unless the exact location of the opening is properly labeled.
8. External ductwork insulation and factory-insulated flexible ductwork shall be legibly printed or labeled at intervals not greater than thirty-six (36) inches with the name of the manufacturer, the nominal thickness and density of the insulation or R-Value and the flame-spread and smoke-developed ratings of the composite materials.
9. Duct and piping insulation materials for other than one and two family dwellings and townhouses shall conform to sections 1005 and 2127.2A(8) of 675 IAC 18, the Indiana Mechanical Code.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-48; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1136; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-49 Section 503.10; duct construction**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 49. Delete section 503.10 and footnote number 1 and substitute the following: Ductwork shall be constructed and erected in accordance with 675 IAC 18, the Indiana Mechanical Code, or 675 IAC 14, the Indiana One and Two Family Dwelling Code, as required. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-49; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1136; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-50 Section 503.10.1; duct construction**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 50. Change the first line of section 503.10.1 to read as follows: High-pressure and medium-pressure ducts may be leak tested in. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-50; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1136; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-51 Section 503.11; piping insulation**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 51. Change Exception number 4 in section 503.11 to read as follows: When piping is installed in basements, cellars, ventilated crawl spaces or unventilated crawl spaces having insulated walls in one and two family dwellings or townhouses. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-51; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1136; readopted filed Sep 11,*

2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-52 Section 504.2.1.1; electric water heaters**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 52. Change section 504.2.1.1 to read as follows: Automatic electric storage water heaters having a storage capacity of one hundred twenty (120) gallons or less and an input rating 12kW or less shall have a standby loss not exceeding four (4.0) watts/ft.<sup>2</sup> of tank surface area or forty-three (43) watts, whichever is greater, and shall be identified as having been tested in accordance with Standard RS-5 listed in Chapter 7 and calculated at eighty degrees Fahrenheit (80°F) temperature difference.

Automatic electric storage water heaters having either a storage capacity greater than one hundred twenty (120) gallons or an input rate greater than 12kW shall have all waterbacked storage tank surfaces insulated to at least R-10 or have a standby loss not exceeding four (4.0) watts/ft.<sup>2</sup> and shall be identified as having been tested in accordance with Standard RS-6 listed in Chapter 7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-52; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1136; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-53 Section 504.2.1.2; gas and oil-fired water heaters**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 53. Change the second and third paragraphs of section 504.2.1.2 to read as follows: These storage water heaters shall be identified as having been tested in accordance with Standard RS-5 listed in Chapter 7.

Other gas-fired water heaters shall have a thermal efficiency (E<sub>t</sub>) of not less than seventy-five percent (75%) and shall be identified as having been tested in accordance with Standard RS-7 listed in Chapter 7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-53; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-54 Section 504.2.3; combination service water heating/space heating boilers**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 54. Change Exception number 1 of section 504.2.3 to read as follows:

Systems with service/space heating boilers having a standby loss (BTU/h) less than:

$$\frac{13.3 \text{ pmd} + 400}{7}$$

7

determined by the fixture count method where: pmd = probable maximum demand in gallons/hour which may be determined in accordance with Chapter 37 of Standard RS-11 listed in Chapter 7.

n = fraction of year when outdoor daily mean temperature exceeds sixty-four and nine-tenths (64.9) degrees F.

The standby loss is to be determined for a test period of twenty-four (24) hour duration while maintaining a boiler water temperature of ninety degrees Fahrenheit (90°F) above an ambient of sixty degrees Fahrenheit (60°F) to ninety degrees Fahrenheit (90°F) and a five (5) foot stack on appliance.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-54; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-55 Section 504.3; automatic controls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9



Sec. 55. Change the second sentence of section 504.3 to read as follows: Temperature setting range may be in accordance with Table No. 2 in Chapter 37 of Standard RS-11 listed in Chapter 7. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-55; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-56 Section 504.5; swimming pools**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 56. Add a paragraph at the end of section 504.5.1 to read as follows: The thermal efficiency of pool heaters shall be no less than seventy-eight percent (78%). *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-56; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-57 Section 504.5.3; time clocks**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 57. Delete section 504.5.3. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-57; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-58 Section 504.8.2.2; lavatories in rest rooms of public facilities**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 58. Change section 504.8.2.2 to read as follows: Lavatory outlet temperature shall be as required by 675 IAC 16, the Indiana Plumbing Code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-58; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-59 Section 505; electrical power and lighting**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 59. Delete section 505 and substitute the provisions of sections 60 through 65 of this rule. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-59; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-60 Section 505.1; general**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 60. Section 505.1 is added to read as follows:

505.1 General. Electrical distribution and lighting systems shall be designed for efficient use of electrical energy from the service entrance to the points of use.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-60; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1137; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-61 Section 505.2; electrical distribution**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 61. Section 505.2 is added to read as follows:

505.2 Electrical Distribution. 505.2.1 Power Factor. Utilization equipment rated greater than 1,000W, and lighting equipment greater than 15W, with an inductive reactance load component, shall have a power factor of not less than eighty-five percent (85%) under rated load conditions. A power factor of less than eighty-five percent (85%) shall be corrected to at least ninety percent (90%) rated condition. Power factor corrective devices, installed to comply with this code shall be switched with the utilization equipment, except where this results in an unsafe condition or interferes with the intended operation of the equipment. Where the servicing utility certifies that power factor corrective devices at the service entrance are as effective as a corrective device or devices on utilization equipment, either technique may be employed.

505.2.2 Lighting Switching. Switching should be provided for each lighting circuit or for portions of each circuit, so that the partial lighting required for custodial or for effective complementary use with natural lighting may be operated selectively.

Circuiting and switching or dimming shall be provided so that:

505.2.2.1 lighting in each task area larger than one hundred (100) square feet can be reduced by at least one-half (1/2) when the task is not being performed.

505.2.2.2 lighting can be turned off when a space is empty and not used.

505.2.2.3 lighting can be selectively reduced or turned off either manually or automatically where daylighting is adequate.

505.2.3 Electrical Energy Determination. In all multifamily dwellings, provisions shall be made to determine the energy consumed by each tenant by separately metering individual dwelling units.

Exception 1. Motels, hotels, bed and breakfast establishments, and dormitories are exempt from these requirements.

Exception 2. This provision does not apply to units with a common central electrical HVAC and/or service water heating systems, but electric lighting systems shall be separately metered.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-61; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1138; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-62 Section 505.3; lighting power budget**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 62. Section 505.3 is added to read as follows:

505.3 Lighting Power Budget. The purpose of this section is to outline a procedure for determining the maximum power limit for the lighting.

A lighting power budget is the upper limit of the power to be available to provide the lighting needs in accordance with the criteria and calculation procedure specified herein.

The lighting power budget for the building shall be the sum of the power limits computed for all lighted interior and exterior spaces and shall be determined in accordance with the procedures specified in this section.

One and two family detached dwellings, bed and breakfast establishments and the dwelling portion of multifamily dwellings are exempt from the requirements of this section.

**505.3.1 Calculation Methods**

505.3.1.1 The criteria specified below shall be utilized for computation of the lighting power maximum. All calculations shall be in accordance with section 505.3.5 of this code.

505.3.1.2 When insufficient information is known about the specific use of the building space (e.g., number of occupants, space function, location of partitions), the budget shall be based on the apparent intended use of the building space.

505.3.2 Building Interiors. The budget electric power for lighting shall be established by using the criteria and the calculation procedures specified in this section. The value shall be based on the use for which the space is intended.

505.3.2.1 Illumination Level Criteria. For the purpose of establishing a budget, levels of illumination may be as stated

in RS-8 listed in Chapter 7. Those levels shall be used as follows:

505.3.2.1.1 Task Lighting. In most cases, the levels of illumination listed are for specific tasks. These levels are for the task areas and may be used as defined in RS-8 listed in Chapter 7, or where not defined, at all usable portions of task surfaces. In some cases, the levels of illumination are listed for locations. These levels are to be considered as average levels.

505.3.2.1.2 General Lighting. In areas surrounding task locations the average level of general lighting, for budget purposes only, shall be one-third (1/3) the level for the tasks performed in the area. Where more than one task level occurs in a space, the general level shall be one-third (1/3) the weighted average of the specific task levels.

505.3.2.1.3 Non-Critical Lighting. In circulation and seating areas where no specific visual tasks occur, the average level of illumination shall be one-third (1/3) of the average general lighting in the adjacent space.

505.3.2.1.4 Lighting System Criteria. For the purposes of establishing a power budget, only lamp efficacies and coefficients of utilization (CU) specified in Table No. 505.3.2.1a of section 63 of this rule and Table No. 505.3.2.1b of section 64 of this rule shall be assumed.

#### 505.3.3 Exceptions to Building Interior Criteria

505.3.3.1 The criteria of section 505.3.2 shall not apply to specific areas (i.e., Operating rooms, T.V. studios, etc.), when approved under section 103 of this code.

#### 505.3.4 Building Exteriors. For exterior spaces, the lighting power budget shall be based on the use for which the space is intended.

505.3.4.1 Criteria. The same criteria as those for interior spaces apply for illumination levels and lighting systems with the addition of luminaires for floodlighting.

505.3.4.2 Facade Lighting. Facade lighting maximums shall be no greater than two percent (2%) of the total interior lighting budget of the building.

505.3.4.3 Calculation Procedure. In establishing a lighting power budget the following procedures shall be used:

505.3.4.3.1 Overhead Lighting. The procedure specified in this section shall be followed for overhead lighting.

505.3.4.3.2 Floodlighting. The beam lumen method in RS-8 and a coefficient of beam utilization (CBU) of 0.75 may be used for floodlighting calculations.

#### 505.3.5 Calculation Procedure. To establish a lighting power budget, the following procedure shall be used:

##### 505.3.5.1 Determining Illumination Levels and Areas

505.3.5.1.1 Determine the visual tasks that are expected to be performed in each space (the commonly found tasks at each work station) and the number of planned work locations where tasks will be performed. If assumptions are made, their bases shall be indicated.

505.3.5.1.2 Select the illumination level, in footcandles for those expected tasks in accordance with section 505.3.2.1.1 of this code.

505.3.5.1.3 Calculate total task areas to be illuminated to the same level by multiplying the number of work locations by fifty (50) square feet per work location. (Total task area shall not exceed actual total space area.) If the actual task area is greater than fifty (50) square feet the actual area shall be used. If special task lighting or localized lighting is to be employed, use the actual task areas and point calculation procedures.

505.3.5.1.4 Calculate the level of general lighting by multiplying the task lighting level by one-third (1/3), where there is only one task level, or by taking one-third (1/3) of the sum of the products of the task levels (b) and their areas (c) divided by the total task areas in accordance with section 505.3.2.1.2 of this code.

505.3.5.1.5 Calculate the level of non-critical lighting in accordance with section 505.3.2.1.3 of this code.

##### 505.3.5.2 Determining Lighting System Data:

505.3.5.2.1 Determine light source and luminaire types.

505.3.5.2.2 Determine lamp lumens per watt and luminaire coefficients of utilization for room luminaire mounting height dimensions. Luminaire CUs shall be selected from manufacturers' data. In all cases, no luminaire shall have a CU for Room Cavity Ratio (RCR) 1 of less than that given in Table No. 505.3.2.1b of section 64 of this rule. Lamp efficacies shall be those listed in Table No. 505.3.2.1a of section 63 of this rule.

##### 505.3.5.3 Determining Maximum Wattage:

505.3.5.3.1 Using data from section 505.3.5.2 of this code, the illumination levels and areas determined in section 505.3.5.1 of this code, and the criteria of Table No. 505.3.3.3 of section 65 of this rule calculate the allowable wattages using the lumen method.

505.3.5.3.2 Calculate the total space wattage by adding the task, general and non-critical lighting loads.

505.3.5.3.3 Add the wattage of luminaires allowed in section 505.3.3.1 of this code and section 505.3.3.2 of this code.

505.3.6 The lighting power maximum thus calculated establishes the limit that cannot be exceeded.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-62; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1138; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-63 Table No. 505.3.2.1a; lamp efficacies**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 63. Add Table No. 505.3.2.1a to read as follows:

TABLE NO. 505.3.2.1a  
LAMP EFFICACIES

Application	Lumens* per watt
Where color rendition is not a consideration	100
Where moderate color rendition is appropriate	55
Where good color rendition is appropriate	40
Where high color rendition is appropriate, spaces are less than fifty (50) ft <sup>2</sup> or where use of low wattage High Intensity Discharge (HID) lamps under 250w or fluorescent lamps under 40w is appropriate	25

\*The initial lumen output per watt input, including ballast losses.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-63; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1140; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-64 Table No. 505.3.2.1b; luminaire coefficients of utilization (CU)**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 64. Add Table No. 505.3.2.1b to read as follows:

TABLE NO. 505.3.2.1b  
LUMINAIRE COEFFICIENTS OF UTILIZATION (CU)\*

Space Use	Minimum CU (at RCR = 1)
For spaces with tasks subjected to veiling reflections (where design levels of illumination are listed in terms of equivalent sphere illumination (ESI) and where visual comfort is important.	0.55
For spaces without tasks, or with tasks not subjected to veiling reflections, but where visual comfort is important.	0.63

For spaces without tasks and where visual comfort is not a criterion.	0.70
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\*Coefficients of utilization (CU's) are to be for luminaires for use in the types of spaces listed, and those luminaires shall have a CU of no less than that listed for each type space for a Room Cavity Ratio (RCR) of 1 and reflect areas as in Table No. 505.3.3.3. (Fire Prevention and Building Safety Commission; 675 IAC 19-3-64; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1140; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-65 Table No. 505.3.3.3; reflectances and light loss factors**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 65. Add Table No. 505.3.3.3 to read as follows:

TABLE NO. 505.3.3.3  
REFLECTANCES & LIGHT LOSS FACTORS

Interior Spaces*	Reflectance	Light Loss Factor
Ceiling Cavity	80 percent	—
Wall	50 percent	0.70
Floor Cavity	20 percent	—

\*For interior spaces, initial cavity and surface reflectances shall be shown. (Fire Prevention and Building Safety Commission; 675 IAC 19-3-65; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1141; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-66 Section 602.1; general**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 66. Change the first paragraph of section 602.1 to read as follows: The various wall, roof and floor assemblies in the Appendix are typical and are not intended to be all inclusive. Other assemblies may be used under section 103 of this code indicating the thermal transmittance value of the opaque section. (Fire Prevention and Building Safety Commission; 675 IAC 19-3-66; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1141; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-67 Section 602.1.1; vapor retarder**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 67. Delete section 602.1.1 and substitute as follows:

602.1.1 In all frame walls and floors and ceilings not ventilated to allow moisture to escape, an approved vapor retarder having a maximum perm rating of 1.0, when identified as conforming to Standard RS-23 listed in Chapter 7, Procedure A, shall be used on the warm-in-winter side of the thermal insulation.

Exceptions:

1. In construction where moisture or its freezing will not damage the materials.
2. In hot and humid climate areas where the following condition(s) occur: sixty-seven degrees Fahrenheit (67°F) or higher wet-bulb temperature for three thousand (3,000) or more hours during the warmest six (6) consecutive months of the year, and/or seventy-three degrees Fahrenheit (73°F) or higher wet-bulb temperature for one thousand five hundred (1,500) or more hours during the warmest six (6) consecutive months of the year.

*(Fire Prevention and Building Safety Commission; 675 IAC 19-3-67; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1141; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-68 Section 602.2.1; walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 68. Change the last sentence of section 602.2.1 to read as follows: The  $U_o$  of the wall may be determined by selecting the  $U_w$  value for the wall section from Appendix Table No. 602.2.1a, 602.2.1b or 602.2.1c and modifying the  $U_w$  by the use of chart 602.2.1(a), 602.2.1(b), 602.2.1(c) or 602.2.1(d) based on the glazing area. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-68; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1141; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-69 Section 602.2.2; roof/ceiling**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 69. Change section 602.2.2 to read as follows: The roof/ceiling assembly may be selected from Appendix Table No. 602.2.2 for thermal transmittance value not exceeding the value specified for roof/ceiling in Table No. 502.2.1 of section 30 of this rule or Table No. 502.3.1 of section 34 of this rule as appropriate for the building type. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-69; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1141; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-70 Section 602.2.3; floors over unheated spaces**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 70. Change section 602.2.3 to read as follows: The floor section over an unheated space may be selected from Appendix Table No. 602.2.3 for the overall thermal transmittance value ( $U_o$ ) not exceeding the value specified for floors in Table No. 502.2.1 of section 30 of this rule or Table No. 502.3.1 of section 34 of this rule as appropriate for the building type. For floors over outdoor air, i.e., overhangs,  $U_o$  values for heating shall meet the same requirements as shown for floors in Table No. 502.2.1 of section 30 of this rule. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-70; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-71 Section 602.2.4; slab-on-grade floors**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 71. Change section 602.2.4 to read as follows: For slab-on-grade floors, the R-Value of the insulation around the perimeter of the floor shall not be less than the value given in Table No. 502.2.1 of section 30 of this rule or Table No. 502.3.1 of section 34 of this rule. The insulation shall extend downward from the top of the slab to the bottom of a trench footing or from the top of the slab to the top of the inverted tee of a spread footing or from the top of the slab downward to the bottom of the slab and then horizontally for a minimum distance of forty-eight (48) inches, and shall be a moisture resisting insulation with an absorption rate of less than five percent (5%) by volume. The top edge of the insulation installed between the exterior wall and the edge of the interior slab may be cut at a forty-five (45) degree angle away from the exterior wall. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-71; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-72 Section 602.2.5; crawl space walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 72. Change section 602.2.5 to read as follows: The exterior walls of crawl spaces below uninsulated floors shall have a thermal transmittance value of not less than the value given in Table No. 502.2.1 of section 30 of this rule or Table No. 502.3.1 of section 34 of this rule. Foam plastic insulation used in crawl spaces shall conform to the thermal barrier requirements of 675 IAC 13, the Indiana Building Code, or 675 IAC 14, the Indiana One and Two Family Dwelling Code.

Crawl space ventilation shall conform to 675 IAC 13, the Indiana Building Code, or 675 IAC 14, the Indiana One and Two Family Dwelling Code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-72; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-73 Section 602.2.6; basement walls**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 73. Change section 602.2.6 to read as follows: The exterior walls of basements below uninsulated floors shall have a thermal transmittance value of not less than the value given in Table No. 502.2.1 of section 30 of this rule or Table No. 502.3.1 of section 34 of this rule to a depth of ten (10) feet below the outside finish ground level, or to the level of the basement floor, whichever is less. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-73; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-74 Section 603.2.1; heating and mechanical cooling equipment performance**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 74. Delete section 603.2.1 including Tables No. 603.2.1a, 603.2.1b, 603.2.1c, and 603.2.1d and substitute the following: Equipment and mechanical component performance and efficiency factors shall be as required by Chapter 5 of this code. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-74; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-75 Section 603.2.2; combustion heating equipment**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 75. (a) Change section 603.2.2 to read as follows: Gas and oil-fired comfort heating equipment shall have an AFUE of not less than the values shown in Table No. 503.4.3.

(b) Delete Table No. 603.2.2 and footnotes. *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-75; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

**675 IAC 19-3-76 Section 604.1.2.3; swimming pools**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 76. (a) Delete the last paragraph of section 604.1.2.3.

(b) Add a paragraph to the end of section 604.1.2.3 to read as follows: The thermal efficiency of pool heaters shall be no less than seventy-eight percent (78%). *(Fire Prevention and Building Safety Commission; 675 IAC 19-3-76; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)*

16 IR 1142; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-77 Section 605; electrical power and lighting**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 77. Change section 605 to read as follows: The electrical power distribution and lighting systems shall conform to the requirements of section 505 of this code.

Exception: One and two family detached dwellings, bed and breakfast establishments, and the dwelling portion of multifamily buildings are exempt from the requirements of this section.

(Fire Prevention and Building Safety Commission; 675 IAC 19-3-77; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1143; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-78 Section 701.1; standards**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 78. (a) Change the first paragraph of section 701.1 to read as follows: The standards and portions thereof, which are referenced in various parts of this code and in this section are not adopted and are not enforceable as part of this code, and are for reference only.

(b) Change RS-1 in section 701.1 to read as follows: 1989 ASHRAE Handbook of Fundamentals.

(c) Delete in section 701.1, Standards RS 16, RS 17, RS 18, and RS 19. (Fire Prevention and Building Safety Commission; 675 IAC 19-3-78; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1143; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-79 Chapter 7**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 79. Delete in Chapter 7 the following: Figures No. 1 through No. 9. (Fire Prevention and Building Safety Commission; 675 IAC 19-3-79; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1143; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

**675 IAC 19-3-80 Appendix**

Authority: IC 22-13-2-2; IC 22-13-4-1

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7-2-9

Sec. 80. Add a paragraph to the Appendix to read as follows: The tables in the Appendix are for information only and are not adopted as part of this code. (Fire Prevention and Building Safety Commission; 675 IAC 19-3-80; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1143; readopted filed Sep 11, 2001, 2:49 p.m.: 25 IR 530; readopted filed Sep 21, 2007, 9:20 a.m.: 20071010-IR-675070388RFA; readopted filed Oct 10, 2007, 9:16 a.m.: 20071031-IR-675070388RFA)

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