

# SoftWall noise control solutions

Whether it is strategically placed baffles and wall blankets to control ambient noise, or a SoftWall enclosure system, Soper's has a practical, efficient, cost-effective noise control solution.

SINCE 1875  
**SOPER'S**  
ENGINEERED FABRIC SOLUTIONS



## Industrial noise

### – not just an occupational health and safety issue

Even before noise – defined as unwanted sound – becomes a health and safety issue, it can have a costly impact on productivity and efficiency.

Noise can be constant, pulsating or intermittent. And it can travel in unpredictable patterns.

Surprisingly, without a proper design, attempts to simply block noise can actually make the problem worse. “Block and Absorb” is the answer and the SoftWall specialists at Soper’s can help you simplify a complex problem and identify a cost-effective, step-by-step solution to your noise control challenges.

## What is a decibel ?

**Sound intensity** is measured in decibels (dBs). The human ear has a comfortable and safe listening range of zero dB (our threshold of hearing) through to 70 dB (the din of a noisy restaurant or heavy traffic).

## Frequencies and their impact...

Noise is not just soft or loud; it travels the frequency map from an almost inaudible murmur to a tooth-jarring bang. Low frequency noises, like the whump of a punch-press, can also produce additional structure-borne sound that actually travels through floors, steel columns and beams. It is sometimes necessary to stage a multi-faceted solution that combines a wide range of specialty expertise, from equipment isolation to custom enclosures.

## Acoustical Absorbers

When noise is absorbed, the sound wave enters the material and is converted to heat through a frictional process within the porous material. It is important to consider the use of a barrier in conjunction with the absorber, as sound waves tend to flow through the porous absorbing material. When a full or partial enclosure is designed, sound-absorbing materials should be used on the inside surface of the noise barrier to minimize reflected and elevated sound levels.

## Acoustical Barriers

The most effective way to reduce noise is to place a barrier between the source of the noise and the receiver. However, barriers do not absorb sound. Instead, most of the sound is reflected back from the barrier. When choosing material for a sound barrier the important consideration is its physical mass. The heavier and denser the material, the better the barrier.

## Here are some facts about noise:

- Without ear protection, auditory nerves can be permanently damaged by prolonged exposure to **90 dB noise** – roughly the equivalent of a **lawn mower** or a **heavy vehicle**.
- **120 dB** is like being close to a **propeller aircraft**; the noise can cause pain and ringing in the ear.
- Sharp pain and extensive destruction of the auditory nerves occurs at **140 dB**, noise produced by a **shotgun blast** or standing 30 metres from a **jet engine**.
- At **150 to 160 dB** – the “crack” of a **30-calibre rifle** – massive destruction of the auditory nerves and persistent ringing in the ears will occur immediately.



**90 dB noise**  
Lawn Mower  
(Damage can occur if prolonged)



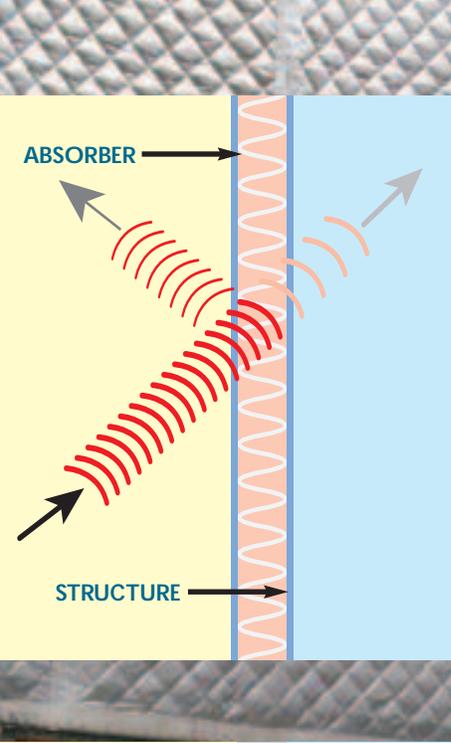
**120 dB**  
Propeller Aircraft  
(Threshold of pain)



**140 dB**  
Shotgun Blast  
(Extreme danger)



**150 to 160 dB**  
30-Calibre Rifle  
(Extreme danger)



## The Soper's solution

Whether it is ambient noise – the accumulation of all the sounds in a production area – or a typical project that involves controlling a specific sound source, Soper's will deliver a solution. When it is a complex problem, calling in additional associate experts like acoustic engineers is often advisable.

There are some key principles in the Soper's commitment to deliver a high value-added solution:

Keep it simple

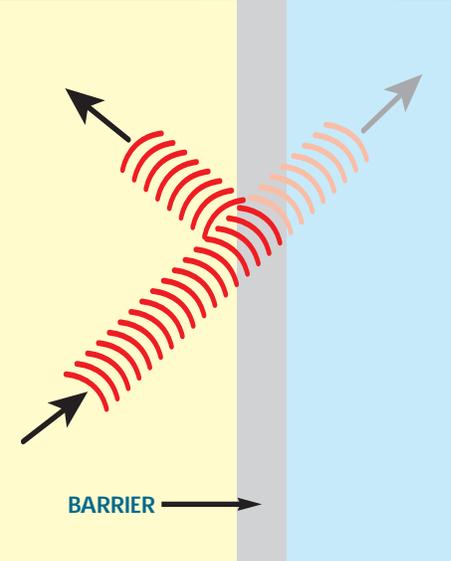
Keep it practical

Keep it efficient

**And above all, keep it cost-effective!**

For instance, if it means creating a physical barrier, make sure it does not impede materials handling or other plant traffic patterns.

- For ambient noise, a step-by-step approach is often advisable since costs can be significant when covering large surface areas.
- Solutions can start with surface treatments such as wall blankets and ceiling baffles; then progress to include larger suspended upper panels (sound hoods). Framed screens at floor level can be introduced later to fine-tune the overall solution, isolating specific noise sources.



### For example...

To overcome ambient noise generated at an instructional woodworking lab, Soper's was able to reduce the overall noise level to a point where:

- Ear protection was not required
- The instructional area was isolated without blocking the view or mobility of the instructor (and students) at the floor level – enabling an easy and continual transition between instruction and machine usage.

Other challenges involved working around exhaust ducts, air make-up vents and electrical and compressed air outlets – all while ensuring existing lighting remained adequate in all areas.

The Soper's solution met these challenges and has since been implemented at other locations.



### Immediate and measurable results

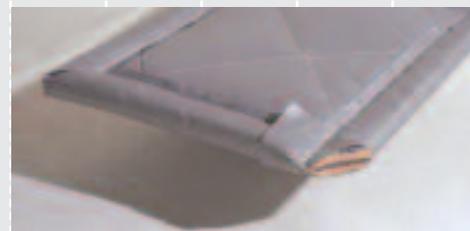
Soper's expects the results to be immediate – and measurable – for its customers. Noise levels, before and after, tell only part of the story. The Soper's solution is a complete solution. We not only solve the noise problem, we also incorporate our extensive SoftWall enclosure experience to enhance productivity and ensure there is no impact on process flow.

Soper's encourages the client to actively participate throughout the design process. The goal is to ensure Soper's noise control solutions exceed expectations in terms of flexibility, durability and integrity.

#### The final tests:

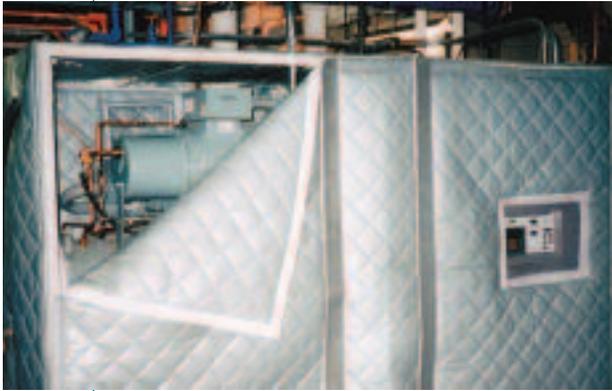
- Seamless interface with existing operations
- Delivery and installation with little or no down time.

Cross Section Acoustical Absorbers

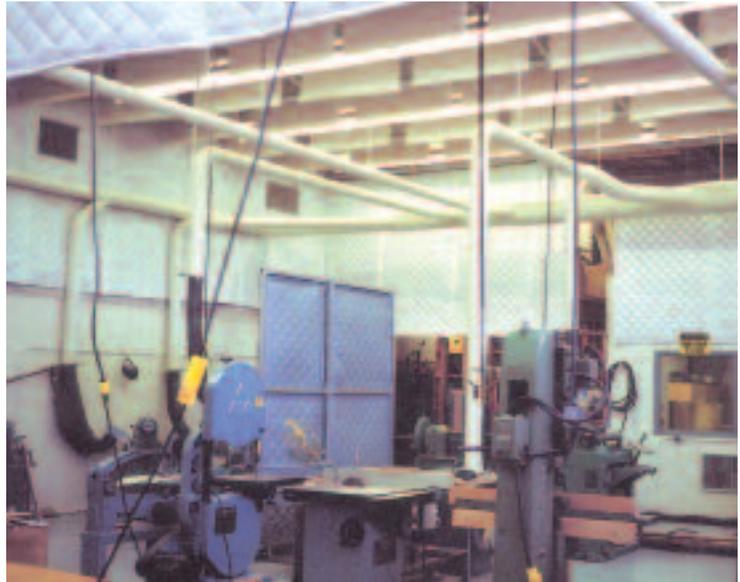


# SoftWall noise control solutions

Soper's SoftWall noise control solutions – five categories



**1** Sealed enclosures to contain compressors, pumps etc.  
Target: noise reduction of 20- plus dB



**4** Overall ambient noise reduction within the entire facility  
Target: noise reduction of 6 – 12 dB



**2** Large enclosures to segregate entire areas



**3** Smaller work station enclosures



**5** Outdoor environmental noise pollution enclosures  
Target: noise reduction of 10 – 20 dB

Rugged  
Purpose Built  
Custom sized  
Designed

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