INSTALLATION

Reading Rock's RockCast must be installed according to standard masonry specifications and within the guidelines of local building codes.

- **Refer to specifications** in NCMA TEK Bulletins and Section 048100, 047200 & 042200 to install units in conjunction with masonry.
- **Pull units from multiple cubes** during installation to minimize variation in color and help with natural blending. RockCast products are manufactured from natural limestone that has color range as part of its natural beauty.
- **Waste.** For various reasons due to shipping, handling or the manufacturing process, a small amount of product may have blemishes or chips and should be used for field cutting for maximum material utilization. When ordering material, please allow for waste and saw cutting in your material estimate.
- **Cut units using a motor-driven masonry saw.** Finished ends should be turned to the visible side and the saw cut turned to the inside of the mortar joint to hide exposed aggregates and saw marks.
- **When specified, fill dowel holes and anchor slots** completely with mortar or non-shrink grout. Holes drilled in coping units for light or fence posts should be filled with flexible caulk to prevent coping units from cracking due to movement.
- **Set units in full bed mortar**, unless otherwise indicated on drawings.
- **Fill vertical joints with mortar.**
- **Make joints 3/8"**, unless otherwise indicated on the drawings.
- **Use Type N mortar** when possible (ASTM C270). Type S is acceptable.
- **Sealing is not required.** RockCast is produced with an integral water repellent (IWR) in the mix design. If sealing is required, apply a non bridging breathable sealer typical of Prosoco's Sure Klean® Weather Seal, Siloxane WB Concentrate or Siloxane PD, or Hydrozo® Enviroseal 7 according to manufacturer's recommendations.
- **All RockCast products are shipped on a pallet and have one unfinished side.** Architectural Masonry Veneer units have only one finished face. Textured units are to be set with the texture face forward. Smooth units are stacked "face up" on the pallet.
- **Not all ends are finished.** Custom cast stone units do not have returns or finished ends unless otherwise ordered and noted on the shop drawings. Architectural Masonry Veneer units have an unfinished back, one finished face, and approximately 40% – 60% of the units have one smooth finished end. Architectural Masonry Veneer split and chiseled faced units can be ordered with a matching finished end. Request should be made at time of order.
- **Cover wainscot** for protection and bond separation with plastic, felt paper or other approved products.
- **For best results** cover freshly installed masonry products with plastic to ensure the wall system stays dry during the curing process especially if rain or cold weather is expected.

LEADERS IN LEED®

Many Reading Rock products contribute to the achievement of LEED credits on projects. We proudly support the development of green product innovations and are committed to developing and improving our entire product line with respect to the environment. In fact, Reading Rock was one of the first cast stone manufacturers to devote resources to products with supplementary cementitious materials (SCM).

MANAGING MOISTURE CONTROL, SHRINKAGE AND CRACKING

Reading Rock's RockCast stone, like all concrete masonry products, may shrink slightly. The most common shrinkage/restraint issues come from drying shrinkage, temperature changes, carbonation and differential movement.

- Kiln fired clay brick expands as it absorbs moisture and concrete masonry units shrink. This **differential movement needs to be controlled when utilized with clay products.**
- **IWR mortar additive can be included** in the mortar mix when a water repellent wall system is required. This is however not necessary.
- **Control movement in the wall system.** To do this and minimize control joints consider horizontal joint reinforcement, bond separation between different building products (Brick vs Concrete Masonry), and the use of control joints. For Concrete Masonry units used as a wainscot with brick above, bond separation should be considered with horizontal joint reinforcement every 16" o.c. or every course on 12" and 16" tall units and appropriate control joints. **Please refer to the appropriate NCMA TEK Guides.**
- **Control joints are required** at all openings, changes in wall height, between main intersecting walls, corners and for long running walls without openings at a distance of 1 1/2 times the height of the masonry, as outlined in TEK Guide 10-2C.The empirical method notes that the distance is for the masonry only and if brick is used, it should be treated independently for "expansion" and the appropriate brick technical guidelines followed. The most common shrinkage/restraint issues come from drying shrinkage, temperature changes, carbonation and differential movement.
- In using elastic (control) joints, **refer to NCMA TEK Bulletins** 10-1A Crack Control in Concrete Masonry, 10-2C Control Joints for Concrete Masonry Walls — Empirical Method, 10-03 Control Joints for Concrete Masonry Walls – Alternative Engineered Method, 10-4 Crack Control for Concrete Brick and Other Concrete Masonry Veneers, and 5-2A Clay and Concrete Masonry Banding Details for guidelines. Refer to NCMA TEK Bulletin 3-6C Concrete Masonry Veneers for proper veneer anchoring.

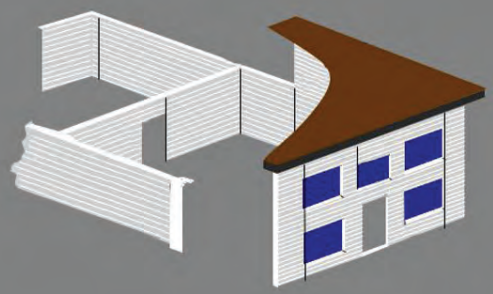
For access to NCMA TEK Bulletins, log on to www.readingrock.com for a direct link to NCMA's eTEK website.

TOLERANCES

- **Dry tamped stone is not structural.** It's designed to carry only its own weight. Utilize architectural precast if stone is required to be structural.
- **Maximum size ratio is generally 15 to 1.** Units should not be manufactured longer or larger than 15 times the thinnest dimension. Architectural precast, used with rebar, has a maximum size ration generally 20 or 25 to one depending on the unit profile and shape.
- **Do not deviate by more than** plus or minus 1/8" from approved cross-section dimensions.
- **Do not deviate by length of units** by more than length/360 or plus or minus 1/8", whichever is greater, not to exceed plus or minus 1/4".
- **Warp, bow, or twist:** Do not exceed length/360 or plus or minus 1/8", whichever is greater.
- **For installation tolerances comply accordingly:**

1. **Variation from Plumb:** Do not exceed 1/8" in 5' or 1/4" in 20' or more.
2. **Variation from Level:** Do not exceed 1/8" in 5', 1/4" in 20', or 3/8" maximum.
3. **Variation in Joint Width:** Do not vary joint thickness more than 1/8" or 1/4" of nominal joint width, whichever is greater.
4. **Variation in Plane between Adjacent Surfaces:** Do not exceed 1/8" difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

MOVEMENT JOINT LOCATIONS



The most common shrinkage/restraint issues come from drying shrinkage, temperature changes, carbonation, and differential movement.

HANDLING AND STORAGE

- **Protect units at all times** to prevent chipping, cracking, staining, or other damage.
- **Handle long units at the center and both ends** simultaneously to prevent cracking.
- **Store units on pallets with non-staining waterproof covers.**
- **Do not double stack pallets.**
- **Ventilate units under covers** to prevent condensation.
- **Prevent contact with dirt and splashing.**
- **Do not use pry bars** or other equipment in a manner that could damage units.

REPAIR

- **Repair chips and other surface damage** if noticeable when viewed in direct daylight at 20'.
- **Use only repair methods that are approved by architect**.
- **Use materials provided by manufacturer.**

CLEANING

- **Clean exposed units** after mortar is thoroughly set and cured. The wall should be cleaned within 1 to 2 weeks of installation for best results.
- **Perform test of cleaner on small area** of 4' x 4' on each profile and color; then receive approval by architect before full cleaning. Let test area dry 4 to 5 days before inspection. Keep test area for future comparison.
- **It is not advised to clean in cold temperature.**
- **Do NOT use** the following to clean units:
  - Muriatic acid
  - Power washing
  - Sandblasting
  - Harsh cleaning materials or methods that would damage or discolor surfaces
- **Clean units by wetting down the surface first,** before using the appropriate Sure Klean cleaner, brush on cleaner, let dwell for 2 to 3 minutes. Reapply cleaner, scrub surface with masonry brush and rinse off thoroughly. Areas with heavy soiling use a wood block or non-metallic scraper. If EaCo Chem products such as NMD-80 are used, consult Reading Rock or EaCo Chem for further instructions.
  - Pay close attention to weather and evening temperature's in colder months and follow cleaner manufactures instructions.
  - Darker colored units should be cleaned with Prosoco Light Duty Cleaners. It is likely that darker units will show a white haze and will require delicate cleaning techniques to ensure consistency.
- **Always apply cleaner to units in accordance with manufacturer's cleaner instructions.**

SURE KLEAN® 600 DETERGENT

Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking.

SURE KLEAN® VANA TROL®

Concentrated acidic cleaner for new masonry surfaces subject to vanadium, manganese and other metallic stains. Is designed to simplify rinsing and reduces potential for efflorescence.

SURE KLEAN® CUSTOM MASONRY CLEANER

Removes concrete splashes, excess mortar, mud, retarders, heavy efflorescence, embedded stains, rust and surface soiling from textured to custom masonry surfaces.

SURE KLEAN® LIGHT DUTY CONCRETE CLEANER

Specially formulated to remove common construction and atmospheric staining from a variety of substrates, including smooth architectural and engineered concrete, custom masonry, concrete brick, manufactured stone and decorative pavers. This general-purpose, non etching acidic cleaner removes rust, mud, atmospheric dirt, mortar smears and other stains without altering the surface texture. Light Duty Concrete Cleaner adds depth to colors, brightens white matrices and exposed aggregate.