

Physical properties / characteristics	Installation form/method	Density (#/cu.ft.)	Compressive Strength (PSI)	Blowing Agent	Expansion / packing (volume) Before/after	Cure type	U-value	R-value	Vapor permeable	Air permeable	Flamability
Types of materials											
Glass fiber	Blankets	1 - 5	0	Air	1 : 1	N/A	0.30	3.30	Yes	Yes	Low
	Blown in	1 - 2	0	Air	1 : 1	N/A	0.30	3.30	Yes	Yes	Low
Rockwool	Blankets	1 - 2	0	Air	1 : 1	N/A	0.29	3.50	Yes	Yes	Low
	Blown in	1 - 5	0	Air	1 : 1	N/A	0.29	3.50	Yes	Yes	No
Cellulose	Blown in	0.5	0	Air	1 : .5	N/A	0.29	3.50	Yes	Yes	Low
	Dense-pak	.5 to 1.5	0	Air	1 : 1	N/A	0.29	3.50	Yes	Yes	Low
	Wet spray	1 to 1.5	0	Air	1 : 1.5	Air dry	0.29	3.50	Yes	Yes	Low
Polyurea	Injected	1 to 1.5	0	Air	1 : 40	Air dry	0.29	3.50	Yes	Yes	No
Expanded polystyrene	Sheet goods	.5 to 1.5	10 - 20	Steam	1 : 35	Thermoset	0.25	4.00	Yes	No	Fire retarded
Extruded polystyrene	Sheet goods	1 - 5	20 -30	LCG	1 : 25 to 35	Thermoset	0.20	5.00	No	No	Fire retarded
Foamglass	Sheet goods	2 - 5	20 -30	Air	1 : 15 to 20	Cooling	0.29	3.50	No	No	No
Polyisocyanurate	Sheet goods	1.85 - 3.0	20 -30	LCG	1 : 30	Exotherm	0.17	6.00	No	No	Fire retarded
Bulk Polyurethane foam											
Options	All forms	.5 to 100	5 - 100	H2O/LCG	1 : 1 to 100	Exotherm	1.0 to .13	1 to 7.5	Varies	No	Varies
Spray-applied open-cell polyurethane	Spray-applied	0.5	5	H2O	1 : 100	Exotherm	2.8 to 2.6	3.6 to 3.8	Yes	No	Fire retarded
Cavity-fill open-cell polyurethane	Injected	0.5	5	H2O	1 : 100	Exotherm	2.8 to 2.6	3.6 to 3.8	Yes	No	Fire retarded
Spray-applied closed-cell polyurethane	Spray-applied	1.85 - 3.0	20 -30	H2O/LCG	1 : 25 to 35	Exotherm	0.15	6.50	No	No	Fire retarded
Cavity-fill closed-cell polyurethane	Injected	1.85 - 3.0	20 -30	H2O/LCG	1 : 25 to 35	Exotherm	0.15	6.50	No	No	Fire retarded
SIPs (Wood/gypsum/metal faces)	Injected	2.0 to 2.5	20 -30	H2O/LCG	30	Exotherm	.15 to .13	6.5 to 7.5			
Kit/can Polyurethane foam											
Two-component expanding	Disposable Kit	1.65 - 2.0	15 - 20	H2O/LCG	1 : 1	Exotherm	0.17	6.00	No	No	Fire retarded
Urethane sealant											
Single-component expanding	Can dispenser	1 - 1.5	10 - 15	H2O	1 : 1	Exotherm	N/A	N/A	No	No	Fire retarded
Single-component non-expanding	Can dispenser	1 - 1.5	10 - 15	H2O	1 : 1	Exotherm	N/A	N/A	No	No	Fire retarded
Urethane caulk	Tube	N/A	N/A	N/A	1 : 1	N/A	N/A	N/A	No	No	N/A

* LCD = Low-conductivity gas