

Baths



Bathroom
Manufacturers
Association

Bathroom Academy

Generic Industry Guide



Generic Industry Guides

Welcome to the Baths Generic Industry Guide one in a series of Industry Guides which are available free from the Bathroom Academy Web Site.

We hope you find the Guides informative and useful and prove to be the basis of your continuing professional development within the Bathroom Industry.

Each Guide has been written by experts and contains the same five elements:

- Right choice of product for end user needs
- Generic industry design
- Generic industry installation
- Frequently asked questions
- Generic industry terminology



The Baths Generic Guide looks at the vast range of baths that are available and offers essential information which will allow the merchant, retailer and installer to sell and install the right bath for the end users needs.

Whilst the customer's major considerations will be cost, image and performance, consideration of building infrastructure, total water systems

together with location will ensure that the most suitable bath is installed giving maximum performance.

Guides in the series include:

- **Baths**
- **Bathroom Furniture**
- **Brassware**
- **Domestic Water Systems**
- **Sanitaryware & Fittings**
- **Shower Controls**
- **Shower Enclosures**
- **Shower Trays**

New Guides on the way include:

- **Health & Safety**
- **Bathroom Countertops**
- **Boilers**
- **CAD for the Bathroom**
- **Inclusive Design**
- **Water Efficiency**

All will be downloadable free of charge from www.bathroom-academy.co.uk





Introduction		3
Section 1		
Acrylic Baths		4
Designs and Types	- Standard Bath	4
	- Corner Bath	4
	- Off-set Corner Bath	4
	- Double End Bath	5
	- Shower Bath	5
	- Tapered Bath	5
	- Roll Top (Free Standing) Baths	5
Construction	- Material	6
	- Cradle	6
	- Baseboard	6
	- Adjustable Feet	6
	- Wall Fixings	6
Section 2		
Porcelain Enamel Steel Baths		7
Designs and Types	- Standard Bath	7
Construction	- Materials	7
	- Support	7
	- Feet	7
Section 3		
Cast Iron Baths		8
Designs and Types	- Standard Bath	8
	- Free Standing Bath	8
Construction		8
Section 4		
Whirlpool Baths		9
Section 5		
Installation of Baths	- Baseboard	10
Acrylic	- Cradle	10
	- Fitting	10
	- Fixing	10
	- Sealing	10
	- Panels	10
Steel Baths		11
Cast Iron Baths		11
Whirlpool Baths	- Fixing	11
	- Electrical Requirements	11
	- Safety	12
Section 6		
Frequently Asked Questions		13
Section 7		
Industry Terminology		15
Section 8		
References		16

Introduction

There are three main types of materials used in the construction and production of baths:

- Cast Acrylic
- Porcelain Enamel steel baths
- Enamelled Cast Iron

Each has specific characteristics which influence their design and application. For example Cast Acrylic is easily moulded into a wide variety of shapes and styles. Steel and Cast Iron baths can be more robust but because of the nature of the material they tend to be of more traditional design.



Section 1

Cast Acrylic Baths

Cast Acrylic Baths with Glass Reinforced Plastic

Acrylic baths have been manufactured for over fifty years and have the following characteristics:

- Warm to the touch
- Retain water temperature longer than baths made from other materials
- Lightweight
- Easily transported
- Easily located and installed
- Available in a wide range of colours
- Hardwearing
- Excellent resistance to water staining
- A comprehensive range of tap and grip scope for wide range of designs and size
- Easy to clean.

Acrylic bath Designs and Types

Standard Bath

Rectangular in shape, with numerous size options. Rectangular baths can be supplied with front and end panels. These panels are usually made from plastics and are lightweight and easy to cut to fit into various installation situations.



Corner Baths

These baths fit into a corner of the bathroom usually with each side being of equal lengths. Front panels are usually made from plastics and come in a variety of designs, which like the standard bath are easily cut and trimmed to fit specific installations/conditions.



Off-set Corner Baths

These baths fit into a corner of the bathroom but have sides of unequal length. This optimises bathing space whilst occupying less of the available space. Off-set corner baths fit into left or right hand corners of the bathroom as required. They are available in a range of styles and colours.



Section 1

Acrylic Baths

Double End Baths

These baths are usually rectangular in shape with a facility for fitting the taps on one of the sides rather than at either end. This allows two people to bathe together or for a number of children to be bathed at the same time.



Shower Baths

Shower baths provide conventional bathing with the additional facility of an over the bath shower. The showering end of the bath generally displays a 'bulge' or widening to maximise space for showering. These baths are available in left or right handed options to fit into most bathroom layouts.



Tapered Baths

Tapering baths are designed to be used in bathrooms where space is at a premium. These baths are wider at one end. Often a shower is fitted at the wider end. Available in a range of colours and sizes. These baths are supplied with matching side panels.

Free Standing Baths

These baths are designed to be free standing on feet, not fitted against a wall. Roll top baths are often considered to be the 'traditional' look although they are available in contemporary designs. They are heavily reinforced with glass reinforced plastic (GRP) for strength and therefore do not require an external cradle for additional support.



Section 1

Acrylic Baths

Construction

Material

Acrylic baths are moulded from a single acrylic sheet and reinforced for strength and rigidity. Generally reinforcement is provided by spraying glass reinforced plastic (GRP) to the underside.

The baths are manufactured from a range of acrylic sheets having different thicknesses typically 4mm, 5mm or 8mm. As a rule, the greater the thickness, the less GRP reinforcement is needed on the underside.

Cradle

A steel or wooden frame supports and strengthens an acrylic bath from the underside. The cradle has adjustable feet for levelling on uneven floors. The cradle forms part of the bath package. It is usually packed with the bath and requires assembling prior to installation. However, some acrylic baths come with cradles ready assembled, speeding up installation.



Baseboard

The baseboard comes fixed onto the underside of the bath. The baseboard itself is usually made of chip board but other materials can be used. The purpose of the baseboard is to add strength and rigidity to the base of the bath. In some bath designs the baseboard is fully encapsulated and is underneath the bath, covered with glass reinforced plastic.

Adjustable Fixings

Acrylic baths are supplied with adjustable feet which serve two functions. They allow the bath to be levelled during installation and they enable the height to be adjusted within a limited range.

Wall Fixings

When wall fixings are supplied by the manufacturer it is important that they are used. Their purpose is to prevent movement or 'play' at the point where the bath meets the wall. Any movement of the bath relative to the wall can lead to leakage, particularly if a shower is used over the bath.

Section 2

Porcelain Enamel Steel Baths

Fundamentally, porcelain enamel is a form of glass bonded to metal at high temperature. It is the highest quality, most durable and sanitary finish available for metallic surfaces. The advantages are:

- Smooth and evenly finished
- Resistant to chipping and abrasives
- Easy to install, generally having no cradle
- Good rigidity
- Resistant to acids and alkalis
- Capable of supporting heavy weights
- Long lasting (flame proof, fade proof, corrosion resistant)

Design and Types

Standard Baths

These baths are rectangular in shape and are available in a wide range of sizes. Panels are usually supplied in plastics to finish the front and ends.



Construction

Materials

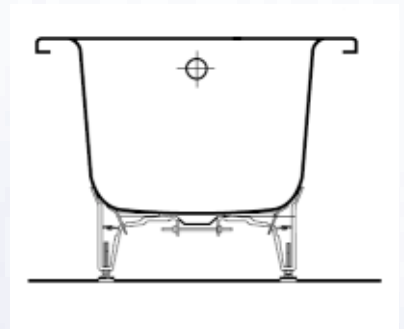
Steel baths are pressed from a steel sheet to form their shape. From pressing, the bath is taken through a cleansing process to ensure the perfectly clean surface needed to accept the enamel coating. The vitreous porcelain enamel coat is applied by spraying. Baths are then fired at a very high temperature to make a strong chemical bond between the steel and the enamel.

Support

Porcelain enamel steel baths have inherent strength and generally do not need a supporting cradle or a baseboard.

Feet

Porcelain enamel steel baths are supplied with adjustable feet. They allow levelling on uneven floors and some adjustment of the installation height.



Section 3

Cast Iron Baths

Historically this is an older form of bath and is now less common in the UK. Cast Iron Baths have similar properties to steel baths:

- Immensely strong
- Very rigid
- Coated with porcelain enamel
- Associated with traditional bathrooms
- Durable with a long life
- Easy to clean

Designs and Types

Standard Baths

These baths are rectangular in shape and are available in a range of sizes.



Free Standing Baths

These baths are generally free standing with decorative feet, sometimes called claw feet.



Construction

Cast iron baths as their name suggests are cast in a mould from iron. After forming they are subject to a cleaning process to ensure that they bond with the porcelain enamel sprayed on to their surface. Baths then undergo treatment at high temperatures in a kiln to bond the coating to the surface.

Cast iron baths do not require cradles or baseboards because of their inherent strength.



Section 4

Whirlpool Baths

'Whirlpool' is a general term for the two different methods of activating water in a bath;

- Spa Bath
- Whirlpool Bath

Whirlpool Bath

Jets are located around the sides of the bath. The water from the bath is drawn by a pump and returned through the jets at high pressure. The stop/start, mixture of air and water and flow rate is adjusted by a control panel located on the rim or remotely.



Manual controls mounted on the bath



Remote touch pad control



Whirlpool Jet

Spa Bath

A pump forces air only upwards through the bath water via jets located in the bath, again the flow rate is governed by a control panel.



Spa Jet

Whirlpool/Spa baths are available in numerous shapes and styles and are mostly manufactured in Acrylic. As with 'standard' baths they are supported by a cradle which also acts as a convenient location for the pump and associated pipework.



Section 5

Installation - all Types of Baths

Essentially the methods of installing baths are the same for the different types of materials used in their manufacture but there are variations which must be considered.

Acrylic Bath Installation

Before fixing a new acrylic bath or its panels, remove the protective covering and check thoroughly that all the components required have been supplied by the manufacturer.

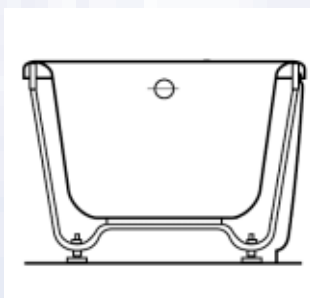
NB: Manufacturers instructions will vary for different models and between different manufacturers, so always read the specific instructions carefully before commencing work.

Baseboard

To add stiffness, most moulded plastic baths have a baseboard bonded separately to the underside or incorporated into a moulding in the base of the bath and often with an additional wooden frame bonded beneath the rim.

Cradle

A cradle kit is usually supplied which will need to be fitted to the underside of the bath. The easiest way to do this is to invert the bath, but put a



cloth sheet on the floor first so as not to scratch the surface of the bath. Following the manufacturer's instructions, fit the cradle legs to the frame and baseboard and also fit the centre support leg, if supplied .

Attach the wall-fixing brackets (if supplied) to the underside of the rim-support frame. Fit any hand grip(s) to the rim if supplied at this point so you have easy access to the securing nuts and washers.

Fitting

Now turn the bath back onto its feet. Initially place the bath in the required position to adjust the bath to the correct height by using the adjustable feet. When you are satisfied that the overall height is correct ensure that the bath is level by using a spirit level across the width and the length of the bath. "Fine Tune" to the correct level and when satisfied tighten the locking nuts on all of the feet.

Pull the bath away from the wall and install the other components.

Place the hot and cold taps or a mixer- tap set through the pre-cut holes on the bath rim, ensuring the rubber/plastic washers are located under the body of the taps against the bath. Attach and tighten the locking nuts from the underside.

Caution: Do not overtighten these nuts as it may cause cracking. Attach flexible connecting pipes to the tap tails - this allows for any misalignment when you connect up with the supply pipes.

Fit the overflow outlet and waste outlet into the bath, again ensuring all the necessary washers are located in their correct position. Connect them to the combined waste/ overflow and trap unit. When all the components have been correctly fitted place the bath back in its desired position and secure to the wall with the brackets and the feet to the floor. Connect the water supply and wastepipes.

Fixing

Before completing the installation it is recommended that the bath is fully filled with warm water to allow it to 'settle' on the frame and fittings, as acrylic material tends to flex slightly.

Sealing

It is recommended that tiling is completed after the bath has been fixed to the wall so that the tiles overlap onto the bath rim which will produce a joint which can be made watertight.

Seal the joint between the wall and bath using a proprietary waterproof flexible silicone sealant while the bath is still full of water.



Panels

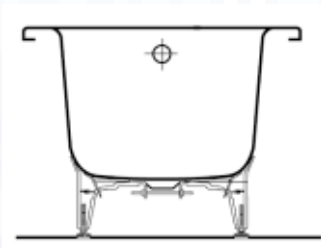
'Test fit' the bath panel(s) to the bath to see how much (if any) they will need trimming to ensure a neat and tidy finish. Panels are commonly supplied slightly larger than required so that they can be trimmed to individual installation requirements. Always use a fine toothed saw being careful not to scratch the surface of the panel. Individual manufacturers panels are fitted in different ways so read their specific installation instructions carefully.

Section 5 Installation - all Types of Baths

Steel Bath Installation

Installation of a Steel Bath follows the same principles as for Acrylic baths but there are a few differences.

Normally, because a Steel bath is inherently more rigid than an Acrylic bath, it is supported by a cradle fixed to the base of the bath, rather than one which supports the whole of the bath.



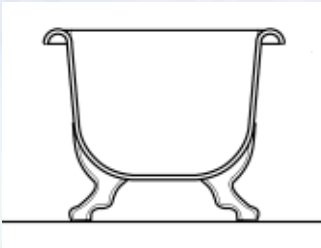
Cradle and adjustable feet attached to the base of the bath.

All the same fixing instructions apply except it is not necessary to fill the bath prior to sealing as the steel bath will not deform when filled. Bear in mind that a steel bath will probably be heavier than its' Acrylic equivalent.



Cast Iron Bath Installation

Installation of a Cast Iron bath again will follow the same principles as for Steel baths but, it is supported by the feet which are an integral part of the casting or attached separately. There is no additional cradle for support as a Cast Iron bath is completely rigid and self supporting.



Feet are integral or attached separately to the bath.

Commonly because there is no cradle



which needs to be hidden Cast Iron baths are of 'free standing' design in a luxury style bathrooms i.e. they are not attached to any walls.

Whirlpool Bath Installation

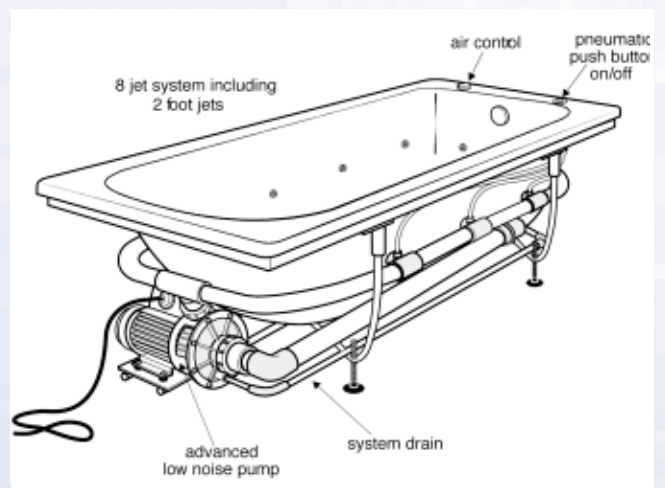
Because of their more complex nature whirlpool baths must be installed by professional qualified plumbers and electricians.

Typically Whirlpool baths are manufactured from Acrylic so the same basic principles of installation apply as to 'standard' Acrylic baths.

Fixing

Do not lift or move the bath with any part of the pipework. Always allow access to service the whirlpool or spa after installation.

Install the bath in such a manner that will allow for its removal with out the necessity to remove tiles.



Check that the pump unions are hand tight only and nothing has been moved in transit. Fit stop valves in to the water supply to allow the water to be turned off when necessary. Inspect bath for damage before installation.

Never run the whirlpools system without water in the bath as this can damage the pump.

Electrical Requirements

The installation **MUST** be carried out by a qualified electrician.

1. Mains supply via a 30 MAmp, 30 Msec RCD.
2. Use a 13Amp fused spur from the ring main.
3. Use 2.5 Twin and earth cable.

RCD (Residual Current Device)

1. The RCD must not be fitted under the bath.
2. The RCD must not be fitted with in reach of the bath.
3. The RCD must be



Section 5

Installation - all Types of Baths

positioned in an accessible position to allow for testing and can be used to isolate the bath.

The bath and whirlpool pump must be correctly earthed.

Safety Issues

Safety is of paramount importance in the installation and use of Whirlpool Baths as the combination of water and electricity is potentially a major hazard. Professional installation is a major priority to ensure highest safety standards are adhered to. Some baths are fitted with a safety cut off unit in the event of the pump inlet becoming covered or with a safety suction cover. All whirlpool system should comply with EN60 335 Pt 2 safety standard.

Additional Information

Pregnant women should not use a Whirlpool bath. People with a medical condition should consult their doctor before taking a whirlpool bath or spa bath. Never leave children, the very elderly or the infirm unattended.



Section 6

Frequently Asked Questions

Is the quality of Acrylic baths as good as others?

Yes. They all should meet BS 4305: Part 1/EN198 so their quality is guaranteed, and they are less costly to produce because of lower raw material cost and the manufacturing process.

What is the best way to clean an acrylic bath?

A soft cloth and soapy water is all that is needed to get a good finish. Rinse with clean water and wipe dry.

Can I choose my bath from one supplier and the wash basin and toilet from other sources - will the colours match?

This is not recommended but it is possible to obtain bathroom products from more than one source.

I like to soak in the bath, which bath keeps the water temperature warm for longest?

Acrylic baths have good insulation properties and keep the water warmer for longer.

Which type of bath gives more choice of style?

Acrylic baths have good design flexibility and are produced in the widest range of shapes and sizes.

My bathroom has limited space, what are the options for fitting a bath?

Several manufacturers produce baths with the smaller bathroom in mind. Consider a shower bath.

Are colours available in porcelain enamel steel?

Yes, the range is not as wide as the range for acrylic baths because of the colour matching process.

Will my local domestic water supply stain my porcelain enamel steel bath?

Whilst porcelain enamel steel and acrylic baths are generally excellent in their ability to withstand water soluble materials, cast iron baths can be affected over time. Cleaning after use will help reduce any problems.

I want to change the position of my taps when I install a new bath, is that possible?

Yes, with the wide range of designs available taps can be located in various positions to suit any bathroom.

I wish to install a bath with taps mounted on the wall, are baths available without tap holes?

Yes, most manufacturers have baths in their range with no pre-cut tap holes.

How do I make sure that I have a water tight seal between the bath and the wall when it is installed?

Follow the instructions from the manufacturer. Importantly, use the wall brackets if provided to fix the bath to the wall. A silicone sealant can be used to make a neat seal. A good tip is to fill the bath with water before applying the sealant.

Is it better to fit the bath panels before or after the bathroom flooring is laid?

Generally speaking the flooring should run under the edge of the bath. The panel when fitted on top of the flooring gives a neat finish.

Do baths come with a guarantee?

It varies between different manufacturers, some offer a 25 year guarantee.

Do you need a special water supply to have a Whirlpool bath?

No, Whirlpool baths utilise standard hot and cold supplies found in all households.

Are Whirlpool baths expensive to run?

Not really, because they utilise the heat in the water more efficiently, therefore there is less wastage of energy.

Are Whirlpool baths noisy?

No, if installed correctly they should work quietly and efficiently.

Section 6

Frequently Asked Questions

Do I need a big bathroom for a Whirlpool bath?

No, they are available in a full range of sizes, all the plumbing and the pump is usually hidden beneath the bath or within an airing cupboard so they don't take up more space than a standard bath.

Do Whirlpool baths need specialists fitters?

Yes. They are best installed by professional plumbers / electricians.



Section 7

Industry Terminology

Adjustable Feet

Devices by which baths are supported above the floor, incorporating a mechanical adjustment facility which accommodates unevenness in the floor and usually provides adjustment of the rim height within a limited range.

Anti-Entrapment device

When the water suction inlet is covered the system cuts out.

Cast Iron

Metal, formed by traditional casting technique. Very strong and rigid. Surface is coated with porcelain enamel to provide attractive, easy clean finish.

Combination Systems

Whirlpool and Spa systems combined into one bath.

Conventional Baseboard

Usually made of chipboard. Bonded to the bottom of a bath to provide support and rigidity.

Corner Bath

Bath designed to fit into the corner of a bathroom usually with sides of equal length, with the bathing area positioned diagonally across the corner.

Cradle

Metal support arrangement for baths which usually accommodate feet for supporting a bath above the floor.

Double End Bath

Bath designed for use by two people, usually with provision for taps to be fixed along one of the sides.

Encapsulated Baseboard

Usually made of chipboard bonded to the bottom of a bath to provide support and rigidity but also completely 'sealed in' by the reinforcing material.

Glass Reinforced Plastic (GRP)

Reinforcing material comprising strands of glass fibre and high quality resin (sometimes known as Glass Reinforced Polyester).

Manual Controls

Buttons/knobs operated by hand to control the functions of a whirlpool bath e.g. on/off.

Off-set Corner Bath

Bath designed to fit into the corner of a bathroom with one side longer than the other, with the bathing area positioned parallel to the longer side.

Panels

Covers usually made from plastics, to conceal the underside of a bath and its connecting pipe-work.

Whirlpool Pipe-work

Either flexible or rigid, for conveying air/water to the jets in the bathing area.

Porcelain Enamel

A glazed finish produced by the application of a powdered inorganic glass either dry or suspended in water, to cast iron parts, subsequently fused by application of high temperature.

Pump Immobiliser

A device to prevent the whirlpool pump in a whirlpool bath from running without water (which will damage the pump).

RCD (residual Circuit Device)

The professional installation of which instantly cuts off the power supply if water has contact with the electrical system. This must be fitted by law and is provided with the system by some suppliers.

Roll Top Bath

Traditional in appearance with rounded profile to the top of the rim.

Self-draining pipe work system (Whirlpool)

When not in use the system leaves almost no residual water in the pipework. There are degrees of self-draining.

Shower Bath

Bath designed to also be used with a shower, often provided with increased space and 'profiling' in the base for increased stability in the area intended for showering.

Spa Jet

The device in the bottom of the bath where air is forced into the bath.

Steel Bath

Bath formed from pressed sheet steel with a surface coated with vitreous enamel.

Tapered Baths

Baths designed to optimise the use of space in a bathroom, usually narrower at the foot end.

Touch Pad Control

Electronic control which engages the functions of the system i.e. intensity of bubbles, by pressing the Keypads.

Whirlpool Jet

Device for allowing air/water to enter the bathing area of a whirlpool bath.



Section 8

References

BS5412:1996

Specification for low-resistance single taps and combination tap assemblies (nominal size $\frac{1}{2}$ and $\frac{3}{4}$) suitable for operation at PN 10 max, and a minimum flow pressure of 0.01 MPa (0.1bar).

The standard specifies the dimensional, water tightness, pressure resistance, hydraulic, mechanical strength and endurance characteristics with which size $\frac{1}{2}$ and $\frac{3}{4}$ single taps and combination taps shall comply.

BS1010

Specification for draw-off taps and stopvalves for water services (screw-down pattern).

EN 200

General specification for single taps and mixer taps (nominal size $\frac{1}{2}$) PN10. Minimum flow pressure of 0.05MPa (0.5 bar).

Water (Water Fittings) Regulations 1999

The Water Fittings Regulations (or Byelaws 2000 in Scotland) are national requirements for the design, installation and maintenance of plumbing systems, water fittings and water-using appliances. Their purpose is to prevent misuse, waste, undue consumption or erroneous measurement of water and to prevent contamination of drinking water.

<http://www.wras.co.uk>

BS 4305: Part 1 – EN 198: 1987

Specification for finished baths. General requirements, functional and physical characteristics to give satisfactory performance, and tests. National appendices give advice on labeling and information to be supplied by the purchaser.

BS 1390: 1990

Specification for baths made from vitreous enamelled sheet steel. Materials, dimensions, designs and construction, functional requirements, testing, information to be supplied by purchaser and by supplier for two grades of steel and two types of support.

BS 1189: 1986

Specification for Baths made from porcelain enamelled cast iron. Materials, design, construction, testing, information to be supplied by purchaser.

BS EN 60335 - 2 - 60 : 1998

Whirlpool baths

For baths for indoor use, including equipment for circulating air or water to baths. To be read in conjunction with BS EN 60335-1: 1995 Replaces BS EN 60335- 2- 60: 1991 which remains current.

The Bathroom Manufacturers Association (BMA) is the trade association that represents the major manufacturers of bathroom products, ranging from sanitaryware, baths, taps, showers, enclosures, accessories and furniture.

Members of the BMA offer products with an outstanding combination of quality, style, design, colour and availability.

Contact details for plumbing organisations.



Scottish and Northern Ireland Plumbing Employers

Federation (SNIPF) is the trade association representing businesses involved in the installation and maintenance of plumbing and heating systems in Northern Ireland and Scotland. For a list of members telephone 0131 225 2255, or visit the website www.snipf.org



The Association of Plumbing & Heating Contractors (APHC) is the leading Trade Association for the plumbing & heating industry in England & Wales. For a list of members telephone 02476 470626 or visit the web site www.aphc.co.uk



The Institute of Plumbing and

Heating Engineering (IPHE) is the professional body for the UK plumbing industry. For a list of members telephone 01708 472791, or visit the web site www.iphe.org.uk