

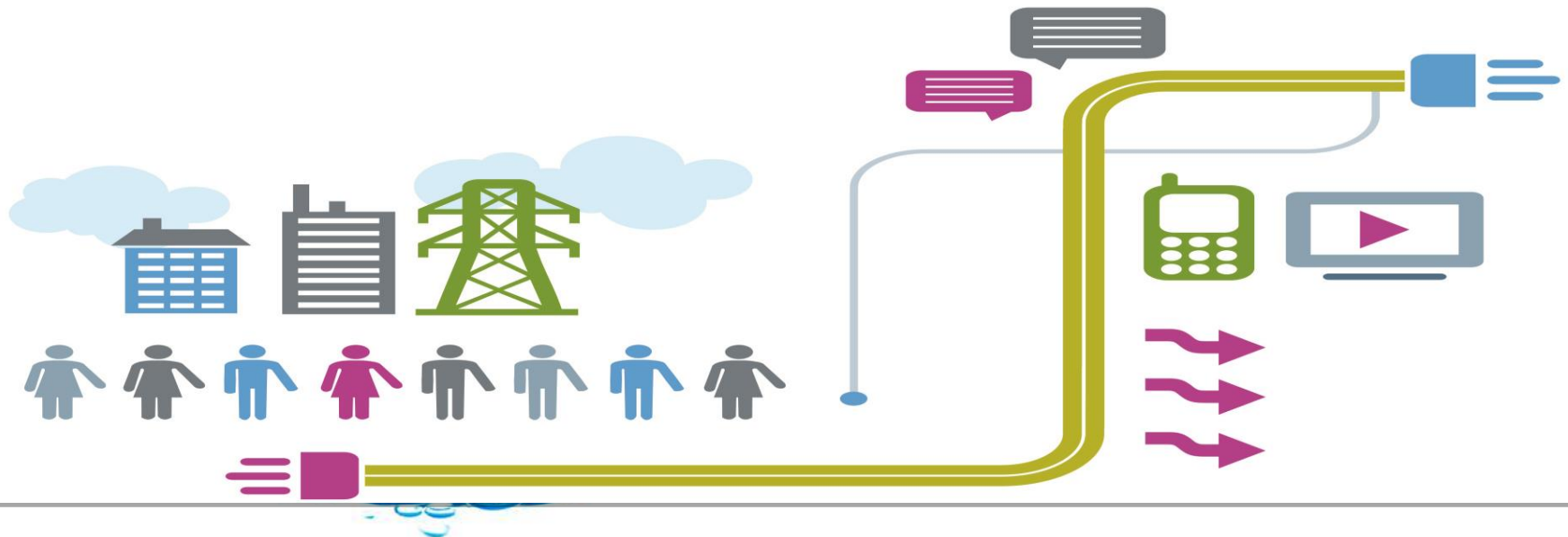


UK's leading independent water treatment
organisation.



BEAMA WATER TREATMENT

- COMFORT, CONVENIENCE AND COST – WATER SOFTENER OPPORTUNITIES FACT AND FICTION
- KEVIN JOHNSON, MONARCH WATER & CHAIR OF BEAMA WATER SOFTENERS GROUP





Has 2 divisions covering water treatment.

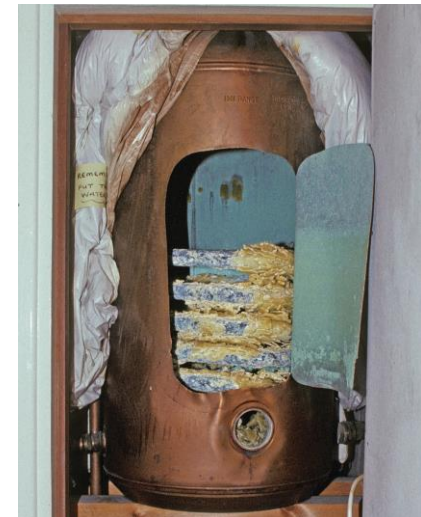
Today we are talking about protecting the domestic secondary side from hard water scale using ion exchange water softeners.

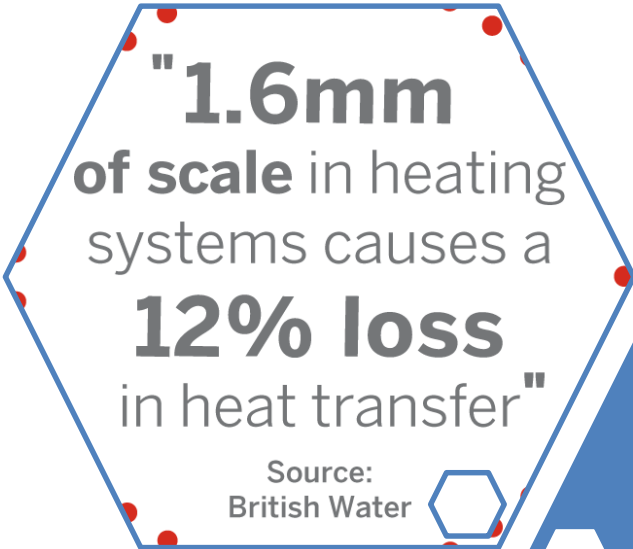


1. Opportunities for the supply chain – 999!
2. Addressing misconceptions
3. Why would a householder want soft water?
4. Main benefits of a softener
5. Where to go for further guidance
6. Demonstration



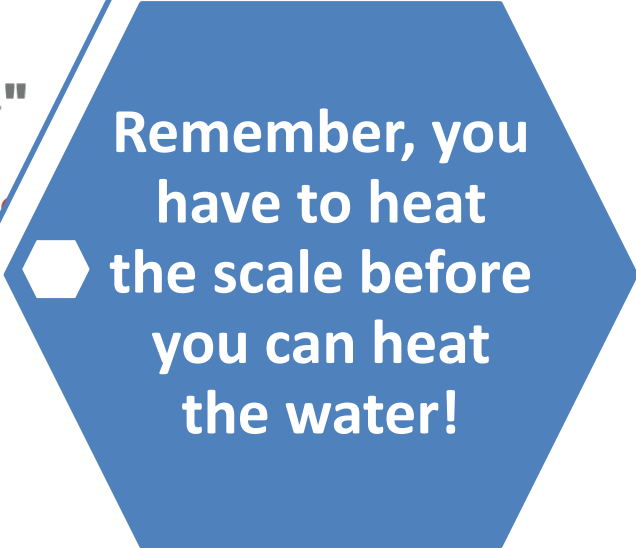
- Reduce daily frustrations for the 60% of UK homes that suffer from hard water
- Remove existing scale from your system to allow it to work at its highest efficiency
- Cut household bills i.e. cleaning products, by over 50%



A white hexagon with a blue border and red dots at each vertex and mid-point.

**"1.6mm
of scale** in heating
systems causes a
12% loss
in heat transfer"

Source:
British Water

A solid blue hexagon.

**Remember, you
have to heat
the scale before
you can heat
the water!**

OPPORTUNITIES FOR THE SUPPLY CHAIN

Remember 999...

- Easy to fit
- Drinkable up to 425ppm
- Good payback time
- Long life span
- Wide variety of products
- Any hard water home can have a softener

MISCONCEPTIONS - How a water softener works...

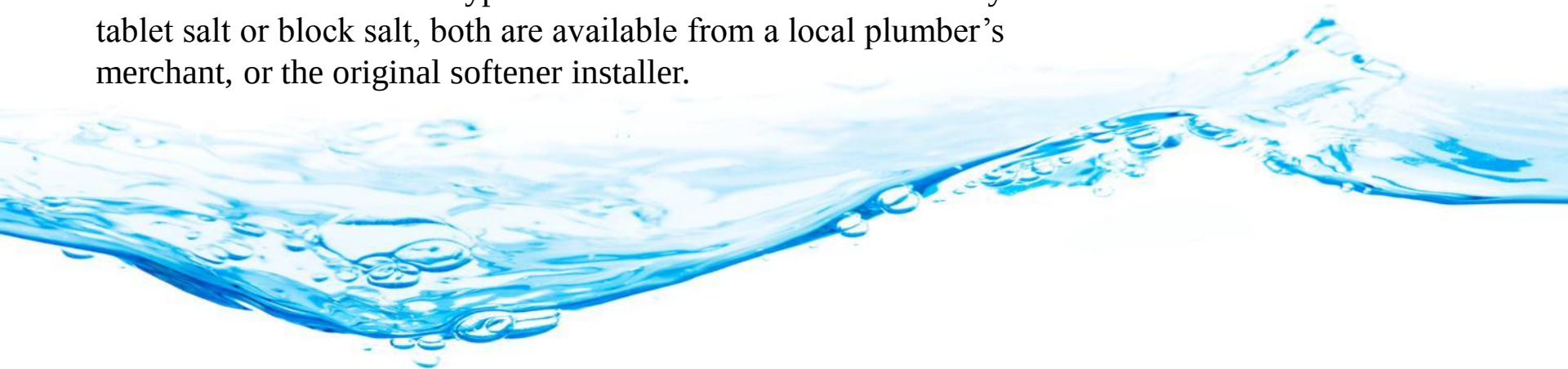
A water softener works by passing the incoming hard water through a sealed container called a resin vessel, which contains literally thousands of small ion exchange resin beads.

These beads attract and retain any hardness in the water i.e. scale and scum, that causes so much damage to your system. When these beads become saturated with hardness, they need cleaning and regenerating for continued use. This is done by rinsing them with a weak solution of brine (salt and water).

The brine together with the previously collected hardness is then automatically flushed down the drain. This process takes place automatically as determined by the softener, with all the homeowner having to do is ensure the softener is kept full of salt. The softener model will determine the type of salt to be used. This is normally either tablet salt or block salt, both are available from a local plumber's merchant, or the original softener installer.



© Monarch Water

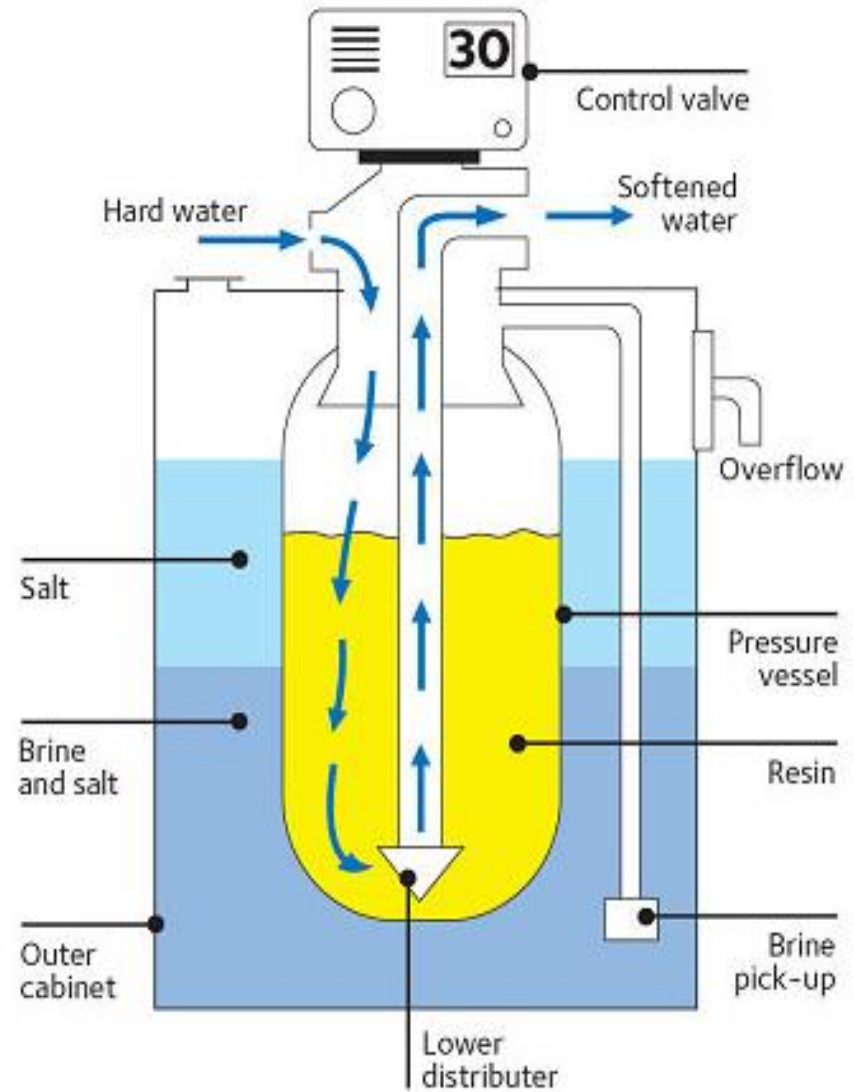


In conclusion therefore, salt does not soften the water.

The resin cleans/softens the water and when required the salt cleans the resin.

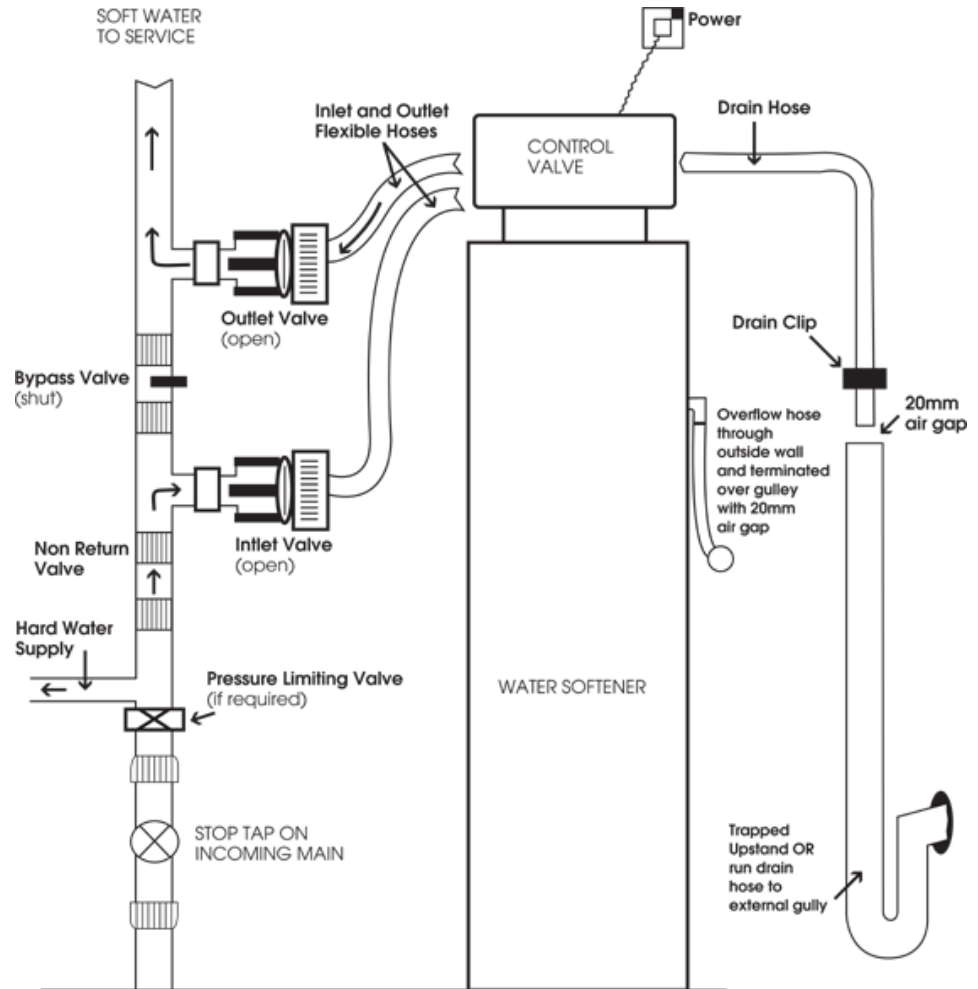
During the cleaning of the resin, the previously collected scale and scum is discharged automatically down the drain together with the salt.

At no time does the salt enter the water supply.



Installation

The diagram shows an average domestic installation that would take approx. 3-4 hrs.



The effects of hard water...



This scaled up fitting was only 3 years old.
A water softener would remove this scale!

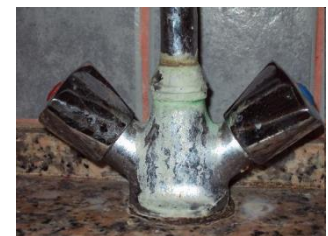


Visible signs...

Scale, scum and tidemarks around baths, basins and taps etc.

Evaporation stains left by the minerals in hard water.

What you see in your kettle is an excellent guide to what is happening in other parts of your water system.



This?



Or this!

HARD AND SOFT WATER

Hard water is water that contains dissolved chalk, lime and other minerals.

Rainwater is naturally soft but, as it percolates through the ground, any chalk and limestone it passes through becomes dissolved to create hard water.

Soft water (natural) is rain that falls onto rock and cannot enter the ground.

Examples of this are areas such as Wales, Scotland and The Lake District etc. As a guide only 40% of the country has natural soft water, leaving the remaining 60% to suffer with hard water.



Remember 999...



All around your home ...

Hard water has a detrimental effect on anything in which it comes into contact.

There are numerous examples of this that can be seen every day, as well as those you don't see inside your system.

To name but a few,

Misted glasses, streaky plates, and spotted and stained utensils.

Blocked showers and shower heads

Leaking ball-valves

Scaled up cylinders and immersions

Dull finish to the bath, basin etc.

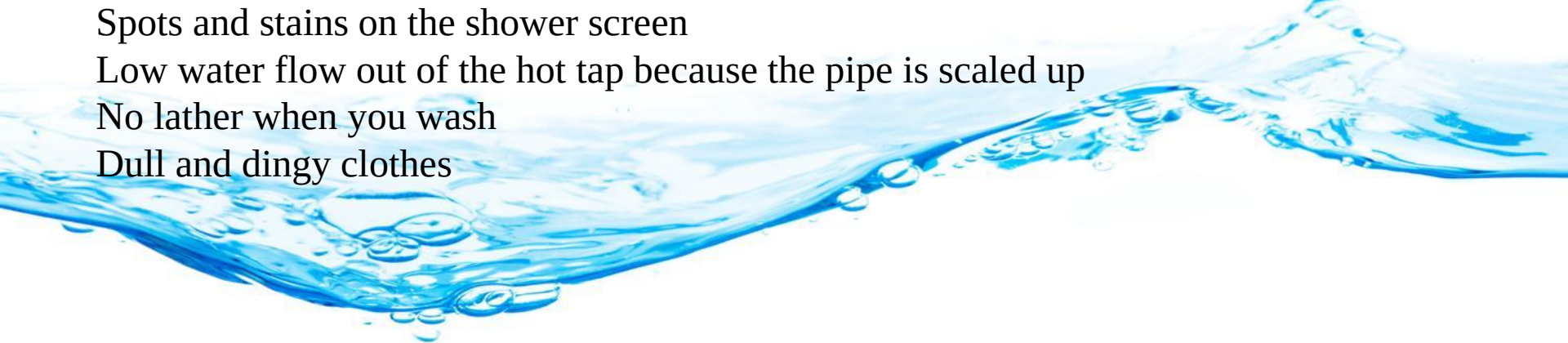
Tide lines around your bath and basins

Spots and stains on the shower screen

Low water flow out of the hot tap because the pipe is scaled up

No lather when you wash

Dull and dingy clothes



The Main Benefits of a softener



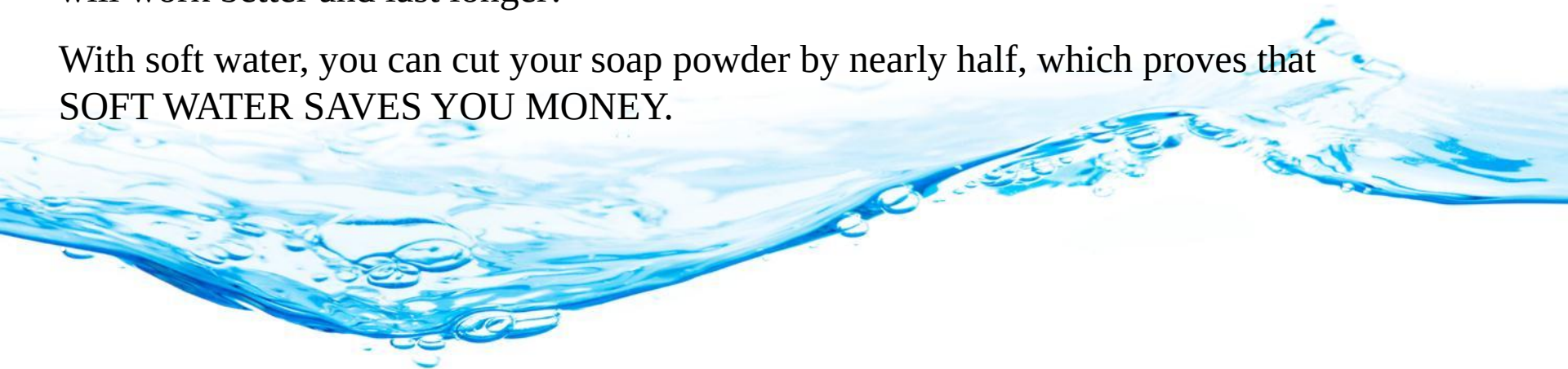
The gentle touch of soft water ...

There is no clearer benefit than that shown by a dishwasher with soft water. Shiny dishes and plates, clean clear glasses and cutlery you are proud of, all come from soft water. If it is doing this to your dishwasher, just imagine what it is doing to the rest of your system, and do not forget, that with your dishwasher using soft water, you do not need to put anymore salt in it.

Clean, bright clothes, gentle on your skin, every time with soft water. This also applies if you prefer to wash by hand, Gone are dry cracked hands you get with hard water.

Soft water gives you cleaner, brighter, fresher fabrics, simply because your washing powder can concentrate on washing your clothes, not fighting the effects of hard water every time. Remember that with soft water flowing through your washing machine and de-scaling it, it will work better and last longer!

With soft water, you can cut your soap powder by nearly half, which proves that **SOFT WATER SAVES YOU MONEY.**



The benefits keep coming ...

FOR THE FAMILY ...

Smooth complexion, bubbles in the bath, lower household bills, soft towels .
A smooth wet shave and with the appliances running like never before, they haven't got to worry about the next repair bill.

AND THE CHILDREN TOO ...

Lovely fresh soft clothes ensure their delicate skin is being cared for, all day every day, even when they are tucked up in bed in those crisp clean sheets



As soon as a water softener is installed, it will ...

- Start to remove existing scale
- Immediately prevent more scale build up
- Reduce your fuel bills
- Start to save you money – a family of four can save over £283 every year!
- Help keep sinks, taps, baths, shower screens, tiles etc. clean – no more scale and scum to remove!

**Give you a quality of life you wish you had
invested in years ago!**

And you can even take it with you if you move!

Also ...

- Saves time. With no scum marks or evaporation stains to clean away, housework is reduced
- Can save up to 50% of washing powder, soaps, shampoos and conditioners etc.
- Will protect and increase the life of your system by removing existing scale
- Saves money on hot water bills with no scale to heat first! Just 1/16" of scale will cause a loss of efficiency of 12%
- Rinses away without staining
- Makes laundry brighter and fresher
- Has a clean silky feeling, and makes bathing a luxury without the need for expensive bath oils – Nice on your skin too!



Soft water saves you money...

Most people who have a water softener would simply say that to wash and bathe in scum free water is enough. However, a water softener fulfils many functions and gives substantial savings. The long term benefits are the increased life of appliances, protection of taps, bathroom suites, your boiler etc. not to forget the daily savings on household bills by reducing soap consumption to name just one by up to 50% (Battelle Study)

WEEKLY CONSUMABLES Average family of four survey 16 Monarch Water staff	HARD WATER	SOFT WATER
Shampoo / Conditioner	1.30	.65
Washing up liquid	.70	.35
Washing powder / liquid	0.40	.20
Fabric conditioner	0.60	.30
Dishwasher powder	1.80	.90
Soap bars	.20	.10
Bubble bath	1.80	.90
Shower gel	1.10	.55
Cleaning agents for baths & sinks	1.20	.60
Hot water bills with just 3mm scale	6.00	5.10
TOTAL	£15.10	£9.65



Weekly difference = £5.45

**Yearly savings of over
£283**

SOFT WATER SAVES YOU MONEY.



FURTHER GUIDANCE

Have 4 members offering nationwide
water softener solutions

BWT

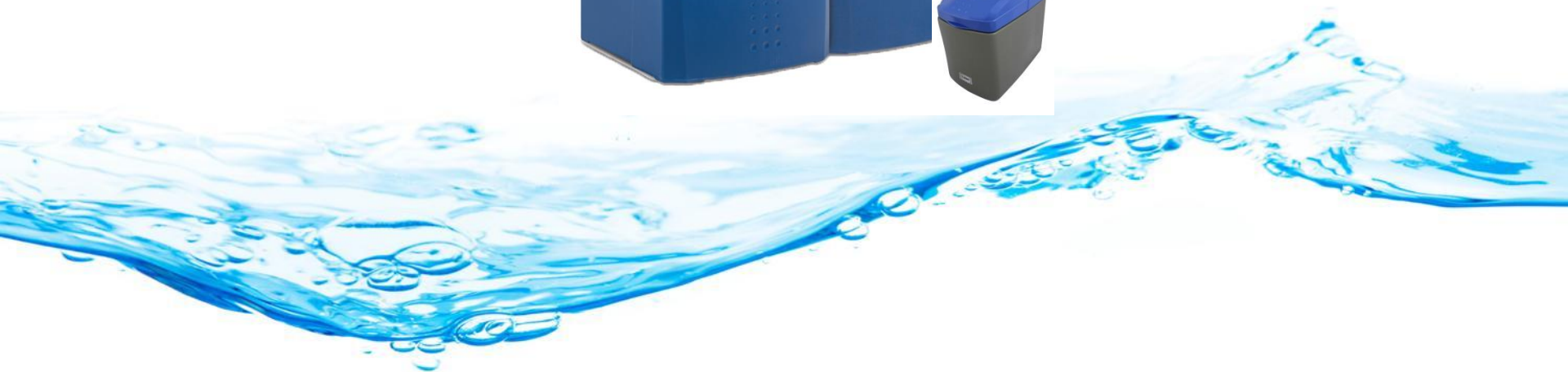
Harvey Softeners

Kinetico

Monarch Water



BWT



Harvey Softeners



Kinetico



Monarch Water



The Use of Water Softeners with Heating Systems.

In February 2013 the HHIC (Heating & Hotwater Industry Council) published a position paper for consultation within primarily the boiler, chemical inhibitor and water softener industry.

Beama, the UK's leading organisation representing water treatment companies are an active supporter of this position.

It has long been Beamas belief that a water softeners key benefits are enjoyed by the householder on the secondary side of the system, many of which we have discussed in this presentation.

Therefore Beama, through BWT, Harvey Softeners, Kinetico and Monarch Water, fully endorse the statement on the next slide.





HEATING & HOTWATER INDUSTRY COUNCIL

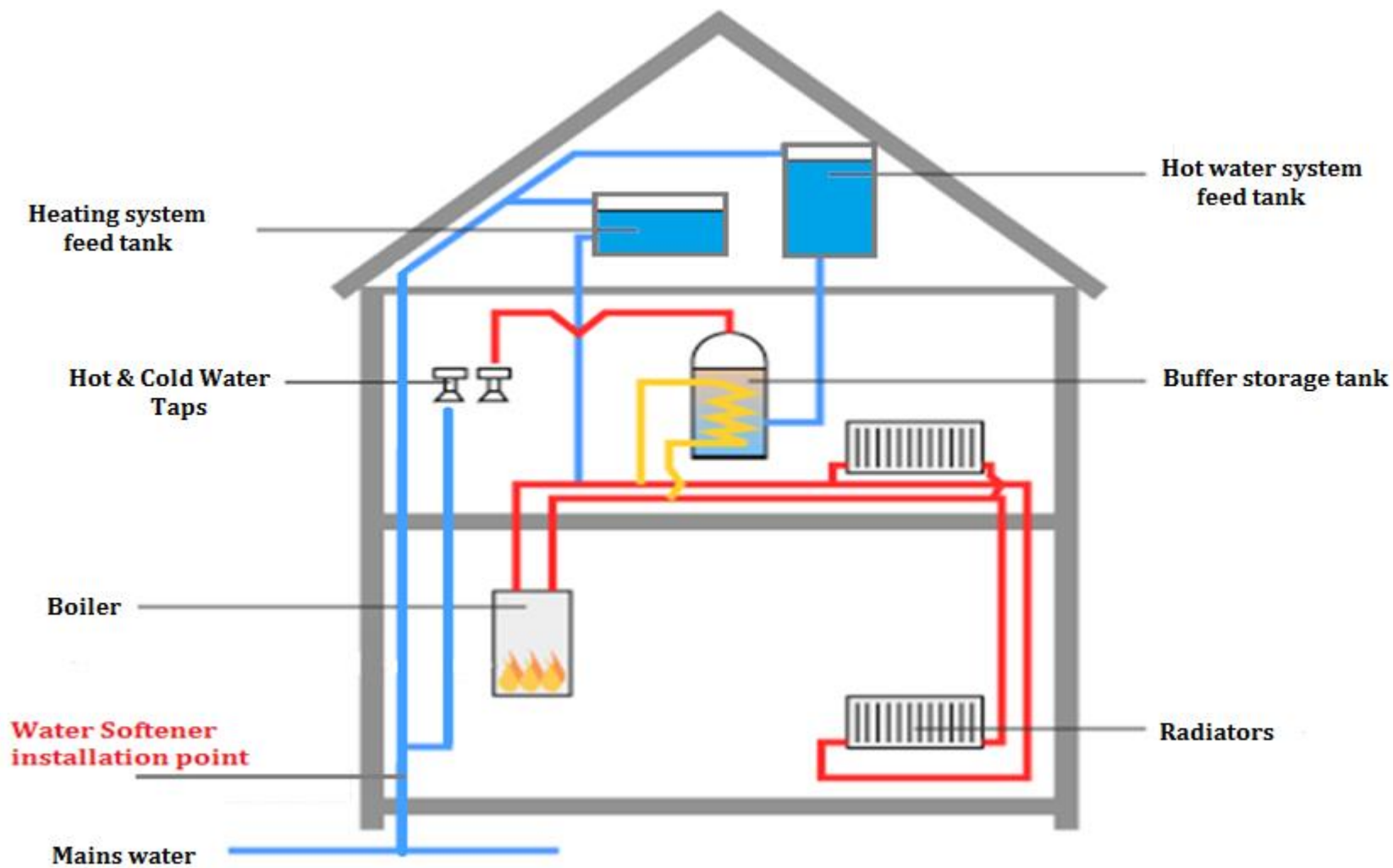
Where a water softener is present in the dwelling ensure that a heating system primary circuit is filled with mains water via a general bypass valve as required within BS EN 14743:2005.

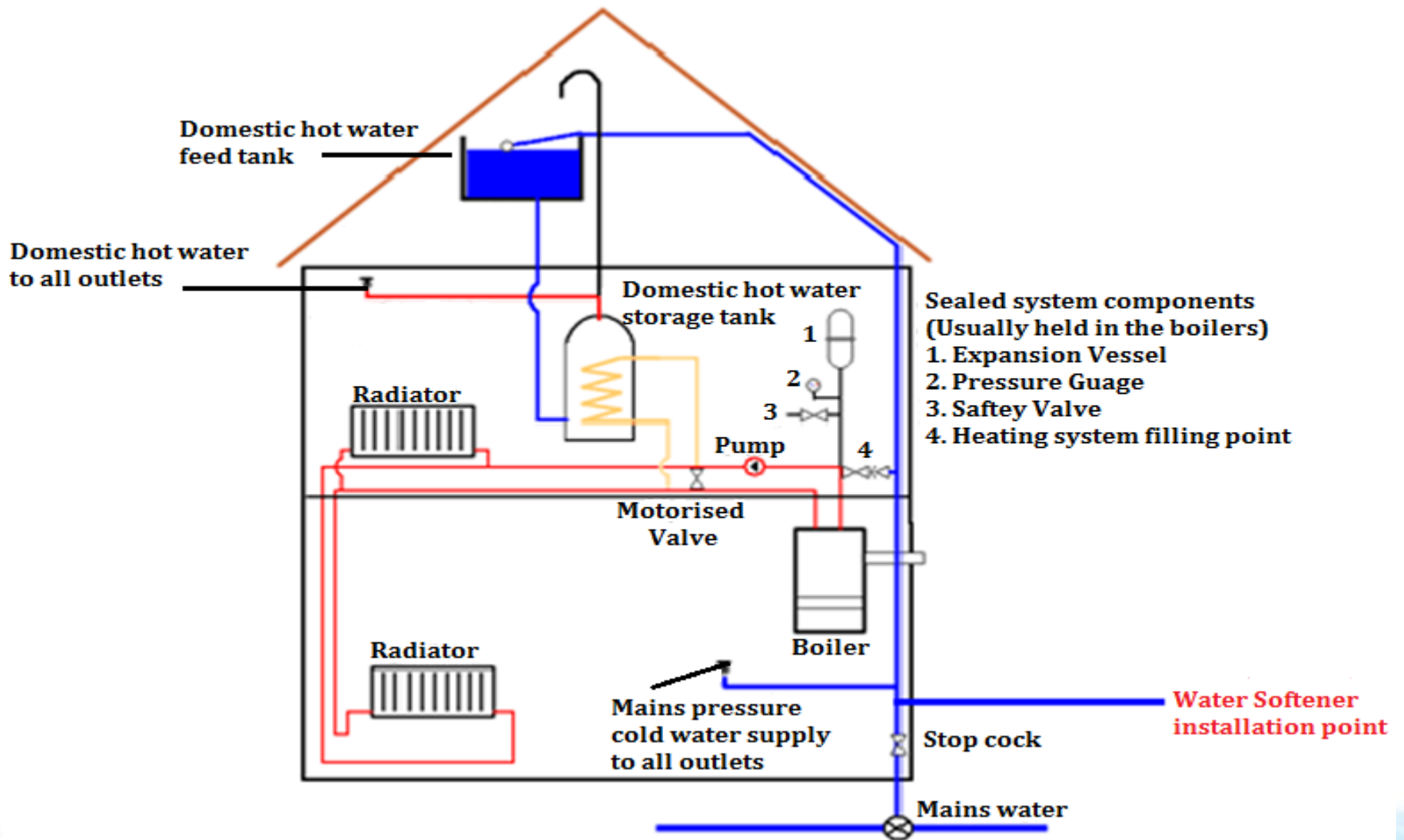
Note: A water softener installation must comply with BS 14743.

This states that there must be ‘a general bypass valve which enables the softening unit to be isolated from the mains, while maintaining water supply to the end user’. For installation requirements, refer to WRAS Information and guidance Note No 9-07-01 “Information for the installation of ion exchange water softeners for systems supplying water for domestic purposes”.

So in conclusion, you can have a water softener in any dwelling with any boiler, but you should fill up the primary side with hard water.



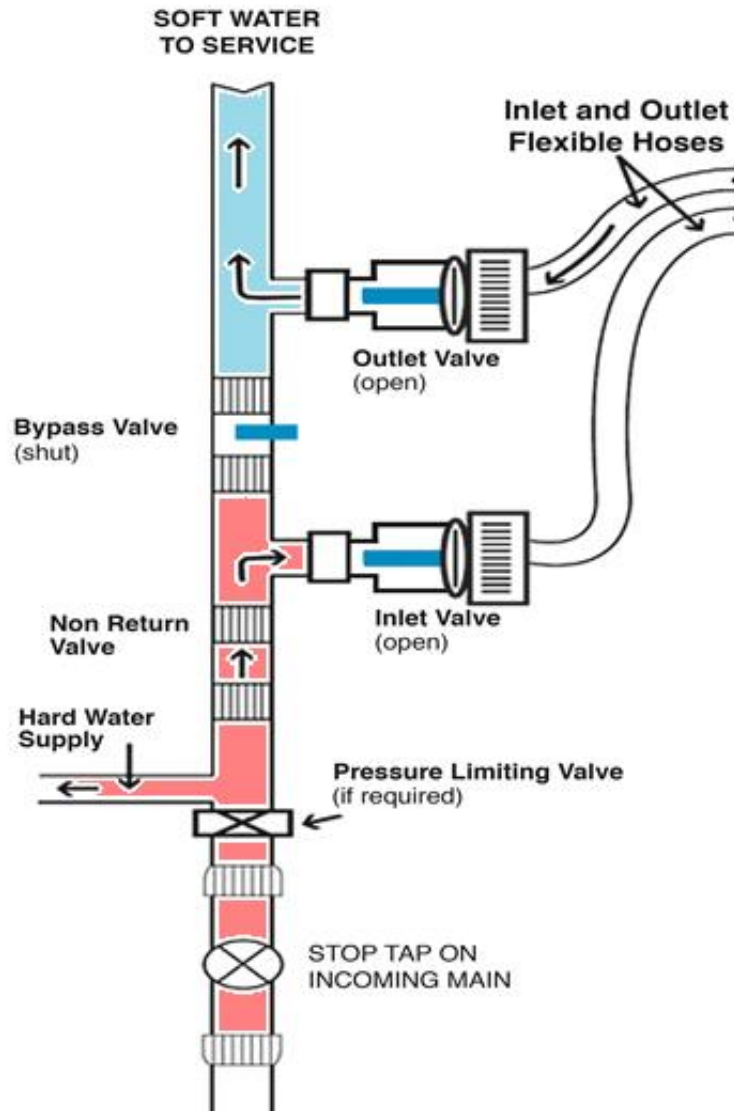




Three valve bypass with water softener in Service

Hard Water

Soft Water



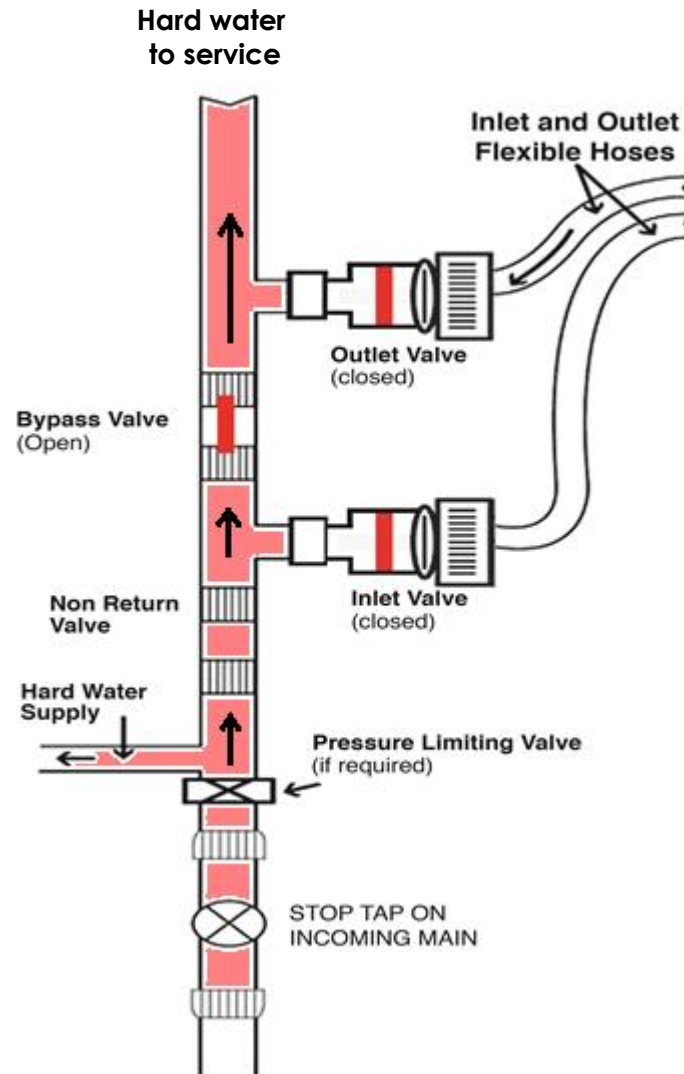
Three valve bypass with water softener in

Bypass

in conjunction with HHIC when filling primary system.



Hard Water





Water Regulations Advisory Scheme

INFORMATION AND GUIDANCE NOTE

Contents

- Section 1 – **Introduction**
- Section 2 – Water fittings Regulations
- Section 3 – Softener Construction
- Section 4 – Water Efficiency
- Section 5 – Backflow Protection
- Section 6 – **Connections / Hoses**
- Section 7 – Waste Water Connections
- Section 8 – **Drinking Water**
- Section 9 – Garden Supply's
- Section 10 – Installation Guidance
- Section 11 – Maintenance
- Section 12 – Further Information

1. Introduction

In hard water areas water softeners can provide benefits to the user in terms of reduced soap and detergent usage, reduced scum deposits on sanitary ware and reduced energy consumption due to absence of scale on water heating appliances.

In ion exchange water softening, the hard water flows through a bed of ion exchange material (the resin) which retains the calcium and magnesium ions that cause hardness

and replaces them in the softened water by sodium ions. The ion exchange capacity of the resin is gradually used up and when exhausted, it is regenerated by treatment with a strong brine (common salt) solution, which is subsequently rinsed out to waste.

This Information and Guidance Note (IGN) relates to the use of ion exchange softeners for supplying water for domestic purposes, which includes use of water for cooking, personal washing and bathing, clothes washing and drinking, (but see Section 8 regarding drinking water). Although principally referring to softeners in domestic premises, it is applicable to the same types of softener supplying water for domestic purposes in non-domestic premises (e.g. an office canteen).

Where an ion exchange water softener is used for the treatment of water for other than domestic purposes, this IGN does not apply but regard should be had to its contents, giving especial attention to the adequacy of backflow prevention requirements which may be increased by the uses of the soft water 'downstream' of the water softener. The IGN does not apply to non ion exchange water softening equipment.

The IGN has been produced by WRAS on behalf of the public Water Suppliers, in conjunction with the UK Water Treatment Association (UKWTA) to provide guidance on the installation of ion exchange water softeners in compliance with the Water Fittings Regulations.

6. Connection / Hoses

The softener requires four plumbing connections: the hard water inlet, the soft water outlet, the drain and the overflow. Some softeners also require connection to the electrical supply to power the electronics for the automatic regeneration system.

The connections between the supply pipe and the softener are normally made in flexible pipe to enable the softener to be moved for servicing. Where the softener is located in a confined space that would impede maintenance, the length of flexible connections should be cut to allow the unit to be moved (after closing the bypass valves) to a position such that maintenance access is acceptable. The hose used must be suitable for drinking water applications – dishwasher, washing machine or garden hoses are not suitable.

Bypass

A bypass should be provided for the softener so that the unit can be isolated for maintenance purposes. This should comprise, as a minimum, isolation valves on the inlet and outlet of the softener and a bypass valve between the inlet & outlet T-pieces and from the softener (Fig .2).

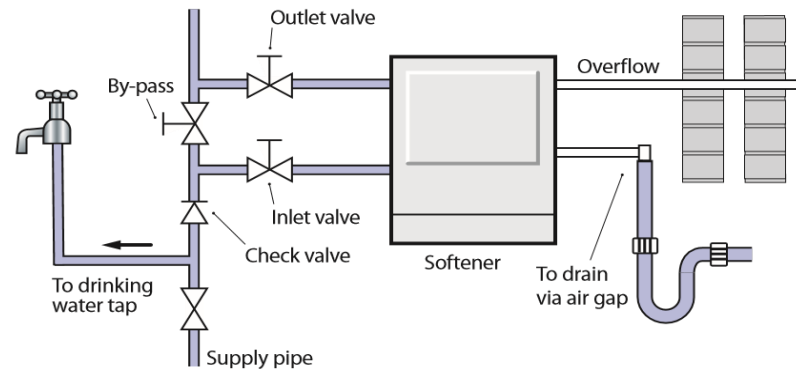


Fig2: Bypass, connections and check valve

Drinking softened water – can you, can't you?

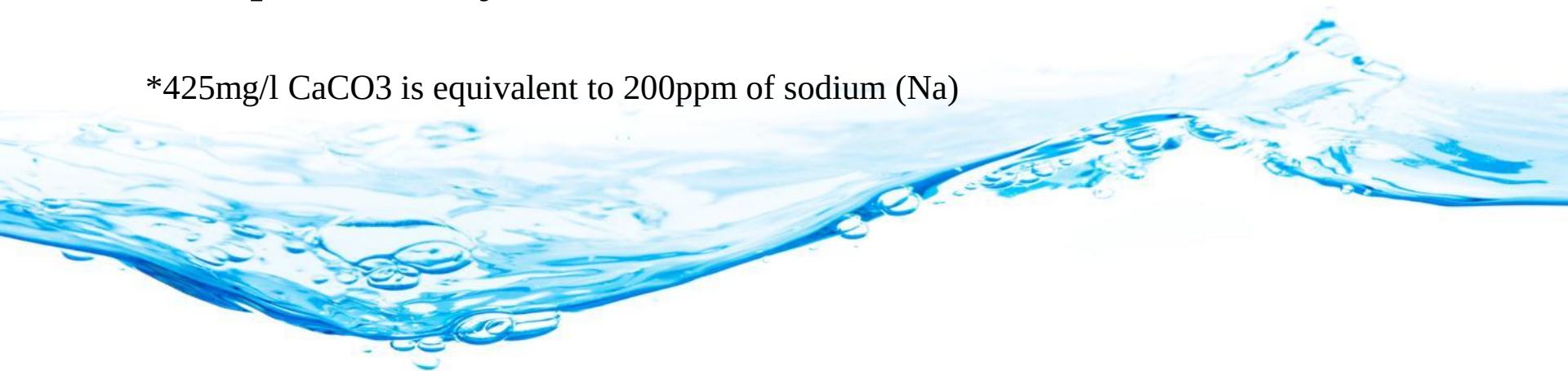
Softened water is classified as 'wholesome water' where the incoming water hardness is below 425mg/l

This means **you can drink it...**

Any water that is harder than 425ppm, it is a requirement to install a hard water drinking tap.

Exceptions – anyone on a low sodium diet

*425mg/l CaCO_3 is equivalent to 200ppm of sodium (Na)



Taken from: nhs.uk/chq/Pages/1945.aspx

Can I use bottled water to make up baby formula (infant formula)?

Bottled water is not recommended to make up infant formula feeds for your baby. This is because it's not usually sterile (free from bacteria) and may contain too much salt (sodium) or sulphate.

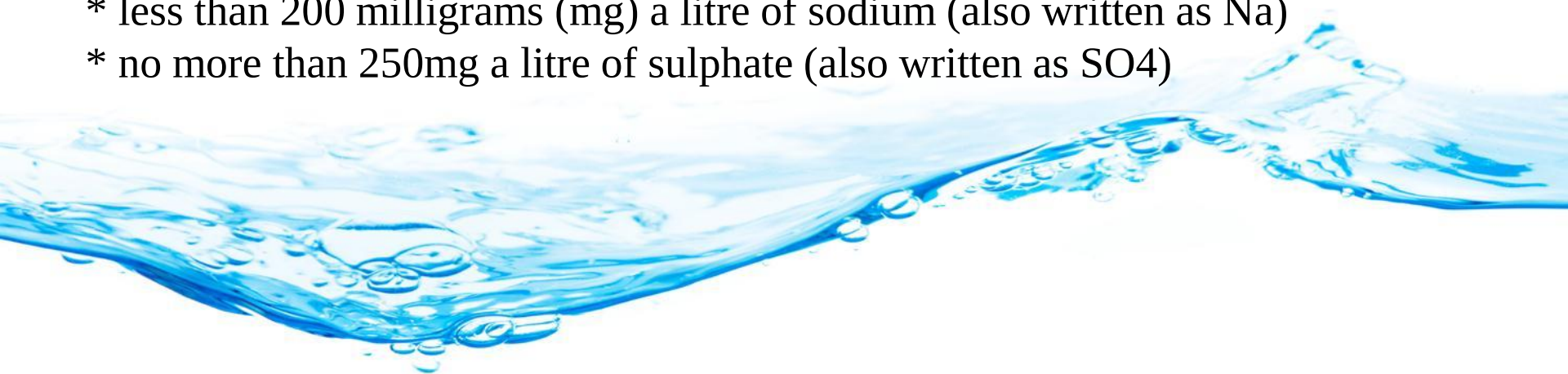
Check the levels of sodium and sulphate

You may need to use bottled water to make up a feed if:

- * your drinking water has been contaminated because of flooding
- * you're travelling abroad and drinking the local water is not recommended

If you have to use bottled water to make up a feed, check the label to make sure the water contains:

- * less than 200 milligrams (mg) a litre of sodium (also written as Na)
- * no more than 250mg a litre of sulphate (also written as SO₄)



8. Drinking water tap

Advice from the World Health Organisation and the Department of Health about drinking softened water leads Water Suppliers to recommend that where water in premises is to be softened, a separate un-softened water tap should be provided for drinking water. This should preferably be at the kitchen sink but alternative positions such as at a utility room sink can also be acceptable. The separate un-softened drinking water tap should be connected into the supply pipe upstream (before) of the bypass to the softener and run directly to the tap (Fig 4).

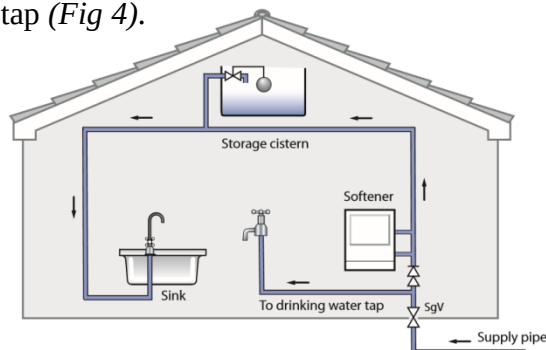


Fig 4: Connection for drinking tap upstream of the water softener.

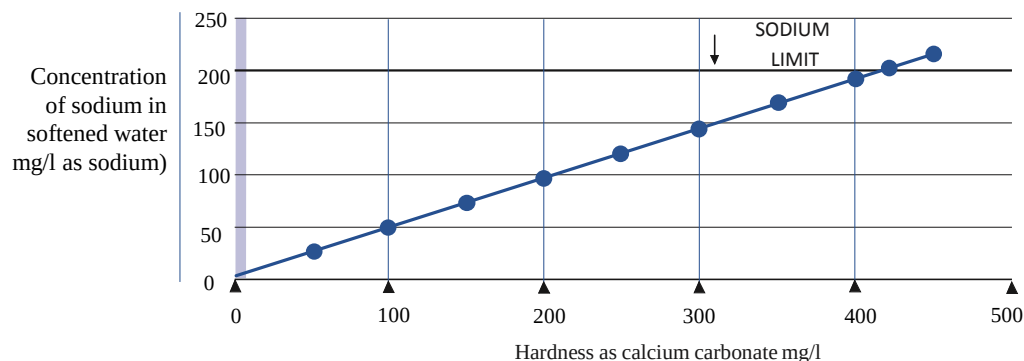


Fig 5 Sodium content resulting from softening water of a given hardness (with no allowance for sodium content of the water as supplied)

The Regulations require that 'All premises supplied with water for domestic purposes shall have at least one tap conveniently situated for the drawing of drinking water'. Drinking water must comply with the Water Supply (Water Quality) Regulations 2000, which stipulate a maximum limit of 200 mg/l (milligrams per litre) for sodium. The Department of Health recommends that this sodium limit should not be exceeded for infant feed preparation and for those individuals on a medically supervised low-sodium diet.

The provision of an un-softened drinking water tap is essential where the hardness of the public supply and its sodium content as supplied would result in the softened water exceeding 200 mg/l sodium limit.

For ion exchange softened water, this limit will be exceeded where the water is extremely hard, i.e. above 425 milligrams per litre as CaCO_3 (assuming zero sodium in the public supply).

Before installing the water softener, installers must check by asking the local water supplier the level of water hardness and sodium in the area, so that the sodium level after softening will not exceed the 200 milligrams per litre value, and advise the customer accordingly.

- Any hard water home can have a softener – **ref HHIC**
- Easy to fit – **only takes 3-4 hours**
- Drinkable up to 425ppm – **as set out by WRAS**
- Good payback time – **only 3-4 years**
- Long life span – **15-18 years**
- Wide variety of products – **domestic, commercial & industrial from all 4 Beama members.**



Thank you for listening

oh yes 999 !



In 2012, Monarch Water concluded a 2 year survey.
The answer was 999.

What was the question?

Very simply, 999* out of every 1000 home owner properties in a hard water area that you drive past on your way home tonight, will not buy a new water softener.

That is your market potential.

Based on excluding existing softener owners and anyone renewing a previous unit.

*The answer was actually 998.7, but who ever would remember that! 😊



BWT – 01494 838100

Harvey Softeners – 01483 753400

Kinetico – 01489 566970

Monarch Water – 01986 784759

