



CALIFORNIA ENERGY COMMISSION

CONSERVATION DIVISION

New Building and Appliance Efficiency Office

ENERGY EFFICIENCY STANDARDS FOR NEW BUILDINGS

New Standards for Office Buildings

Consolidated and Streamlined Standards
For Other Nonresidential and Residential Buildings

Chapter 2-53 of Title 24

Adopted December 14, 1983

and

January 11, 1984

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Item Code: P400-84-007

=====
IMPORTANT NOTICE
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These standards apply to all new construction for occupancies A, B, E, H, and R. They become effective six months after certification of the 1985 Energy Compliance Manual or upon their publication in the State Building Code by the State Building Standards Commission, whichever is later. Sections applying to new office construction, 2-5341 to 2-5343, are alternate standards until January 1, 1987, at which time they become mandatory.

CALIFORNIA ADMINISTRATIVE CODE
TITLE 20
CHAPTER 2, SUBCHAPTER 4
ARTICLE 1.--ENERGY BUILDING REGULATIONS

1401. Scope.

- (a) This article contains administrative regulations relating to the energy building regulations in Chapter 2-53. This article applies to all residential and nonresidential buildings.
- (b) Nothing in this Article lessens any necessary qualifications or responsibilities of licensed or registered building professionals or other designers or builders, or the duties of enforcement agencies, that exist under state or local law.

NOTE: Authority cited: Public Resources Code, Sections 25402 and 25402.1
Reference: Public Resources Code, Sections 25402 and 25402.1

1402. Definitions.

In this article the following definitions apply:

"Approved calculation method" means a Public Domain Computer Program approved under Section 1409(a), or an Alternative Calculation Method approved under Section 1409(b).

"Building Permit" means an electrical, plumbing, mechanical, building, or other permit or approval, that is issued by an enforcement agency, and that authorizes any construction that is subject to Chapter 2-53.

"Chapter 2-53" means California Administrative Code, Title 24, Part 2, Chapter 2-53.

"Commission" means the State Energy Resources Conservation and Development Commission.

"Compliance approach" means any one of the allowable methods by which the design and construction of a building may be demonstrated to be in compliance with Chapter 2-53. The compliance approaches are the performance compliance approach and the prescriptive compliance approach. The requirements for each compliance approach are set forth in Section 2-5304 of Chapter 2-53.

"Conditioned floor area" means "conditioned floor area" as defined in Section 2-5302 of Chapter 2-53.

"Energy Budget" means "energy budget" as defined in Section 2-5302 of Chapter 2-53.

"Enforcing agency" means the city, county, or state agency responsible for issuing a building permit.

"Executive Director" means the Executive Director of the Commission.

"Fan performance index" means "fan performance index" as calculated under Section 2-5332 of Chapter 2-53.

"Fan watt index" means "fan watt index" as calculated under Section 2-5342(e)2.C of Chapter 2-53.

"HVAC system" means "HVAC system" as defined in Section 2-5302 of Chapter 2-53.

"Manufactured device" means "manufactured device" as defined in Section 2-5302 of Chapter 2-53.

"Public Adviser" means the Public Adviser of the Commission.

"R Value" means the measure of the resistance of a material or building component to the passage of heat in $[\text{hr} \times \text{ft}^2 \times ^\circ\text{F}] \div \text{Btu}$.

"Source cooling performance index" means "source cooling performance index" as calculated under Section 2-5342(e)2.B. of Chapter 2-53.

"Source heating performance index" means "source heating performance index" as calculated under Section 2-5342(e)2.A. of Chapter 2-53.

NOTE: Authority cited: Public Resources Code, Section 25402
Reference: Public Resources Code, Section 25402

1403. Permit, Certificate, Informational, and Enforcement Requirements for Nonresidential Designers, Installers, Builders, Manufacturers and Suppliers.

(a) Documentation.

1. Responsibility for signing.

Each document described in Sections 1403(a)(2) and 1403(a)(3) shall be signed by the person responsible for its preparation. The signer shall be a civil engineer, mechanical engineer, electrical engineer, architect, building designer, general building contractor, or specialty contractor, licensed or registered to practice by the State of California; or shall be the building owner if he or she is allowed by law to prepare the document. If more than one person has responsibility for building design or construction, each person may prepare and sign the document or documents applicable to that portion of the design or construction for which the person was responsible; or the person with chief responsibility for design or construction may prepare and sign the document for the entire design or construction.

2. Design; application for a building permit.

Each application for a building permit subject to Chapter 2-53 shall contain at least one copy of the documents listed in Sections 1403(a)(2)(A) and 1403(a)(2)(B).

- A. Plans and specifications showing the characteristics of each feature, material, component, and manufactured device proposed to be installed in order to have the building meet the requirements of Chapter 2-53, and of any other feature, material, component, or manufactured device that Chapter 2-53 requires be indicated on the plans and specifications. If any characteristic of any such feature, material, component, or manufactured device is materially changed before final construction and installation, the change shall be indicated on amended plans and specifications and shall be submitted to the enforcement agency. Such characteristics shall include the efficiency (or other characteristic regulated by Chapter 2-53) of each device, and the source heating power index, source cooling power index, fan wattage index, and fan performance index of each proposed HVAC system.
- B. A designation of the compliance approach for the building, and of the sections of Chapter 2-53 with which the building is intended to comply.
 - (1) If a building permit has been previously issued for any part of the building subject to Chapter 2-53, the compliance approach in the current application shall be consistent with the compliance approach approved in the previous permit.
 - (2) If the application proposes a performance compliance approach, the designation shall contain:
 - a. the approved calculation method used;
 - b. a statement that the input values used for the items listed in Section 2-5304(d)4.B. of Chapter 2-53 were the values required by that section;
 - c. the energy budget allowed by Chapter 2-53, and the energy consumption of the proposed building modelled by the approved calculation method, in annual Btu per square foot of conditioned floor area;
 - d. a statement that the proposed building modelled is consistent with the plans and specifications described in Section 1403(a)2.A.; and
 - e. the calculation outputs, including the standardized inputs and outputs described in the Energy Conservation Manual, produced by the modelling of the proposed building.

3. Construction.

Before the enforcement agency determines whether the building may be occupied, the person with responsibility for the construction or installation shall submit to the enforcement agency a statement including:

- A. a list of all manufactured devices installed. The list shall indicate the manufacturer, model number, date of manufacture, and manufacturer's stated efficiency (or other characteristic regulated by Chapter 2-53), including the HVAC component power requirements required to calculate the source cooling power index, source heating power index, fan wattage index, and fan performance index of each HVAC system. The list may refer to the location of the information on the plans and specifications described in Section 1403(a)(2)(A) rather than listing the information;
- B. the number of the building permit under which the construction or installation was performed; and
- C. any other information that the enforcement agency may require to determine that the building as constructed is consistent with approved plans and specifications and complies with Chapter 2-53.

If construction on any portion of the building subject to Chapter 2-53 will be made impossible to be inspected by subsequent construction, the enforcement agency may require the statement to be submitted upon completion of that portion.

EXCEPTIONS:

- I. Nonresidential buildings that have 1,000 square feet or less of conditioned floor area and that have an occupant load of 49 persons less shall be permitted without complying with Section 1403(a), if the enforcement agency so determines.
- II. Buildings of Occupancy R shall be permitted without complying with Section 1403(a)(3).
4. Insulation Certificate. After installing wall, ceiling, or floor insulation, the installer shall post in a conspicuous location in the building a certificate signed by the installer stating that the installation conforms is consistent with the plans and specifications described in Section 1403(a)2.A. and for which the building permit was issued, and conforms with the requirements of Chapter 2-53. The certificate shall also state the manufacturer's name and material identification, the installed R-value, and (in applications of loose fill insulation) the minimum installed weight per square foot consistent with the manufacturer's labeled installed design density for the desired R-value.

(b) Operating and Maintenance Information to Be Provided by Builder.

1. The builder shall provide the building owner, manager, and the original occupants a list of the features, materials, components, and mechanical devices installed in the building, and instructions on how to use them efficiently. The instructions shall be consistent with specifications set forth by the Executive Director.

2. The builder shall provide maintenance information to the building owner, manager, and original occupant(s) for all features, materials, components, and manufactured devices that require routine maintenance for efficient operation. Required routine maintenance actions shall be clearly stated and incorporated on a readily accessible label. The label may be limited to identifying, by title and/or publication number, the operation and maintenance manual for that particular model and type of feature, material, component or manufactured device.
3. The builder shall provide the building owner, manager, and original occupants a description of the quantities of outdoor and recirculated air that the ventilation systems are designed to provide to each area.

(c) Equipment Information to be Provided by Manufacturer or Supplier.

The manufacturer or supplier of any manufactured device shall, upon request, provide to building designers and installers information about the device. The information shall include the efficiency (and other characteristics regulated by Chapter 2-53), and the source heating performance index, source cooling performance index and fan performance index of each HVAC system.

(d) Enforcement Agency Requirements.

1. Permits.

An enforcement agency shall not issue a building permit for any construction unless the enforcement agency determines in writing that the construction is designed to comply with the requirements of Chapter 2-53 that are in effect on the date the building permit was applied for.

If a building permit has been previously issued there has been no construction under the permit, and the permit has expired, the enforcement agency shall not issue a new permit unless the enforcement agency determines in writing that the construction is designed to comply with the requirements of Chapter 2-53 in effect on the date the new permit is applied for.

"Determines in writing" includes but is not limited to approval of a building permit with a stamp normally used by the enforcement agency.

2. Inspection.

The enforcement agency shall inspect new construction to determine whether it is consistent with the agency's approved plans and specifications, and complies with Chapter 2-53.

1404. Exceptional Designs.

(a) Requirements.

If a building permit applicant proposes to use a performance compliance approach, and the building designs cannot be adequately modeled by an approved calculation method, an applicant shall be granted a building permit if the Commission finds:

1. that the design cannot be adequately modeled with an approved calculation method;
2. using an alternative evaluation technique, that the design complies with Chapter 2-53; and
3. that the enforcement agency has determined that the design complies with all other legal requirements.

(b) Applications.

The applicant shall submit four copies of a signed application with the following materials to the Executive Director:

- (1) A copy of the plans and specifications required by Section (a)2.A.;
- (2) A statement explaining why meeting the energy budget cannot be demonstrated using an approved calculation method;
- (3) Documentation from the enforcement agency stating that (i) meeting the energy budget requirements cannot be demonstrated using an approved calculation method, and (ii) the design complies with all other legal requirements; and
- (4) A detailed evaluation of the energy consumption of the proposed building and the building's materials, components, and manufactured devices proposed to be installed to meet the requirements of Chapter 2-53, using an alternative evaluation technique. The evaluation shall include a copy of the technique, instructions for its use, a list of all input data, and all other information required to replicate the results.

NOTE: Authority cited: Public Resources Code, Sections 25402 and 25402.1.
Reference: Public Resources Code, Sections 25402 and 25402.1.

1405. Enforcement by the Commission.

- (a) Where There Is No Local Enforcement Agency. Before new construction may begin in an area where there is no local enforcement agency, and on any

NOTE: See Section 1409 for approval of calculation methods and Alternative Component Packages.

proposed governmental agency building, the Executive Director must determine in writing that the building design conforms to the requirements of Chapter 2-53. The person proposing to construct the building shall submit the information described in Section 1403(a)(2) and 1403(a)(3) to the Executive Director when such a determination is sought.

- (b) Where the Local Enforcement Agency Fails to Enforce. If a local enforcement agency fails to enforce the requirements of this article or of Chapter 2-53, the Commission, after furnishing 10 days written notice, may condition building permit issuance on submission of the information described in Sections 1403(a)(2) and 1403(a)(3) to the Executive Director and on his or her written determination that proposed construction conforms to the requirements of Chapter 2-53.

NOTE: Authority cited: Public Resources Code, Section 25402.1.
Reference: Public Resources Code, Section 25402.1.

1406. Locally Adopted Energy Standards.

(a) Requirements.

Local governmental agencies may adopt and enforce energy standards for new buildings, provided the Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by Chapter 2-53. Such local standards include but are not limited to adopting the requirements of Chapter 2-53 before their effective date, requiring additional energy conservation measures, or setting more stringent energy budgets. Local adoption of the requirements of Chapter 2-53 before their effective date is a sufficient showing that the local standards meet the requirements of this section and Section 25402.1(f)(2) of the Public Resources Code; in such a case only the documentation listed in Section 1406(b), and a statement that the standards are those in Chapter 2-53, need be submitted.

(b) Application.

Local governmental agencies wishing to enforce locally adopted energy conservation standards shall submit four copies of an application with the following materials to the Executive Director:

- (1) The proposed local energy standards.
- (2) A study with supporting analysis showing how the local agency determined energy savings.
- (3) A statement that the local standards will require buildings to be designed to consume no more energy than permitted by Chapter 2-53.
- (4) The basis of the agency's determination that the standards are cost effective.

NOTE: Authority cited: Public Resources Code, Section 25402.1.
Reference: Public Resources Code, Section 25402.1.

1407. Interpretations.

- (a) The Commission may make a written determination as to the applicability or interpretation of any provision of this article or of Chapter 2-53, determination upon written application, if a dispute concerning a provision arises between an applicant for a building permit and the enforcement agency, and the dispute has been heard by the local board of permit appeals or other highest local review body. Notice of any such appeal, including a summary of the dispute and the section of the regulations involved, shall if possible be sent to the Commission 15 days before the appeal is heard, and the result of the appeal shall be sent to the Commission within 15 days after the decision is made. Either party to the dispute may apply for a determination but shall concurrently deliver a copy of the to the other party. The determinations are binding on the parties.
- (b) The Executive Director may, upon request, give written advice concerning the meaning of any provision of this article or of Chapter 2-53. Such advice is not binding on any person.

NOTE: Authority cited: Public Resources Code, Section 25402.1.
Reference: Public Resources Code, Section 25402.1.

1408. Exemption.

(a) Requirements.

The Commission may exempt any building from any provision of Chapter 2-53 if it finds that:

- (1) Substantial funds had been expended in good faith on planning, designing, architecture, or engineering of the building before the adoption date of the provision.
- (2) Compliance with the requirements of the provision would be impossible without both substantial delays and substantial increases in costs of construction above the reasonable costs of the measures required to comply with the provision.

(b) Application.

The applicant shall submit four copies of a signed application with the following materials to the Executive Director:

- (1) A summary of the claimant's contracts for the project;
- (2) A summary of internal financial reports on the project;
- (3) Dated schedules of design activities; and
- (4) A progress report on project completion.

NOTE: Authority cited: Public Resources Code, Section 25402.1.
Reference: Public Resources Code, Section 25402.1.

1409. Calculation Methods.

NOTE: See Section 1404 for approval of exceptional designs.

(a) Public Domain Computer Programs.

In addition to the present approved public domain computer programs, the Commission may, upon written application or its own motion, approve additional public domain computer programs that may be used to demonstrate that proposed building designs meet energy budgets.

- (1) The Commission shall ensure that users' manuals or guides for each approved program are available.
- (2) The Commission shall approve a program only if when it models building designs or features, it predicts energy consumption substantially equivalent to that predicted by the computer program used by the Commission to set energy budgets.

(b) Alternative Calculation Methods (All Occupancies).

(1) Requirements.

The Commission may approve alternative calculation methods, in addition to the present approved point system for residential occupancies, which may be used to demonstrate that proposed building designs meet the energy budgets, if it finds that the method:

- (A) makes no changes in any input parameter values specified in the Energy Conservation Manual and (for other parameters) lists any default values used;
- (B) Provides input and output documentation that facilitates the enforcement agency's review;
- (C) Is supported by clear and concise instructions for using the method to demonstrate that the energy budget requirements of Chapter 2-53, are met;
- (D) Is reliable and accurate;
- (E) Establishes factors that, when applied to method's outputs, result in energy budgets for that alternative calculation method that are equivalent to those in Chapter 2-53, when the buildings used to develop the energy budgets in Chapter 2-53 are modeled.

(2) Application.

The applicant shall submit four copies of a signed application with the following materials to the Executive Director:

(A) the method's analytical capabilities and limitations with respect to the occupancies, designs, materials, and devices covered by Chapter 2-53; and

(B) a demonstration that the criteria in Section 1409(b)(1) are met.

(3) Exceptional Methods.

The alternative calculation method analyzes designs, materials, or devices that cannot be adequately modeled using the public domain computer programs, the method may be approved as an exceptional method. Applications for approval of exceptional methods shall include theoretical and empirical information that verify the method's accuracy, and shall also include the other documentation required by subsection 1409(b).

(4) Approval.

The Commission may approve a method unconditionally, may restrict approval to specified occupancies, designs, materials, or devices, or may reject the application.

(5) Resubmittal.

An applicant may resubmit a rejected method or may request modification of a restricted approval. Such application shall include the information specified in Section 1409(b)(2) and shall indicate how the method has been changed to enhance its accuracy or capabilities.

(6) Modification.

Whenever an approved calculation method is changed in any way, the method shall be resubmitted under this Section for reapproval. The Executive Director may waive any of the requirements of this paragraph for nonsubstantive changes.

- (c) The Commission may modify or withdraw certification of a program or method under Section 1409(a) or 1409(b) based upon approval of other programs or methods that are more suitable.
- (d) Alternative Component Packages. The Commission may approve any alternative component package, in addition to the packages in Sections 2-5342 and 2-5351(c) of Chapter 2-53, which it determines will meet energy budgets and is likely to apply to a significant percentage of new buildings or to a significant segment of the building construction and design community.
- (e) Publication of Commission Determinations. The Executive Director shall periodically publish a manual, newsletter, or other administrative guide containing determinations made by the Executive Director and Commission pursuant to this section.

NOTE: Authority cited: Public Resources Code, section 25402.1.
Reference: Public Resources Code, section 25402.1.

1410. Procedures for Consideration of Applications Under Sections 1404, 1406, 1407(a), 1408, and 1409.

- (a) Within 15 days after the Executive Director receives the application, he or she shall make it available to interested persons in order to obtain comments on it. Comments shall be submitted within 45 days after he or she receives the application.
- (b) Within 30 days after the Executive Director receives the application, he or she may request any additional information needed to evaluate it.
- (c) Within 60 days after the Executive Director receives the application, or 30 days after receipt of all additional information requested under Section 1410(b), whichever is later, he or she shall submit to the Commission and the applicant a written recommendation on the application.
- (d) The application and the Executive Director's recommendation shall be placed on the consent calendar and considered at the first available business meeting after preparation of the recommendation. The matter shall be removed from the consent calendar at the request of any person.
- (e) The Executive Director may charge a fee to recover the costs of processing and reviewing applications.
- (f) Applicants under Sections 1404, 1406, 1408, and 1409 have the burden of proof to establish that their applications should be granted.

NOTE: Authority cited: Public Resources Code, Section 25402
Reference: Public Resources Code, Section 25402

CALIFORNIA ADMINISTRATIVE CODE
 TITLE 24
 PART 2

CHAPTER 2-53. ENERGY CONSERVATION IN NEW BUILDING CONSTRUCTION

NOTE: Chapter 53 of the U.B.C. is not adopted by reference. The provisions of this chapter represent an entire new Chapter 2-53.

Adoption Table No. 2-53A

Code Section	BSC	HCD 1	HCD 2	SFM	OSA SSS	OSA HC	OSH PD	DHS	OSHA	CEC	SHB	DOT	AGR	YA	BOC	DOE	CA
Entire Chapter 2-53	-	-	-	-	-	-	-	-	-	x ³	-	-	-	-	-	-	-

- NOTES:
1. See Sections 2-105 and 2-106 for explanation of this Table.
 2. See State Building Code History Note Appendix.
 3. The building standards contained in this Chapter become effective upon publication.

EXCEPTION:

Until March 1, 1987, building permit applicants for new office occupancies in buildings may comply with the standards in Sections 2-5321 through 2-5333 as an alternative to the pertinent requirements in Sections 2-5341 through 2-5343. After March 1, 1987, building permit applicants for office occupancies in buildings shall comply with Sections 2-5341 through 2-5343.

ENERGY CONSERVATION STANDARDS--GENERAL PROVISIONS

Scope

Sec. 2-5301.

(a) General.

Chapter 2-53 establishes energy efficiency standards for buildings that are heated or mechanically cooled and for which an application for a building permit or renewal of an existing permit is filed on or after the effective date of the provisions. Chapter 2-53 also applies to buildings constructed by a governmental agency.

EXCEPTIONS: The following building types need not comply with Chapter 2-53:

1. Qualified historical buildings, to the extent provided under the State Historical Building Code (Title 24, part 8).
2. Buildings in which no energy for space heating, space cooling, water heating, or lighting is derived from depletable sources.
3. Buildings for which actual site preparation and construction have begun before the effective date of the amendments.

(b) All Buildings. Sections 2-5301, 2-5302, and 2-5311, apply to all buildings.

(c) New Buildings.

1. Sections 2-5304 and 2-5312 through 2-5319 apply to new buildings of occupancies A, B, E, H, and R.

EXCEPTION: Buildings of occupancy group R need not comply with Sections 2-5315, 2-5316(c), or 2-5319.

2. Sections 2-5321 through 2-5333 apply to new buildings of occupancies A, B (except offices), E, and H.
3. Sections 2-5341 through 2-5343 apply to new office occupancies.
4. Sections 2-5351 through 2-5352 apply to all new buildings of occupancy group R except apartment houses with four or more habitable stories, and hotels.

EXCEPTION: Seasonally occupied agricultural housing limited by state or federal agency contract to occupancy not more than 180 days in any calendar year need not comply with the provisions of Section 2-5351.

5. The provisions of Sections 2-5361 through 2-5365 apply to new apartment houses with four or more habitable stories, and to new hotels.

(d) New Construction in Existing Buildings.

1. Installation of additional insulation. Sections 2-5313(b) and (c) apply to existing buildings of all occupancies. Section 2-5313(a) applies only to existing buildings of occupancy group R.
2. Additions and alterations (Occupancies A, B, E, H, and R)
 - A. Additions and alterations which increase or create conditioned space shall comply with (1) or (2):
 - (1) The lighting system and the building envelope of such additions or alterations shall comply with the provisions of Sections 2-5321 through 2-5333 (for buildings of occupancy A, B, E, and H), 2-5342 (for offices), 2-5351(c) (for buildings of occupancy R other than apartment houses of four or more stories and hotels), or 2-5362 through 2-5364 (for apartment houses of four or more stories and hotels).
 - (2) If the addition or alteration uses a performance compliance approach, the energy efficiency of the existing building may be improved and used to offset the energy consumption of the addition; the energy consumption of the improved existing building and the addition shall be equal to or less than that of the unimproved existing building plus an addition that complies with the applicable energy budget, as shown by an approved calculation method.

EXCEPTION: Hotel alterations that are not additions need not comply with section 2-5301(d)2.A.

- B. Manufactured devices located within additions or newly conditioned space shall comply with Sections 2-5311 through 2-5319.

EXCEPTION: Expanding an existing space conditioning system to heat or cool an addition shall be permitted provided that new ductwork and piping, and those portions of existing ducts and pipes that are altered, shall comply with Sections 2-5312, 2-5313, and 2-5316.

- C. Alterations that do not increase conditioned space shall:
 - (1) comply with those portions of Sections 2-5311 through 2-5319 that apply to the building component, system, or equipment being altered; and
 - (2) not increase the energy consumption of the altered component, system, or equipment. If the occupancy type of a building,

**TABLE 2-53L
OCCUPANT AND CLIMATIC THERMAL LOADS PER SQUARE FOOT OF CONDITIONED FLOOR AREA**

Occupancy (1) Group A-Drinking and dining establishments	Climatic Thermal (2) Zones 1-5			Climatic Thermal Zones 6, 8, 9, 10			Climatic Thermal Zone 7			Climatic Thermal Zones 11, 12, 13			Climatic Thermal Zones 14, 15		
	Heated & Cooled	Heated Only	Cooled Only	Heated & Cooled	Heated Only	Cooled Only	Heated & Cooled	Heated Only	Cooled Only	Heated & Cooled	Heated Only	Cooled Only	Heated & Cooled	Heated Only	Cooled Only
all others	131	126	82	108	102	82	104	103	80	132	119	96	148	109	126
B-1	159	154	64	123	114	68	118	106	71	155	140	86	189	120	141
offices	180	171	163	191	163	184	189	162	184	196	173	185	243	168	236
under 300	141	135	134	145	133	142	145	132	143	148	139	140	165	137	160
over 299	126	125	124	129	128	128	131	130	131	134	131	130	132	129	128
retail grocery stores	214	212	167	194	189	176	192	187	176	235	216	199	255	204	229
B-2 other retail stores															
under 300	180	171	163	191	163	184	189	162	184	196	173	185	243	168	236
over 299	200	195	190	207	195	202	209	196	204	213	199	205	231	205	225
drinking and dining establishments	131	126	82	108	102	82	104	103	80	132	119	96	148	109	126
classrooms	120	118	77	105	94	82	101	94	83	156	143	89	142	97	123
storage	104	104	104	65	65	65	63	63	63	92	92	92	80	80	80
B-3	104	104	104	65	65	65	63	63	63	92	92	92	80	80	80
B-4															
H															
E	120	118	77	105	94	82	101	94	83	156	143	89	142	97	123

NOTES

- Occupancy, as defined in the Uniform Building Code, 1982 Edition. Occupancies A and B-2 have been further subdivided. For B group occupancies (other than offices) not listed, use the subdivision which most closely describes the occupancy.
- Occupant load, calculated as described in Table 2-53L.
- Climatic thermal zone, as described in Figure 2-53A.
- Use appropriate columns for buildings that are heated and cooled, heated only or cooled only.

