SECTION 07 50 00 – MEMBRANE ROOFING

1.1 VERIFITCATION OF MEMBRANE INTEGRITY

A. SUMMARY

1. Engage a qualified Independent Testing Agency to perform Electronic Integrity Testing after installing the membrane and before placing overburden. Provide testing to verify installed membrane is waterproof and free of any holes, open seams or capillary defects that could allow water to pass. Electronic Integrity Testing shall include:
    a. High-Voltage Membrane Integrity Testing (HVIT)
    b. When required, an alternative grounding medium installed above a nonconductive deck or any nonconductive materials between the waterproofing membrane and the conductive deck
    c. When required, a permanent On-demand Electronic Leak Detection System (ELDS) installed above the waterproofing membrane.

B. SUBMITTALS

1. Field Reports: Prepare and submit reports with a description of the techniques employed, summary of findings, and scaled drawings of the tested areas with the locations of all defects.
2. Qualifications: Proof of testing company qualifications

C. QUALITY ASSURANCE

1. Qualifications: The approved Independent Testing Agency shall have a minimum five-year record of satisfactory experience providing both Low Voltage Integrity Testing and High Voltage Integrity Testing on projects of similar size and scope.

D. PRODUCTS

1. Basis-of-Design: Provide membrane integrity test system and service by Atlantic Testing Services, 1-888-696-6429, service@atlanticleak.com, or comparable system and service from a manufacturer approved by Architect prior to bidding.
    a. High-Voltage Electric Integrity Test: Perform a High Voltage Integrity Test Survey on all available membrane areas in the contract. High Voltage Integrity Test shall be performed on a dry membrane surface.
    b. Alternative Grounding Medium: In assemblies where the deck is not electrically conductive or there are nonconductive materials installed between the waterproofing membrane and the conductive deck, e.g. insulation, coverboards, vapor retarders, etc., an alternative grounding medium must be installed under the membrane to accept the electronic integrity test currents.
    c. Permanent On-Demand Electronic Leak Detection System (ELDS): In assemblies where the membrane will be covered with overburden, the

HVIT Technician will install a permanent On-demand Electronic Leak Detection System to facilitate future Low Voltage Vector Mapping with the overburden in place.

E. EXECUTION

1. High-Voltage Electric Integrity Testing

    a. The HVIT Technician will meet with the Installer and review the sizes and locations of areas to be tested.

    b. Test equipment shall consist of conductive phosphor bronze brush electrodes and a portable battery powered generator capable of providing variable DC current from 1000-30,000 volts at low amperage.

    c. One terminal of the generator shall be connected to a ground in the assembly. The other terminal shall be connected to the phosphor bronze brush. The voltage level will be calibrated to the thickness of the membrane being tested.

    d. The Technician shall methodically pass the brush electrode over all testable horizontal and vertical membrane surfaces in the contract.

    e. If no current flow is detected after a complete search, then the certified inspector shall report the installed membrane within the tested area is free of holes, or seam and capillary defects, and is therefore waterproof at that time.

    f. If there is an audible alarm while passing the brush over the installed membrane, it indicates that the current has grounded through a breach at the alarmed location. The Technician shall mark any breach locations on the membrane with spray paint, chalk, tape or other approved method.

    g. The inspector shall report to the contractor immediately the exact location of any defects on the installed membrane in the area tested. Defects found shall be repaired by the contractor and retested by the Inspection Agency Technician.

    h. The Agency providing the HVIT testing shall provide a report documenting each days' test results including a written description of the testing procedures, status of the membrane, daily activity, and a schematic drawing indicating location of any defects found in testing. This report shall be submitted to the Contractor, and Architect if required.

2. When required, install a permanent On-demand Electronic Leak Detection System on top of the membrane before any overburden in installed. The ELDS will consist of trace wire loops installed on top of the membrane in area increments not to exceed 7500 sf, and weather tight low voltage connection boxes to provide access to the trace wire loops. Trace wire loops to be installed by HVIT Technician. Connection boxes to be installed by Contractor.