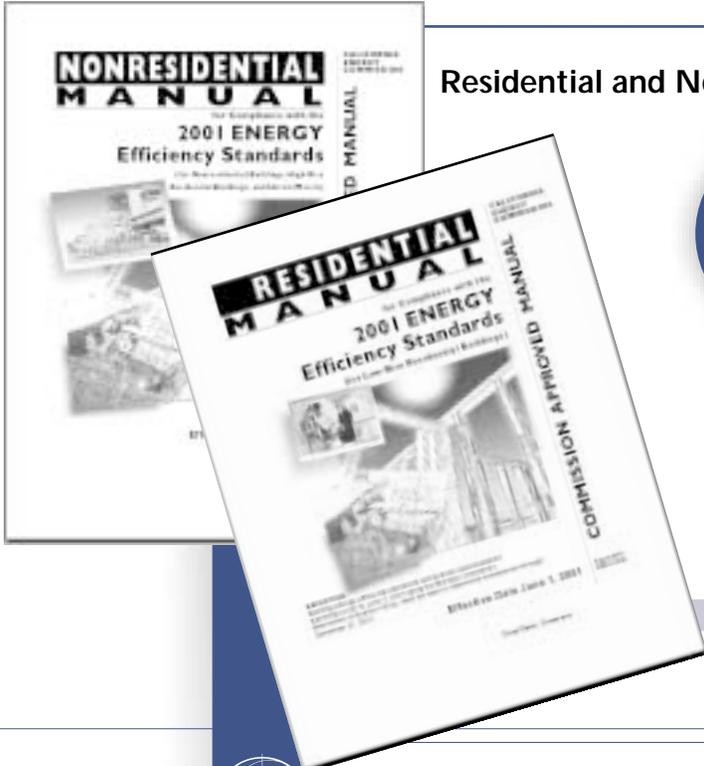


Residential and Nonresidential Manuals now available – see page 4



QUESTIONS and ANSWERS

RESIDENTIAL



In the previous issue of the *Blueprint*, you explained how to calculate the required pipe insulation thickness to comply with R-value requirements. For pipe diameters less than two inches, commonly available 3/4-inch and one-inch-thick pipe insulation products may not quite meet the R-value requirements for refrigerant and hot water lines. Are there other acceptable ways to determine compliance when pipe insulation does not meet required R-values?



Yes. For example, if piping with 3/4-inch (refrigerant lines) or one-inch (hot water lines) pipe insulation is run through the attic in a manner which will allow the ceiling insulation to fully cover the insulated refrigerant lines or hot water pipes, then the pipe insulation requirement in Table 1-T, Section 150(j) 2 has been met. If the piping is run in an exterior wall that is adjacent to conditioned space, the wall and pipe insulation together may be sufficient. For this installation to be acceptable, care must be taken to enclose the insulated pipe in the wall insulation without compromising the wall insulation effectiveness. The following steps should be taken:

- ▼ Piping must be installed so that the wall insulation is between the piping and the outside surface of the wall, minimizing wall insulation compression.

...continued on page 2

QUESTIONS and ANSWERS

RESIDENTIAL (continued)

- ▼ If blown in wall insulation is used, then the piping must be fully enclosed in wall insulation.
- ▼ For hot water pipes with one-inch-thick insulation, if batt insulation is used, it must be split and fitted around the insulated hot water pipes so that the insulated pipes are fully enclosed in wall insulation.
- ▼ For refrigerant lines with 3/4-inch-thick insulation, if batt insulation is used, it must either be split and fitted around the insulated refrigerant line, or two batts of insulation must be used, one installed on the outside and one on the inside of the insulated refrigerant line.
- ▼ If piping is run in an exterior wall that is not adjacent to conditioned space or in a wall that has conditioned space on both sides of the wall, then the cavity must be filled with insulation on both sides of the pipe. The minimal certified R-value for each side must be R-2.

Note that for pipe diameters over two inches, the pipe insulation must meet the requirements of Table 1-T in the Standards. Also note that pipe insulation thicknesses are actual, not nominal thicknesses.



If I am doing an addition but am not replacing my air conditioner, can I use the "Alternative to Package D?"



No. The "Alternative to Package D" can not be used unless all of the requirements specified in the "Alternative to Package D" are met, including the SEER 11, 12 or 13 air conditioner requirement depending on climate zone. If the air conditioner is not being replaced, the only prescriptive option that is available is Package D.



If I am building an addition less than 500 square feet, do I only have to meet the 0.75 glazing U-factor requirement if I am using the "Alternative to Package D?"



No. The "Alternative to Package D" can not be used unless all of the requirements specified in the "Alternative to Package D" are met, including the 0.55 or 0.40 glazing U-factor requirement depending on climate zone. If you want to install windows that only have to meet a 0.75 U-factor, the only prescriptive option that is available is Package D.

Please note that "Prescriptive Requirements for Additions" are explained on pp. 7-6 to 7-8 of the *Residential Manual*.

NON RESIDENTIAL



Is there a recommended method to account for additional chandelier wattage and for filling out the related lighting forms LTG-1 and LTG-2?

Yes. To account for chandelier wattage:

First, determine the allowed chandelier wattage:

The smallest of the following values may be added to the allowed lighting power listed in "Area Category Method," Table 1-N in Section 146(b) 2 of the 2001 Efficiency Standards. For ornamental chandeliers and sconces that are switched or dimmed on circuits different from the circuits for general lighting, use the smallest of either a, b, or c listed below.

- a. 20 watts per cubic foot times the volume of the chandelier or sconce; or
- b. One watt per square foot times the area of the task space that the chandelier or sconce is in; or
- c. The actual design wattage of the chandelier or sconce

Second, the LTG-2 and LTG-1 forms should be filled out as follows:

1. On the LTG-2 form, under the "Area Category Method," on a separate line show the calculations for a or b above or use c(the actual design wattage) and enter the resulting wattage in the "Allowed Watts" column. Subtotal the "Area Category Method, Allowed Watts" column and include that value in the "SUBTOTAL FROM THIS PAGE" box in the "Actual Lighting Power, Total Watts" column of the form. Be careful not to double count the "Allowed Lighting Power" with the "Actual Lighting Power."

2. On the LTG-1 form enter the additional wattage in the "Installed Lighting Schedule" section, "SUBTOTAL FROM THIS PAGE" box of the form.

R E S I D E N T I A L & N O N R E S I D E N T I A L



Did the Commission change the energy code requirements that prohibited the use of cloth backed rubber adhesive duct tape unless it is installed with mastic and mechanical fasteners?



No. This prohibition has been in effect for the tight duct credit since 1999. In the 2001 Standards, the Commission made the prohibition mandatory for all residential and nonresidential duct systems. Two cloth duct tape manufacturers petitioned the Commission to reconsider the prohibition, resulting in a special rulemaking proceeding on the issue. The information submitted during this proceeding, including laboratory testing results, expert testimony and written and oral comments, reinforced the appropriateness of the existing prohibition. The Commission's decision to NOT change the



Standards was supported by the California Building Officials, California Building Industry Association, Insulation Contractors Association, Pacific Gas and Electric Company, Lawrence

Berkeley National Laboratory, Proctor Engineering Group, and Intertape Polymer Group (a cloth duct tape manufacturer). You can review the Notice of Committee Conclusions that explains the reasons for continuing the prohibition at:

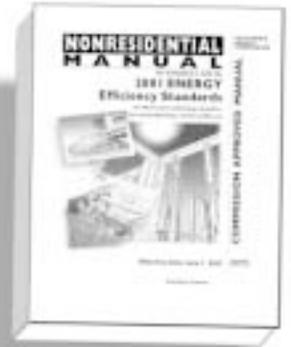
www.energy.ca.gov/title24/ducttape/notices/2002-03-26_COM_CONCLUSIONS.PDF



Are the residential and nonresidential manuals for the 2001 Energy Efficiency Standards available in hardcopy, and if so, how do I obtain them?



Yes. If you prefer hard copies of the manuals they are now available from the Energy Commission's Publications Unit. These are identical to the manuals that have been accessible on the web at www.energy.ca.gov/title24/



To obtain a hard copy using VISA or MasterCard, please call (916) 654-5200 and request publication number P400-01-022 for the *Residential Manual* and P400-01-023 for the *Nonresidential Manual*. The cost of the manuals is \$40 and \$35, respectively. You may also pay by check by writing to:

California Energy Commission
Publications Unit, MS-13
1516 Ninth Street
Sacramento, CA 95814-5512



Is laminated glass that is sandwiched by two outer layers of glass with an inner layer material considered a double pane window?



No. To be considered a double pane window an air space must exist between the two glass panes, regardless of lamination and coating. The space between the two panes needs to be hermetically dry and sealed airtight. The air space is commonly 3/16-inches to 3/4-inches wide.

CALIFORNIA COMMUNITY ENERGY EFFICIENCY PROGRAM

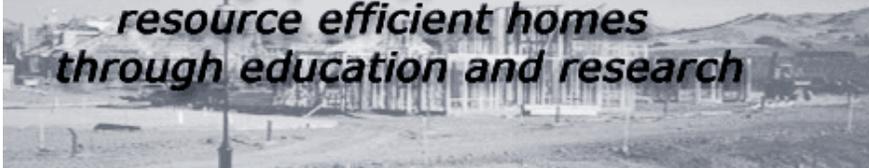
California's Community Energy Efficiency Program (CEEP), designed by the Building Industry Institute and local building departments, is a voluntary effort to improve the energy efficiency of new homes by at least 15 percent more than required by the California Energy Standards. Over 40 local jurisdictions including eight counties, primarily in Southern California, currently participate. The program offers homebuilders incentives such as expedited plan checks, fee reductions, and waivers, all of which save money in exchange for homes that surpass the energy code requirements and reduce resource wastes. The program includes a strong third party-quality assurance process that ensures compliance with the Standards and Quality Home construction practices.

Participating builders may also receive marketing benefits and award recognition while achieving fewer callbacks and increased consumer satisfaction. Some builders also see great value in being "ahead of the curve" of future, more energy efficient, regulations. Building departments benefit from a lesser burden on inspectors and plan checkers confronted with pressing workloads generated by increasing new residential construction rates.

For additional information on CEEP go to:
www.thebii.org/ and select CEEP

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resource efficient homes
through education and research**



TITLE 24 ENERGY TRAINING

San Diego Gas and Electric Company is sponsoring training on Title 24 residential construction and encouraging builders to do more than required by Title 24.

Classes are being offered on:

- EnergyPro (fee required)
- HVAC - Manual D Duct Design
- HVAC - Manual J
- High Performance Duct Systems and 2001 Residential Energy Standards
- Lighting Design
- Title 24 Compliance Using Micropas (fee required)
- High Performance Windows

For more information contact Deborah Newell at (858) 636-5730 or e-mail dnewell@sdge.com

The Energy Commission continues to sponsor Building Energy Code training. Classes will be starting up in August 2002. For the schedule, class locations and registration visit: www.calbo.org and select *Education*

CHEERS training for HERS raters is coming up. See www.cheers.org for more information.

Don't miss the Commission's Online Training Series. View more than 40 videos online at a new web address: cec.ishow.com/

Check out the utilities training calendars. www.energy.ca.gov/title24/ and select *Builder Training Calendar*.

Special Thanks to:

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Did You Know?



More and more solar photovoltaic systems converting sunlight directly into electricity are being installed on new buildings. The Energy Commission encourages greater use of the technology through its Renewable Energy Program, offering rebates on solar photovoltaic systems of \$4.50 per watt or 50 percent off the installed cost, whichever is less. To keep the costs down, buildings should first be made very energy efficient so that a smaller photovoltaic system can be used.

The program also funds training workshops for *National Electrical Code* compliance and proper installation practices for local building inspectors and system installers, reaching more than 700 installers and nearly 700 building inspectors last year. For consumers the program provides buying guides, a computer-based tool to estimate the costs and benefits of a system, fact sheets and answers to frequently-asked questions.

For up-to-date workshop information, visit: www.endecon.com and select *training*.

For a guide to photovoltaic system design and installation visit: www.energy.ca.gov/reports/2001-09-04_500-01-020.PDF

To contact Energy Commission Renewable Energy Program staff, call toll free at 800-555-7794, or e-mail Renewable@energy.state.ca.us

The Commission's Online Training Series will soon include three videos on photovoltaics.

The *Blueprint* can also be found in electronic form at: www.energy.ca.gov/efficiency/blueprint

The Energy Commission maintains an index of Blueprints that includes questions and answers of previous editions by topic.

For residential questions and answers go to: www.energy.ca.gov/efficiency/blueprint/pdf/BLEPRINT_RES_INDEX.PDF

For nonresidential questions and answers go to: www.energy.ca.gov/efficiency/blueprint/pdf/BLEPRINT_NONRES_INDEX.PDF

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For any questions or additional information relating to the new Standards contact the Energy Hotline at (800) 772-3300.

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