

SHIELDING EFFECTIVENESS OF EMCOAT PAINT

TECHNICAL BULLETIN

OVERVIEW

EMCoat 4PA067 is a water-based, electrically conductive architectural coating. EMCoat is developed, manufactured, and sold by Faraday Structures (a division of the Conductive Group). A principle use of this patented formulation is as an electromagnetic shielding coating for internal surfaces, including walls, floors, and ceilings. This technical bulletin presents the shielding effectiveness test results of panels with a standard coating of EMCoat paint.

PREPARATION

EMCoat paint was applied to primed, flat wall surface panels (24-inch x 24-inch) to a dry film thickness of 0.004 inches, which is the recommended coverage for typical interior surfaces.

TEST METHODS

Panels were sent to DNB Engineering (Fullerton, CA) for testing from 30 MHz to 1 GHz. DNB Engineering is a DOD Qualified Suitable Laboratory under the Defense Logistics Agency (DLA) Standardization Program. Specifically, DLA has qualified DNB to perform electromagnetic shielding testing under MIL-DTL-38999, requirement paragraph, 3.32, test paragraph 4.5.28, EMI shielding and EIA-364-66, EMI Shielding Effectiveness. The DNB facility consists of a 24 ft x 12 ft x 12 ft welded steel room bisected by a welded steel wall containing a window in which the sample is placed. This dual room steel chamber is essentially free of electromagnetic artifacts and noise.

RESULTS

Test results show shielding effectiveness of ~55 dB average across the frequencies tested. Shielding of 40 dB at 30 MHz quickly increases to 60 dB by 150 MHz, then ~55 to 60 dB of attenuation through 1 GHz.

