

EXPOSED AGGREGATE BY CHEMICAL RETARDERS AND WATER WASHING

Chemical surface retarders and water washing can be used to texture the surface of hardened concrete to provide an exposed aggregate finish. This non-abrasive process is highly effective in bringing out the natural color and luster of coarse aggregates without altering the aggregate with abrasive blasting. A chemical retarder is applied to the form or mold surface prior to casting the concrete which delays the surface cement paste from hardening within a certain time period and to a depth dependent on the type or concentration of retarder. After the concrete has cured and hardened, the precast product is stripped from the form and the retarded outer layer of cement paste is removed by high-pressure water washing, exposing the aggregate to the desired depth. This process should take place at a predetermined time each day after casting to insure consistency and uniformity of the surface texture.

The shape of the coarse aggregate, its position after consolidation, and the depth of exposure will determine the surface appearance. On flat casting tables, external form vibrators are often used to insure proper and uniform consolidation of the coarse aggregates. If bright, natural colors of the aggregate are desired, exposed aggregate from retarded and water-washed surfaces is the best way to achieve this result.

Exposed aggregate retarded and water-washed surfaces are most commonly used for medium or deep exposures. The combination of using exposed aggregate retarded and abrasive blasted finishes within the same precast panel produced from the same concrete mix can provide an economical contrasting different appearance without having to use a second concrete mix. Demarcation or rustication features are recommended to prevent any ragged edges where the retarder is applied only to a portion of a mold surface.



Sterling Bank (Rochester, MN) Precaster: Wells Concrete