

PCI Plant Quality Talk Quality Enhancement Committee



SERIES 2, ISSUE 12 – BUGHOLES

Bughole Assessment/Troubleshooting

Providing customers with the desired quality of finish is very important, and the manner in which this expectation is satisfied can have significant cost impacts to the company. Final finishing processes to repair surface imperfections can bottleneck the production cycle, diminish aesthetic features, and reduce customer confidence in the product quality. Minimizing the potential for bugholes is an efficient way to achieve high-quality surface finishes at relatively low cost. Employees should be familiar with how the following production aspects affect surface quality, and be able to identify potential sources and evaluate solution options.

Form Conditions

- Dents, holes, build-up, and general roughness can potentially cause bugholes.
- The form material type can affect bugholes; wood forms are typically more forgiving than steel.
- Excess moisture should be removed from forms; trapped water can cause surface defects.
- A reactive release agent should be used, not a barrier type.
- Excess release agent/form oil should be removed from the form surface; too much form oil will cause very small bugholes and dark staining.

Concrete Handling

- The drop height of the concrete should be minimized to avoid trapping air.
- Place concrete slowly; this gives air in the form time to get out as it is displaced by concrete as the mold is filled.
- Allow enough mixing time to homogeneously blend the materials without adding too much extra time to any one batch.

Consolidation Method

- Use self-consolidating concrete or a highly fluid concrete, when possible.
- If vibrating conventional concrete, use the proper frequency and amplitude vibrator. Low-slump concrete responds better to low-frequency/high-amplitude vibration, whereas higher-slump concrete responds better to high-frequency/low-amplitude vibration.

Concrete Properties

- Select well-graded and clean aggregate.
- Use a coarse aggregate size that will pass between the reinforcing bar spacing.
- Have sufficient paste volume to fill the voids in the combined aggregate.
- Have sufficient viscosity to avoid excessive bleeding (higher T-20 test results).
- Ensure sufficient slump life to place all of the concrete batched.

Note: Please complete this form and return to the Quality Control Manager. All crew members should be observant and report to their foreman anything out of the ordinary on a project. *See something, say something.*

NOTES	ATTENDEE SIGNATURES
DATE	
PRESENTER	