

GUARDED HOT PLATE APPARATUS



Guarded Hot Plate Apparatus ToronGHP™

ToronGHP™ Guarded Hot Plate Apparatus is a high-temperature Guarded Hot Plate / Heat Flow Meter thermal conductivity tester designed for steady-state testing of insulation materials up to 1000°C. It supports automated operation, faster test cycles, and reliable results for research, QC, and production labs.

It is suitable for measuring thermal conductivity of refractory insulation, ceramic fibers, felts, textiles, boards, and bricks at different temperatures. With an additional frame, it can also test powdered materials.

APPLICATIONS

Guarded Hot Plate Apparatus ToronGHP™ Applications

- Refractory and insulation testing for bricks, boards, and high-temperature insulating materials.
- Ceramic fiber and textile insulation evaluation to compare formulations and verify performance at set temperatures.
- University and research labs conducting material thermal characterization and development studies.
- Quality inspection and manufacturing plants for incoming QC and production verification testing.
- Powdered material testing (with optional/additional frame) for expanded sample coverage.



Reference Standards

ToronGHP™ references multiple thermal conductivity standards used for insulation and refractory materials testing.

- ASTM C518 – Steady-state thermal transmission properties measured using a heat flow meter apparatus (commonly used for insulation materials).
- ASTM C182 – Thermal conductivity test method specific to insulating firebrick materials.
- ASTM C202 – Thermal conductivity test method for refractory brick products.
- ASTM C417 – Thermal conductivity test method for unfired monolithic refractories (castables/ramming mixes, etc.).
- ASTM C201 – Thermal conductivity test method for refractories (general refractory class coverage).

FEATURES

Guarded Hot Plate Apparatus ToronGHP™ Key Features

- Guarded hot plate / heat flow meter method for steady-state thermal conductivity measurement.
- High-temperature capability up to 1000°C for demanding insulation and refractory applications.
- Fully automatic computer control with data processing and printable reports.
- Multi-layer testing support (additional layers supported with extra thermocouples).
- Flexible cooling control using semiconductor cooling, with optional constant-temperature water bath cooling available.
- Broad material compatibility including refractory insulation, ceramic fibers, felts, textiles, boards, and bricks.

TECHNICAL SPECIFICATIONS

Guarded Hot Plate Apparatus ToronGHP™ Technical Specifications

Specification	Details
Model	ToronGHP™ Guarded Hot Plate Apparatus
Test Method	Guarded Hot Plate / Heat Flow Meter Method
Thermal Conductivity Range	0.0010 – 3 W/(m·K)
Measurement Accuracy	±5%
Hot Surface Temperature Range	100 – 1000°C
Sample Atmosphere	Air
Calorimeter Plate Size	100 × 100 mm
Heat Flow Meter Size	100 × 100 mm
Sample Temperature Points	4
Sample Dimensions	230×230 to 250×250 mm; thickness 10 – 100 mm
Measurement & Control	Fully automatic computer-controlled testing and data processing; report generation and printing
Cooling / Temperature Control	Semiconductor cooling; constant-temperature water bath cooling optional
Voltage	220V, 50Hz (110V is also available)
Total Power	≤ 5 kW
Multi-Layer Testing	Supported; each additional layer requires one extra thermocouple
Standard Configuration	Main unit, software, communication interface and data cable, test thermocouples (for three-layer testing), rubber water hose; user provides computer



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

