



**Performance
Insulation**

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(916) 383-7590 * Greater Sacramento

Buyer's Guide to Insulation: Spray Foam



Made from polyurethane, this product reduces air leakage better than any other type of insulation. It fills the nooks and crannies of unusually shaped building cavities easily.

There are two main types of spray foam: open-cell spray foam, which has a density of about 1/2 lb. per cu. ft.; and closed-cell spray foam, which has a density of about 2 lb. per cu. ft. The higher the density of the foam, the greater the R-value per inch.

The two ingredients used to make spray foam—conventionally called the “A” and “B” components—are mixed on site using special equipment mounted in a trailer or truck. Heated hoses convey the chemicals to a mixing gun that sprays the chemicals on the surfaces to be insulated. An exothermic chemical reaction begins as soon as the chemicals are mixed; the liquid mixture foams, expands, and eventually hardens.

For small jobs, builders can purchase disposable tanks of two-component closed-cell polyurethane foam. Sold in various sizes, these tanks cost from about \$250 to \$600. For very small jobs, small aerosol cans of one-component (moisture-cured) polyurethane foam can be purchased at most building-supply stores for about \$5 a can.

(775) 324-4434 Reno / Sparks * (530) 550-1977 Tahoe / Truckee * (209) 465-0760 Stockton / Modesto

P.O. Box 292964
Sacramento, CA 95829
Fax (916) 383-7591

California License # 739707
Nevada License # 70336

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Open-cell spray foam



R-VALUE:R-3.6 to R-4 per in.

COST: Varies widely, but filling a 2×4 cavity to R-13 with open-cell spray foam costs about \$1.20 to \$1.75 per sq. ft.

APPLICATION: Walls, ceilings, and roofs

 The low density of open-cell foam makes it relatively vapor permeable (a 3-in.-thick layer of open-cell foam has a permeance of 16), so when it's used to create an unvented conditioned attic in a cold climate, the interior face of the foam should be covered with a vapor retarder. This can be accomplished by spraying the cured foam with vapor-retarding paint.

Open-cell foams use water or carbon dioxide as the blowing agent. Some open-cell foams are made in part from bio-based raw materials—for example, soybean oils—in place of a portion of the petrochemicals. Like closed-cell foam, open-cell foam creates an effective air barrier.

Unlike closed-cell foam, however, open-cell foam absorbs and holds water, has a lower R-value per inch, and is vapor permeable. The permeable nature of open-cell foam can be a virtue or a drawback, depending on the application.

Open Cell is an Air-Impermeable Insulation which can be used in unvented Attic Assemblies.

In Elevations where a Vapor Barrier is required an additional Vapor Barrier must be included

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Closed-cell spray foam



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R-VALUE: R-7 per in.

COST: Varies but filling a 2×4 cavity to R-13 with closed cell spray foam costs about \$3 to \$4.50 per sq. ft.

APPLICATION: Under slabs; walls (below grade and above grade); ceilings; and roofs

Closed-cell spray foams provide a higher R-value per inch than less expensive insulation types like fiberglass, cellulose, or open-cell foam, all of which have R-values of R-2.5 to R-4.2 per in.

Closed-cell spray foam is the most expensive residential insulation. When installed well, however, it performs better than any other insulation. It is an excellent air barrier, is impervious to moisture, and is an effective vapor retarder. Because of its density and glue-like tenacity, it also adds structural strength to a wall, ceiling, or roof assembly. To seal air leaks in retrofit applications as well as new construction—for example, at rim joists or the attic side of partition top plates—closed-cell spray foam is an extremely useful material.

Some green builders limit the use of closed-cell spray foam because the blowing agents in most types of closed-cell spray polyurethane foam are hydrofluorocarbons (HFCs) with a global-warming potential

But there are no harmful VOC's

The potential for Energy Savings must be figured in to determine which is a better fit.

In closing both Open and Closed Cell Spray Foams are Air Impermeable.

Open Cell is an Air Barrier at 3.5 inches typically.

Closed Cell Spray Foam is an Air Barrier at 1.5 inches typically.

Closed is a Vapor Barrier at 2 inches- Open Cell is not a Vapor Barrier.

Both Open and Closed Spray Foam are installed by the same process.

Both Open and Closed Cell go on as a liquid and go where the Ants don't go!!providing an Air Tight application

Today's Spray Polyurethane Foams offer the best in Air Sealing and Thermal Performance and have no harmful off-Gassings or VOC's

Both Open and Closed Spray Foams are People Friendly and providing for a very comfortable and far less Energy Consumption than any other Insulation Product on the Market Today!!

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