

# Ignitability Apparatus

firetesting  
technology

(ISO 5657, BS 476 Part 13  
Ignitability of building products  
using a radiant heat source)



**ISO 5657, BS 476 Part 13:**  
**Ignitability of building products using a radiant heat source**

The capability of a material to be ignited is a critical property to measure and is a highly important element in any assessment of fire hazard.

The Ignitability Test Apparatus allows the user to carry out crucial tests that conform to ISO 5657 and BS 476 Part 13. The Apparatus has been designed, principally for testing building materials and composites, but it is capable of testing any sample of size 165mm x 165mm and up to a maximum of 70mm thick. The apparatus measures the ignition characteristics of exposed surfaces of essentially flat materials and specimens mounted in a horizontal orientation.

**The FTT Ignitability Apparatus**

The test apparatus consists of a support framework which clamps the test specimen horizontally between a pressing plate and a masking plate such that a defined area of the upper surface of the specimen is exposed to radiation.

This radiation is provided by a radiator cone positioned above and supported from the specimen support framework. An automated pilot flame application mechanism is used to bring a test flame through the radiator cone to a position above the centre of the surface of the specimen. A specimen insertion and location tray is used to position the specimen accurately on the pressing plate of the specimen support framework and a screening plate is used to shield the surface of

the specimen during its insertion into the apparatus.

**Main Features**

**Test apparatus**

- Framework for the cone sample support mechanism
- Radiator cone assembly
- Radiation levels between 10-50kW/m<sup>2</sup> using a conical radiation furnace
- Counter weight for pressing plate
- Pilot gas line with flashback arrestor and provision for re-ignition
- Pilot flame application mechanism and motor drive assembly to bring pilot flame into the correct position above the plane of sample every 4 seconds
- Secondary ignition source.



**Control Unit**

- 3-term temperature controller
- Temperature indicator and over temperature alarm
- Pilot speed controller
- Timer

The apparatus is also supplied with a Flux Meter for calibration purposes.



**TECHNICAL SPECIFICATIONS**

Measuring principle	Ignitability of material sample subject to radiant heat source
Radiator cone	10-50 kW/m <sup>2</sup>
Temperature control	2 × Type K thermocouple
Heat flux measurement	Schmidt-Boelter heat flux meter for measuring the test heat flux
Control unit (Front panel)	<ul style="list-style-type: none"> <li>• Heater Control – Temperature Controller.</li> <li>• Temperature Indicator and over-temperature alarm.</li> <li>• Timer.</li> <li>• Pilot speed controller.</li> <li>• Propane on/off valve – turns off propane to pilot and secondary ignition.</li> <li>• Propane flowmeter – measures gas flow to pilot, setting required approximately 20cm<sup>3</sup>/min.</li> <li>• Air on/off valve – turns off air to pilot flame.</li> <li>• Air flowmeter – measures air flow to pilot, setting required approximately 160cm<sup>3</sup>/min.</li> <li>• Needle valve for adjusting height of flame for secondary ignition.</li> <li>• Control switches comprising:             <ul style="list-style-type: none"> <li>– 3 red on/off push button switches which operate by firm pressure and light up when activated.</li> <li>– Power – switches on mains electricity to the control unit.</li> <li>– Cone – switches on power to the cone heater.</li> <li>– Motor – switches on power to the pilot drive motor.</li> </ul> </li> </ul>
Control unit (Back panel)	<ul style="list-style-type: none"> <li>• Mains in cable. Supply required 230VAC 15A, 50/60Hz</li> <li>• 4-pin socket power output to cone heater</li> <li>• 3-pin socket power output to pilot drive motor</li> <li>• 2-off thermocouple sockets, type K</li> <li>• Propane gas inlet</li> <li>• Air inlet</li> <li>• Pilot outlet</li> <li>• Secondary ignition outlet</li> </ul>

Due to **FTT**'s continuous development policy, specification could change without prior notice

**SERVICES**

Power	230VAC 15A, 50/60Hz
Gas	Propane and Air for the pilot flame
Water	200-300 ml/min water flow through the system at room temperature, i.e. 15-30°C
Extraction	A proprietary extraction system or fume chamber is recommended

## Unrivalled Experience in Design and Manufacturing

FTT's site in East Grinstead, is home to the largest group of fire scientists and instrumentation design engineers working on fire testing instrumentation, and is at the heart of our design and manufacturing. For almost 30 years

FTT has provided the highest quality instruments and service for fire testing and research professionals worldwide, directly and through its extensive global sales and support network.



### Quality

- World-class manufacturing in accordance with multiple international and national standards, including: EN, ISO & ASTM
- ISO 14001, ISO 9001 certified

### Integrity

- A dedicated team passionate about fire testing instrumentation and continuous product improvement
- Delivering reliable, robust and easy-to-use instruments for the past 30 years

### Excellence

- A world-class team made up of qualified fire scientists, mechanical, electrical and electronic fire instrument design engineers and production, installation and maintenance engineers

### Global

- World-wide distribution network for global sales, installations, training, maintenance and technical support
- Leading global supplier of the Cone Calorimeter, Large Scale Calorimeter, NBS Smoke Chamber and Oxygen Index