

1 INTRODUCTION :

1.1 Viatera Introduction

Viatera® quartz surfacing is comprised of 93% quartz, blended with 7% unsaturated polyester resins, additives, and inorganic non-fading pigments using the world patented vacuum-vibroprocess press of Breton S.P.A of Italy. Viatera® slabs and tiles are ideally suited for a wide range of horizontal and vertical surfacing applications including counters, vanities, interior wall cladding and residential as well as even the largest scale commercial floors. The current color palette of over 40-styles as well as the capability to produce essentially any color or desired appearance limits designers and architects only by their imagination.

Quartz is extremely hard, with unique strength, unusual depth, clarity and radiance. Quartz crystals give Viatera® it is exceptional hardness, clarity and consistency in color.

Viatera® is dense, non-porous, non-staining and requires virtually no maintenance. It suggests a feeling of enhanced luxury and sophistication while at the same time it is one of the most varied minerals. It offers a variety of types, colors and forms, each with its own individual appearance. Viatera® has characteristics of superior strength and durability. It is extremely resistant to cracks, chips, scratches, dulling, and abrasion. It is graded as a Class 1 material and has a PEIV rating. It has a MOHS hardness rating of 7.

Viatera® can be cut and installed to the exact specifications needed by the customer. It requires virtually no maintenance other than normal cleaning. It is virtually unaffected by heat, freeze-thaw, and acid.

2 FABRICATION :

2.1 General Description

Material making it extremely strong. Due to the small amount of resin that is added, water must be used to fabricate Viatera® otherwise heat from friction between tools and the product may blacken the surface.

2.2 Fabrication Tools

Fabricating tools for Viatera® is similar to tools used for fabricating granite and abrasives used for granite can be used to gloss Viatera®'s surface. For more information on fabricating tools, please contact us directly.

2.3 Fabrication Thickness

Viatera® is produced in 15mm, 20mm, and 30mm thickness and because it is also extremely strong, Viatera® can be used as extremely thin tiles. If there is a need for thicker products or a need to connect two tiles, an elastic adhesive can be used to adhere needed tiles. For more information on adhesives, please contact us directly.

2.4 Cleaning and Maintenance

Viatera® can be cleaned using neutral detergent. Harsh cleaning tools such as stainless brushes are inappropriate for cleaning. For a shinier gloss, abrasive-free stone wax can be used but caution is recommended because overuse of wax can cause the surface to become slippery and contaminated.

2.5 Precautions

- 1 Although Viatera® is highly heat resistant, cookware such as skillets, pots, pans, and kettles straight off the heat should not be placed directly on the product surface. To avoid direct heat on the surface, coasters should be used beneath hot cookware.
- 2 Surface impact with sharp knives or heavy materials may cause damage and caution is advised.
- 3 Please prevent damage from impact by rounding the tile corners during processing.
- 4 Neutral detergent should be used to clean the product. Detergent comprised with abrasive materials and alkaline detergent may damage the surface and should not be used for cleaning.

3 INSTALLATION for FLOOR :

3.1 Environment Requirement

- 1 Install adhesives only in a ventilated environment.
- 2 Maintain environmental conditions and protect work during and after installation.
- 3 Maintain air temperature and structural base temperature at installation area at not less than 25°F (5°C), or more than 95 °F (35°C) for (48) (24) hours before, during and for days after installation.

3.2 Substrate preparation

Substrate must be sound, level, free from structural movement and clean of debris such as oil, paint sealers and curing compounds which may prevent the tile from proper bonding. Cement slabs must be adequately cured before installation.

3.3 Moisture content of concrete slabs

It is recommended to install tile only over concrete slabs that are free of hydrostatic pressure. Installation difficulties may occur when a slab demonstrates rising moisture conditions. Install tiles over only those slabs which are sufficiently cured and free from hydrostatic pressure rising moisture conditions.

To test for moisture transmission through a slab; a 2' x 2' polyethylene sheet may be laid on the substrate and taped around all four sides. It should be allowed to remain undisturbed for 48 hours. If after this time no condensation is visually present, the slab may be considered sufficiently dry to install tile.

Moisture may also be tested with a Calcium chloride Moisture Tester.

The standard level of acceptable moisture for epoxy mortars is a reading that does not exceed 5%.

This may also be used as a general guideline for other tile installation in order to establish moisture emissions through a slab.

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3.4 Installation methods

1 Types are four basic types of setting material considered for Viatera®:

① Traditional laying method using mortar (Cement/Mud) : Not permitted for Viatera®.

A job site mixture of sand, cement and water. Cement mixes such as this always contain excess water ; mechanics may be add more for workability. Even after the cement has chemically cured, there will be excess water that must eventually evaporate. This excess water may exit the floor system through the grout lines, sometimes leading to discoloration of the grout. Also, the excess water in these systems can promote warping of the tile. The setting material has the weakest internal tensile/shear strength and slab-to tile adhesive strength.

② Cement based adhesive (Latex modified portland cement thinsets)

Pre-packaged mixture of sand, cement, powdered polymers, water and water emulsions of polymers (resins), water reducing and flow additives. The polymer resin is introduced to the system as either a powder mixed in with the sand and cement or as part of a water emulsion "milk" /latex.

The purposes of the flow additives and the polymer is to improve adhesive strength, consume or displace water in this system so there will be no excess water after the cement cures and to improve handling.

The term "latex" is commonly used to refer to either the "milky" liquid polymer emulsion used with some thinset systems and to refer to the powdered polymer included in other thinset systems. Latex is actually the sap derived from a natural rubber plant.

Few, if any thinsets today include natural latex in the formulation. Latex has been replaced with synthetic polymers which are both more effective strengthening the thinset and costing much less.

The word "latex" is retained along with the more precise terminologies "polymer emulsion and powdered polymers". to 200+psi. Latex/portland cement Thinsets develop a good adhesive strength to tile/slab in 6-12 hours water "available" for 6-12 hours. The ideal adhesive thickness must be 5-10mm.

③ Rapid set liquid latex / acrylic modified thinsets

Contain chemical curing accelerators Develops good adhesive strength in 3-6 hours. Water "available" for 3-6 hours only. * Recommended adhesive : Mapei, Laticrete, Bostik etc. (please contact manufacturers)

④ Epoxy

Contains no water and generates a very high adhesive strength.

2 Selecting a setting materials

The selection of setting materials depends upon the following factors :

① The floor / The job

Available elevation and levelness of the slab

- Adjust elevation and levelness with cement /concrete : thoroughly dry the concrete, then thinset
- Adjust elevation and level with self leveling underlayments ; then thinset -preferred method
- Adjust elevation and levelness while thinsetting tile

The time available before traffic

- Standard thinset -12-24 hours to accept traffic
- Rapid set thinset -3-6 hours to accept traffic

Substrate condition, expected traffic, installation temperature

② The tile

- Dimensional stability. "Inherent warpage factor" of tile /size and thickness. Dimensional stability refers to the tiles All materials, even glass, will absorb some water on its surface and as the surface absorbs water it expands. This expansion makes the wet side of the tile larger than the dry side and the tile will attempt to curve or warp in order to relieve the stress. Viatera® tiles have very low water absorption and excellent dimensional stability, therefore they are very resistant to warping or curling. However, as the size becomes larger, 24"x 24"(600mm X 600mm) or larger, even Viatera® will curl a little and the setting materials and methods must be selected accordingly.

- Water Absorption/Desired Bond Strength Low absorption materials such as porcelains and Viatera® require the use of Latex-Portland cement modified thinsets to achieve proper adhesive to the tile.

- All tiles should be "back buttered" to insure maximum coverage.

3 Grouting

The installation of the floor tiles without joint is to be avoided

The width of joint between the tiles should be at least 1/8" ~ 1/5" (3mm ~5mm) and the width of expansion joint (minimum every 4 X 4M or 6 X 6M) filled with elastic jointing should be at least 2/5" (10mm).

4 Protection

① Protect finished work against weather, freezing and immersion in water for at least 21 days after completion of the work.

② Protect floors from foot traffic for at least 24 hours and general traffic for at east 72 hours after installation. Prohibit heavy traffic in floors for at least 7 days after installation. Special attention must be given to protecting textured material during installation and afterward. The installer should consider using a grout release on textured Viatera®. Also, sealing the textured finish immediately after the grout is dry will greatly help to protect the textured surface. Even after sealing, it is best to protect the textured surface from vehicular traffic, especially fork trucks with appropriate cover during the construction period.

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INSTALLATION for WALL :

Materials should always be installed according to local codes, ordinances, trade practices and climatic conditions. Consult with the setting material manufacturer for each project. There are almost no restrictions on interior installations of Viatera® materials. However, until further testing is completed, it is NOT recommended that Viatera® be installed on exterior surfaces.

4.1 Surface preparation

The surface must be free of coatings, oil, wax or anything that would prevent proper bonding.

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4.2 Installation methods

Viatera® tiles up to 400mm X 400mm may be applied over plywood, gypsum board, "floated" walls or cementitious backer board. The following must be considered in the selection of the backer board/substrate for walls.

- 1 Whether the wall will be subjected to water, and
- 2 The weight of the wall tile : do not use gypsum board where the height of the tile application will result in weight which is greater than the shear strength of the paper facing of the gypsum board, usually more than 4 feet high. Installation materials include thinset or organic adhesive.

4.3 Protection

- 1 Protect finished work against weather, freezing and immersion in water for at least 21 days after completion of the work.
- 2 Protect walls from impact, vibration and hammering on adjacent walls for at least 14 days after installation.

4.4 Grouting

On walls, install Viatera® tiles leaving a regular even spacing between tiles of a least 1/18"(3.0mm) (specify joint width if wider joints are desired). The installation of the wall tiles without joint is to be avoided.

4.5 Wall anchor system

Occasionally, 3/4"(20mm) material will be the selection of choice for a wall installation. Viatera® 3/4"(20mm) large format panels can be "anchored" to the wall using any of the approved systems available. Cutting slabs into 3/4 " Viatera®, as is done with natural marble and granite, creates an extremely strong anchor.

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MAINTENANCE :

Viatera® products are very resistance to chemical and scratches. Polished and Semi-Gloss finishes are very resistance to stains. Maintenance does not involves sealers or polishers. Therefore, the basic concept in maintaining these finishes is to focus on the effective removal of daily soil and spots.

Honed finishes will require more aggressive scrubbing and detergents for effective maintenance especially in darker colors.

5.1 Daily cleaning

- 1 Dry mop/sweep/vacuum floor as appropriate to the floors finish to remove dust/dirt.
- 2 Spot clean with detergents or spot removers and hand scrub as needed.

5.2 Washing

Use an automatic scrubber/vac fitted with a 2" soft bristle nylon brush. This machines scrubs, rises and wet vacs the floor in one pass. Use detergent/stripper solutions appropriate for the soil to be removed.

OR. Use a low speed (175 rpm) buffer with 2" soft nylon brush, scrub floor with cleaning solution wet vac.

Rinse with clean water and wet vac again. The most effective frequency for each of the above procedures is to determined by the traffic and desired appearance standards for the floor.

5.3 Heavy duty cleaning

Periodically, it may be effective to give the floor a more aggressive cleaning using a heavy or stripper type cleaning solution. If possible, increase the soak time for the cleaning solution on the floor before scrubbing and removal.

The deep cleaning is also very beneficial to the appearance of the grout. Periodic heavy duty cleaning can keep your Viatera® floor as beautiful as when installed. Never use Methylene Chloride or cleaners containing any alkaline materials.

Either as a solvent or paint remove on Viatera® as it will damage the surface in as little as five minutes.

5.4 Spot removal

The focus of spot removal is to find the most effective cleaner or solvent that ill removes the spot.

Adhere material : Gum, Paint-nail polish, Grease, Dried Raisins, Etc.

It is sometimes useful to start by scraping the spot material. A putty knife or razor may be used.

NOTE : Viatera® is much harder than the steel blade so excessive scrapping of a blade on the surface may abrade the blade and leave a gray mark on the surface. Such a mark can usually be removed with a green scrub pad. After removing the materials from the spot, treat the spot with th appropriate cleaner/solvent. For heavy material, it is sometimes very effective to apply the cleaner/solvent with a pad of paper towels to keep the spot wet with cleaner for 2~5 minutes before scrubbing and rinsing with additional solvent or rinse water.

Apparent stains : Magic marker, coffee, make up, food.

Apply selected cleaner/solvent by wiping, or where appropriate, by soaking with paper towel pads for 3~10 minutes. Scrubbing after soaking can sometimes be more effective. Rinse with water or solvent one or more times.

5.5 Product that should be avoided

- 1 Cleaners that contain Pine Oil.
Without very thorough rinsing, these products can leave behind a residue of pine oil. The pine oil then attracts and holds dirt on the surface, eventually reducing the cleanliness of the surface and its appearance.
- 2 Abrasive scrubs/cleaners containing either soft or hard abrasive particles.
The abrasives will not harm Viatera® but if the surface is not completely rinsed, a powder residue will remain reducing the appearance of the surface, especially on dark colors.
- 3 Cleaners that contain Xylene, Toluene, Potassium Hydroxide or Caustic soda.
- 4 Paint removers, Furniture strippers containing trichlorethane or methylene chloride.
- 5 Nail polish remover, bleach, bluing, permanent markers.
- 6 Inks, Oil soaps.

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PACKING, STORAGE & TRANSPORTATION :

6.1 Packing

1 SLAB PRODUCTS

Shipping procedures for slabs are as follows.

- The finished top surfaces of the slabs are placed fair face to fair faces.
- The fair faces of the slabs are protected by a fine vinyl.
- ※ Loading capacities of 20ft container for the slabs.

Unit : Sheet

THK (mm)	Open Top	Dry
	1300mm X 3000mm	1300mm X 3000mm
12	155	155
15	124	124
20	93	93
30	62	62
	Only one "A-Frame" per container	5 Bundles per container

2 TILE PRODUCTS

Tile products are shipped as follows.

- Packed in carton boxes, loaded onto wooden pallets with shrink wrapping and steel banding.
- The following information is displayed on the boxes : name of product, date of manufacture, and product size and lot number.

Packing weight, composition and dimensions are set out as following table.

SIZE(THK 12mm)	PCS/BOX	PCS(BOX)/PALLET	SQ.M/PALLET	PALLET/20FT CONT.	SQ.M/20FT CONT.	KG/PALLET	KG/20FT CONT.	PALLET SIZE(mm)(LxWxH)
300mmX300mm	6	384(64)	34.56	17	587.52	1,020	17,340	1350X1350X450
400mmX400mm	6	210(35)	33.60	18	604.80	995	17,910	1350X1350X490
600mmX600mm	3	93(31)	33.48	18	602.64	990	17,820	750X1500X880

6.2 Storage

- 1 Viatera® should be stored indoors prior to installation and covered with protective material.
- 2 Viatera® should be not moistened and be stored in a ventilated environment without hydrostatic pressure/rising moisture condition.
- 3 Maintain air temperature at storage area at not less than 25°F(5°C), or more than 95°F(35°C) before using.
- 4 The exposed surface, edges, and corners should also be protected from impact and scratching.
- 5 The exposed surfaces should be protected from direct sunlight and rain while in storage.

6.3 Transportation

Transportation conditions and methods are determined according to size and weight.

- 1 Consideration should be given to distance to destination, unloading point, road and or job site conditions in determining pallet quantities and packaging.
- 2 While loading and unloading material careful attention must be made to prevent impact damage.

Important Notice to Purchaser :

All information herein is based on test we believe to be reliable. However, the accuracy or completeness there of cannot be guaranteed. Neither seller of manufacturer shall be liable for any loss or damage arising out of use the product. Before using, user shall determine the suitability of the product for it's intended use, and user assumes all risk and liability whatsoever in connection therewith. Due to printing and photographic limitations, printed representations of the product may vary from actual samples and production pieces. The compensation does not apply to color variances in the event of external use or if the products have been subject to thermal shock, chemical abuse or not installed and maintained in accordance with this guide book of LG Hausys or necessitated in whole or in part by force majeure beyond LG Hausys's control, or by the fault or negligence of customers.

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PRODUCT SIZES & WEIGHT :

• Slab size

Large Type : 1,340mm X 3,060mm / Usable area : 1,300mm X 3,000mm

• Standard tile sizes

300mm X 300mm (11.81" X 11.81")	300mm X 400mm(11.81" X 15.75")
300mm X 500mm (11.81" X 19.69")	400mm X 400mm (15.75" x 15.75")
400mm X 500mm (15.75" X 19.69")	400mm X 600mm (15.75" X 23.62")
500mm X 600mm (19.69" X 23.62")	600mm X 600mm (23.62" X 23.62")

• Nominal Thickness

12, 15, 20, and 30mm (0.47, 0.59, 0.79, 1.18")

• Nominal Weight

12mm : 6.02 lbs/ft² (29.4 kg/m²), 15mm : 7.54 lbs/ft² (36.8 kg/m²)
20mm : 10.04 lbs/ft² (49.0 kg/m²), 30mm : 15.05 lbs/ft² (73.5 kg/m²)

• Tolerance for non Standard sized product

Thickness ± 1.0mm, Size ± 1.0mm Flatness ± 1mm/m, Seam cutting angle ± 1%

