ARAU ACUSTICA

TEST REPORT NUMBER: *TI-16/1*

MEASUREMENT OF SOUND ABSORPTION BY IMPEDANCE TUBE:

SAMPLE:	80 % PVC 20%PES
TRADEMARK:	VERTISOL
MODEL:	PS 351 WHITE
MANUFACTURER:	Vertisol Internacional, SRL
PETITIONER:	Vertisol Internacional, SRL
CURRENT REGULATION:	UNE-EN ISO 10534-2.
TEST DATE:	April 21, 2016
DATE ISSUE REPORT:	April 25, 2016

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Doctor in Physics

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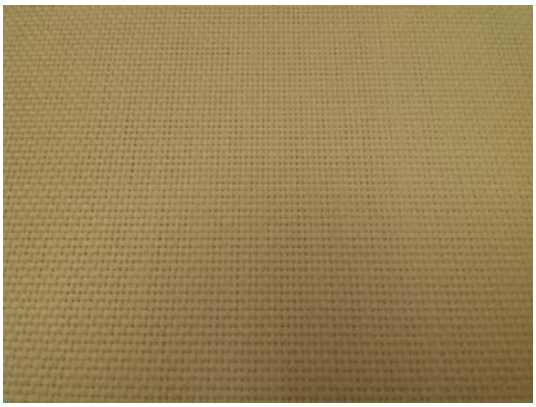
This report is concerned only to the samples tested and the time and conditions under which the measurements were made. The test item has been subjected to the tests required by the applicant, using the procedures specified by the rules used. The test results are summarized in the following pages.

1.- PURPOSE OF THE REPORT:

In this report are collected the results of sound absorption measurements by impedance tube, made according to UNE-EN ISO 10534-2 to three different samples of the product: 80% PVC 20%PES.

These measurements were performed using the Transfer Function.

2.- PRODUCT STUDIED DESCRIPTION:



Product:	80% PVC 20% PES
Trademark:	VERTISOL
Model:	PS 351 WHITE
Manufacturer:	VERTISOL INTERNACIONAL, SRL
Distribution:	VERTISOL
Description:	*composition*: 80% PVC 20% PES, in white color. Cylindrical samples of 3.5 cm diameter. *The configuration is*: 80% PVC 20% PES in white color *150 mm air chamber*

3.- LABORATORY:

Name:	ARAU ACÚSTICA
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	08024 Barcelona
Person in charge:	Higini Arau
Phone:	+34 93 284 5016
Contact person	Oriol Arau
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4.- PETITIONER:

Name:	Vertisol Internacional, SRL
Address:	C-17 km 18.92,
	08403 Granollers
Phone:	+34 93 840 1444
Contact person:	María Jose Moya
Email:	mjmoya@vertisol.es

5.- DESCRIPTION OF TEST METHODOLOGY:

The test sample consists in three distinct processes:

i) *Experimental acquisition of the material response to the acoustic excitation.*

It is in this first step where samples are subjected to experimental study. By impedance tube (fig. 4.1) the values of the *transfer function H1* is obtained.

Impedance tube (diameter 3.5 cm) is metallic, and comprises:

The "*subject samples*" (where a specimen of the material to be studied, of 3.5 cm diameter and thickness depending on the product, is applied).

The connection of the two microphones (required to calculate the transfer function).

The speaker signal generator (at the opposite end of the sample).

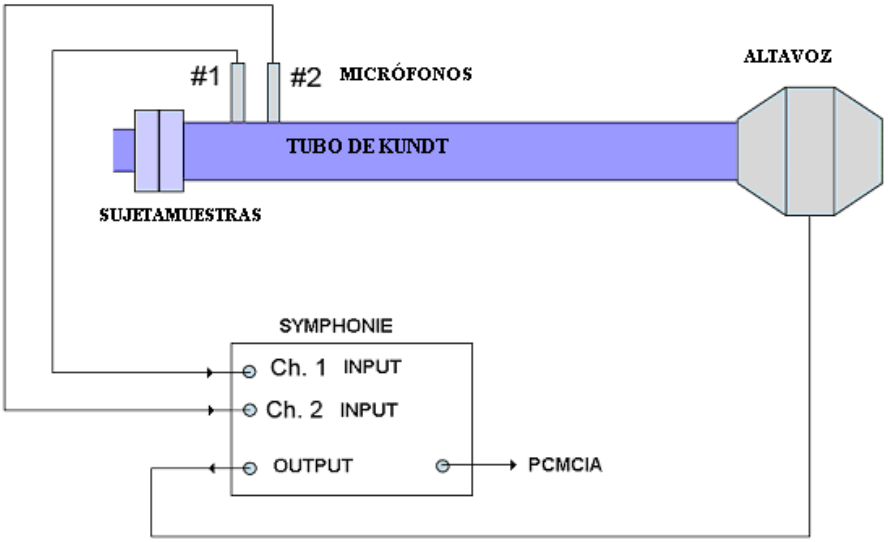


Figure 4.1. Scheme of sound absorption measurement

The study was performed on three different samples of material of the same dimensions and densities. This will allow us to average acoustic properties.

These samples are extracted from the part of the product given to us by a "*short samples*" of the same dimensions as the impedance tube.

Samples are introduced one to one in to experimental acquisition system. White Noise signal is generated, and the system captures the response of the material to sound signal.

ii) *Processing the response data obtained in the above process.*

This computer processing allow us to treat the information we have gained from the *transfer function H1*, with the intention of obtaining the absorption coefficients / reflection, acoustic impedance and other material parameters.

iii) *Processing of the results coming from the previous mathematical treatment.*

With this calculation we obtain, numerically and graphically, material absorption frequency bands (octave and octave-thirds).

ARAU ACUSTICA

COEFFICIENT OF ACOUSTIC ABSORPTION BY UNE-EN ISO 10534-2

Acoustic absorption measurements by impedance tube

PETITIONER: Vertisol Internacional, SRL. **DATE OF TEST:** 21/04/16

IDENTIFICATION SAMPLE:

PS 351 WHITE

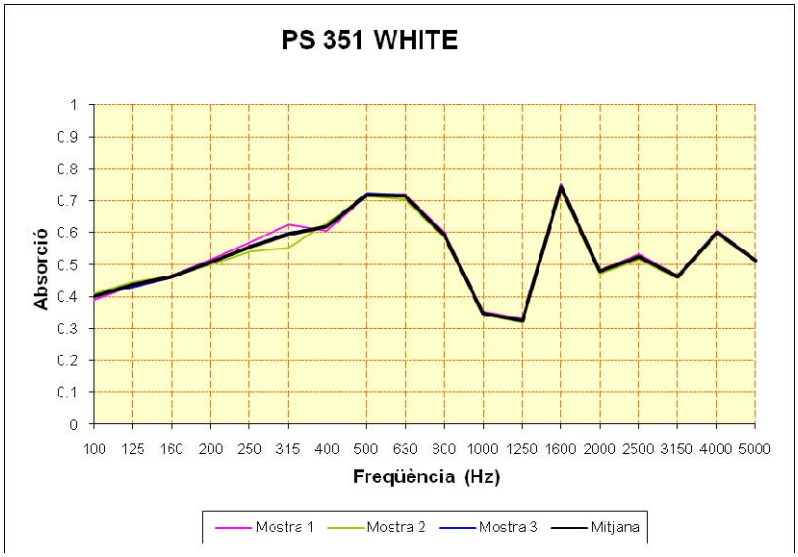
DIMENSIONS: cylinder of base of 3.5 cm of diameter.

CHARACTERISTICS: *80% PVC 20% PES in white.*

80% PVC 20% PES in white color, *150* mm air chamber.

TEMPERATURE (ºC)	**21.5**	*ATMOSPHERIC PRESSURE (mbar)*	**1015**

FREQUENCY	ABSORPTION
100	**0.40**
125	**0.44**
160	**0.46**
200	**0.51**
250	**0.56**
315	**0.59**
400	**0.62**
500	**0.72**
630	**0.71**
800	**0.59**
1000	**0.35**
1250	**0.33**
1600	**0.74**
2000	**0.48**
2500	**0.52**
3150	**0.46**
4000	**0.60**
5000	**0.51**



FREQUENCY	ABSORPTION
125	**0.43**
250	**0.55**
500	**0.68**
1000	**0.42**
2000	**0.58**
4000	**0.52**

Tests realized with impedance tube in the laboratory "ARAU ACÚSTICA". According to the parameters of the rule UNE-EN ISO 10534-2.

$\alpha_w = 0.50$

NCR = 0.56

TEST REPORT NUMBER: TI-16/1 **LABORATORY:** ARAU ACÚSTICA

REPORT DATE: 25/04/16 **PERSON IN CHARGE :** HIGINI ARAU