



Safety testing and certification services for gas and electrical appliances

Fired up about safety

raising standards worldwide™



With increasing concerns over climate change and consumer safety, there is a rising public demand for more efficient and safe appliances. Organisations can help mitigate the risks involved in non-performance by selecting products and services which have been tested and certified.

BSI's heritage in gas and electrical appliance testing is founded upon the former research arm of British Gas (and Advantica) in the UK and through this, BSI has built up an international reputation for technical expertise, quality services and in-depth knowledge of gas, electrical, oil and solid fuel product testing and certification.

Today, BSI provides trusted testing and certification services for domestic and commercial appliances as well as recruiting and retaining some of the most experienced and knowledgeable staff in the world.

The dedicated BSI test facility in Loughborough has a strong reputation in the industry which extends beyond the UK and into markets including the US, Japan, China, Hong Kong and Australia. With over 300 global clients, BSI has one of the most comprehensive appliance testing services available.

Read on to find out just how we can help you make sure your appliances are proven to be safe, reliable and compliant.





Kitemark, the distinctive symbol of quality and trust, for a range of gas and electrical products including cooking, water heating, refrigeration, space

heating, leisure and camping as well

as related control and safety devices associated with these appliances. As a voluntary certification mark, it has a strong reputation – **93%*** of the UK adult population believe a Kitemark product is safer.

Kitemark is a certification mark that shows a product or service meets the appropriate standard for quality and safety. These can be British, European or international standards that are publicly available.

Kitemark has also long been considered the UK's premier symbol of product or service quality that brings real, tangible benefits to licence holders. These benefits include:

Reduced risk – Kitemark demonstrates due diligence and duty of care to your industry, employees, suppliers and customers.

Improved efficiency – by reducing costs and waste you should be able to realise a more healthy profit in your business

Customer satisfaction – happy, confident customers will bring unrivalled benefits to your business through repeat business and recommendation.

Access to new business – with public and private sector procurement managers increasingly specifying Kitemark, you can secure your access to these tenders and projects.

Being a Business Superbrand in its own right means that Kitemark has established the finest reputation in its field. It offers customers significant emotional and/or tangible advantages over its competitors, which customers want and recognise.

In a market that develops quickly and to keep ahead of the competition manufacturers and suppliers of appliances can now benefit from Kitemark certification to help keep their products at the top of the market. Customers increasingly want reassurance that they are purchasing intelligently and that the product will be safe and reliable; **77%*** of UK adults believe a Kitemark shows that they have purchased intelligently while and **75%*** state that the presence of a Kitemark helps them choose between products.

What better credibility could you have?

* GfK NOP Survey



CE marking and direct testing

CE marking:

The majority of appliances supplied in the European Union, must bear the “CE mark”, the sign of compliance to all relevant EU Directives. BSI offers a comprehensive range of testing and certification services that enable manufacturers to confidently and legally affix the CE mark to their products. CE marking is a conformity mark, not a quality mark and should not be interpreted as such.

BSI, as a Notified Body (0086) is appointed by the UK Government to certify products and production methods which conform to a range of Directives.



Gas Appliances Directive 2009/142/EC

The directive covers gas appliances and fittings supplied for the purpose of lighting, heating, washing and cooking, regardless of size (so covering camping appliances, household appliances and commercial equipment). The directive defines “gas” as any fuel which is in a gaseous state at 15°C on an atmospheric pressure bar, it therefore includes appliances that burn natural gas, manufactured gas, LPG and even new technologies such as hydrogen.

Boiler Efficiency Directive 92/42/EEC

This directive specifies the minimum efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels. The directive now forms an implementing measure under the European Union’s Eco-design of Energy-Using Products (EUP) directive which is concerned with improving energy efficiency and the subsequent reduction in the carbon emissions from “standard”, “low temperature” and “gas condensing” boilers with outputs in the range 4 to 400 kW. The directive

specifies minimum efficiency levels at both “full-load” and “part-load” test conditions.

Construction Products Directive 89/106/EC

This directive relates to products which are produced for incorporation in a permanent manner in works such as buildings, roads, bridges and other civil engineering projects. In the context of appliances, the directive relates to products such as gas appliance flue systems, flexible connectors for gas appliances, valves and similar ancillary items that may form part of a gas appliance installation.

Direct Testing:



With a worldwide reputation as an independent testing authority, BSI not only tests a wide range of products to international and national standards, but in many cases can formulate bespoke test programmes to meet specific client needs and create test regimes beyond those required by published standards.



Product testing has many benefits and can significantly help the research and development phase of product evolution. Pre-production testing can help eliminate errors or faults that can be costly to rectify once the product is on the market.

BSI is a UKAS accredited inspection body for gas/flue products, in addition to certifying gas and electrical products against overseas requirements helping clients meet their legal obligations in other parts of the world. Particular expertise exists to help clients demonstrate that they meet the requirements for appliances sold in USA, Canada, Australia, New Zealand and South Africa.

Cooking appliances

Methods of cooking have become much more sophisticated over the years and continue to evolve. The arrival of induction cooking and pyrolytic cleaning has meant that appliances have changed too. With cooking appliances now incorporating a multitude of electronics, the need for technical capability and testing expertise is ever more critical.

BSI's test laboratories are fully equipped and accredited to perform safety and performance testing of household and commercial gas and electric cooking appliances (the side column shows some of the more commonly used standards).

Test results may be used to support CE marking of equipment intended for use within the EU, or to help fulfil the requirements of an export market. We can also evaluate household ovens for compliance with the EU Energy Labelling Regulations.

Uniquely, BSI also has its own range of in-house test requirements for products where no published standard exists, such as heat storage cooking appliances.

98% of customers would use BSI testing services again

Source: Certification services feedback 2009



Household equipment

BS EN 30-1-1, 2, 3, 4

Domestic cooking appliances
burning gas - safety

BS EN 30-2

Domestic cooking appliances
burning gas – rational use of
energy

BS EN 60335-2-6

Safety of household and similar
electrical cooking appliances

BS EN 15181

Energy performance of household
gas ovens

BS EN 484

Specification for dedicated
liquefied petroleum gas
appliances. Independent hotplates,
including those incorporating a
grill for outdoor use

Commercial equipment

BS EN 203-1

Gas heated catering equipment –
general safety requirements

BS EN 203-2 (part 1 – 11)

Gas heated catering equipment –

BS EN 60335-2-36, 37, 38, 39, 42, 48, 49

Safety of commercial electrical
cooking appliances

Overseas standards

AS 4551

Australian standard for gas
cooking appliances

AS 4563

Australian standard for gas heated
catering equipment

ANSI Z21.1

USA & Canadian standard for
household cooking appliances

SANS 1539

South African national standard
for safety of gas appliances

NZS 5262

New Zealand standard for safety
of gas appliances

Household

BS EN 297

Type B11 and B11BS gas boilers
not exceeding 70 kW

BS EN 483

Type C gas boilers not
exceeding 70 kW

BS EN 625

Domestic hot water operation
of combination boilers
not exceeding 70 kW

BS EN 677

Condensing gas boilers not
exceeding 70 kW

BS EN 50465

Fuel cell heating appliances

BS 7977-2

Combined fire/back boiler or
circulator

BS EN 26

Gas fired instantaneous water
heaters

BS EN 89

Gas fired storage water heaters

BS EN 13203-2

Gas fired water heaters
– assessment of energy
consumption

BS EN 60335-2-21

Household electrical storage
water heaters

BS EN 60335-2-35

Household electrical
instantaneous water heaters

BS EN 304

Heating boilers with atomizing
oil burners

BS EN 15034

Condensing heating boilers
for fuel oil

BS EN 15035

Oil fired room sealed units
up to 70kW

Water heating appliances

Efficiency and reliability are core requirements of any water heating appliance. BSI is equipped and accredited to test the safety and performance of household and commercial gas fired, oil fired and electric water heating appliances, such as:

- Central heating boilers
- Combination boilers for heating and hot water
- Instantaneous water heaters (gas or electric)
- Storage water heaters (gas or electric heated)
- Pool and spa heaters

BSI also has specialist test facilities and accreditation to conduct safety testing on unvented water storage systems to demonstrate compliance with the UK Building Regulation G3.

“NORITZ and BSI continue to collaborate to enable our Japanese products to meet the various European requirements. Right from the start of the certification activity, we have appreciated the responsiveness shown by BSI. The company has been our Notified Body of choice since 2004 and we appreciate the confidential relationship and benefits gained through certification.”

Yutaka Nakamura, Group Manager, Engineering Service Group, Noritz Corp



Water heating appliances

New Technology

BSI has extensive experience with new and emerging technologies, such as a small-scale combined heat and power (micro-CHP) using fuel cells, Stirling engines and internal combustion engines.

BSI has worked in partnership with Microgen to ensure that its wall-mounted microCHP (Micro Combined Heat and Power) was safe to install as a commercial pilot in 45 premises including private homes, social housing and small commercial properties.

Testing was done by BSI to guarantee that the product met the essential requirements of the Gas Appliance Directive, Low Voltage Directive, Electromagnetic Compatibility Directive and the Machinery Directive. In addition, BSI also carried out third party testing to demonstrate that the microCHP conformed with the requirements of the Electricity Association engineering recommendation G83 for the connection of small-scale embedded generators.

“We have been impressed with the contribution made by BSI, especially the organisation’s expertise and knowledge of standards. BSI has helped us develop a technical solution to the applicable directives. The responsiveness of the organisation has allowed Microgen to meet its field trial commitments against a very tight schedule.”

Huw Gaskill, Field Trial Project Manager, Microgen

Commercial

BS EN 303

Heating boilers with forced draught gas burners

BS EN 676

Automatic forced draught burners

BS EN 656

Type B boilers exceeding 70 kW, but not exceeding 300 kW

BS EN 13836

Type B boilers exceeding 300 kW, but not exceeding 1000 kW

BS EN 15417

Condensing boilers greater than 70 kW but not exceeding 1000 kW

Overseas

AS 4560

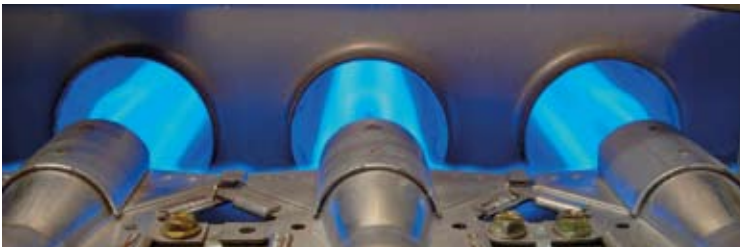


Australian standard for gas pool heaters

AS 4552



Australian standard for gas fired water heaters hot water and /or central heating



Space heating and air conditioning appliances

As with any fitted gas appliance, safety of space heating and air-conditioning is of paramount importance. BSI is able to test a complete range of household and commercial gas fired and electric space heating appliances:

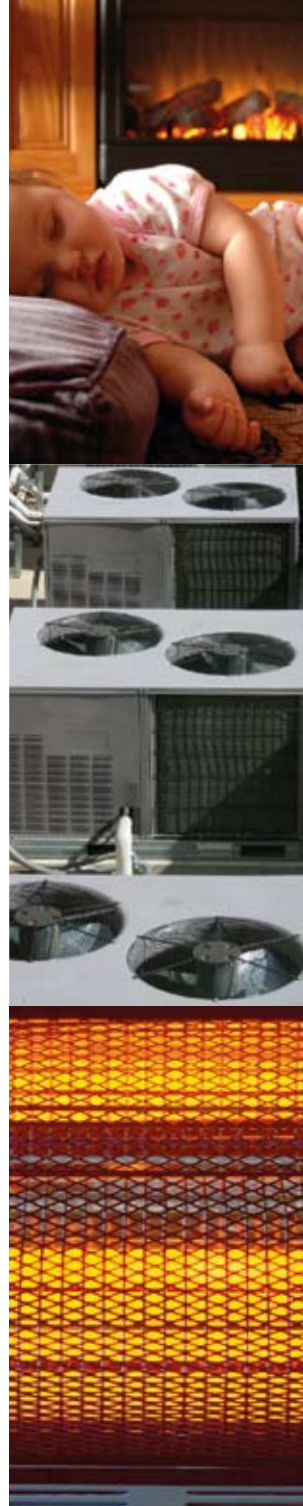
- Household gas fires and electric heating appliances
- Household and similar gas fired air heaters
- Household electric heat pumps and air conditioning units
- Agricultural heaters
- Commercial warm air units (condensing or non-condensing)
- Commercial overhead radiant heating systems

Facilities include a unique radiant efficiency test rig for measuring the thermal efficiency of commercial radiant heating systems.



“Valor Fires has had a long lasting association with BSI. We employ BSI to conduct all of our type testing certification and surveillance for our gas heating appliances and to maintain our ISO 9001:2008 registration. During this time BSI has always provided a first class service and has worked closely with Valor Fires to assist us in achieving our business needs.”

Bob Hennessey, Special Projects Manager, Baxi Group



Household

BS EN 509

Decorative fuel effect gas appliances

BS EN 613

Independent gas fired convection heaters

BS EN 1266

Independent fanned gas fired convection heaters

BS 7977-1

Radiant/convector gas fires

BS EN 13278

Open-fronted gas fired space heaters

BS EN 14829

Gas fired flueless space heaters

BS EN 449

Flueless LPG space heaters

BS EN 778

Gas fired domestic air heaters without fan not exceeding 70kW



BS EN 1319

Gas fired domestic fan-assisted air heaters

BS EN 1196

Condensing gas fired air heaters

BS EN 60335-2-30

Household electrical room heaters

BS EN 60335-2-40

Household electrical heat pumps, air conditioning units etc

Commercial space heating appliances

BS 5990

Direct gas fired convection air heaters up to 2MW

BS 5991

Indirect gas fired convection air heaters up to 2MW

BS EN 525

Direct fired forced convection or heaters up to 300kW

BS EN 621

Forced convection gas fired air heaters up to 300kW

BS EN 1020

Fan assisted gas fired air heaters up to 300kW

BS EN 12669

Gas fired agricultural air heaters

BS EN 461

LPG non-domestic space heaters up to 10kW

BS EN 1596

Mobile and portable non-domestic LPG air heaters

Commercial radiant heating appliances

BS EN 416-1

Gas fired overhead radiant tubes – safety

BS EN 416-2

Gas fired overhead radiant tubes – rational use of energy

BS EN 419-1

Gas fired overhead luminous heaters– safety

BS EN 419-2

Gas fired overhead luminous heaters – rational use of energy

Overseas standards

AS 4553

Australian standard for gas fired room heating appliances



Leisure appliances

BS EN 521

Portable vapour pressure gas appliances

BS EN 498

LPG gas barbecues for outdoor use

BS EN 484

Independent LPG hotplates for outdoor use

BS EN 15033

LPG storage water heaters for vehicles and boats

BS EN 624

LPG space heaters for vehicles and boats

BS EN 14543

Flueless gas fired patio heaters

BS EN 1860-1

Charcoal barbecues

BS EN 60335-2-78

Household electrical barbecues for outdoor use

Overseas standards

AS 4557

Australian standard for gas fired barbecues

AS 2658

Australian standard for mobile and portable LPG appliances

SANS 1539

South African national standard for safety of gas appliances

NZS 5262

New Zealand Standard for safety of gas appliances

Leisure appliances

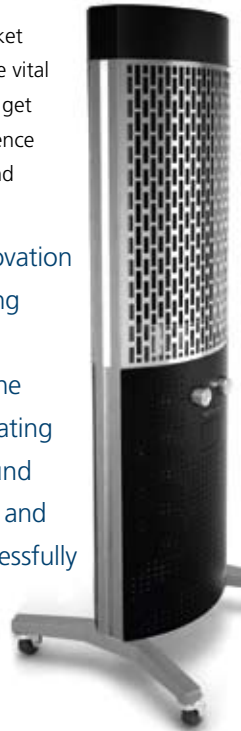
BSI performs safety testing on a range of gas, solid fuel and electric products intended for use in the leisure industry such as :

- LPG barbecues and patio heaters
- Outdoor heating and lighting appliances
- Electric barbecues
- Solid fuel barbecues
- Equipment for use in caravans
- Vapour pressure camping equipment

Standards tend to be developed slowly and the market moves quickly for this type of product. It is therefore vital that an appropriate test programme is developed to get the product right first time. BSI has extensive experience in developing requirements for novel types of gas and electrical appliances.

“Being a leader in product design and innovation sometimes results in the appliance not being covered by the current standards, making certification somewhat difficult. This was the case with the Totum patio heater, incorporating light and sound functions, features not found in any similar appliance. With BSI technical and practical experience these issues were successfully addressed with the appliance certificated and released into the market.”

Jeff Elliott, Technical Manager, Grand Hall



Other appliances

In addition to all of the main categories of appliances tested, BSI can frequently adapt its extensive test equipment to new types of appliance, so please contact us to discuss your requirements.

We have facilities to test:


- Gas and electrical refrigeration equipment for UK and overseas
- Household washing machines
- Household and commercial gas and electric tumble dryers
- Commercial kitchen extraction systems
- Gas proving control systems for educational premises

We can also devise bespoke test programmes to help you solve problems (eg : long-term reliability testing to prove product life).


“American Dryer Corporation devotes its business to providing dryers that perform better than any others. The robust testing services provided by BSI enable us to meet this corporate mission and ensure the credibility of our brand. The ability to provide assurance of quality across an international platform continues to facilitate market access and new business opportunities for our organisation.”

Ruth Medeiros, Project Manager, American Dryer Corporation

Other appliances

BS EN 1458-1 


Household gas fired tumble dryers - safety

BS EN 732 


LPG gas absorption refrigerators

BS EN 12752-1


Commercial gas fired tumble dryers - safety

BS EN 60335-2-7 

Household and similar electrical washing machines

BS EN 60335-2-11 

Household and similar electrical tumble dryers


BS EN 60335-2-15 

Household appliances for heating liquids

BS EN 62301 

Measurement of standby power consumption

Overseas standards

AS 4555 

Australian standard for gas fired refrigerators

AS 4554

Australian standard for gas fired tumble dryers



Controls and ancillary items

All appliances are only as safe as the control and safety devices used within them. Control devices may be tested as a component part of an appliance, or the control device can be independently tested prior to being supplied to OEMs for inclusion with an appliance. Please contact us to discuss the best route for you.

BSI has particular expertise in the field safety related electronic control systems and BSI experts have provided training and support to blue chip companies and overseas certification bodies in the EU, Japan, USA, Australia, Korea and China. This expertise, coupled with our customer friendly approach, is used to reduce time to market for our clients.

Most electrical accessories undergo a range of tests such as:

- Provision of earthing
- Thermal endurance
- Protection against electric shock
- Mechanical strength
- Resistance to heat, fire and tracking
- Insulation resistance and electrical strength
- Creepage distances and clearances
- Dimensional compatibility

These products also fall within the scope of the EU Low Voltage Directive (2006/95/EC) and as such must be compliant with the relevant specifications for sale within the UK.

In addition to our electronic control expertise, we perform a range of testing services on most gas and electrical components intended for use in household and commercial gas and electrical appliances.



Safety related electronic controls

BS EN 298

Burner control systems for gas appliances

BS EN 230

Burner control systems for oil fired appliances

BS EN 12067-2

Electronic gas/air ratio controls

BS EN 60730-1

Controls for household electrical appliances – General

BS EN 60730-2-9

Temperature sensing controls for household electrical appliances

BS EN 14459

Electronic control systems used in gas appliances

AS 4625

Australian standard for electronic flame safeguards

ANSI Z21.20

USA standard for automatic gas ignition systems

ISO 23550

Automatic burner control systems

ISO 23552-1

International standard – gas/air ratio controls for gas/oil appliances

Gas-carrying controls

BS EN 331

Manually operated ball valves

BS 1552

Taper plug valves

BS EN 161

Automatic shut-off valves for gas appliances

BS EN 88

Pressure regulators for gas appliances

BS EN 126

Multi-functional controls for gas appliances

BS EN 125

Flame supervision devices for gas appliances

BS 6047 Part 1

Flame supervision devices for gas appliances

BS EN 1106

Gas taps for gas appliances

BS EN 13611

Safety and control devices intended for use in gas appliances

BS EN 257

Mechanical thermostats for gas burning appliances

BS EN 12067-1

Pneumatic gas/air ratio controls for use in gas appliances

BS EN 12864

LPG low pressure regulators

AS 4617

Australian standard for manual shut-off valves

AS 4629

Australian standard for automatic shut-off valves

Ancillaries related to gas appliances

BS EN 1856

Metal chimneys

BS EN 14471

Plastic chimneys for gas appliances

BS EN 13502

Masonry flue blocks and terminals

BS EN 15069

Safety gas connections for metal hose assemblies

BS EN 14800

Corrugated metal hose assemblies

BS 669 parts 1 and 2

Flexible hoses, end fittings and sockets for gas appliances

BS EN 15266

Corrugated stainless steel flexible tubing used for gas supply

Electrical safety

BS EN 60335-1:2002

Household (or similar), electric and oil fired appliances

BS EN 50304:2001

Electric cooking ranges, hobs, ovens and grills for household use

Meters and monitors

BS EN 50291

Electrical apparatus for the detection of carbon monoxide in domestic premises

BS EN 62301

Household electrical appliances - measurement of standby power



BSI - one-stop-shop for certification

As well as Kitemark certification, product testing and CE marking did you know that BSI also offers a range of services that can help your business maximise its potential?



Management system certification - BSI is one of the world's largest certification bodies for assessing and certifying management systems. It has certified 68,000 locations in more than 120 countries and is market leader in a number of countries, including the UK and North America.



Training - BSI offers a comprehensive portfolio of standards-based and business improvement training courses. Training delivery methods include open scheduled courses, in-company training, eLearning modules and distance learning qualifications. Visit www.bsigroup.co.uk/training



Entropy® Software - BSI's web-based management system software solution is used by leading organisations at over 14,000 sites around the world to improve their business performance and manage their risks. For further information please visit www.bsigroup.co.uk/entropy



Standards - as the UK's National Standards Body BSI works with businesses, consumers and the Government to make sure that British, European and international standards are useful, relevant and authoritative. To find out more visit: www.shop.bsigroup.com

Come and talk to us and find out how BSI can help your business

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Email: certification.sales@bsigroup.com

www.bsigroup.com/appliances

Further information enquiry

Company Name:

Address (Head Office):

Town:

County:

Postcode:

Country:

Tel:

Fax:

Contact Name:

Job Title:

Email*:

Direct Line:

What type of service are you interested in (please tick)?

- | | | |
|---------------------------------------------|-------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Product testing | <input type="checkbox"/> CE marking | <input type="checkbox"/> Kitemark® certification |
| <input type="checkbox"/> Management systems | <input type="checkbox"/> Training courses | <input type="checkbox"/> Entropy® software |

What type of product do you manufacture (please tick)?

- | | | |
|---------------------------------------------|---------------------------------------------------|---------------------------------------------------------|
| <input type="checkbox"/> Cooking appliances | <input type="checkbox"/> Water heating appliances | <input type="checkbox"/> Space heating air conditioning |
| <input type="checkbox"/> Leisure appliances | <input type="checkbox"/> Other appliances | <input type="checkbox"/> Controls and ancillary items |

*Please only provide your email address if you consent to BSI occasionally sending you emails about their products and services. You may change this consent at any time and we will not pass on your email address to anyone else.

BSI would like to use this information to keep you up to date on our products and services in the future. If you would prefer not to be contacted by telephone please tick

**For more detailed information complete and fax back to +44 (0)1908 814920
email: certification.sales@bsigroup.com or post: BSI, Kitemark Court, Davy Avenue,
Knowlhill, Milton Keynes MK5 8PP**





BSI Group is a global independent business services organisation which enables businesses, governments and other organisations to increase profits and market access, and to enhance reputation with its standards-based solutions and assurance services. From its origins as the world's first National Standards Body, BSI Group draws upon over 100 years' experience to partner with 66,000 organisations in 147 countries from its 50 offices.

Today, through its independence, innovation and integrity, BSI continues to improve the lives of millions by raising standards worldwide. **To learn more about BSI Group, please visit www.bsigroup.com**

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