

konkrétum コンクリート σκυρόδεμα concred calcestruzzo  
คอนกรีต varlık béton steypu ukhonkolo متماسك  
somut beton concrit

# CONCRETE

## APPLICATIONS GUIDE



# About Smooth-On, Inc.

Since 1895, Smooth-On has been helping people like you discover material possibility. Our rubbers, plastics and other materials are used around the world to turn ideas into reality.



Smooth-On's 380,000 ft<sup>2</sup> (35,303 m<sup>2</sup>) facility in Macungie, PA makes hundreds of materials that ship around the world.

This applications guide offers a glimpse of what people have created with our materials and will hopefully inspire you to take the next step.

You will learn how our materials are used around the world to create everything from Stone Veneer, Form Liners, Sinks and Furniture to Concrete Stamps, Countertops and other concrete ornaments.

## The Concrete Technical Services Team

With years of design and casting experience, The Concrete Technical Services Team will help you realize your production goals. We specialize in developing material strategies for:

- Mold Design and Construction
- Choosing the Right Mold Rubber
- Admixture Design Options
- Stone Veneer
- Large Scale Precast Panels
- Glass Fiber Reinforced Concrete

We can help you get there

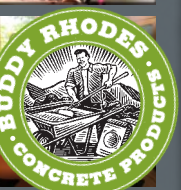
We are easy to talk to and will save you time and money

- Architectural Restoration
- Concrete Stamping
- Concrete Countertops
- Concrete Finishing Options
- Polymer Modified Concrete
- Sealers and Release Agents



## TABLE OF CONTENTS

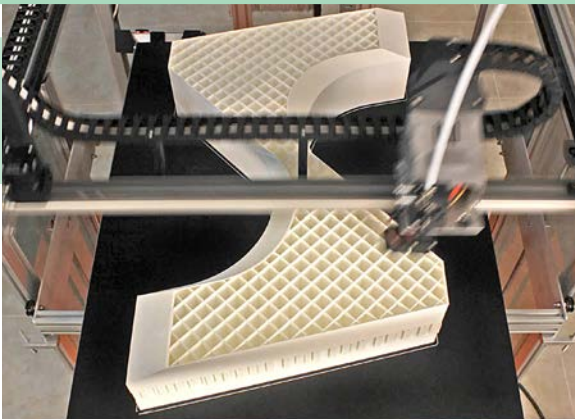
1-2	CELOSÍAS & WALL LAMPS	FEATURED PROJECTS		
		Taller de Prefabricados (Cancun, Mexico)		
		Innovates with Rubber and Polymeric Concrete		
3-4	STONE VENEER FOR A COUNTRY COTTAGE	Stone Veneer	Interior/Exterior Façades • Fireplaces	
5-6	PRECAST CONCRETE PERMANENT FORMWORK		Window & Door Surrounds • Mantels	
7-8				
9-10	GFRC PANELS	Form Liners	Fences • Sound Barriers	
			GFRC Permanent Formwork	
11-12	STAMPED CONCRETE: THE BEST KEPT DESIGN SECRET	Stamps	Concrete Stamps • Texturing Mats	
			Textured Rollers • Horizontal/Vertical Façade Texturing	
13-14	How-To Video Series	Molds Of Nature	Molding And Casting Tropical Foliage To Make A Birdbath	
15-16	GFRC TABLE		Reclaiming Unique Detail from a Fallen Cedrela Tree	
17-18	GFRC SINK	Sinks & Furniture	Sink Molds • Drain Plugs	
19-20	FORTON® MG		Textured Liners	
21-22	GFRC POWERED BY FORTON	Restoration & GFRC Cladding	Polymer Modified Gypsum Architectural Elements	
23-24	SEALERS & RELEASE AGENTS EQUIPMENT & ACCESSORIES		Polymer Modified Concrete Concrete Cladding Systems	
25-26	BUDDY RHODES	Equipment & Accessories	Meter Mix Machine • Fibers/Scrim	
			Concrete Release Agents • Sealers & Release Agents For Molding and Casting	
27-28	CHARTS & TABLES	Buddy Rhodes Concrete Products	Craftsman Mix, GFRC Blended Mix, ECC Mix	
			Sealers, Pigments, Raw Materials and Tools	
		Product Specification Charts		



# PRECAST BEAUTY AND FUNCTION

Taller de Prefabricados (Cancun, Mexico) has 25 years experience in producing a variety of innovative concrete projects all over the world. From concept to installation, clients know that TDP's creativity is matched only by their design and artisan capability, allowing them to deliver unique concrete elements that range from interior decorative to large scale architectural. TDP's innovative sunscreen design ("celosías" in Spanish), that diffuse intense sunlight in tropical climates, has yielded unique precast concrete elements that are both aesthetically pleasing and functional.

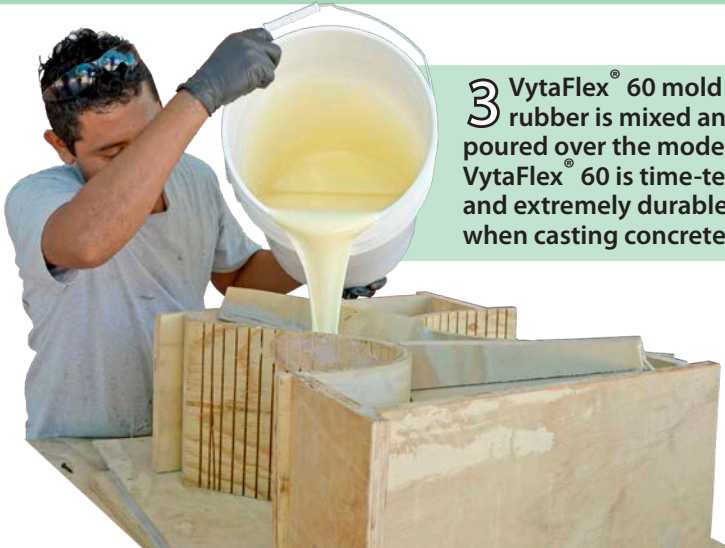
1 Two original pieces are designed and 3D printed. They are mirror images of each other.



2 XTC-3D® is used to coat the models for mold making.



3 VytaFlex® 60 mold rubber is mixed and poured over the models. VytaFlex® 60 is time-tested and extremely durable when casting concrete.



4 Over 600 concrete castings were made from the VytaFlex® 60 molds.



5 The finished castings were installed to create celosia walls measuring over 1,600 ft² (150 m²).



**VytaFlex®**  
MOLD RUBBER...  
MADE ESPECIALLY FOR  
CASTING CONCRETE



# AMBIENT ELEGANCE WITH POLYMERIC CONCRETE

TDP also produces custom designed concrete sconces for some of the world's finest hotels. The process begins with a 3-D printed design.

1 XTC-3D® is used to seal the original for mold making.



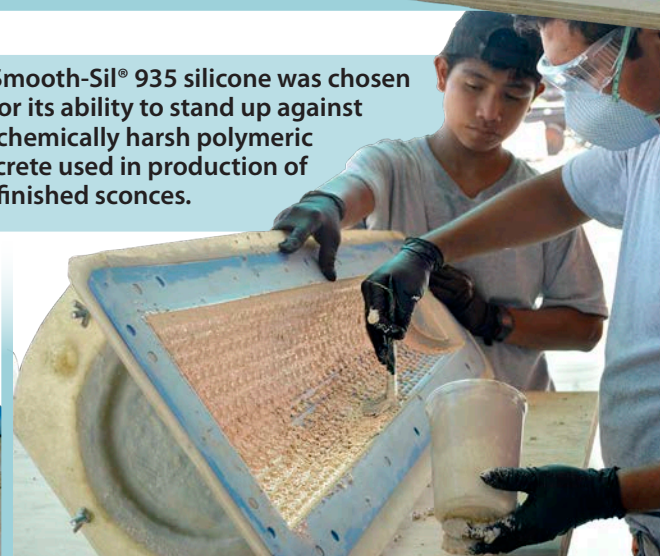
2 Smooth-Sil® 935 silicone rubber is applied in three layers.



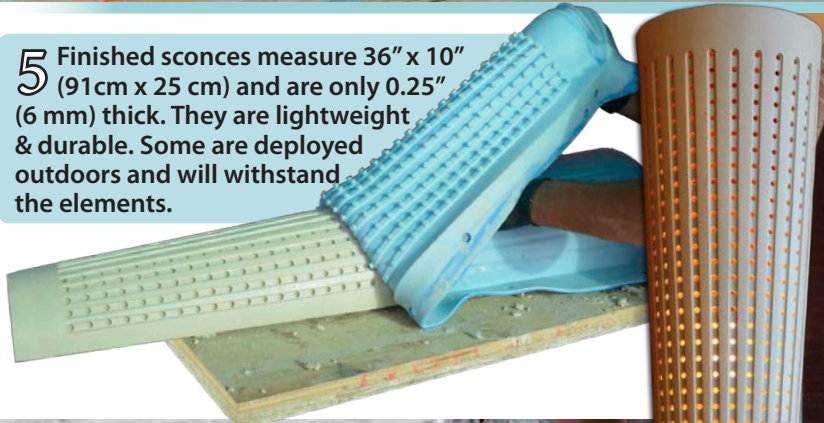
3 After curing, the rubber mold is easily demolded from the original.



4 Smooth-Sil® 935 silicone was chosen for its ability to stand up against the chemically harsh polymeric concrete used in production of the finished sconces.



5 Finished sconces measure 36" x 10" (91cm x 25 cm) and are only 0.25" (6 mm) thick. They are lightweight & durable. Some are deployed outdoors and will withstand the elements.



6 Prior to installation, the sconce is lightly sanded to expose aggregate.



**Smooth-Sil® 935**  
SILICONE MOLD RUBBER  
EXCELLENT RESISTANCE AGAINST  
CHEMICALLY AGGRESSIVE MIXES



# STONE VENEER

## A Classic Look, The Modern Way!

Lancaster Stone (Lancaster, PA) has perfected the art of making stone veneer and casts millions of veneer concrete castings annually that ultimately adorn the exterior of homes across the USA and Canada. Color inconsistency between castings can be disastrous and result in expensive replacement claims from homeowners and national distributors. Using the right mold rubber for production concrete casting is critical.

VytaFlex® mold rubbers were formulated especially for making color accurate concrete castings. Available in Shore 10A – 60A hardnesses, they are easy to use, reproduce perfect detail and have abrasion resistance for optimal production casting.



**1** VytaFlex® 60 mold rubber is mixed and poured into the mold box.



**2** Mold cavity is pigmented to desired color.



**3** Concrete is then carefully cast into the mold.



**4** Concrete is allowed to set fully.



**5** Cast stones are demolded and inspected to ensure quality.



**6** Cast stones are ready to be shipped to job site for installation.



- BLOCK MOLDS:**
- Fastest Way To Make Molds
  - Molds Are Easy To Handle
  - Molds Can Be Stacked In Production
  - Durable For Large Mold Designs
  - Support Boxes Not Necessary



- BRUSH-ON MOLDS:**
- Low Material Cost
  - Lightweight Support (Backer)
  - Molds Can Be Stacked In Production
  - Flexible For Easy Demolding
  - Good For Stone With Undercuts



- CAVITY MOLDS:**
- Low Material Cost
  - Lightweight Support (Backer)
  - Demolds Easily
  - Good For Undercuts
  - Mold Can Be Mass Produced Quickly



**Need A Lot Of Molds In A Hurry?**

**It's EZ with the EZ-Mix® Meter Mix Machine.**

Make Large Molds,  
Make Many Molds Quickly  
(see page 24 for more information)



# Concrete Production On A Large Scale... Casting Miles of Concrete Sound Panels

The Pennsylvania Department of Transportation needed decorative noise reduction panels installed along a major highway to minimize traffic noise for family neighborhoods.

**Criteria:** finished panels had to be ecological, long lasting and aesthetically pleasing.

J&R Slaw (Lehigh, PA) met an ambitious deadline by producing 2,000 concrete panels measuring 10' x 18' (3m x 5.5m) in less than 1 year.

**Choosing the Right Mold Rubber:** VytaFlex® 60 was selected to make the rubber form liners because of its lasting durability in production and ability to render color accurate concrete castings. The EZ-Mix® Meter Mix Machine mixed and dispensed hundreds of pounds (kilos) of the liquid rubber in under 1 hour to produce form liners. Production casting of 16 million lbs. (7.25 million kilos) of concrete ran 7 days per week to complete the project.



**1** VytaFlex® 60 mold rubber is meter mix dispensed.



**2** Rubber is allowed to cure and is demolded.



**3** A power hoist is necessary to handle the 1,000 lb. (454 kg) liner.



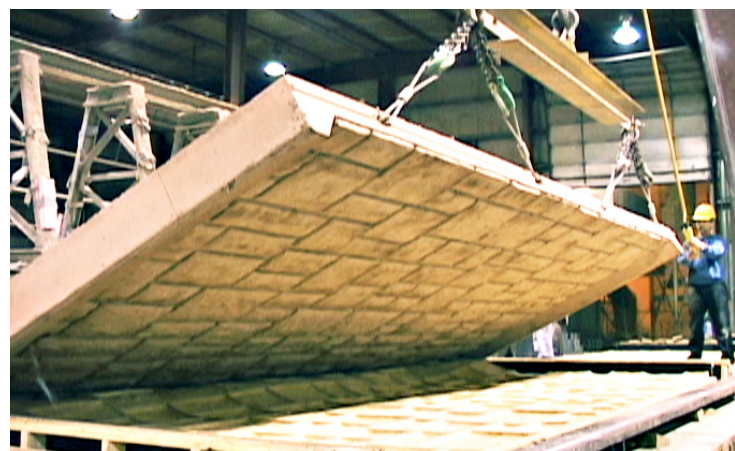
**4** Rebar is positioned.



**5** Concrete is poured into the mold. VytaFlex® offers excellent resistance to compressive loads without distorting.



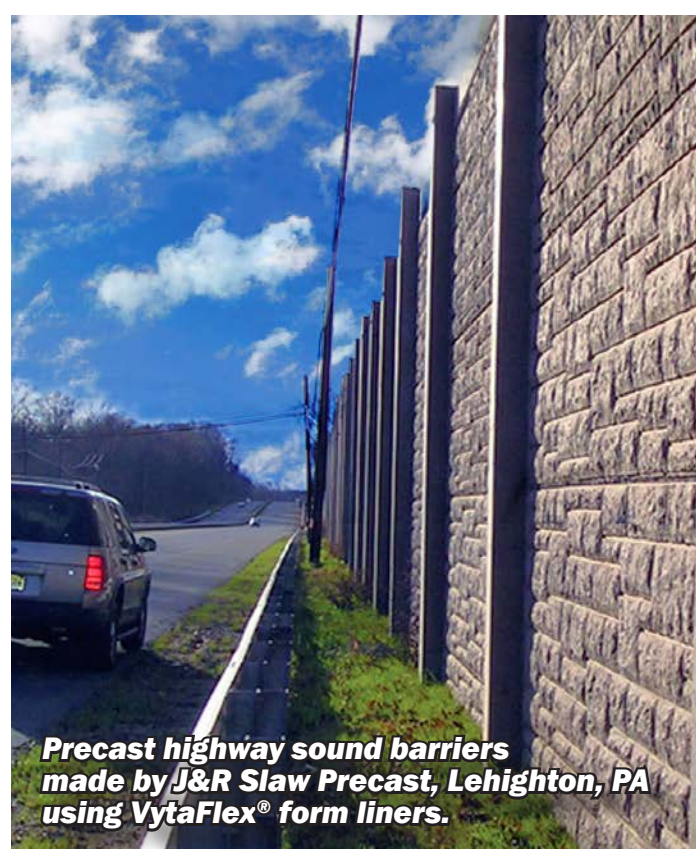
**6** A drop-in vibrator helps to eliminate surface voids.



**7** A crane is used to remove the 4 ton (3,629 kg) concrete panel.



**8** Completed panels are shipped to the job site.



Precast highway sound barriers made by J&R Slaw Precast, Lehigh, PA using VytaFlex® form liners.



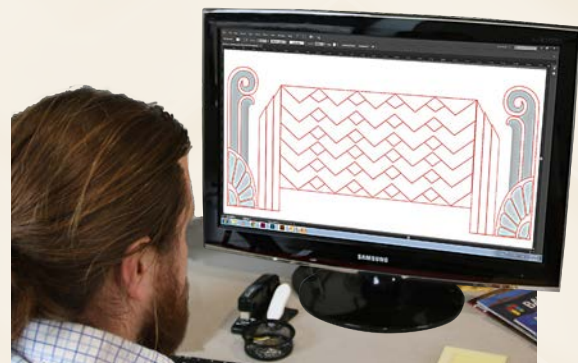
**VytaFlex®**  
MOLD RUBBER...  
MADE ESPECIALLY FOR  
CASTING CONCRETE

LEARN MORE AT: [SMOOTH-ON.COM/FORMLINERS](http://SMOOTH-ON.COM/FORMLINERS)

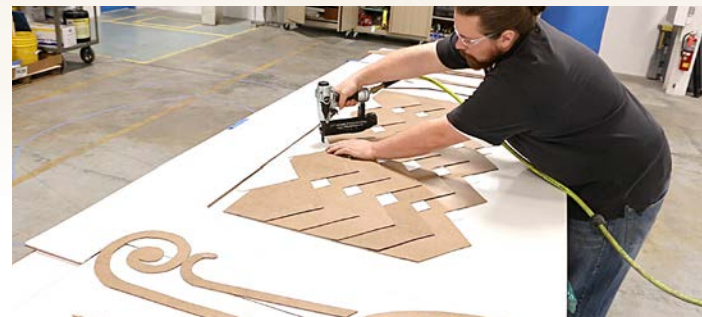
CREATING THE PERFECT OUTDOOR SPACE WITH:

# PERMANENT ARCHITECTURAL FORMWORK

GFRC is commonly used for building cladding or custom countertops. The superior performance characteristics and unlimited design possibilities are key advantages. But what if you wanted to combine the aesthetic beauty of GFRC panels with the structural integrity of a traditionally poured concrete wall? Permanent Architectural Formwork is the perfect solution. This process utilizes GFRC panels as formwork. Once the core is poured, the panels remain in place for a lifetime of service. See the complete video on Smooth-On's ConcreteU page, visit: [www.smooth-on.com/concreteU](http://www.smooth-on.com/concreteU)



**1** An original Art Deco line drawing is created.



**2** Model components are fabricated and assembled.



**3** VytaFlex® 60 is properly measured, mixed and poured over the entire model.



**4** After curing for 16 hours, the rubber liner is demolded.



**5** The GFRC face mix is sprayed using a hopper gun.



**6** The GFRC backer mix (with AR glass fiber) is then applied.



Four precast formwork panels are ready to ship to the jobsite.



**7** Precast panels are placed onto footers and fastened using anchors and rebar.



**8** Ready Mixed concrete is then poured into the formwork.



**9** Custom countertops are fabricated and secured to the permanent base.



**10** Steel Pergola and concrete pavers are added to complete the outdoor space.



**VytaFlex®**  
MOLD RUBBER...  
MADE ESPECIALLY FOR  
CASTING CONCRETE

The Perfect Backyard Entertainment Venue - GFRC panels made with Forton® VF-774 are UV Stable, flame rated, and will weather the elements for years to come.

LEARN MORE AT:

[SMOOTH-ON.COM/ARCHITECTURALFORMWORK](http://SMOOTH-ON.COM/ARCHITECTURALFORMWORK)

# Capturing Detail from 200 Years Ago

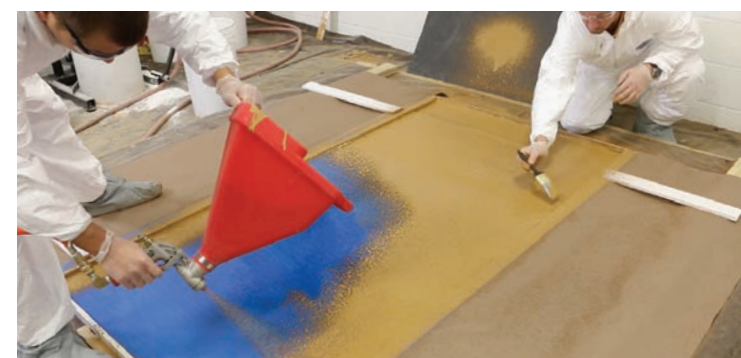


Restoring a 200 year old home called for using modern materials to simulate architectural elements consistent with original construction. All materials had to be environmentally sustainable and borrowed from the property when possible. Capturing wood grain detail from the walls of the original barn and then reproducing that detail in GFRC to replace bathroom shower panels and more, was an inspired idea that met all requirements.

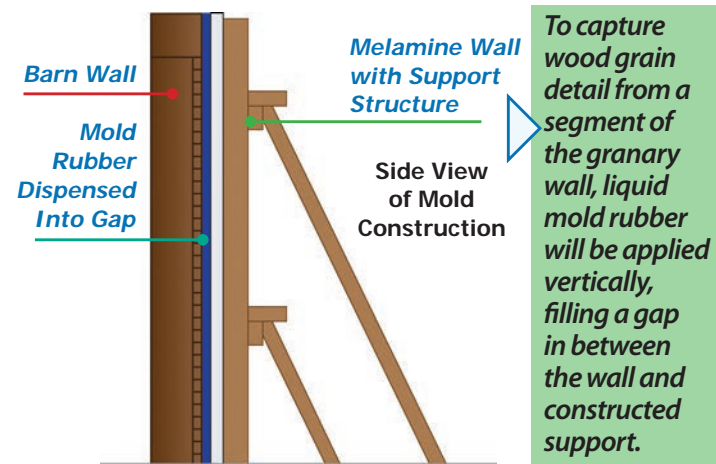


## Why GFRC?

- Unlimited Design Possibilities
- Economical to Produce
- Environmentally Sustainable
- Water Resistant and Flame Rated
- Unmatched Strength and Durability
- Safe to Use - No VOCs



**6** A hopper gun is used to spray the GFRC face coat.



**1** The mold wall is braced to withstand the pressure of the mold rubber.



**7** Back up mix (with AR glass fibers) is applied.



**8** Four GFRC panels of different sizes will be made from the same mold



**2** Mold Star® 30 is dispensed, quickly filling the gap.



**3** Cured Mold Star® 30 silicone is demolded easily from the granary wall.



**4** Mold will first be segmented to make four shower walls.

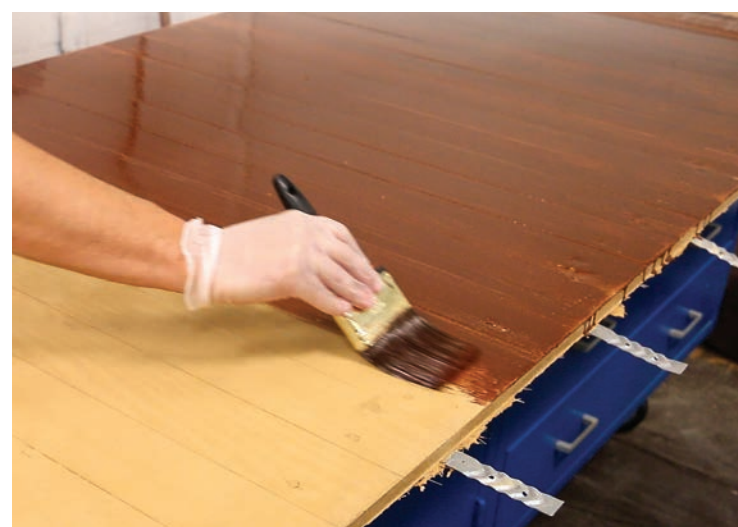


**5** GFRC components are mixed in a high-shear mixer.



VF-774 yields higher density panels & greatly enhances water resistance.

**Mold Star®**  
MOLD RUBBER...  
**GREAT FOR CASTING**  
**GFRC PANELS**



**9** GFRC panels are post finished with a concrete stain and sealer.



GFRC panels made with Forton® VF-774 are highly water resistant and will last for years.

LEARN MORE AT: [SMOOTH-ON.COM/GFRCSHOWER](http://SMOOTH-ON.COM/GFRCSHOWER)

# Stamped Concrete: THE BEST KEPT DESIGN SECRET

Kingdom Products (Throop, PA) knows the advantages of using rubber stamps to create concrete magic. Used on small and large projects, Kingdom Products has refined stamping concrete to an art.

Among other advantages, stamping concrete allows Kingdom to deliver true value to their customers and maximize profits at the same time.

**The way from dull to elegant:** Caravan, Inc. (Mendham, NJ) recently finished an addition to their building and wanted to give their ordinary service entrance a look that reflected their upscale corporate image. Kingdom Products proposed a cost effective design that would incorporate an elegant lasting stamped concrete walkway that looked like expensive tile.



**1** Mold box is built around stone pavers in a pattern.



**2** Textured grout is made with clay and a stiff brush.



**3** PMC®-780 is pigmented and drill mixed.



**4** Rubber is poured onto the pavers, ensuring straps are embedded within the PMC®-780.



**5** Once cured, stamp is demolded. Multiple stamps are made for a single job.



**6** Ready Mixed concrete is poured at the job site.



**7** Concrete is screeded and color hardener is applied prior to stamping.



**8** Stamps are positioned and hand-tamped to imprint the pattern on the concrete slab.



**9** Stamps are then removed revealing the imprinted tile texture.



**10** The concrete slab is stained and sealed.

**PMC® - 780**  
MOLD RUBBER...

**GREAT FOR MAKING  
CONCRETE STAMPS**



YouTube

CONCRETE

YOU

- WATCH
- LEARN
- DO

[Smooth-on.com/concreteU](http://Smooth-on.com/concreteU)

CONCRETE U is Smooth-On's

**"how-to" video series** featuring innovative ways to push the concrete envelope. Always informative, these videos will take you in directions you never considered. You will discover that you can make a mold of just about anything and cast your own personalized concrete elements.

## Molds of Nature: Molding And Casting Tropical Foliage To Make A Birdbath



Multiple Layers of Rebound® 25 mold rubber are applied to a leaf.



After the rubber cures, the leaf is peeled away.



Amazing detail is captured.



Layers of GFRC are applied to the mold.



Final casting is revealed.



Leaf is stained and sealed.



**STAY TUNED!  
MORE VIDEOS  
TO COME!**

- Molds of Nature
- Thinking Outside the Blocks
- Customer Spotlights

And Much More!

## Molds of Nature: Reclaiming Unique Detail From A Fallen Cedrela Tree



Tree is reclaimed from jungle floor.



The 16' (5 m) cedrela tree is supported with two stands.



Four layers of Rebound® 25 mold rubber are applied to the surface.



The rubber is allowed to cure for 6 hours before demold.



Layers of GFRC mix, chopped glass fiber and scrim are applied to the mold to a .75" (19 mm) thickness.

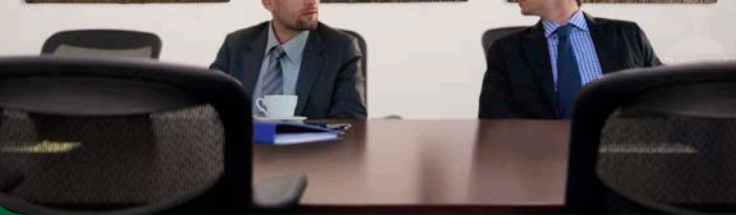
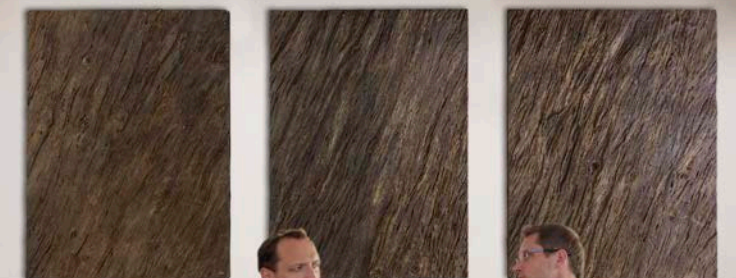


Once cured, the panels are easily removed from the Rebound® 25 mold, reflecting perfect detail.



Panels are colored with different acid stains to create a natural wood look.

The panels add an artistic touch to different areas of the resort, a reminder of the natural setting surrounding the property.



# Creating Hurricane Proof Furniture using Glass Fiber Reinforced Concrete

Obratur, S.A. of Cancun developed an idea to create furniture using GFRC that can withstand the devastating power of hurricanes.

**Criteria:** Furniture had to be functional, practical, able to withstand a category 5 hurricane, and impervious to the elements.

The design for this table was inspired by the strength of the Royal Poinciana tree root.

**Choosing the Right Mold Rubber:** A critical production tool will be the rubber mold used to make the GFRC castings. The Royal Poinciana tree root poses a challenge in that there are deep undercuts and texture that require a soft mold rubber. Rebound® 25 silicone was determined to be the best investment to produce the many castings needed.



**1** Tree root is positioned and prepared for making the mold.



**2** Rebound® 25 mold rubber is dispensed 1A : 1B by volume. A drill mixer is used to thoroughly mix the two parts.



**3** The mold is made in 2 halves, each consisting of 4 brush-on layers.



**4** A support shell is applied, allowed to cure and then removed. The rubber mold is removed from the original and ready for GFRC casting.



**5** GFRC is sprayed into the mold halves. Mold halves are then put together.



**6** Mesh fiber and additional GFRC is hand applied to blend seams.



**7** Finished GFRC casting is removed from the Rebound® 25 rubber mold.



**8** A multi-step staining process makes the GFRC casting look exactly like the original.



**Rebound®**  
MOLD RUBBER...  
**GREAT FOR CASTING**  
**GFRC FURNITURE**

LEARN MORE AT: [SMOOTH-ON.COM/GFRCFURNITURE](http://SMOOTH-ON.COM/GFRCFURNITURE)

# Custom designed concrete sinks, MAKE A BIG Splash!

In Mexico City, a 600 unit condominium high-rise is being built to attract upscale buyers. A team of fabrication talent came together to create unique concrete fixtures with an aquatic theme. One of the many fine details that will be a selling point includes a never-before-seen concrete bathroom sink design in the shape of a nautilus shell.

**Criteria:** Sink had to be very strong, water resistant, cost effective and aesthetically designed to attract potential buyers.

**Choosing the Right Mold Rubber:** Polymeric concrete mix designs are chemically harsh on conventional mold rubbers and would result in the molds burning out quickly tin production. After running mold rubber cycling tests, Mold Star® 30 platinum silicone was chosen for offering the best resistance to the polymeric concrete mix and yielding the longest mold life.



A 3D rendering of the nautilus sink is created.



1 A CNC model is sealed with grey primer in preparation for mold making.



2 A cavity pour mold making technique is used to create the mold. Sulfur-free modeling clay is used to form the cavity.



3 Plasti-Paste® II urethane plastic is applied to form the first half of the rigid support shell.



4 Mold Star® 30 silicone is mixed and poured into the cavity mold.



5 Mold Star® 30 cures in 6 hours and the other half of the cavity mold is poured.



6 Mold Star® 30 captures perfect detail and the mold is ready for polymeric concrete casting.



7 A low viscosity polymeric concrete is poured into the mold cavity.



8 After 6 hours, the new sink is ready for installation. Mold Star® 30 is ready to cast again.

**Mold Star®**  
MOLD RUBBER...  
GREAT FOR CASTING  
CONCRETE SINKS



LEARN MORE AT: [WWW.SMOOTH-ON.COM/SINKS](http://WWW.SMOOTH-ON.COM/SINKS)

# Forton® MG One Material, Limitless Possibilities

Architectural Products (Van Nuys, CA) has been one of the USA's premier producers of interior and exterior ornamentation since 1982. They continue to supply public buildings and private residences around the world with exquisite ornamentation that lasts for years.

The FORTON® MG System (Polymer Modified Gypsum) has been a key material component to their success and remains their "go to" creative medium. Applying a gel coat of FORTON® MG and reinforcing with 'E' glass yields thin, lightweight elements that are strong and incredibly durable. Cured castings can be sealed for maximum weather and UV resistance. They certify to the highest architectural flame rating available. Color FORTON® MG with iron oxide pigments or add an infinite variety of fillers to make castings look like stone, marble, metals and more.



**1** A facecoat of Forton® MG is brushed onto the mold surface.



**2** Once the facecoat has partially set, E-glass veil is applied.



**3** Alternating layers of Forton® MG and E-glass veil are applied to build up to the desired thickness, typically 3/8" (10 mm).



**4** Wood supports are embedded in the back of the casting for attachment points.



**5** Forton® MG elements can be demolded after 60-90 minutes.



**6** The finished column is ready for interior installation, or it can be sealed for exterior applications.



**7** Columns installed.



**FORTON®**  
**VF-812**  
**POLYMER ADDITIVE**  
**FOR USE IN FMG**

## Cold Cast Metal with Forton® MG

Using FORTON® MG and metal powders, you can create castings that look exactly like bronze, copper, brass, aluminum and other metals at a fraction of the cost of real metal.

**1** A gel coat mixture of FORTON® MG and bronze powder is applied to the mold surface.



**2** Back up layers of FORTON® MG and E-glass veil reinforce the initial gel coat.



**3** The finished piece looks exactly like a bronze casting and is lightweight. Suitable for interior or exterior display.



# Cutting Edge Architectural Design Made With GFRC Powered by FORTON® VF-774

With over 450 completed commercial cladding projects to its credit, GFRC Cladding Systems (Garland, TX) knows the infinite design possibilities of GFRC better than any producer in the world. Architectural design requirements for the new Tom Ford Store in Miami's Design District included innovative angular panels that could only be realized by using GFRC.

Finished panels would have to be environmentally sustainable and comply with Miami building codes that include withstanding the fury of Florida hurricanes (wind and water) and the highest architectural flame rating. GFRC Cladding has relied on Forton® VF-774 polymer modifier to make GFRC panels and comply with strict building codes across the USA for 25 years. Forton® VF-774 meets all PCI specifications for curing admixtures in GFRC and is known throughout the industry to improve the long-term physical and performance properties of GFRC.



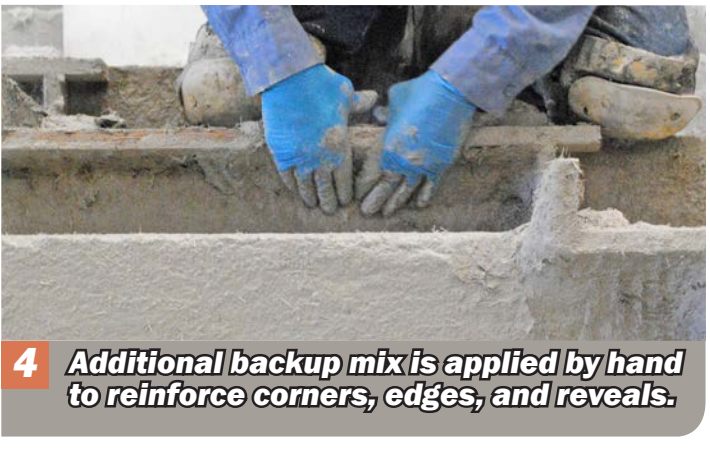
**1** Two layers of a Forton® VF-774 enhanced GFRC face mix are sprayed over form surfaces.



**2** Additional layers of backup mix reinforced with AR glass fiber are applied.



**3** Compaction rollers are used to coat all glass fibers with cement slurry, remove trapped air and consolidate the composite.



**4** Additional backup mix is applied by hand to reinforce corners, edges, and reveals.



**5** A structural steel frame is carefully lowered into place just above the wet concrete.



**6** Pre-welded steel flex anchors attach the frame to the GFRC skin, using GFRC bonding pads.



**7** GFRC panels are allowed to cure for 12 hours before being removed with a crane.



**8** Panels are sandblasted to yield the desired texture and surface finish.



**9** Finished panels are ready to be shipped to the job site.



**10** Installation of GFRC panels is finished in a few days.

The GFRC panels, enhanced with Forton® VF-774, add cutting edge design and long term durability to the Tom Ford Store in Miami, FL.

**Use With Confidence:**  
FORTON® VF-774 complies with stringent PCI standards and is supported with over 20 years of test data.



LEARN MORE AT: [WWW.SMOOTH-ON.COM/GFRC](http://WWW.SMOOTH-ON.COM/GFRC)

# Your Success Depends On Using The Right Sealing & Release Agents

**1**

**SONITE® WAX**  
IS APPLIED TO SEAL  
THE ORIGINAL MODEL

**Sonite® Wax**  
Soft paste wax used  
to seal highly porous  
surfaces such as concrete.

**2**

**UNIVERSAL  
MOLD RELEASE®**  
IS APPLIED TO THE  
SEALED ORIGINAL

**Universal Mold Release®**  
Made for mold making and  
casting with urethane rubber  
and plastic.

**3**

**VYTAFLEX®**  
MOLD RUBBER  
IS POURED

**VYTAFLEx®**  
MOLD RUBBER  
IS POURED

**4**

**ORIGINAL IS  
DEMOLDED ONCE  
RUBBER IS FULLY CURED**

**ORIGINAL IS  
DEMOLDED ONCE  
RUBBER IS FULLY CURED**

**5**

**AQUACON® IS APPLIED TO VYTAFLEX®  
MOLD PRIOR TO CASTING CONCRETE**

**Aquacon®**  
**Concrete Release Agent**  
Made especially for  
releasing concrete  
from urethane  
rubber molds.

**6**

**PLAQUE IS CAST  
IN CONCRETE**

**PLAQUE IS CAST  
IN CONCRETE**

**7**

**MANY CASTINGS  
FROM A  
SINGLE MOLD  
ARE POSSIBLE**

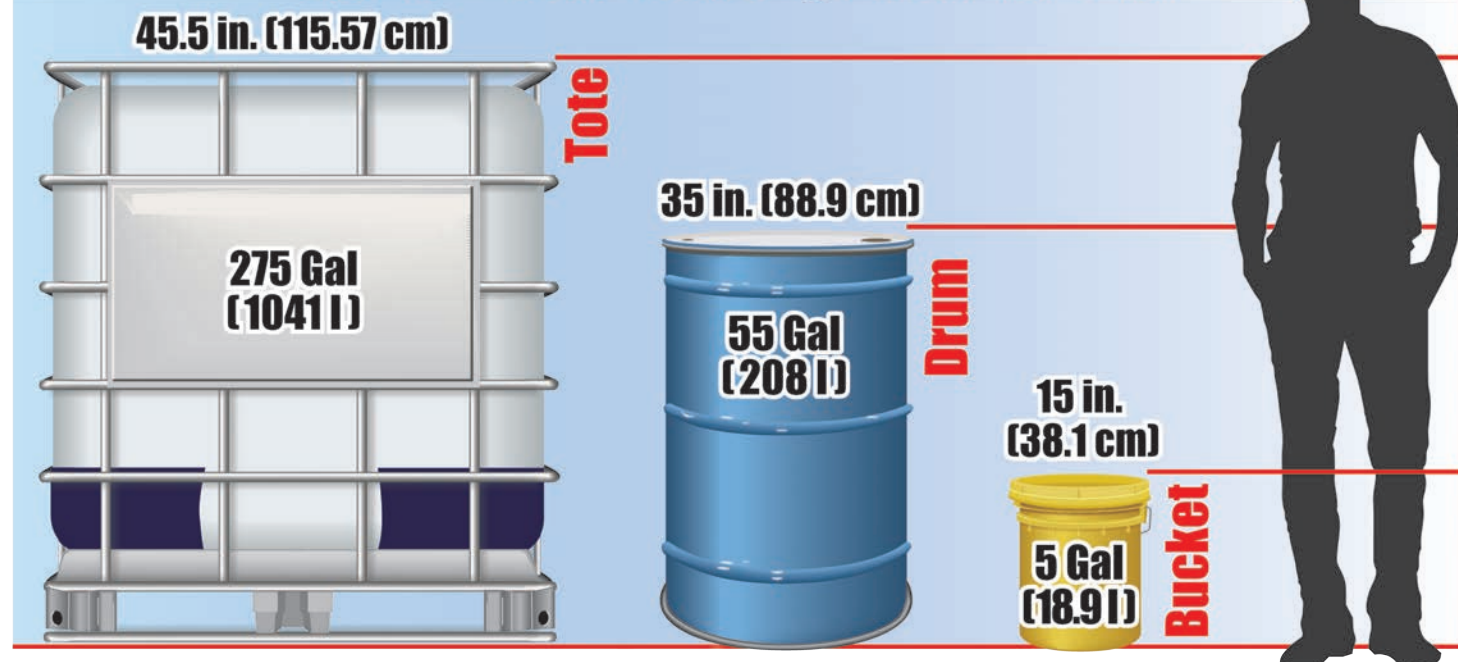
**MANY CASTINGS  
FROM A  
SINGLE MOLD  
ARE POSSIBLE**

**Kwikkee® Sprayer**  
An economical  
alternative to  
aerosols for  
dispensing liquid  
release agents and  
sealing agents  
in a fine mist.

**Kwikkee® Sprayer**  
An economical  
alternative to  
aerosols for  
dispensing liquid  
release agents and  
sealing agents  
in a fine mist.

## Container Size Comparison Chart

6 ft. (1.82 m)



**The EZ-Mix® Meter Mix Machine** is a simple yet effective way to quickly mix large amounts of mold rubber and offers many advantages. Greatly reduce waste due to human error.

**EZ-Mix® Machine** molds are stronger and last longer due to less air entrapment. Dispense from 55 gallon units (left) or 275 gallon totes (below).

- Easy to Use
- Easy to Clean
- Easy to Maintain
- Easily Transported
- Variable Mix Ratios
- Variable Viscosities

**Chopped AR Glass**  
½-inch (12 mm) & ¾-inch (18mm) is added to backer in GFRc composites.



**AR Glass Scrim** For added reinforcement of GFRc Composites.



**Drierite® Cartridges**  
Provide economical means for preventing moisture contamination in 55 gal. (208 l) drums.



**Turbine Mixer**  
Highly effective at mixing mold rubber and other materials. Simple design for easy cleaning.



**55 Gallon Drum Adapter Kit**  
Fits all 55 gallon Smooth-On drums.



**Spout Valve Adapter Kit**

Designed to fit snugly inside the Reike brand pour spout on 5 gallon buckets of Smooth-On material. That allows pail to be stored on its side for better dispensing.

# BUDDY RHODES CONCRETE PRODUCTS

Smooth-On is the home of Buddy Rhodes Concrete Products. Buddy Rhodes started a concrete revolution years ago with his easy to use, innovative formulas that have become known around the world for making concrete countertops, furniture, art and sculpture. He now has the full support of Smooth-On's laboratories and technical departments to develop new materials that make concrete lighter, stronger and more versatile. We continue Buddy's tradition of supporting artisans and DIY enthusiasts with products and know-how to help transform your vision to concrete reality.



## THE BUDDY RHODES STORY

As a young man, Buddy was consumed by clay. More important than the material itself, Buddy was compelled by the creative process. Eventually that creative process pushed his desire beyond the capacity of clay.

Buddy struck out to find something different to quench his desire as a maker. He was after a material that would behave like clay, but that could develop strength and durability without the need of a kiln. He was after a self hardening clay.

Buddy found his solution in concrete, he created a material that behaved like both clay and concrete. Over the decades of this collaboration, a whole new language has been born. A language in the tradition of the craftsman movement, and a set of materials that would allow the maker community to create their vision.



## THE MIXES



**NEW PRODUCT - BUDDY RHODES VERTICAL MIX™**  
Buddy Rhodes Vertical Mix is a flame rated (E84 – Class A) cement-based overlay that is troweled onto vertical surfaces and carved, sculpted or stamped to create rock, stone, tile and other textures. For interior or exterior areas, this lightweight, zero slump formula is used for a variety of applications including creating themed structures for amusement parkparks, zoo & aquarium displays (above ground only), architectural panels, landscape elements and public sculpture. Visit [buddyrhodes.com/verticalmix](http://buddyrhodes.com/verticalmix) for info!



**BUDDY RHODES CRAFTSMAN MIX™**  
Newcomers and seasoned artisans know Buddy Rhodes Craftsman Mix as easy to use and one of the most enjoyable concrete mixes to work with anywhere. Modify the mix to a consistency that is right for your project for hand pressing (clay-like) into a form, wet casting or troweling.



**BUDDY RHODES GFRC BLENDED MIX™**  
Buddy Rhodes GFRC (Glass Fiber Reinforced Concrete) Blended Mix does not contain fibers or large aggregates. This makes it a versatile base mix that can be combined with different reinforcements and decorative aggregates to create truly custom mix designs. It can be sprayed, poured, pressed, or troweled.



**BUDDY RHODES ECC BLENDED MIX™**  
Originally developed for use in seismic zones for its high ductility, the strength of Buddy Rhodes ECC recipes comes from the combination of particle gradation and the addition of a high dosage of fiber. From a creative standpoint, ECC can be mixed to unique workabilities, allowing for many variations in finish.

## PIGMENTS, SEALERS AND MORE

The mixes are the building blocks for any project. The accessory products are what make it personal. We offer a full line of colors, sealers, tools and raw materials.



## BUDDY RHODES CATALOG of CONCRETE PRODUCTS & TECHNIQUES

The Buddy Rhodes catalog compiles techniques, recipes, process insights and a comprehensive list of materials into a useful tool for anyone inspired to create artisan concrete. Learn more about this craft and be inspired.

Download your copy at: [www.buddyrhodes.com/catalog](http://www.buddyrhodes.com/catalog)

Urethane Rubber												
Product Name	A:B Mix Ratio	Mixed Viscosity ASTM D-2393	Pot Life ASTM D-2471	Cure Time @ 73°F/23°C	Shore A Hardness ASTM D-2240	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (Cu. In./lb.)	Die B Tear Strength ASTM D-624	Elongation at Break %	Shrinkage (in/in)	Urethane Rubber	
											Color	
VytaFlex® 20	1:1 pbv	1,000 cps	30 min.	16 hrs.	20A	1.00	27.7	60 pli	1,000%	<0.001	Clear Amber	
VytaFlex® 30	1:1 pbv	1,800 cps	30 min.	16 hrs.	30A	1.02	27.3	78 pli	1,000%	<0.001	Off-White	
VytaFlex® 40	1:1 pbv	2,000 cps	30 min.	16 hrs.	40A	1.03	26.9	82 pli	660%	<0.001	Off-White	
VytaFlex® 50	1:1 pbv	2,000 cps	60 min.	16 hrs.	50A	1.04	26.7	102 pli	400%	<0.001	Off-White	
VytaFlex® 60	1:1 pbv	2,000 cps	60 min.	16 hrs.	60A	1.04	26.6	136 pli	480%	<0.001	Off-White	
Formlastic® 48	1:1 pbv	3,000 cps	25 min.	24 hrs.	48A	1.14	24.3	98 pli	1,250%	<0.001	White	
Formlastic® 60	1:1 pbv	3,000 cps	40 min.	24 hrs.	60A	1.14	24.3	146 pli	1,000%	<0.001	Off-White	
PMC®-780	2:1 pbv	2,000 cps	25 min.	48 hrs.	80A	1.02	27.2	200 pli	700%	<0.001	Light Amber	
Task® 16	1:2 pbw	1,400 cps	6 min.	90 min.	80A, 30D	1.08	25.6	N/A	233%	0.0025	Light Yellow	

 **KEEP OUT OF REACH OF CHILDREN. WARNING:** Known to the state of CA to cause cancer, birth defects or other reproductive harm. www.P65Warnings.co.gov

Silicone Rubber																						
Product Name	A:B Mix Ratio	Mixed Viscosity ASTM D-2393	Pot Life ASTM D-2471	Cure Time @ 73°F/23°C	Shore A Hardness ASTM D-2240	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (Cu. In./lb.)	Die B Tear Strength ASTM D-624	Elongation at Break %	Shrinkage (in/in)	Silicone Rubber											
											Color											
											Mold Star® 15 SLOW	1:1 pbv	12,500 cps	50 min.	4 hrs.	15A	1.18	23.5	88 pli	440%	<0.001	Green
											Mold Star® 16 FAST	1:1 pbv	12,500 cps	6 min.	30 min.	16A	1.18	23.5	88 pli	440%	<0.001	Blue-Green
											Mold Star® 30	1:1 pbv	12,500 cps	45 min.	6 hrs.	30A	1.12	24.7	88 pli	339%	<0.001	Blue
											Rebound® 25	1:1 pbv	Brushable	20 min.	6 hrs.	25A	1.14	23.5	102 pli	690%	<0.001	Orange

Forton® VF-774 for GFRC

Liquid Polymer Properties				Typical Range of Cured Premix Properties				Typical Range of Cured Spray-Up Properties			
Solids by weight: 51% (±1%)				Density (Dry)				110 - 130 pcf			
Viscosity: 100 - 300 cps				Compressive Strength (Edgewise)				6,000 - 9,000 psi			
pH: 8 - 10				Flexural: Yield (FY)				700 - 1,200 psi			
Density at 20°C: 1055 kg/m³				Ultimate Strength (FU)				1,450 - 2,000 psi			
Tg: 11°C				Modulus of Elasticity				1.0x10 <sup>6</sup> - 2.9x10 <sup>6</sup> psi			
Particle Size: 0.1300 - 0.2500				Direct Tensile: (ASTM C 1230) Yield (TY)				600 - 900 psi			
Grit: 0 - 50 ppm				Ultimate Strength (TU)				600 - 1,000 psi			
				Strain to Failure				0.1 - 0.2 %			
				Shear: Interlaminar				N/A			
				In-plane				600 - 1,000 psi			
				Coefficient of Thermal Expansion				Approx. 12x10 <sup>-6</sup> in./in./deg. F			
				Thermal Conductivity				3.25 - 7.0 Btu/in./hr/ft²/deg. F			
				Fire Rating (ASTM E-84)				Class A/Class 1			

These are typical values and are not to be used for design or control purposes. Each manufacturer must test production composites to establish physical properties for design. The values achieved in practice will be dependent on mix design, quality control of materials, fabrication process and curing. Values achieved after 28-day cure.

GFRC Mix Design-Parts By Weight

Type 1	Sand	Forton VF-774®	Water	Plasticizer	AR Glass Fiber
Portland Cement					
100	85	10 - 12	24 - 27	4 - 8 oz (118 - 236 ml)	3% by weight of entire mix
100	100	12 - 14	24 - 27	4 - 8 oz (118 - 236 ml)	5% by weight of entire mix

Polymer Modified Casting Systems

Product Name	Mix Ratio	Pot Life	Demold Time	Density (lbs./ft³)	Specific Volume (cu. in./lb.)	Tensile Strength	Tensile Ultimate	Flexural Strength	Flexural Ultimate	Compressive Strength - psi	Color
Forton® VF-812 Alpha Gypsum Modifier (50% Solids)	100 parts gypsum + 50 parts VF-812 Latex + 10 parts MF-415 Resin + 0.5 Parts Hardener	20 - 30 min.*	60 - 90 min.*	95-100	17.45	-	3,500 - 9,400 psi	-	3,500 - 9,400 psi	6,000 - 9,000 psi	White
duoMatrix® NEO®	100 parts A (powder) : 50 parts B (liquid) by weight or volume	6 min. mechanically mixed, 15 min. by hand*	60 min.*	99	17.45	3,300 - 5,500 psi	-	7,500 - 9,000	-	6,500 - 9,500 psi	White

\* Depending on mass and environmental temperature

# How-To Seminars

# Mold Making for Production Casting of Concrete

Intensive 2 day training will focus on topics associated with making molds for casting concrete. Slides, videos, group discussion and hands on demonstrations will introduce you to the basics in an easy-to-understand format including:

- *Mold Design and Construction*
- *Choosing the Right Mold Rubber*
- *Mixing Mold Rubber The Right Way*
- *Minimizing Color Variation*
- *GFRC: Is it Right For You?*
- *Sealing and Release Agents*
- *Admixture Design Options*
- *Polymer Modifiers for Concrete & Gypsum*

## **You Will Make Your Own Molds & Castings:**

Smooth-On's Concrete Technical Team will guide you as you make a "pour-on" mold and a "brush-on" mold. Molds will be used to make your own castings.

- *Specialty "Side Show" Demonstrations Will Be On Going.*
- *Bring Your Questions. Let's Discuss Your Project.*
- *Class Size Is Limited & Teacher To Student Ratio Is Very Low To Maximize Your Learning Experience.*



For more details, visit [smooth-on.com/concreteseminars](http://smooth-on.com/concreteseminars)

RR-092517



5600 Lower Macungie Rd. | Macungie, PA 18062 | Tel: 610.252.5800 | [www.smooth-on.com](http://www.smooth-on.com)