

# TCV Help Resources

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### Help Resources:

[Click for Detailed release Notes for TCV \(v1.1 r148\)](#)

[Click for The Manual \(PDF Format for v1.0\)](#)

[Click to Contact Us](#)

[Click for Frequently Asked Questions \(FAQ\)](#)

### What's new in version 1.1?

One the biggest changes in TCV 1.1 is the enhancement of the User Interface Technology. The whole user interface has been moved to Adobe Flash Technologies and is more responsive then before.

- We've added the ability to save a house as a template or to copy an existing house to quickly add more houses into TCV.
- You can now quickly search for any of the projects in TCV.
- You can organize your projects into categories in order to take better control of your categories.
- You no longer need to enter a TRCC number for registration.

[Details here.](#)

### What is the difference between TCV v1.1 and IC3 v3.2?

Differences between the ESL IC3 v3.0 and TCV include IECC 2006 with Austin Ammendments in the simulation, an Inspection system, input of the Manual J determined HVAC size, specifying the energy source of the water heater separately from the house heating, roof reflectance set by user, different acceptable entry values (due to the different adopted Code), entry of feet and inches for overhangs, editing of the user's account information, and improved IE6/IE7 compatibility.

### TCV FAQ

Questions:

- What is Texas Climate Vision?
- How does TCV work?
- How is TCV different from Rescheck?
- What types of things are included in the TCV calculation?

- Can TCV be used in other cities in Texas?
- What types of residential buildings can be calculated with TCV?
- What are some ways I can be sure that my project is better than code?
- How do I find the reflectance of the roofing I will be using?
- My project has some portion of the ceiling vaulted and insulated with R-22 batts, but TCV won't let me enter a value less than R-30. What should I do?
- I am using open cell foam at the roof to create an unvented attic, but the foam I am using is limited to a thickness of 6 inches, or about R-21. What should I enter for ceiling insulation?
- I am designing a house to use cavity insulation plus exterior insulation for the walls, but TCV only permits a single value.
- What should I enter for wall insulation. Like many homes, the windows in my house will have different U and SHGC values. Should I use the highest numbers of a given window or an average?
- For water heaters, is energy factor (EF) the same as efficiency?
- Where do I find my water heater EF?
- My project will have solar thermal water heating. Can I receive credit in the code calculation?
- Based on the condenser and evaporator coils I will be using, my system SEER rating is higher than the label on the condenser. How do I get credit for the higher efficiency?

#### Answers

1: What is Texas Climate Vision?

A: Texas Climate Vision, or TCV, is a code compliance calculator developed to calculate energy code compliances of homes proposed for construction in Austin, Texas. It was developed by the Energy Systems Lab at Texas A&M University and Austin Energy with a grant from the US Department of Energy and assistance from the State Energy Conservation Office.

2: How does TCV work?

A: TCV calculates an annual energy budget for the entire proposed project by comparing the proposed project against a standard reference design. The requirements for the standard reference design are set forth in Section 404 of the IECC.

3: How is TCV different from Rescheck?

A: Rescheck calculates a U-value average for the envelope of the project, while TCV calculates an energy budget on all elements—envelope, mechanical system efficiency, lighting, water heating, appliances loads as well as miscellaneous loads.

4: What types of things are included in the TCV calculation?

A: Efficiency of the building envelope, efficiency of mechanical systems, lighting, water heating efficiency, appliances and miscellaneous loads are all included in the TCV calculation.

5: Can TCV be used in other cities in Texas?

A: Not really, as it was developed based on Austin's amendments to the International Energy Conservation Code (IECC). A similar calculator, IC3, has been developed for the rest of Texas. One could use TCV to see how their project performs compared to Austin's energy code, which is considered more stringent than other cities in the state.

6: What types of residential buildings can be calculated with TCV?

A: Right now, TCV can be used for new one- and two-level detached homes (a version still under development will accommodate three-level and multifamily buildings). For other residential buildings, Rescheck should continue to be used.

7: What are some ways I can be sure that my project is better than code?

A: Because space conditioning and water heating account for a large portion of a home's energy budget, modest increases over federally-mandated minimum efficiencies can boost code performance.

8: How do I find the reflectance of the roofing I will be using?

A: Many roofing manufacturers list the reflectance of their roofing products. The performance of many products can be found on the Cool Roof Rating Council website [www.coolroofs.org](http://www.coolroofs.org). If using composition shingles, a good guide is: dark - .10; medium or gray - .15; light or white - .20.

9: My project has some portion of the ceiling vaulted and insulated with R-22 batts, but TCV won't let me enter a value less than R-30. What should I do?

A: For projects with some areas of fiberglass or cellulose insulation of R-22, enter the following:

Less than 25% R-22, remainder R-30 – enter R-30

25% - 50% R-22, remainder R-38 – enter R-30

A new TCV user interface that is currently under development will accommodate differing thicknesses of attic insulation.

10: I am using open cell foam at the roof to create an unvented attic, but the foam I am using is limited to a thickness of 6 inches, or about R-21. What should I enter for ceiling insulation?

A: Because TCV presently limits users to a minimum ceiling insulation R-value of R-30, lower values commonly associated with foam/unvented attics can't be entered. However, we have determined that when the ducts and mechanical system are brought into the thermal envelope of the building, a house with an unvented attic and R-21 foam at the roof will perform better than the same house with ducts and mechanicals in a vented attic and R-30 at the ceiling.

11: I am designing a house to use cavity insulation plus exterior insulation for the walls, but TCV only permits a single value. What should I enter for wall insulation?

A: Go ahead and enter the total R-value for the two products. TCV does not currently capture the full value of exterior insulation, but the final code compliance calculation will be similar.

12: Like many homes, the windows in my house will have different U and SHGC values. Should I use the highest numbers of a given window or an average?

A: It is best to use the highest values. While U values can be reliably averaged, the impact of SHGC is dependent on building orientation. Using the highest values will result in a more accurate calculation of annual energy use.

13: For water heaters, is energy factor (EF) the same as efficiency?

A: No. Efficiency is a measure of how effectively energy is transferred to the water, while EF also captures stand-by losses in light of the average patterns of residential use.

14: Where do I find my water heater EF?

A: The EF (and other performance data) for both current and discontinued water heaters can be found at the Gas Appliance Manufacturers Association website: [gama.net](http://gama.net). It includes electric heaters as well as gas.

15: My project will have solar thermal water heating. Can I receive credit in the code calculation?

A: Not at the moment. The highest energy factor (EF) that TCV can presently accommodate is 1.0. Solar systems generally have an EF of between 3.0 and 3.5.

16: Based on the condenser and evaporator coils I will be using, my system SEER rating is higher than the label on the condenser. How do I get credit for the higher efficiency?

A: Make sure that you include the AHRI certificate for your equipment. Match in your construction documents both the permit reviewer and building inspector.

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