

SolidDrive Transducers

Installation Tips & Best Practices

Surface Materials

- Performance is most optimal on Wood, Drywall, or Glass
 - We publish Manufacturer's Recommended EQs for each of these materials – these serve as a good starting point for each material, but each installation will need to be tweaked to optimize the response.
- Other materials have been known to perform well, but we do not have pre-determined EQ's for these.
- Glass additional notes:
 - The thickness of a glass panel is just one of several variables to consider in a SolidDrive installation. Our “sweet spot” is somewhere in the range of $\frac{1}{4}$ ” – $\frac{1}{2}$ ” in thickness but that does not mean SolidDrive cannot be viable on thicknesses outside of that range. Glass can be made in many different ways and with many different compositions so the best way to confirm performance is through the use of our **Demo Kit**.
 - SolidDrive can be used on double-pane glass, but it is important to note that the transducer must be mounted on the side of the glass that you wish to be audible. You will not get the sound output on both sides of the window the way you would with just a single-pane window.

- The SolidDrive can rattle a glass panel or other substrate if too much bass is put into the substrate. This can be alleviated through reducing the bass level, filtering, or isolating/gasketing the outer edge of the glass/panel.
- Materials that generally do not work:
 - Cement
 - Thick marble
 - Acoustic Ceiling Tiles
 - Anything that is completely “dead” and does not vibrate
- **“The Knock Test”** – If you can “knock” on it, it will probably work!
- All materials will require some level of EQ to optimize the performance

Surface Size

- Frequency response and output are most determined by overall substrate size and substrate edge-termination
- Generally, the larger the substrate, the louder and lower in frequency the transducers play
- The transducers’ maximum output and frequency response are achieved using a 4x8’ sheet
 - This holds true for all materials with both the SD-1(-T) and MSK-1(-T) units.

Placement

- Generally, dead-center on a surface is the worst spot for a SolidDrive. The transducer excites the surface randomly but uniformly, so dead-center placement can result in cancellations. Somewhere 4-12” from the edge is usually ideal – test it to find the best spot.

Output

- SolidDrive transducers are 70-75 dB efficient (substrate-dependent) and can reach ~88 dB SPL at 1m. The absolute SPL is taken at a point, but the coverage is much broader. The overall sound pressure in the room is higher than a point source.
- SoundTube recommends applying a high-pass filter around 60-70 Hz, especially if you want it to play loud. The majority of music-content bass is in the 60-80 Hz range, which is what people tend to consider “thumping bass”. Failure to high-pass the signal around these frequencies can yield rattling or vibrations when the level is turned up.

- Using two transducers on a single panel to increase output can be done, but the distance between them is paramount to their response. Output can be boosted by +6 dB.

SD-1(-T) vs. MSK-1(-T)

- The only performance difference between the SD-1(-T) models and MSK-1(-T) models is the sensitivity
 - The MSK-1(-T) units play about 6 dB lower than the SD-1(-T) units. The MSK-1(-T) series was specifically designed for sound masking since the levels are usually much lower than distributed audio. The MSK models use a single voice coil, whereas the SD models use two voice coils.
 - Otherwise, the placement and frequency response are the same. The sound will spread out, so in plasterboard/drywall ceilings, you can space them up to 25'-30' apart and get very even coverage in the room.

SD-1DESKTOP-250-PAIR Demo Kit

- The SD-1 Demo Kit is a good tonal indicator, but cannot guarantee an accurate representation of output or coverage (especially in applications that will have more than one SolidDrive).

Miscellaneous

- The SolidDrive transducers CAN be used for stereo applications. For best results, give each SolidDrive channel adequate surface area (we recommend around 20 square feet per channel). The sound can overlap the two sides if the transducers are too close together on one wall.
- Glass Transducer VHB Disc:
 - Up until late 2022, the SolidDrive VHB disc was [3M™ VHB™ Tape 4941](#). It was later switched to [3M™ VHB™ Tape GPF-110GF](#) as the 4941 tape was experiencing major supply disruptions.
- The SolidDrive transducers only move linearly between 0.001 - 0.01 inches