

Archie's Equation

Assumed Parameters and Measured Resistivity

Parameters	Measurement or Assumption
a Tortuosity factor	Assumption
m Cementation exponent	Assumption
n Saturation exponent	Assumption
R_w Water resistivity	Assumption
ϕ Porosity	Assumption
R_t Deep resistivity	Measurement

Archie's Equation

$$S_w = \left[\frac{a}{\phi^m} \times \frac{R_w}{R_t} \right]^{1/n}$$