

# HARMONY

## UNDERSTANDING ACOUSTICS

Harmony panels are perfectly suited for solving acoustic requirements, space definition and wayfinding and or department identification. Our acoustic panels are made of up to 100% recycled PET with excellent structural and sound absorption qualities.

Due to its manufactured structure and many possibilities of application, Harmony is extremely capable of absorbing or altering sound waves. The process to determine the amount of material to use and how to apply it may seem complex but we want to help.

Since there are many types of sounds, environments and criteria to mitigate, we will concentrate on three factors that are common: transmission, absorption and reflection.

**Transmission** is the amount of sound energy that travels through an object and the subsequent reduction as it passes through.

**Absorption** is the amount of sound energy that becomes trapped or nullified within the fibers of the Harmony Board.

**Reflection** is the amount of energy bouncing back after it dissipates through Harmony as it encounters a hard surface.

Factors like the frequency, volume and distance influence the amount of energy absorbed or altered by Harmony.

Based on the size of your space and frequency of sound energy to be mitigated, you may need to employ a combination of products to get the results you desire for a healthy sound environment.

A common formula for determining the amount of acoustic material (sound absorbing material) required to provide a 30-40% noise reduction is by calculating the volume of the area ( length X width X height ) and multiplying that number by 0.03.

For example:

40 ft (long) X 20 ft. (wide) X 10 ft (high) room = 8,000 cubic ft. X 0.03 = 240 sq. ft. of acoustic material

The above formula suggests that 240 sq. ft of acoustic material will provide a 30 - 40 % noise reduction in a room with an internal volume of 8,000 cubic feet.

Bear in mind there is no absolute rule in determining the actual amount of acoustic material required to reduce sound to a specific level and quality of sound. There are many factors that must be taken into consideration such as room shape and volume level, construction materials, room temperature, furniture and even the number of people in the room.

Noise Reduction Coefficient (NRC) is an averaged rating to show how much sound energy an acoustic material can absorb. Acoustic materials are designed to absorb sound energy and the NRC value tells us how well the material will absorb sound and quieten the area. The NRC of a sound absorbent material is given a rating between 0.0 and 1.0 where the higher the rating, the better the material's ability to absorb sound . Harmony acoustic panels perform at an NRC range of .75 - 1.0 on midrange frequencies. Our products contribute to providing balanced noise levels and help create speech privacy.

If you have any questions please contact our team.