

Types of Insulation Quick Reference



Form	Insulation Materials	Where Applicable	Installation Method(s)	Advantages
Blanket: batts and rolls	<ul style="list-style-type: none"> Fiberglass Mineral (rock or slag) wool Plastic fibers Natural fibers 	Unfinished walls, including foundation walls; floors and ceilings; fitted between studs, joists, and beams	<ul style="list-style-type: none"> Do-it-yourself 	<ul style="list-style-type: none"> Suited for standard stud and joist spacing, which is relatively free from obstructions.
Concrete block insulation	Foam beads or liquid foam: <ul style="list-style-type: none"> Polystyrene Polyisocyanurate or polyiso Polyurethane Vermiculite or perlite pellets 	Unfinished walls, including foundation walls, for new construction or major renovations	<ul style="list-style-type: none"> Involves masonry skills 	<ul style="list-style-type: none"> Autoclaved aerated concrete and autoclaved cellular concrete masonry units have 10 times the insulating value of conventional concrete.
Foam board or rigid foam	<ul style="list-style-type: none"> Polystyrene Polyisocyanurate or polyiso Polyurethane 	Unfinished walls, including foundation walls; floors and ceilings; unvented low-slope roofs	<ul style="list-style-type: none"> Interior applications: must be covered with 1/2-inch gypsum board or other building-code approved material for fire safety Exterior applications: must be covered with weatherproof facing 	<ul style="list-style-type: none"> High insulating value for relatively little thickness. Can block thermal short circuits when installed continuously over frames or joists.
Insulating concrete forms (ICFs)	Foam boards or foam blocks	Unfinished walls, including foundation walls, for new construction	<ul style="list-style-type: none"> Installed as part of the building structure 	<ul style="list-style-type: none"> Insulation is literally built into the home's walls, creating high thermal resistance.
Loose-fill	<ul style="list-style-type: none"> Cellulose Fiberglass Mineral (rock or slag) wool 	Enclosed existing wall or open new wall cavities; unfinished attic floors; hard-to-reach places	<ul style="list-style-type: none"> Blown into place using special equipment; sometimes poured in 	<ul style="list-style-type: none"> Good for adding insulation to existing finished areas, irregularly shaped areas, and around obstructions.
Reflective system	<ul style="list-style-type: none"> Foil-faced kraft paper Plastic film Polyethylene bubbles Cardboard 	Unfinished walls, ceilings, and floors	<ul style="list-style-type: none"> Foils, films, or papers: fitted between wood-frame studs, joists, and beams 	<ul style="list-style-type: none"> Do-it-yourself. All suitable for framing at standard spacing. Bubble-form suitable if framing is irregular or if obstructions are present. Most effective at preventing downward heat flow; however, effectiveness depends on spacing
Rigid fibrous or fiber insulation	<ul style="list-style-type: none"> Fiberglass Mineral (rock or slag) wool 	Ducts in unconditioned spaces and other places requiring insulation that can withstand high temperatures	<ul style="list-style-type: none"> HVAC contractors fabricate the insulation into ducts either at their shops or at the job sites 	<ul style="list-style-type: none"> Can withstand high temperatures.
Sprayed foam and foamed-in-place	<ul style="list-style-type: none"> Cementitious Phenolic Polyisocyanurate Polyurethane 	Enclosed existing wall or open new wall cavities, unfinished attic floors	<ul style="list-style-type: none"> Applied using small spray containers or in larger quantities as a pressure-sprayed (foamed-in-place) product 	<ul style="list-style-type: none"> Good for adding insulation to existing finished areas, irregularly shaped areas, and around obstructions
Structural insulated panels (SIPs)	<ul style="list-style-type: none"> Foam board or liquid foam insulation core 	Unfinished walls, ceilings, floors, and roofs for new construction	<ul style="list-style-type: none"> Builders connect them together to construct a house 	<ul style="list-style-type: none"> SIP-built houses provide superior and uniform insulation compared to more traditional construction methods; they also take less time to build.

Source: www.energysavers.gov

The U.S. Department of Energy ZIP-Code Insulation Program will tell you the most economic insulation level for your new or existing house. To use the program, go to: www.ornl.gov/~roofs/Zip/ZipHome.html