TORONTECH

# FIRE HOSE BENDING TESTER

# Fire Hose Bending Tester – ToronFT™ FH-BD

ToronFT™ FH-BD is a fire hose bending Tester designed and built for evaluating the flexibility and bend radius performance of lined fire hoses and fire hose assemblies under hydraulic pressure. The instrument tests fire hoses with nominal sizes of 25 mm, 40 mm, 50 mm, 65 mm, 80 mm, and 100 mm — covering the full range of standard fire fighter hose diameters used in suppression, attack, and supply line applications.

The ToronFT™ FH-BD bending Tester is used in conjunction with the ToronFT™ FH-HP Fire Hose Hydraulic Pressure Burst Tester and a fire coupling device (sold separately) to supply the required test water pressure. The test frame accommodates fire hose specimens bent to nine selectable bending radii, and the apparatus evaluates whether the fire hose maintains hydraulic integrity and structural integrity through the full bend geometry under operating pressure conditions.

## APPLICATIONS

# Fire Hose Bending Tester – ToronFT™ FH-BD Applications

The ToronFT™ FH-BD fire hose bending Tester is used in fire hose manufacturing, certification testing, and quality assurance programs:

- Fire hose manufacturing QC: bending performance verification for lined fire hoses and fire hose assemblies before release from production
- Fire hose certification testing: third-party and in-house compliance testing of fire fighter hose to international and national performance standards
- Fire hose type approval testing: bending flexibility performance evaluation as part of a new fire hose design qualification program
- Fire hose procurement inspection: incoming inspection of fire fighter hose deliveries to verify bending performance meets purchase specification requirements

- Fire safety equipment testing laboratories: standardized bending test capability for comprehensive fire hose test programs
- Fire department equipment verification: performance verification of in-service fire hoses to confirm continued operational suitability

TORONTECH

# Fire Hose Bending Tester – ToronFT™ FH-BD Key Features

The ToronFT™ FH-BD bending Tester provides a complete set of mechanical features for standardized fire hose flexibility and bending performance evaluation:

### 1. Multi-Diameter Fire Hose Compatibility

The apparatus is designed to test fire hoses across the full range of standard nominal sizes: 25 mm, 40 mm, 50 mm, 65 mm, 80 mm, and 100 mm — covering the complete range of attack, supply, and wildland fire fighter hose diameters used in fire suppression operations.

### 2. Nine Selectable Bending Radii

Nine standard bending radii are available on the test frame: 250 mm, 500 mm, 750 mm, 1,000 mm, 1,500 mm, 2,000 mm, 2,500 mm, 3,000 mm, and 3,500 mm — any of which can be selected for a given test to replicate the full range of bending conditions specified by international fire hose standards.

### 3. Standardized Test Frame Geometry

The test frame has a bottom dimension of 2,500 mm, a top dimension of 2,450 mm, and a height of 1,000 mm — providing a stable, consistent fixture for clamping full-length fire hose specimens in the bent position at the selected bending radius during the pressurized test.

### 4. Controlled 0.8 MPa Test Pressure

The fire hose specimen is pressurized to 0.8 MPa before and during the bending test, replicating the hydraulic pressure conditions under which fire fighter hose must maintain integrity in bending service. Air is fully purged from the hose before pressurization to prevent compressible gas in the test circuit.

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

The ToronFT™ FH-BD uses theToronFT™ FH-HP Fire Hose Hydraulic Pressure Burst Tester and an associated fire coupling device as the water pressure source (sold separately), enabling the bending test to be performed at a precisely controlled and measured hydraulic pressure.

**6. Lined Fire Hose and Fire Hose Assembly Support**

The apparatus is suitable for testing both lined fire hoses and fire hose assemblies with couplings, ensuring that the bending test evaluates the complete fire hose product — including the coupling connection zones — under the specified bend and pressure conditions.

## THEORY & METHOD

# Theory and Method

The ToronFT™ FH-BD measures bending performance by clamping a pressurized fire hose specimen on a rigid test frame bent to the specified bending radius. The fire hose specimen is first connected to the water pressure source, and air is purged from the hose by opening the exhaust valve. The pressure is then raised and adjusted to 0.8 MPa while the hose is bent around the selected radius former on the test frame.

At the specified pressure and bend radius, the fire hose specimen is held in the bent position and examined for leaks, kinks, bulges, or structural failure. The test evaluates whether the hose jacket, liner, and coupling connections maintain their integrity when the hose is bent — simulating the sharp-bend conditions that occur when fire fighter hose is deployed around obstacles, corners, and through doorways under operational pressure. The test frame bottom dimension is 2,500 mm and top dimension is 2,450 mm, with a height of 1,000 mm, providing sufficient fixture area for full-length fire hose bending tests across all specified bending radii.

# Fire Hose Bending Tester – ToronFT™ FH-BD Technical Specifications

| Parameter | Specification |
|---|---|
| Model | ToronFT™ FH-BD |
| Application | Bending performance testing of lined fire hoses and fire hose assemblies |
| Compatible Fire Hose Sizes | 25 mm, 40 mm, 50 mm, 65 mm, 80 mm, 100 mm (nominal diameter) |
| Test Pressure | 0.8 MPa |
| Test Frame — Bottom Dimension | 2,500 mm |
| Test Frame — Top Dimension | 2,450 mm |
| Test Frame — Height | 1,000 mm |
| Bending Radii (selectable) | 250 mm, 500 mm, 750 mm, 1,000 mm, 1,500 mm, 2,000 mm, 2,500 mm, 3,000 mm, 3,500 mm |
| Water Pressure Source | ToronFT™ FH-HP Fire Hose Hydraulic Pressure Burst Tester + fire coupling device (sold separately) |
| Standards Compliance | NFPA 1961, UL 19, ISO 14557, EN 14540, EN 1947 |

TORONTECH.com

TORONTECH


**Torontech Inc.**
251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

**Torontech, LLC**
601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

**Torontech ME FZE**
Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE

Phone: +971 488 19252
Email: me@torontech.com


USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia