

Summary table of Insulation

Material	Application Tips	Pros	Cons
Cellulose	Available as loose fill. Appropriate for small to large remodels in parts of the structure with very low to no moisture. Good for wall cavities or attic floors and ceilings. Wall cavities need small holes to spray through. Can be blown in dry, or sprayed in damp to prevent gaps and settling.	<ul style="list-style-type: none"> * Requires up to 30 times less energy to make than fiberglass and mineral wool * At least 75% post-consumer recycled content (newspaper) * No effect on indoor air quality (treated with nontoxic borate) 	<ul style="list-style-type: none"> * Can absorb moisture * Can settle (if blown in dry)
Cotton	Available as batt and loose fill. Appropriate for small to large remodels in areas with very low to no moisture. Good for wall cavities or attic floors and ceilings. Batts require open walls.	<ul style="list-style-type: none"> * Renewable, plant-based material * At least 70% post-industrial recycled content (e.g., denim) * Recyclable * No effect on indoor air quality (treated with nontoxic boron) 	<ul style="list-style-type: none"> * Cotton farming typically uses large volumes of water and pesticides * Can absorb moisture
Fiberglass	Available as board, batt, and loose fill. Appropriate for small to large remodels in areas with very low to no moisture. Good for wall cavities or attic floors and ceilings. Batts and boards require open walls. Boards can be used in interior basement spaces.	<ul style="list-style-type: none"> * Made of abundant material (silica) * Up to 40% recycled content 	<ul style="list-style-type: none"> * Releases eye, throat and skin irritants * Energy-intensive manufacturing process * Some products contain formaldehyde
Polyisocyanurate Foam Insulation	Foam insulation boards. Appropriate for larger projects or new construction in areas with low to no moisture. Choose closed-cell option for higher moisture areas. Best for interior basement walls, beneath siding, and attic ceilings.	<ul style="list-style-type: none"> * No hydrochlorofluorocarbons (HCFCs) * Typically no indoor air quality effects 	<ul style="list-style-type: none"> * Made from petrochemicals * Not recyclable

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Polystyrene-Expanded (EPS) Foam Insulation	Foam insulation boards. Appropriate for larger projects or new construction in areas with low to no moisture. Best for interior basement walls, beneath siding, and attic ceilings; can be used below grade if coated with foil or plastic.	<ul style="list-style-type: none"> * No HCFCs * Recyclable * Typically no indoor air quality effects 	<ul style="list-style-type: none"> * Made from petrochemicals * Contains highly toxic HBCD brominated flame retardant and other toxins
Polystyrene-Extruded (XPS) Foam Insulation	Foam insulation boards. Appropriate for larger projects or new construction in areas with moderate to no moisture. Best for interior basement walls, beneath siding, attic ceilings or below grade.	<ul style="list-style-type: none"> * More moisture resistant than EPS * Typically no indoor air quality effects * Recyclable 	<ul style="list-style-type: none"> * Most products still use HCFCs (but they are to be phased out by 2010) * Made from petrochemicals * Contains highly toxic HBCD brominated flame retardant and other toxins
Spray Polyurethane Foam (SPF) Insulation	Spray foam is appropriate for small to large remodels in areas with moderate moisture. Good for wall cavities and attics. Sprayed through small holes in walls.	<ul style="list-style-type: none"> * No HCFCs * Prevents air leakage * Doesn't settle * Low density SPF bio-based products are available, which use up to 33% soy oil 	<ul style="list-style-type: none"> * Not recyclable * Most SPF products are made primarily from petrochemicals
Mineral Wool (AKA Rock Wool or Slag Wool)	Available as batt, loose fill, and board. Appropriate for small to large remodels in areas with moderate to no moisture. Good for wall cavities and attics. Batts and boards require open walls. Can be used below grade if made for that purpose.	<ul style="list-style-type: none"> * No additional flame retardants necessary * Abundant materials (steel slag or natural rock) * Moisture resistant * Often contains 75%-90% recycled content 	<ul style="list-style-type: none"> * Releases some eye, throat and skin irritants