

Electrical Field Tape

General Description	Features
<p>Electrical Field Tape (EFT) is used to propagate a low-voltage electrical field used in the detection of current draw events over a contiguous region of non-conductive membrane.</p> <p>EFT is made up of a 316 stainless steel strip bonded to a mylar backing, final design and peripheral materials needed for termination vary depending on the application:</p> <ul style="list-style-type: none"> - Leak Detection Signal Antenna (General Use) <ul style="list-style-type: none"> - HTS Code 85.17.79.00.00 <ul style="list-style-type: none"> - Electrical Communication Equipment <ul style="list-style-type: none"> - Parts thereof... - Sub-grade & “Buried” - Wetside placement - Low energy output, 12-72V - Data collection array controlled by local gateway <ul style="list-style-type: none"> - Apparatus for communication in a wired, local area network / controlled area network - Transmission of “Other Data” for building science automation <ul style="list-style-type: none"> - Cellular network components - Flat, adhesive backed mylar tape (90% of material composition) with a single 316 stainless steel conductor strip (10% of material composition). Sensors exposed to continuous moisture require stainless steel conductors to prevent corrosion. 	<ul style="list-style-type: none"> • Self adhesive backing allows tape to be adhered to any surface. • Flat profile allows for deployment in roof assembly under overburden. • Tape can be folded and oriented to manoeuvre obstacles and turn corners. • Various designs are available for specific applications.

Specifications

Functional	
Operating Voltage	3 - 72VDC
Maximum Voltage	72VDC
Sensor Element	1 Stainless Steel element.

Environmental	
Operating Temperature	-40° to 50°C / -40° to 122°F
Application Temperature	-10° to 40°C / 14° to 104°F
Storage Temperature	-40° to 50°C / -40° to 122°F
Storage Humidity	30% to 70% RH

Physical	
Tape Width	20 mm / 0.8"
Tape Thickness	0.95 mm / 0.04"

Approvals/Regulatory	
Flammability Rating	In Test

Installation

1. Identify surface to apply tape and locate connection and termination points.
2. Clean surface wipe clean with cloth and isopropyl alcohol to remove dust and debris.
3. Remove backing and adhere tape to the surface. Contour tape around obstacles. Use SBS strips to adhere to surfaces that are wet.



4. Connect tape to the screw terminal block.



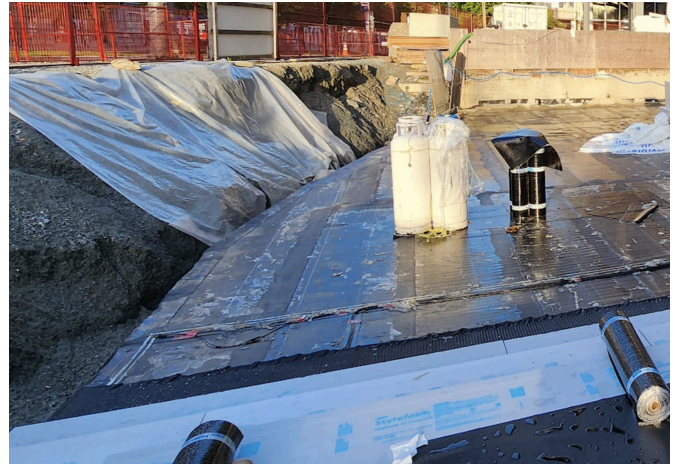
5. Use SBS to anchor end points



6. Use EFT Antenna to define a grid at 'N' density



7. Ensure the overburden is not directly on the membrane during EFT install



8. Direct Overburden/fill should never touch the EFT tape. A layer of poly, drainmat, or other protection courses must be deployed to enable the antenna to function as designed and intended.



9. Metallic debris shorting (touching) multiple lines at once must be avoided.



10. Metallic debris may cause damage to the waterproofing assembly, regardless of impact on the antenna signal and should be avoided at all costs.



11. Each EFT Tape is connected to a Direct Burial Cable and routed in bundles to the control node.



12. When the EFT array is fully complete and buried, only an access hub will be able to control the array. Buried hardware is never exposed until renewal or repair occurs. Free standing nodes are possible



13. Wall Mounted is the however the best option for termination.



Maintenance

Protect tape

- Cover objects that can short the tape with an insulator such as Tuc tape.
- Take precautions to avoid damaging the tape.
- Do not allow the tape to be grounded or connected to a conductive surface.

Keep Clean

- Objects and metallic debris could short the tape causing voltage propagation issues. Ensure the tape is free from dirt, stains, and any and all other forms of conductive debris.

Repair and Splicing

To join two segments of tape together or reconnect two pieces use a terminal block connector with heatshrink.

Troubleshooting

Readings fluctuate or are unstable.

1. WiDAQs are battery operated:
 - Change batteries
 - Check tape for grounding or wetting
2. WiDAQs are powered over the CAN bus:
 - Check tape for grounding or wetting
 - Ensure Gateway (BiG) and CAN bus are
 - Install 1uF capacitors from power and ground at each WiDAQ to building ground. isolated using an isolation transformer.

Building Envelope Monitoring

EFT tape is used under feet of overburden, to act as an antenna in the propagation of low voltage signals, that emanate from an aquatic environment, atop a non-conductive roofing layer, to communicate the integrity of this waterproofing treatment, using specialized data acquisition hardware (MultiScan on a CAN network) and software (BiG/TiG) that cloud syncs (.to Analytics) via a wired or cellular network.

Lightening discharge &/or AC lighting induced interference may temporarily influence the antenna array, subject to the grid density chosen (10'x10' vs 80'x80').

Ordering Information (common configs)

1,000 ft Roll of Stainless Steel EFT	EFT-1000-SS
Connection Box	EFT-CON
Termination box	EFT-TERM