



HOW COMMON ROCK ATTRIBUTES EFFECT ARCHIE'S CEMENTATION EXPONENT "m"

$$S_w = \sqrt{\frac{aR_w}{R_t \phi^m}}$$

ROCK PROPERTY		"m"	REASON
Cementation	↑	↑	Pore geometry becomes more disorderly.
Patchy Cement	↑	↑	Due to the breaks in net electrical continuity.
Compaction	↑	↑	Pore throats are cut off, thus isolating pores.
Bimodality	↑	↑	Pore geometry becomes more disorderly.
Inter-connected Vugs	↑	↑	Pore geometry becomes more disorderly.
Clay	↑	↑	The surface area to grain volume increases. Certain clay types will have more effect on "m" than others will.
Grain Sorting	↑	↓	Pore geometry becomes more orderly.
Grain Size	↑	↓	The surface area to grain volume increases.
Uniformly Distributed Porosity	↑	↓	Pore geometry becomes more orderly.

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