

# Sound & Science: Digital Histories

Archives NAG: Notitie over "Acoustical Value," op briefpapier Wijngaarden & Co's Handelmaatschappij, [No date]. [Note on "Acoustical Value," on stationary Wijngaarden & Co's Trade Company, [No date].

<https://acoustics.mpiwg-berlin.mpg.de/text/notitie-over-acoustical-value-op-briefpapier-wijngaarden-cos-handelmaatschappij-no-date>



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Acoustical Value.

1.

The subject of acoustics is a highly technical one and is of greatest importance in the design and construction of public buildings as theatres, churches, offices, etc. It is, however, worthy of serious consideration in all construction. In the use of insulatingboards one of the controlling factors in determination of the type of board to use should be its acoustical value. In construction of certain types, radio broadcasting studios, for example, it is the most important factor to be considered.

The acoustical value of a material depends on the amount of percentage of sound waves or energy that the material will absorb. It is evident that unless the sound waves striking a surface such as a wall penetrate it or are absorbed, that they must be reflected back into the room causing echos or "reverberation".

The confusion of sound caused by echos - the overlapping of sound waves - is the direct cause of inability of the listener, in rooms where acoustical correction is poor, to understand conversation or to enjoy clear undistorted music. One of the points of value of a good acoustical material is to absorb the same percentage of sound in all wave lengths or sound ranges.

A material which will absorb a correct percentage of sound at one sound range and is poor at another is an inefficient acoustical material as it is then ~~possible~~ impossible for acoustical engineers to design a balanced acoustical room. As total absorption which would equal conditions of level ground in open air is never desired, the uniformity of sound absorption through the different sound ranges is of even more importance than percentage absorption.

Undoubtly, the outstanding expert on acoustics in this country (U.S.A.) is Prof. Paul E. Sabine of the Riverbank Laboratories at Geneva, Ill. Tests on acoustical value conducted by Prof. Sabine indicate another valuable advantage for Maftex .

<u>Material</u>	<u>Tone C 3;</u>	<u>Tone C 4;</u>	<u>Tone C 5;</u>	<u>Tone C 6;</u>	<u>Tone C 7;</u>	<u>Maximum</u>
						<u>variaton</u>
Cane fibre.. 16	22	20	16	15	7	
Maftex..... 20	20	22	19	25	6	

The above figures show the percentage of sound absorption.

% Superiority Maftex over Cane fibre (Ave. Values) 17%.

Prof. Sabine's tests on wood fibre sheets are not available, but other tests indicate it to be decidedly inferior to cane fibre.

It must be borne in mind that the acoustical value of a material is a property of the surface as well as structure, and anything that destroys the absorption of the surface also destroys its acoustical value. An oil paint which forms a glazed form over surface, for example will destroy efficiency of any acoustical material.