

Holiday Detection

Holiday Detection {aka Spark Testing or Pin Hole Detecting} - was designed some 40-50 years ago, specifically to test paints and anti-corrosive coatings on pipes and other metallic structures, especially those intended for sub-sea applications. It has since been adapted for testing waterproofing membranes, both on roofing systems and on bridge decks, car park decks, etc.

Compared to the Earth Leakage Detection system, it has two major disadvantages: i) it can only be used on exposed membranes {ie zero ballast} and ii) it can only be used in dry conditions (a modicum of dampness may be tolerated, but totally dry should be preferred). Its main advantage is that it permits a very much quicker test regime.

As for the Earth Leakage Detection system, Holiday Detection relies on passing a current, in the form of a high voltage arc, between the membrane surface and the building's structure, via pinholes, punctures and failed laps. Voltages are typically set at 8-10kV_{dc} for SPMs, and upwards for thicker membranes. Thin membranes, eg paints, may be tested at voltages typically in the order of 1-2kV_{dc}. All voltages are determined by formulae, or as directed by the coatings' / membranes' manufacturers. NB: too high a voltage may result in damage, where the high voltage causes an arc to "burn" a hole in the membrane.

The test equipment comprises of i) a back-pack battery, ii) a phosphor-bronze brush - the cathode - in contact with the membranes (swept backwards and forwards), and iii) a trailing earth lead, connected to the building's structure - the anode.