

APPENDIX 5

SYSTEM DESIGN STANDARDS FOR HOT AND COLD WATER

Cold Water

- Storage temperature: 20°C (maximum)
- Storage capacity: 4 hours (where necessary)
24 hours (maximum)
Avoid installing cisterns if possible
- Distribution temperature: 20°C (maximum)

Domestic Hot Water

- Storage temperature: 60°C (minimum)
65°C (maximum)
- Distribution temperature: 50°C (minimum)

DHWS Distribution Pipework

Maximum length of:

- Spur – 5 metres
- Dead leg / blind end – 5 pipe diameters
- Blended pipework – 2 metres

Distances are measured from the circulating main to the point of draw-off, and INCLUDE any length of blended pipework, shower hose, etc.

Pumps

- Secondary circulation
- single pump, in return leg
 - provide 'dry' standby adjacent
 - use electrical plug and socket
- Anti-stratification
- shall run for one hour per 24 hours
 - must only run in times of low or no demand
 - primary heat source to be 'on' during pump run period

Distribution System Layout

Design temperature drop: 5K (maximum)

Hydraulic balancing: avoid multiple parallel loops, aim for 'single pipe' with short return leg

General

Avoid tank-fed systems if possible; use mains pressure

Select direct gas-fired water heaters in preference to calorifiers

Select electric point-of-use water heaters for small systems, but control to limit electrical maximum demand.

Avoid concealed pipework, cisterns and components and observe the requirements of the Water Regulations.

Spray taps are not to be specified.

Temperature Sensor Positions on New/Refurbished Projects

Include BEMS temperature sensors in:

- Incoming mains CWS downstream of stop valve
- Cold water feed into calorifiers or water heaters
- Cold water storage tanks
- HWS flow from calorifier or water heater
- HWS return to calorifier or water heater

Install dial-pattern thermometer in storage cisterns.

Where BEMS is not installed, provide 100mm dial thermometers in the above locations to permit manual observation.