



Texas Design Standards Update

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SAEAG Meeting in Austin-April 20, 2011

Agenda

- ❖ Chapter 447-TX Government Code
- ❖ Texas Administrative Codes Amendments
 - ❖ Section §19.31
 - ❖ Section §19.32
 - ❖ Section §19.33
 - ❖ Section §19.34
- ❖ New Compliance Certifications
- ❖ Key IECC-ASHRAE Changes
- ❖ Energy Code Training

Texas Design Standards

Chapter 447.004-TX Gov. Code

- ❖ State that SECO shall establish and publish mandatory energy and water conservation design standards for each new state building or major renovation project
- ❖ SECO shall define “major renovation project” and shall review and update the standards biennially

Texas Design Standards

Texas Administrative Code

§19.31-Requirement to Use Design Stds.

- ❖ (a) Pursuant to Gov Code, §447.004, state agencies and institutions of higher education shall use the energy and water conservation design standards that SECO has adopted under this chapter, when constructing new state buildings or conducting major renovations of existing state buildings.
- ❖ (b) This subchapter applies to the construction of new state buildings or major renovations of existing state buildings, where the assignment for design has been entered into after the effective date of this rule.

Texas Design Standards TAC Proposed Amendment

§19.31-Requirement to Use Design Stds.

- ❖ Delete subsection (b) which currently identifies an effective date for the rule
- ❖ Separates implementation dates will be made by amendments in §19.32

Texas Design Standards TAC Amended

§19.31-Requirement to Use Design Stds.

- ❖ Pursuant to Gov Code, §447.004, state agencies and institutions of higher education shall use the energy and water conservation design standards that SECO has adopted under this chapter, when constructing new state buildings or conducting major renovations of existing state buildings.

Texas Design Standards

Texas Administrative Code

§19.32-Energy & Water Design Standards

- ❖ (a) SECO adopts by reference the following standards for new construction or major renovations:
 - ❖ (1) ASHRAE Std. 90.1-1999, or the most current adopted version for commercial buildings;
 - ❖ (2) IECC-2000, or the most current adopted version for residential buildings.
- ❖ (b) SECO shall adopts guidelines for the design of water conservation measures.
- ❖ (c) Copies of the standards are on file at SECO.

Texas Design Standards TAC Proposed Amendment

§19.32-Energy & Water Design Standards

- ❖ Implement new energy and water conservation standards by adopting by reference the latest ASHRAE 90.1 & IECC
- ❖ Adopt by reference the water standards published by SECO-CPA
- ❖ New standards to be published in the Comptroller's website

Texas Design Standards TAC Amended

§19.32-Energy & Water Design Standards

- ❖ (a) SECO adopts by reference the following standards for new construction or major renovation projects:
- ❖ (1) for any new construction or major renovation project, except low-rise residential buildings, with a design assignment made prior to September 1, 2011, ASHRAE 90.1-1999.
- ❖ (2) for any new construction or major renovation project for public low-rise residential buildings with a design assignment made prior to June 1, 2011, IECC-2000.

Texas Design Standards TAC Amended

§19.32-Energy & Water Design Stds.

- ❖ (3) for any new construction or major renovation project, except low-rise residential buildings, with a design assignment made on or after September 1, 2011, ASHRAE 90.1-2010.
- ❖ (4) for any new construction or major renovation project for a public low-rise residential buildings with a design assignment made on or after June 1, 2011, IECC-2009.

Texas Design Standards TAC Amended

§19.32-Energy & Water Design Stds.

- ❖ (b) Effective September 1, 2011, SECO adopts by reference the “Water Efficiency Standards for State Buildings and Institutions of Higher Education Facilities prepared by SECO-CPA and dated January 2011 as the water conservation design standards for new state buildings and major renovation projects.
- ❖ (c) Copies of the standards may be viewed during normal office hours at SECO and the water standards published by the Comptroller Office is available at www.txbuildingenergycode.com.

Texas Design Standards

Texas Administrative Code

§19.33-Major Renovation projects

- ❖ For the purpose of 34 TAC, Chapter 19, Subchapter C, a major renovation project is a building renovation or improvement that affects the energy and water use of the facility.

Texas Design Standards TAC Proposed Amendment

§19.33-Major Renovation Projects

- ❖ Amend the definition of major renovation based on the initial implementation cost estimate.

Texas Design Standards TAC Amended

§19.33-Major Renovation Projects

- ❖ For the purpose of 34 TAC, Chapter 19, Subchapter C, a major renovation project is a building renovation or improvement where the implementation cost is \$2,000,000.00 or more, based on the initial cost estimate.

Texas Design Standards

Texas Administrative Code

§19.34-Submission of Compliance Certification and Documentation

- ❖ Before beginning construction of a new state building or a major renovation project, a state agency or an institution of higher education shall submit to SECO a copy of the certification by the design architect or engineer that verifies to the agency or institution of that the construction or renovation complies with the standards that are established under this chapter, including engineering documentation.

Texas Design Standards TAC Proposed Amendment

§19.34-Submission of Certification and Compliance Documentation

- ❖ Language change to maintain consistency with Chapter 447.004 of the Texas Government Code

Texas Design Standards TAC Amended

§19.34-Submission of Certification and Compliance Documentation

- ❖ Before beginning construction of a new state building or a major renovation project, including a new building or major renovation project of a state-supported institution of higher education, a state agency or an institution of higher education shall submit to SECO a copy of the certification by the design architect or engineer that verifies to the agency or institution of that the construction or renovation complies with the standards that are established under this chapter, including engineering documentation.

PROJECT DESCRIPTION

New

Renovation

Addition

Total Sq. Ft. of Conditioned Space _____

Please provide brief description of project: _____

**INDICATE METHOD USED TO VERIFY COMPLIANCE AND ATTACH DOCUMENTATION:
MANDATORY REQUIREMENTS PLUS**

PRESCRIPTIVE

TRADE-OFF (ENVELOPE)

ENERGY COST BUDGET

COMPLIANCE WITH THE ECONOMIC FEASIBILITY OF INCORPORATING ALTERNATIVE ENERGY
AND ENERGY EFFICIENT ARCHITECTURAL AND ENGINEERING DESIGN

COMPLIANCE WITH THE STATE WATER EFFICIENCY STANDARDS

Having examined the Texas Design Standard for nonresidential buildings, based on ANSI/ASHRAE/IESNA Standard 90.1-2010, and being knowledgeable of provisions thereof, I do hereby notify the agency or institution listed above and the State Comptroller's Office, State Energy Conservation Office, of the above described project and confirm, to the best of my professional ability, that the construction plans and specifications are in compliance with the provisions of the Standard in accordance with the Texas Government Code, Title 4, Ch. 447.004 (e) (f).

Signature of Confirming Architect/Engineer

Title

Date

(Affix Official TBAE/TBPE Seal)

TBAE/TBPE Registration No.

PROJECT DESCRIPTION

New

Renovation

Addition

Total Sq. Ft. of Conditioned Space _____

Please provide brief description of project: _____

INDICATE METHOD USED TO VERIFY COMPLIANCE AND ATTACH DOCUMENTATION:

Prescriptive Requirements (Ch. 6) Component Performance (Ch. 5) Systems Analysis (Ch. 4)

COMPLIANCE WITH THE ECONOMIC FEASIBILITY OF INCORPORATING ALTERNATIVE ENERGY AND ENERGY EFFICIENT ARCHITECTURAL AND ENGINEERING DESIGN

COMPLIANCE WITH THE STATE WATER EFFICIENCY STANDARDS

Having examined the Texas Design Standard for residential buildings, based on the 2009 IECC and being knowledgeable of provisions thereof, I do hereby notify the agency or institution listed above and the State Comptroller's Office, State Energy Conservation Office, of the above described project and confirm, to the best of my professional ability, that the construction plans and specifications are in compliance with the provisions of the Standard in accordance with the Texas Government Code, Title 4, Ch. 447.004 (e) (f).

Signature of Confirming Architect/Engineer

Title

Date

(Affix Official TBAE/TBPE Seal)

TBAE/TBPE Registration No.

Key IECC-2009 Changes

- ❖ Air sealing and insulation – demonstrated compliance
 - ❖ Testing option – blower door
 - ❖ Visual inspection option – approved independent party
- ❖ Duct tightness tested at rough-in or post-construction
 - ❖ Exception: all ducts and air handler are in conditioned space
- ❖ High-efficacy lamps in 50 percent of the permanent fixtures – CFL's qualify
- ❖ Vertical fenestration
 - ❖ SHGC reduced from .40 to .30 in Climate Zones 2 and 3
 - ❖ U-factor reduced from .75 to .65 in Climate Zone 2, and from .65 to .50 in Climate Zone 3
- ❖ Pool covers required for heated pools
 - ❖ Exception: solar heated

Key ASHRAE Changes: Lighting LPD's

**TABLE 9.5.1 Lighting Power Densities
Using the Building Area Method**

Building Area Type ^a	LPD	
	(W/ft ²)	
Automotive facility	0.9	<u>0.82</u>
Convention center	1.2	<u>1.08</u>
Courthouse	1.2	<u>1.05</u>
Dining: bar lounge/leisure	1.3	<u>0.99</u>
Dining: cafeteria/fast food	1.4	<u>0.90</u>
Dining: family	1.6	<u>0.89</u>
Dormitory	1.0	<u>0.61</u>
Exercise center	1.0	<u>0.88</u>
Gymnasium	1.1	<u>1.00</u>
Health-care clinic	1.0	<u>0.87</u>
Hospital	1.2	<u>1.21</u>
Hotel	1.0	<u>1.00</u>
Library	1.3	<u>1.18</u>
Manufacturing facility	1.3	<u>1.11</u>
Motel	1.0	<u>0.88</u>
Motion picture theater	1.2	<u>0.83</u>
Multifamily	0.7	<u>0.60</u>
Museum	1.1	<u>1.06</u>
Office	1.0	<u>0.90</u>
Parking garage	0.3	<u>0.25</u>

Key ASHRAE Changes: Fenestration U-Factors

Fenestration U-Factor Changes

(2007) 1.20 (cz1) → .35 (cz8)

(2010) .51 (cz1) → .25 (cz8)

Note: CZ = Climate
Zone

Key ASHRAE Changes: Roof and Wall U-Factors

R-Value Insulation Changes

Roofs

(2007) R-15 (cz1) → R-20 (cz8)

(2010) R-20 (cz1) → R-35 (cz8)

walls

(2007) R-13 (cz1) → R-13+7.5ci (cz8)

(2010) R-13+7.5ci (cz1) → R-13+18.8ci (cz8)

Note: CZ = Climate
Zone

Training ASHRAE-2010/IECC-2009

- ❖ **RFP to Provide Training on IECC-2009**
 - ❖ **Closed on Mar 30,2011**
 - ❖ **Evaluation Team**
- ❖ **Draft RFP to Provide Training on ASHRAE 90.1-2010**
- ❖ **Trainings Schedule for IECC-2009 at www.txbuildingenergycode.com**
- ❖ **Trainings for ASHRAE Std. 90.1-2010 to be coordinated by SECO with SAEAG help**

Questions?

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