

INSULATE



YOURSELF FROM HIGHER ENERGY COSTS

www.sgvenergywise.org

INSULATION works best when you also

- *seal gaps & cracks*
- *add a radiant barrier*

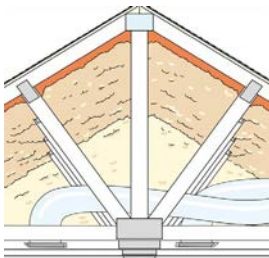
INSULATION

- Slows down heat transfer
- Maintains indoor temperatures longer
- Prolongs life of air conditioning units
- Reduces energy consumption and costs
- Reduces noise

The effectiveness of insulation to slow heat transfer is expressed as its "R" value, (higher "R" value, better insulation). Today's code requires R-19* in walls & R-30* in the ceiling.

* refers to Prescriptive Requirements of the Energy Code

An 1,800 SF home built today will use about one third the energy compared to the same size home built in 1970. Higher insulation values, better windows, & equipment contribute to the overall reduced energy.



Where you insulate makes a difference. Insulation at the roof helps your air conditioning ducts stay cooler.

Additional Info:

<http://www.naima.org>; <http://sprayfoam.com>
http://asset.sce.com/Documents/Shared/08Apr_ResidentialEnergyGuide.pdf

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WHEN IT COMES TO INSULATION, WHERE DOES IT MATTER?

THE FOLLOWING MINIMUMS ARE REQUIRED BY THE ENERGY CODE:

Attic Space (above your ceiling)

- R-30 insulation is required.
- *Consider R-38. It's \$250 more per 1000 SF and the utility savings are 5 to 10% every year.*



ATTIC SPACE

Roof Rafters (without attic space)

- R-19 insulation is required.
- *Consider filling the void between rafters to maximize your insulation.*



ROOF RAFTERS

Roof Sheathing

- *If part of your remodel requires your roof sheathing to be replaced because it's rotted and damaged, a radiant barrier is required on new sheathing.*

New Walls

- R-13 insulation is required for 2x4 walls.
- R-19 insulation is required for 2x6 walls.
- *Consider adding rigid insulation over framing for more insulation value.*



NEW WALLS

Existing Walls

- R-11 insulation minimum for existing walls.
- *If there's room, consider R-19 or 21 for additional insulation value.*

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WHAT ARE MY CHOICES?

Closed Cell Spray Foam \$\$\$\$

- Good vapor, moisture, & thermal barrier
- Seals every gap as it is sprayed
- R-value of 6.0 for every 1 inch of thickness
- Costs \$3.02 per sq. ft for R-value of 19



SPRAY FOAM

Open Cell Spray Foam \$\$\$

- R-value of 3.6 for every 1 inch of thickness
- Costs \$2.05 per sq. ft for R-value of 19



ULTRA-TOUCH (DENIM)

Ultra-touch Batt \$\$\$

- Recycled material (Denim)
- No toxic chemicals
- R-value of 3.4 - 3.8 for every 1 inch of thickness
- Costs \$2.50 per sq. ft for R-value of 19

Loose-fill Cellulose \$\$

- Made from recycled newspaper
- R-value of 3.5 for every 1 inch of thickness
- Costs \$1.40 per sq. ft for R-value of 19



FIBERGLASS

Fiberglass Batt \$

- Use products that are formaldehyde free & certified by GREENGUARD
- R-value of 3.2 for every 1 inch of thickness
- Costs \$1.25 per sq. ft for R-value of 19

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Building Department Checklist

Plans, Permit, and Inspection

For PLANS and PERMIT

TO OBTAIN a PERMIT, submit

1. Building Permit Application and Fees.
2. **Certificate of Compliance form(s)** required based on the type of work related to insulation.
 - a. **Form CF1R – ADD-02-E** when...
 - i. Your work is adding new insulation for a **new addition** with less than 300 sq. ft or
 - ii. Your work is related to new insulation for **alterations** where less than 40 ft of duct for A/C is replaced
 - b. **Form CF1R – ALT -01-E** when...
 - i. Your work involves **replacing** greater than 50% of roofing and attic insulation and/or
 - ii. Your work involves **replacing** insulation on your walls
3. Construction Plans & Photos.

For CLOSEOUT

TO OBTAIN COMPLETION,

1. Schedule inspections with the City.
2. Complete ALL applicable **Certificates of Installation and Field Verification forms** which may include the following:



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Building Department Checklist

Plans, Permit, and Inspection

- Form CF2R-ENV-02-E** for Envelope Air Sealing for Air Barrier for new additions and alteration by Contractor.
- Form CF2R-ENV-03-E** for Insulation Installation for Roof/Attic and Walls by Contractor.
- Form CF2R-ENV-23-H** for Quality Insulation Installation by HERS Provider. This is when qualified test raters verify the installation has been done.
- Form CF3R-ENV-22-H** for Quality Insulation Installation Verification for Air Infiltration Sealing at New Ceilings or Roof Decks by HERS Provider. This is when qualified test raters verify ceiling and roof work has been done properly.
- Form CF3R-ENV-23-H** for Quality Insulation Verification by HERS Provider for walls, roof, and foundation slabs. This is when qualified test raters verify the installation has been done properly.

This block shows two overlapping forms. The top form is titled "INSULATION INSTALLATION" and "AIR BARRIER INSTALLATION". The bottom form is titled "INSULATION INSTALLATION" and "QUALITY INSULATION INSTALLATION". Both forms have sections for project information, installation details, and a checklist of requirements. Vertical labels on the right side of the forms identify them as "CERTIFICATE 2c" and "CERTIFICATE 2b".This block shows two overlapping forms. The top form is titled "AIR INFILTRATION SEALING - CEILING/ROOF DECK". The bottom form is titled "INSULATION INSTALLATION" and "QUALITY INSULATION INSTALLATION". Both forms have sections for project information, installation details, and a checklist of requirements. Vertical labels on the right side of the forms identify them as "CERTIFICATE 2e" and "CERTIFICATE 2d".

Visit your local Building and Planning Department for very helpful information including specific requirements for permit submittal and approvals. Design approval submittal may be required.

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Check out other improvement ideas...

A collage of seven energy-saving brochures. Each brochure is labeled with a category: "Electricity" (brochure: "OUR USE OF ELECTRICITY IS SHOCKING!"), "Shade" (brochure: "CREATE SHADE TO STAY COOL"), "Addition" (brochure: "A HOME ADDITION WITHOUT SUBTRACTING SAVING"), "Windows" (brochure: "A WINDOW ON SAVINGS"), "Cool Roof" (brochure: "A COOL ROOF OVER MY HEAD"), "Air Conditioning" (brochure: "CHOOSE THE RIGHT HVAC EQUIPMENT TO KEEP YOU COOL"), and "Kitchen" (brochure: "COOK UP SOME KITCHEN IMPROVEMENT SAVINGS").



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San Gabriel Valley Council of Governments

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