



TORONTECH

FIRE HOSE WEAR RESISTANCE TESTER



Fire Hose Wear Resistance Tester - ToronFT™ FH-WR

ToronFT™ FH-WR is a fire hose wear resistance Tester designed for evaluating the abrasion resistance of lined fire hoses and fire wet hoses under operational hydraulic pressure conditions. The instrument tests fire hoses across a wide range of nominal sizes — 25 mm, 40 mm, 50 mm, 65 mm, 80 mm, 100 mm, 125 mm, 150 mm, and 200 mm — making it one of the most comprehensive wear resistance test platforms available for fire fighter hose qualification programs.

The ToronFT™ FH-WR wear resistance Tester works in conjunction with the ToronFT™ FH-HP Fire Hose Hydraulic Pressure Burst Tester and a fire coupling device (sold separately) as the water pressure source. The standard configuration covers the most common fire hose sizes; additional specifications and model variants are available for fire hoses outside this standard range. The apparatus subjects the pressurized fire hose specimen to controlled reciprocating abrasion cycles, and the number of reciprocations can be freely set from 0 to 999 times.

APPLICATIONS

Fire Hose Wear Resistance Tester - ToronFT™ FH-WR Applications

The ToronFT™ FH-WR fire hose wear resistance Tester serves fire hose qualification, certification, and quality assurance programs across the following application areas:

- Fire hose jacket abrasion resistance testing: evaluation of lined fire hose jacket durability against pavement, concrete, rough terrain, and structural surfaces encountered in firefighting operations
- Fire wet hose wear resistance evaluation: abrasion performance testing of percolating and non-percolating wet hose types used in wildland and structural firefighting
- Fire hose certification and type approval: third-party compliance testing of fire fighter hose abrasion resistance for standard certification programs

- Manufacturing quality control: production-batch wear resistance verification to confirm jacket abrasion performance consistency
- Fire hose material qualification: testing of new jacket materials, weave constructions, and coating systems for abrasion performance evaluation
- Fire safety equipment test laboratories: comprehensive fire hose testing capability including wear resistance as part of a full fire hose test program



FEATURES

Fire Hose Wear Resistance Tester - ToronFT™ FH-WR Key Features

The ToronFT™ FH-WR wear resistance Tester provides a targeted feature set for standardized, reproducible fire hose jacket abrasion testing:

1. Wide Nominal Diameter Range — 25 mm to 200 mm

The apparatus accommodates fire hose specimens from 25 mm to 200 mm in nominal diameter, covering both standard attack and supply line fire hoses and large-diameter fire wet hoses used in industrial and municipal fire suppression systems.

2. Controlled Test Pressure 0.45-0.55 MPa

Test pressure is maintained at a stable level between 0.45 MPa and 0.55 MPa throughout the wear test cycle, simulating the operational hydraulic pressure conditions under which fire fighter hose jacket abrasion occurs in service.

3. Controlled Specimen Rotation Speed — 27 ± 1 rpm

The fire hose specimen rotates at 27 ± 1 rpm during the abrasion cycle, providing a consistent, controlled relative velocity between the specimen jacket and the abrasive element for reproducible and comparable test results across test runs.

4. Freely Programmable Reciprocation Count — 0 to 999 Cycles

The number of abrasive reciprocations can be set freely from 0 to 999, allowing the test program to match the requirements of any applicable fire hose standard or custom wear resistance specification.

5. Compatible with ToronFT™ FH-HP Hydraulic Pressure System

The ToronFT™ FH-WR uses the ToronFT™ FH-HP Fire Hose Hydraulic Pressure Burst Tester and an associated fire coupling device as the water pressure source (sold separately), providing precisely controlled and measured test pressure throughout

the wear test.

6. Lined Fire Hose and Fire Wet Hose Compatibility

The apparatus is suitable for both lined fire hoses and fire wet hoses, covering the two primary fire hose construction types used in structural, industrial, and wildland firefighting operations.

THEORY & METHOD

Theory and Method

The ToronFT™ FH-WR evaluates fire hose wear resistance by applying a controlled abrasive contact force to the outer jacket of a pressurized fire hose specimen while rotating the hose at a defined speed and cycling the abrasive contact back and forth across the specimen surface for a specified number of reciprocations. The fire hose specimen is connected to the water pressure source and pressurized to a stable test pressure between 0.45 MPa and 0.55 MPa before the wear test cycle begins.

The specimen rotation speed is 27 ± 1 rpm during the wear test, providing consistent, reproducible relative motion between the abrasive element and the fire hose jacket surface across the full reciprocation count. After the specified number of abrasion cycles, the fire hose specimen is inspected for jacket abrasion damage, breach of the jacket weave or coating, and any leakage from the hose bore — evaluating whether the fire fighter hose jacket maintains sufficient integrity after abrasive contact to continue performing under operational pressure. The number of reciprocations (0–999) can be configured to match the requirements of the applicable test standard.

TECHNICAL SPECIFICATIONS

Fire Hose Wear Resistance Tester - ToronFT™ FH-WR Technical Specifications

Parameter	Specification
Model	ToronFT™ FH-WR
Application	Wear resistance testing of lined fire hoses and fire wet hoses
Compatible Fire Hose Sizes	25 mm, 40 mm, 50 mm, 65 mm, 80 mm, 100 mm, 125 mm, 150 mm, 200 mm (nominal diameter)
Test Pressure	0.45 MPa – 0.55 MPa (stable during test)
Sample Rotation Speed	27 ± 1 rpm
Number of Reciprocations	0 – 999 (freely settable)
Water Pressure Source	ToronFT™ FH-HP Fire Hose Hydraulic Pressure Burst Tester + fire coupling device (sold separately)
Standard Configuration	25 mm – 200 mm nominal sizes; additional sizes available at extra cost
Standards Compliance	NFPA 1961, UL 19, ISO 14557, EN 14540, EN 1947, ISO 6945



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