# 2006-07 Fabrication Manual

Version 5

LG Viatera

*The Timeless Elegance of Quartz Surfacing*

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LG Viatera
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# LG VIATERA INTRODUCTION

LG Viatera®, categorized as quartz surfacing, is the newest addition to the LG family of countertop surfacing products. Launched in 2004 in the US, the LG Viatera® brand has rapidly made its name in the surfacing industry due to high quality standards, experience of producing similar materials in Italy for over 20 years and the industries first, 15 year transferable warranty.

LG Viatera® is composed of 93% quartz blended with advanced polymer resins and colorfast pigments. The innovative design combined with cutting edge technology, makes LG Viatera® the highest quality quartz surfacing material available.

Unlike Granite or Marble, LG Viatera® does not need topical sealing thus allowing lasting beauty with very little maintenance. LG Viatera® appeals to those who prefer the elegant look of stone, but desire a product that is easy to maintain.  Due to the innovative ways the product can be used, quartz surfacing is becoming the material of choice for design projects of all types.

**CONTACT INFORMATION**

LG Viatera® is made in Italy exclusively for the sole distribution by LG Solid Source, LLC.

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# SAFETY

- Please consult your insurance company, local, state and federal regulations
- Ensure that all tools are grounded and when in use, away from wet locations
- Keep area well lit
- Only properly trained employees should be in the area where fabrication is taking place
- Safety glasses, gloves, ear protectors and safety shoes should be worn at all times when handling LG Viatera
- Safety glasses do not include everyday glasses as they only have impact resistant lenses

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# SAFETY

Continued

- Instruction manuals of tools should be consulted prior to operation
- Guards should be in place and in working properly at all times
- Masks should be worn at all times due to the silica in the dust
- Consult US Regulations as it relates to the amount of dust allowed in the air – respiratory program might be necessary
- Adequate ventilation is necessary when using adhesives and acetone
- Employees should avoid loose clothing, jewelry or any other item which could get caught up in the machinery

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# SAFETY

Continued

- A-FRAME SAFETY
  - Following are simply guidelines – local regulations should take precedent
    - Use of tie-down straps or clamps
    - When removing slabs, the material remaining on the A-frame should be secured
    - Important to make sure the material is secured before releasing the stress from the straps or clamps
    - Stored material should be secured at all times
    - Ensure the A-frame's slope is such that it provides a stable resting place

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# HANDLING & TRANSPORT

- LG Viatera Slabs come in either 2cm or 3cm thicknesses
- LG Viatera Slabs standard size is 55”x120” and weighs approximately 470lbs per 2cm slab and 700lbs per 3cm slab
- When handling more than one slab, LG Viatera should be handled face-to-face
- LG Viatera preferred unloading route is with a forklift or other lifting device capable of handling the appropriate capacity without any body part being between it and the ground
- Carts and dollies should be used when transporting LG Viatera around the shop
- Safety shoes/glasses with side shields should be worn

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# HANDLING & TRANSPORT

Continued

- Gloves should be worn while handling Viatera
- When suction cups or grips are being used, slabs should be held low to the ground
- Laminated edges should be top loaded to avoid bearing the load
- Cut-out pieces should be placed at the top of the A-Frame to prevent bearing the load

# STORAGE

- Vertical storage is recommended
  - Horizontal storage can put stress on the material and cause the material to break
- Polished edges should be covered using blankets, carpet or any other type of quality padding for protection
- Tarps can be used to cover slabs stored in direct sunlight
- Slabs should be stored face-to-face so that an unfinished side is not facing a polished side
- Strapping should be used with A-Frames to prevent flexing
- A-frames that hold finished materials and come in contact with the polished face or edge should have a protective covering to prevent scratching

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# SITE INSPECTION

- Ensure site allows for easy access from drive-up to tear-out
  - Make note of outside ground surface, stairs, elevators, hallways, etc.
- Dimensions of window sills and backsplash heights verified
- Visual inspection of plumbing to ensure height and condition is satisfactory
- Cabinets complete, straight and level
- Walls in good condition and square
- Electrical locations on backsplash
- Corbels or sub-deck required for extended overhangs
- ¾” overhang adequate for clearance of cabinet doors

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# MATERIAL INSPECTION

- Prior to making your first cut, inspect your slab(s) for the following:
  - Slabs that are color matched
  - Cracks or chips in the slab(s) and/or edges
  - Manufacturing Flaws
    - Circular scratches
    - Poor finish (milky or hazy)
    - Foreign Debris (i.e. rubber, metal)
  - Warpage
  - Material color matches the jobs work order

- **If problem areas can not be worked around, please contact your LG Viatera distributor for product replacement prior to cutting into the material**

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# MEASURING & TEMPLATING

- *MEASURING*
  - Detail dimensions and locations should include:
    - Cutouts, overhangs, splashes, faucet holes, interior cabinet dimensions, countertop dimensions, edge sizes, etc.
  - Drawings need to be developed with detailed dimensions
  - Re-verify levelness of the cabinets and the “squareness” of the walls
  - All angles should be conveyed to the drawing
  - All cut-outs need to be clearly marked
    - Sink cut-outs, electrical, cooktop or slide in range, etc.
  - All overhangs need to be noted with recommended overhang support

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# MEASURING & Ttemplating

- *MEASURING Continued*
  - Edges need to be clearly noted by type, location and finish
  - Splash locations and heights need to be noted
  - Joint installation points to avoid are as follows:
    - Center of an undermount sink
    - Over a dishwasher
    - In direct sunlight
  - Preferred Joint installation points are as follows:
    - Corners
    - Center of drop-in sink or cooktop
    - Between cabinet doors
    - Center of large slabs

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# MEASURING & TEMPLATING

- *MEASURING Continued*
  - Faucet locations and hole size should be noted
  - Re-verify all dimensions (“measure twice, cut once”)
  - Record pictures of the installation area for future reference
- *TEMPLATING INFORMATION*
  - Templates should reflect the following:
    - Splash locations and sizes
    - Cut out dimensions
    - Edge detail
    - Location of finished edges
    - Windowsill dimensions

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# MEASURING & TEMPLATING

Continued

- *TEMPLATING INFORMATION Continued*
  - Sink location and model information
  - Stove location and model information
  - Overhang locations
  - Faucet hole location(s) and sizes
  - Seam locations
  - Material color

# MEASURING & TEMPLATING

Continued

- *TEMPLATING INFORMATION Continued*
  - Cutout centerlines
  - Interior cabinet dimensions and cooktop cutouts
  - Overhangs with any special support requirements
  - Type and location of edge profiles
  - Wall locations with splash zones noted
  - Joint locations
  - Faucet drilling locations

# MEASURING & TEMPLATING

Continued

- *TEMPLATING TOOLS TO CONSIDER*
  - *Tape measure*
  - *Grid paper*
  - *Pen & paper*
  - *Framing square*
  - *Angle gauge*
  - *2, 4, 6' levels*
  - *Calculator*
  - *Glue gun/sticks*
  - *Templating material (i.e. Plastic, Paper, Luan)*

# FABRICATION DETAILS

- *ACCEPTABLE SUPPORT MATERIALS*
  - Steel
  - Wood
  - MDF
  - Plywood
- *OVERHANGS*
  - 2cm Overhangs
    - 12-18” requires solid substrate along with corbels spaced no more than 36” apart
    - 18” + requires solid substrate along with columns or legs
  - 3cm Overhangs
    - 15-24” requires solid substrate along with corbels spaced no more than 36” apart
    - 24” + requires solid substrate along with columns or legs

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# FABRICATION DETAILS

- *OVERHANGS*
  - Steel Support Bars
    - Maximum of 48” apart
    - Steel should sit flush with the subtop and adhered with 100% Silicone
  - No additional support required for less than 1/3 overhang depth of overall overhang
- *PONY WALLS*
  - Corbels are required and need to be installed by securing them to wall studs
  - Spacing between corbels is not to exceed 36”
  - Corbels to be used where overhang exceeds 1/3 of the overall depth of the top
- *MINIMUM RADIUS DIMENSION*
    - No radius should be less than 3/16” as it will encourage cracking which will void the warranty

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# FABRICATION DETAILS

Continued

- *EDGE DETAILS*
  - Exposed edges around refrigerators or slide-in ranges should be polished
- *LAMINATION*
  - Refers to the width of the piece of stone laminated to the underside of the countertop
  - Waves must be grinded to an even finish prior to Lamination
  - Material must be cleaned with acetone prior to Lamination
- *BACKSPLASHES*
  - Maximum of 3/8” gap between wall and the countertop (1/8” is preferred)

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# FABRICATION DETAILS

Continued

- *BACKSPLASHES Continued*
  - Splashes should be at least 1” greater in length and cut-to-fit on-site
  - Full Height Splashes should be flush with the bottom of the upper cabinet trim
  - Backsplash should rest on the countertop with 100% silicone being applied

- *ACCEPTABLE SEAM PLACEMENT*
  - Corners
  - Middle of large countertop
  - Cook Tops
  - Sink Cutouts
    - Edges need to be finished on all four sides for Undermount sinks

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# INSTALLATION

- *CABINET PREPARATION*
  - Verify that the cabinets are level (within 1/16” in 10’0”) and shim where appropriate
  - Underside support is as follows:
    - 2cm requires support every 24” regardless of depth
    - 3cm requires support every 36” except for tops with a depth of more than 26” which requires support every 24”
    - Outer perimeter support is acceptable when installed on all four sides and the depth of the countertop is less than 26”
    - Outer perimeter support for tops greater than 26” in depth is acceptable provided that front-to-back support is installed every 36”
    - Dabs of 100% silicone should be used every 24” to adhere underside support to the cabinet and countertop

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# INSTALLATION

Continued

- *"DRY FIT"*
  - Position the LG Viatera slabs on the cabinets
  - At each wall location, ensure the gap does not exceed 1/8" clearance
  - Make note on the material where scribing needs to occur
  - Check the seam fit and adjust where appropriate with the use of shims
  - Check the squareness of the pieces and make sure the pieces fit flush
  - Ensure the dimensions from the cabinet edge to the countertop edge are consistent through the entire length of the top

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# INSTALLATION

Continued

- *"DRY FIT" CONTINUED*
  - Check for gaps and adjust accordingly
    - Use masking tape to protect the top prior to cutting
    - Draw a line on the tape where the cut needs to take place to remove the gap(s)
  - Verify the location of the appliance cut-out and reference the manufacturers specifications for placement of appliance in cutout
  - Remove countertops and perform the necessary steps for field fabrication

# INSTALLATION

Continued

- *Seam Countertops*
  - Level countertops
  - Apply silicone underneath of countertops
  - Re-level countertops
  - Tape along both sides of area that is to be seamed
  - Apply color-matched adhesive/hardener
    - Gel time to not exceed 25 minutes (dependent on air conditions)
  - Ensure countertops are level
  - Use a razor blade to scrape off excess adhesive
  - Once seams are hardened, add shims to support unsupported gaps
  - Repeat for additional seams

# INSTALLATION

Continued

- *FIELD FABRICATION*
  - Cutting
    - Masking tape should be installed where scribing is required
    - A line should be noted which reflects the cutting line
    - Diamond blades should be used to cut the piece vertically
  - Cutouts
    - Refer to the manufacturers specifications for cut out size opening and clearance requirements
    - A traced pieces of masking tape should be adhered around the cutout dimensions
    - A minimum of ¼” should be allowed underneath cooktop cutout to allow for hardware installation if cooktop is attached from underneath

# INSTALLATION

Continued

- Cutouts Continued
  - Initial cut should be from the center of the cutout and the saw should be used in a pulling motion versus a pushing motion
    - Continuous rim, diamond blade should be installed on the saw
  - Cutout should stop approximately ¼” from the line
  - Left over material should be grinded to install radius corners
  - Cooktops must be 2 ½” minimum in the front and 1 ½” minimum in the back
  - In Undermount sink applications, a perimeter build-up using 5/*” MDF or plywood needs to be installed around the sink cut-out
- Edges
  - Edges should be smooth and all exposed edges should be polished

# INSTALLATION

Continued

- *SINK INSTALLATION*
  - Drop-In Sinks
    - There should be a minimum of 2 ½” space from the front of the sink to the lip of the LG Viatera
    - Edges need to be cleaned with denatured alcohol
    - 100% silicone should be applied to the deck of the LG Viatera
    - Sink can be dropped in ensuring that it is square with the countertop edge
  - Cast Iron Undermount Sink
    - Build-up should be installed around the perimeter of the sink using 5/8” MDF or plywood

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# INSTALLATION

Continued

- Cast Iron Undermount Sink Continued
  - Support strips should be installed outside the brackets from front-to-back
  - Sink should be adjusted so it is flush with the support strips – remove sink
  - Sink flange should be cleaned with denatured alcohol before color-matched silicone sealant is applied
  - Undermount sinks with pre-drilled holes must have the back a minimum of 1 ½” clearance
  - Undermount sinks without pre-drilled holes must have the back a minimum of 4 ½” clearance
    - Verify hole dimensions which are usually either 1 ¼” or 1 ½”

# INSTALLATION

Continued

- Cast Iron Undermount Sink Continued
  - Joints should be completely filled before the excess is removed with denatured alcohol
  - Install the leveling brackets per the manufacturers recommendation
- Stainless Steel Undermount Sink
  - Build-up should be installed around the perimeter of the sink using 5/8” MDF or plywood
  - Support strips should be installed outside the brackets from front-to-back
  - Sink should be adjusted so it is flush with the support strips – remove sink
  - Apply a generous amount of silicone to the build-up
  - Sink flange should be cleaned with denatured alcohol before color-matched silicone sealant is applied

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# INSTALLATION

Continued

- Stainless Steel Undermount Sink Continued
  - Undermount sinks with pre-drilled holes must have the back a minimum of 1 ½” clearance
  - Undermount sinks without pre-drilled holes must have the back a minimum of 4 ½” clearance
    - Verify hole dimensions which are usually either 1 ¼” or 1 ½”
  - Set the sink and apply a bead of color-matched silicone sealant to the inside of the sink flange
  - Install the leveling brackets per the manufacturers recommendation

# INSTALLATION

Continued

- LG HI-MACS SOLID SURFACE SINK INSTALLATION
  - Secure 5/8” MDF build-up to the cabinet and secure with deck screws
  - Center the sink cutout around the build-up that was secured to the cabinet
    - Mark the cut-out and remove the top
  - Center the LGHI-MACS sink face down marking the outer edge
    - Using a jig saw, cut the sink cut-out 1/16” larger than the outer mark to allow for expansion and contraction
  - Dry fit the top to make ensure the sink is flush with the build-up – shim if needed
  - Clean the sinks flange with denatured alcohol and apply a bead of color matched silicone sealant to the inside edge of the sink flange
  - Secure sink to underneath build-up with clip hardware to hold in place while silicone sets
  - Remove excess with denatured alcohol and a clean cloth

# INSTALLATION

Continued

- *FINAL FIT*
  - Lay the countertops on the cabinet to ensure proper fit
  - Verify the tops are level
- *SEALING JOINTS*
  - Joint should be exposed by 1/8”
  - Epoxy (mixed with hardener) should be applied to the gap between the joints
  - LG Viatera pieces should be jointed together
  - Razorblade is to be used to check for levelness
  - Excess epoxy should be wiped up using a razor blade, rag and lacquer thinner
  - Epoxy hardens very quickly so it should be cleaned up immediately after the tops are confirmed level with the razor blade

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# INSTALLATION

Continued

- *SPLASH INSTALLATION*
  - Place the splashes on the countertop and verify the correct fit
  - For Full-Height backsplashes, electrical outlet dimensions need to be verified and holes need to be cut to accommodate the outlets
    - Ensure that space is allowed for the outlet cover
  - 100% silicone can be used to adhere the backsplash to the wall
  - Excess adhesive or epoxy needs to be removed
  - Entire surface needs to be cleaned with Lacquer Thinner
  - Caulk should be where LG Viatera meets LG Viatera, walls and cabinets
    - Caulk is to be applied using a caulking gun
    - Use your finger to penetrate the caulk between the cracks
    - Excess caulk should be removed using a razor blade

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# INSTALLATION

Continued

- *SPLASH INSTALLATION CONTINUED*
  - Excess adhesive or epoxy needs to be removed
  - Entire surface needs to be cleaned with Lacquer Thinner
  - Caulk should be where LG Viatera meets LG Viatera, walls and cabinets
    - Caulk is to be applied using a caulking gun
    - Use your finger to penetrate the caulk between the cracks
  - Excess caulk should be removed using a razor blade

# INSTALLATION

Continued

## *FINAL VERIFICATION*

- All exposed corners should be checked to ensure proper radius dimensions
- Polishing should be consistent throughout the installation
- Ensure all gaps have been adequately filled with color match material
- Make sure all edges are flush and smooth to the touch
- Cabinets, floors, walls etc. should be wiped down
- All trash, inside and outside, should be taken off the property
- All work areas should be cleaner than before the work started

# INSTALLATION

Continued

- *FINAL VERIFICATION CONTINUED*
  - Warranty and product information should be left at the job site (preferably, warranty card should be filled out during installation and sent in immediately)
  - In situations where other contractors have additional work to do, cover the countertops to prevent accidental damage

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# SAFETY EQUIPMENT

- Safety Glasses
- Safety Shoes
- Gloves
- Dust Masks
- Ear Plugs
- Safety Belts
- Consult State, Local & Federal Safety Requirements

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# TOOLING

- 5” Variable Speed Grinder
- Segmented Diamond Blades
- Diamond Hole Saw
- Hammer Drill
- Diamond Core Bits (1 ¼”, 1 3/8”, 1 ½”)
- Wood Core Bits
- Stone Bits
- Wet Polisher
- Hand Diamond Pads
- Wet/Dry Vacuum
- 9” Suction Cups
- Circular Saw for Wood
- Extension Cords
- Large and Small Level
- Large and Small Square
- Tape Measure
- Caulking Gun
- Grinder Stone
- Shims
- Straps
- Power Strips
- Jig Saw
- Pliers
- Crescent Wrench
- Masking Tape
- Rags

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# TOOLING

Continued

- Epoxy
- Colorants
- Lacquer Thinner
- Hand Saw for Wood & Sheetrock
- Chisel for Stone & Wood
- Brushes
- Spatulas
- Hammer
- 9” Suction Cups
- Paper Towels
- Putty Knives
- Drop Cloths
- 5/8” MDF or Plywood
- C Clamps
- Razor Blades
- Screwdrivers
- Cups
- Sticks
- Acetone
- Silicone
- Steel Wool
- Color Match Kit
- Nails
- Scribe
- Screw Gun
- Glue Gun & Sticks

# TOOLING

continued

- A-frames with pads, straps, clamps, etc.
- Support rails
- Fine cut diamond blade
- Rough cut diamond blade
- Polishing backer pads
- Steel Wool
- 2, 4, 6’ levels
- Shop Vac
- Material to cover countertop post-installation

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# TEST DATA

## Technical Data of Quartz Engineered Stone

| Test Type | Standard | Standard of measurement | Trafficstone |
|---|---|---|---|
| Water Absorption | pr EN 14617-1<br>ASTM C97 | % | 0,06-0,05<br>0.0514 |
| Thermal Expansion | EN 103:1982 | $10^{-6}$ $^{o}C^{-1}$ | 20-30 |
| Moh's Hardness | EN 101 | Mohs | 6-7 |
| Density | pr EN 14617-1<br>ASTM C97 | $kg/m^3$ | 2350-2450<br>2422 |
| Resistance to Fire | DIN 4102 | - | B1 |
| Compression Resistance | pr EN 14617-5<br>ASTM C170 | $MP_a$ | 235-250<br>189 |
| Flexural Strength Module | pr EN 14617-2<br>ASTM 648 | $MP_a$ | 30-60<br>6100 |
| Resistance to Abrasion | EN 102<br>ASTM C241 | $mm^3$ | 120-180<br>4810 |
| Slippage Resistance | DIN 51130 | -<br>- | lev. 320= R9<br>honed 320 = R9 |
| | ASTM 1028 | - | 1.2064 |
| Impact Resistance (thickness 20 mm) | pr EN 14617-9 | joule | 5±2 |
| Chemical Resistance | pr EN 14617-10 | | cl. C4 |

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