

Preventing Hearing Damage From Headsets in Call Centers



There are millions of individuals working in call centers throughout North America and in countries around the world. These include consumer, business and medical facility operators that work in customer service and order desks; high tension environments such as air traffic control, 9-1-1 emergency response, police dispatch and military command; along with specialty jobs such as medical and legal transcription specialists. As the operators begin their tasks, the ambient noise in the room begins to rise. A problem occurs when an operator turns up the headset volume to compensate. They not only increase the volume going to their ears, but the naturally begin to speak louder. The operator next door has no choice but to follow suit and in no time, the room noise elevates to unmanageable levels and the headphone volumes are now so loud, that they exceed safety standards.

The United States National Institute for Occupational Safety and Health (NIOSH) has set standards where sound pressure levels should not exceed an 85dBA safety limit during a regular eight-hour work shift. Recent studies have shown that headset volumes are often elevated by 4dBA above the safety limit and as high as 18dBA in some extreme cases. After continuous exposure, operators experience a range of symptoms including pain in the ears, tinnitus (constant and prolonged ringing in the ears), vestibular disturbance (loss of balance) and hyperacusis (heightened sensitivity to noise). The excess noise problem in the room is further exacerbated by the HVAC system, conversations between staff, supervisors calling out orders and in emergency environments, radio communication between the operators and emergency response teams. The excessive volume results in irritability, increased tension, fatigue, and errors that can be as simple as placing the wrong product on order, or as severe as miscommunicating important information in an emergency setting.

The solution is simple: reduce the ambient noise in the room by mounting [Broadway™](#) absorptive acoustic panels to 17% to 25% of the available wall surface. Simply stated, in highly reflective environments, the sound energy has no place to go. Broadway acoustic panels are made from high-density 6lb glass wool. These are fully encapsulated in micromesh and the edges are resin hardened to prohibit dusting. The panels are then either covered in a rugged polyester tween or available in [Paintables™](#) to color match the room décor. Sound energy in the form of vibrations penetrate the panel causing the minute fibers to vibrate, converting sound into heat. The science is known as thermodynamics. We are essentially providing an escape hatch for the excess energy in the room.

In an effort to reduce sound from traveling from one area to another, [Cloud Paintables™](#) or [Saturna™](#) baffles offer a highly effective remedy. These panels are suspended from the ceiling - above noisy areas - and work double-duty by both absorbing direct sound from the floor while also capturing the reflections from the ceiling. Mounting is done using eye-hooks and SlipNot™ adjustable aircraft wires. Placement of acoustic treatment is not critical as the noise is omnipresent. It is more a matter of capturing the energy wherever possible. A combination of wall and ceiling treatment is preferred.



Cloud Paintables offer an easy to install solution to control sound and capture reflections from the ceiling.

For facilities outfitted with T-Bar ceilings, ineffective chip-board ceiling tiles may be retrofitted with high performance [Stratotiles™](#) without the need for special tools. These are made from the same high-density glass wool as the others and made to fit all standard T-Bar ceiling structures. Should noise abatement be needed to keep sound from an adjacent room from polluting the call center, [Thundertiles™](#) add a heavy gypsum layer to increase mass as a means of stopping acoustic energy from rising up through the T-bar ceiling, into the plenum and traversing into the call center space.

The National Institute for Occupational Safety and Health

(NIOSH) clearly states the following as a solution: to reduce background noise levels in the work environment, install noise controls such as barriers between workstations and/or sound-absorbing materials on hard surfaces in the room [NIOSH 2008].

Once the acoustic panels are in place, you will immediately notice a significant reduction in ambient room noise throughout the facility. Sounds that use to travel from one end of the room to the other will be attenuated and 'irritables' such as HVAC system noise, non-work related conversations and external sounds from traffic or machinery will also be subdued. The resulting noise floor will naturally reduce operator voice levels and ultimately reduce the need for operators to turn up their headsets which in turn will help save their ears, health related problems, work stress, absenteeism, legal liability and the related medical costs.

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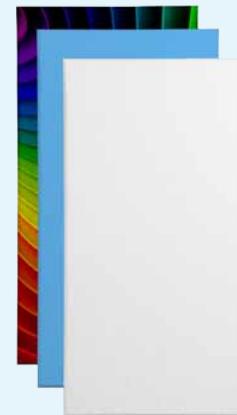
Broadway panels

Broadway™ is a range of high performance, fabric covered absorption panels. Made from high-density 6lb per cubic foot (96kg/m³) glass wool, each panel is fully encapsulated with micromesh to ensure safe handling, and edges are hardened with resin for clean lines and a sharp appearance. The panels are then covered in a tough yet acoustically transparent fabric that is available in three neutral colors. Panels may alternately be re-covered with any breathable fabric to suit room décor.



Primacoustic Paintables

Primacoustic Paintables™ are an innovative acoustic panel range that is finished in Absolute White™, or can be repainted to the color of your choice! The design begins with the same high-density 6lb per cubic foot (96kg/m³) glass wool core that is used in the Broadway series panels. Rather than wrapping the panel in fabric, the face and edges of the Paintables are coated in a breathable latex finish that allows them to be spray painted without affecting the acoustic performance.



Cloud Paintables

Paintable ceiling clouds provide exceptional sound abatement in noisy environments such as cafeterias, restaurants, hotel lobbies, museums and conference centers. The range includes the Cirrus™ a circular cloud, the Hexus™ hexagon and the Altos™ square. Cloud Paintables ship in Absolute White™ or may be repainted to suit room décor. Comes complete with two panels, Helix™ anchors, SlipNot™ suspension kit and mounting hardware.



ThunderTile

The ThunderTile™ combines the exceptional sound absorption of glass wool with the noise blocking benefits of a heavy gypsum backboard. This combination improves intelligibility while helping to reduce sound transmission between rooms by up to 46dB.

