



## **Membrane Quality Assurance Testing- LV (Low Voltage)**

### **Part One- General**

#### **1.1 Description**

- A. Work to include: furnish and install perimeter wire and isolating wire for grounds in membrane field, attach electronic testing system that delivers a low voltage potential difference between the roof membrane surface and the structural deck and complete testing with receiver to locate breaches.
- B. Related Sections: Work contained elsewhere that applies to testing.
  - 1. Scope of Work
  - 2. Roofing/Waterproofing Membrane Section (Div. 7)

#### **1.2 Submittals**

- A. Test procedure description
- B. Proposed perimeter wiring lay-out [Wiring for Future Testing Only]
  - 1. Proposed segmentation of roofing/waterproofing area into individual test grids.
  - 2. Locate perimeter wire hook-up locations for each gridded test area.
- C. Closeout Submittals: Testing agency to submit report of findings.
- D. The written report shall include a digital roof plan, plotted breaches on roof plan, photographs of each breach, a table of breach locations and verification of breach repair.

#### **1.3 Quality Assurance**

- A. Testing agency shall have a minimum of 5 years experience of testing. As verification of this testing, agency shall submit a project list with city and state location, square footage, when completed and client with contact name and phone number.
- B. Testing agency shall examine all surfaces to be tested. Testing agency shall notify roofing/waterproofing contractor contact of any and all conditions which in his opinion, will affect satisfactory execution of the testing.

- C. Tested areas should be protected from roof traffic as soon as possible after test is completed.

## **Part Two- Products**

### 2.0 Membrane Quality Assurance Testing Agency

- A. Honza Group Inc.  
[www.honzagroupinc.com](http://www.honzagroupinc.com)  
301.953.7210

2.1 Provide products that are accepted by the membrane manufacturer and are fully compatible with the indicated substrate and other components.

### 2.2 System Description

- A. LV-ELD (Electronic Leak Detection) Detection System: Direct current leak detection equipment shall deliver low voltage to create an electronic potential difference between the roof membrane surface and the conductive structural deck (ie. - concrete, metal). Using a receiver, the technician will vector in on breaches identified by an electrical connection.

### 2.3 Materials

- A. Conductive wire used to deliver pulsating charge around perimeter of area being tested and to isolate grounds. (ie. – drains)
  - 1. Composite polywire has 9 strands of .07 inch stainless steel wire interwoven into the braided polyethylene strands.
- B. Tapes and sealants used to secure conductive wire shall be compatible with manufacturer's membrane.

## **Part Three- Execution**

### 3.1 Testing/Installation

- A. Verify membrane assembly and visually examine area to be tested.
  - 1. Materials, debris and equipment must be removed from area to be tested.
  - 2. Grounds must be located for creating an electronic charge in the structural deck.
- B. Install perimeter and isolation wire. (Leave in Place for Future Testing)
  - 1. Membrane surface must be dry for securement of perimeter and isolation wire.
  - 2. Install perimeter wire within 4"-6" of base flashings.

3. Any penetrations that act as grounds shall have isolation wire installed around them. (ie. – drains)
  4. No single area shall exceed 6000 SF.
  5. Secure wire using materials compatible with membrane and acceptable to membrane manufacturer.
- C. Turn on equipment and verify ground lead is activating structural deck.
- D. Testing
1. Area tested must be wet to provide an electronically charged field.
    - a. Wet membrane using a hose or shortly after precipitation.
  2. Identify membrane breaches, mark, number and plot location. Photograph breach for documentation.
  3. After breaches have been repaired, complete confirmation testing to assure repair is watertight.
- E. Prepare and submit report.
- F. Post Test Membrane Protection
1. Protect membrane from construction activities and storage of materials after testing is complete.
  2. Re-test membrane if it has not been protected.