



TORONTECH

IGNITABILITY TESTER



Ignitability Tester - ToronFT™ BMT-I

ToronFT™ BMT-I Ignitability for Building Materials Tester is a specialized laboratory instrument designed for determining the ignitability of building materials and products under controlled radiant heat exposure conditions. Ignitability — the ease with which a building material surface can be ignited by an external flame or heat source — is a fundamental fire reaction property used in building product fire safety classification, building code compliance, and fire hazard assessment.

The ToronFT™ BMT-I features a complete test system consisting of a control box, combustion box body, Bunsen burner, solenoid valve, signal control system, and sample holder, all manufactured from high-quality steel plate with electrostatic spraying and high-temperature baking paint for long-term durability. It complies with ISO 11925-2, the primary international standard for ignitability testing of building products using a single-flame ignition source.

APPLICATIONS

Ignitability Tester - ToronFT™ BMT-I Applications

The ToronFT™ BMT-I is applicable for ignitability testing of the following building material and product categories:

- Building materials and products for ignitability classification per ISO 11925-2 under single-flame exposure
- Interior surface finish materials including wall panels, ceiling linings, and floor coverings for ignitability characterization
- Insulation materials and composite building products requiring ignitability testing as part of Euroclass or equivalent fire reaction classification
- External cladding materials and facade systems for ignitability assessment under single-flame conditions
- Structural building panels, boards, and sheets requiring ignitability data for fire safety code compliance
- Research and development testing of building materials for ignitability optimization and fire safety improvement



Standards

The ToronFT™ BMT-I is designed to comply with the following international standards for building material ignitability testing:

- ISO 11925-2: Reaction to fire tests: Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test
- EN ISO 11925-2: Reaction to fire tests for building products: Ignitability when subjected to direct impingement of flame
- ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials (ignitability component)
- NFPA 255: Standard Method of Test of Surface Burning Characteristics of Building Materials

FEATURES

Ignitability Tester - ToronFT™ BMT-I Key Features

- Complete integrated ignitability test system — control box, combustion box body, Bunsen burner, solenoid valve, signal control, and sample holder — provides a fully self-contained building material ignitability testing solution
- High-quality steel plate construction with electrostatic spraying and high-temperature baking paint ensures long-term durability and corrosion resistance in continuous ignitability test environments
- Front and side observation windows enable continuous visual monitoring of specimen ignitability behavior and flame spread height during the test
- Stainless steel mesh base at the bottom of the combustion box (1.5 mm thick, 50 mm height, 25 mm × 25 mm grid) provides free air circulation for standardized airflow conditions during ignitability testing
- Anemometer-measured box flue wind speed maintained at 0.7 ± 0.1 m/s ensures the standardized airflow environment required by ISO 11925-2 for reproducible ignitability test results
- Anemometer range 0.01 m/s to 30.0 m/s with accuracy ± 0.1 m/s provides precise, traceable airflow measurement throughout the ignitability test sequence

- Solenoid valve-controlled automatic burner ignition timing ensures precise and repeatable flame application duration for consistent ignitability test results
- Supports both 15-second and 30-second single-flame exposure durations per ISO 11925-2 ignitability test protocols
- Complies with ISO 11925-2 and EN ISO 11925-2, providing internationally recognized building material ignitability test results accepted by certification bodies in North America and Europe

THEORY & METHOD

Theory and Method

Ignitability testing evaluates whether a building material specimen will ignite and sustain flame propagation when exposed to a direct single-flame source for a specified duration. The test provides a binary pass/fail ignitability result supplemented by quantitative data on flame spread height and burning droplet behavior — all critical inputs for Euroclass and equivalent building product fire reaction classifications.

In the ToronFT™ BMT-I, the specimen is mounted vertically in the sample holder inside the test chamber. The Bunsen burner flame is applied to the specimen surface for the specified exposure duration (typically 15 or 30 seconds per ISO 11925-2) and then removed. The solenoid valve precisely controls the burner ignition timing, and signal control electronics manage the test sequence automatically. The square-bottom combustion box is fitted with a free-air-circulation stainless steel mesh base (1.5 mm thick, 50 mm height, 25 mm × 25 mm grid) that provides the standardized airflow conditions needed for accurate ignitability testing. Box flue wind speed is measured by an anemometer and maintained at 0.7 ± 0.1 m/s. The front and side observation windows allow full visual monitoring of specimen ignition and flame behavior throughout the ignitability test.

TECHNICAL SPECIFICATIONS

Ignitability Tester - ToronFT™ BMT-I Technical Specifications

Component / Parameter	Specification Details
General Information	
Product Name	Ignitability for Building Materials Tester — ToronFT™ BMT-I
Model	ToronFT™ BMT-I
Compliance Standards	ISO 11925-2; EN ISO 11925-2
System Components	Control box, combustion box body, burner, solenoid valve, signal control, sample holder
Environmental Conditions	Temperature: 23±5°C; Humidity: 50±20%
Test Chamber & Construction	
Test Chamber Dimensions	Approx. 700 × 400 × 810 mm
Construction Material	High-quality steel plate structure; electrostatic spraying; high-temperature baking paint
Observation Windows	Front and side
Bottom Box (Combustion)	Square box with stainless steel mesh base (Thickness: 1.5 mm; Height: 50 mm; Grid: 25 × 25 mm; free air circulation)
Burner & Fuel System	
Burner Specifications	Nozzle Ø0.17 mm; Flame height: 20±1 mm; Tilt angle: 45°
Fuel Gas	Propane (purity ≥95%, customer-supplied); Pressure: 10–50 kPa
Airflow & Measurement	
Box Flue Wind Speed	0.7 ± 0.1 m/s
Anemometer Range	0.01 m/s to 30.0 m/s
Anemometer Accuracy	+0.1 m/s

Component / Parameter	Specification Details
Sample Handling & Timing	
Sample Fixture	U-shaped stainless steel frame, vertical suspension
Timing System	Combustion/burning time: 0-99 min; Accuracy: ≤1 s/h
Dimensions & Power	
Overall Equipment Dimensions	Approx. 1040 × 400 × 1050 mm
Voltage	AC 220V±10% / 50Hz (110V is also available)



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