

FIRE EXTINGUISHER ELECTRICAL INSULATION PERFORMANCE TESTER



Fire Extinguisher Electrical Insulation Performance Tester — ToronFT™ FE-EIP

ToronFT™ FE-EIP Fire Extinguisher Electrical Insulation Performance tester is a safety-critical testing system designed to evaluate the electrical insulation integrity of water-based fire extinguishers during spray discharge.

The apparatus creates a standardized electrical field between the extinguisher nozzle discharge and a grounded conductive plate, measuring the leakage current through the water spray jet to verify that the extinguisher provides safe electrical insulation under energized conditions. This test is essential for confirming that water-based fire extinguishers used near electrical equipment meet the dielectric safety requirements of international fire safety standards.

APPLICATIONS

Fire Extinguisher Electrical Insulation Performance Tester — ToronFT™ FE-EIP Applications

The ToronFT™ FE-EIP is applied in:

- Electrical insulation performance testing of water-based fire extinguishers
- Compliance verification for fire extinguishers rated for use near electrical hazards
- Type approval and product certification testing
- Research and development of new water-based extinguishing agent formulations
- Quality assurance testing in fire extinguisher manufacturing



FEATURES

Fire Extinguisher Electrical Insulation Performance Tester — ToronFT™

FE-EIP Key Features

- Test voltage: fixed AC (36 ± 3.6) kV for standardized dielectric stress
- Current capacity: 100 mA transformer with instrument-grade output accuracy
- Leakage current measurement range: 0–10 mA (adjustable)
- Leakage current resolution: 0.01 mA for high-precision measurement
- Acceptance criterion: leakage current ≤ 0.5 mA during extinguisher discharge
- Metal test plate dimensions: (1 ± 0.025) m $\times$ (0.025) m for standardized exposure area
- Digital display and data recording for test documentation
- Safe insulated bracket system for stable apparatus positioning

THEORY & METHOD

Theory and Method

A metal plate measuring (1 ± 0.025) m $\times$ (0.025) m is suspended vertically from an insulated bracket. The plate is connected to a transformer, establishing an AC voltage of (36 ± 3.6) kV between the plate and ground. The fire extinguisher is positioned on an insulating bracket with its nozzle directed 1 m away from the center of the metal plate.

The plate is energized, and the fire extinguisher is discharged toward the plate. Leakage current flowing between the fire extinguisher and ground is measured by a calibrated current meter. Per safety standards, the leakage current must not exceed 0.5 mA. Leakage current can be set between 0–10 mA, with a resolution of 0.01 mA. The transformer delivers 100

mA at the test voltage, ensuring stable test conditions throughout the discharge event.

TECHNICAL SPECIFICATIONS

Fire Extinguisher Electrical Insulation Performance Tester — ToronFT™
FE-EIP Technical Specifications

Parameter	Specification
Model	ToronFT™ FE-EIP
Test Voltage	(36 ± 3.6) kV AC (fixed)
Current	100 mA (transformer with instrument output)
Leakage Current Range	0-10 mA (settable)
Leakage Current Resolution	0.01 mA
Acceptance Criterion	Leakage current ≤ 0.5 mA
Metal Plate Dimensions	(1 ± 0.025) m × (0.025) m
Applicable Extinguisher Types	Water-based fire extinguishers



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