

INSTALLATION GUIDE

These instructions are provided as a general guideline for the installation of Studio E glass tile; some installations require a more detailed specification. An experienced, professional tile installer, who is familiar with the following procedures, should perform the work. Please read and understand these instructions before beginning any work.

TABLE OF CONTENTS:

Material Inspection	2
Recommended Applications	3
Substrate Preparation	4
Installation Materials	6
Cutting	8
Drilling	11
Substrate Variation <i>(installing next to thicker tiles)</i>	12
Installation Instructions	15
Cleaning and Maintenance	19

MATERIAL INSPECTION

The owner or owner's representative is responsible for determining the acceptability of the product prior to installation. Due to the handmade, artistic nature of our products, variation in color, shade, tone and size is normal. In many cases, there will also be folds, wrinkles and bubbles in the glass. These surface characteristics are inherent to our cast glass manufacturing process and should be expected. Upon delivery of your order, open and inspect each box of tile.

For mounted mosaics, verify sheet-to-sheet color consistency by first comparing each sheet to one another from the backside. Next, compare the face of the sheets by laying them adjacent to one another and comparing the visible portion (edge) of the mosaic tiles.

For un-mounted liners and decos, inspect and blend the entire order.

Due to color and other variations inherent to this product, materials ordered separately may not match. All materials to be installed in one location should be ordered together.

No adjustments will be made after installation.

RECOMMENDED APPLICATIONS

The following chart is a general guideline listing Edgewater glass tile products, by color/blend name, cross-referenced with typical tile applications. Use this chart to determine which product is appropriate for your installation.

Color/Blend	WALLS		SHOWERS		SUBMERGED	FLOORS		FLOOR USAGE LEVEL			
	Interior	Exterior	Walls	Floors	All	Interior	Exterior	Light Residential	Residential	Heavy Residential	Light Commercial
Abalone	•	•	•	•	•	•	•	•	•	•	
Black Sand	•	•	•	•	•	•	•	•	•	•	
Del Mar	•	•	•	•	•	•	•	•	•	•	
Dune	•	•	•	•	•	•	•	•	•	•	
Dusk	•	•	•	•	•	•	•	•	•	•	
Outer Banks	•	•	•	•	•	•	•	•	•	•	
Silver Strand	•		•			•		•	•	•	
Stone Steps	•		•			•		•	•	•	
Summerland	•		•			•		•	•	•	
Sunset Cliffs	•		•			•		•	•	•	

NOTE: Edgewater liners are intended for wall use

FLOOR USAGE DEFINITIONS

Light Residential: Residential interior flooring areas subject to soft-soled footwear or normal traffic without heavy dirt or exterior access. Some examples would be: bathrooms and bedrooms.

Residential: Residential flooring areas subject to soft-soled footwear or normal footwear traffic with small amounts of abrasive soil. Some examples would be: living and dining rooms.

Heavy Residential: Residential flooring areas subject to normal footwear traffic with occasional amounts of abrasive soil. Some examples would be: halls, entryways, kitchens and corridors.

Light Commercial: Non-industrial, commercial flooring areas subject to normal footwear traffic with occasional amounts of abrasive soil. Some examples would be: boutique showrooms and corporate office spaces.

SUBSTRATE PREPARATION

The performance of a properly installed thin-set tile application is dependant upon the durability and dimensional stability of the substrate to which it is bonded. In general, there are four types of acceptable substrates for glass tile. They are:

- Concrete - Cured a minimum of 28 days, may require additional surface preparation
- Cement Mortar - Cured a minimum of 7 days
 - Walls - Two-coat cement mortar bed reinforced with 2.5lb galvanized metal lath
 - Floors - Wire reinforced cement mortar bed over membrane or bonded cement mortar bed
- Cement Backerboard (CBU) - Durrock, Fiberock, Hardibacker, PermaBase, Wonderboard
- Drywall - Dry locations only

An installation's substructure, location and substrate type (i.e. cement backerboard or concrete) will influence the details of how the substrate should be prepared.

These various substrate preparation methods are detailed in The Tile Council of North America's "2008 TCA Handbook For Ceramic Tile Installation" and are organized by alphanumeric designation (i.e. B415-07). Use the following chart to identify which TCA Method is appropriate for your installation and refer to the handbook for details.

NOTE: The "TCA Handbook For Ceramic Tile Installation" is available for purchase at www.Tile-USA.com.

FLOORS	INTERIOR			EXTERIOR		
	CBU	Mortar	Concrete	CBU	Mortar	Concrete
Wood Sub-Floor	F144-07	F145-07 F141-07	N/A	N/A	N/A	N/A
Concrete (Slab on Grade)	N/A	F111-07 F112-07	F113-07	N/A	F101-07* F102-07	F102-07
Concrete (Elevated or Post-Tensioned)	N/A	N/A	N/A	N/A	F121-07*	N/A

*This method is not recommended for freeze-thaw applications.

WALLS	INTERIOR			EXTERIOR		
	CBU	Mortar	Drywall	CBU	Mortar	Drywall
Wood Studs	W244C-07 W244F-07	W231-07	W243-07	W244E-07	W231-07	N/A
Metal Studs	W244C-07 W244F-07	W241-07	W243-07	W244E-07	W241-07	N/A
Solid Backing (Masonry)	N/A	W221-07	N/A	N/A	W201-07	N/A

SPECIALTY	CBU	Mortar
Bathtub Walls**	B412-07	B411-07
Shower Receptor** Floors/Walls	B415-07	B414-07
Steam Shower Receptor Floors/Walls	SR614-07	SR613-07
Swimming Pools	N/A	P601-07

**Wood or metal studs.

Unacceptable Substrates

- Single-float mortar bed walls (i.e. cement mortar beds, which do not employ cured scratch coats)
- Cement mortar beds reinforced with metal lath less than 2.5 lb per square yard (i.e. chicken wire)
- Wood Products such as plywood, luan, MDF, pressboard and composites

Substrate Requirements

- Shower receptor floors require the waterproofing below the mortar bed be sloped ¼" per foot towards the drain and unobstructed weep holes per TCA B414-07 and B415-07.
- Cement mortar beds must be cured a minimum of 7 days prior to glass tile installation.
- Cement backerboard (CBU) joints must be treated with mesh-tape and thin-set per the CBU manufacturer's recommendations.
- Solid blocking for anchoring fixtures, such as shower doors and towel bars, must be installed prior to installing the tile substrate.

Pool Installations

The following information relates to the installation of Studio E glass tile over concrete tanks in pool applications. For the preparation of pool substrates, follow the "2008 TCA Handbook For Ceramic Tile Installation" method P601-07 (mortar bed method).

Pool Requirements

- Based on the soil report, pool tanks must be engineered and constructed to support a glass tile installation.
- Pool tank must be reinforced concrete
- Make concrete tank watertight with a cementitious sealer. (See list of waterproofing membranes on page 7)
- Cement mortar beds must be cured a minimum of 7 days prior to glass tile installation.
- The ideal working temperature for most thin-set and grout products is between 50° and 90°F. Exterior installations must be protected from direct sunlight and wind.
- Install movement provisions according to TCA EJ171-07. A flexible sealant, recommended for submerged applications, is required between the tile and the decking or coping, at all inside corners and every 12'-16' on center in the tile field.
- All submerged applications must be cured a minimum of 21 days prior to submersion or heavy water use.

INSTALLATION MATERIALS

Due to the translucent nature of glass tile, the color of the adhesive will affect the appearance of the installed glass tile. We recommend the use of specific **white** thin-sets, some mixed with a specific latex admix (see list below). All submerged applications must be cured a minimum of 21 days prior to submersion or heavy water use.

When mixing thin-set or grout:

1. measure liquid and powder per the manufacturer's recommendations,
2. machine mix at a maximum of 300rpm,
3. allow the thin-set or grout to slake (sit) 10-15 minutes,
4. re-mix (repeat step 2) and do not add more liquid or powder.

Acceptable Thin-Sets (white)

- CUSTOM BUILDING PRODUCTS: FlexBond Fortified Thin-Set Mortar
- CUSTOM BUILDING PRODUCTS: Glass Tile Thin-Set Mortar
- CUSTOM BUILDING PRODUCTS: MegaFlex Crack Prevention Mortar
- CUSTOM BUILDING PRODUCTS: MegaLite Crack Prevention Mortar
- DURABOND: D70 ProFlex High Performance Extremely Flexible Mortar
- FLEXITILE: 52 Versatile Floor Mortar
- HYDROMENT: ReFlex Ultra-Premium Latex Modified Thin-Set mortar
- LATICRETE: 254 Platinum Multipurpose Thin-Set Mortar
- MAPEI: Adesilex P10 mixed with Keraply Mortar Additive.
- MAPEI: Kerabond Premium Dry-Set Mortar mixed with Keralastic Mortar Additive.
- TEC(H.B. FULLER): Super Flex Premium Performance Universal Latex-Modified Thin-Set Mortar.

Unacceptable Adhesives

- Organic adhesive (mastic) - due to yellowing and low bond strengths
- Epoxy - due to low flexibility

Movement Joints

Movement joints are essential for the success of most tile installations. Follow movement joint recommendation EJ 171-07 in the "2008 TCA Handbook For Ceramic tile Installation". Movement joint requirements will vary depending on substrata, climate and size of installation. An architect or design professional should be consulted when specifying the exact number and location of each movement joint. Confirm suitability of sealant for your installation with the sealant manufacturer.

Flexible Joint Fillers (Sealants)

CUSTOM BUILDING PRODUCTS: Polyblend Ceramic Tile Caulk
HYDROMENT: Chem-Calk 900 One-Part Urethane Sealant
LATICRETE: Latasil 100% Silicone Sealant
SIKAFLEX: 1A or 2C Polyurethane-based Sealant

Acceptable Grouts

We recommend grouting Studio E glass tile with a cement-based sanded grout. When installed with standard grouting technique, sanded grout will not scratch Studio E glass tile. Blue, green and red grouts may not be appropriate for submerged applications; consult the grout manufacturer for specific use recommendations.

- CUSTOM BUILDING PRODUCTS: Polyblend Sanded Grout
- CUSTOM BUILDING PRODUCTS: Prism SureColor Grout
- DURABOND: Fortified Tile Grout (FTG) Sanded
- FLEXITILE: 600 Polymer Sanded Grout
- HYDROMENT: Sanded Ceramic Tile Grout (CTG)
- LATICRETE: PermaColor Grout
- LATICRETE: 1500 Sanded Grout
- MAPEI: Keracolor Sanded Grout
- MAPEI: Ultracolor Plus Grout
- TEC (H.B. FULLER): AccuColor Premium Sanded Tile Grout
- TEC (H.B. FULLER): AccuColor XT Sanded

Unacceptable Grouts

- Epoxy Grout - due to low flexibility and degradation from ultraviolet light (sunlight)
- Non-Sanded Grout - due to shrinkage

Anti-Fracture/Waterproofing Membranes

There are a wide variety of anti-fracture and waterproofing membranes available for use in tile installations. Each membrane product will vary in type, application and performance; consult the membrane manufacturer for specific recommendations. The following is a brief list of common membrane materials:

- AQUAFIN: 1K and 2K/M - Cementitious Waterproofing System
- CUSTOM BUILDING PRODUCTS: RedGard Waterproofing and Crack Prevention membrane
- HYDROMENT: Gold Anti-Fracture and Waterproofing Membrane
- LATICRETE: Hydro Ban
- MAPEI: AquaDefense
- TEC: HydraFlex Waterproofing Crack Isolation Membrane
- XYPEX: Concentrate

CUTTING

Studio E glass tile can be cut to meet jobsite dimensions with the use of a high-quality wet tile saw equipped with a continuous, smooth-rim, diamond glass tile blade, such as:

- Alpha Professional Tools - Vetro
- daltool - Glass Tile Blade
- Husqvarna - Supelok Glass+
- MK Diamond - MK 215GL

Because Edgewater mosaics are paper-face mounted with water-soluble glue, wet cutting mounted mosaics can present unique challenges. The following photos document a process, which can be used to facilitate wet cutting while minimizing water contact with the mounting paper. To view a video demonstration of wet and dry cutting paper-faced mosaics, please visit www.studio-e-design.net.

ALWAYS USE SAFETY EQUIPMENT WHEN CUTTING OR DRILLING GLASS TILE



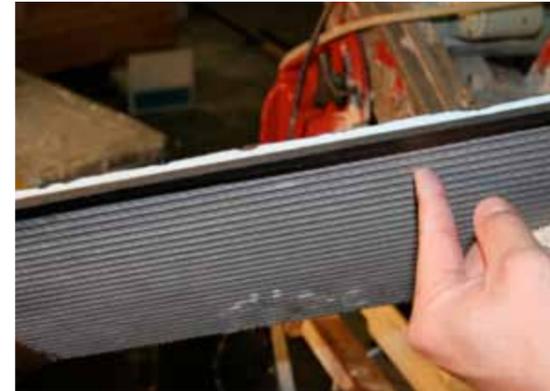
Step 1

Cover the saw tray with a piece of 1/4" cement board cut to a size that covers the entire tray. This will provide a continuous surface that supports the sheet during cutting and prevent mosaic pieces from falling into the tray's cutting channel.



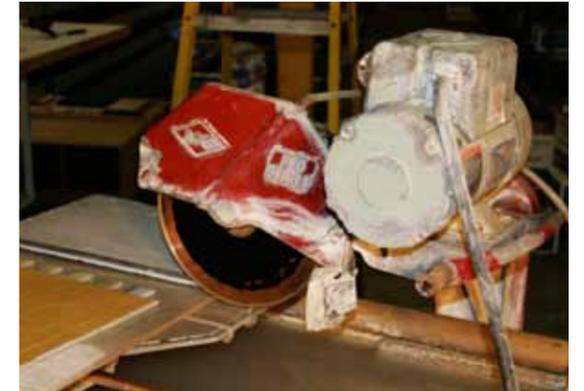
Step 2

Adjust the blade height so the blade cuts through 1/2" of the cement board thickness.



Step 3

Cut another piece of 1/4" cement board to a square size that is larger than a sheet of mosaics. Apply a strip of self-adhesive, compressible, foam weather-strip to one edge of the cement board.



Step 4

With the saw turned off, place the mosaic sheet on the cement board covered saw tray (paper side up) and align the cut.



Step 5

Place the second piece of cement board on top of the mosaic sheet. Cover the portion of sheet that is to be installed (keeper) with the weather-strip side down and against the blade. The board will protect the mounting paper from saw over-spray.



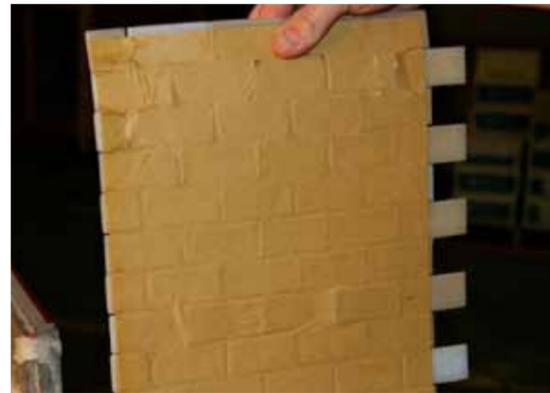
Step 6

Place downward pressure on the top layer of cement board, turn the saw on and slowly proceed cutting. The downward pressure should be sufficient to compress the weather-strip, preventing water from flowing under the board, and to stabilize the mosaic tiles during cutting.



Step 7

Once cutting is complete, turn the saw off, carefully remove the top layer of cement board and quickly towel dry the mounting paper.



Step 8

Towel dry the back of the tile and install the sheet as normal.

NOTES

- The above process should keep the mounting paper relatively dry during cutting. However, if a sheet becomes saturated during cutting, quickly lay it on a flat surface and allow it to completely dry before handling.
- For best results, towel dry the weather-strip between cuts.
- Replace the weather-strip when it no longer recovers its original shape after compression.
- To maintain cut quality, periodically dress the diamond blade with a dressing stone.
- To smooth cut tile edges, use a #120 lapidary stone (tile rub stone), PVA polishing pads or 220 silicon carbide sandpaper.

Mosaic tiles may also be removed from the sheet and wet cut individually or cut by hand using glass mosaic nippers. (See photos)



DRILLING

Studio E glass tile can be drilled using a wet core diamond bit and a water swivel (central water feed). Solid blocking for anchoring fixtures, such as shower doors and towel bars, must be installed prior to installing the tile substrate. The diameter of all drilled holes must be large enough to allow the fastener to pass through the glass tile and substrate without making contact.



Step 1

Attach the water swivel (central water feed) and wet core diamond bit to the drill. Connect the water swivel to a water source and adjust the water flow to a slow trickle. Constant, slow water flow will reduce chipping by cooling and lubricating the drill bit.



Step 2

Using a template to stabilize the drill bit, begin slowly drilling with light pressure.



Step 3

Gradually increase drilling speed and maintain steady pressure until the desired depth is achieved.

SUBSTRATE VARIATIONS (installing next to thicker tiles)

When installing Edgewater glass tile adjacent to thicker materials, with the intention of the two tiles finishing in the same plane (flush), the substrate must be brought up to a level such that the tile can be installed with the recommended amount of setting material. This should be accomplished in one of three ways depending on the amount of variation between the uninstalled glass tile and installed surrounding material.

For Variation Between $\frac{1}{8}$ " - $\frac{1}{4}$ "



Use one of the recommended thin-sets (page 6) and a notch trowel to apply a layer of thin-set. Use a notch trowel size that renders the desired substrate depth once the notches have been flattened.



Without removing any thin-set, flatten the thin-set notches. This step should yield a smooth consistent setting bed of uniform depth. Cure for a minimum of 48 hours.



After the flattened layer of thin-set has cured for a minimum of 48 hours, install and grout the tile per the instructions on pages 15-18.

For Variations Between $\frac{1}{4}$ " - $\frac{3}{4}$ "



Use one of the recommended thin-sets (page 6) to install a piece of $\frac{1}{4}$ " or $\frac{1}{2}$ " cement board. Use a notch trowel size and cement board thickness that will render the desired substrate depth. Cure a minimum of 24 hours.



After the installed cement board layer has cured for a minimum of 24 hours, install and grout the tile per the instructions on pages 15-18.

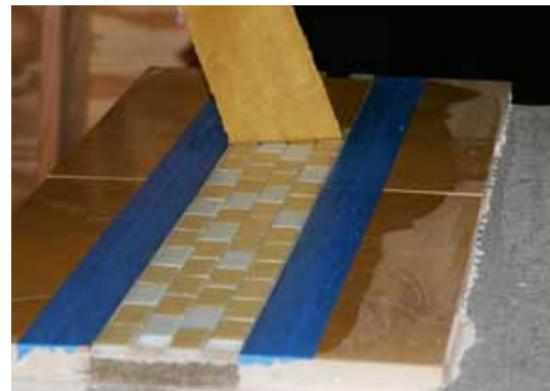
For Variations Between 3/4" - 1 1/2"



Apply a thin layer (bond-coat) of one of the recommended thin-sets (page 6).



While the bond-coat is still tacky, apply a cement mortar bed (sand & cement mixture per ANSI A108.1B). Screed the cement mortar bed to the desired substrate depth and cure a minimum of 7 days.



After the cement mortar bed has cured a minimum of 7 days, install and grout the tile per the instructions on pages 15-18.

INSTALLATION INSTRUCTIONS



Step 1

To initiate the bond coat, use the flat side of a trowel and firmly apply thin-set to the substrate.



Step 2

To establish the proper depth of the setting bed, use a 1/4" x 1/4" square notch trowel to apply additional thin-set and comb full notches in one direction.



Step 3

Use the flat side of the trowel to flatten the notches and achieve a smooth, consistent thin-set setting bed.



Step 4

Apply mosaic sheets to the thin-set setting bed (paper side towards you) with light, even pressure.



Step 5

Prior to setting each additional sheet, check the thin-set for skinning (slight drying). If skinning occurs, remove the thin-set and repeat steps 2 and 3. Apply subsequent sheets so the joints line up and a consistent field is maintained.



Step 6

To achieve the flattest possible surface, lightly tap the sheets with a wooden beating block and a finish hammer. To unify sheet transitions, tap from one sheet to the next.



Step 8

After 15-30 minutes, (floors can be removed sooner) lightly wet the paper. Keep the paper wet by wiping with a damp sponge several times over a 5-10 minute period. After the paper has absorbed the water, the glue will release.



Step 9

Peel the paper from the tile starting at the corner. Removing the paper while the setting material is still fresh allows for individual tile adjustment and re-inspection of color consistency.



Step 7a

For liners and decos, wipe the back of each piece with a clean, dry cloth.



Step 7b

Back-butter each piece with a thin layer of thin-set and apply it to the thin-set setting bed. Space a minimum of 1/8".



Step 10

Straighten individual mosaic tiles prior to final set with the goal of creating a consistent overall field of mosaics. To eliminate the sheet pattern, pay particular attention to the transitions between sheets.



Step 11

After 48 hours, use water and a nylon scrub brush to remove residual glue from the tile. Clean rinse and towel dry.

CLEANING AND MAINTENANCE

Proper care and maintenance is crucial to the long-term appearance and performance of any tile installation. The following information outlines the products and techniques recommended for the cleaning and sealing of Studio E glass tile and are general in nature. For heavy soil and stains that are not removed by the processes in this document, please consult a tile cleaning and restoration specialist.

NOTE: Always wear personal protection equipment and protect surrounding surfaces and finishes when using cleaning or sealing products. Test all cleaning/sealing products in an inconspicuous area for desired effect.

New Installations

For the removal of light cement-based grout haze or light construction dirt:

- Cure the installation a minimum of 24 hours after grouting.
- Remove loose dirt by vacuuming or sweeping.
- Prepare a cleaning solution of warm water and liquid dish soap or pH neutral cleaner.
- Thoroughly clean with the solution and a nylon scrub brush or nylon scrub pad (3M white).
- Thoroughly rinse with clean water and towel dry.

For the removal of stubborn cement-based grout or thin-set haze:

- Cure the installation a minimum of 10 days after grouting.
- Remove loose dirt by vacuuming or sweeping.
- Thoroughly pre-soak with clean water.
- Prepare a cleaning solution of Sulfamic Acid Cleaner per the manufacturer's directions.
- Following the Sulfamic Acid manufacturer's directions, clean with the solution and a nylon scrub brush or nylon scrub pad (3M white).
- Thoroughly rinse with clean water and towel dry.

Sealer Application

Sealers are beneficial for grout and natural stone; however they will not penetrate the impervious glass tile. To prevent sealer smears, remove unabsorbed sealer by buffing the installation with a clean, dry cloth. Change buffing cloth often and DO NOT allow the sealer to dry on the surface of the tile.

NOTE: Consult the grout manufacturer for specific grout sealing recommendations. Always test sealers in an inconspicuous area for desired effect.

General Maintenance

The key to successfully maintaining any tile installation is regular, proper maintenance. Any food or other spills (i.e. coffee, wine & citrus) should be wiped up immediately. For regular cleaning use a nylon scrub brush or 3m White nylon scrub pad and a solution of warm water and a pH neutral soap (liquid dish soap or daily-use stone cleaner). Clean rinse and towel dry.

NOTE: Harsh cleaning chemicals and abrasives can damage tile, stone, grout and grout sealers.



Step 12

Apply grout with a rubber grout float, forcing grout into joints until full.



Step 13

Allow grout joints to set-up (firm) and smooth finish with a damp sponge. After 2 hours remove grout haze with a lightly damp sponge.



Step 14

For final removal of grout haze, polish with a clean, soft cloth.

NOTE

See Cleaning and Maintenance (page 19) for recommendations on cleaning new installations and the removal of stubborn grout haze.

Showers

For regular cleaning use a nylon scrub brush or 3m White nylon scrub pad and a solution of warm water and a pH neutral soap (liquid dish soap or daily-use stone cleaner). Clean rinse and towel dry.

For the removal of soap scum build-up in showers use DESCUM Soap Scum Remover & Renovator per the manufacturer's instructions.

Pools And Water Features

Maintaining proper water balance is critical for the prevention of mineral scale build-up in pools and water features. Water balance is calculated via the Langelier Saturation Index (LSI). The water's LSI is a numeric expression of the water's balance and takes into consideration several factors (i.e. total alkalinity, calcium hardness, etc...). When water is balanced the LSI equals zero and variation between +0.5 and -0.5 is considered acceptable. LSI readings greater than +0.5 may lead to water cloudiness and accelerated scaling (mineral deposits). LSI readings less than -0.5 may lead to corrosion of cement-based materials (i.e. concrete, plaster & grout) and metal surfaces.

For general pool and spa maintenance and the prevention of build-up, scrub the installation with a nylon bristle scrub brush or a 3M White nylon scrub pad. Scrubbing should be part of the regular, weekly, pool maintenance program.

To remove light mineral scale, the installation may also be cleaned with Descale-it Pool & Spa Cleaner or a solution of Sulfamic acid. Always follow the chemical manufacturer's instructions for safety and use. A standard practice when using acidic cleaners is to rinse and neutralize the surface of the tile, immediately after cleaning, with a solution of baking soda and water (1lb: 3 gallons).

If the mineral scale is not removed through the above methods, media blasting may be necessary. There are pool tile-cleaning specialists who use portable media blasting equipment to clean pool tile. They use an array of blasting media ranging from sand (aggressive) to baking soda (mild). In our experience, baking soda (sodium bicarbonate) blasting media is aggressive enough to remove scale but will cause minimal damage to the tile. As with all cleaning procedures, this process should be tested in an inconspicuous area to ensure the results will not damage the tile surface and meet your expectations.