Table of Insulation Types

INSULATION TYPES				
Form	**Insulation Materials**	**Where Applicable**	**Installation Methods**	**Advantages**
Blanket: batts and rolls	• Fiberglass • Mineral (rock or slag) wool • Plastic fibers • Natural fibers	Unfinished walls, including foundation walls, and floors and ceilings	Fitted between studs, joists and beams	Do it yourself. Suited for standard stud and joist spacing, which is relatively free from obstructions
Concrete block insulation	Foam beads or liquid foam: • Polystyrene • Polyisocyanurate • Polyurethane • Vermiculite or perlite pellets	Unfinished walls, including foundation walls, for new construction or major renovations	Involves masonry skills	Autoclaved aerated concrete and autoclaved cellular concrete masonry units have 10 times the insulation value of conventional concrete.
Foamboard or rigid foam	• Polystyrene • Polyisocyanurate • Polyurethane	Unfinished walls, including foundation walls, floors and ceilings, non-vented low-slope roofs	Interior application must be covered with 1/2-inch gypsum or other building code- approved material for fire safety. Exterior applications must be covered with weatherproof facing.	High insulating value for relatively little thickness Can block thermal short circuits when installed continuously over frames or joists
Insulating concrete forms (ICFs)	Foamboards or foam block	Unfinished walls, including foundation walls, for new construction	Installed as part of the building structure	Insulation is literally built into the home's walls, creating a high thermal resistance.
Loose-fill	• Cellulose • Fiberglass • Mineral (rock or slag) wool	Enclosed existing wall or open new wall cavities; unfinished attic floors; hard-to-reach places	Blown into place using special equipment; sometimes poured in	Good for adding insulation to existing finished areas, irregularly shaped areas, and around obstructions
Reflective system	Foil-faced kraft paper, plastic film, polyethylene bubbles or cardboard	Unfinished walls, ceilings and floors	Foils, film or papers fitted between wood-frame studs, joists and beams	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	• Fiberglass • Mineral (rock or slag) wool	Ducts in unconditioned spaces and other places requiring insulation that can withstand high temperatures	HVAC contractors fabricate the insulation into ducts either at their shops or at the job sites.	Can withstand high temperatures
Spray foam and foamed-in-place	• Cementitious • Phenolic • Polyisocyanurate • Polyurethane	Enclosed older wall or open new wall cavities, unfinished attic floor	Applied using small spray containers, or in larger quantities as a pressure-sprayed (foamed-in-place) product.	Good for adding insulation to existing finished areas, irregularly shaped areas, and around obstructions
Structural insulated panels (SIPs)	• Foamboard or liquid foam-insulation core • Straw-core insulation	Unfinished walls, ceilings, floors and roofs for new construction	Builders connect them together to construct a house.	SIP-built houses provide superior and uniform insulation compared to more traditional construction methods; they also take less time to build.