Saw-Cutting Grooves on Bridge Decks

Item 420 Clarification

In the *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* (2004), the 14th paragraph of Item 420.4.1, “Finish of Bridge Slabs,” states the following:

> “Saw-cut grooves in the hardened concrete of bridge slabs, bridge approach slabs, and direct-traffic culverts to produce the final texturing after completion of the required curing period. Cut grooves perpendicular to the structure centerline. Cut grooves continuously across the slab to within 18 in. of the barrier rail, curb, or median divider.”

The highlighted sentence specifies production of sawed grooves that are continuous across the slab within the limits described; however, it does not require grooves to be produced in a single continuous pass from rail to rail. The grooves channel water runoff more quickly off lanes of traffic and in a direct path perpendicular to the roadway instead of in a meandering sheet flow. Although the groove can be saw-cut in more than one pass or direction, the groove itself must be continuous because discontinuities produce dams that obstruct water flow.

Cutting grooves using a power hand saw may be necessary because of limitations of the machines that cut grooves. This technique may also be necessary where low spots in the deck limit the ability of the larger machines to produce grooves of adequate depth.

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| Figure 1. Acceptable gaps between passes of the saw-cutting machine. |
| Figure 2. Saw-cutting at skewed joints. |
| Figure 3. Typical equipment that cuts in only one direction. |
| Figure 4. Typical results. |
Figure 5. Large equipment that cuts in both directions.

For More Information

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