

## Bathroom Radiators

Bathroom radiators are commonly made from 3 types of material.

- 1). Brass
- 2). Steel
- 3). Stainless steel.

### Brass

Traditionally bathroom radiators were constructed using brass. Brass is easily plated and has a high resistance to corrosion and can be installed on almost all heating systems and hot water applications. Brass radiators are however far from foolproof and in certain applications dezincification can occur. This process occurs when certain elements present in the circulating water cause the zinc to be leached from the brass. This leaves the radiator weakened and failure becomes inevitable.

Don't worry as these situations are rare and mainly occur in old mansion block type buildings where heating and hot water are supplied from a central point for the whole block.

Brass radiators are also costly as they have to be accurately polished and prepared before they go for plating to chrome nickel or gold.

### Steel

Steel radiators are a more modern phenomenon and the first ladder type radiators, when made from steel were painted. So they would be white or some other shade of colour and are only suitable for use on sealed heating systems. In recent years however technology has provided a cost effective way to chrome plate steel ladder radiators. The finish is not as good as the chromed finish on a brass radiator. These steel ladder radiators with chromed finish have become a commodity product and are widely available. They can be very cheap and you should be wary of what you are purchasing.

### Stainless Steel

More recently stainless steel has been used, like brass stainless steel offers a high resistance to corrosion although like brass in certain circumstances it can corrode and fail.

Again these situations are few and far between and tend to occur in large mansion blocks where the heating and hot water come from a central point. Iron and stainless steel do not mix. If you have old iron pipe work avoid stainless steel as the metal filings and oxides that can be present in the circulating water can settle in the tubing and cause anodic and cathodic corrosion.

There are also many grades of stainless steel and ladder radiators tend to be made from 304 grade tube. Stainless steel radiators are not plated but just polished, the more like chrome the radiator looks, the higher the quality of the stainless steel.

They tend to be priced somewhere between brass and steel. Once again you should be

careful with the quality especially the welded joints and the polished finish. An easy test for good stainless steel is that it is not magnetic. If your radiator attracts a magnet beware.

My one and only word of advice is that if you live in a mansion block and have a central boiler system be careful. Consult with your plumber but to be 100% safe have an electrically powered only radiator.

Radiator outputs.

There are 2 main measurements for heat output namely watts and BTU or British Thermal Units. The British standard for determining the output is 50  $\Delta t$

$\Delta = \text{delta}$

Basically it assumes an ambient room temperature of 20 degrees Celsius with a hot water input temperature of 75 degrees and a hot water return of 65 degrees.

$75 + 65 = 140$  divide by 2 to find the average giving 70

Mean temperature of 70 – room temp 20 gives 50 or  $\Delta t$  50.

Many manufacturers still quote output as being  $\Delta t$  60 which gives an inflated BTU reading.

Consideration of heat output on towel warmers however becomes somewhat irrelevant as soon as you place a towel on them. So be wary if you intend your towel warmer to be the only source of heat in the bathroom.

### Plumbing Circuits.

The best way of plumbing in your towel warmers is on a boiler bypass circuit. Basically your radiator will heat whenever the boiler fires up. This way in the winter it will be on when the central heating is active and in the summer heat up only when you heat the hot water. This does not apply to combination boiler systems.

It is preferred practice to have corrosion inhibitors in your central heating circulating water.

### Dual Fuel

If your bathroom radiator can only be placed onto the central heating circuits they will then not operate in the summer when there is no call for heating. A solution for this is to have an electric element fitted.

In the summer you turn off the radiator valves and use the electric element. This will provide the heat to dry towels.

It is wise to release the pressure build up when first switching on in the summer. This can be done by allowing the radiators water to exit via the bleed valve during the initial heating process. Let the radiator cool before tightening the bleed valve. This has the effect of introducing an air gap to enable the expanding water on heat up to move into.