



Oppeo™ PET Panel Sound-Absorbing Coefficient

Thickness 5mm testing coefficient (1.3 kgs / sq.m) – The reverberation chamber method

frequency/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	ā	NRC
no cavity	0.01	0.01	0.02	0.02	0.03	0.01	0.04	0.1	0.08	0.1	0.17	0.22	0.28	0.35	0.43	0.5	0.61	0.17	0.15
cavity 50mm	0.09	0.07	0.11	0.17	0.22	0.29	0.39	0.5	0.65	0.7	0.82	0.88	0.92	0.94	0.89	0.77	0.7	0.54	0.6
cavity 100mm	0.15	0.19	0.31	0.4	0.46	0.64	0.83	0.9	0.95	0.9	0.95	0.87	0.7	0.63	0.72	0.75	0.79	0.66	0.7
cavity 150mm	0.27	0.36	0.47	0.61	0.78	0.86	0.95	0.9	0.96	0.9	0.78	0.6	0.72	0.8	0.75	0.79	0.83	0.73	0.8

Thickness 7mm testing coefficient (1.8 kgs / sq.m) – The reverberation chamber method

frequency/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	ā	NRC
no cavity	0.03	0.01	0.01	0.02	0.04	0.02	0.05	0.1	0.12	0.1	0.26	0.33	0.41	0.47	0.57	0.64	0.73	0.23	0.2
cavity 50mm	0.07	0.09	0.14	0.19	0.28	0.35	0.47	0.6	0.72	0.8	0.86	0.83	0.82	0.8	0.75	0.76	0.76	0.54	0.6
cavity 100mm	0.15	0.21	0.35	0.47	0.58	0.71	0.87	0.9	0.88	0.9	0.84	0.73	0.68	0.67	0.82	0.82	0.83	0.67	0.75
cavity 150mm	0.21	0.22	0.36	0.6	0.65	0.8	0.79	1	0.86	0.8	0.66	0.66	0.67	0.82	0.8	0.83	0.86	0.68	0.8

Thickness 9mm testing coefficient (2.0 kgs / sq.m) – The reverberation chamber method

frequency/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	ā	NRC
no cavity	0.02	0.01	0.02	0.03	0.01	0.08	0.1	0.2	0.24	0.3	0.37	0.49	0.55	0.67	0.76	0.86	0.85	0.35	0.3
cavity 50mm	0.11	0.15	0.16	0.25	0.29	0.4	0.58	0.7	0.77	0.9	0.9	0.87	0.84	0.81	0.78	0.78	0.85	0.61	0.65
cavity 100mm	0.19	0.14	0.27	0.44	0.47	0.62	0.72	0.9	0.9	1	0.85	0.75	0.64	0.68	0.84	0.86	0.84	0.66	0.75
cavity 150mm	0.23	0.27	0.38	0.66	0.68	0.82	0.81	1	0.88	0.8	0.69	0.69	0.7	0.8	0.83	0.9	0.87	0.72	0.8
cavity 200mm	0.28	0.45	0.48	0.79	0.86	0.94	0.84	1	0.86	0.7	0.66	0.75	0.69	0.75	0.83	0.94	0.97	0.76	0.8

Thickness 11mm testing coefficient (2.2 kgs / sq.m) – The reverberation chamber method

frequency/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	ā	NRC
no cavity	0.01	0.01	0.01	0.03	0.04	0.05	0.1	0.2	0.21	0.3	0.41	0.53	0.6	0.68	0.77	0.85	0.9	0.33	0.3
cavity 50mm	0.09	0.09	0.16	0.23	0.29	0.39	0.54	0.7	0.78	0.9	0.95	0.97	1	0.95	0.89	0.81	0.91	0.62	0.7
cavity 100mm	0.21	0.26	0.39	0.49	0.55	0.72	0.88	0.9	0.97	1	0.98	0.89	0.75	0.76	0.88	0.87	0.92	0.73	0.8
cavity 150mm	0.27	0.42	0.59	0.67	0.74	0.88	0.97	1	0.99	0.9	0.79	0.72	0.86	0.83	0.85	0.89	0.94	0.72	0.85

Thickness 12mm testing coefficient (2.3 kgs / sq.m) -- The reverberation chamber method

frequency/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	$\bar{\alpha}$	NRC
no cavity	0.01	0.01	0.01	0.03	0.05	0.07	0.11	0.2	0.25	0.4	0.46	0.55	0.61	0.69	0.78	0.82	0.89	0.34	0.35
cavity 50mm	0.09	0.1	0.14	0.21	0.25	0.37	0.51	0.7	0.82	0.9	0.99	0.99	0.99	0.98	0.89	0.82	0.92	0.62	0.7
cavity 100mm	0.18	0.23	0.34	0.44	0.49	0.71	0.87	0.9	0.96	1	0.99	0.89	0.75	0.78	0.93	0.87	0.92	0.72	0.8
cavity 150mm	0.29	0.39	0.5	0.66	0.85	0.89	0.95	1	0.98	0.9	0.8	0.73	0.87	0.9	0.88	0.87	0.91	0.79	0.9

Thickness 25mm testing coefficient (2.0 kgs / sq.m) -- The reverberation chamber method

frequency/Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	$\bar{\alpha}$	NRC
no cavity	0.02	0.02	0.06	0.12	0.19	0.25	0.37	0.5	0.62	0.7	0.79	0.82	0.86	0.9	0.93	0.93	0.98	0.53	0.6
cavity 50mm	0.08	0.1	0.15	0.22	0.29	0.43	0.59	0.7	0.86	0.9	0.98	0.97	0.96	0.94	0.91	0.91	0.96	0.65	0.75
cavity 100mm	0.18	0.24	0.37	0.49	0.62	0.8	0.95	1	0.99	1	0.98	0.92	0.85	0.94	0.98	0.92	0.99	0.78	0.85
cavity 150mm	0.27	0.39	0.58	0.7	0.8	0.94	0.92	1	0.99	1	0.86	0.84	0.98	0.94	0.96	0.82	0.98	0.82	0.9

- Notice:**
1. $\bar{\alpha}$ is the average sound-absorbing coefficient from frequency 100 to 4000 Hz
 2. NRC is noise reduction coefficient standing for 250Hz,500Hz,1000Hz octave band sound absorption coefficient of the arithmetic mean value

Illustration: Oppeo Sound-absorbing PET panel's thickness has influence on the performance of sound-absorbing performance. Adding the thickness of boards can improve the performance, especial to the medium and low frequency. The performance could be improved by mounting cavity, too.