



**Figure 5-2** Influence of water/cement ratio and maximum aggregate size on concrete permeability: (a)  $K_q$  is a relative measure of the flow of water through concrete in cubic feet per year per square foot of area for a unit hydraulic gradient. [(a), From *Concrete Manual, 8th Edition*, U.S. Bureau of Reclamation, 1975, p. 37, (b), adapted from *Beton-Bogen*, Aalborg Cement Co., Aalborg, Denmark, 1979.]

The permeability of concrete to water depends mainly on the water/cement ratio (which determines the size, volume, and continuity of capillary voids) and maximum aggregate size (which influences the microcracks in the transition zone between the coarse aggregate and the cement paste).

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