

Absorption Coefficients of Rockwool Slabs



Absorption Coefficient and Weighed Sound Absorption Coefficient: a_w of Rockwool Tissue Faced Slabs

Product	Freq. Hz (Third Octave Bands)																		a_w
	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k	5k	
RWA45 – 50mm	0.10	0.10	0.26	0.38	0.54	0.72	0.83	1.00	1.08	1.07	1.05	1.04	1.06	1.04	1.03	1.00	1.02	1.03	0.85(H)
RWA45 – 75mm	0.22	0.38	0.56	0.73	0.85	1.13	1.15	1.24	1.22	1.16	1.11	1.09	1.08	1.08	1.08	1.08	1.09	1.10	1.00
RW3 - 40mm	0.05	0.07	0.19	0.31	0.44	0.63	0.80	0.97	1.04	1.04	1.08	1.05	1.08	1.03	1.04	1.00	1.01	1.00	0.75(MH)
RW3 - 50mm	0.09	0.13	0.28	0.43	0.63	0.84	0.93	1.12	1.13	1.08	1.09	1.10	1.08	1.06	1.06	1.05	1.01	1.02	0.95
RW3 - 75mm	0.17	0.40	0.59	0.85	0.98	1.13	1.19	1.21	1.20	1.15	1.10	1.05	1.06	1.04	1.08	1.07	1.06	1.09	1.00
RW4 – 30mm	0.03	0.04	0.09	0.18	0.29	0.46	0.58	0.84	0.94	0.96	1.0	1.03	1.07	1.02	1.04	1.0	1.01	1.04	0.6(MH)
RW4 – 50mm	0.11	0.12	0.37	0.47	0.63	0.90	1.0	1.13	1.13	1.12	1.09	1.08	1.02	1.05	1.02	1.03	1.03	1.03	0.95
RW4 – 75mm	0.24	0.40	0.67	0.82	1.01	1.15	1.16	1.20	1.16	1.11	1.11	1.08	1.04	1.06	1.08	1.12	1.08	1.05	1.00
RW5 - 30mm	0.03	0.03	0.11	0.19	0.30	0.50	0.62	0.85	0.97	1.01	1.03	1.05	1.05	1.04	1.04	1.04	1.03	1.02	0.65(MH)
RW5 - 50mm	0.14	0.14	0.36	0.58	0.74	0.94	1.02	1.12	1.14	1.10	1.04	1.02	1.02	1.03	1.05	1.01	1.04	1.05	1.00
RW5 - 75mm	0.27	0.44	0.74	0.97	0.95	0.99	1.07	1.15	1.10	1.03	1.07	1.04	1.07	1.05	1.06	1.07	1.08	1.05	1.00

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Noise absorption is the reduction in sound energy obtained when the sound is reflected from a surface. In general, the harder the surface, the more sound is reflected.

Noise absorption is expressed as a factor between 0 and 1.0. If a surface absorbs no sound, its coefficient of absorption is 0. If 100% of the sound is absorbed, the coefficient is 1.0 and if 50% then 0.50 and so on.

The structure of mineral wool in Rockwool makes it an ideal product for use as a sound absorber, with characteristically high coefficients over a wide frequency range.

The test used is the reverberation room method which gives a good rating assessment. Due to room differences and inherent material variations, measured absorption coefficients show wide variations and it is not practical to place reliance on differences in coefficients of less than 0.15.

When used as a sound absorbent lining within a room, the sound reduction that can be obtained usually ranges between 5 and 10dB. The actual reduction depends on the room details etc, and an assessment by an acoustic consultant should be obtained.

An appreciable airspace incorporated behind the acoustic slabs improves the low frequency sound absorption coefficient.

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