

11 – Pool temperatures

December 2010

Concern has been expressed by a number of pool operators that recommended swimming pool temperatures in the latest version of *Swimming Pool Water* have increased since the 1999 edition. The values in the table on page 37 are clearly maximum recommended values, not to be interpreted as targets. Although they are a degree higher than those stated in the 1999, the preamble to the table clearly states that pools may be able to operate one or two degrees below these values.

The revised table below reflects this

Activity	Recommended temperature range
Competitive swimming and diving, fitness swimming, training	26°C to 28°C
Recreational swimming, adult teaching	27°C to 29°C
Leisure waters	28°C to 30°C
Children's teaching	29°C to 31°C
Babies, young children, disabled and infirm	30°C to 32°C
Hydrotherapy	30°C to 35°C
Spa pools	30°C to 40°C

Operators tempted to move towards higher temperatures should bear in mind that they can create a number of problems. Although they may please leisure swimmers and children, fitness and competitive swimmers can find them uncomfortable. There are a number of technical arguments against higher than necessary temperatures.

- Microorganisms multiply faster – up to twice as fast for a rise of 10 degrees C.
- Bathers get hotter – limiting serious swimming and increasing sweat and grease in the water.
- Increased perspiration will add to the levels of ammonia and urea in the pool producing more combined chlorine. Chlorine demand will increase simply to maintain free chlorine levels.
- Increase urea levels will increase the production of irritant nitrogen trichloride. This will need to be dealt with.
- Dissolved gases become less soluble – more bad smells (chloramines) and potentially harmful trihalomethanes; and pH value rises as carbon dioxide escapes.

- Energy costs, direct and indirect, are higher – whatever efficiency or conservation methods are used.
- Air temperatures, which are linked to those of the water, rise too – making the atmosphere less comfortable for staff and others (as can the higher moisture levels).
- There is more moisture in the pool atmosphere, even when relative humidity is controlled at the same level – with a risk of condensation and possibly corrosion and deterioration of the building fabric, structure and equipment.

With an increasingly wide variety of pool uses, and operators attempting to introduce more flexibility into programming, it is obviously difficult to select a single appropriate or optimum operating temperature for any particular pool. This is not such a problem for the dedicated small-volume teaching pool, but in a 25 or 50m pool the large volumes of water involved make it difficult to vary water temperatures rapidly in any one water area. Any changes required to suit programme needs must be capable of being achieved gradually. For example temperatures will tend to be lower at the start of the day and be slowly raised throughout the day. Conversely temperature will fall following backwashing and replenishment with fresh water. This means that the selection and accurate control of the optimum water temperature for each pool and each form of programmed use is essential.

The temperature of the pool hall air should normally be maintained at the water temperature – or no more than 1 degree C above or below. But it is recommended that air temperatures over 30°C should generally be avoided.