

EN ISO 1182 Non-Combustibility Test Apparatus

Building Material Non-Combustibility Tester



Standard: EN ISO 1182 (Non-combustibility test for building materials)

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1. Product Overview

The KingPo EN ISO 1182 Non-Combustibility Test Apparatus evaluates the combustibility of building materials by placing a specimen in a vertical tube furnace preheated to 750°C. The test observes whether the material sustains flaming and records any temperature rise to determine its non-combustibility performance.

This non-combustibility test furnace is essential for classifying construction products into fire performance categories such as A1 and A2. It helps manufacturers, testing laboratories, and certification bodies assess the fire safety of materials used in walls, ceilings, insulation, and other building applications under standardized high-temperature conditions.

2. Applicable Standards

- **EN ISO 1182** — Reaction to fire tests for products — Non-combustibility test

3. Test Purpose

In the EN ISO 1182 test, a specimen is placed into a vertical tube furnace preheated to 750°C. The test observes whether the material exhibits sustained flaming and records any temperature rise above the furnace temperature using thermocouples.

Materials that do not sustain flaming and show limited temperature rise are classified as non-combustible. This method provides a standardized way to assess the inherent combustibility of building materials, independent of their thickness or density, supporting A1 and A2 fire classification under EN 13501-1.

4. Key Features

- **Stable Vertical Tube Furnace** — Maintains a stable temperature of 750°C during testing.
- **Precise Temperature Monitoring** — Thermocouples monitor both furnace and specimen temperatures with high accuracy.
- **Standardized Specimen Holder** — Weight of 15 g ± 2 g for consistent test conditions.
- **Stable Power Supply** — Includes voltage stabilizer to ensure consistent test conditions.
- **User-Friendly Operation** — Easy-to-operate control system with direct result display.
- **Reliable & Repeatable Results** — Precise thermocouple placement and furnace construction ensure accurate monitoring and consistent performance.

5. Technical Specifications

Parameter	Specification	Notes
Applicable Standard	EN ISO 1182	Non-combustibility test for building materials
Furnace Type	Vertical tube furnace	Φ95 mm × Φ75 mm × 150 mm
Test Temperature	750°C	Stable furnace temperature
Specimen Holder Weight	15 g ± 2 g	Standardized holder
Thermocouple	Insulated shield, Φ3 mm nickel-chrome	For furnace and specimen temperature monitoring
Power Supply	AC 220V ±10%, 50Hz	With voltage stabilizer
Timer	0–99 hours	–
Thermometer Range	0–1000°C	Accuracy ±5%

6. Typical Test Procedure

1. Preheat the vertical tube furnace to a stable temperature of 750°C.
2. Prepare and weigh the specimen according to the standard requirements.
3. Place the specimen in the standardized specimen holder and insert it into the furnace.
4. Monitor furnace and specimen temperatures using the thermocouples.

5. Observe and record any sustained flaming and temperature rise during the test period.
6. Determine non-combustibility classification based on the recorded data (limited temperature rise and no sustained flaming).

7. Applications

- Building Material Manufacturers — Non-combustibility testing of construction products (insulation, wall panels, ceiling boards) for A1 and A2 classification
- Testing Laboratories — EN ISO 1182 compliance testing and formal reports on non-combustibility performance
- Certification Bodies — Assessing and verifying non-combustibility as part of A1 and A2 fire classification
- Research Institutions and Material Developers — Studying combustion behavior of new building materials under 750°C conditions
- Quality Control Departments — Routine non-combustibility verification during production for batch consistency

8. Standard Configuration

The standard system typically includes:

- Vertical tube furnace ($\Phi 95 \text{ mm} \times \Phi 75 \text{ mm} \times 150 \text{ mm}$)
- Thermocouples (insulated shield, $\Phi 3 \text{ mm}$ nickel-chrome) for furnace and specimen temperature monitoring
- Standardized specimen holder ($15 \text{ g} \pm 2 \text{ g}$)
- Voltage stabilizer for stable power supply ($\text{AC } 220\text{V} \pm 10\%$, 50Hz)
- Control system with timer (0–99 hours) and thermometer ($0\text{--}1000^\circ\text{C}$, accuracy $\pm 5\%$)

Note: Suitable for testing both homogeneous products and substantial components of non-homogeneous building materials. The temperature measurement system and timer should be periodically calibrated.

9. Ordering Information

To provide the most suitable configuration, please confirm the following when requesting a quotation:

- Primary material types to be tested (e.g., insulation, panels, composites)
- Any need for additional accessories or data recording features
- Calibration or extended documentation requirements

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