

Sound absorption coefficients of general building materials

Materials	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC
	Sound absorption coefficients (α)						
Brick, unglazed	0.03	0.03	0.03	0.04	0.05	0.07	0.05
Carpet, heavy, on concrete	0.02	0.06	0.14	0.37	0.60	0.65	0.30
Same, on 40-oz hairfelt or foam rubber	0.08	0.24	0.57	0.69	0.71	0.73	0.55
Concrete block, painted	0.10	0.05	0.06	0.07	0.09	0.08	0.05
Fabrics							
Light velour, 10 oz/yd ² , hung straight, in contact with wall	0.03	0.04	0.11	0.17	0.24	0.35	0.15
Medium velour, 14 oz/yd ² , draped to half area	0.07	0.31	0.49	0.75	0.70	0.60	0.55
Heavy velour, 18 oz/yd ² , draped to half area	0.14	0.35	0.55	0.72	0.70	0.65	0.60
Floors							
Concrete or terrazzo	0.01	0.01	0.02	0.02	0.02	0.02	0.00
Linoleum, asphalt, rubber or cork tile on concrete	0.02	0.03	0.03	0.03	0.03	0.02	0.05
Wood	0.15	0.11	0.10	0.07	0.06	0.07	0.10
Glass, large panes of heavy plate	0.18	0.05	0.04	0.03	0.02	0.02	0.05
Gypsum board, ½ in, nailed to 2 X 4s 16 in, o.c.	0.29	0.10	0.05	0.04	0.07	0.09	0.05
Marble or glazed tile	0.01	0.01	0.01	0.01	0.02	0.02	0.00
Openings							
Stage, depending on furnishings				0.25–0.75			
Deep balcony, upholstered seats				0.50–1.00			
Grilles, ventilating				0.15–0.50			
Plaster, gypsum or lime, smooth finish on tile or brick	0.13	0.15	0.02	0.03	0.04	0.05	0.05
Plaster, gypsum or lime, rough finish on lath	0.02	0.03	0.04	0.05	0.04	0.03	0.05
Same, with smooth finish	0.02	0.02	0.03	0.04	0.04	0.03	0.05
Plywood paneling, 7/8 in. thick	0.28	0.22	0.17	0.09	0.10	0.11	0.15
Water surface, as in a swimming pool	0.01	0.01	0.01	0.02	0.02	0.03	0.00
Air, sabins per 1000 ft ³					2.30	7.20	

Source: W.J. Cavanaugh, "Acoustical Control in Buildings" in *Building Construction: Materials and Types of Construction*, 5th ed., W.C. Huntington and R.E. Mickadeit, Eds., Table 10.1, p. 390, Wiley, New York, 1981. Reprinted with permission of John Wiley & Sons Inc.

All materials enjoy a range of acoustical properties. However, fabric, depending on its deployment, enjoys varying acoustical properties and a range that is unmatched by other common building materials and finishes.