

## **TECHNICAL ADVISORY NOTE**

### ***Cleaning Molded Brickwork***

### ***Including Sand-Finished and Coated Extruded Brick***

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New brickwork is usually cleaned to remove excess mortar from brick faces. The cleaning agents designed to do this are sometimes called "detergents", but they are ALL some type of buffered acids. Only acid will dissolve the cement in mortar to release it from the brick faces. All of the cleaning agents, even the mildest ones, have the potential to damage masonry. This is why the method of cleaning is critically important. (Muriatic acid is NEVER recommended for cleaning any masonry.)

There are three methods approved by Redland Brick for cleaning new brickwork constructed with Cushwa molded face brick, Rocky Ridge molded face brick, and all Harmar, Lawrenceville and KF sand-finished or surface treated face brick.

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#### METHOD 1 - No Cleaning (Building Clean Walls).

If certain precautions are taken, objectionable amounts of excess mortar on the brick can be completely avoided, or, at least minimized, so that water and chemicals are not required. This is by far the best approach to clean, beautiful brickwork. Careful work is not much slower, nor much more expensive, than haphazard work. And, any extra cost is far less than the cost of chemical cleaning; and far, far less expensive than solving problems later caused by poor chemical cleaning.

Specify and follow these steps:

- a) All brick received on the jobsite should never touch the ground or concrete. Store on wood pallets. Cover with plastic or tarps.
- b) Scaffolding should be erected away from the wall to prevent mortar droppings from splattering onto the wall.
- c) When not in use, scaffold boards should be removed or turned up, away from the wall, so that mortar splatter or rain splatter will not hit the wall.
- d) As brick are laid, masons should cut excess mortar with the edge of the trowel such that mortar is not smeared onto the brick.
- e) After tooling joints, mortar tailings (tags) should be cut off with the edge of a clean trowel. DO NOT BRUSH at this time, because mortar could still be absorbed into the brick faces.
- f) The day AFTER brick are laid, the brickwork may be brushed, or scraped with a wood paddle, to remove tailings or burrs missed the previous day. Do not use metal brushes, metal scrapers or other brick.
- g) Protect ledges, such as sills and watertables, from mortar droppings, by covering them with plastic.
- h) At the wall base, cover the ground with straw or plastic to prevent mud splatter.
- i) Cover all wall openings daily to prevent precipitation from entering the wall behind the brick. This will help limit efflorescence and staining.

## METHOD 2 – Chemical Cleaning with Bucket and Brush.

If the brickwork must be cleaned of excess mortar, beyond what was accomplished with Method 1, the next best method is the use of proprietary cleaning agents (acids), applied by brush or low-pressure spray (such as a “garden” sprayer), not by high pressure-spray equipment.

Specify and follow these steps:

Start by following Method 1, above, building the masonry as clean as possible.

- a) Remove all large mortar droppings within 24 hours of laying, with a bristle brush or wood. Do not use metal or other brick.
- b) Wait at least 4 days after laying, preferable 7 days, before starting in order to avoid chemical damage to mortar joints.
- c) Test the chemicals and method at least two weeks prior to starting. This can be done on a specially erected “field panel”, or an approved area of the wall.
- d) Follow the cleaning agent manufacturer recommendations COMPLETELY.
- e) Remove any older mortar droppings with a wood paddle before starting. Chemicals will only remove thin smears. Attempting to remove this clumps of mortar with chemicals and a brush will be frustrating, at best, and could lead to problems later caused by the misuse of the chemicals.
- f) Pre-wet the wall area with clean water by low pressure hose (40psi). The bricks’ absorption must be satisfied by clean water so that chemicals and dissolved mortar will not be absorbed. If the wall begins to become surface dry, re-wet with clean water until final rinsing of the area is complete.
- g) Start at the top of the wall by working 20-40 square feet areas.
- h) Keep areas below the cleaning are saturated with clean water.
- i) Do not allow the area being cleaned to dry out until final rinsing is complete.
- j) Apply cleaning solution from a bucket with a medium stiff bristle brush and scrub with the brush in accordance with the timing specified by the instructions with the cleaning agent. Avoid scrubbing the joints.
- k) Rinse thoroughly with plenty of clean water by low pressure hose.
- l) Avoid cleaning in direct sunlight. Try to clean “ahead” of the sun, so that drying after rinsing is enhanced.
- m) Rinse thoroughly with clean water from a low-pressure hose. Be certain all “dirty” water is flushed all the way to the ground and does not stay on any masonry.
- n) IMPORTANT: EacoChem NMD-80 is **recommended** for new cleaning of all Redland Brick. SureKlean VanaTrol and Diedrich Vana-Stop (#202V) are NOT recommended, but have been used successfully for cleaning Redland Brick. SureKlean #600 and Diedrich #202 Detergent can be safe for red brick but may damage mortar and are more likely to contribute to efflorescence than NMD-80. Improper application of any material may cause efflorescence or other staining.

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REMEMBER CONTROLLING THE METHOD OF CLEANING IS MUCH MORE IMPORTANT THAN WHICH CLEANING ACID YOU USE. IMPROPER CLEANING METHODS OFTEN CAUSE EFFLORESCENCE, AND CAN CAUSE MANY OTHER TYPES OF DAMAGE TO MASONRY.

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### METHOD 3 – “High Pressure” Cleaning with Chemicals.

**Extreme caution, and a limited definition of “high” pressure are required with this method .** Pressure spray equipment has become popular because of ease of use, speed, and economy. Pressure spray equipment has also ruined many brick projects.

The success of high pressure cleaning relies not only on limiting the pressure, but, also, the nozzle type, distance from wall, angle to wall, and operator technique. Experience and good judgement are critical. **Planning, testing and control are essential.**

#### **Specify and follow and these steps:**

Always start by following Method 1, above, building the masonry as clean as possible.

- a) DO NOT APPLY CHEMICALS AT MORE THAN THRITY (30) PSI AT ONE (1) GALLON PER MINUTE. It may be practical to apply the cleaning chemicals by garden hose or sprayer, or by bucket-and-brush. Then, use the “high pressure” spray for rinsing.
- b) Maximum water pressure allowed is three hundred (300) psi. (Be aware that, even at this pressure, molded, sanded, and surface treated brick can be damaged beyond repair if appropriate cautions are not followed.) Always test the method and allow the test to dry before judging.
- c) Water flow must be less than four (4) gallons per minute.
- d) Use only cone shape nozzle, not fan or stream.
- e) Always pre-wet the brickwork with clean water prior to applying chemicals. With our recommended EacoChem NMD-80, less water is required. Keep masonry below the work area wet – never allow cleaning solution to get onto dry brickwork.
- f) Do not clean sections large enough to begin to surface dry before complete rinsing is possible. The size of this area is dependent on weather conditions.
- g) Work top to bottom.
- h) Test the chemicals and method. This can be done on a specially erected “field panel”, or an approved area of the wall. Allow the test area to dry before determining the results.
- i) The operator of the pressure equipment intended to clean the wall must be the same operator as performed the test. If this is not possible, another test must be performed by the appropriate operator, and this test must be also be approved by the owner prior to starting.
- j) IMPORTANT: EacoChem NMD-80 is ***recommended*** for new cleaning of all Redland Brick. SureKlean VanaTrol and Diedrich Vana-Stop (#202V) are NOT recommended, but have been used successfully for cleaning Redland Brick. SureKlean #600 and Diedrich #202 Detergent can be safe for red brick but may damage mortar and are more likely to contribute to efflorescence than NMD-80. Improper application of any material may cause efflorescence or other staining.

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