Table S6. Variability in Reported Data for Insulation (Metric units)

See article for table in U.S. units.

	Density (kg/m³)		Thermal Conductivity [W/(m-K)]		% Weight Primary Plastic Polymer	
Common Product	**Median (Min, Max)**	**N[a]**	**Median (Min, Max)**	**N[a]**	**Median (Min, Max)**	**N[a]**
ASJ-Faced Fiberglass Board Insulation	96 (18, 112)	4	0.034 (0.032, 0.036)	4	15 (5, 30)	3
Closed Cell Spray Foam Insulation	32 (24, 38)	9	0.021 (0.021, 0.023)	9	87[b]	9
Dense Pack Cellulose Insulation	55 (54, 56)	2	0.039 (0.038, 0.041)	2	N/A	N/A
Dense Pack Fiberglass	29 (24, 32)	5	0.034 (0.032, 0.034)	5	N/A	N/A
EPS Insulation (expanded polystyrene)	22 (11, 48)	ASTM Standard [c]	0.036 (0.034, 0.047)	ASTM Standard [c]	97 (92, 100)	9
Expanded Cork Board Insulation	116 (112, 120)	2	0.038 (0.034, 0.04)	2	N/A	N/A
Kraft-faced Fiberglass Batt Insulation	7 (7, 7)	2	0.043 (0.034, 0.049)	4	6.6 (3.4, 8.2)[d]	4
Loose Fill Cellulose Insulation	5 (4, 5)	3	0.048 (0.042, 0.051)	3	N/A	N/A
Loose Fill Fiberglass Insulation	7 (5, 8)	5	0.055 (0.053, 0.068)	5	N/A	N/A
Mineral Fiber Batt Insulation	32 (9, 35)	2	0.034 (0.034, 0.036)	2	5 (1, 20)	3
Mineral Wool Board Insulation	96 (64, 160)	4	0.035 (0.034, 0.042)	4	2 (0.8, 6)	5
Polyisocyanurate Wall Insulation Board	30 (24, 40)	2	0.022 (0.021, 0.027)	5	80 (55, 99)	5
Spray-applied Fiberglass Insulation	34 (16, 48)	5	0.035 (0.034, 0.036)	3	0.9[e]	1
Unfaced Cellulose/Cotton Batt Insulation	40 (19, 56)	3	0.039 (0.036, 0.041)	4	10 (5, 20)	4
Unfaced Fiberglass Batt Insulation	7 (7, 7)	2	0.043 (0.034, 0.049)	4	7 (3.7, 8.8)[d]	3
Wet-Blown Cellulose Insulation	55 (43, 69)	3	0.038 (0.038, 0.04)	4	2.5 (2.3, 2.7)[f]	3
Wood Fiber Insulation Boards	111 (50, 271)	7	0.04 (0.037, 0.05)	6	4 (0.3, 4)	4
XPS Insulation (extruded polystyrene)	26 (19, 48)	ASTM Standard [c]	0.029 (0.029, 0.037)	ASTM Standard [c]	90 (60, 100)	5

[a] N equals the number of sources used to calculate the median. Where a range was reported, the median was calculated using both the reported minimum and maximum. See the methods section for the rationale behind including both data points to estimate the median.

[b] The reported median weight percentage of primary plastic polymer for closed cell spray foam represents the sum of the median weight percentages of all chemicals expected to react when the product is applied at the build site to form a polyurethane polymer. These included all polyols, monomers, and initiators included as common content in the Common Product. While a total of nine sources were used to determine individual chemical medians, all chemicals included in the calculation were not reported by each source. As a result, a range is not reported in this table. The median reported here is slightly higher than the estimated plastic polymer weight percentage for closed cell spray foam insulation reported in Table S1 because we used a conservative approach to estimate plastic polymer content across all Common Products that erred on the side of missing plastic polymers rather than flagging non-plastic polymer content as plastic polymers (see Table S3c). This automated screening method did not capture two monomers ethylene glycol (CASRN 107-21-1, 0.08% weight) and diethylene glycol (CASRN 111-46-6, 2.3% weight) in this Common Product, because these two chemicals are widely used in other types of building products and often are not intended to react with other chemicals in the product, e.g. acting as antifreeze or solvents.

[c] ASTM Standard C578 specifies densities and thermal resistance values for various types of rigid cellular polystyrene thermal insulation. The values for EPS and XPS insulation represent the median and range specified in this standard rather than those reported in manufacturer literature.

[d] The same sources were used to determine the weight percentage of polymeric binder in kraft-faced and unfaced fiberglass batt insulation. Since the kraft-paper facing adds additional weight, the binder contributes slightly more to the overall weight percentage of the unfaced product.

[e] Only one source provided information on the weight percent of the polymer when diluted with water, so no range is reported.

[f] Little product-level data were available on adhesive composition at the time that the wet-blown cellulose insulation research was conducted. Therefore, the weight percentage of polymeric binder was estimated based on available information for similar types of polyvinyl acetate and ethylene vinyl acetate based liquid adhesives and reported water-to-adhesive dilution ratios.