

Essential Pool Calculations

AMOUNT CONVERSIONS

Ounces to Pounds
Fluid Ounces to Gallons

Ounces \div 16 = Pounds
Fluid Ounces \div 128 = Gallons

DISTANCE CONVERSIONS

Yards to Feet
Meters to Feet

Yards X 3 = Feet
Meters X 3.28 = Feet

SURFACE AREA

Rectangle or Square
Circle

Length X Width = Surface Area in Sq. Ft.
Radius X Radius X 3.14 = Surface Area in Sq. Ft.

POOL VOLUME

Rectangle or Square
Circle

Surface Area (SA) X Depth (D) X 7.5 = Gallons of water
Surface Area (SA) X Depth (D) X 7.5 = Gallons of water

AVERAGE DEPTH

For constant slope bottom pools

Shallow depth + deep depth \div 2 = Average depth

GALLONS LOST IN ONE INCH

Surface Area (SA) X 0.0833 (D) X 7.5 = Gallons in one inch

CALCULATING COMBINED CHLORINE (CHLORAMINES)

Total Chlorine – Free Chlorine = Combined Chlorine (Chloramines)

TURNOVER RATE

Pool Volume \div Flow Rate \div 60 = Turnover Rate (TOR) in hours

FLOW RATE REQUIRED FOR TURNOVER RATE

Pool Volume \div Turnover Rate \div 60 = Flow Rate in gpm (gallons per minute)

FLOW RATE BASED ON FILTER SIZE AND FILTERING RATE

Filter Surface Area X Filtering Rate (FMR) = Flow rate in gpm (gallons per minute)

FILTER SIZE REQUIRED (FILTER SURFACE AREA)

Flow Rate \div Filter Media Rate (FMR) = Square feet of filter surface area required

SPA WATER DUMPING

Recommended: Dump when Total Dissolved Solids (TDS) rises 1500 ppm above start up reading
OR:

Spa Volume \div 3 \div Avg. # of users daily = Number of days until water should be dumped

HEATER SIZING

Volume x 8.33 x Degrees raised (change) = BTU's needed to achieve temperature rise

TOTAL DYNAMIC HEAD

Multiply Pump PRESSURE gauge reading by 2.31 = feet of head on pressure side

Multiply Pump VACUUM gauge reading by 1.13 = feet of head on vacuum side

ADD THESE TWO RESULTS TOGETHER; RESULT IS TOTAL DYNAMIC HEAD OF SYSTEM