

# REPORT N. 048-2021-CR Eng

## UNI EN ISO354:2003

### ACOUSTIC ABSORPTION MEASUREMENT IN REVERBERATION ROOM

**Issue place and date:** Cerea (VR), 21/11/2022

**Committee:** CENTRUFFICIO LORETO SPA– CUF MILANO

**Address committee:** Viale Andrea Doria, 17 – 20124 Milano

**Sample delivery date:** 3<sup>rd</sup> November 2021

**Sample provenance:** CENTRUFFICIO LORETO SPA– CUF MILANO

**Sample installation date:** 4<sup>th</sup> November 2021

**Sample installed in laboratory by:** Committee (sampling made by the committee)

**Test date:** 4<sup>th</sup> November 2021

**Test location:** Z Lab S.r.l. – Via Pisa, 7 – 37053 Cerea (VR) - Italia

**Sample denomination:** SHAPES - thickness 50 mm

**Mounting Type:** Mounting A



LAB N° 1416 L

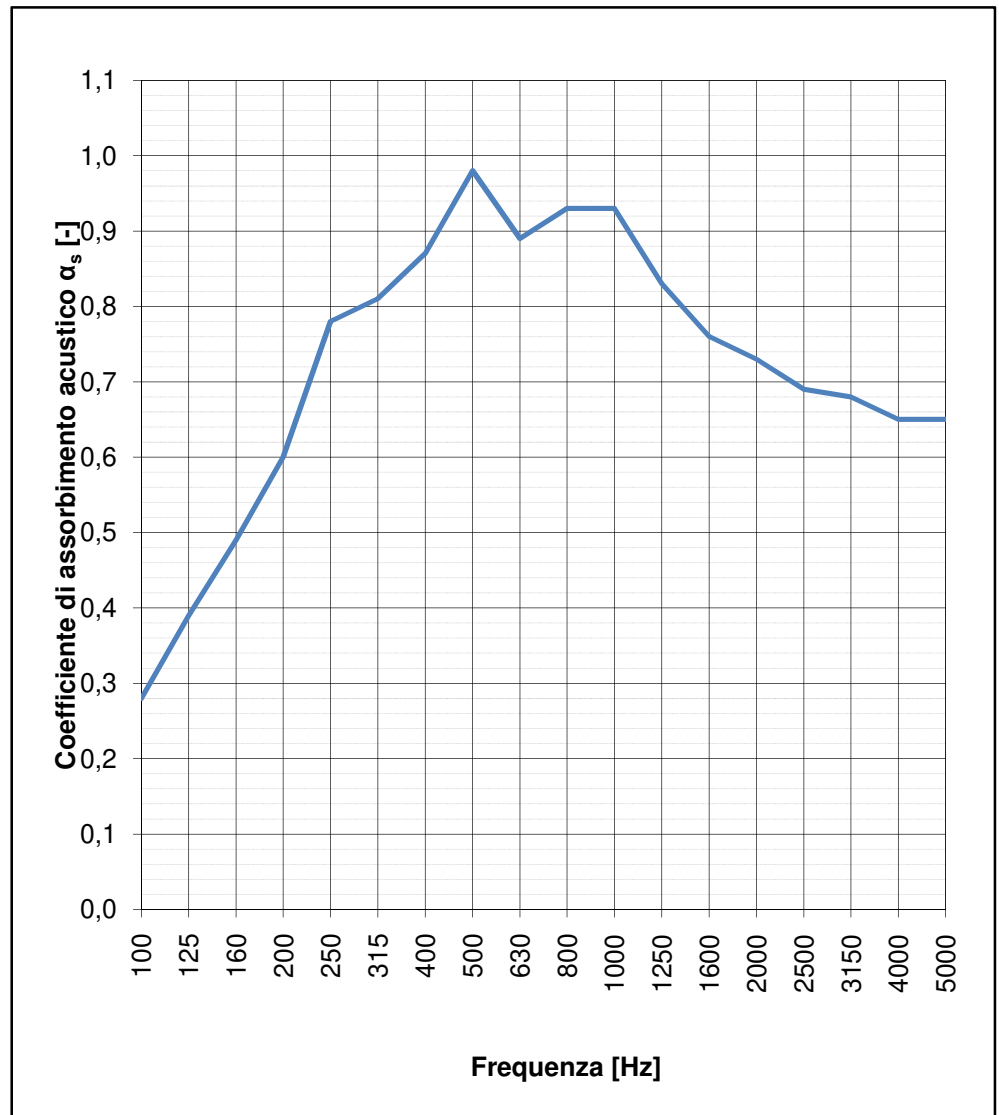
| PREPARED          | VERIFIED        | APPROVED        |
|-------------------|-----------------|-----------------|
| Sabato Di Filippo | Antonio Scofano | Antonio Scofano |

*Acoustic absorption calculation in reverberation room according to UNI EN ISO 354:2003*

Sample description: SHAPES - thickness 50 mm  
 Mounting Type: Mounting A

Sample area: 10,97 m<sup>2</sup>  
 Reverberation room volume: 161,3 m<sup>3</sup>

| f [Hz]    | $\alpha_s$ [-]                         |
|-----------|----------------------------------------|
| Frequency | Acoustic absorption coefficient values |
| 100       | 0,28                                   |
| 125       | 0,39                                   |
| 160       | 0,49                                   |
| 200       | 0,60                                   |
| 250       | 0,78                                   |
| 315       | 0,81                                   |
| 400       | 0,87                                   |
| 500       | 0,98                                   |
| 630       | 0,89                                   |
| 800       | 0,93                                   |
| 1000      | 0,93                                   |
| 1250      | 0,83                                   |
| 1600      | 0,76                                   |
| 2000      | 0,73                                   |
| 2500      | 0,69                                   |
| 3150      | 0,68                                   |
| 4000      | 0,65                                   |
| 5000      | 0,65                                   |



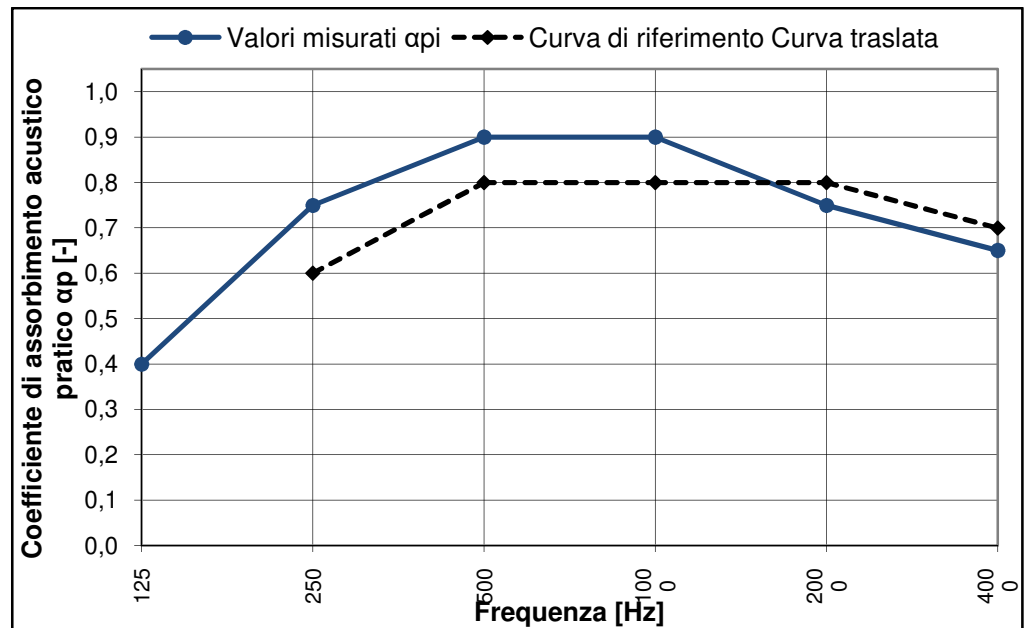
Evaluation based on laboratory measurement results by means of a technical method.

*Acoustic absorption calculation in reverberation room according to UNI EN ISO 11654:1998*

Sample description: SHAPES - thickness 50 mm  
Mounting Type: Mounting A

Sample area: 10,97 m<sup>2</sup>  
Reverberation room volume: 161,3 m<sup>3</sup>

| f [Hz]    | $\alpha_p$ [-]                                   |
|-----------|--------------------------------------------------|
| Frequency | Practical acoustic absorption coefficient values |
| 125       | 0,40                                             |
| 250       | 0,75                                             |
| 500       | 0,90                                             |
| 1000      | 0,90                                             |
| 2000      | 0,75                                             |
| 4000      | 0,65                                             |



STANDARD EVALUATION INDEX:

|            |                |                                                                             |                          |
|------------|----------------|-----------------------------------------------------------------------------|--------------------------|
| $\alpha_w$ | 0,8<br>CLASS B | Weighted acoustic sound absorption coefficient<br>Sound Absorption Class ** | UNI EN ISO<br>11654:1998 |
|------------|----------------|-----------------------------------------------------------------------------|--------------------------|

Evaluation based on laboratory measurement results by means of a technical method.

\*\* Classification of acoustic absorbers: The unique  $\alpha_w$  evaluation index is used to calculate the absorption class according to the following table:

| CLASS | $\alpha_w$              |
|-------|-------------------------|
| A     | 0.9 - 0.95 - 1.00       |
| B     | 0.8 - 0.85              |
| C     | 0.6 - 0.65 - 0.7 - 0.75 |
| D     | da 0.3 a 0.55           |
| E     | 0.15 - 0.2 - 0.25       |
| NC    | 0.00 - 0.05 - 0.1       |

Laboratory Manager, Ing. Antonio Scofano