STOPPING NOISE IN INDUSTRIAL APPLICATIONS

Industrial noise is a serious problem in modern life. Industrial noise can be stopped by a variety of methods depending on the noise source, what type of installation is being silenced, requirements from local, state, and federal authorities, as well as many other factors.

Terminology

While there are a variety of methods that can stop noise, each method has its challenges.

To understand why this is the case, one must first understand a number of terms. For example, there's PWL (Sound Power Level). PWL is the total acoustic energy emitted, and is often specified in decibels. It is the power level of any sound that is determined to be noise and is the sound that must be silenced. Engineers have to consider a variety of factors when coming up with ways to reduce PWL. For example, they must consider both breakout noise which is noise that "breaks out" through a wall or other barrier, and spreading loss, as sound drops over distance irrespective of angle.

SPL (Sound Pressure Level) is the "sound level" at a certain distance and is often measured in decibels.

In order to properly block sound or reduce noise to predetermined levels, engineers must consider how effective the materials they choose for a barrier will be at stopping breakout noise, how spreading loss or directivity (noise loss accounted for by the direction of the noise) might determine the positioning of a barrier or where a barrier might not be needed, for example, at certain angles far away from a structure.

Other factors almost always need to be considered when it comes to noise barriers. NRC (Noise Reduction Coefficient), which is a numerical value that shows how much sound is absorbed by a material, helps engineers choose the proper material for reducing sound in each unique situation. STC (Sound Transmission Class) and TL (Transmission Loss) are other classifications used to determine how much noise a barrier may block.

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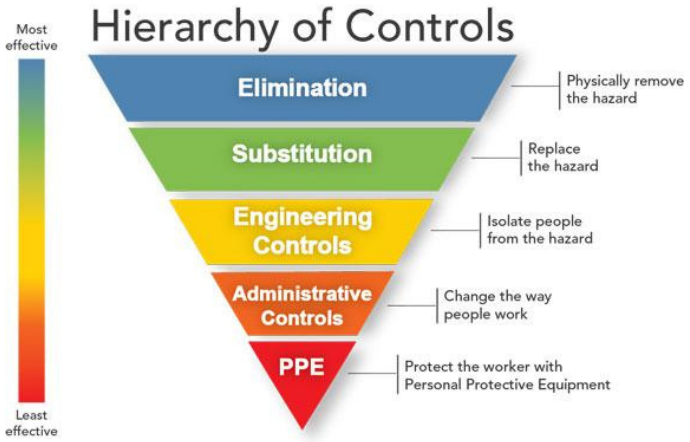
Noise Silencing Issues

TL through walls can stop a certain amount of noise depending on their thickness, their height, and what materials they are constructed out of. Although not all industrial noise applications are static, moving air adds an additional facet to design. For example, one of the major problems with silencing noise is that the silencers themselves generate noise. For industrial applications, this must be taken into account. It often means that, depending on how much the noise must be reduced, more measures must be taken.



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