TORONTECH

TEXTILE VERTICAL FLAME SPREAD TESTER

Textile Vertical Flame Spread Tester – ToronFT™ TB-FS

ToronFT™ TB-FS Textile Vertical Flame Spread Tester is a precision laboratory instrument designed for determining the flame retardant and flame spread performance of a wide range of single-component, multi-component (coated, quilted, multi-layer, sandwich), and similar combination textiles and industrial products. Vertical flame spread testing is one of the most demanding and widely required flammability performance tests for textiles used in apparel, protective clothing, home furnishings, and industrial applications.

The ToronFT™ TB-FS applies a calibrated ignition flame to the surface or bottom edge of a vertically oriented textile specimen for a 10-second exposure period and measures the time for the flame to spread to each of three marked lines on the specimen — providing a quantitative measure of vertical flame spread performance. It complies with GB 5456 equivalent international standards ISO 6941 and related vertical flame spread performance test methods.

APPLICATIONS

Textile Vertical Flame Spread Tester – ToronFT™ TB-FS Applications

The ToronFT™ TB-FS is applicable for vertical flame spread performance testing of:

- Single-component textiles — plain woven, knitted, and nonwoven fabrics — for vertical flame spread performance classification
- Multi-component textiles including coated, quilted, multi-layer, and sandwich fabrics for vertical flame spread performance evaluation
- Protective clothing fabrics and ensembles requiring vertical flame spread performance certification for occupational safety compliance
- Flame-retardant treated apparel and workwear textiles for vertical flame spread performance verification

- Industrial products and technical textiles requiring vertical flame spread characterization for product certification and fire safety qualification
- Curtains, drapes, and decorative textiles for public and commercial buildings requiring vertical flame spread compliance

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Standards

The ToronFT™ TB-FS is designed to comply with the following international standards for vertical textile flame spread performance testing:

- ISO 6941: Textile fabrics: Measurement of flame spread properties of vertically oriented specimens
- EN ISO 15025: Protective clothing: Protection against flame — Method of test for limited flame spread
- ASTM D6413: Standard Test Method for Flame Resistance of Textiles (Vertical Test)
- 16 CFR Part 1615: Standard for the Flammability of Children's Sleepwear (U.S. CPSC)

FEATURES

Textile Vertical Flame Spread Tester – ToronFT™ TB-FS Key Features

- Supports both surface ignition and bottom edge ignition of vertically oriented specimens — enabling vertical flame spread performance testing of the full range of single and multi-component textile constructions per ISO 6941 and ASTM D6413
- Precision burning blowtorch with a nozzle diameter of 0.19 mm delivers a standardized, reproducible ignition flame for consistent vertical flame spread performance test initiation
- Standardized template for specimen sampling and hole punching ensures consistent specimen preparation geometry for reproducible vertical flame spread test mounting
- Automatic three-line timing system independently times the flame spread to each of three pre-marked lines on the specimen — automatically stopping timing when each marking line burns through, eliminating operator timing error
- Vertical specimen orientation provides the most demanding flame spread test geometry — upward flame propagation — directly relevant to the fire hazard of apparel, protective clothing, and vertically hung textile products
- Suitable for single-component, coated, quilted, multi-layer, sandwich, and industrial product textiles — covering virtually all textile construction types requiring vertical flame spread performance characterization

- Complies with ISO 6941, EN ISO 15025, and ASTM D6413, providing internationally recognized vertical flame spread performance test results for textile certification in North America and global markets

THEORY & METHOD

Theory and Method

Vertical flame spread performance testing evaluates the propagation of a flame upward and laterally across the surface of a vertically mounted textile specimen after ignition by a standardized flame applied to the specimen surface or bottom edge. The upward orientation represents the most hazardous flame spread scenario — gravity-assisted flame propagation — providing a demanding and safety-relevant test condition for textile flame spread characterization.

In the ToronFT™ TB-FS, the textile specimen is mounted vertically using the template for sampling and punching. The specified igniter applies a flame from below (bottom edge ignition) or from the front (surface ignition) for a 10-second exposure period. Three reference marking lines are pre-marked on the specimen at specified positions. After ignition, the timing device automatically records the time for the flame front to reach each of the three marking lines — stopping automatically when each line burns through. The burning blowtorch nozzle diameter of 0.19 mm ensures a standardized, reproducible ignition flame for consistent vertical flame spread performance measurements.

TECHNICAL SPECIFICATIONS

Textile Vertical Flame Spread Tester – ToronFT™ TB-FS Technical Specifications

Parameter	Specification

Product Name	Textile Vertical Specimen Flame Spread Performance Tester — ToronFT™ TB-FS
Specimen Orientation	Vertical
Ignition Mode	Surface or bottom edge (10-second exposure)
Burning Blowtorch Nozzle Diameter	0.19 mm
Specimen Template	Used for sampling and punching
Timing Device	Automatic three-line timing; stops automatically when each marking line burns
Applicable Textiles	Single-component, coated, quilted, multi-layer, sandwich, industrial products
Compliance Standards	ISO 6941; EN ISO 15025; ASTM D6413; 16 CFR Part 1615

For more information, pricing, or to request a quotation, please contact ToronFT. Specifications are subject to change without prior notice.

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