

# TURNOVER CALCULATIONS

## I. VOLUME

$$\begin{aligned} &= L (\text{length}) \times W (\text{width}) \times D (\text{depth}) = \text{ft}^3 (\text{cubic feet}) \\ &= \text{Ft}^3 \times 7.48 (\text{constant; } 7.48 \text{ gal/ ft}^3) \\ &= \text{Volume of pool in gallons} \end{aligned}$$

NOTE: for pools with shallow **and** deep ends, divide the pool into two parts and apply this calculation to each part and add them together. Use average depth; e.g., a shallow pool has a depth at one end of 3' and 5' at the other end. The average depth is:  $3+5/2 = 4'$ . This works because the slope is uniform for the shallow end and uniform in the deep end. However, the slopes between the shallow and deep ends are different; hence, divide the pool into two parts when performing the volume calculations.

## II. SWIMMING POOL

## WADING POOL

## SPA

6-hour turnover

2-hour turnover

30-minute turnover

$$\begin{aligned} &= \frac{\text{VOLUME}}{6 \text{ hr.} \times 60 \text{ min}} \end{aligned}$$

$$\begin{aligned} &= \frac{\text{VOLUME}}{2 \text{ hr.} \times 60 \text{ min}} \end{aligned}$$

$$\begin{aligned} &= \frac{\text{VOLUME}}{30 \text{ min}} \end{aligned}$$

= Gallons/min (gpm)

= gallons/min (gpm)

= gallons/min (gpm)

III. Check flow meter reading (gpm) against the calculated (minimum) flow rate you just produced. The flow meter reading should be **close** to this minimum or greater.

NOTE: If the flow meter reading (gpm) is less than the minimum requirement, it may be that the flow meter is malfunctioning or inoperable. Verify filter size, plumbing size, pump(s), etc...before stating the pool does not meet minimum turnover requirements.