CONTRACTOR'S ALERT – 2020.3

CORE TESTING REQUIREMENTS

Certain DSA and all OSHPD projects require masonry walls to be cored and the cores will be tested to determine the bond between the grout and masonry unit. The required shear bond depends on the masonry strength and is about 112 psi for walls with an $f'm$ of 2,000 psi.

There are several recommended steps for best practices in grouting masonry in anticipation of coring and core testing.

1. Determine if coring of masonry walls is required.

Core testing may not be required for nonbearing, non-shear single-wythe walls that do not exceed 12 feet in height with a maximum design of 2,000 psi. There is also a code provision which permits approved non-destructive testing as an alternative to core testing masonry walls.

2. Use a grout mix design suitable for masonry.

Concrete mix designs and grout mix designs are not the same. Concrete suppliers typically use admixtures as water replacement to improve a concrete mix, but these admixtures can be detrimental to grout bond strength. Check your mix design submittals and if it contains any admixtures, reject the mix design. Remember that masonry walls absorb a significant amount of water immediately after grout placement. The code requires a grout slump of 8 to 11 inches, and it is better to start grout placement in the high slump range. Grout mixes designed for masonry walls will typically have a W/C ratio between 0.65 and 0.80, will have no more than 625 pounds of cementitious materials (which may include fly ash and slag), and will have approximately 400 to 450 pounds of initial mix water.

3. Consolidate and reconsolidate the grout.

Proper consolidation is key to acquiring a good bond between the grout and masonry unit and is more of an art than science. Reconsolidation is required after initial water loss, but before the grout starts to set. The time between passes may be longer when Integral Water Repellent has been added to the CMU. When hi-lift grouting; use an approved grout-aid added to the mix on the job site and be careful not to push the vibrator into the preceding lift causing voids in the lower lift.

4. Find out when the walls will be cored and be there to watch the process.

The Code required core extraction no sooner than 7 days after grouting with specimen testing at 28 days after walls are grouted. Take pictures or video and make notes. If face shells fall off during the coring process, find out why and immediately contact your industry representative. Unbonded face shells do not constitute a failure but are included as a zero result in the average unit shear value. Make sure to be included on the distribution list of all inspection and material test reports.

5. Be <u>Proactive</u> if there are problems.

The sooner problem issues are addressed, the more chance there is for a solution. Do not delay in contacting your industry representative. It is important that solutions be presented to the Structural Engineer Of Record for approval; don't wait for the solution to be determined by the Inspector Of Record, Structural Engineer Of Record, Architect, or special inspector.

Industry Representatives				
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