ABSORPTION COEFFICIENT CHART

I got this chart off the web and it gives you an idea of how the different materials absorb sound at different frequencies.

Remember that full absorption is 1 whilst full reflection is 0

Absorption coefficients of common building materials and finishes

Floor materials	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**
carpet	0.01	0.02	0.06	0.15	0.25	0.45
Concrete (unpainted, rough finish)	0.01	0.02	0.04	0.06	0.08	0.1
Concrete (sealed or painted)	0.01	0.01	0.02	0.02	0.02	0.02
Marble or glazed tile	0.01	0.01	0.01	0.01	0.02	0.02
Vinyl tile or linoleum on concrete	0.02	0.03	0.03	0.03	0.03	0.02
Wood parquet on concrete	0.04	0.04	0.07	0.06	0.06	0.07
Wood flooring on joists	0.15	0.11	0.1	0.07	0.06	0.07
Seating materials	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**
Benches (wooden, empty)	0.1	0.09	0.08	0.08	0.08	0.08
Benches (wooden, 2/3 occupied)	0.37	0.4	0.47	0.53	0.56	0.53
Benches (wooden, fully occupied)	0.5	0.56	0.66	0.76	0.8	0.76
Benches (cushioned seats and backs, empty)	0.32	0.4	0.42	0.44	0.43	0.48
Benches (cushioned seats and backs, 2/3 occupied)	0.44	0.56	0.65	0.72	0.72	0.67
Benches (cushioned seats and backs, fully occupied)	0.5	0.64	0.76	0.86	0.86	0.76
Theater seats (wood, empty)	0.03	0.04	0.05	0.07	0.08	0.08
Theater seats (wood, 2/3 occupied)	0.34	0.21	0.28	0.53	0.56	0.53
Theater seats (wood, fully occupied)	0.5	0.3	0.4	0.76	0.8	0.76
Seats (fabric-upholsterd, empty)	0.49	0.66	0.8	0.88	0.82	0.7
Seats (fabric-upholsterd, fully occupied)	0.6	0.74	0.88	0.96	0.93	0.85
Reflective wall materials	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**
Brick (natural)	0.03	0.03	0.03	0.04	0.05	0.07
Brick (painted)	0.01	0.01	0.02	0.02	0.02	0.03
Concrete block (coarse)	0.36	0.44	0.31	0.29	0.39	0.25
Concrete block (painted)	0.1	0.05	0.06	0.07	0.09	0.08
Concrete (poured, rough finish, unpainted)	0.01	0.02	0.04	0.06	0.08	0.1

Doors (solid wood panels)	0.1	0.07	0.05	0.04	0.04	0.04
Glass (1/4" plate, large pane)	0.18	0.06	0.04	0.03	0.02	0.02
Glass (small pane)	0.04	0.04	0.03	0.03	0.02	0.02
Plasterboard (12mm (1/2") paneling on studs)	0.29	0.1	0.06	0.05	0.04	0.04
Plaster (gypsum or lime, on masonry)	0.01	0.02	0.02	0.03	0.04	0.05
Plaster (gypsum or lime, on wood lath)	0.14	0.1	0.06	0.05	0.04	0.04
Plywood (3mm(1/8") paneling over 31.7mm(1-1/4") airspace)	0.15	0.25	0.12	0.08	0.08	0.08
Plywood (3mm(1/8") paneling over 57.1mm(2-1/4") airspace)	0.28	0.2	0.1	0.1	0.08	0.08
Plywood (5mm(3/16") paneling over 50mm(2") airspace)	0.38	0.24	0.17	0.1	0.08	0.05
Plywood (5mm(3/16") panel, 25mm(1") fiberglass in 50mm(2") airspace)	0.42	0.36	0.19	0.1	0.08	0.05
Plywood (6mm(1/4") paneling, airspace, light bracing)	0.3	0.25	0.15	0.1	0.1	0.1
Plywood (10mm(3/8") paneling, airspace, light bracing)	0.28	0.22	0.17	0.09	0.1	0.11
Plywood (19mm(3/4") paneling, airspace, light bracing)	0.2	0.18	0.15	0.12	0.1	0.1
Absorptive wall materials	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**
Drapery (10 oz/yd2, 340 g/m2, flat against wall)	0.04	0.05	0.11	0.18	0.3	0.35
Drapery (14 oz/yd2, 476 g/m2, flat against wall)	0.05	0.07	0.13	0.22	0.32	0.35
Drapery (18 oz/yd2, 612 g/m2, flat against wall)	0.05	0.12	0.35	0.48	0.38	0.36
Drapery (14 oz/yd2, 476 g/m2, pleated 50%)	0.07	0.31	0.49	0.75	0.7	0.6
Drapery (18 oz/yd2, 612 g/m2, pleated 50%)	0.14	0.35	0.53	0.75	0.7	0.6
Fiberglass board (25mm(1") thick)	0.06	0.2	0.65	0.9	0.95	0.98
Fiberglass board (50mm(2") thick)	0.18	0.76	0.99	0.99	0.99	0.99
Fiberglass board (75mm(3") thick)	0.53	0.99	0.99	0.99	0.99	0.99
Fiberglass board (100mm(4") thick)	0.99	0.99	0.99	0.99	0.99	0.97
Open brick pattern over 75mm(3") fiberglass	0.4	0.65	0.85	0.75	0.65	0.6
Pageboard over 25mm(1") fiberglass board	0.08	0.32	0.99	0.76	0.34	0.12
Pageboard over 50mm(2") fiberglass board	0.26	0.97	0.99	0.66	0.34	0.14
Pageboard over 75mm(3") fiberglass board	0.49	0.99	0.99	0.69	0.37	0.15
Performated metal (13% open, over 50mm(2") fiberglass)	0.25	0.64	0.99	0.97	0.88	0.92
Ceiling material	**125**	**250**	**500**	**1**	**2**	**4**

	Hz	Hz	Hz	kHz	kHz	kHz
Plasterboard (12mm(1/2") in suspended ceiling grid)	0.15	0.11	0.04	0.04	0.07	0.08
Underlay in perforated metal panels (25mm(1") batts)	0.51	0.78	0.57	0.77	0.9	0.79
Metal deck (perforated channels,25mm(1") batts)	0.19	0.69	0.99	0.88	0.52	0.27
Metal deck (perforated channels, 75mm(3") batts)	0.73	0.99	0.99	0.89	0.52	0.31
Plaster (gypsum or lime, on masonary)	0.01	0.02	0.02	0.03	0.04	0.05
Plaster (gypsum or lime, rough finish or timber lath)	0.14	0.1	0.06	0.05	0.04	0.04
Sprayed cellulose fiber (16mm(5/8") on solid backing)	0.05	0.16	0.44	0.79	0.9	0.91
Sprayed cellulose fiber (25mm(1") on solid backing)	0.08	0.29	0.75	0.98	0.93	0.76
Sprayed cellulose fiber (25mm(1") on timber lath)	0.47	0.9	1.1	1.03	1.05	1.03
Sprayed cellulose fiber (32mm(1-1/4") on solid backing)	0.1	0.3	0.73	0.92	0.98	0.98
Sprayed cellulose fiber (75mm(3") on solid backing)	0.7	0.95	1	0.85	0.85	0.9
Wood tongue-and-groove roof decking	0.24	0.19	0.14	0.08	0.13	0.1
Miscellaneous surface material	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**
People-adults (per 1/10 person)	0.25	0.35	0.42	0.46	0.5	0.5
People-high school students (per 1/10 person)	0.22	0.3	0.38	0.42	0.45	0.45
People-elementary students (per 1/10 person)	0.18	0.23	0.28	0.32	0.35	0.35
Ventilating grilles	0.3	0.4	0.5	0.5	0.5	0.4
Water or ice surface	0.008	0.008	0.013	0.015	0.02	0.025

RT60 relates to intelligibility. Diffractors reduce pronounced reflection by breaking up the sound wave before reflecting it back. This does not reduce reverberant energy, but does reduce echo spikes that may otherwise exceed -60db of direct, thus lowering RT60 and improving intelligibilty, **but not necessarily improving the listening environment for music**.