Introduction

Tokai-Omni Platform Touch Voltage Protection Membrane System (PTVPMS) is a customized solution installed at MRT Platforms to safeguard passengers on the platform from possible electrical shocks caused by touch and step voltages.

These electrical shocks can occur during:
- Boarding / Alighting
- Physical contact with the train
- Physical contact with Platform Screen Doors (PSDs).

Potential Hazards

Potential hazards such as electrical shocks to passengers due to the different voltage potentials which can occur around the platform edge especially between the platform screen door and train or train depot workshop area. For our MRT system, the platform screen doors that are installed at the underground and elevated stations are in close proximity to the train at the station platform edge, and this is the area that poses the highest risk to touch potential and its associated hazards.

Therefore to mitigate this risk, a protection zone in the form of an insulation system is required, and in doing so we are able to protect passengers on the platform from accidental contact with high voltage that with sufficient energy may result in severe injury or death.

System Benefits

- Our insulation membrane solution is in accordance to the International Standards of VDE 0115 and EN 50122-1
- Bonded type Membrane with hot-liquid applied to the required thickness (2.5mm – 3mm) both horizontal and vertical application
- No adhesive used, hence porous or air-void between membrane and concrete is avoided.
- Earth resistance compliance test in accordance to the BS 7430 and MS IEC 62305:2006
- Proven reliability and durability for MRT Projects
Membrane Type
Bonded type Membrane with hot-liquid applied to the required thickness of 2.5mm – 3mm for both horizontal and vertical applications.

Membrane Specifications
Subjected to Volume Resistivity Test of ASTM D257:2007 Standard and results states that the Volume Resistivity is tested to exceed $5 \times 10^{14}$ ohm-cm.

The Protection Zone
The protection zone coverage of the membrane shall be 1.8 to 2.4m away from the Passengers Screen Door (PSD) and to the height of 2.5m above Finished Floor Level (FFL).

ISO9001:2008 certified in Lightning, Surge Protection & Security Solutions and a winner of multiple industry awards!

Insulation Sealant
A High Resistivity Sealant shall be used to seal off all gaps between the floor and the Insulation Membrane which have the following characteristics in accordance to ASTM D257:2007 Standard:

- Volume Resistivity : $1 \times 10^{14}$ ohm – cm
- Elongation Break : 200%
- Shore hardness : 50 min

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