ASTM Standard D8231-19

ASTM-D8231 Standard Practice outlines a procedure for performing Electronic Leak Detection (ELD) on roofing and waterproofing. D8231 expands on the scanning platform method described in ASTM D7877 Standard Guide. D8231 creates a detail oriented solution for ELD, dedicated to the scanning platform with two important additions.

The two most important additions in D8231 pertain to the electrical properties of the membrane and the substrate under the membrane. Technical advancements reflected in the new ASTM practice allow conductive and semi-conductive membranes such as black EPDM and cold fluid applied membranes to be tested. D8231 mandates that the membrane have a surface resistance **greater than** 10^7 ohms-per-square. The substrate under the membrane must have a surface resistance **less than** 10^4 ohms-per-square. Black EPDM has a surface resistance of approximately 10^8, greater than the 10^7 requirement of D8231. A typical concrete deck has a surface resistance of 10^2 to 10^4, conductive enough to perform D8231 testing. Conversely, typical poly-iso and coverboards in conventional assemblies are electrical insulators which requires that a conductive medium must be added directly under the membrane to conform to both D7877 and D8231.

D8231 also states that the test must be performed before overburden is installed. Once overburden is put in place the integrity of the ELD test is greatly compromised. Some overburden materials are electrical insulators and others can be extremely conductive. The layered combination of these materials can make tracing an electrical signal through the overburden impossible. D8231 mandates that the ELD test be performed prior to overburden installation to ensure accurate test results.