

# WHITE PAPER: Why Shielding?

Tune a radio among stations and noise pours from speakers, showing electrical activity around us. This background noise is also evidence of both environmental and human activity. The crackling sound is spread across the radio spectrum. Here are a few sources of electromagnetic noise.

- Solar or cosmic radiation, lightning and windstorms disturb the atmosphere
- Wi-Fi and cellphone devices broadcast at high frequencies, distributing data
- Power supplies for household electronics radiate electronic noise
- Power over Ethernet® (PoE) wiring transfers power and data through wiring
- Unshielded wiring transmits and receives interference
- Electric motors convert electricity to motion with some electrical noise
- Alternators and generators noisily convert motion into electrical power
- Wind turbines, antennas, cellphone towers and solar arrays create or reflect noise
- Damaged, aged or abused electrical equipment generates electrical noise
- Microwave ovens, industrial heaters and medical devices radiate microwaves

In the USA, the Federal Communications Commission (FCC) provides guidance about electronic noise manufactured devices may radiate. However, standards vary among applications and locations, such as for industrial purposes or in aircraft and air traffic control. More electronic noise is allowed for industrial purposes and far less is allowed in aircraft to avoid interference with flight control, communication and location devices.

## MIL-STD 1310H Requirements

Electromagnetic interference is always with us, whether in nature or generated by artificial sources. Shielding is needed to prevent interference in communications and control systems. Where electronic signals need to be clear, contained, or protected, ANACONDA SHIELDTITE® conduit shields the transfer of power through wiring. This stripwound bronze conduit has proven to be an effective shield for wiring, conforming to MIL-STD 1310H requirements while providing shielding effectiveness of 81 dB to 119 dB at 1 kHz to 1 GHz.

ANACONDA SHIELDTITE®, Halogen Free SHIELDTITE® Z1 and Halogen Free SHIELDTITE® MIL conduit types have the same shielding capacity, with different liquid tight jackets. This conduit is effective protection from interference for sensor arrays, antennas, PoE systems, sound reinforcement and radio and TV control.

## MIL-STD-PRF24758A(SH) Requirements

SHIELDTITE® MIL conduit connected with 316 Stainless Steel SEALTITE® fittings conforms to MIL-STD-PRF24758A(SH) requirements for topside naval applications.

For more information about ANACONDA SEALTITE® shielding conduit, visit [www.ancondasealtite.com](http://www.ancondasealtite.com).



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