

FIRE RESISTANCE DOOR WINDOW TESTER



Fire Resistance Door Window Tester – ToronFT™ FR-DW

ToronFT™ FR-DW is a dedicated fire resistant doorsets and windows repeated switching durability tester engineered to evaluate the operational reliability and mechanical endurance of fire-rated door assemblies under cyclic opening and closing conditions. Designed for manufacturers, testing laboratories, and certification bodies, this system simulates long-term in-service use of fire resistant doorsets by subjecting them to thousands of automated open-close cycles under controlled, repeatable conditions.

The FR-DW accommodates single and double door configurations across a range of product types — including timber fireproof doors, steel fire doors, and plastic fire doors — covering the full spectrum of specifications encountered in commercial, industrial, and residential building applications. It delivers the quantitative durability data required for product certification and quality assurance of fire resistant doorsets and windows.

APPLICATIONS

Fire Resistance Door Window Tester – ToronFT™ FR-DW Applications

- Cyclic durability testing of timber fireproof door assemblies (single and double leaf)
- Repeated switching endurance testing of steel fire doors for commercial and industrial buildings
- Operational reliability evaluation of plastic fire doors and fire-rated window assemblies
- Certification testing of fire resistant doorsets for building product compliance programs
- Quality assurance and life-cycle testing of fire door hardware, hinges, and closers
- Research and development durability testing of new fire door designs and materials



Standards

- ISO 6444: Fire Resistance Tests: Door Assemblies and Shutters — Methodology for Testing Fire Resistance
- EN 1634-1: Fire Resistance and Smoke Control Tests for Door and Shutter Assemblies, Openable Windows, and Elements of Building Hardware: Fire Resistance Test for Door and Shutter Assemblies and Openable Windows
- UL 10B: Standard for Fire Tests of Door Assemblies
- NFPA 252: Standard Methods of Fire Tests of Door Assemblies

FEATURES

Fire Resistance Door Window Tester – ToronFT™ FR-DW Key Features

- Accommodates single and double door configurations of timber fireproof doors, steel fire doors, and plastic fire doors across a wide range of product specifications
- Adjustable operation cycle time from 8 to 14 seconds, enabling configuration for different door types and test protocols
- Adjustable opening angle range of 50 to 90 degrees for standardized or product-specific durability test setups
- Programmable number of openings from 0 to 99,999 cycles, supporting both short-term qualification and long-term endurance testing
- Robust test frame with overall dimensions of L3106 mm × W1600 mm × H2950 mm, providing a rigid, stable mounting structure for large fire door and window assemblies
- Compact, dedicated control box measuring L380 mm × W332 mm × H875 mm for centralized test management and cycle counting
- Low power consumption at 320W, AC220V power supply, suitable for standard laboratory electrical infrastructure
- Automated cyclic operation reduces operator intervention and ensures consistent, repeatable test conditions throughout the full durability test sequence

THEORY & METHOD

Theory and Method

The ToronFT™ FR-DW mounts the fire resistant doorset or window specimen within a rigid steel test frame that replicates the structural boundary conditions of an installed door assembly. A motorized actuation mechanism drives the door through precisely controlled open-close cycles at a defined operation cycle time, with the opening angle set to the specified test value. The system counts and records the cumulative number of cycles, enabling assessment of operational durability, mechanical wear, and functional integrity over the specified test duration.

The adjustable operation cycle time and opening angle parameters allow the system to be configured to match the specific test requirements of different fire door standards and product specifications. The control box provides automated cycle counting, fault detection, and test management throughout the durability test program.

TECHNICAL SPECIFICATIONS

Fire Resistance Door Window Tester – ToronFT™ FR-DW Technical Specifications

Parameter	Specification
Product Name	Fire Resistant Doorsets and Windows Repeated Switching Durability Tester
Brand	ToronFT™ FR-DW
Applicable Door Types	Timber fireproof, steel fire doors, plastic fire doors (single and double leaf)
Operation Cycle Time	8 – 14 seconds

Parameter	Specification
Opening Angle Range	50 - 90 degrees (adjustable)
Number of Openings	0 - 99,999 times (adjustable)
Test Frame Dimensions (L×W×H)	3106 mm × 1600 mm × 2950 mm
Control Box Dimensions (L×W×H)	380 mm × 332 mm × 875 mm
Voltage	AC 220V (110V is also available)
Power Consumption	320W



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