



MOSAICOS VENECIANOS DE MÉXICO



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Sobre Pedido
Special Order



Bizantino - Técnica Tradicional: Hecho a mano
Byzantine - Traditional technique: Handcrafted



Teknikolor - Mosaicos por computadora
Teknikolor - Computer technique



Entrega Rápida
Stock - Fast delivery



Línea Ecológica
Green product

v20

2 x 2 cms - 3/4 x 3/4 inch

v25

2.5 x 2.5 cms - 1 x 1 inch

v50

5 x 5 cms - 2 x 2 inch

Colecciones Collections 8

Mezclas Blends 58

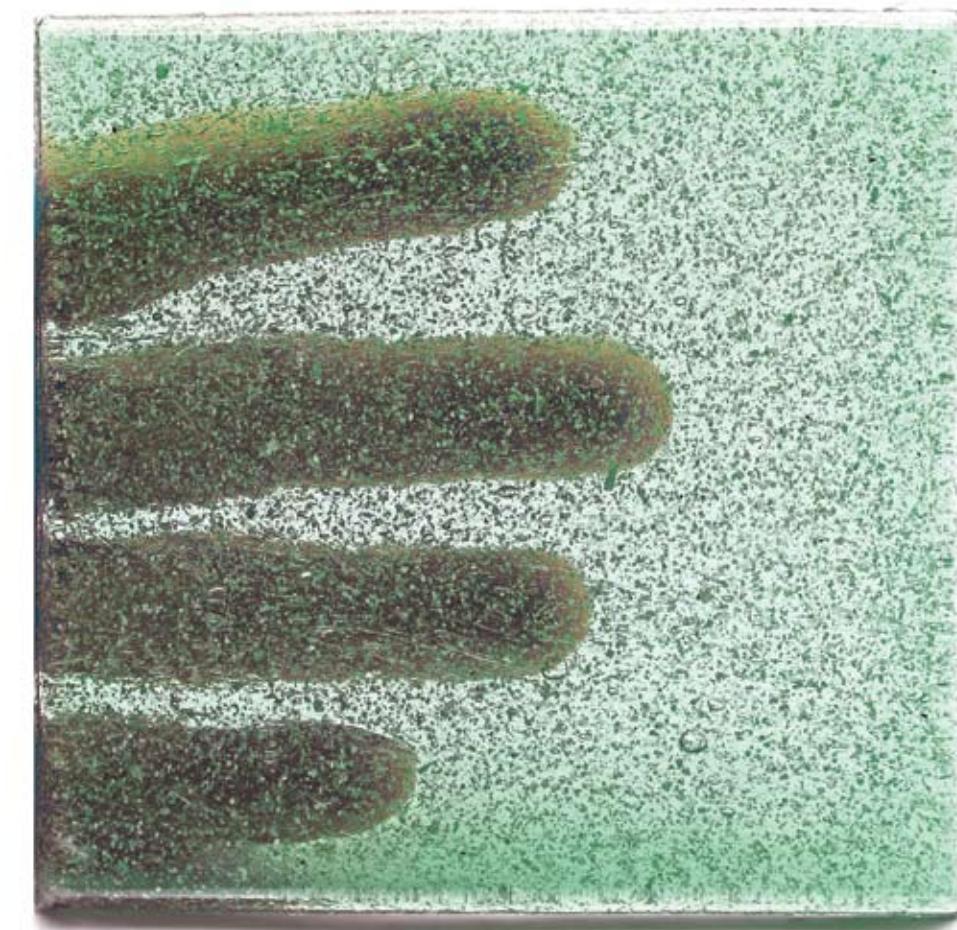
Decorados Pool Art 58

Estudio MVM MVM Mosaic Studio 88

Información Técnica Technical Information 104

El Mosaico de México

De lo industrial a lo artesanal, Mosaicos Venecianos de México produce una rica selección de mosaicos que van del veteado, iridiscente, esmaltado, translúcido, opaco, con gránulos de arena suspendidos. Para lograr esto, nuestra fábrica combina las fórmulas ancestrales de la elaboración de vidrio coloreado con lo último en tecnología para la producción de mosaicos.



Mosaicos Venecianos de México

MVM manufactures a rich selection of colors and textures such as veined, smalti, iridiscent, colored, transparent, opaque, sand-granules suspended in glass and laminated gold. MVM glass works transforms ancient formulas using state of the art technology.



Color
Textura
Belleza
Tecnología
Experiencia
Desempeño
Mínimo Mantenimiento

COLOR TEXTURE BEAUTY TECHNOLOGY EXPERIENCE PERFORMANCE MINIMUM MAINTENANCE



Collections

colecciones

 **Kolorines®**

Vitrogota 10

v25 Kolorines 18

Murano 26

Solar 34

Metálica 36

Irís 40

Kuarzo 44

Botánica 48

Akua 52

Mezclas Blends 58

Cenefas Borders 66

Formas orgánicas,

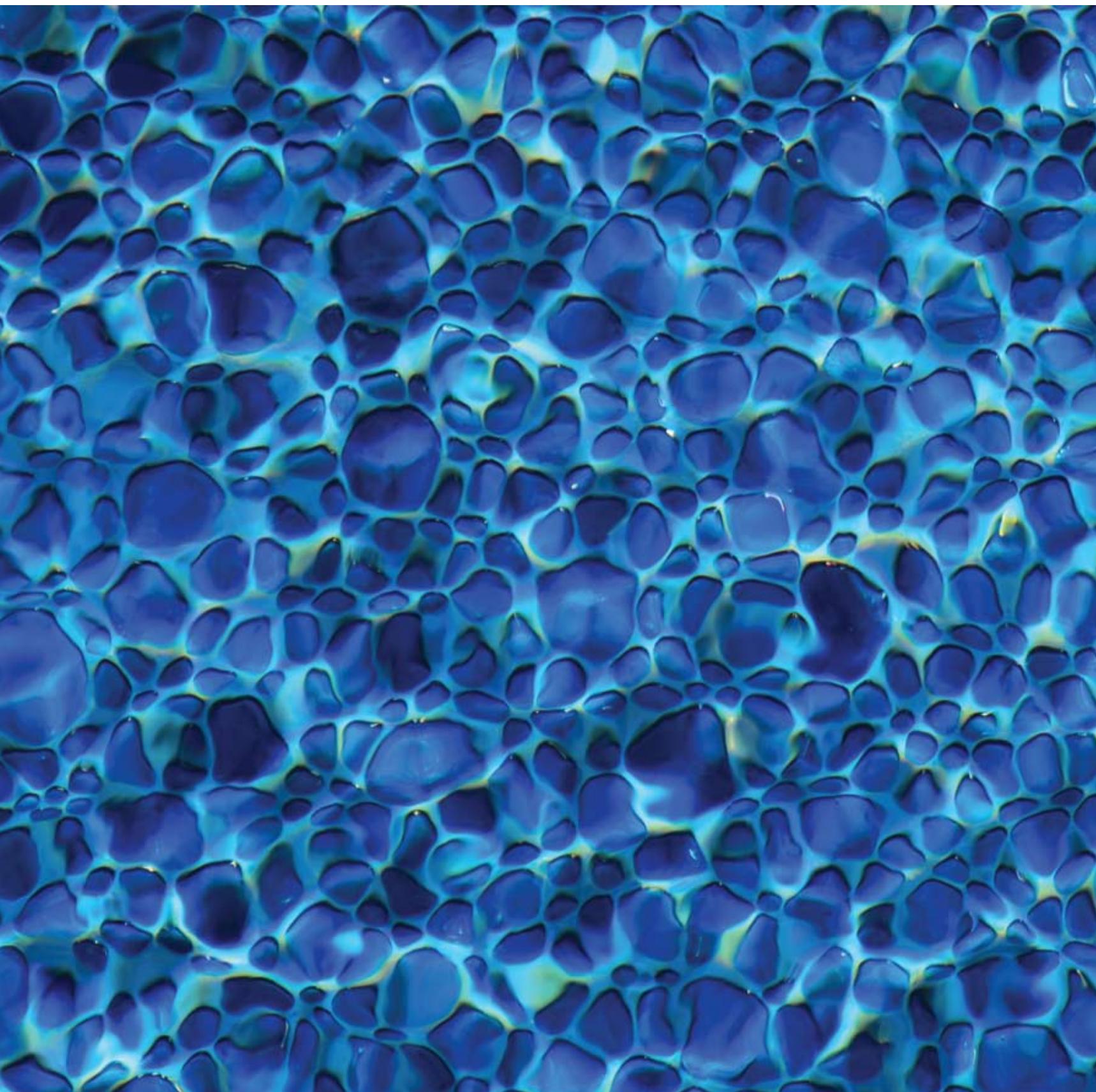
amigables y adaptables se crean con la *vitrogota*. La similitud con las piedras de río ayuda a imaginar escenarios menos rígidos y más fluidos. Su componente básico es vidrio coloreado.

vitrogota[®]

glass pebbles

VG-Tulum

junta azul / blue grout



Organic, adaptable and friendly defines vitrogota collection, whose main component is colored glass. The similarity to river pebbles leads the imagination into less rigid, more fluid landscapes.

vitrogota[®]
glass pebbles

VG - Volcánica / Aguaclara junta azul claro / light blue grout

Giarettta Italia SRL

VG - Aguaclara junta arena / sand color grout

Grand Hyatt Singapore



VG - Bali



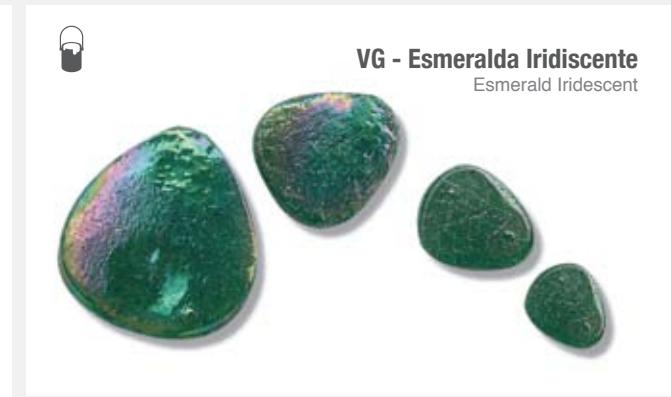
VG - Tulum



VG - Aguaclara
50% Iridescent



VG - Esmeralda Iridiscente
Esmerald Iridescent





VG - Ivory



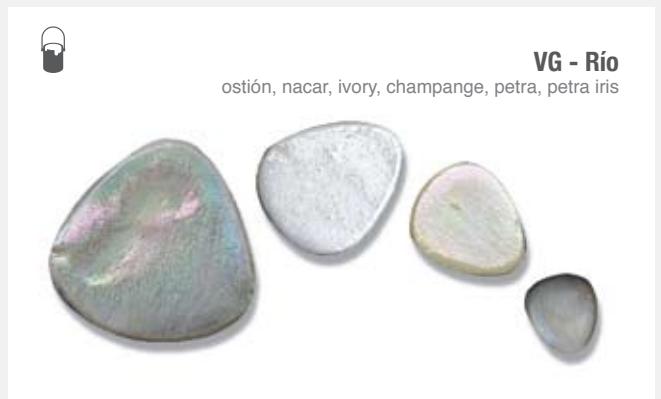
vitrogota®
glass pebbles



VG - Ivory



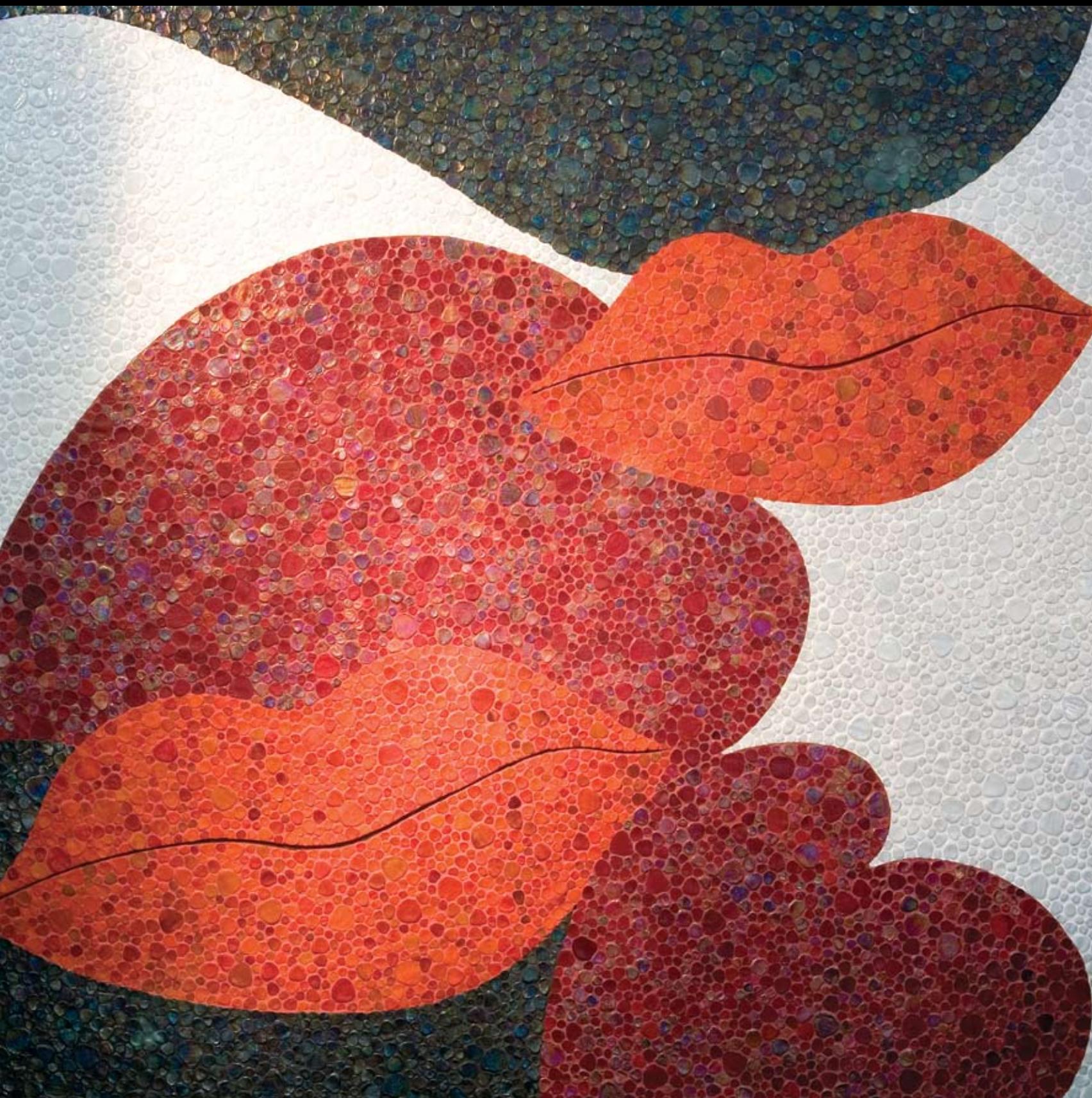
VG - Creta
20% Iridescent



VG - Río
ostión, nacar, ivory, champagne, petra, petra iris



VG - Petra Iridiscente
Petra Iridescent



vitrogota®
glass pebbles



ESTILO + FUNCIÓN

Un efecto relajante por medio de tonos refrescantes y tenues, en acabados lustrados, veteados o gránulos de arena suspendidos. v25 Kolorines es un mosaico de cuerpo robusto diseñado para un alto desempeño debido a su espesor, borde de anclaje y montado en papel o en gota para facilitar su instalación.



STYLE + FUNCTION

in a variety of finishes

- iridescent, beautifully veined or with suspended particles - the refreshing, subdued tones of our V25 collection produce a relaxing sensation.

Installation is facilitated by the anchorage borders, dot mounted and extra thickness, thereby ensuring top performance.

+V25 *Kolorines*

v25 Kihea sr69 / Kihea sr79



K5 sr



Medium blue sr 57 Azul medio sr 57



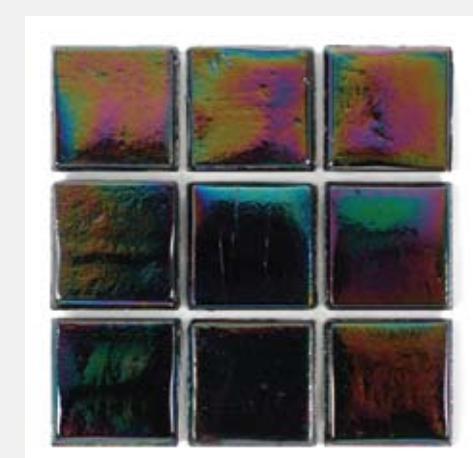
Kihea sr 59



Kihea sr 79



Black sr 62 Negro sr 62



Black sr 82 Negro sr 82

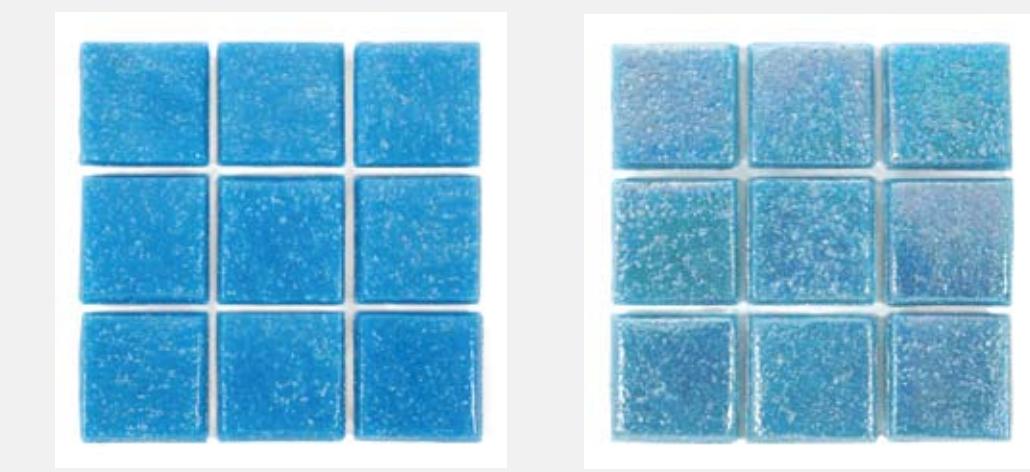
v25 Azul Medio sr 57 - Azul Claro sr 86 - Cancún sr 70



Oyster white sr 56 **Ostión sr 56** Oyster sr 76 **Ostión sr 76**



Acapulco sr 53 **Light blue sr 86 Azul claro sr 86**



Cancún sr 50 **Cancún sr 70**



Mint sr 64 Menta sr 64



Emerald sr 55 Esmeralda sr 55

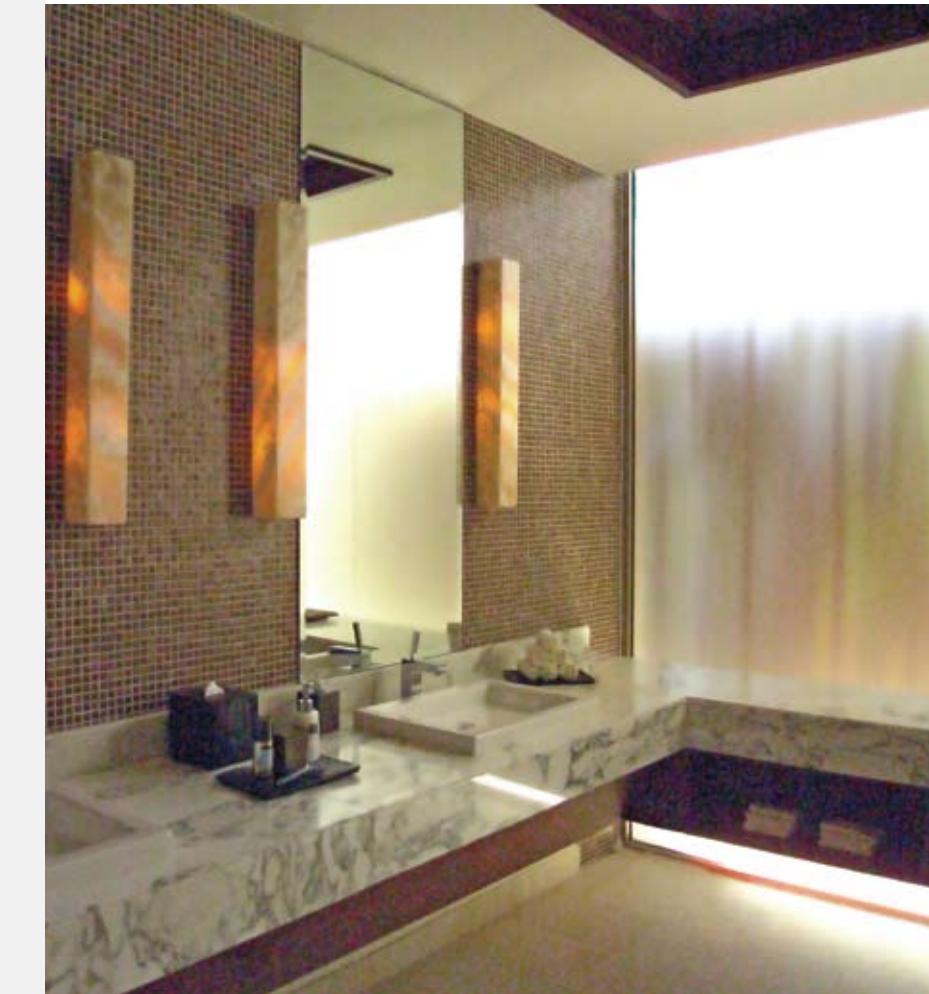


Wheat sr 22 Trigo sr 22



Wheat sr 42 Trigo sr 42

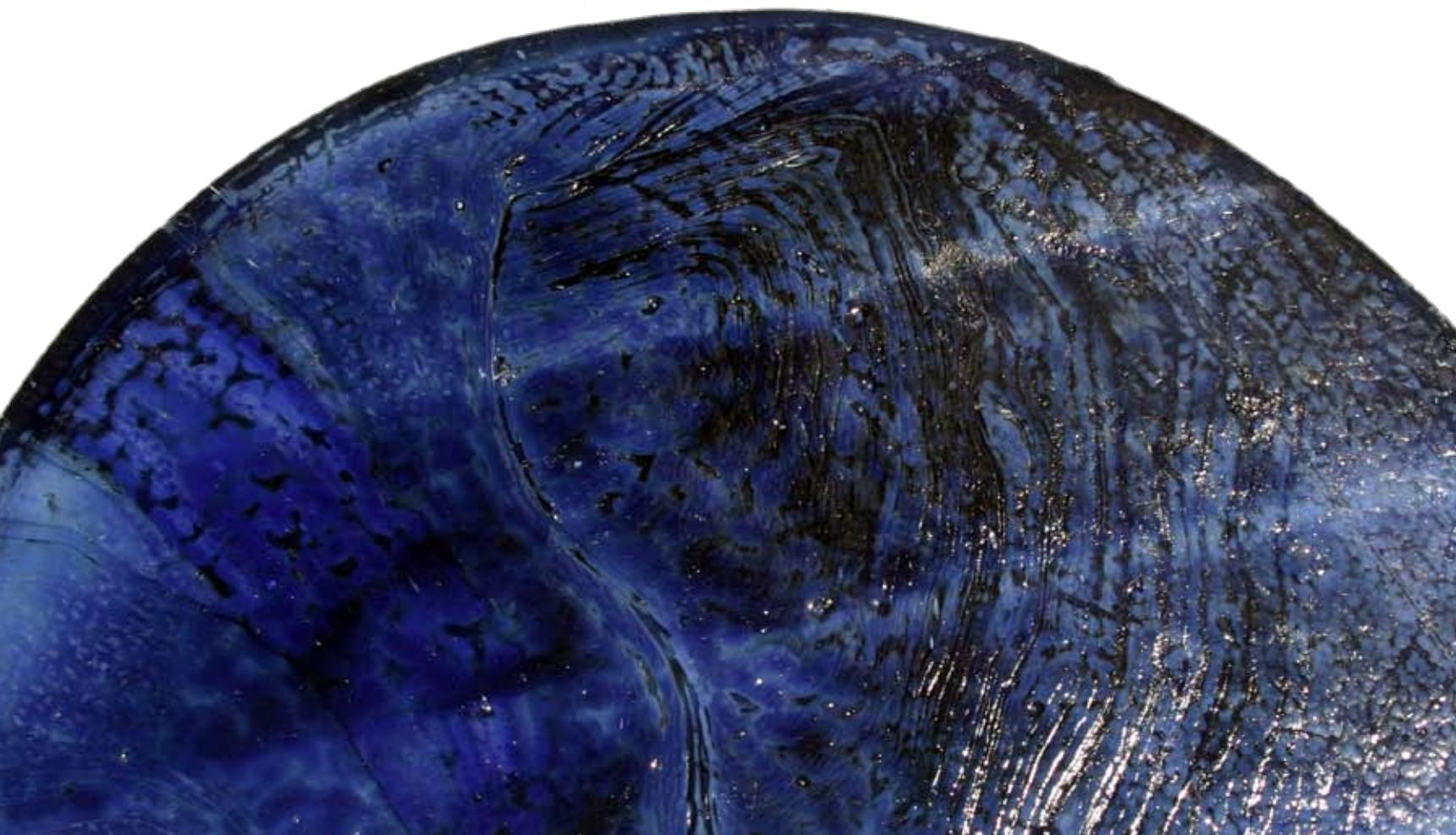
v25 Esmeralda sr 55



v25 Trigo sr 22 Spa Hotel Rosewood



El secreto de la colección Murano radica en la sutilidad de sus cambios de color sublimes en sus vetas, generando textura visual para discretamente destacar espacios apagados. El esmalte y su mezcla da esplendor percibido en jaspeado y una pureza extrema de color.



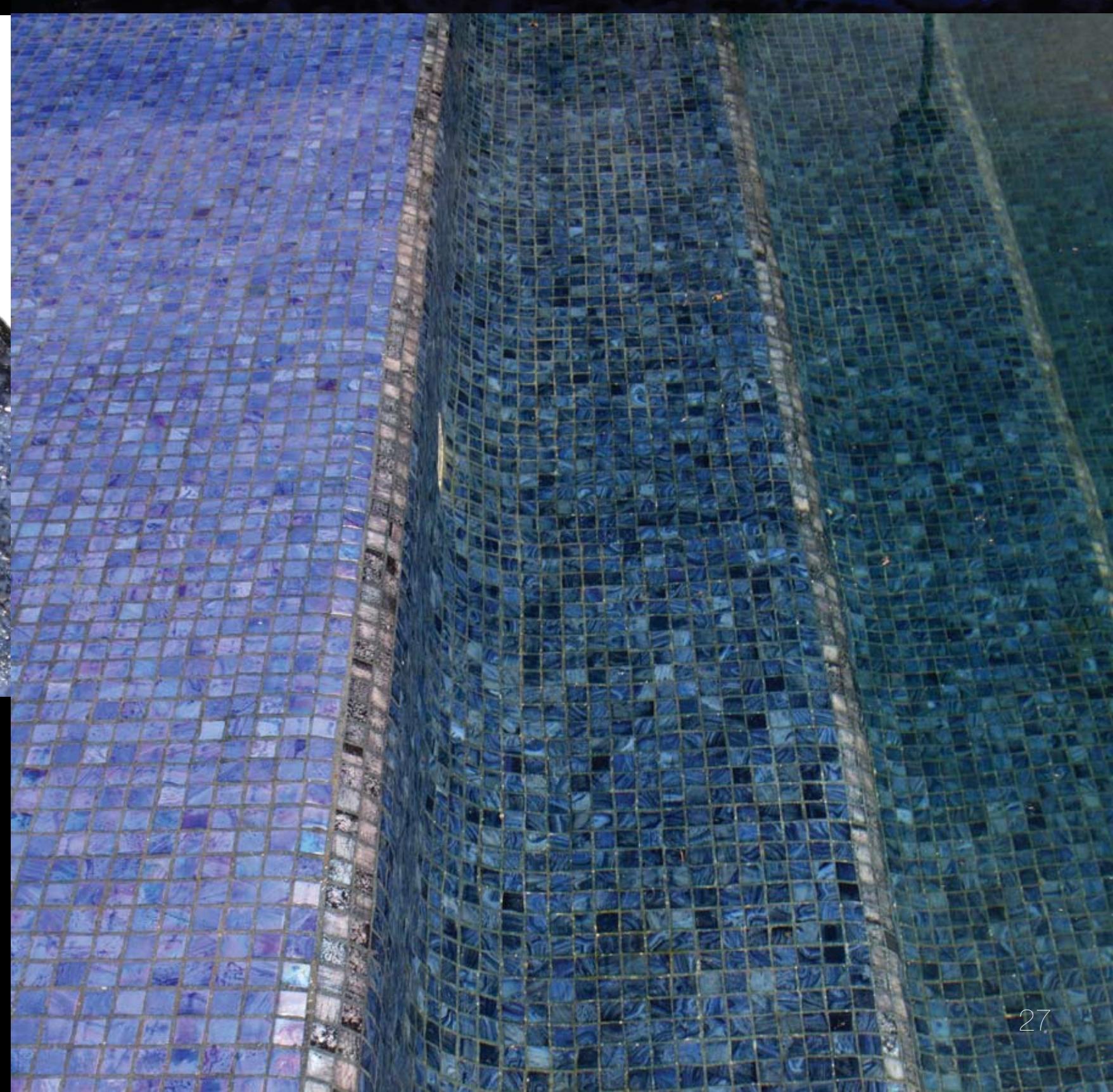
v20 Infinity > Marino >



MURANO

Esmates

Mexican Smatti



MURANO

Esmalte Mexican Smalti



v20 Heaven



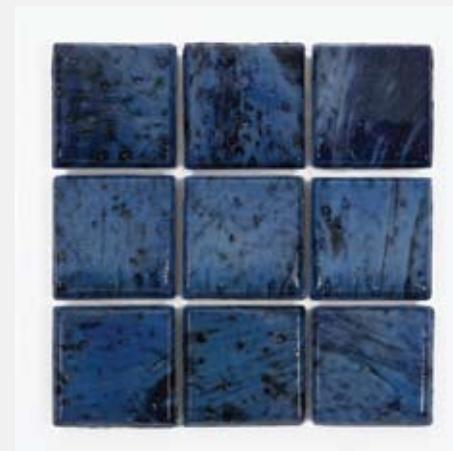
v20 Mediterráneo



v20 Lagoon



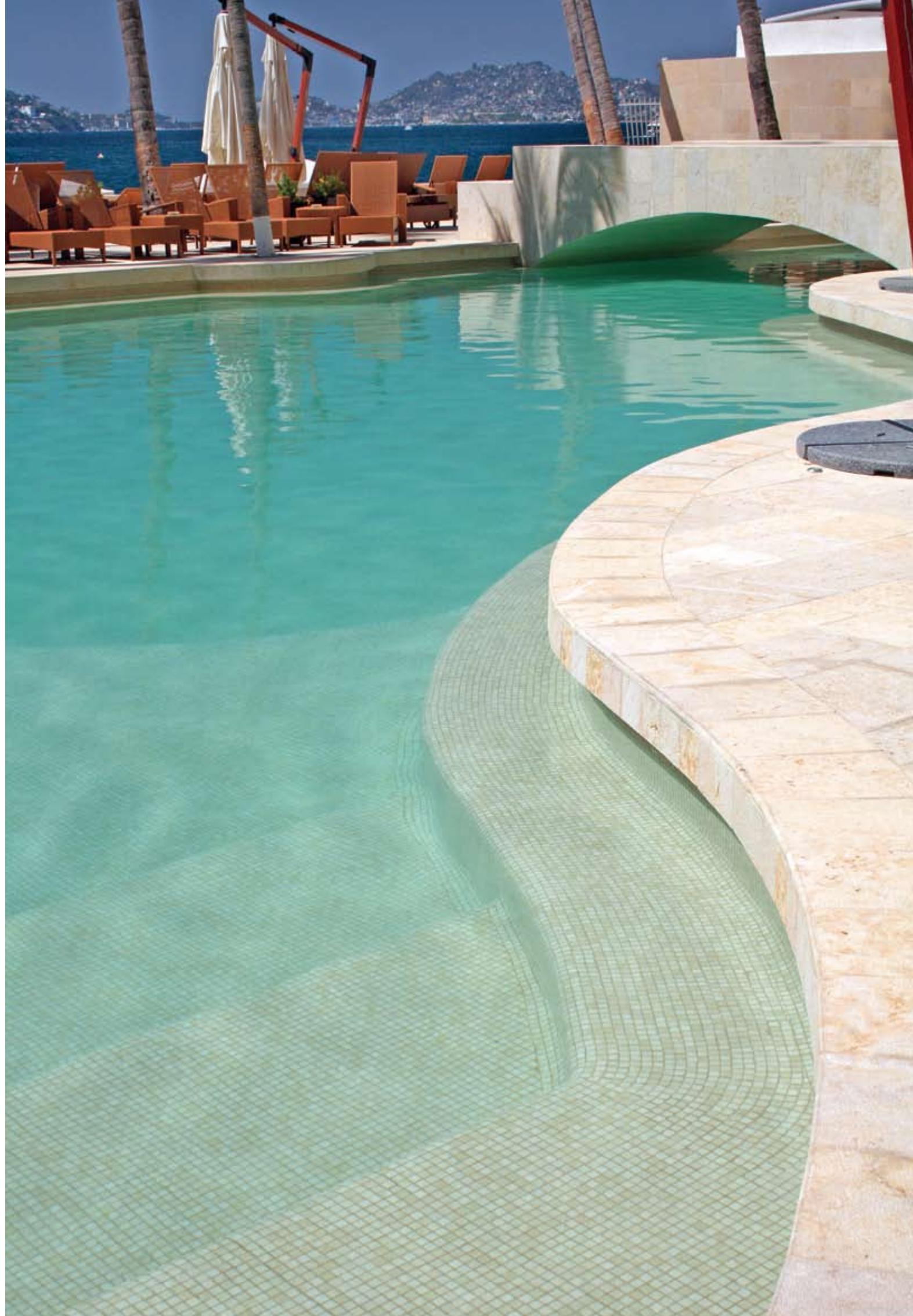
v20 Infinity



v20 Marino



v20 Symphony



MURANO

Esmalte Mexican Smalti



v20 ❁ Glacial



v20 ❁ Petra



v20 Champagne



v20 Terra



MURANO

Esmalte Mexican Smalti



v20 🔍 Pistachio



v20 🔍 Amazonia



v20 🔍 Jade



v20 🔍 Foresta

Siempre llamativo e intenso, la colección SOLAR concentra y transmite jovialidad pues propone cambio y experimentación a través de la fuerza energética que acarrea. Se compone de esmalte veneciano ligeramente veteado y de colores sólidos.



v20 Bermellón

Intense.... eyecatching, SOLAR collection exudes a festive mood and a vigorous energy that proposes change and experimentation. SOLAR is made up of lightly veined Venetian smalti presented in solid colors.



v50 Solar collection 5x5 cms 2x2 inch



SOLAR

Esmaltes Mexican Smalti



v20 - v50 Yellow Amarillo



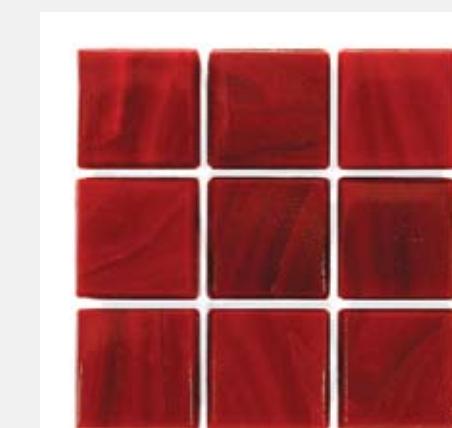
v20 - v50 Peach Durazno



v20 - v50 Tangerine Mandarina



v20 - v50 Vermillion Bermellón



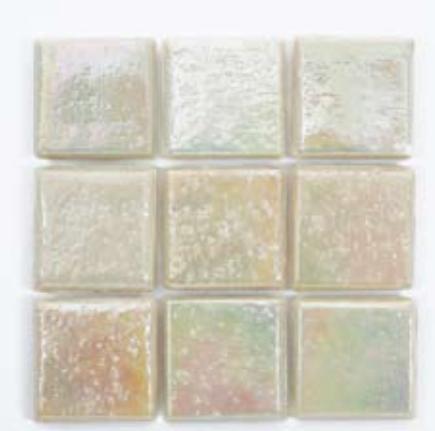
v20 - v50 Scarlet Escarlata



v20 - v50 Crimson Carmin



v20 Mango



v20 - v50



Ivory v20 Peta Iris



v20 Mango



v20 Terra Iris

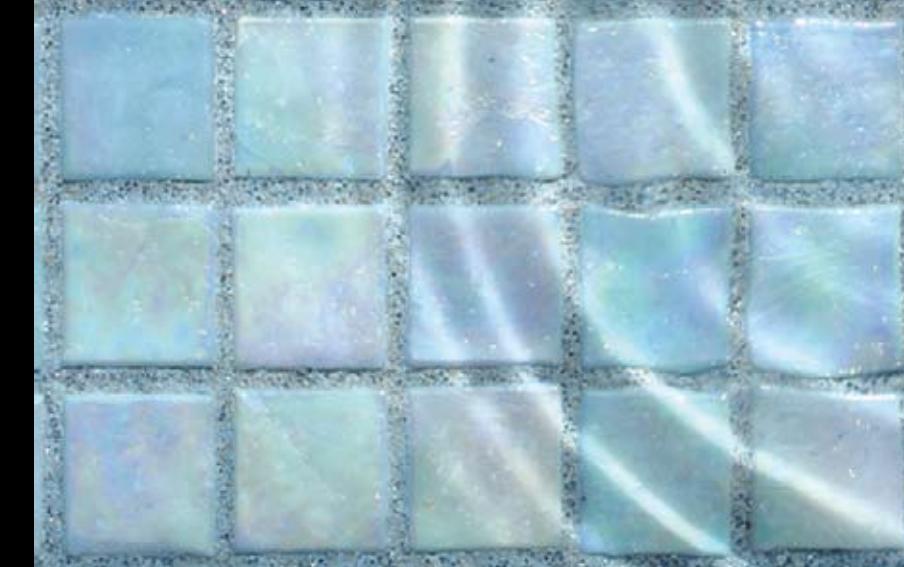
METÁLICA añade una mezcla de brillo colorido que ligeramente aprovecha y explota los grupos de colores fríos y cálidos. La fusión del laminado brillante con colores muy puros da por resultado un acabado vítreo-metálico que es su principal característica.

METÁLICA

Esmalte lustroso Glossy Smart



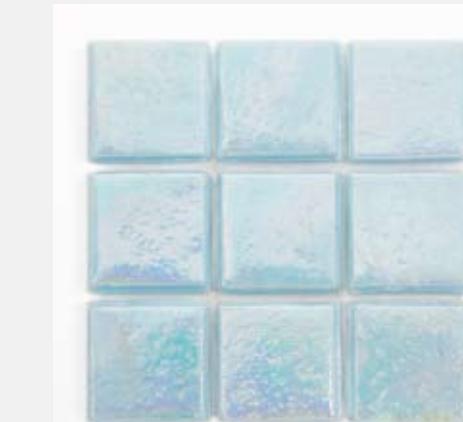
v20 Petra Iris >



METÁLICA

Esmaltes lustrosos Glossy Smalti

The fusion of pure color with a glazed finish produces the glass-metallic look that is the principal characteristic of our METALICA. Both the coolness and warmth that color offers are used to produce a blend of colorful brilliance.



v20 ⚒ Blue Pearl



v20 - v50 ⚒ Ciano



v20 ⚒ Mystic



v20 ⚒ Umbra

Reflejos de la Naturaleza

La magia de IRIS ofrece más de un color a través del jugueteo visual por los reflejos de luz. El destello cambiante provoca un delicado dinamismo muy particular del material y el entorno donde se encuentre. Compuesto de vidrio opalizado con laminado vítreo-metálico que da el reflejo iridiscente.



IRIS

Cristales Iridiscentes Pearlized Mosaic



v20 - v50

Nácar



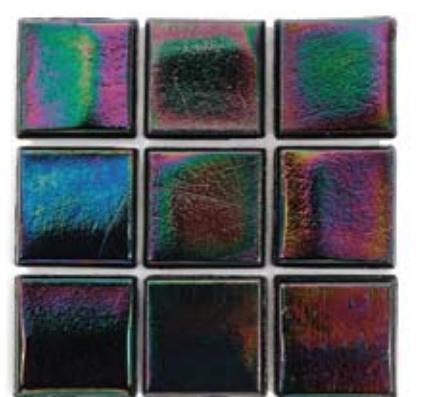
v20

Golden



v20

Shell



v20

Obsidian

v20 Obsidian Spa Orlane >



IRIS

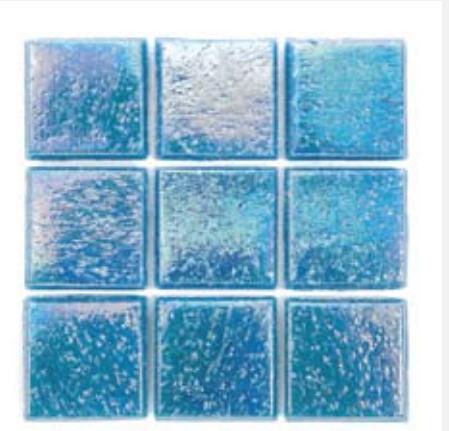
Cristales Iridiscentes Pearlized Mosaic

Visual play through the reflection of light creates a myriad of colors and the magic of IRIS collection. The ever-changing sparkling gives rise to a delicate dynamism particular to the material and its surroundings. A glass-metallic covering on opal glass produces an iridescent radiance.



v20

Celeste



v20 - v50



Paradise



v50 IRIS collection
5x5 cms 2x2 inch



v20 - v50

Nautilus



v20 - v50



Thunder



v20 Nautilus



Rocas de luz

KUARZO nos brinda la transparencia del cristal en combinación con colores vaporosos. El detalle se verá manipulado por la elección del adhesivo: ya sea uno de color similar o blanco para resaltar las características del vidrio o uno diferente para una vista versátil.



KUARZO

Cristales Translucent mosaic



v20 🔍 Cristalina



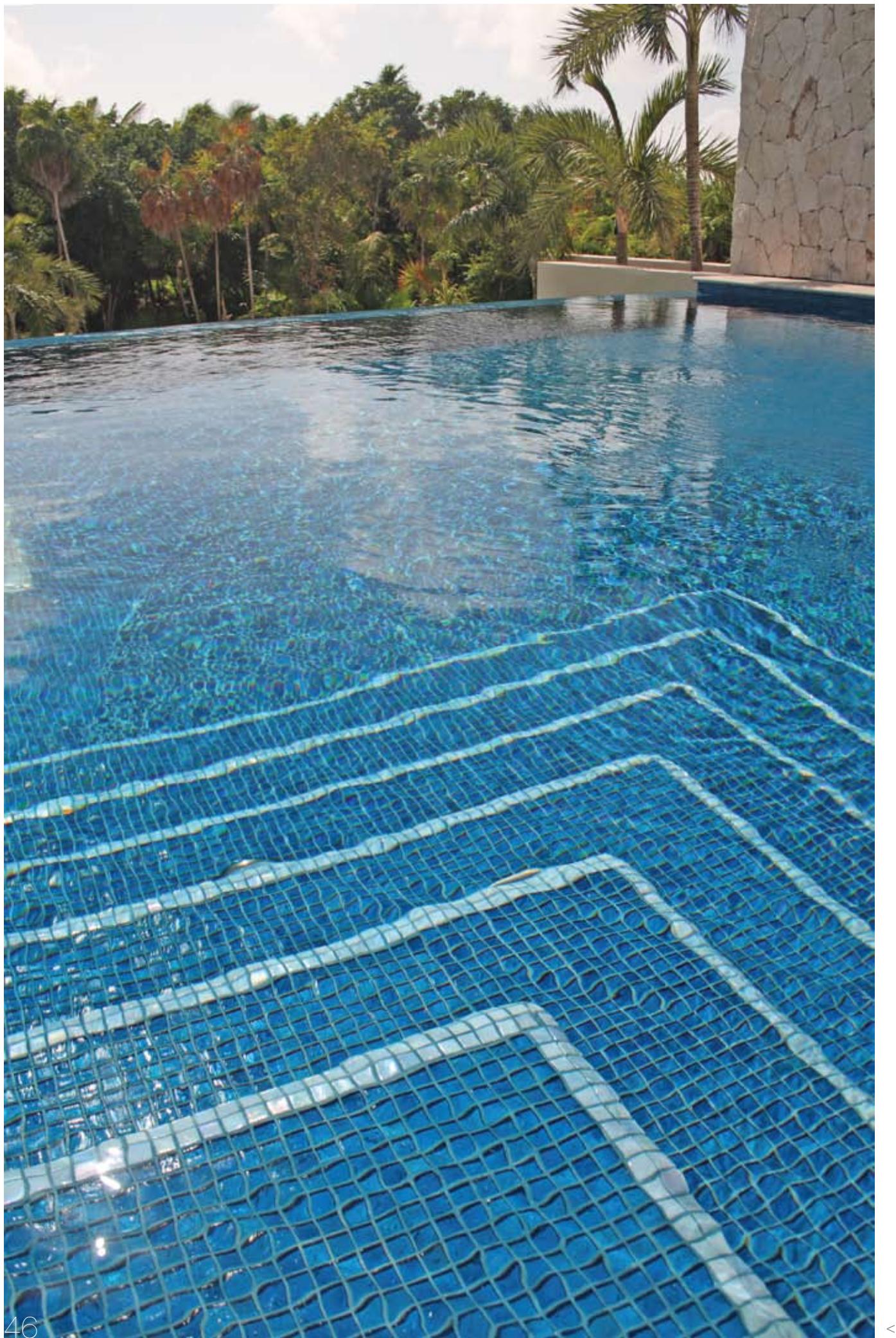
v20 🔍 Sílica



v20 🔍 Ambar



v20 🔍 Violeta



< v20 Tulum

Rocks of Light

Transparent glass in combination with tenuous color tones bestows a particular delicacy to KUARZO. Detail will be affected by the choice of adhesive, whether it is of a similar color or white to emphasize the characteristics of the glass, or of a different color for a more versatile look.

KUARZO

Cristales Translucent mosaic



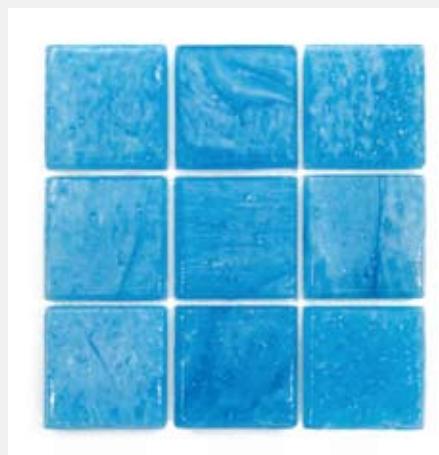
v20 🔒 Xelha



v20 🔒 Aralia



v20 🔒 Laurel



v20 🔒 Agave



v20 🔒 Bacalar



v20 🚛 Tulum



v20 Indigo

BOTÁNICA

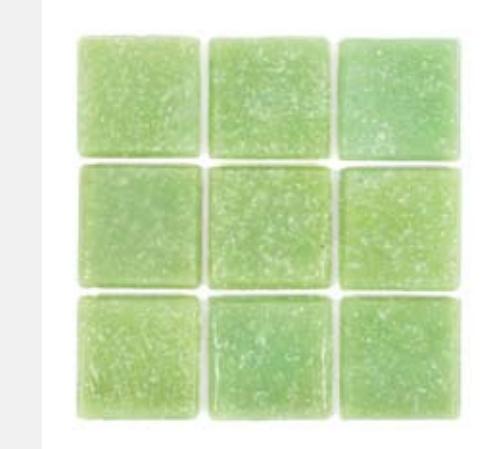
Opalizados opalized carthones



v20 Verde Caribe - Esmeralda

Arq. Abe

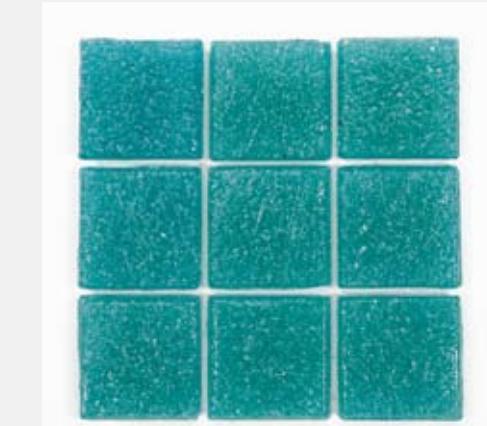
v50 BOTANICA collection



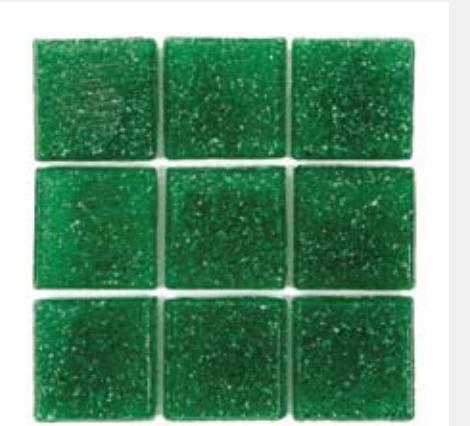
v20 - v50 ☕ 🌿 Caribbean Green Verde Caribe



v20 - v50 🌿 Cuernavaca



v20 - v50 🌿 Aqua Green Verde Agua



v20 - v50 🌿 Emerald Esmeralda

Enérgico y en sintonía con el ambiente, el complemento perfecto que equilibra la vitalidad del verde con la neutralidad del café. La esencia selvática impresa en BOTÁNICA conjura una mezcla de matices que nos remontan a los orígenes naturales. El acabado son gránulos de arena suspendidos en el vidrio.

BOTÁNICA

Opalizados opalized carthones



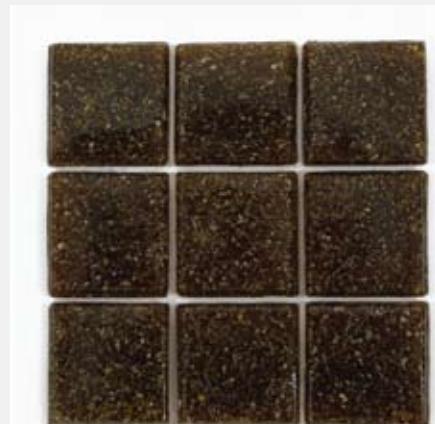
v20 - v50 Pearl Gray Gris Perla



v20 - v50 Wheat Trigo



v20 - v50 Honey Miel



v20 - v50 Dark Honey Miel Obscuro



v20 Tobacco Tabaco



v20 - v50 Black Negro



v20 Negro

v20 Miel Obscuro



In harmony with its surroundings, our dynamic BOTANICA collection is the perfect complement, equilibrating the vitality of green hues with neutral browns, and a finish of sand particles suspended in glass. The essence of the jungle is imprinted on this collection in a combination of shades that takes us back to the very origins of nature.



v20 Esfumado especial - Custom gradation

Dino Valezzi

AKUA

Opalizados water colors



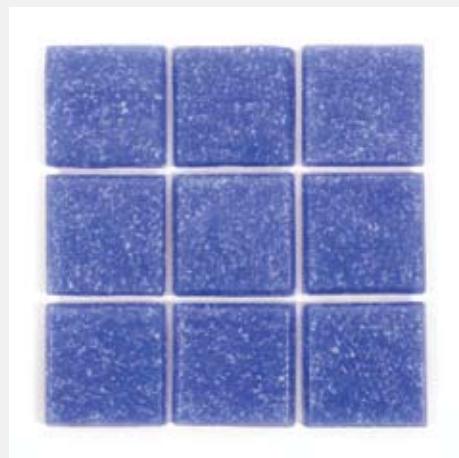
v20 Aqua Blue Azul aqua



v20 - v50 Ixtapa



v20 - v50 Turquoise Turquesa



v20 - v50 Cobalt Blue Cobalto



v20 - v50 Acapulco



v20 - v50 Cancún



v50 AKUA collection

Los Colores de México

Playas mexicanas sintetizadas en una gama de azules de vidrio opalizado que nos llevan por todo México: desde un verde agua de Cancún hasta el azul profundo de Los Cabos. La máxima expresión de frescura en días soleados se proyecta en nuestra línea AKUA, que alude a una sensación de brisa marina con diversión playera. Se caracterizan por sus gránulos de arena suspendidos en el vidrio.



v50 Ostión - Cancún

AKUA

Opalizados water colors



v20 - v50 Oyster White **Ostión**



v20 - v50 Ice White **Hielo**



v20 Crystal Blue **Cristal**



v20 - v50 Steel Blue **Acero**

The Colors of Mexico

Mexican beaches synthesized in shades of blue on opal glass transport us from Cancun's aqua green to the deep blue of Los Cabos. With its particular characteristic of sand particles suspended in glass, our AKUA collection emanates coolness on a sunny day, hinting at fun on the beach and the caress of an ocean breeze.



v20 - v50  K5



v20 - v50   Dark cobalt Cobalto Obscuro



v20 - v50  Ocean Blue Mar

v20 Ostión



v20 Cobalto



v20 Cobalto Obscuro

Blends
mezclas



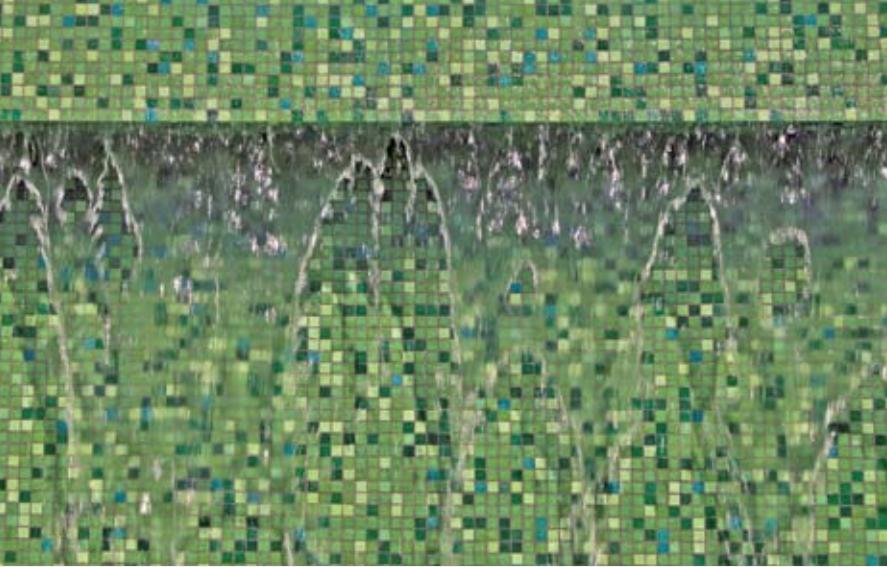
Cielo Azul
Hotel Fairmont Mayacoba
Arq. Mario Lazo

Blends *mezclas*



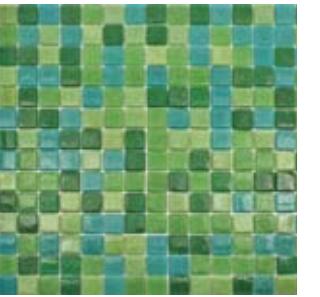
Cielo Azul >
Hotel Fairmont Mayacoba
Arq. Mario Lazo

Blends *mezclas*



Esmalda, Caribe,
Verde Aqua,
Cuernavaca - al azar / random

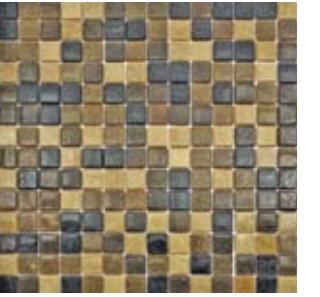
Verdes



3/4" x 3/4" 2 x 2 cms

Miel, Trigo
Tabaco, Miel Obscuro
al azar / random

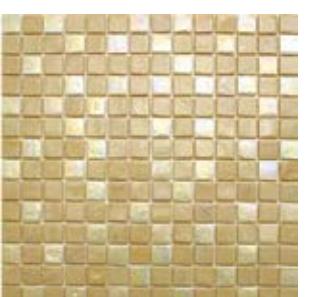
Café



3/4" x 3/4" 2 x 2 cms

70% Champagne
30% Ivory

Ivory 30

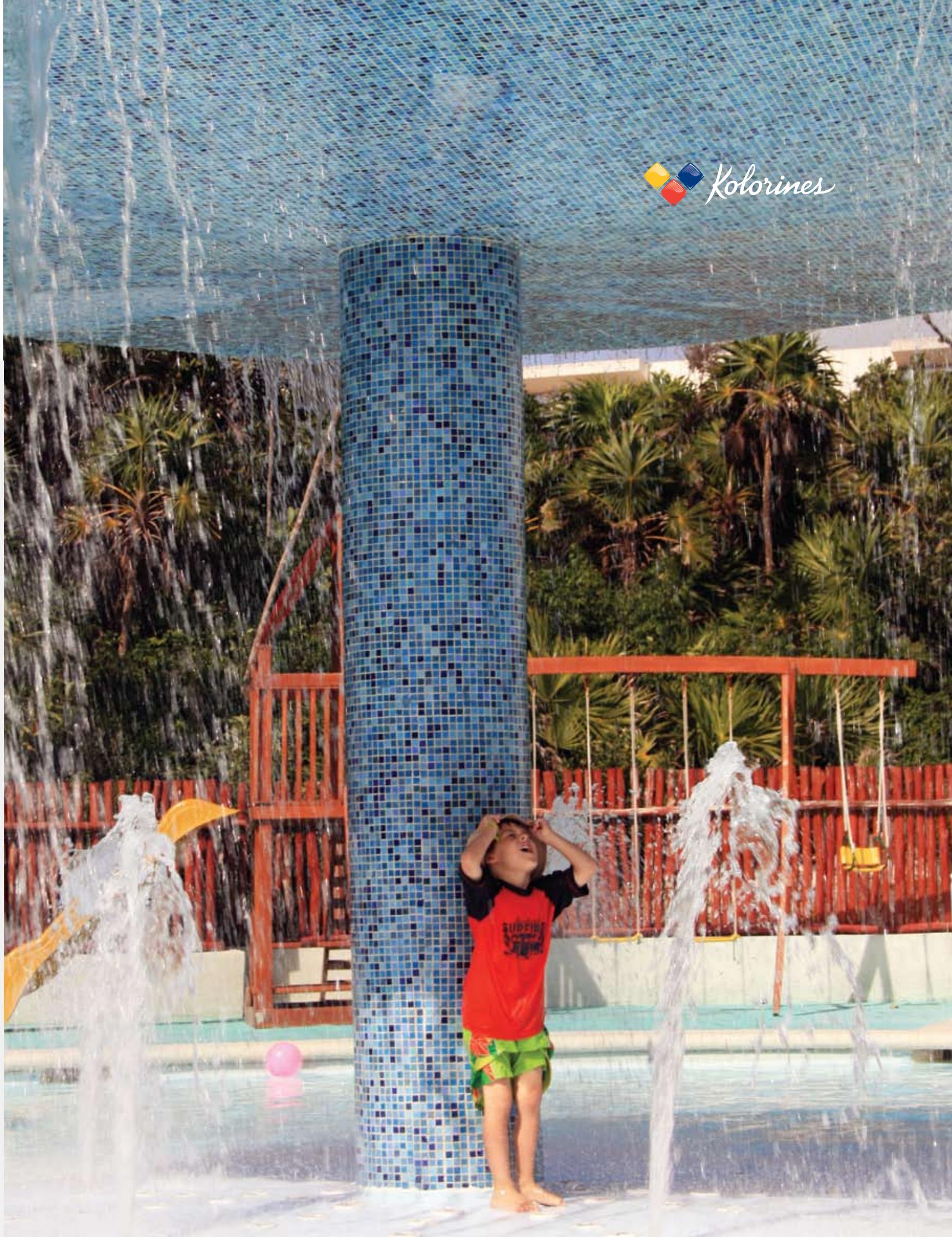
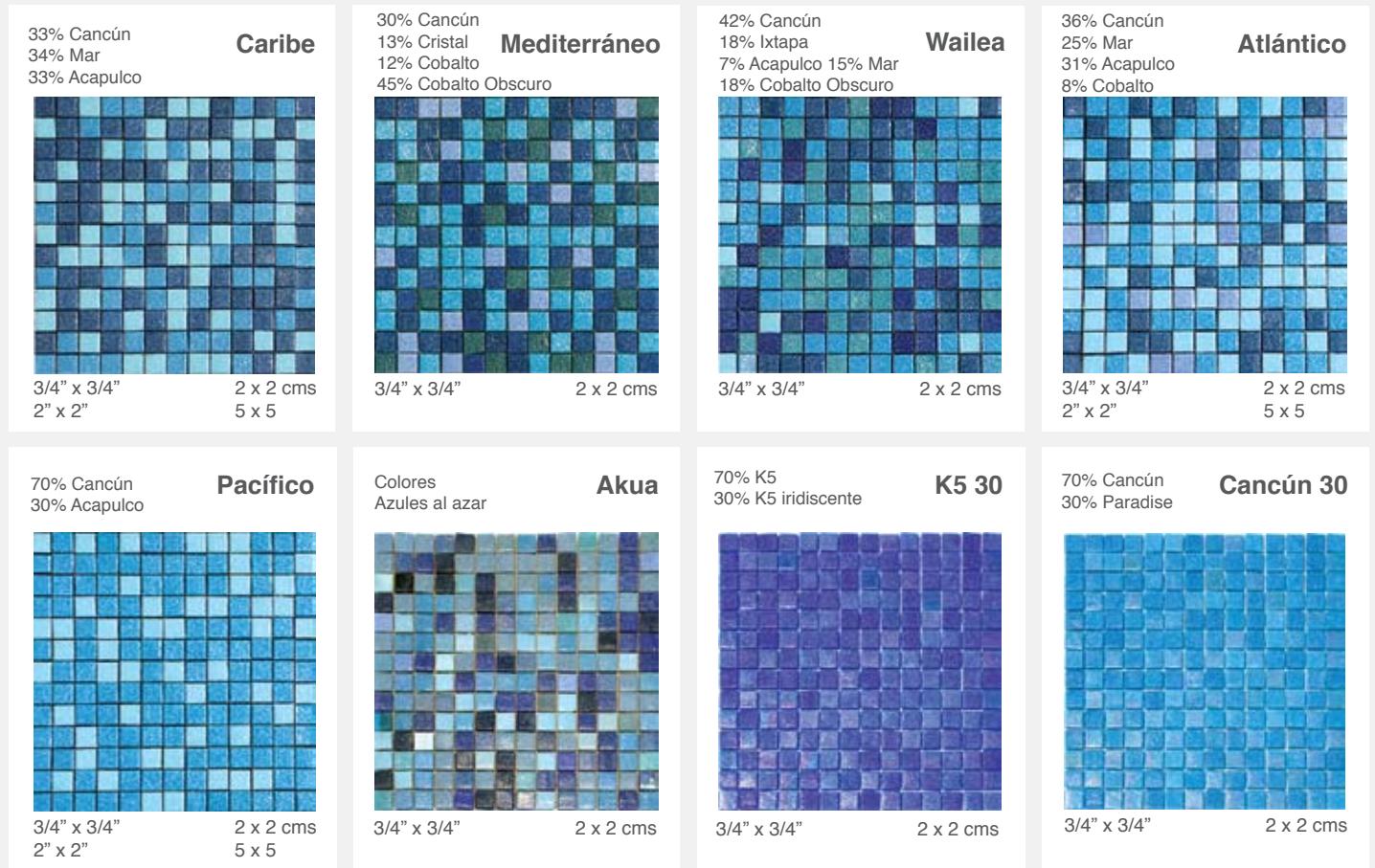


3/4" x 3/4" 2 x 2 cms

Ivory 30 >
Banyan Tree resort



Blends *mezclas*



 **Kolorines**

Borders

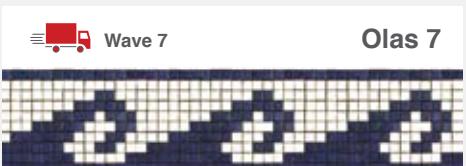
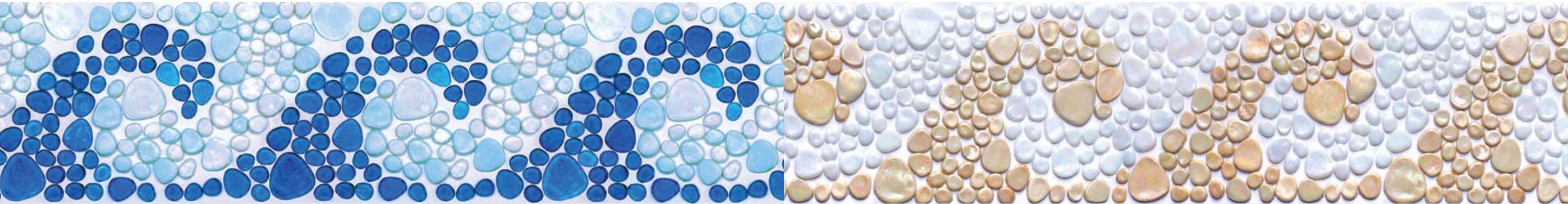
cenefas

cenefa Gotas Agua - 20 cms ancho

Water Drops border - 8 inch wide

cenefa Gotas Arena - 20 cms ancho

Sand pebbles border- 8 inch wide



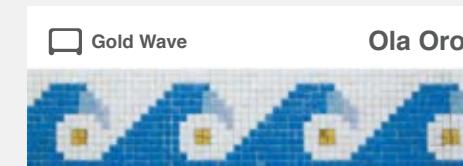
3/4" x 3/4"
Wide 7 3/4"
Oyster White
Dark Cobalt

Olas 7



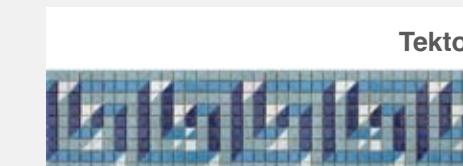
3/4" x 3/4"
Wide 7 3/4"
Acapulco
Cancun
Ocean Blue
Oyster White
Dark Cobalt

Olas 4 colores



3/8" x 3/8"
Wide 7 1/2"
Acapulco
Cancún
Mar
Blanco Ostión
Cobalto Oscuro

Ola Oro



3/4" x 3/4"
Wide 7"
Cancun
Aqua Blue
Oyster White
Dark Cobalt

Tekton



3/4" x 3/4"
Wide 6 1/3"
Aqua Blue
Cobalt Blue
Dark Cobalt
Turquoise
Acapulco, Cancun
Ocean Blue, Ixtapa
Oyster White

Ondulación



Wide 8 5/8"
Wide 12"
Wide 22 cms
Ancho 30 cms

Marea



3/4" x 3/4"
Wide 5 1/2"
Vermillion
Esmerald Green
Yellow
Oyster White
Dark Cobalt

Cruces 1



3/4" x 3/4"
Wide 5 1/2"
Bermellón
Esmeralda
Amarillo
Blanco Ostión
Cobalto Oscuro

Cruces 2



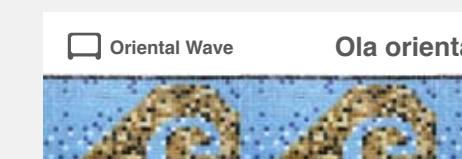
3/4" x 3/4"
Wide 11"
Dark Cobalt
Cancun
Turquoise
Caribbean Green

Marroqui 10



3/4" x 3/4"
Wide 5 1/2"
Terra
Champagne

Ruina



3/8" x 3/8"
Wide 12"
1 x 1 cms
Ancho 31 cms

Ola oriental



3/4" x 3/4"
Wide 8 1/2"
Lagoon
Heaven
Champagne

San Vitale

Borders

Cenefas



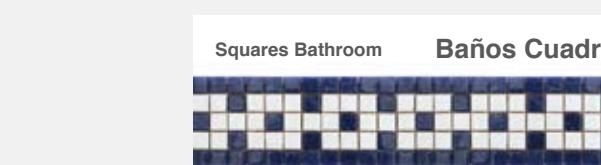
Griega 5
3/4" x 3/4"
Wide 5 1/2"
Oyster White
Dark Cobalt



Griega 6
3/4" x 3/4"
Wide 5 1/2"
Blanco Ostión
Cobalto Oscuro



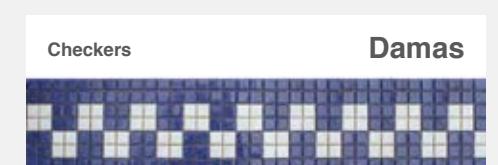
Laberint
3/4" x 3/4"
Wide 8 1/2"
Oyster White
Dark Cobalt



Baños Cuadros
3/4" x 3/4"
Wide 4"
Oyster White
Dark Cobalt



Baño rectángulos
3/4" x 3/4"
Wide 4"
Oyster White
Dark Cobalt



Damas
3/4" x 3/4"
Wide 6 1/3"
Oyster White
Dark Cobalt



Cuadros
3/4" x 3/4"
Wide 5 1/2"
Oyster White
Dark Cobalt
Cobalt Blue



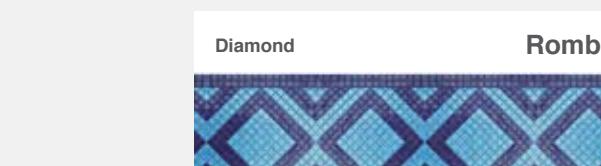
Lucian
3/4" x 3/4"
Wide 5 1/2"
Blanco Ostión
Cobalto Oscuro
Cobalto



Diagonal
3/4" x 3/4"
Wide 5 1/2"
Blue Pearl
Lagoon
Infinity

Akua Blue
Cancún
Ixapa
Oyster White
Dark Cobalt

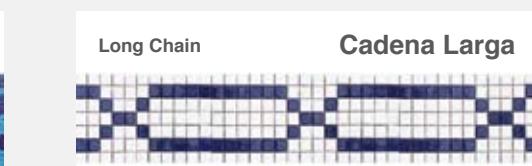
Azul Akua
Cancún
Ixapa
Blanco Ostión
Cobalto Oscuro



Rombos
3/4" x 3/4"
Wide 15 3/4"
Cancún
Dark Cobalt

2 x 2 cms
Ancho 40 cms

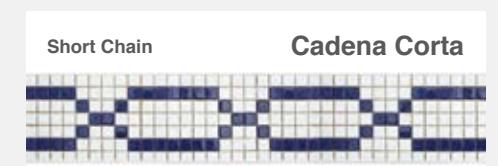
Oyster White
Dark Cobalt



Cadena Larga
3/4" x 3/4"
Wide 5 1/2"
Oyster White
Dark Cobalt

2 x 2 cms
Ancho 14 cms

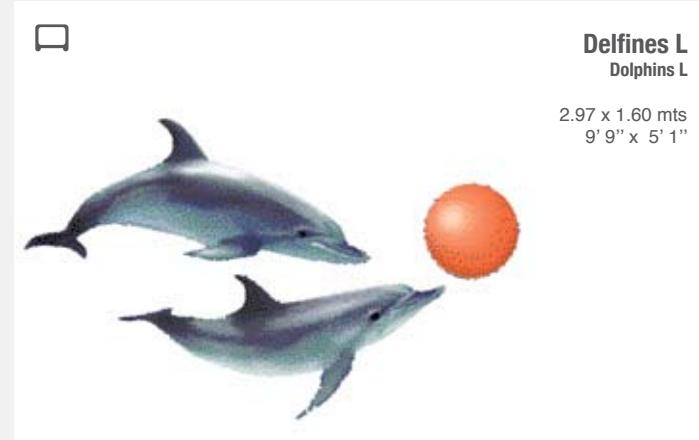
Blanco Ostión
Cobalto Oscuro



Cadena Corta
3/4" x 3/4"
Wide 5 1/2"
Oyster White
Dark Cobalt

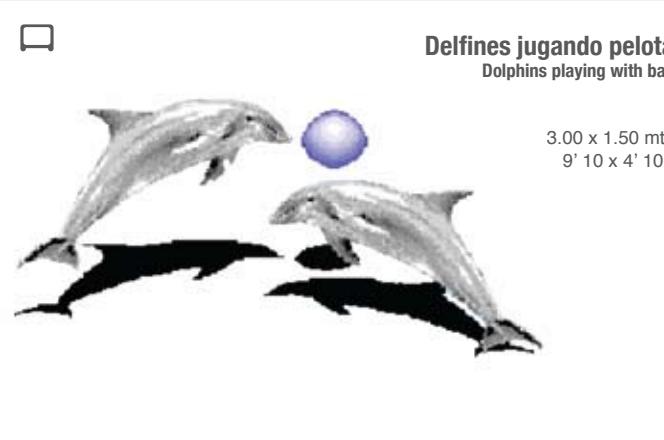
2 x 2 cms
Ancho 14 cms

Blanco Ostión
Cobalto Oscuro



Delfines L
Dolphins L

2.97 x 1.60 mts
9' 9" x 5' 1"



Delfines jugando pelota
Dolphins playing with ball

3.00 x 1.50 mts
9' 10" x 4' 10"



Delfín 1
Dolphin 1

1.50 x 1.00 mts
5' x 3' 4"



Orca y Corales
Killer Whale & Corals

5.50 x 3.00 mts
18' x 9' 10"



Pelota de playa colores
Colors Beach ball

1.00 x 1.00 mts
3' 4"



Tesoro
Treasure

2.21 x 1.74 mts
7' 1" x 5' 8"

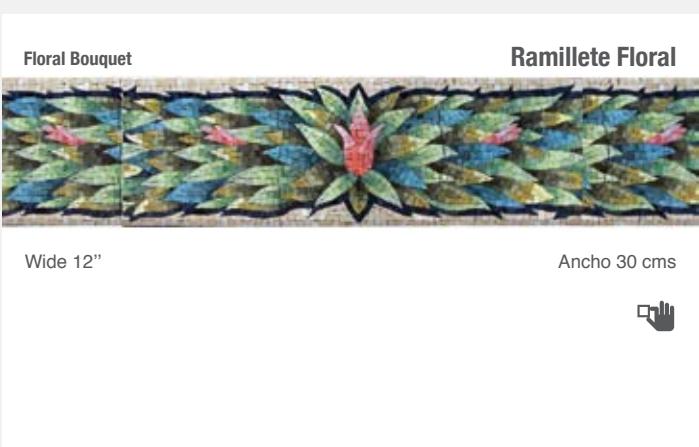
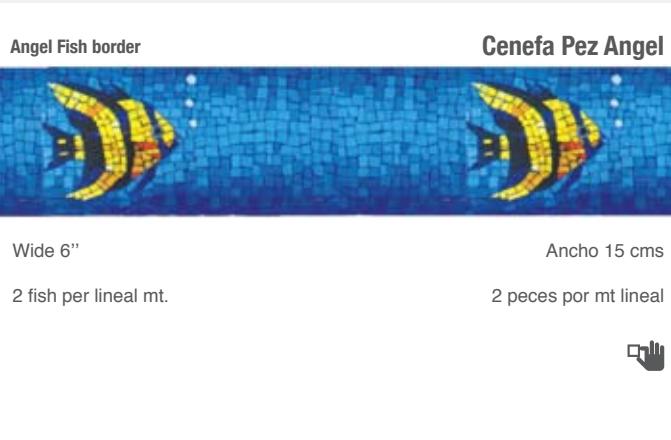
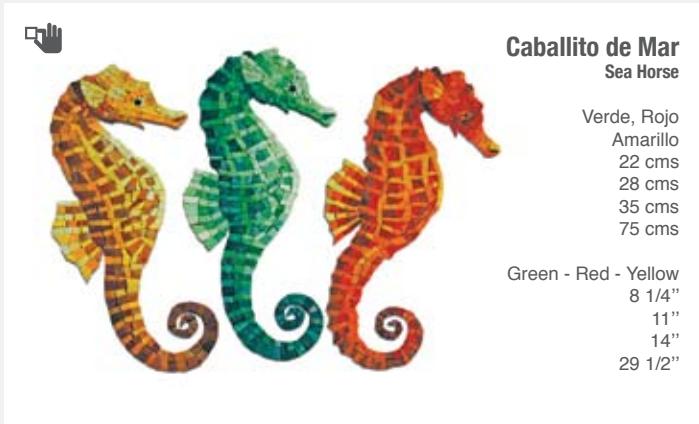


Sumérgete...

Los detalles de decoración Kolorines muestran el ingenio y el trabajo minucioso que resalta y convierte cualquier rincón en un sitio divertido y especial. Para niños de todas las edades, la recreación de un mundo fantástico donde meterse a la alberca se vuelve toda una experiencia.



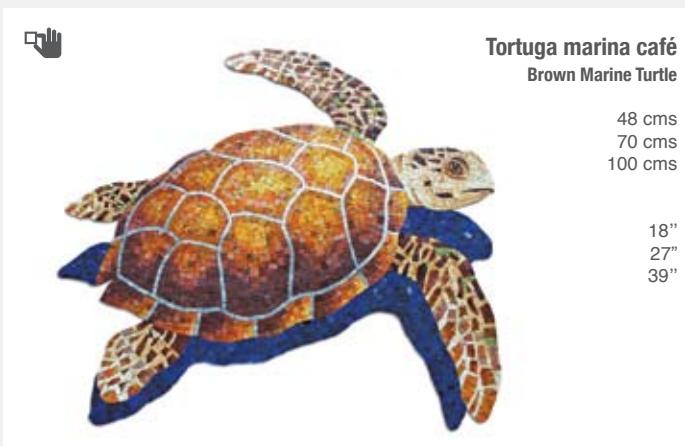
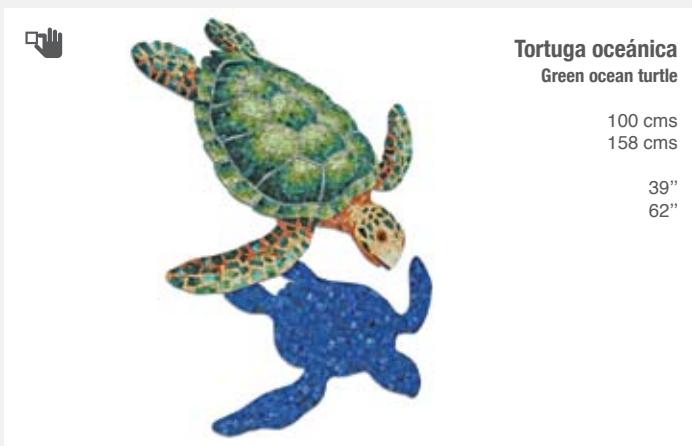
Pool Art Decorados



Kolorines pool art demonstrate the ingenuity and careful work entailed to highlight an insignificant corner, turning it into a special fun area. For children of any age, recreating a fantasy world makes a dip in the pool a whole new experience.

Pool Art

Decorados



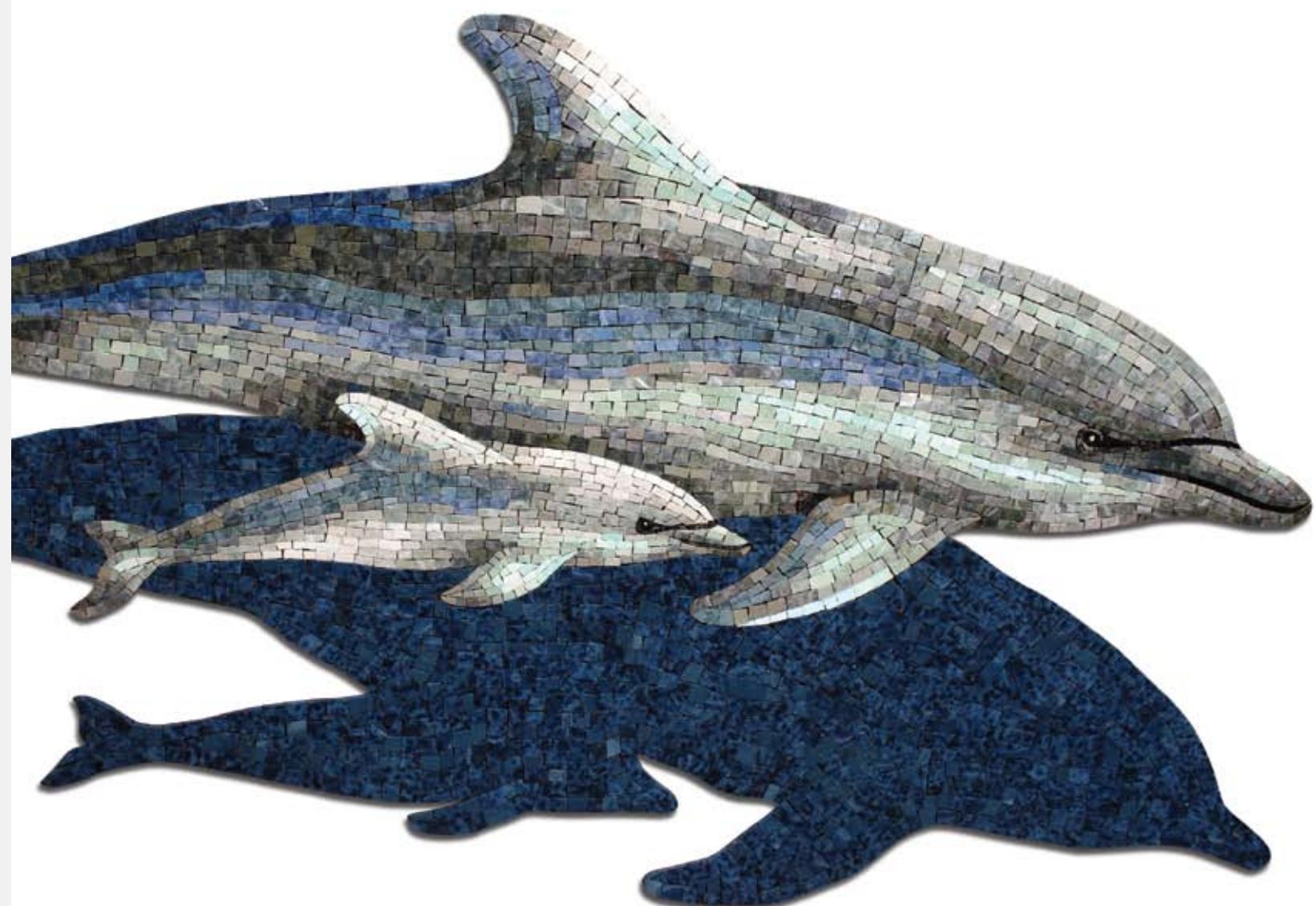
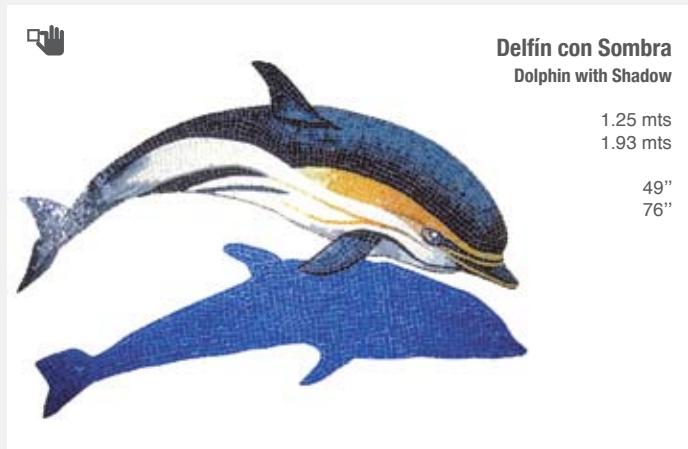
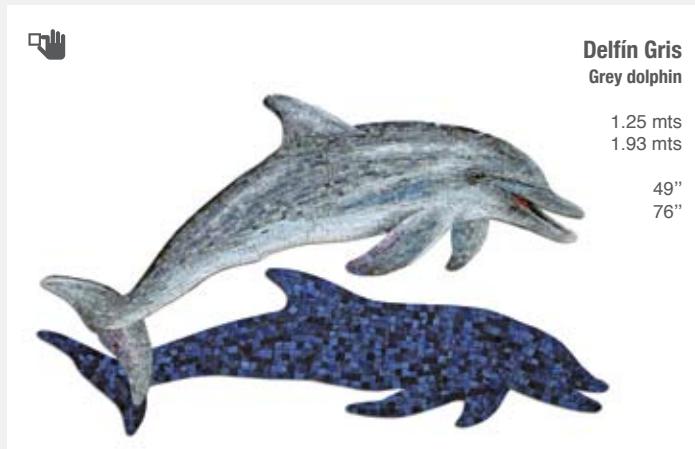
Tortuga - diseño especial

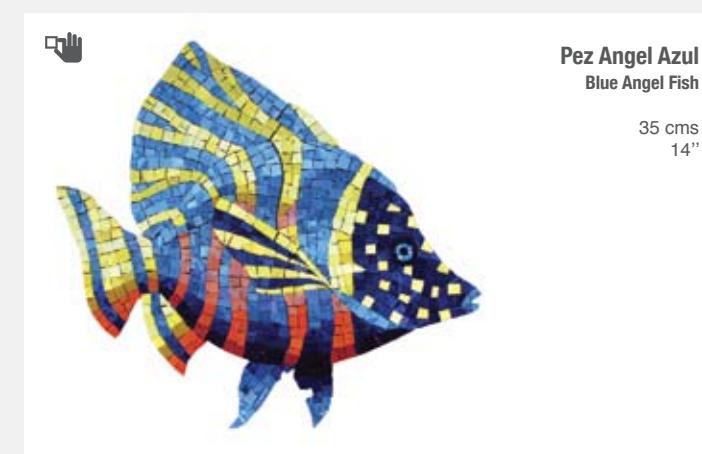
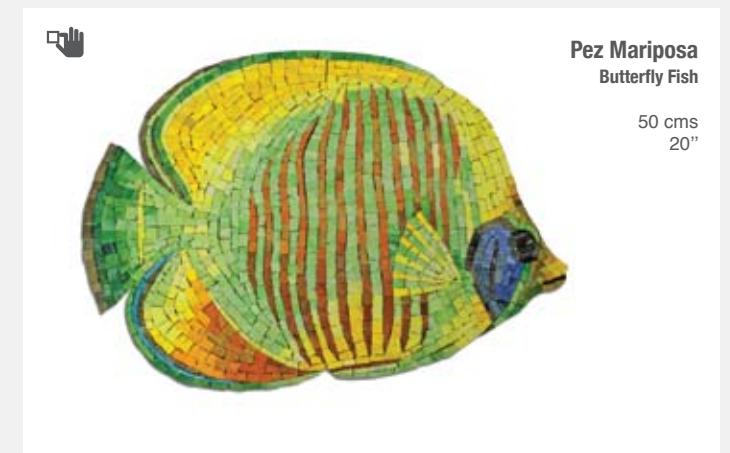
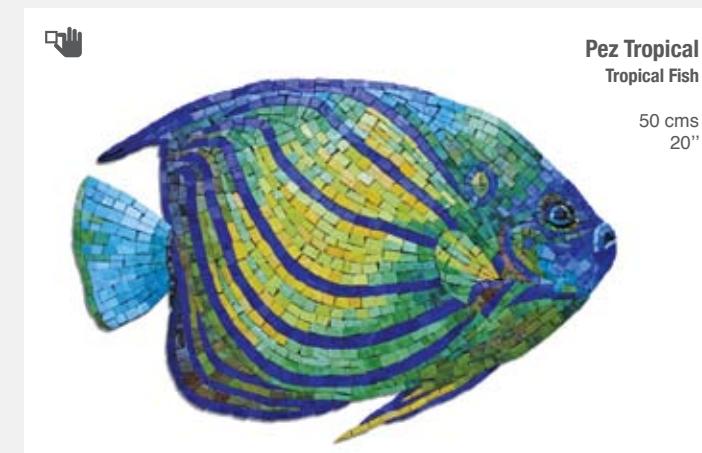
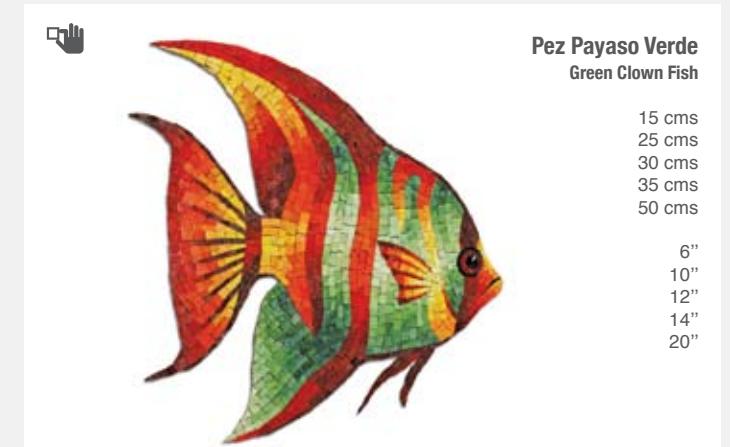
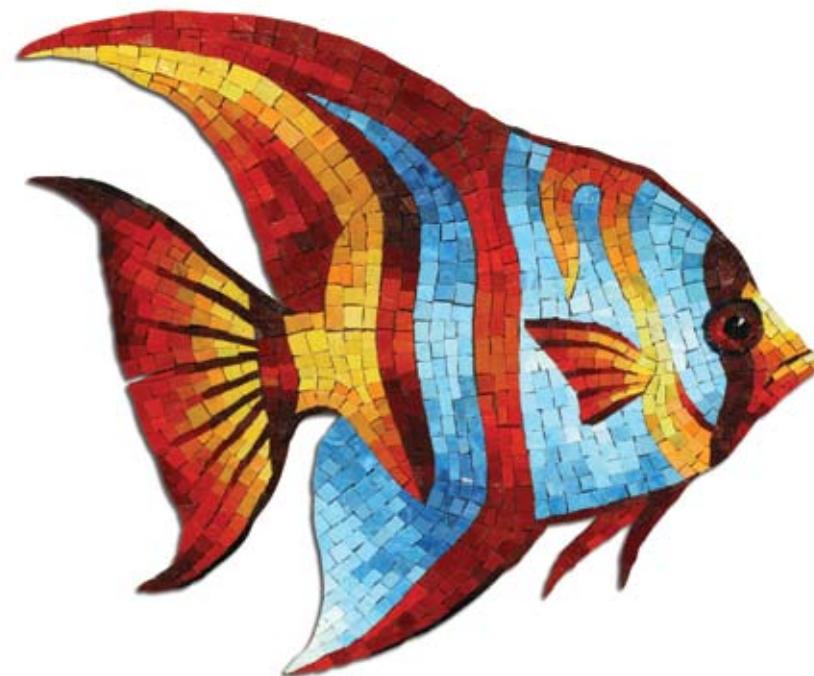
Custom made turtle



Pool Art

Decorados





Pez Payaso Azul
Blue Clown Fish

15 cms
25 cms
30 cms
35 cms
50 cms

6"
10"
12"
14"
20"

Pez Tropical
Tropical Fish

50 cms
20"

Pez Angel Azul
Blue Angel Fish

35 cms
14"

Pez Payaso Verde
Green Clown Fish

15 cms
25 cms
30 cms
35 cms
50 cms

6"
10"
12"
14"
20"

Pez Mariposa
Butterfly Fish

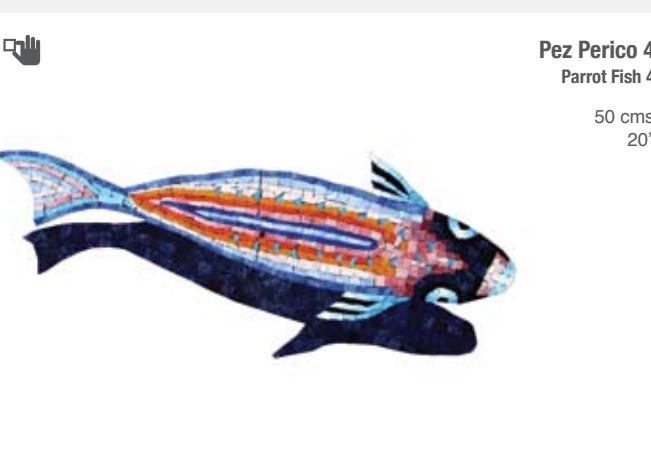
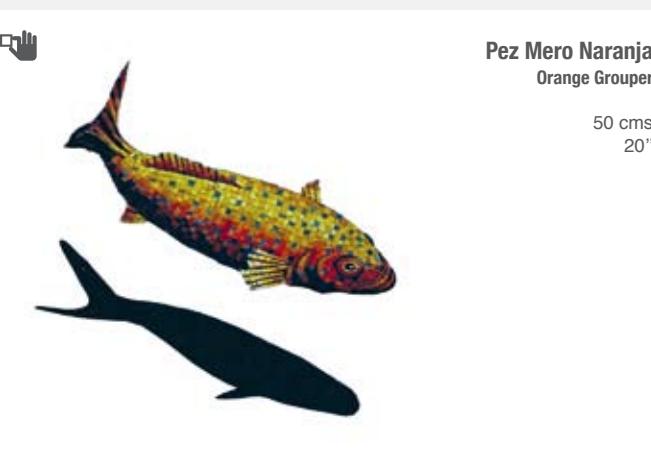
50 cms
20"

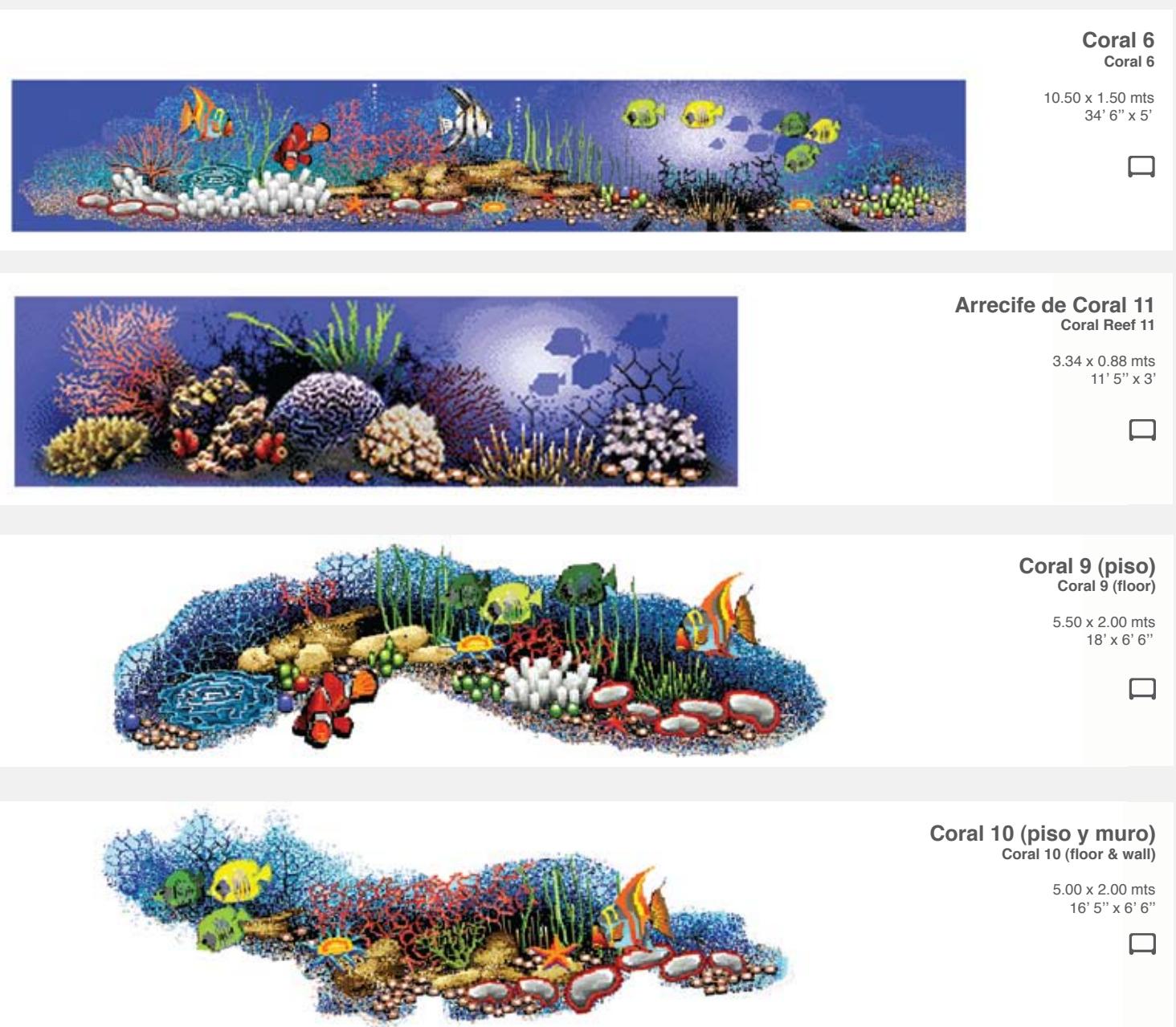
Pez Angel Francés
French Angel Fish

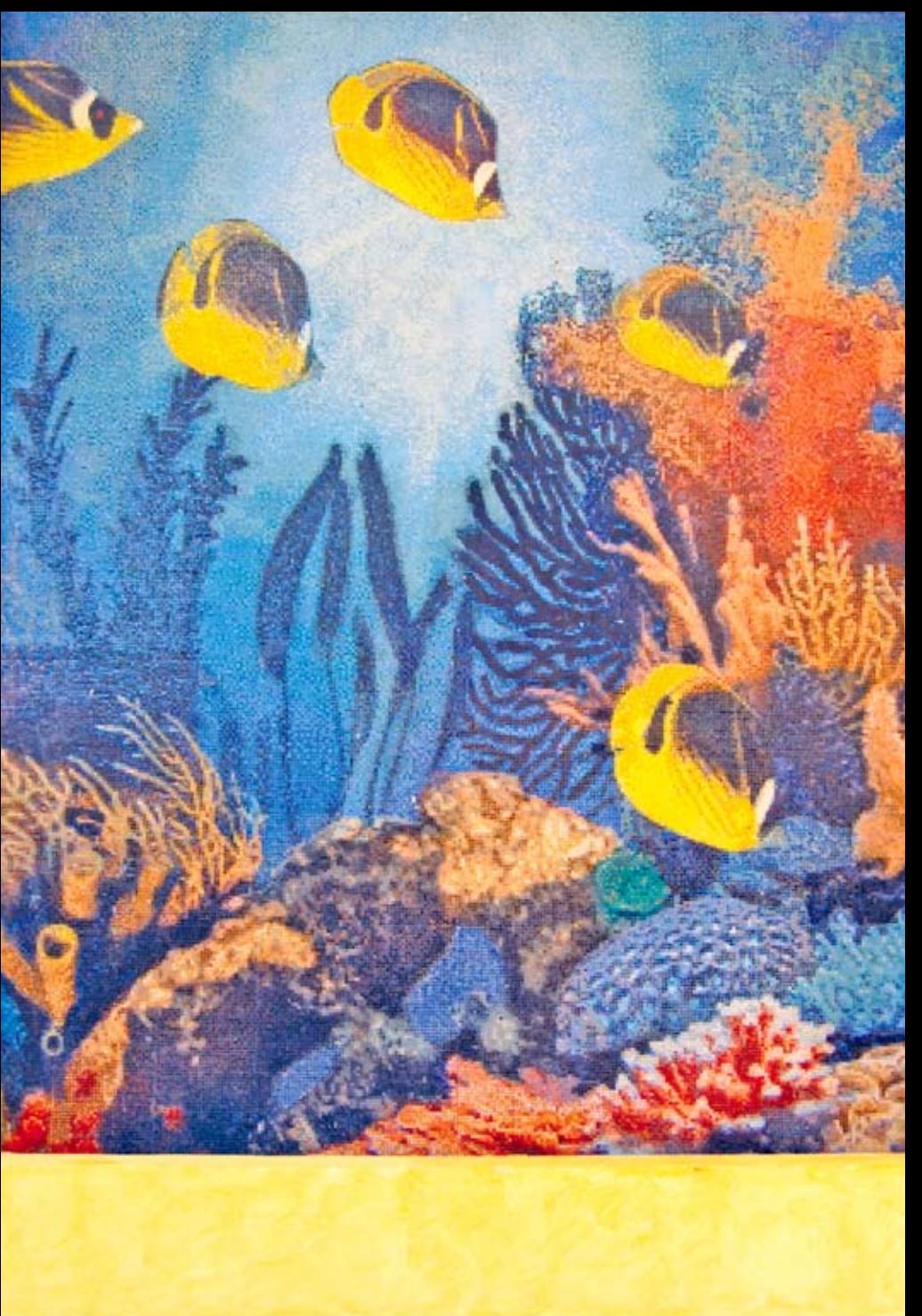
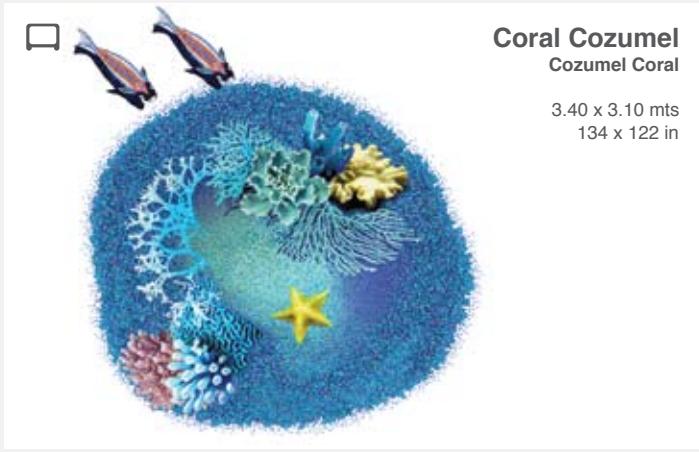
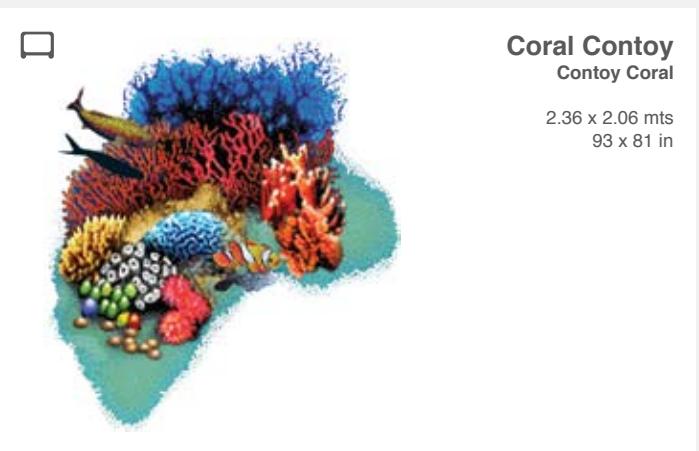
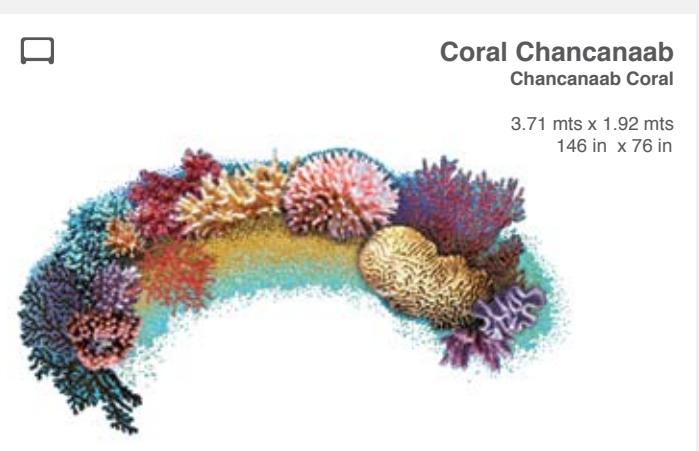
25 cms
35 cms

10"
14"

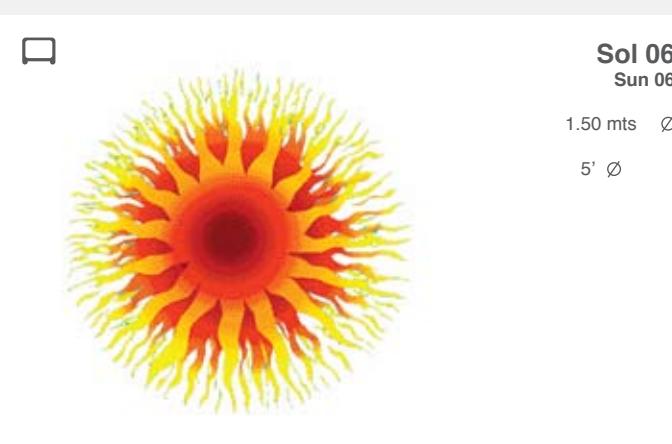
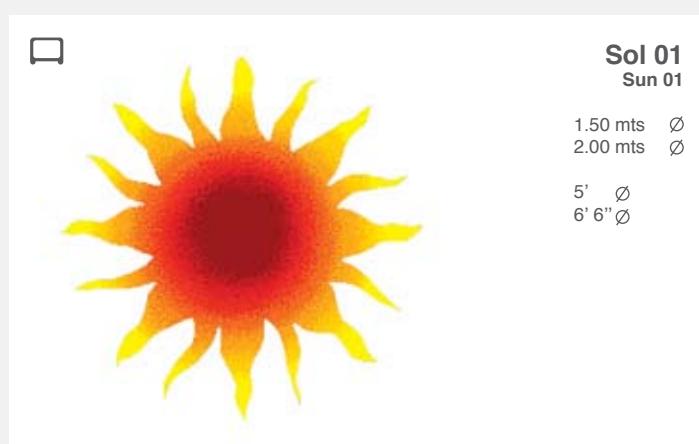
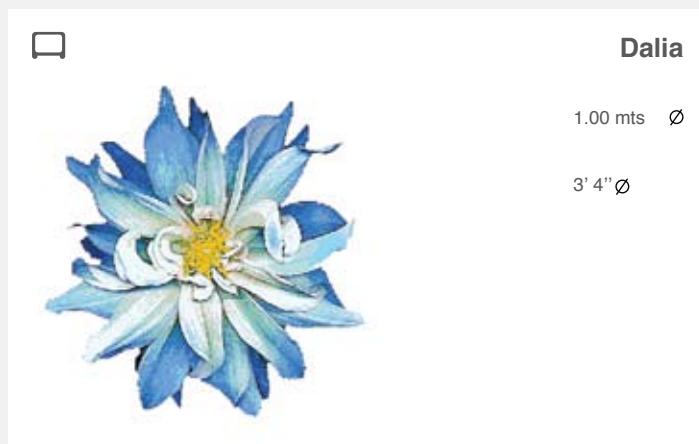
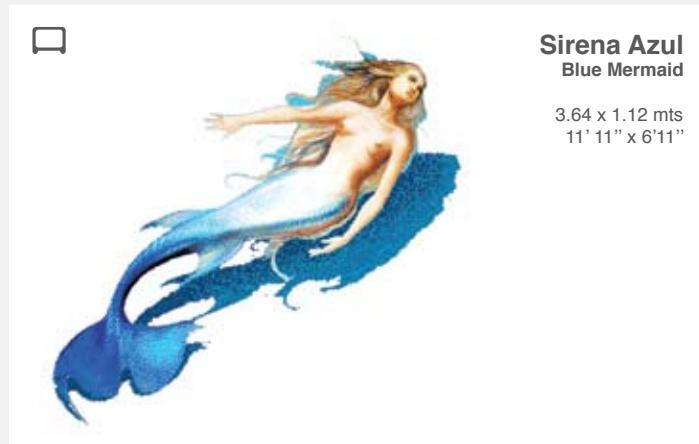
Pool Art Decorados







Pool Art Decorados





ESTUDIO MVM

PROYECTOS

Architectural Mosaic Planning

MEZCLAS Y ESFUMADOS

Custom Blends & Gradations

DECORADOS A LA MEDIDA

Custom Decor

MURALES POR COMPUTADORA

Digital Mosaic Design

EDICIONES ESPECIALES

Special Editions

MOSAICOS ARTÍSTICOS

The Art Workshop



Tu propio
paraíso

MOSAICOS HECHOS A LA MEDIDA



Estudio MVM es un servicio de consultoría que consiste en asesorar un proyecto, personalizar diseños, proponer decoraciones y complementar visiones artísticas para la creación de ambientes únicos. En conjunto, el trabajo de diseño es de arquitectos, artistas y diseñadores que se apoyan en el estudio como herramienta para colaborar, contribuir y supervisar un proyecto de principio a fin sin descuidar el sello personal del creador.

MVM Studio provides a complete consulting service for architectural mosaic planning and execution. It consists on project guidance, custom artwork, decorative proposals to complement artistic visions for specific mosaic projects. Designs are executed by independent architects, artists and designers. The Studio's purpose is to assist our clients all the way through the development of their projects.





Association of Pool & Spa Professionals APSP 2008 Awards of excellence

MVM Mosaic Studio



GAVA Awards 2009 Hotel Hilton

MVM Mosaic Studio





CUSTOM FLOORS AND MURALS Murales y pisos especiales Banyan Tree Hotel Mario Lazo

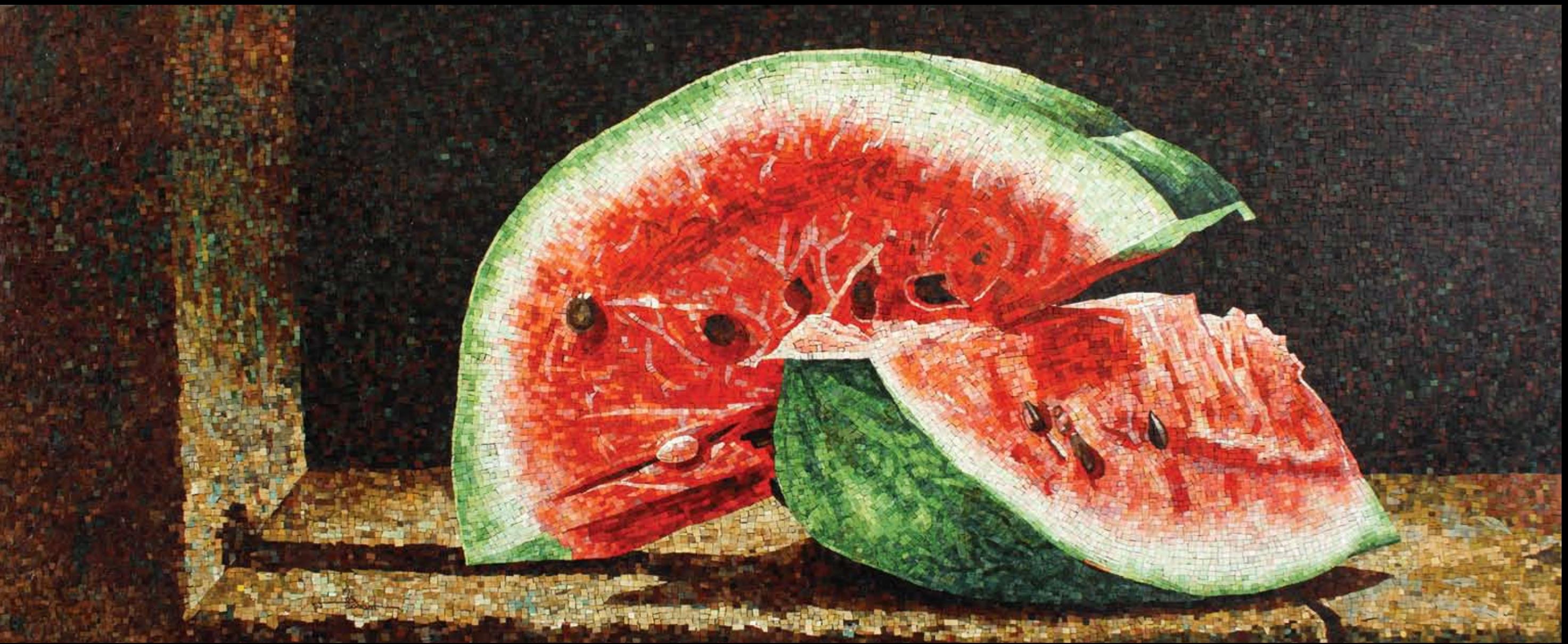


ESPECIAL EDITIONS & INTERIORS COLLECTIONS Ediciones especiales y Colecciones de Interiores
www.mosaicosvencianos.com



MTZ & LANGE Studio
Isidro Giner





Hotel Real Hacienda

arte/ artwork: Arturo Montoto



Información técnica

Technical Information

Términos generales

Es importante que al momento de recibir el material, se revise y verifique el color antes de instalarlo. Despues, no se aceptan reclamaciones pues INSTALARLO SIGNIFICA ACEPTARLO.

Para su revisión tome en cuenta que:

Las imágenes fotográficas de los colores en nuestro folleto deben considerarse únicamente como indicativas.

Pueden existir ligeras variaciones del tono y veteado en una placa de producto que es inherente a los mosaicos de vidrio y de piedras naturales. Esta característica enriquece el aspecto final del mosaico, especialmente en las colecciones *Murano* (mosaicos con fórmula esmalte) y *Solar* (tonos, rojos, naranjas y amarillos), donde se ha enfatizado estas características para lograr una apariencia más natural.

En las líneas de mosaicos translúcidos como en la colección *Kuarzo* o algunos colores de *Vitrogota*, es importante considerar que el color del cemento del fondo afecta el color del mosaico. Se recomienda usar cemento de color blanco para mantener el color original y usar cemento coloreado para las juntas.

Todas las líneas vienen montadas sobre placas de papel desprendible con agua excepto el *Veneciano 25* (2.5 X 2.5 cms) que puede venir montado sobre gota de PVC. El *Veneciano 50* (5 X 5 cms) puede montarse en gota de PVC para pedidos especiales.

Considera una merma del 10 al 20% dependiendo del manejo.

Recomendaciones generales de instalación

El trabajo debe ser desempeñado por un instalador especializado en la colocación de productos Kolorines, el cual esté familiarizado con los procesos de instalación de éste tipo de material, ya que los conocimientos en recubrimientos cerámicos NO SON LOS MISMOS para la colocación de *mosaico veneciano*.

Todos los materiales deben ser utilizados siguiendo las instrucciones del fabricante.

Las juntas de expansión y control son esenciales para el éxito de la instalación. Es necesario enfatizar y recordarle a los dueños e instaladores que el sustrato se expande y se contrae en aquellos lugares donde ocurrán cambios drásticos de temperatura. Para más información, consulte el *Handbook for Ceramic Tile Installations* publicado por el *Tile Council of America*.

General terms

At the moment of material delivery, it is important to go through it and check its color before installing. Afterwards, any complaints will not be taken because INSTALLATION CONSTITUTES ACCEPTANCE. For inspection take into consideration the following:

Colors in our catalogue pictures should be considered only as indicatives since tone variations may occur due to studio lightning that causes a slight difference among printed and actual tiles.

Possible tone variations and veining within a product sheet are to be expected, inherent to glass and natural stone mosaics. This characteristic enhances the final aspect of the application and it has been highlighted particularly in *Murano* -smalti formula- and *Solar* -red, orange and yellow shades- collections, as means of achieving a natural look.

Translucent collections such as *Kuarzo* and a few *Pebble* products, the color choice of the bonding material will impact the ultimate look of the glass. White cement back buttering is recommended to maintain the translucent original color, and the use of a color combination or contrast grout.

Glass mosaics are paper faced mounted with water-soluble glue. Install with paper side up. 1"x1" mosaics are PVC dot mounted; 2"x 2" mosaics are dot mounted under special request or else, paper faced mounted.

A 10% extra product is suggested at the time of your purchase for incidentals.

WARRANTY: This information is considered general in nature and may not be applicable to specific applications. MVM's* warranty is limited to the following: If the MVM's product is proved to be defective -if not installed-, the exclusive remedy, at MVM's option, shall be: 1) the repair of the defective product, 2) the replacement of the defective product with conforming goods, or 3) the repayment of the purchase price. This is MVM's sole warranty with respect to the product and to these installation guidelines. Otherwise, MVM shall not be liable for loss or damages, whether direct, indirect, special, incidental or consequential.

*MVM: Mosaicos Venecianos de Mexico

General recommendations

Installing work should be performed by an installer specialized in placing Kolorines products or at least someone who is familiarized with installing processes of similar materials. Note that knowing how to install ceramic material is not the same as placing venetian mosaic.

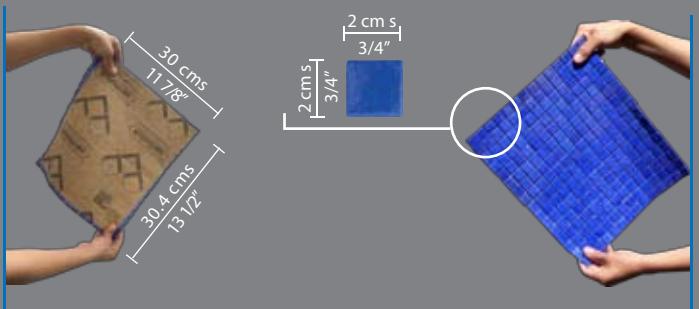
All materials should be used following the manufacturer's instructions.

Grouting process is essential for the installing success. It is quite necessary to point out to owners and constructors that foundation expands and contracts in places where dramatic temperature changes exist. For further information, look up in the *Handbook for Ceramic Tile Installations* published by the *Tile Council of America*.

Especificaciones

Specification data

v20



M2 por caja:4

Amount per Carton43 ft2

Peso por m2: 8.5 kg

Weight per ft2:2,700 lb

Cajas por pallet:36

Cartons per pallet:36

Peso por pallet:1,225 kg

Weight of pallet2,700 lb

18 Tons

Contenedor:2,250 m2

Container:24,219 ft2

Grosor: 4.5 mm

Thickness: 3/16"

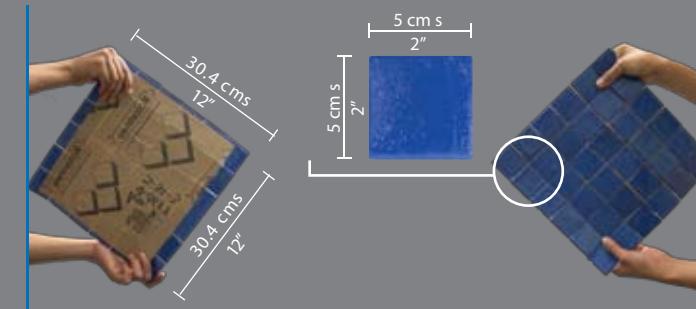
Hojas por caja:40

Hojas por m2:10

Peso kg por caja:35

M2 por pallet:144

v50



M2 por caja:2

Amount per Carton21.5 ft2

Peso por m2: 11.5 kg

Weight per ft2:2,35 lb

Cajas por pallet:48

Cartons per pallet:48

Peso por pallet:1,104 kg

Weight of pallet2,429 lb

18 Tons

Contenedor:1,600 m2

Container:17,316 ft2

Grosor: 5.5 mm

Thickness: 7/32"

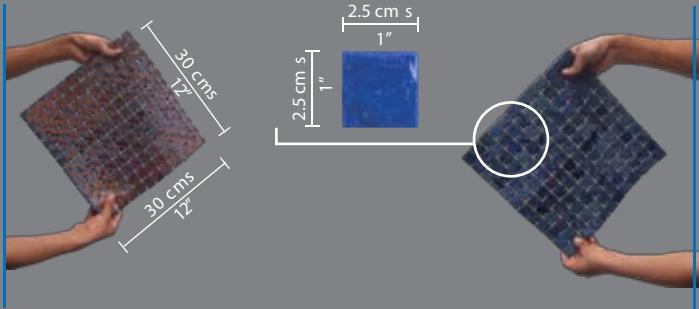
Hojas por caja:21

Hojas por m2:10.5

Peso kg por caja:23

M2 por pallet:96

+v25



M2 por caja:1

Amount per Carton10.7ft2

Peso por m2: 10 kg

Weight per ft2:2.35 lb

Cajas por pallet:54

Cartons per pallet:54

Peso por pallet:570 kg

Weight of pallet1,188 lb

18 Tons

Contenedor:1,750 m2

Container:18,837 ft2

Grosor: 5.5 mm

Thickness: 7/32"

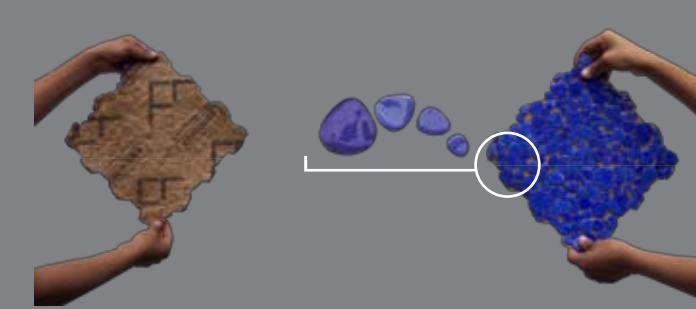
Hojas por caja:10

Hojas por m2:10

Peso kg por caja:10

M2 por pallet:54

vitrogota



M2 por caja: 1

Amount per Carton21.5 ft2

Peso por m2: 10kg

Weight per ft2:2.35 lb

Cajas por pallet:72

Cartons per pallet:48

Peso por pallet:750 kg

Weight of pallet1,650 lb

18 Tons

Contenedor:1,750 m2

Container:18,837 ft2

Grosor: 5.5 mm

Thickness: 7/32"

Hojas por caja:15

Hojas por m2:15

Peso kg por caja:10

M2 por pallet:72



Línea Ecológica
Green product



NUESTRO COMPROMISO CON EL DESARROLLO SUSTENTABLE

Porque creemos que un buen diseño considera al medio ambiente, en MVM* reducimos, reutilizamos y reciclamos los materiales utilizados en la producción de nuestro mosaico, ofreciendo a nuestros clientes proyectos sustentables sin comprometer su visión artística. Para la fabricación de nuestros productos hemos implementado el sistema de mejora LEED* avalado por *Green Building Council (USGBC)* para minimizar el impacto ambiental basándose en dos diferentes formas de reciclado:

POST-CONSUMO: vidrio utilizado en diferentes presentaciones como envases, botellas, frascos, considerados "desechos" y que nosotros utilizamos como ingrediente en el proceso de fabricación de mosaico.**

PRE-CONSUMO: durante el proceso de fabricación, material proveniente de procesos de calidad y control no aprobados como roturas, imperfecciones, bajas, es recuperado para incorporarse al proceso productivo normal, valorando el residuo de materia.**

Basándonos en este nuevo sistema, algunos productos de nuestro catálogo son calificados como líneas ecológicas, los cuales mantienen su estándar de alta calidad en función de una gestión ambiental responsable.

Al igual que con nuestros productos, hemos implementado medidas dentro de la fábrica que reiteran nuestro continuo desarrollo y compromiso de mejora en procesos productivos, de alta calidad y de respeto al medio ambiente. Entre estas nuevas medidas se encuentran:

- La reutilización del agua proveniente del proceso industrial en nuestros cuatro hornos, en el departamento de pegado y lavado. De esta manera se limita el consumo de agua limpia.
- Promoción del uso de embalajes con material reciclado como papel kraft y cajas de cartón.
- Reciclamos la mayor parte del plástico generado en las tareas de embalaje: utilizamos palets madera de múltiples usos; almacenamos producto en contenedores de PET (polietileno tereftalato, resina plástica y una forma de poliéster).
- Hemos creado nuestra propia tecnología con elementos "reciclados": utilizamos filtros de emisión y combustibles verdes, 100% reciclados de aceite, en la producción de todos los productos MVM. Este aceite se quema a 1,250°C siendo una temperatura óptima para no producir residuos contaminantes.

GREEN POLICY, OUR SUSTAINABLE COMMITMENT

Because we believe that a good design takes the environment into account, here at MVM* we reduce, reuse and recycle materials used in our glass mosaic manufacturing processes, thus offering to our clients sustainable projects without compromising their artistic vision. For our product manufacture, we have implemented LEED*, a Green Building Council (USGBC) guaranteed improvement system for minimizing environmental impact based on two different ways of recycling:

POST-CONSUMPTION: used glass in different presentations such as bottles or jars, considered waste and that we use as an ingredient during our mosaic manufacturing process.**

PRE-CONSUMPTION: during the manufacturing process, all material retained for not meeting quality standards by being either broken or with imperfections, is reincorporated into the regular manufacturing process, thus valuing material wastes.**

Using this new system, some of our products are now tagged as Sustainable Collections, highlighting the fact of being high quality products depending on a responsible environmental promotion.

Since our only concern is not only to create new friendly environment products, we have also implemented other actions inside our company to state our constant development and commitment towards our manufacturing processes improvements always considering high quality and respect towards the environment. Within these actions, our implements are:

- Water that comes from an industrial process is reused in our four kilns, in our Glueing and Washing Areas. By doing this, we restrict clean water consumption.
- In our Packaging Area, we use recycled paper (Kraft paper) and cardboard boxes. By this we are promoting the use of recycled materials.
- We recycle most of the plastic used in packaging processes: we use multitask wooden palets; we store product in PET containers (Polyethylene Terephthalate, plastic resin and a polyester type).
- We have developed our own technology with recycled elements: we use emission filters and green fuels coming from 100% oil recycled in the manufacturing process of all MVM products. This oil is being burned at 2,282°F, an optimum temperature to avoid pollutant residues.

* Son marcas registradas.

** Norma ISO 14021. Fuente: Environmentally Friendly Products and Manufacturing Processes

* These are registered brands

** ISO 14021. Source: Environmentally Friendly Products and Manufacturing Processes

Método Tradicional Kolorines :: método con cama de mortero

Es el método de instalación OFICIAL que consiste en una base de cemento, cal y arena; diseñado para recubrir superficies irregulares o desplomadas, ya que se coloca el mosaico a la vez que se empareja el muro. Ideal para exteriores como fachadas y columnas; de inmersión permanente como piscinas, fuentes y jacuzzi e interiores como: baños, tinas, techos, muros, escaleras y pisos de tráfico ligero. Recomendado para la instalación de murales y mosaico bizantino donde hay instalaciones de más de 50 años.

Sustrato

Verifique que la superficie NO suene hueca y que NO existan grietas y fugas, de lo contrario REPARA antes de iniciar la instalación. Pique el área con cincel si el concreto está macizo, ya que la superficie deberá ser rugosa y derecha a plomo. NO ES RECOMENDABLE utilizar éste método para recubrir sobre un revestimiento previo, utilice el método alternativo.

Las condiciones del sustrato al cual se va a adherir el recubrimiento son indispensables para garantizar la durabilidad de la instalación:

Verifique que la superficie NO suene hueca y que NO existan grietas y fugas, de lo contrario REPARA antes de iniciar la instalación. Si el área a recubrir está pintada, asegúrese de REMOVER COMPLETAMENTE la pintura antes de iniciar el repellado. Pique el área con cincel si el concreto está macizo, ya que la superficie deberá ser rugosa y derecha a plomo. LIMPIE la superficie antes de iniciar con la instalación del recubrimiento y cumpla con las condiciones del sustrato. NO ES RECOMENDABLE utilizar éste método para recubrir sobre un revestimiento previo, utilice el método alternativo.

Herramienta sugerida

La selección de la herramienta es necesaria e indispensable para complementar la correcta instalación del recubrimiento Kolorines:

- | | |
|---|---|
| 1. Nivel y Regla de madera. | 8. Cucharas tipo albañil: |
| 2. Plomo. | 8a. Cuchara chica |
| 3. Brocha limpia y Cepillo. | 8b. Cuchara grande |
| 4. Pinza o tenaza corta azulejo
con punta de tungsteno. | 9. Flota de goma o Llana plástica. |
| 5. Guantes de hule. | 10. Llana plana de metal. |
| 6. Trapo suave y esponja. | 11. Bote de plástico (19 Litros). |
| 7. Tacón de madera (madera de encino rectangular) y Martillo. | 12. Muñeca (bolsa de arena envuelta en tela o yute).
utilizada para asentar el recubrimiento en bordes y curvas. |

1. Repellado rústico

En caso de superficie nueva, prepare la mezcla de repellado con:

CEMENTO una parte (20%) 2 bultos

ARENA cuatro partes (80%) 8 botes



El repellado deberá de tener una textura áspera.
Deje secar el repellado mínimo 24 hrs.

2. Aplanado fino

REFRESQUE el muro ANTES de aplatar y lograr una superficie uniforme. La preparación de la mezcla para la instalación del recubrimiento tiene un rendimiento de 10 m² aprox. para un aplanoado con un espesor constante de 1cm (si el espesor es de ½ cm el rendimiento será de 20 m²).



CEMENTO GRIS
tipo Portland 1-1 ½ bultos

CAL HIDRATADA
2-3 bultos

ARENA CERNIDA
8-10 botes

Aplique la mezcla y aplane con la regla hasta lograr una superficie uniforme a plomo. Aplane sólo la superficie que va a recubrir ese mismo día para mantener fresca la mezcla.

3. Marque plomo y nivel / coloque

Compruebe que el aplanoado esté firme y NO seco. Apenas deben marcarse los dedos al presionar ligeramente. Use plomo para emparejar y marque el nivel para determinar el punto de arranque y de remate de la placa de recubrimiento Kolorines comenzando por arriba en piscinas y por abajo en baños y muros para evitar que los cortes en el mosaico sean visibles.



4. Enmantecillado

Empaste CADA placa con la mezcla de la lechada, llenando TODAS LAS JUNTAS con la cara de papel hacia abajo, situando la placa en una superficie plana y seca. Cada placa se posiciona sobre el aplanoado fresco, fijándola suavemente con el tacón de madera y el martillo, para unificar la superficie de una placa a la otra. Este paso ASEGURA un enlace del 100% entre cada placa y la cama de mortero. Coloque sucesivamente.



5. Humedezca / quite el papel

Antes de que seque el empaste por completo, moje la brocha y humedezca el papel. Después de 15 min aprox., retírelo tomándolo de un ángulo suavemente y en sentido diagonal. Cuidando no despegar las pastillas de vidrio.



6. Empareje

Empareje las pastillas, sólo si es necesario con ayuda de la cuchara. Para obtener uniformidad en la superficie, utilice una vez más el tacón de madera y el martillo, golpeando de manera sutil para desaparecer uniones entre placa y placa.

LECHADA: Para un color uniforme MEZCLE EN SECO todo el material que utilizará para cubrir la superficie. Rendimiento para 20 m² aprox.:

- 1 bulbo de cemento blanco
- 1 kg de colorante para cemento
- añada el agua necesaria.



La consistencia deberá ser ligeramente más líquida que el empaste. Use el mismo color del material de recubrimiento para el empaste y la lechada. Para variaciones de color considere los distintos efectos que obtendrá en el resultado final.

7. Limpie

Para la limpieza inicial, retire todo tipo de residuo con cepillo y agua en sentido diagonal para evitar deformación de las hiladas.



8. Al término de la instalación

Use guantes de hule para aplicar éste proceso.

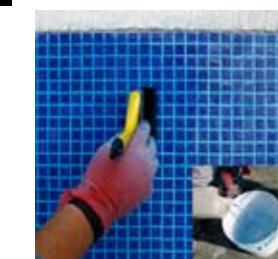
Después de 24 hrs. mínimo limpíe con:

- 80% (cuatro partes) de agua limpia
- 20% (una parte) de ácido muriático

Después enjuague con agua para obtener un acabado final.

CONSIDERE:

Evite el tránsito peatonal 24hrs. después de haber terminado la instalación del recubrimiento. Finalizando la LIMPIEZA FINAL, las aplicaciones sumergidas pueden ser llenadas con agua por primera vez.



Método Capa Delgada : método con ***Adhesivo Kolorines*** ®

Es el método de instalación ALTERNATIVO que consiste en el uso de un adhesivo modificado con polímeros y aditivos especiales diseñado para adherir recubrimientos sobre superficies planas y a plomo. Recomendado para instalaciones exteriores como fachadas y columnas, y de inmersión permanente como albercas y fuentes e interiores como: baños, tinas, techos, muros, escaleras, spas y pisos de tráfico ligero. Ideal para la colocación de recubrimiento mosaico sobre mosaico, es decir, la instalación de un nuevo revestimiento sobre un revestimiento previo.

Las siguientes instrucciones son provistas como una guía general para instalar productos Kolorines siguiendo éste método de instalación. Antes de iniciar con la colocación del recubrimiento es aconsejable preparar la superficie de instalación, para garantizar un mejor resultado. NO proceda con el trabajo hasta que las superficie cumpla con los requisitos previos de instalación. Cualquier irregularidad repórtela al contratista general o arquitecto.

Sustrato

Las condiciones del sustrato al cual se va a adherir el recubrimiento son indispensables para garantizar la durabilidad de la instalación:

La superficie deberá ser sólida, limpia de polvo, rebabas, grasas y aceites. Después humedezca la superficie con agua limpia evitando saturación.

La superficie puede ser lisa o ligeramente rugosa, pues el ***Adhesivo Kolorines*** incrementa la fuerza de adhesión en general. Si el área a recubrir está pintada y la pintura no está perfectamente adherida, REMUEVA la pintura completamente antes de iniciar el proceso. Si el área estuvo pintada y quedan restos de pintura, limpie con lija la superficie para quitar residuos y después limpie con un paño húmedo.

El ***Adhesivo Kolorines*** se puede utilizar en una superficie revestida, es decir, la colocación de mosaico sobre mosaico, sólo si el revestimiento previo se encuentra bien adherido y sin piezas rotas. De no ser así, REMUEVA por completo el revestimiento previo.

El ***Adhesivo Kolorines*** está diseñado para adherir, evitando desprendimientos; NO tapa grietas, NO repara fugas y NO actúa como impermeabilizante. REPARA y cumpla con las condiciones del sustrato antes de instalar.

Herramienta sugerida

La selección de la herramienta es necesaria e indispensable para complementar la correcta instalación del recubrimiento Kolorines:

1. Flota de goma o Llana plástica.
2. Llana cuadrada dentada de:
 - 2a- 0.635 cm x 0.635 cm ($\frac{1}{4}$ "x $\frac{1}{4}$ "x $\frac{1}{4}$ ")
El rendimiento del Adhesivo Kolorines en superficies lisas es de 3 a 4 m²
 - 2b- 0.635 cm x 0.9525 cm ($\frac{1}{4}$ "x $\frac{3}{8}$ "x $\frac{1}{4}$ ")
El rendimiento del Adhesivo Kolorines en superficies lisas es de 2 a 3.8 m².
3. Cucharas:
 - 3a- Cuchara tipo cubeta
 - 3b- Cuchara tipo albañil
4. Flexómetro y cutter.
5. Mazo de goma.
6. Trapo limpio y suave, esponja.
7. Pinza o tenaza corta azulejo con punta de tungsteno.
8. Guantes de hule
9. Nivel y Plomo.
10. Tira líneas.
11. Bote de plástico de 1l., 1½ l. y 19 l.
12. Cepillo y Fibra de nylon blanca.
13. Muñeca (bolsa de arena envuelta en tela o yute) utilizada para asentar el recubrimiento en bordes y curvas.
14. Mezclador eléctrico (opcional).

Preparación del adhesivo Kolorines

En una charola o cubeta de plástico limpia adicione 4.4 litros de agua limpia para 20 Kg. de ***Adhesivo Kolorines*** batiendo bien la mezcla y asegurándose que no queden grumos. Deje reposar 5 minutos y bata nuevamente. NO AGREGUE MÁS AGUA. Se recomienda el uso de mezclador eléctrico para garantizar la perfecta incorporación de materiales. Mantenga la mezcla preparada a la sombra. Rebata cada 15 minutos SIN AGREGAR MAS AGUA, la mezcla tomará su consistencia inicial con sólo batirla. Para AMBAS presentaciones (blanco y azul) el polvo del adhesivo EN SECO es de color BLANCO; el adhesivo azul, cambia de color sólo al contacto con el agua, al momento de la preparación.



1. Instalación

De acuerdo a las dimensiones del recubrimiento y las condiciones del sustrato, NO instale bajo incidencia solar directa, de ser así proyecte sombra al momento de instalar. Aplique el ***Adhesivo Kolorines*** en la parte posterior de la placa de recubrimiento Kolorines y en el sustrato rallándolo con la llana dentada dejando surcos rectos paralelos entre sí.* Combine ambos sistemas. Coloque las placas con el empaste sobre la superficie de instalación ejerciendo presión con la flota de goma a fin de asentar el recubrimiento y que el adhesivo brote entre las juntas. NO ASIENTE con el mango de la cuchara.

*En superficies lisas y utilizando una llana dentada cuadrada de:

0.635 x 0.635 cm ($\frac{1}{4}$ " x $\frac{1}{4}$ " x $\frac{1}{4}$ "), el rendimiento es de 3 a 4 m².
0.635 x 0.9525 cm ($\frac{1}{4}$ "x $\frac{3}{8}$ "x $\frac{1}{4}$ "), el rendimiento es de 2 a 3.8 m².



El rendimiento puede variar, dependiendo de las condiciones del sustrato y métodos de instalación. En superficies niveladas el método de instalación es de una capa (empaste sólo el sustrato). En superficies ligeramente desniveladas e instalaciones mosaico sobre mosaico, se recomienda una doble capa (empaste sustrato y placa).

2. Remoción del papel

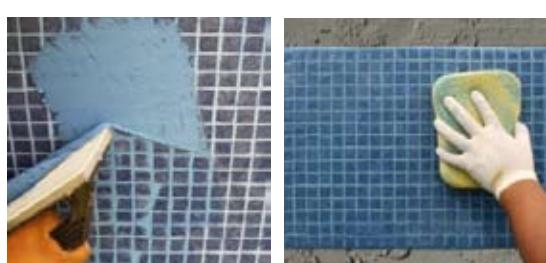
Después de 15 min y antes de que el adhesivo fragüe (el tiempo puede variar dependiendo de las condiciones climáticas) SEPARE el papel protector de las placas con ayuda de una esponja húmeda y ligeros movimientos circulares. CUIDE EL EXCESO DE AGUA.



Retire el papel tomándolo de un ángulo y tirando de él SIEMPRE en sentido diagonal y con un movimiento rasante.



CONSIDERE: En la línea de productos translúcidos Kolorines el color del adhesivo de fondo afecta el color original de las pastillas. Use ***Adhesivo Kolorines*** o cemento blanco y boquilla coloreada semejante al color del recubrimiento para un mejor acabado. LA MEZCLA SE HACE EN SECO.



3. Embocillado

Deposite la mezcla del emboquillado en la flota de goma y distribuya sobre el área, con movimientos diagonales ejerciendo ligera presión.

Después afine la boquilla con la esponja ligeramente húmeda para sellar los poros de las juntas.

Use el mismo color del material de recubrimiento para el empaste y la boquilla. Para variaciones de color, considere los distintos efectos que obtendrá en el resultado final.



4. Limpieza

24 hrs después de la instalación (el tiempo puede cambiar considerando la temperatura ambiente) RETIRE los residuos con una fibra blanca de nylon ligeramente húmeda. Deje secar y limpie de nuevo con un paño seco para lograr la apariencia final.

NO realice la limpieza final con ácido muriático.

Al término de la instalación:

Evite el tránsito peatonal durante 72 hrs, como mínimo.

Espere de 7-9 días antes de llenar por primera vez la alberca o fuente.

PORLAND CEMENT MORTAR (CTI 0-106-68) ::

Specification for Glass Mosaic Tile Installed on Exterioirs in Portland Cement Mortar*

Technique for isolating tile installation from masonry or concrete surfaces when using cement mortar method.

1. This method isolates the tile installation when installing tile over concrete or masonry subject to cracking.
2. Concrete and masonry provide a surface that can not be readily nailed to. Pneumatic driven or powder actuated fire-on fasteners are therefore used to assure adequate anchoring of the metal reinforcing.
3. Since an isolation sheet of 15 lb. roofing felt or equivalent is used over the masonry or concrete, the pins fired into the masonry or concrete hold up the entire tile installation. This makes the selection of corrosion resistant pins most important. Monel metal or stainless steel drivepins should be used.
4. The method is illustrated in the following photos and captions.

1. Scope

Furnish all labor, material, tools, equipment, transportation and services required to complete the installation of glass mosaic tile work indicated on drawings and as specified herein.

2. Work specified in other sections

All surfaces to receive glass mosaic tile over wood or steel stud construction shall be left with a scratch coat applied to thickness of not less than $\frac{1}{4}$ inch nor more than $\frac{1}{2}$ inch from the structural face. Scratch coat shall be mixed in the proportions of one part waterproof portland cement to three parts clean, sharp sand.

Scratch coat

Aproperly prepared scratch coat has a surface that provides a mechanical bond for the mortar bed. The scratcher is an instrument for making the surface that provides a mechanical bond. Accompanying photographs tell the story. The scratcher, or sometimes known as a scarifier, has long tines which provide an excellent scratched surface. A good scratcher can also be made out of metal lath if it is cut correctly.

Wood or steel studs shall be covered with one the following waterproofing materials: 15 lb. asphalt saturated building felt; ASTM D 266 or polyethylene sheeting 0.004 inch thick, ASTM C 156. Wire reinforcing shall be furred out $\frac{1}{4}$ inch from the studs and shall be $2'' \times 2'' - 16/16$ or $1\frac{1}{2}'' \times 2'' - 16/13$, ASTM A 82 and A 185 or shall be 3.4 galvanized metal lath.

All surfaces to receive glass mosaic tile over concrete shall be heavily sandblasted to remove surface oil and slickened surface caused by forms or troweling. After concrete surfaces are sandblasted they shall receive a dash coat mixed in proportions of one part Portland cement to one and one half parts graded, sharp, fine sand. Add one part of Anti-Hydro to five parts of water and mix into dry mixed sand and cement to bring to proper consistency.

Roughened surfaces shall be cleaned and well saturated with water prior to application of dash coat.
Maintain moisture by covering or repeated wetting until cured to maximum hardness and bond.

Dash coat

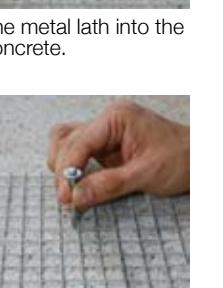
The dash coat, properly applied and cured, provides the surface for the mechanical bond of the mortar bed. The tenacious bond of the dash coat can be somewhat explained by the unwanted splashing of the materials containing portland cement on finished portions of a structure. If the splash marks from those unwanted materials are not cleaned off while fresh, they become a part of the finish on the structure.

A. Please note

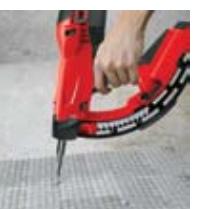
One of the most important items in a glass mosaic tile installation is to provide control joints. Metal extrusions in the structure can often be used to provide these. Exterior installations should have control joints not more than 16 feet (preferred) to 20 feet apart in both directions. When it is necessary to put them in the joints between tile they need not be wide and unsightly. They must, however, be continued through the tile and mortar setting bed and kept free of mortar and grout. These shall then be filled with an approved Thiokol based caulking compound, as close as possible to the color of the grout. Control joints $\frac{1}{4}$ inch wide and 16 feet on center should be ample.

B. Important

All steps of the conventional and thin-set methods are the same except for the final step, the bond coat. Alternate Thin-Set-Method: For this method delete- paragraph 4.(c)- and replace as follows: The exposed back of the sheets shall be given a buttercoat of the grouting material. The sheets shall then be placed in position on tested thin-set portland cement mortar or rubber latex portland cement mortar freshly combed onto the mortar setting bed with a notched trowel. All combing must be done in horizontal direction. Care shall be taken to cover the mortar with the backbuttered sheets before it has become glazed over from exposure to sun or wind. Sheets shall then be tamped firmly into place, true and even with the finished surface line or plane.



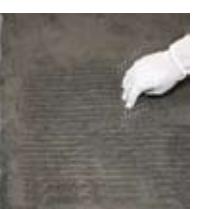
Close up of drive pin anchoring the reinforcing wire after being driven through metal slug and into concrete.



Gun in action to secure metal lath.



Metal lath scratcher.



Metal lath scratcher in use.

The requirements for the dash coat are as follows:

- The concrete shall be given a sandblast followed by a good washing.
- The concrete must be dampened just prior to applying the dash coat, without free water on the concrete surface.
- The dash coat is a mixture of half portland cement and half washed plasterer's sand.
- The mixture will be on the soupy side, as it must be picked up by the brush and dashed onto the damp surface.
- The dash coat is not applied in a thick coat. It should be no more than about $1/8$ -inch thick at the thickest places.
- Curing is important and starts when the dash coat is firm enough not be washed away by the moisture applied for curing. For spraying, or wetting several times a day for 72 hours after applied, are usual ways to cure.



Examination of Surfaces to Receive Glass Mosaic. Representatives of the general contractor, plastering contractor and tile contractor firms shall test hardness of scratch coat and dash coat with hammer and chisel and agree to suitability before installation is started.

3. Materials

a. Glass Mosaic Tile shall be of highest quality tiles of sizes and colors hereinafter specified and mounted on paper sheets, with a reasonably uniform joint, of size and patterns indicated on drawings. Glass shall be (state brand to be used) or approved equal. Tile shall be as perfect as it is possible to manufacture. The colors and shades shall be reasonably uniform. The exposed face of the tile shall be a smooth, even surface, uniform in texture without chips.

Size: All tesserae shall be cast approximately $3/16$ inch uniform thickness, and shall be (give size) in size.
Colors: Shall be (state colors). All colors used in the work shall match approved samples.

- b. Portland Cement shall conform to ASTM C 150, Type 1.
- c. Hydrated Lime shall be for masonry purposes and conform to ASTM C 207, Type S, plus the added requirement limiting the unhydrated exides to eight per cent maximum.
- d. Sand shall comply with "Method for Test for Organic Impurities in Sand for Concrete," ASTM, Designation C 40 and "Specifications for Aggregate for Masonry Mortar", ASTM Designation C 144.
- e. Water free from any impurity that is injurious to the construction and shall be fit for human consumption.
- f. Grout and Buttering Mix shall be a waterproof grout mix with up to one part of sand added to each two parts of portland cement. Sand to comply with CTI-70-6 Standard for Graded Extra Fine Sand Aggregate. Colors shall be (state color or natural cement).
- g. Pure Coat shall be pure portland cement mixed with water into a trowelable wet slurry.
- h. Mortar Setting Bed shall be mixed in the proportions of one part portland cement, one part hydrated lime, six parts of clean sharp sand.



Portland Cement, Hydrated Lime and Sand

4. Workmanship

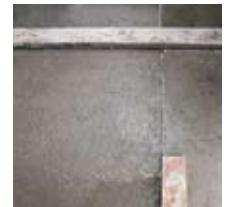
Glass Mosaic Tile shall be set by journeymen tile setters experienced in setting tile of this type under similar conditions. Experience in setting clay ceramic tiles only may not be deemed qualifications for setting glass mosaics tiles.

- a. At no time shall the mortar setting bed be over $\frac{1}{2}$ " thick. Apply a plumb scratch coat where necessary to establish this. Plumb scratch shall be mixed in the proportions of one part waterproof portland cement to four parts clean, sharp sand.
- b. Apply rod and float the mortar setting bed to uniform plumb and level surface, allowing room for glass mosaic, to bring finished surface to required plane. Thickness of mortar shall be from $\frac{1}{4}$ to $\frac{1}{2}$ inch as required, cut through the setting bed horizontally and vertically every 24 inches.
- c. The exposed back of the glass mosaic tile shall be given a butter coat of the buttering mix. The sheets shall then be placed in position on the pure coat freshly combed onto the mortar setting bed with a notched trowel. All combing must be done in a horizontal direction. Care shall be taken to cover the mortar with the back buttered sheets before it has become glazed over from exposure to sun or wind. Sheets shall then be tamped firmly into place, true and even with the finished surface line or plane.
- d. Where they occur and at least every 20 feet in both directions in the structure, expansion joints or control joints must be continued through the mortar bed and glass mosaic and kept free of mortar and grout. These shall be filled with an approved Thiokol based compound, as close as possible to the color of the grout.
- e. Interiors corners shall be butt. External corners shall have the glass mosaic fitted together with a close quirk miter. Where external corners are subject to pedestrian traffic, they shall be carefully gone over with a fine carborundum stone to remove sharp edges.
- f. Grout all joints, after removal of the paper, leaving them completely and uniformly filled. At no time shall sand or any abrasive be used that will damage the natural sheen of the natural sheen of the glass mosaic tile.



5. Cleaning

All excess grout, glue and scum shall be removed from the face of the tile leaving the finished surface clean. If acid is used, care shall be taken so that it will not damage color of grout, painted or metal finished.



GLASS MOSAIC MURAL INSTALLATION :: FIELD REPORT CTI 82-1-4 (R85)*

A. Introduction

1. The purpose of this report is to offer some insight into the challenges and peculiarities of installing glass mosaics, especially murals.
2. This report will outline procedures for installing glass mosaic murals. Elsewhere in this manual there appears a suggested Specification for Glass Mosaic Tile Installed on Exteriors in Portland Cement Mortar, CTI-0-106-68.
3. The types of murals that will be discussed are those made of both Smalti, Byzantine glass and Venetian glass.
4. Murals made of glass mosaic, especially the Smalti type glass, are very costly and can easily be ruined unless they are properly handled and installed. For this reason, many specifications require the mural be installed by: "Journeyman tile setters experienced in setting tile of this type under similar conditions". This field report therefore is a much a not-to-do warning for those inexperienced in mural installations, as it is a review of procedure for those who are experienced.



B. Discussion

1. Both types of glass are installed basically the same way.
2. As stated in a prior issued CTI Field Report, No.66-2-9 (appearing elsewhere in this section), "Backbuttering Glass Mosaics", a successful glass mosaic installation cannot be obtained by combing thinset material over a hardened surface, much as a prefloat mortar bed, and placing the glass mosaic sheets directly on the thinset mortar. This procedure most surely will result in a failure. The major factors contributing to the failure are:
 - a) Insufficient contact of the thinset bonding mortar to the glass, resulting in little or no bond.
 - b) An inability to beat the Byzantine glass in on a hard wall because all tesserae are not of equal thickness.
 - c) Both kinds of glass must be back grouted, they cannot be face grouted.
 - d) Not locking each individual tessera of glass into place by back-butting the bondable side of the sheet of glass.



C. Material and mixing ratios

1. Glass mosaics are best set in the mortar method of tile installation.
2. The mortar method referred to is in the ANSI A108.1 specification.
3. The materials are as follows:
 - a) Portland Cement: Conforming to ASTM C150, Type I.
 - b) Hydrated Lime: For masonry purposes and to conform to ASTM C-207 types, plus the added requirement limiting the unhydrated oxides to eight percent maximum.
 - c) Sand: ASTM designation C-144 washed plaster sand and specification for aggregate for masonry mortar ASTM C-144.
 - d) Water: Free from impurity that is injurious to the construction and shall be fit for human consumption.
 - e) Grout and Buttering Mix: Shall be a grout mix with up to one part sand to two parts portland cement. Sand to comply with CTI 70-6 Standard for Graded Extra Fine Sand Aggregate. White sand complying with CTI 70-6 is available from Crystal Silica Sand Company in Oceanside, California. It is called Tile 70 Sand. The only way to get grey graded sand is to screen washed plaster sand, using a 16 mesh screen (window screen).
 - f) Mortar Setting-Bed: Shall be mixed in the proportions of one part portland cement, one part hydrated lime, six part washed plaster sand.



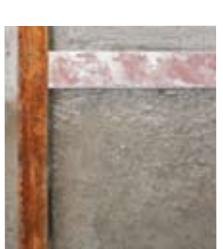
D. Lofting

1. Lofting is a procedure whereby the mural is laid out on a clean, dry surface, paper side down.
2. The sheets are placed so that they fit tightly together.
3. Measurements are then taken to make certain that the mural fits properly into the space it is designed for.
4. Special care should be taken when lofting to protect the sheets from moisture such as a damp concrete slab. Also, the sheets must be protected from the direct heat of the sun. Moisture will begin to release the tile from its paper face. Excessive heat will cause the paper to curl and the glue to become brittle. Either condition could cause the tile to come loose from the paper face.



E. Installation -for Venetian and Byzantine Glass

1. Mortar bed should not exceed $\frac{1}{2}$ " in thickness. A plumb scratch can be applied to obtain desired thickness, or compensate for irregularities in the wall or floor.
2. Setting the mosaic in fresh mortar provides the most favorable installation.
3. An area not to exceed a day's installation should be floated. An experienced journeyman can expect to set 50 sq. ft. per day. This estimate, is for course, depend upon job and weather conditions.
4. The mortar bed must be firm before setting sheets. A wet or heavy bed could precipitate slipping, air pockets, and difficulty in working the sheets together. Mosaic sheets are one-of-a-kind units. If they fall apart or are ruined by placement on too wet a bed, an expensive work of art may be irreparably damaged.



5. Mosaicists draw a center line and also draw squiggle lines all over the back of the cartoon paper prior to cutting it into sections and mounting the tesserae. These lines are used to plumb and level and keep details such as hands and faces straight and true.

6. Constant care must be taken to make sure the mural is level and plumb. If it begins to drift out of level, it is difficult or impossible to correct the mistake.

7. The backbutting of the mosaic is of great importance for several reasons:

One, it locks the individual pieces into place so that they do not move independently after the sheet is set.

Two, it provides a 100 percent bond between tile and mortar bed.

Three, it removes any foreign substance such as dirt or dust from the back of the tile that could act as a bond breaker.

Four, backbutting also back-grouts the tile. Beveled Venetian glass cannot effectively be face-grouted.

8. Extreme care should be taken not to butter the glass too far in advance of setting the sheet. Dependent upon the weather, consistency of the backbutter and the experience of the setter, the glass tile sheet has between 30 and 60 seconds before the water in the backbutter affects the glue on the paper holding the glass together. If the water is allowed to dissolve the glue, the sheet could tear, fall apart, or become almost impossible to handle.

FIELD REPORT #CTI 66-2-9 (R85)

C. Backbuttering

1. Authorities on installing glass mosaic tile agree that the backbutting of the sheets is a very necessary step.
2. The buttering mix specified in the Ceramic Tile Institute Specification CTI-0-106-68 is one part of fine graded sand added to each two parts of portland cement. This is also used for the grouting.
3. The specification calls for the exposed back of the glass mosaic tile to be backbuttered with the buttering mix. The mosaic sheets are then positioned on the portland cement pure coat, freshly combed onto the mortar setting-bed with a notched trowel. The combing is done in a horizontal direction. Care is taken to cover the pure with the backbuttered sheets before it has become glazed over from exposure to sun or wind. Sheets are then tapped firmly into place, paper removed, cleaned and grouted.

D. Conclusion

1. Backbuttering is a very necessary step in the installation of glass mosaic.
2. The backbuttering locks each individual piece of glass mosaic in its own setting much the same as a jeweler sets a stone in a mounting.
3. Shortcuts of using materials that are supposed to have a superior bond to glass, combing them only on the surface, and setting the glass mosaic sheets against such bonding materials are sure to fail.

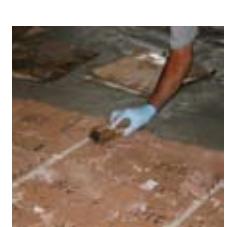
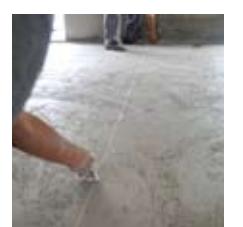
9. The placing of the sheets is critical. Care should be taken to fit the sheets together as tightly and smoothly as possible. A few extra minutes fitting the sheets initially will save hours of tedious work after the paper has been pulled from the face of the glass. This careful fitting of the sheets is to prevent sheet marks from showing where two sheets come together.

10. Sheets should be tapped into place and joint lines smoothed before pulling the paper.

11. Wetting the sheets is a variable. In hotter weather, fewer sheets would be set before wetting. The opposite, of course, is true in colder weather. Generally, between 20 and 30 sq. ft. could be set before wetting the sheets and pulling the paper.

F. WORKING THE GLASS

1. The glass must be rubbed into place, using a block of wood or comparable implement. The face of the glass must be rubbed flat and smooth.
2. When a mural is so large that it takes more than one day to install, the mortar extending past the edges of the sheets in place must be cut clean, back to the scratch coat. This procedure is done so that the next day's work can be fit nicely into place.



G. DISCUSSION OF ALTERNATIVE METHOD OF SETTING SMALTI BYZANTINE GLASS

1. This method has been related by workers who have used it successfully in the field.
2. The materials are the same as those specified in C.3 (a)-(d). The mixing ratio for the backbutter is different. The backbutter mix is three parts sand, one part portland cement and one part hydrated lime.
3. This procedure is for setting Smalti Byzantine over a prefloated setting-bed.

H. PROCEDURE

1. Mural is lofted and actual dimensions are taken.
2. The area is prefloated, using the mortar mix detailed in C.3(f). The prefloating is done to accommodate the thickness of the glass plus $\frac{1}{2}$ ".
3. The mortar bed is then cover-cured until dimensionally stable, with recommendation for 7-day curing.
4. A box screed is then made so that each sheet will have exactly $\frac{1}{2}$ " of backbutter in addition to the glass.
5. A skim coat of thinset is applied on a small section of the wall. Care should be taken that the thinset does not skim over before sheets are applied to mortar bed.
6. Make certain that there is a good bond between the prefloated mortar bed and the backbutter. The shear strength of one coat of mortar applied to another coat of mortar without an effective bonding ingredient, such as a cement slurry or thinset, is very low.
7. All other procedures are the same as those outlined in the previous sections.

I. GROUTING

1. Refer to backbutter mix section C.3 (e). This same material is used to grout the glass.
2. All cement and glue scum must be cleaned from the face of the tile prior to grouting.

FIELD REPORTS #CTI 73-7-2 R85

1. Acid should not be used on colored grouts. Even the acid in vinegar will be detrimental on dark or black grout. The acid can make a whitish haze over the grout joints. It does little good to have a colored grout when the color is hidden by a whitish film. Acid will often cause irregular shades of light and dark in colored grout.
2. Irregular colors of light and dark can also be caused by not making all of the joints the same depth. If part of the grout joints are $\frac{1}{2}$ inch deep and part of the grout joints are only $\frac{1}{4}$ inch deep they cannot be expected to be the same shade. It has been observed that rubber spacers, left in an installation, and even the spacer lugs on tile, can cause light and dark shades in the grout.
3. Tile joints that are uniform in size and depth, and damp cured, will be the most uniform in color. This may require wetting and cover curing with waterproof paper or polyethylene sheeting.

J. CONCLUSION

1. Glass mosaics are fragile work of art. Each step of the procedure must be taken with care by those experienced in doing this work.
2. Lofting for dimension, backbuttering for maximum bond and careful placement and working in of the sheets are important aspects of a good installation.
3. The installation of glass mosaic murals is perhaps the most difficult procedure in tile setting. It is for that reason that we recommended only journeymen with experience in dealing with this material under many circumstances be called upon for an installation of this kind. There can be no short cuts when installing glass mosaics. The glass dictates its own speed. Therefore, control of all of the materials is absolutely critical. Glass is most unforgiving. One simple mistake could ruin an expensive work of art and be very costly to the installer.



European Especifications

Caratteristiche tecniche
Características Techniques
Características Técnicas
Test Data
Technische Eigenschaften

En 99

Assorbimento acqua	Nullo
Water Absorption	None
Absorption d'eau	Nul
Wasseraufnahme	Null
Absorción de agua	Nula

En 104

Resistenza agli sbalzi di temperatura	Resistente
Resistance to thermal shocks	Resistant
Résistance aux chocs thermiques	Resistant
Temperaturwechselbeständigkeit	Beständig
Resistencia a los cambios de temperatura	Resistente

En 122

Resistenza agli agenti chimici	Resistente
Resistance to chemical attack	Resistant
Résistance aux produits chimiques	Resistant
Säure und Laugenbeständigkeit	Beständig
Resistencia a los agentes químicos	Resistente

En 202

Resistenza al ghiaccio	Resistente
Frost resistance	Resistant
Résistance au gel	Resistant
Frostbeständigkeit	Beständig
Resistencia al hielo	Resistente

Din 51049

Resistenza dei colori alla luce	Resistente
Colour resistance against fading	Resistant
Résistance Des couleurs à la lumière	Resistant
Farbstabilität	Beständig
Resistencia de los colores a la luz	Resistente

	ASTM	Requirements	Results	Conclusion
FACIAL DIMENTIONS	C499	Should not vary by more than 10% from the normal dimensions	Conforms	Passes
WEDGING	C502	Shall not exceed 2.0%	Conforms	Passes
THERMAL SHOCK	C484	Shall not failure	Not failure	Passes
WATER ABSORPTION	C373	Shall not exceed 0.5%	Non 0.02%	Passes

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