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DOES THE BUILDING CODE ADDRESS CLEANING OF NEWLY CONSTRUCTED MASONRY?

Yes. Article 3.8 of TMS 602-13 [1], which is referenced by both the International Building Code and International Residential Code, states:

Clean exposed masonry surfaces of stains, efflorescence, mortar and grout droppings, and debris using methods that do not damage the masonry.

While the building code does not require all newly constructed masonry to be cleaned (for example, an unexposed backup assembly isn't typically cleaned by default), it does require that approved cleaning procedures be stipulated and implemented when required. Further, because the project conditions, masonry materials, and care in construction can all vary from one project to another, so should the aggressiveness of cleaning efforts. Best practices suggest using the least aggressive cleaning process that achieves the desired result and demonstrating these cleaning procedures on the project's sample panel to ensure the final outcome is satisfactory. Additional discussion on cleaning options and procedures is available in CMHA TEK 08-04A [2].

Cleaning can include varying degrees of effort, including: simple hand cleaning using brushes and trowels, pressure washing, chemical cleaning, and abrasive cleaning. Additional considerations are reviewed in more detail in the following discussion.

ROUTED MASONRY CONSTRUCTION

All mortared masonry construction has the potential for mortar smears to develop on the surface of the masonry. When grout is introduced into the masonry assembly, the potential for cleaning increases. Grout can not only be dropped onto the surface of the masonry when being placed, but because of the highly fluid

nature of masonry grout, it has the potential of leaking through the face of the masonry or through holes in the mortar joints and running down the face of the assembly. This likelihood of leakage can increase when the concrete masonry units and mortar contain integral water repellents. Because the plastic grout is under extreme head pressure when first placed and consolidated, the resulting pore structure of units containing integral water repellents may force the grout through small pin holes in the face of the units or through small defects or hairline cracks in the mortar. For these reasons, some degree of cleaning should be planned for with all exposed, grouted concrete masonry construction.

TIMING OF CLEANING

The success of cleaning a newly construction concrete masonry assembly can be driven as much by the timing of when the cleaning occurs as the cleaning procedures used. For example, attempting to remove fresh mortar droppings from the surface of the masonry is likely to result in smearing that requires additional cleaning efforts. Allowing the mortar to slightly set before removing reduces the likelihood of smears occurring. In the case of grout leakage through small pinholes in water repellent CMU or small mortar defects, in warm, sunny weather periodically spraying the wall down with low pressure water within hours after grouting can often wash off much of the grout leaks and make final cleaning of the building easier. Be aware, though, that allowing the mortar and grout to fully cure on the surface of the assembly will require much more aggressive cleaning procedures to be used as it will be more difficult to remove these materials once they have fully hardened. Additional discussion is available in CMHA TEK 03-08A [3] and TEK 08-02A [4].

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REFERENCES

1. *Specification for Masonry Structures*, TMS 602-13, The Masonry Society, 2013.
2. *Cleaning Concrete Masonry*, TEK 08-04A, CMHA, 2005.
3. *Concrete Masonry Construction*, TEK 03-08A, CMHA, 2001.
4. *Removal of Stains from Concrete Masonry*, TEK 08-02A, CMHA, 2005.

ABOUT CMHA

The Concrete Masonry & Hardscapes Association (CMHA) represents a unification of the Interlocking Concrete Pavement Institute (ICPI) and National Concrete Masonry Association (NCMA). CMHA is a trade association representing US and Canadian producers and suppliers in the concrete masonry and hardscape industry, as well as contractors of interlocking concrete pavement and segmental retaining walls. CMHA is the authority for segmental concrete products and systems, which are the best value and preferred choice for resilient pavement, structures, and living spaces. CMHA is dedicated to the advancement of these building systems through research, promotion, education, and the development of manufacturing guides, design codes and resources, testing standards, and construction practices.

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