

Article Originally Appeared in Evaluation Engineering Magazine

Moving into a new electronics manufacturing facility can be exciting. It means modern laboratories, larger offices, a fancy cafeteria, and big, clean assembly areas. The ceilings are fresh. The walls have that new look. And the floors? Sure, they are static-controlled floors. But what will they look like after a few months of hard use? Will the aisles and other heavily traveled areas deteriorate quickly and detract from the appearance of the new facility? These were the questions posed by EMC Corp. as the company contemplated their late-1998 move into a new facility in Franklin, MA. And rightly so, since the new floor space is as large as 14 football fields. The facility incorporates many state-of-the-art features for electronics manufacturing. "To bring a building of this magnitude online in 15 months is a testament to the collaborative efforts of the project team," said Michael Gorman, one of the architects. "Our understanding of the specific technical requirements for this building allowed us to make the necessary decisions to meet critical construction schedules."

Choosing the Flooring

To incorporate static-control flooring in the new building, EMC Corp. formed a committee to evaluate the ESD-control properties and durability of sample floors from three manufacturers. The group found that the basic ESD control properties were acceptable on each sample examined. But since heavy products were going to be built in and transported around the facility, the decision then focused on durability. Several types of flooring had been used in the old facility, but none were satisfactory: concrete chipped, rubber delaminated, and vinyl lifted. With that background, the committee was very conscious of the challenge to find an ESD-control floor with durability. As a result, a highly accelerated life test for the prospective flooring was designed in which a 4,000-lb cabinet was moved back and forth along a 6-ft track to simulate constant-wear patterns on the sample ESD floors. Each type of floor was evaluated for wear, appearance, and conductivity. One company submitted two different sample floors. The first, a 90-mil quartz-type floor, lasted a mere eight minutes before the cabinet's wheels wore a hole in the surface. The second sample, a standard 90-mil, self-leveling, high-build epoxy floor, withstood two hours of testing before a hole was created. A second company submitted a similar floor that also failed after two hours. The third company's product, the Staticworx LoadMax-9000 Epoxy Floor, showed no signs of wear and no loss in conductivity after 48 hours of testing. Its appearance was only slightly dulled by the cabinet wheels. As a result, EMC Corp. selected this epoxy-carbon- base polymer flooring.



Validation of the Choice

The flooring decision at EMC Corp. has been validated by more than five years of use. The quartz floors have been very durable, and the only problems are the loss of the gloss finish in high-traffic areas and excessive scratches in pallet storage sections. Routine maintenance consists of frequent scrubbing with a machine similar to the Zamboni ice-skating-rink conditioner using mild soap and water. Durability has exceeded expectations. ESD control characteristics of the flooring are well within expectations. The standard ESD Association test criterion, a static-dissipative resistivity of 105 to 108W/sq, is met with no difficulty. With an average of one tour group per hour through the facility, floor appearance and ESD control are a vital part of the image that the company wants to display, and visitor comments on the facility and flooring are positive.

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