Design Tip: Top-Surface Broom Finishes

Design and specify a floated and broomed finish for best value.

Defining the garage's top-wearing surface finish during design is an important step to ensure all parties have consistent expectations while not losing sight of the project's construction standards and tolerance limits. For best value, we recommend a floated and broomed finish. Whenever possible, a physical example of the finish should be approved before beginning work.

The top-wearing surface (aka pavement) must be designed to meet many demands, including impermeability for reinforcing corrosion protection, ramping for access, and sloping for drainage. To achieve these objectives, place formed concrete and float the surface to reduce imperfections and compact the concrete. The surface also must provide traction for vehicles navigating ramps and weather conditions. For this reason, garage pavement surfaces are seldom hard-troweled. Also, since garage structures are often exposed to freeze-thaw conditions, the concrete mix often contains entrained air. This type of mix design should not be hard-troweled due to potential delamination.

OTHER RECOMMENDATIONS

Do not set floor flatness (FF) or floor levelness (FL) expectations by design. The broom finish makes such criteria unrealistic. Do, however, use a high-quality curing compound and moisture foggers when extreme weather conditions suggest the need per American Concrete Institute guidelines.

While specifying a broom finish is recommended, specifying the type of broom finish is problematic and likely won't achieve the value for the invested time and cost. The difference between a light broom and medium broom finish can vary even with the same broom and tradesperson. Tolerance variability due to the size of the pour, the slump of each truckload of ready-mix, the passing of clouds, the change in wind velocity and direction, the traffic impact of concrete delivery or the placement rate can all affect the speed of set and the depth of the broom. The length of a broom handle influences the angle of the broom bristle and the broom starting and ending locations. Lastly, each finisher's skill will impact the results.

In most cases, a light to medium broom finish with expected nonuniform and inconsistent irregularities should be specified in design and anticipated in the field. A manually applied swirl finish is not recommended and seldom achieves desired results.