

APPENDIX G

SIZING A DIATOMITE FILTER

Using the example cited in appendix F, a 216,000-gallon pool operating at a 6-hour turnover would require a system flow rate of 600 gal/min. At a 2 gal/min/ft² filter flow rate, as recommended in chapter 13, the system would be provided with a filter having 300 square feet of septum surface area. At a 1-gallon rate the filter would have to be enclosed to provide 600 square feet of septum area. The 600 square foot filter has twice the dirt-holding capacity of the 300-square foot filter and therefore is obviously the best choice of the two. Since the diatomaceous earth filter lends well to compactness of design and large dirt-holding capacity in a relatively

small space, logic favors low flow systems when diatomite filters are used.

Diatomite Filter Sizing Calculation:

Water Volume = 216,000 gal.

Turnover Rate = 6 hrs.

$$\frac{216,000 \text{ gal.}}{6 \text{ hrs.}} \times \frac{1 \text{ hr.}}{60 \text{ min.}} = 600 \text{ gal/min.}$$

$$\frac{600 \text{ gal/min.}}{2 \text{ gal/min/ft.}^2} = 300 \text{ ft.}^2$$