

## OVERVIEW: Membrane Assembly General Information for Electronic Leak Detection

The Principal of Electronic Leak Detection (ELD) is to separate two opposing electronic charges with an insulator. With a conventional roof assembly this is achieved by putting an electronic charge in a conductive deck (steel or concrete) having the membrane act as the insulator and having the test equipment provide the other electronic field.

Two key points;

- Deck must be conductive
- Only one insulator can be present

To address a conventional roof assembly with a vapor retarder (second insulator) or a non-conductive deck (wood), we would introduce a conductive media within the roof assembly. The conductive media we use is a stainless-steel mesh with  $\frac{3}{4}$ " cells. The media can be installed; directly over the vapor retarder, between layers of the insulation, or between the insulation and the membrane. (Mopping asphalt acts as an insulator. Low-rise ribbon adhesive and mechanical fasteners are good substitutes).

There is now an ASTM for electronic leak detection ASTM D7877. High Voltage, Low Voltage and a hybrid Low Voltage are listed. We test with all three methods.

There is a patent for the two probe, low voltage electronic field vector mapping test method when a conductive mesh is in the assembly. We have other electronic test methods that are listed in ASTM D7877 "Standard Guide for Electronic Methods of Detecting and Locating Leaks in Waterproof Membranes" that can be used in lieu of the two-probe method.

If there is public funding involved in your project you may have problems with specifying a proprietary method.