

EMCAULK FOR RF SHIELDING OF GAPS, CRACKS & SEAMS

A FARADAY STRUCTURES SUCCESS STORY

PROBLEM

As wireless communications capabilities continue to evolve, there is an increased need for shielding solutions that can physically block these electromagnetic and wireless signals. Secure facilities, SCIFs, and protected spaces are utilized to protect sensitive information but can be difficult to properly shield due to a wide range of penetrations such as ducting, conduit, filter mounting points, fire sprinkler pipe, and drains. Other susceptible features that are common leak points for wireless signals include structural elements like doors, windows, areas that have been repaired, and transitions between surfaces. Utilizing conductive paints or metal foils on large surfaces works well but even very small gaps or cracks between shielding layers can lead to a weak area in the shielding layer, compromising secure information. A significant portion of shielded facilities and spaces would benefit greatly from a cost-effective, easy-to-apply solution that can be used to fill gaps and cracks while also providing electrical continuity so that shielding is not compromised.

SOLUTION

EMCaulk conductive caulk is ideal for filling gaps and cracks in shielded facilities, rooms and protected spaces - it is an electrically conductive, general purpose sealant that provides electrical continuity and excellent long-term electromagnetic protection in a wide range of sealing applications. EMCaulk can be used on a wide variety of interior and exterior surfaces and forms a flexible, durable, airtight, and water resistant seal providing protection from environmental hazards. Available in standard and high-flex formulations, EMCaulk is excellent for sealing gaps, cracks, joints, and seams around penetration points such as conduit and ducting, and features like windows, doors, and surface transitions. Paintable when dry and soap and water clean-up make application easy and simple. EMCaulk is a cost-effective, easy to apply solution which can significantly improve shielding performance in a straightforward, versatile, and durable solution.

USE CASE

SPECTRIC LABS A 12,000 ft² space in Dulles, VA required RF shielding to meet tenant requirements. Architectural specification called for conductive paints and metallic foils for shielding of surfaces. However, the space also required RF mitigation at doors, HVAC ducting, power lines, and other communication lines. A solution was needed to ensure that all shielding features were properly connected. EMCaulk conductive caulk was an ideal product for this. EMCaulk was used with RF line filter conduits, HVAC ducts, plumbing lines, and other penetrating features to connect conductive paint layers or foils at the point of penetration - which was possible over irregular or imperfect gaps and mating surfaces. EMCaulk was used with RF door frame installations to ensure connection to shield layers. EMCaulk was also used as a form-in-place gasket to improve the RF performance of several existing doors that were found to be below requirements for RF performance. After installation, the space was inspected and certified as meeting all requirements.



EMCaulk solved RF shielding susceptibilities at many places during our build-out. It is straightforward to use and significantly improved shielding performance in our space.

- Spectric Labs



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