

Diesel Engine Generator Set Noise Control

Diesel Engine Generator Set, or *Genset* as they are commonly called, are used primarily for emergency power generation or stand-by power in case of power failure. In the case of emergency power the gensets are an extremely important piece of equipment for hospitals, utilities, and government buildings in case of an emergency. Stand-by gensets provide back-up power for many financial and data companies that rely on power to facilitate their day-to-day operations. As you may have noticed, many of these facilities are familiar and located in your neighborhood or near noise sensitive areas. Here lies the importance of genset noise control and acoustical enclosures. The diesel power generators provide insurance and piece of mind in an emergency, but all other times we do not want to know they are there. Gensets typically need to be tested on a regular schedule to insure operation in case of an emergency.

Gensets have three areas that create the majority of the high sound levels. The motor, the motor exhaust, and the radiator or cooling fan. The motor and radiator require large volumes of air to keep them cool and operating. Maintaining airflow in sound enclosure design is critical. You are going to place a large enclosed box over the genset, then cut big holes in it for airflow and expect it to reduce the noise. Typically the acoustic enclosure is constructed of heavy gauge solid steel outer skin, a perforated steel inner skin, and sound absorbing insulation filling the void between the two. The steel outer skin performs as a noise barrier (mass blocks noise) and the absorber layer reduces reverberation within the enclosure. These steel assemblies are constructed of large sheets or modular panels. To tackle the motor cooling airflow requirement, acoustical silencers are utilized. The sound attenuators are typically constructed of the same materials described above utilizing solid steel, perforated steel and a sound absorptive material. The silencers are designed for minimum pressure loss and maximum sound reduction. This entire assembly of acoustical sound barrier panels and sound attenuators provide noise control as well as adequate airflow to achieve your sound reduction goals.

