

Cellulose Insulation Comparison Chart

How Do They Stack Up?	Cellulose	FiberGlass Batts	Open Cell Foam (1/2lb.)	Closed Cell Foam (2lb.)
Typical R-Value in 2 × 6 wall	R-20	R-11*	R-20**	R-21 to R-34***
Resists Air Flow?	Yes - Dense Packed	No - Air Filter	Yes	Yes
No Gaps or Voids?	Yes - Dense Packed	No - Gaps & Voids	May Have Voids	Voids if cavity not filled. Gaps and cracks can occur as structure dries or settles.
Use for retrofit without significant demolition?	Yes	No	No	No
Sound Transmission (STC)	41	38 [^]	37	37
Smoke when burned? ^{^^}	None	50	300 - 400	300 - 450
Functions as Fireblock?	Yes	No - Melts	No - Burns ^{^^^}	No - Burns ^{^^^}
Moisture Management?	Yes - Hygroscopic	No - Hydrophobic	No - Hydrophobic	No - Hydrophobic
Deters Mold and Pests?	Yes - Has Borates	No	No	No
Outgases?	No	May - Formaldehyde	Yes - At Installation	Yes - At Installation
Blowing Agent?	Air	No	Chemical Based Gas [#]	Chemical Based Gas [#]
Recycled Content?	85% +	Up to 35% ^{##}	Little or None	Little or None
Embodied Energy?	750 BTU/lb	12,000 BTU/lb	Up to 30,000 BTU/lb	Up to 48,000 BTU/lb

* Per Conservation Services Group (CSG), R-19 rated fiberglass batt in typical installation.

** Assumes cavity is completely filled, which may not be the case.

*** In a completely filled 2x6 cavity, closed cell foam will have an R-Value of approximately 34. However, field installation depth by many contractors is approximately 3.5" in a 2x6 cavity due to cost, challenge in controlling depth and difficulty if trimming. In addition, in partially filled cavities, thermal bridging by studs can further degrade R-Value.

[^] As measured in a laboratory setting - installed performance typically lower.

^{^^} ASTM E 84 SDI (Smoke Development Index).

^{^^^} Once code mandated fire barrier is breached.

[#] Some blowing agents used in sprayed foams are also powerful greenhouse gases. Check with your manufacturer of your product.

^{##} Only 9% +/- post-consumer, the rest recovered during the manufacturing process.