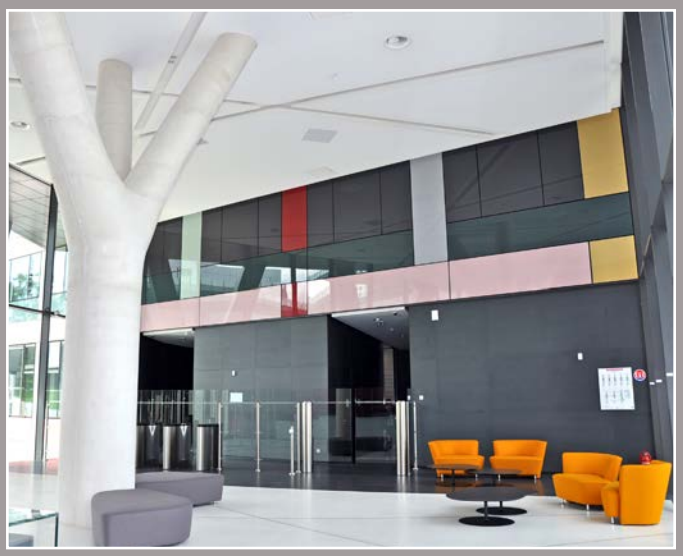
clipso sound®

Acoustic comfort for your ears!



clipso®
ceiling & wall

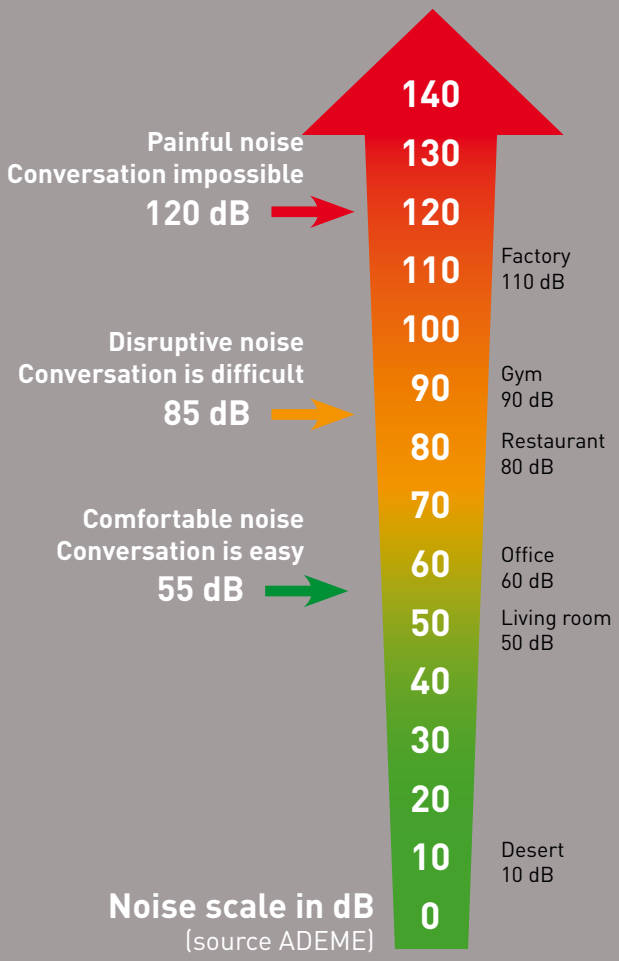
Introduction

Noise pollution is today recognised by the scientific community as being a source of daily discomfort and stress, whether in public or private spaces. It has a significant impact upon health and performance.

This is one of the reasons for which there is an increasing number of regulations regarding acoustics.

Good acoustics are not random but require the kind of know-how and expertise that **clipso** can provide.
Thanks to the coverings specially developed for ceilings and walls, **clipso** contributes to the good acoustics of your environment and thus provides a source of comfort and wellbeing to which we all aspire, with good reason, in our daily lives.

IBC Innovation Factory, Denmark - Architect: Schmidt Hammer Lassen Architects - Fitter: Ralbo Aps



Noise scale in dB
(source ADEME)

How can you improve the acoustic performance of your premises?

Two aspects can have an impact in this area:
• Acoustic insulation concerning the building: construction materials, partitions, windows, etc.
• The acoustic absorption which applies to different rooms and which influences the propagation of sound in these rooms.

The performances from **clipso** coverings 495AC - 495AT - 495D and 705A are ideal for acoustic absorption, and can be installed either on walls or ceilings

What are the important parameters in terms of acoustic improvement?

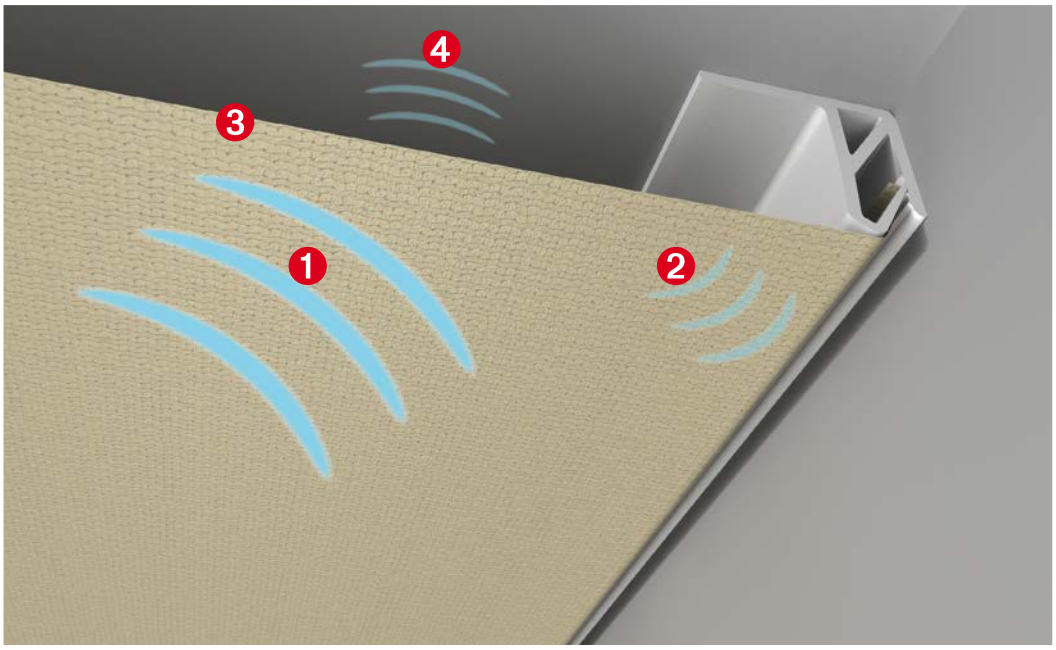
To achieve good results and acoustics, several approaches must be involved:
• The level of sound pressure: the noise level measured in dB (decibels), the best-known concept to the general public;
• The reverberation time: the amplitude of a room's echo;
• Spoken intelligibility: ease of understanding verbal exchanges;
• Acoustic insulation: amount of sound not transmitted from one room to another.

clipso: an optimal acoustic asset

clipso coverings together with acoustic insulators provide an excellent performance. Thus an adapted acoustic absorption makes the space appropriate for its use. This avoids the unpleasant effects like a loss of bearings, poor intelligibility and the 'cocktail party effect'.

What exactly is the acoustic absorption coefficient?

When a sound wave meets a material, energy disperses as follows: part of it is reflected, another part is absorbed into the material and a third part passes through the material.



1 The start of the acoustic wave **2 The sound is partially reflected upon contact with the covering**

3 The sound is mostly absorbed by the covering **4 Sound passes through the covering**

• The acoustic absorption coefficient results from the ratio of absorbed sound energy to incident sound energy. **It is expressed in α_s (alpha Sabine), with a grade of 1 meaning that all sound is absorbed.**

• Another significant criterion in which the **clipso** acoustic coverings provide excellent results: the reverberation time (RT_{60}).
This is defined as the time needed for the level of sound pressure to decrease by 60 dB (decibels) after the interruption of the sound source. It is given in seconds, and the lower the time, the greater the acoustic comfort it provides. **Depending on the setting and the frequency, it is possible to gain more than 6 seconds using the acoustic solutions offered by clipso.**

clipso proposes a choice of four coverings: 705 A (Acoustic), 495 D (Acoustic), 495 AC (Acoustic Color) and 495 AT (Acoustic Translucent).

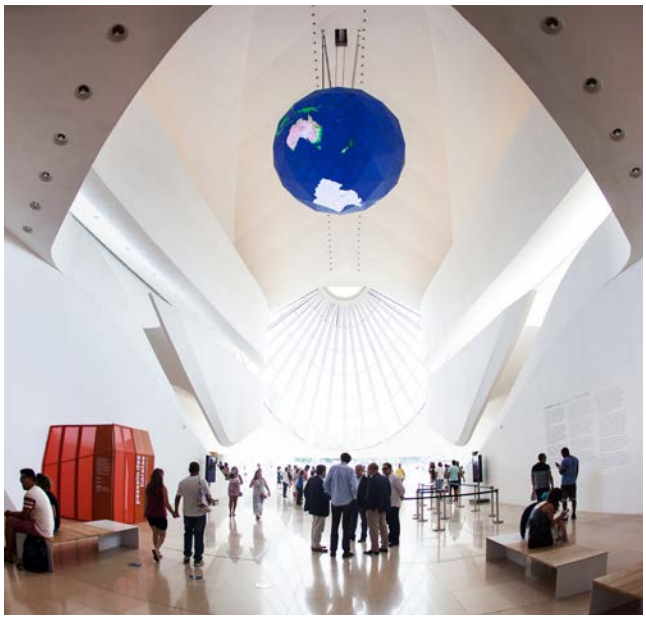
NEW

Thanks to a totally innovative covering, fruit of **clipso** research, **the 495 AT acoustic covering** is a major technical achievement, associating top-notch **acoustic performance** with the **possibility to integrate lighting in one and the same covering.**

Associated with a sound absorber, the 495 AT covering's **acoustic performance** is excellent (alpha sabine 0.95) and allows you to integrate **backlighting that will ensure a perfect result.**

The best way to meet **requirements, both aesthetic and technical, in spaces with a distinct ambience:** universities, companies, museums, restaurants, shops, hotels, airports, cinemas, thalassotherapy centres and spas, etc.

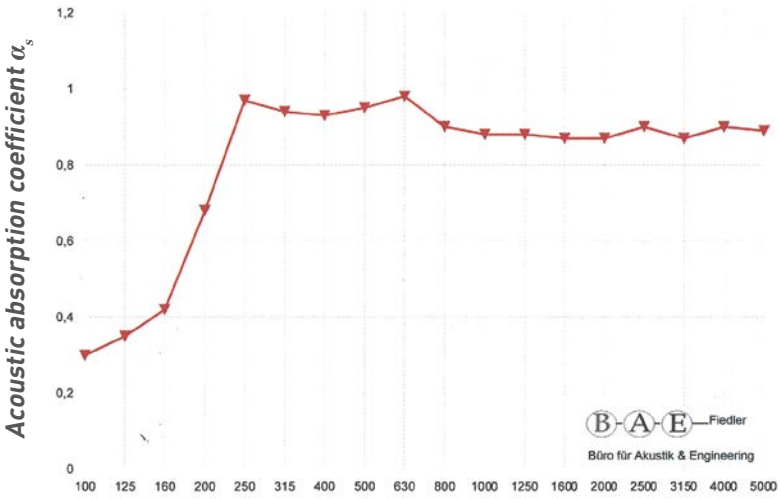
When treatment of light and sound transforms our daily lives.



Museum of Tomorrow, Rio, Brazil - Architect: Santiago Calatrava - Fitter: DIARCO Ltda.

Technical characteristics of the 495 AT covering

Polyester knitted fabric coated with polyurethane (PU) - Openwork mesh, 250 000 holes/m² - Width up to 5.10 m
Thickness: 0.4 mm - Weight: 235 gr/m² (+/- 10%) - Colour: 1 - Appearance: mat, smooth and uniform
Fire reaction: Euroclass - Tear strength: CH 5.5 daN/TR 7.5 daN - Light transmission: 40%



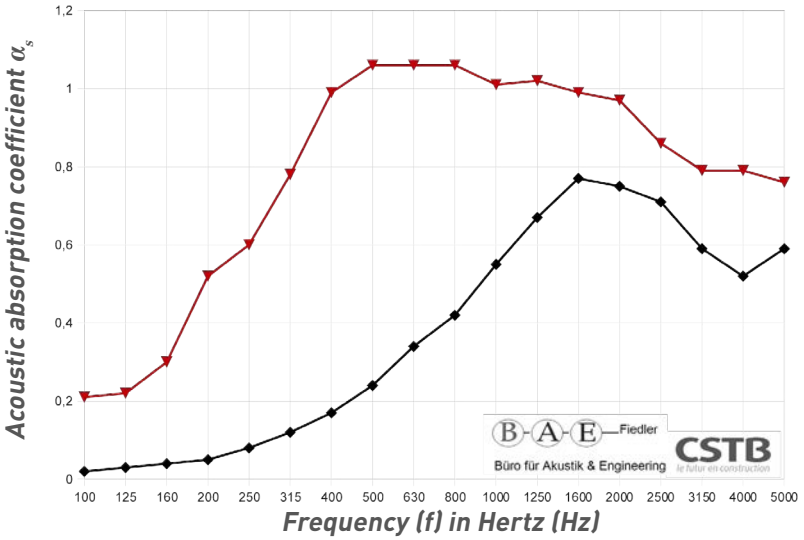
495 AT covering with insulation
α_s = 0.95 - Classification: A

Original wall or ceiling
Insulation LA54 (50 mm)
Empty plenum space (55 mm)
495 AT covering (0.4 mm)

Other acoustic tests are available; please address your request to our sales department at this e-mail address: service.commercial@clipso.com.

Technical characteristics of the 495 D and 495 AC covering

Polyester knitted fabric coated with polyurethane (PU) - Openwork mesh, 250 000 holes/m² - Width up to 5.10 m
Thickness: 0.4 mm - Weight: 235 gr/m² (+/- 10 %) - Colours: 3 (495 D) and 20 (495 AC) - Appearance: mat, smooth and uniform - Fire reaction: Euroclass - Tear strength: CH 5.5 daN/TR 7.5 daN - Light fastness > 8
The 495 D covering offers the same acoustic performance whether printed or not.

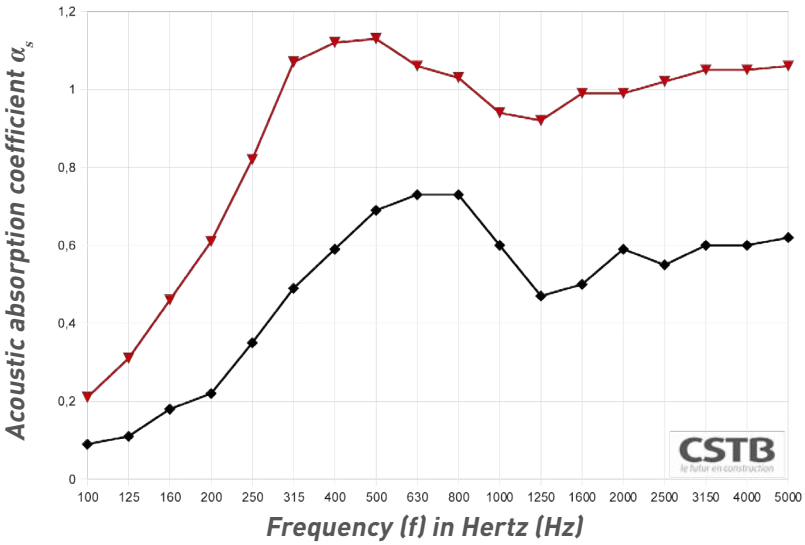


495 D / AC covering with insulation
α_s = 1 - Classification: A

Original wall or ceiling
Insulation LA54 (50 mm)
Empty plenum space (55 mm)
495 D / AC covering (0.4 mm)

495 D / AC covering without insulation
α_s = 0.30 - Classification: D

Original wall or ceiling
Empty plenum space (55 mm)
495 D / AC covering (0.4 mm)

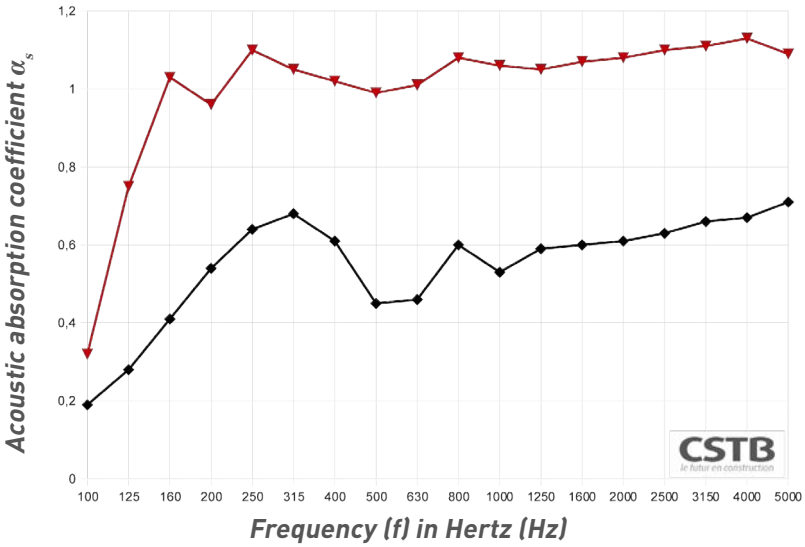


495 D / AC covering with insulation
α_s = 1 - Classification: A

Original wall or ceiling
Insulation LA54 (50 mm)
Empty plenum space (155 mm)
495 D / AC covering (0.4 mm)

495 D / AC covering without insulation
α_s = 0.60 - Classification: C

Original wall or ceiling
Empty plenum space (155 mm)
495 D / AC covering (0.4 mm)

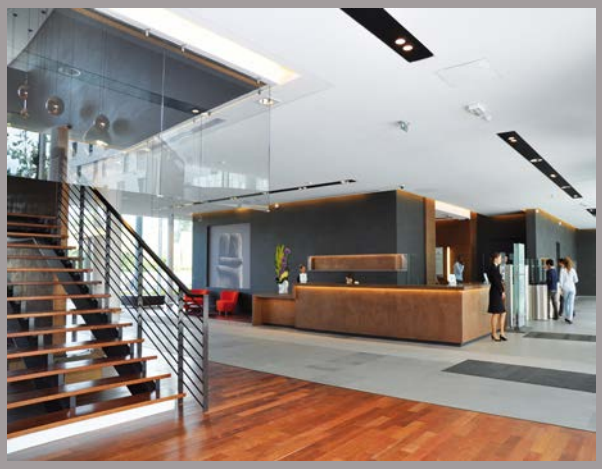


495 D / AC covering with insulation
α_s = 1 - Classification: A

Original wall or ceiling
Glass wool (100 mm)
Empty plenum space (355 mm)
495 D / AC covering (0.4 mm)

495 D / AC covering without insulation
α_s = 0.55 - Classification: D

Original wall or ceiling
Empty plenum space (355 mm)
495 D / AC covering (0.4 mm)



Zac Claude Bernard BNPPI, France - Project manager for Didier Gomez: Elisabeth Haulin - Fitter: Langlois Sobreti

Company restaurant, Belgium - Fitter: Mona Visa
Architect: Lineos-Chris Vantornout

Aquatic complex, Badewelt Sinsheim, Germany
Architect: Architekturburo Wund - Fitter: Art Design Hahn
Distributor: Baumann Spanndecken

University of South Carolina, USA - Fitter: Warco Constructions Inc. - Architect: L3SP

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