

**//// TERRACO®**



## **Ambient Acoustic System**

*The House of Scandinavian Finishing Materials*

# Acoustics



## Acoustics – the issues

Positively harnessed acoustics are a part of every day life and are commonly used to enhance and amplify for example musical performances. Unwanted sound or noise can however cause great discomfort and pose a serious health hazard that greatly reduces efficiency in the workplace and quality of life in general.

## Reverberation – the basics

- In enclosed spaces sound waves reflect, blend together, build up and create reverberation.
- The method of quantifying reverberation time was first developed in 1900 by Wallace Clement Sabine, an American physicist, following an instruction to remedy acoustical difficulties in the lecture room at the Fogg Art Museum.



Reverberation time is the time required for the amplitude of sound to drop by 60 dB (after the source has ceased transmitting)

### Sabine's formula

T = Reverberation time

V = Volume in m<sup>3</sup>

A = Average absorption coefficient of the room

S = Total surface area of the room in m<sup>2</sup>

$$T = \frac{0.161 \times V}{A \times S}$$

Popular design themes, such as minimalism, produce architecturally pleasing environments – the emphasis being on clean, unobstructed spaces and areas. Such designs, however, generally incorporate hard, flat surfaces – which have a negative effect on reverberation and exacerbate unpleasant noise.

Properly controlled acoustics are becoming increasingly important for architects, designers and builders across the globe as they strive to meet design criteria while ensuring the minimization of negative acoustic effects.

## Experience

Terraco understands the science of acoustics – but more importantly prides itself on its knowledge of how to control acoustical properties in practice. The company has extensive experience in real acoustic engineering in public and private applications.

Terraco's acoustic products, such as Terraco Ambient, have been designed and formulated to provide versatile solutions to acoustic problems in the real world.

## Ecological products for the present and future

The modern Terraco materials, developed over many years, for a variety of diverse applications have stood the test of time and can be relied upon to cope with the demands of the 21st century.







# What benefits



## The Benefits

- Excellent reverberation control.
- Noise reduction = stress reduction (at home and at work).
- Good acoustics = improved work efficiency and performance.
- Enhanced listening experience.
- Excellent design flexibility - can be applied on curved and vaulted ceilings.
- Jointless acoustic finish.
- Non polarized material ensures low maintenance and easy cleaning.
- Can be applied equally well to hard substrates or suspended ceilings.
- Non hazardous.
- Easy to maintain and repair.
- Uses 80% recyclable material.
- Incombustible.
- Vapour permeable.
- Excellent fungal resistance.
- Ambient Acoustic plasters are members of Terraco's ultra-environmentally friendly EcoLife range.
- 50 standard colours, full colour spectrum on request. Acoustics and aesthetics, enjoy both with Terraco Ambient System.

## Terraco Ambient

### Main Components

Terraco Ambient Acoustic Systems are comprised of 3 main acoustic components which are used in various combinations to achieve the desired acoustic properties.

#### 1. Ambient Basecoat

Terraco's high quality acoustic performance plaster. Typically applied in layers of 8 – 18 mm to create the main absorbent layer.

#### 2. Ambient Finishcoat

Terraco's decorative acoustic finishing plaster. Applied as the final coat in layers of 2-3 mm. Ambient Finishcoat is available in a wide range of colours and can be finished smooth or with a spray texture.

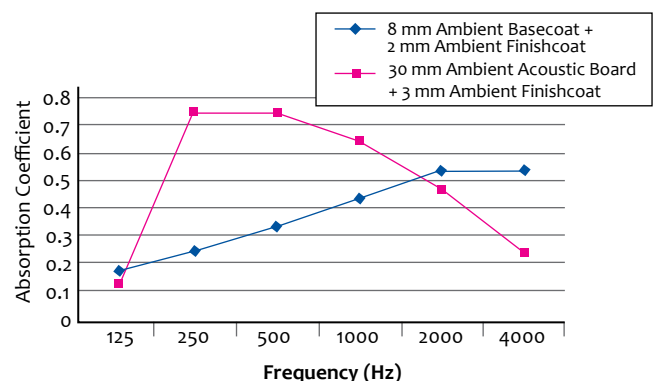
#### 3. Ambient Acoustic Board

Acoustic mineral fibreboards. Usually used in thicknesses of 20 – 40 mm.

### System Options

The Ambient acoustic products, in conjunction with other components such as Ambient Primer and Ambient Adhesive are combined to produce several versatile system options. Some of the most popular ceiling systems are outlined below with comparisons of relevant coefficients of absorption.

- (A) The full Terraco Ambient System includes 18 mm of Basecoat and 2mm of Ambient Finishcoat. This system is both easy to apply and cost effective.
- (B) For less demanding applications 8 mm of Ambient Basecoat is combined with 2 mm of Ambient Finishcoat.
- (C) For specific applications a 30 mm Ambient Acoustic Board is combined with 3 mm of Ambient Finishcoat. The backing board gives the system a greater dampening effect on certain frequencies.





### **Environmentally Friendly**

Terraco has constantly pushed the boundaries in environmentally friendly finishing materials – spearheading new technology and production techniques. The company takes pride in its flawless ecological track record and always aims to be the first to make new advances in ecological products available to the end user.

EcoLife marking denotes that a product is a part of Terraco’s EcoLife range. This range of products has been formulated to comply with the most stringent national regulations in the world pertaining to interior decoration products. The products contain specially developed polymers and additives containing zero volatile organic compounds (VOCs) which ensure their inertness and ecologically friendly nature.

### **Research & Development**

The Terraco Group is committed to an extensive Research & Development Program. The Technical Centre, based in Ireland, heads up the group’s in-house product development program and is responsible for making sure that Terraco products remain at the forefront of their field with regard to innovation, quality and environmental standards. Terraco cooperates with several technology partners and suppliers, conducting joint research projects in common interest areas.



KBS Dubbing Room



Stanley House, London



Chapel Room, Seoul

### **Quality Assurance**

The Technical Centre implements strictly monitored quality control procedures at all production facilities ensuring homogenous, high quality products.

All Terraco companies follow QC procedures as outlined by ISO 9000. 11 Terraco factories have acquired ISO 9001 Certification. Additionally, Terraco Korea has been awarded the ISO 14001 Environmental Management Certificate.

### **Suitable Application Areas**

- Banks
- Boardrooms
- Indoor swimming pools
- Galleries
- Theatres
- Civic buildings
- Museums
- Hospitals
- Libraries
- Offices
- Schools and colleges
- Shopping malls
- Stairwells
- Reception areas
- Public areas
- Lecture theatres
- Restaurants
- Hotels
- Meeting rooms
- Living rooms with home theatre or sound systems
- Entrance halls
- Dining rooms

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