



SAFE SURFACE TEMPERATURES

In most low pressure hot water heating systems, the flow/supply to radiators is usually designed to be 80°C with a 70°C return. Therefore under normal design conditions, radiator surface temperatures will vary between these values. At these temperatures, the average population will receive partial thickness burns in under a second and full thickness burns in about 10 seconds. However, certain sectors of the population represent a higher risk factor, for example the elderly, the young and the mentally impaired. Therefore, in areas/residencies where these groups are likely to be at risk, particular attention needs to be paid to the heating system temperatures.

Maximum Surface Temperatures

Wherever patients, residents and visitors have access to space heating devices, the maximum surface temperature should not exceed 43°C when the system is operating at the maximum designed output. This criteria can be achieved in different ways, the three most common solutions are:

- The fitting of protective guards
- The installation of Low Surface Temperature Heat Emitters
- Flow temperature reduction

However, any other design solutions which prevent the maximum surface temperature from exceeding 43°C are acceptable.

The fitting of guards will reduce the heat output by around 60% meaning that more/and or larger radiators will be required. If guards are to be used, the size of the mesh incorporated in the guards must prevent small hands from entering and making contact with the heat emitter.

The preferred method of achieving low surface temperatures is to install Low Surface Temperature (L.S.T) heat emitters. L.S.T heat

emitters usually consist of a heat emitter enclosed within a L.S.T casing with inlet and outlet grilles, designed to exclude small hands. Although the casing remains below the recommended 43°C, the space/room is heated by convection rather than by radiant heat. Suitable heat emitters should be designed so that:

- There are no surface hot spots
- There are no access holes which may allow contact to be made with the heat emitter itself
- They can be cleaned easily as a routine procedure.

Exposed Pipework

Any exposed pipework within 2m of the floor, either horizontal or vertical, carrying water above 43°C also presents a risk and therefore should be either 'boxed-in' or securely insulated.

For further information on Safe Surface Temperatures see NHS Guidance Notes, available through NHS Estates, at: www.nhsestates.gov.uk.

This Databyte has been designed to accompany the Databyte entitled: 'Safe Hot Water Temperatures'.

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