FIRETS
法瑞测试设备
FRTS

FRTS-14402

Oxygen Bomb Calorimeter

Oxygen Bomb Calorimeter

CALORIFIC VALUE / BUILDING MATERIALS

Quantify the energy released by complete combustion.

Determine gross heat of combustion using oxygen bomb calorimetry. The method provides material and component data for building-product assessment and helps compare the thermal contribution of core materials, adhesives and surface layers.

Principle

A weighed sample is ignited in a sealed oxygen-filled bomb.

System

Oxygen bomb, calorimetric vessel, temperature measurement, stirring and ignition.

Application

Homogeneous materials, composite products and individual constituents that can be prepared and combusted using the specified method.



Original equipment photograph. Appearance only.

Sichuan Farui Testing Equipment Co., Ltd.

01 / PRODUCT / APPLICATION

Product purpose and selection

Determine gross heat of combustion using oxygen bomb calorimetry. The method provides material and component data for building-product assessment and helps compare the thermal contribution of core materials, adhesives and surface layers.



Original equipment photograph. Appearance only.

PRINCIPLE & MEASURAND

Measurement principle

A weighed sample is ignited in a sealed oxygen-filled bomb.



Original equipment photograph. Appearance only.

Measurement principle

A weighed sample is ignited in a sealed oxygen-filled bomb. The calorimeter measures temperature change and converts it into heat of combustion using calibrated system heat capacity and the required corrections.

Use in the laboratory

Oxygen bomb, calorimetric vessel, temperature measurement, stirring and ignition. Weighing, oxygen charging and reference materials support preparation and calibration.

English edition follows the reviewed Chinese manuscript evidence. Configuration and laboratory conditions follow the technical file confirmed by both parties. Unconfirmed numerical claims from the Chinese edition are not restated here.

SAMPLING & PREPARATION

Specimens and conditioning

Homogeneous materials, composite products and individual constituents that can be prepared and combusted using the specified method.

01 Specimens and conditioning

Homogeneous materials, composite products and individual constituents that can be prepared and combusted using the specified method.

02 Use in the laboratory

Keep sample mass, calibration, ignition aids and correction values. Inspect combustion residue and retain the basis used to calculate component contributions.

English edition follows the reviewed Chinese manuscript evidence. Configuration and laboratory conditions follow the technical file confirmed by both parties. Unconfirmed numerical claims from the Chinese edition are not restated here.

CALIBRATION & QUALITY CONTROL

Calibration and verification

Oxygen bomb, calorimetric vessel, temperature measurement, stirring and ignition.

Calibration and verification

Oxygen bomb, calorimetric vessel, temperature measurement, stirring and ignition. Weighing, oxygen charging and reference materials support preparation and calibration.

Use in the laboratory

Keep sample mass, calibration, ignition aids and correction values. Inspect combustion residue and retain the basis used to calculate component contributions.

English edition follows the reviewed Chinese manuscript evidence. Configuration and laboratory conditions follow the technical file confirmed by both parties. Unconfirmed numerical claims from the Chinese edition are not restated here.

TEST WORKFLOW

Operation

A weighed sample is ignited in a sealed oxygen-filled bomb.

01 Operation

A weighed sample is ignited in a sealed oxygen-filled bomb. The calorimeter measures temperature change and converts it into heat of combustion using calibrated system heat capacity and the required corrections.

02 Use in the laboratory

Keep sample mass, calibration, ignition aids and correction values. Inspect combustion residue and retain the basis used to calculate component contributions.

English edition follows the reviewed Chinese manuscript evidence. Configuration and laboratory conditions follow the technical file confirmed by both parties. Unconfirmed numerical claims from the Chinese edition are not restated here.

CALCULATION & INTERPRETATION

Calculation and reported quantities

ISO 1716 / GB/T 14402 measure gross heat of combustion.

01 Calculation and reported quantities

ISO 1716 / GB/T 14402 measure gross heat of combustion. This quantity is distinct from the time-dependent heat-release rate measured by SBI or cone calorimetry. Component sampling and mass fractions matter for composite-product assessment.

02 Use in the laboratory

Keep sample mass, calibration, ignition aids and correction values. Inspect combustion residue and retain the basis used to calculate component contributions.

English edition follows the reviewed Chinese manuscript evidence. Configuration and laboratory conditions follow the technical file confirmed by both parties. Unconfirmed numerical claims from the Chinese edition are not restated here.

DATA, REPORTS & APPLICATION

DATA, REPORTS & APPLICATION

Keep sample mass, calibration, ignition aids and correction values.

DATA, REPORTS & APPLICATION

Keep sample mass, calibration, ignition aids and correction values. Inspect combustion residue and retain the basis used to calculate component contributions.

Use in the laboratory

Homogeneous materials, composite products and individual constituents that can be prepared and combusted using the specified method.

English edition follows the reviewed Chinese manuscript evidence. Configuration and laboratory conditions follow the technical file confirmed by both parties. Unconfirmed numerical claims from the Chinese edition are not restated here.

08 / COMPANY

High-tech enterprise

Sichuan Farui Testing Equipment Co., Ltd. holds a High-tech Enterprise certificate. Its work covers fire-protection and material fire-test equipment, measurement and control software, and laboratory system integration.



Original High-tech Enterprise certificate. Dates and identifiers follow the certificate as issued.

Certificate number

GR202551000122

Issue date

2025.12.02

Stated validity

Three years

Issue date and validity are shown as stated on the certificate.

09 / COMPANY

Quality management system

From technical requirements through on-site use, Farui organises instrument development, assembly and service within the certified management-system scope, connecting requirement confirmation, technical implementation and project delivery.


注册号：30924Q0210R0S

质量管理体系认证证书

兹证明

四川法瑞检测设备有限公司

统一社会信用代码：91510703MA6Z473E4K

注册地址：绵阳市涪城区剑安路 35 号（科技城软件产业园）

审核地址：四川省绵阳市游仙区科学城中经路 52 号辅助房 12、13 号

质量管理体系 符合

GB/T19001-2016 idt ISO9001:2015 标准要求

该管理体系认证所覆盖的范围为：

工业自动控制系统仪器装置的研发、组装及服务

该组织分场所信息：

"无"

获证组织在证书有效期内每年至少接受一次本认证机构的监督审核，并将监督审核合格标志粘贴于证书指定位置，此证书方可持续有效。本证书有效性请登录 http://cx.cnca.cn 查询

颁证日期：2024 年 06 月 06 日　　有效期至：2027 年 06 月 05 日

国评认证（成都）有限公司　　签发人：

地址：成都高新区[illegible]7 层 8 号

Original quality-management-system certificate. This is a company-system certificate, not product certification.

Certified standard

GB/T 19001-2016 / ISO 9001:2015

Certified scope

Research, assembly and service of industrial automatic-control system instruments

Registration number

30924Q0210R0S

Stated validity on the certificate

2024.06.06 — 2027.06.05

This page records the company management-system certificate. Coverage and current standing remain those registered by the certification body.

10 / COMPANY

Industry participation

As a senior member of the Smart Laboratory Professional Committee of the China Association for Standardization, Farui follows test standards and smart-laboratory practice, connecting industry exchange with instrument design, measurement and technical service.



Original senior-membership certificate of the Smart Laboratory Professional Committee.

Membership and organisation

Senior member, Smart Laboratory Professional Committee, China Association for Standardization

Issue date

2026.07.21

Stated validity on the certificate

2027.07.20

Membership is shown as registered on the original certificate and its stated validity date.

11 / COMPANY

Research and standards participation

Around flame retardancy, fire protection and measurement systems, Farui continues to accumulate instrument-design, automatic-control and test-method experience, using research and standards participation in technical discussion and system design for complex tests.

8 Invention patents (count)

4 Utility models (count)

4 GB/T participation (count)

From method to apparatus

Test conditions, measured quantities and use cases are translated into configuration options, with the test method as the starting point for technical discussion.

From signal to record

Data acquisition, control software and combined systems are organised so that original signals, operating conditions and reported results remain corresponding.

Figures follow the April 2026 company introduction. Patent applications are not distinguished from granted patents. Participation lists follow the corresponding documents.

CONTACT / FIRETS

Contact Farui

Discuss selection against the intended method, material and specimen form, measurement and reporting needs. Supply configuration and laboratory conditions follow the technical documents confirmed by both parties.

From the test need to the equipment configuration

Product selection / technical exchange

Project configuration / service enquiry

Connect on WeChat

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