## 1. Introduction

This certification scheme has been designed to allow product manufacturers to demonstrate the environmental performance of their products in order to contribute to credits given under the Code for Sustainable Homes (CSH) see Appendix 1. This scheme covers the volume of water that can be held within a correctly installed bath.

The functional requirements of conventional baths are covered by BS EN 14516:2006, Baths for domestic purposes. This scheme builds upon the tests and apparatus set out in clause 5.3 Resistance to temperature changes.

The physical functional requirements of whirlpool baths are covered by BS EN 12764:2004+A1:2008, Sanitary appliances: Specification for whirlpool baths. The electrical functional requirements of whirlpool baths are covered by BS EN 60335-2-60, Household and similar electrical appliances- Safety – Part 2-60: Particular requirements for whirlpool baths (IEC 60335-2-60:2002). This scheme builds upon the tests and apparatus set out in clause 5.3 of BS EN 14516:2006 - Resistance to temperature changes.

The product must comply with the current Water Supply (Water Fittings) Regulations.

## 2. Scope

This scheme provides ongoing independent, third party assessment, certification of the volume of water that can be used in the CSH water calculator. The assessment will also ensure that the performance, marking and classification requirements of the appropriate Standards are met and maintained.

By certifying volumes for baths that are less than those generally in current use, there is the opportunity to contribute towards the credits determined under the CSH. Credits for water saving appliances are also being considered in EcoHomes and components of the BRE's Environmental Assessment Methodology (BREEAM).

The scheme covers

- baths

## 3. Testing of Products

In order to achieve certification the product must conform to the appropriate clauses of relevant British Standards, eg BS EN 14516:2006 for conventional baths or BS EN 12764: 2004 +A1:2008 and EN 60335-2-60 for whirlpool baths (Appendix 2 and tables 3-4 set out the additional specific testing requirements).

The product may be tested periodically by WRAS for continued compliance with aspects of the Water Regulations; Appendix 2 table 5 also sets out the audit testing requirements that BRE Global will undertake during factory visits.

All samples supplied for testing must be declared by the manufacturer as being representative of normal production.

## 4. Applications to join the Scheme

To apply for product certification please complete and return application form BF955 'General Application for Certification and Listing of Water Efficient Baths'.

Your application will be reviewed and, if accepted, a proposal will be prepared setting out:

- any testing that is required and details of a laboratory or laboratories that might be able to carry out the test work required
- the additional requirements for approval, e.g. ISO 9001 or Factory Production Control (FPC) assessment and other documentation review (such as installation and maintenance manuals)
- certification scheme fees

All proposals and contracts are subject to our Standard Terms and Conditions as detailed in PN101.

For more information or help with your application contact BRE Global on 01923 664100 or e-mail *enquiries@breglobal.com*.

## 5. Management Systems Certification

In order to ensure water efficient baths meet, and continue to meet, the requirements of this scheme document, applicants are required to maintain full control of their production processes and the quality of the products that they supply through a structured documented management system. *Companies must as a minimum, maintain a current UKAS accredited certificate to ISO 9001:2000.*

If this is not provided by BRE Global, then we will conduct FPC assessment to confirm that the products are manufactured under a documented management system. These assessments concentrate on the product specific aspects of the management system to confirm that the products meet and continue to meet the requirements of the standard or specification. Our generic requirements for FPC are detailed in publication PN111.

The frequency of FPC visits is once a year.

## 6. Certification and Listing

Certificates are awarded to Companies when all assessment activities have been satisfactorily completed, the Assessor has recommended that certification is granted and any corrective and preventative actions are complete. The certification process is shown in Appendix 3. Certificates will include a statement of the determined water volume that can be held in the bath up to the overflow level and the potential affect this will have on the CSH credits. Details of the products will also be listed on www.greenbooklive.com.
Certificates and listing are maintained subject to:

- Satisfactory results from the product audit testing programme set out in table 5 Appendix 2.
- Satisfactory maintenance of FPC and/or ISO 9001:2000 certification.
- Approval by BRE Global of any proposed modifications to the product which may affect performance, production or specification. Requests to assess proposed modifications must be made in writing to BRE Global. The applicant will be advised of the further BRE Global requirements necessary to retain certification.

## 7. Alternative Marking and Cross-listing

BRE certificated water efficient baths may be branded with another company's name and product identification incorporating the BRE Global Mark.

The other named company may be entitled to a cross-listing certificate and a separate entry in the BRE Global Green Book website subject to:

- the prior agreement of the certificate holder; and
- FPC assessment by BRE Global.

Requests for alternative marking are made to BRE Global by the certificate holder.

## 8. Certification Mark

Once a certificate has been issued, the BRE Global Mark can be used as directed in the publication PN103 'Use of the BRE Global Marks' and guidance document GD 036 ‘Selection of Certification Mark(s)’.

## 9. Complaints and Appeals

BRE Global operates procedures for complaints and appeals. Further details are available on request.

## Appendix 1: Indication of the CSH Rating Scale

Internal potable water use is a mandatory element of the CSH and the maximum number of credits available for this section (at the time or writing) is 5. The aim of this section of the CSH is to reduce consumption of potable water in the home.

### Assessment Criteria

Credits are awarded based on the predicted average household water consumption (calculated using the Code Water Calculator – see *Calculation Procedures*) for the Dwellings type in accordance with table 1 below:

**Table 1: Code for Sustainable Homes credit calculator dependent on water consumption in litres per person per day.**

| Water consumption (l/person/day) | Credits | Mandatory Levels |
|---|---|---|
| ≤ 120 | 1 | Levels 1 and 2 |
| ≤ 110 | 2 | |
| ≤ 105 | 3 | Levels 3 and 4 |
| ≤ 90 | 4 | |
| ≤ 80 | 5 | Levels 5 and 6 |

Water consumption is calculated in accordance with the table and technical guidance which can be downloaded for free at:
http://www.planningportal.gov.uk/uploads/code_for_sustainable_homes_techguide.pdf

Table 2 below shows how various bath volumes translate into CSH water consumption values for internal water. The impact on the overall achievement of CSH points for internal water will also depend upon the other water using appliances, but baths make a significant impact on the calculation, especially where no shower is provided.

**Table 2: Volume Calculator for the CSH**

| **Factors** | **Bath-<br>Where there is both a bath and shower<br>0.4 x 0.4 = 0.16** | **Bath-<br>Where there is only a bath available<br>1.0 x 0.4 = 0.4** |
|---|---|---|
| **Water volume (L)** | **L/Person/Day<br>Bath** | **L/Person/Day<br>Bath** |
| 130 | 20.8 | 52 |
| 120 | 19.2 | 48 |
| 110 | 17.6 | 44 |
| 100 | 16 | 40 |
| 90 | 14.4 | 36 |
| 80 | 12.8 | 32 |

## Appendix 2: Assessment and Test Requirements

**Documentation required:**
Current applicable Certificate of Compliance to BS EN 14516:2006 or BS EN 12764: *2004 +A1:2008* and EN 60335-2-60 for whirlpool baths, in English, from a recognised independent UKAS accredited or equivalent test body.

**Composite Samples required:**
Two samples of each item to be certified should be supplied to BRE Global complete with appropriate fixings, accessories and instructions for installation and use. Where possible, one sample will be installed for actual use and its function informally monitored. In the event of any issues arising regarding the product during its period of Certification, reference may be made to the supplied samples. Both samples are non-returnable and the installed sample will become the property of the owner of the building in which it is installed, unless agreed otherwise.

Test apparatus (based upon BS EN 14516:2006)

The test apparatus specified in clause 5.3.1 includes a water flow meter to determine the specified flowrates. In addition to that meter, a volumetric meter is also required by this scheme. However, it is expected that the test body will already have a volumetric meter as part of the apparatus due to BS EN 14516's requirement to discharge specified volumes of water with a 2% accuracy in clause 5.3.2.
For this scheme the volumetric meter should be capable of determining the bath volume to within an accuracy of ± 5.0 litres and resolving to ± 1.0 litre.

The procedure that should be used would ideally be carried out immediately after the Standard procedure, set out in clause 5.3, reproduced below.

**Resistance to temperature changes (clause 5.3 of BS EN 14516;2006)**

**Apparatus**

a) water supply capable of discharging cold and hot water with temperatures, flow rates and volumes;
b) pipe with a nominal diameter of 22 mm;
c) thermometer with an accuracy of 1 % at the measured values;
d) flow meter suitable for measuring a flow rate of (0,32 ± 0,032) l/s.

**Procedure**

- With the waste outlet open, discharge (50 ± 1) l of water through the pipe positioned not more than 125 mm above the overspill level of the bath. The pipe shall also be positioned so that the water impinges on the side of the bathing area nearest to the waste outlet hole, in a position where a supply fitting is likely to discharge. The temperature of water at the outlet of the pipe shall be (90 ± 2) °C and the flow rate into the bath shall be (0,32 ± 0,032) l/s.

- With the waste outlet closed, discharge immediately afterwards (100 ± 2) l of water at a temperature (12 ± 3) °C at the same flow rate through the same pipe in the same position.

- Leave the water in the bath for 10 $_{0}^{+1}$ min then allow it to drain off.

-With the waste outlet closed, discharge water through the pipe positioned not more than 125 mm above the overspill level of the bath. The pipe shall also be positioned so that the water impinges on the side of the bathing area nearest to the waste outlet hole, in a position where a supply fitting is likely to discharge. The water shall fill the bath to a height of 250 mm minimum above the waste outlet level. The temperature of water at the outlet of the pipe shall be (75 ± 2) °C and the flow rate into the bath shall be (0,32 ± 0,032) l/s.

- Leave the water in the bath for 10 $_{0}^{+1}$ min then allow it to drain off.

- With the waste outlet closed, add immediately afterwards the same volume of cold water with a temperature of (12 ± 3) °C, at the same flow rate through the same pipe in the same position.

- Leave the water in the bath for 10 $_{0}^{+1}$ min then allow it to drain off.

- Repeat this procedure 100 times without interruption.

- After the last cycle, apply over the surface of the bath by means of a sponge or paint brush a solution of eosine in water at 100 g/l to which is added 1 cm3/l of liquid detergent. Leave for 5 $_{0}^{+1}$ min, then remove the eosine from the surface by cleaning with a damp cloth.

- Visually check for any adverse change in appearance and for any trace of eosine.

-Record any failure to comply with requirements of 4.3.4 of BS EN 14516;2006.

**Bath volume procedure of SD175**

- With the waste outlet closed and the water volume meter installed, record the meter reading.

- Using the metered supply, fill the bath with water in such a way as not to cause splashing which would not be contained within the bath. For example, the water could be supplied through a pipe positioned not more than 125 mm above the overspill level of the bath. The inlet pipe shall be positioned so that the water discharges, in a position where a supply fitting is likely to discharge. The bath shall be filled at a rate of no more than 20 l/min (0.333 l/s) with warm water (37± 4°C) until 1cm of the overflow.

- For the final part of the filling the flowrate shall be reduced to no more than 10 l/min (0.166 l/s) and the overflow carefully observed.

- As soon as the first discharge from the overflow is seen, or detected, the supply shall be stopped and the water volume meter read.
- The difference between the first and second readings shall be recorded.
- All of this bath volume procedure shall be repeated until three values for the bath volume have been determined.
- The average value, rounded to the nearest litre, will be the designated volume.

**Procedural warning:**

Although the risk should be no more than when running a bath, as these tests will be conducted at temperatures at which legionella may be active, operatives should be isolated from the apparatus when aerosols may be produced unless additional anti-legionella precautions have been taken. Additional precautions could include treatment by temperature, chemicals, ionisation, ultra or micofiltration, UV light, electrolysis or electrical pulsing.

**Table 3: Initial test and assessment requirements**

| Standard applicable | Summary requirements |
|---|---|
| BS EN 14516:2006 | Baths for domestic purposes |
| BS EN 14516:2006 Clauses | All |
| BS EN 12764:2004 + A1:2008 | Sanitary appliances- Specification for whirlpool baths |
| BS EN 12764:2004 + A1:2008Clauses | All |
| BS EN 60335-2-60: 2003 | Household and similar electrical appliances – Safety- part 2-60: Particular requirements for whirlpool baths (IEC 60335-2-60:2002) |
| BS EN 60335-2-60: 2003 Clauses | All |

**Table 4: Standard clauses that have been used as a basis for the requirements in this Scheme Document – bath volume test**

| Standard Applicable | Clause Number | Modifications | Reference within this Scheme Document |
|---|---|---|---|
| BS EN 14516:2006 Baths for domestic purposes | 5.3 | These clauses are used verbatim | Appendix 2 |
| Bath volume procedure SD175 | | This clause has been developed specifically for this Scheme. It utilises the apparatus used in Section 5.3 of BS EN 14516:2006 and uses it to determine the volume of the bath. | Appendix 2 |

**Note:** Testing will be performed by a UKAS or equivalent accredited laboratory acceptable to and/or commissioned by BRE Global.

**Table 5: Audit test and product review requirements**

FPC assessment to include at least:

| Requirement |
|---|
| • Review of drawing status against the BRE Global Product Specification Document Register<br>• Examination against drawings<br>• Marking<br>• Witness test at manufacturer's premises to validate performance. |

**Notes:**

1. Audit testing and product review will be conducted annually at the manufacturer's premises or a testing laboratory deemed suitable by BRE Global on one sample of each product identified for audit.
2. Products will be considered for audit test on an annual basis and all products will be reviewed over a three-year period.

**Appendix 3 - The certification process**