

# GLOW WIRE TESTER



# Glow Wire Tester - ToronFT™ GWT

ToronFT™ GWT Glow Wire Tester is a precision laboratory instrument designed to evaluate the fire hazard of electrical equipment, components, and insulating materials by simulating the thermal stress caused by heat sources such as glowing elements or overload resistors over a short period of time. The glow wire test is a fundamental flammability test for electrical and electronic equipment — determining the Glow Wire Flammability Index (GWFI) of solid electrical insulating materials and plastic parts used in proximity to high-heat electrical components.

The ToronFT™ GWT features a 0.5 m<sup>3</sup> test chamber with high-temperature electrostatic baking paint, integrated lighting and exhaust functions, and black-painted interior for optimum observation of glow wire flame behavior. It complies with IEC 60695-2-10, IEC 60695-2-11, IEC 60884-1, and IEC 60598-1 — the principal international standards governing glow wire testing of electrical and electronic materials.

## APPLICATIONS

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### Glow Wire Tester - ToronFT™ GWT Applications

The ToronFT™ GWT is applicable for glow wire testing and GWFI determination of the following electrical and electronic component materials:

- Electrical equipment enclosures, housings, and structural plastic parts for glow wire GWFI compliance per IEC 60695-2-11
- Electrical connectors, terminal blocks, and auxiliary parts of electrical and electronic equipment requiring glow wire flammability index testing
- Insulation materials, engineering plastics, and other solid combustible materials used in electrical and electronic products for glow wire test qualification

- Household appliances, machine tool appliances, motors, power tools, and electronic instruments requiring glow wire test certification
- Lighting equipment, low-voltage electrical equipment, and information technology equipment for glow wire compliance per IEC 60598-1 and IEC 60695-2-11
- Production and quality inspection testing of electrical components for glow wire flammability index compliance with IEC 60335-1 and IEC 60695-11 standards



# Standards

The ToronFT™ GWT is designed to comply with the following international standards for glow wire testing:

- IEC 60695-2-10: Fire hazard testing: Glow-wire/hot-wire based test methods — Glow-wire apparatus and common test procedure
- IEC 60695-2-11: Fire hazard testing: Glow-wire/hot-wire based test methods — Glow wire flammability test method for end-products (GWEPT)
- IEC 60884-1: Plugs and socket-outlets for household and similar purposes
- IEC 60598-1: Luminaires: General requirements and tests

## FEATURES

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### Glow Wire Tester - ToronFT™ GWT Key Features

- Glow Wire Tester complying with IEC 60695-2-10 and -2-11 — providing a comprehensive GWEPT glow wire testing platform for electrical and electronic component materials
- 0.5 m<sup>3</sup> test chamber constructed from high-temperature electrostatic baking paint steel plate — durable, thermally stable, and built to withstand continuous glow wire test cycles
- Black-painted interior chamber provides high visual contrast for accurate detection of ignition and flame propagation during the glow wire test — critical for reliable GWFI determination
- Integrated lighting system ensures the light received by the test sample is <20 lx — meeting the low-illumination observation conditions required for accurate glow wire flame detection
- Integrated exhaust function removes combustion gases from the test chamber after each glow wire test — minimizing contamination between test cycles and maintaining safe operator working conditions
- Suitable for a broad range of solid electrical insulating materials, engineering plastics, and combustible solid materials used in electrical and electronic equipment, including both end-product and raw material glow wire testing

- Complies with IEC 60695-2-10, IEC 60695-2-11, IEC 60884-1, and IEC 60598-1 providing internationally recognized glow wire test results for electrical and electronic equipment certification in North America and globally

## THEORY & METHOD

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### Theory and Method

The glow wire test simulates the thermal stress that insulating materials in electrical equipment experience when in contact with an overheated resistor or glowing element during a fault condition. A resistance wire loop (the 'glow wire') is heated to a specified temperature (typically 550°C, 650°C, 750°C, 850°C, or 960°C) and pressed against the surface of the test specimen for 30 seconds. The specimen's response — whether it ignites, sustains a flame, or self-extinguishes — determines the Glow Wire Flammability Index (GWFI) or Glow Wire Ignition Temperature (GWIT) of the material.

In the ToronFT™ GWT, ignitability tests are carried out on test samples of electrical insulating materials or other solid materials using the electrically heated glow wire as the ignition source. A small flame is used to directly ignite the escaping gas at the upper opening of the furnace to evaluate and measure the GWFI. The 0.5 m³ test chamber is made of high-temperature electrostatic baking paint steel plate and features integrated lighting (light received by the sample <20 lx) and exhaust functions. The black interior finish optimizes visual contrast for accurate detection of glow wire ignition and flame behavior throughout the test.

## TECHNICAL SPECIFICATIONS

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### Glow Wire Tester - ToronFT™ GWT Technical Specifications

| Parameter | Specification |
|-----------|---------------|
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|-----------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Product Name                      | Glow Wire Tester — ToronFT™ GWT                                                                                    |
| Test Chamber Volume               | 0.5 m <sup>3</sup>                                                                                                 |
| Chamber Material                  | High-temperature electrostatic baking paint steel plate                                                            |
| Chamber Interior                  | Black paint; lighting and exhaust functions integrated                                                             |
| Sample Illumination (during test) | <20 lx                                                                                                             |
| Test Method                       | Electrically heated glow wire; small flame ignition of escaping gas                                                |
| Applicable Materials              | Solid electrical insulating materials; engineering plastics; combustible solids in electrical/electronic equipment |
| Compliance Standards              | IEC 60695-2-10; IEC 60695-2-11; IEC 60884-1; IEC 60598-1                                                           |

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



**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](mailto: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](mailto: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](mailto:me@torontech.com)

