

# Town of Marana

Amendments to the:

## 2006 International Energy Conservation Code

**Section 101.1 Title.** Insert:[name of jurisdiction] as “Town of Marana”.

**Section 102.2.1 Protection of exposed foundation insulation.** Delete this section.

ADD new section 102.4. to read:

**102.4. Residential.** Residential buildings constructed under the provisions of this standard shall be permitted to use refrigerated air conditioning systems selected under the guidelines of the Air Conditioning Contractors of America (ACCA) Manual J Procedures, Specifically Sections 7-27, 7-28 and 7-29 at outside conditions of 105 degrees F and inside conditions of 75 degrees F. Other provisions of this standard notwithstanding, air conditioning equipment shall have a minimum SEER of 14 and gas-fired heating appliances shall have a minimum of 90% efficiency.

ADD new section 102.4.1 to read:

**102.4.1 Evaporative cooling.** Evaporative cooling may be used for cooling or to reduce air conditioning requirements but may not be used as the method of compliance to this standard except for commercial buildings that use evaporative cooling as an economizer cycle on a refrigeration or air conditioning application. Duct leakage through the evaporative device shall be minimized during air conditioning and heating modes of operation.

ADD new section 102.4.2 to read:

**102.4.2 Water Heating.** The following service water heating systems are the only methods acceptable:

- a. Solar water heaters.
- b. Instant gas or electric water heaters.
- c. Heat pump electric water heaters.
- d. Heat recovery water heaters from air conditioning or other sources.
- e. Gas water heaters exceeding 80% efficiency.
- f. Passive Solar with in-collector storage (ICS), thermal siphon and alike shall be installed with no more than a total of 20 linear feet of piping between the solar system and the storage tank.

**Exception:** Other methods acceptable to the authority having jurisdiction showing 50% reduction of water heating energy consumption.

Water heating systems that serve only hand sinks and/or a single mop sink may use a water heater with up to 20 gallons of storage.

**Section 104.1 General:** REVISE section by ADDING a sentence at the end of the paragraph to read:

Plans and specifications shall show the method of utilizing "beneficial use of solar energy".

**Section 202 General definitions.** Add the following new definitions:

**Beneficial Use of Solar Energy:** The following devices/methods may be used to demonstrate compliance:

- Solar space heating systems.
- Solar Photovoltaic systems.
- Solar thermal/electric power generating systems, including stand-alone and grid connected parabolic trough and dish.
- Passive building heating for the winter through the use of optimum window shade structures and orientation when designed by a registrant.
- Solar water systems for domestic water heating or space heating.

**Power Density:** The total connected power load of all components of a building system, including all auxiliary components and circuitry, without regard to the timing, scheduling, or control of their operation, in  $w/ft^2$  or  $Btu-h/ft^2$ .

**Site Energy:** Energy, other than recovered energy, utilized for any purpose on the site.

Source energy consumption shall be determined by multiplying the site energy usage in  $kBtu-h$  per square foot by the following factors:

| Site Energy                                 | Factor |
|---|--------|
| Electric                                    | 3.10   |
| Gas   | 1.11   |
| Wood  | 1.00   |
| Solar (amount of displaced electric or gas) | 0.00   |

**Bedrooms:** A room including clothes closets that may be used for sleeping purposes.

**Section 404.3 Documentation.** REVISE first sentence to read: ...proposed residence (proposed design) be shown to have an annual energy cost that is less than 50% of the annual energy cost of the standard reference design....

**Section 404.3 Documentation.** REVISE section by ADDING a second exception to read:

**Exception 2:** Compliance with this chapter may utilize an analysis of the annual source energy usage, as required in section 404.3, hereinafter called an annual energy analysis or shall not exceed the source energy usage shown in Table 404.3.

Table 404.3

| Building<br><i>Sq. Ft. Range</i> | <i>kBtu/Sq.Ft./yr.<br/>(source consumption)</i> |                |              |
|----------------------------------|---|----------------|--------------|
|                                  | <i>Heating</i>                                  | <i>Cooling</i> | <i>Total</i> |
| <1000                            | 5   | 22             | 27           |
| 1000 - 1399                      | 4   | 18             | 22           |
| 1400 - 1799                      | 4   | 16             | 20           |
| 1800 - 2199                      | 4   | 15             | 19           |
| >2200                            | 4   | 14             | 18           |

ADD new section 404.5.3 to read:

**404.5.3 Occupied mode.** The occupied mode shall be not less than 10 hours in a 24-hour period.

ADD new section 502.1.2 to read:

**Section 502.1.2 Energy Consumption.** In multifamily dwellings, provisions shall be made to determine the energy consumed by each tenant by separately metering individual dwelling units or tenant spaces.

**Section 503.2.7.1.1 Duct construction.** REVISE section by ADDING the following to the end of the sentence:

All low pressure ducts shall be leak tested in accordance with this standard. The tested rate of air leakage is not to exceed 3% of conditioned floor area in CFM at 25 Pascals (0.1 inches WC) prior to drywall and air handling equipment installation. A representative of the developer and/or builder will perform a field inspection and leakage test of the ductwork before drywall installation. The field representative will certify successful completion of this test.

**Section 504.6 Hot water system controls.** REVISE section by DELETING "conveniently", PLACING a period after "automatically" and DELETING the rest of the sentence.

**Section 505.6.2 Exterior lighting power.** Add after the first sentence: The lighting power densities shall not exceed the allowable limits of lighting established in the Marana Outdoor Lighting Code.