

# TILE TODAY

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# 140

**OUTDOOR & POOL PROJECTS**

**CERAMIC TILE IMPORTS**

**COVERINGS 2021 HYBRID EVENT**





# TILE

# TODAY

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# Moke

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*Bone*

*Grey*

*Greige*

**30\*30 P3**

**45\*45 P2, 45\*45 P5**



As the singular body representing the tile and tiling industry, the Australian Tile Council (ATC) works hard to promote the benefits of being part of a group invested in the future. As national president Aaron Genesin puts it, "We need to expose young people at school to ... the prosperities and satisfaction that accompany this trade."

Beyond young minds, there are many professionals currently working in the industry that could gain from their involvement with the tile council. To find out more about Aaron and the ATC in 2021, go to pp. 6-7.

If there is a theme to this edition, it would be the technical aspects of outdoor and pool installations. As we enter the warmer months, activity for tile specifiers and installers is set to ramp up for people either planning or building pools and outdoor spaces.

The latest ceramic tile imports can also be found in this issue. Chinese products continue to dominate, with New South Wales the largest recipient of all tile imports.

After being a household name in Victoria, Queensland and South Australia, National Tiles has launched a major showroom and trade store in Tasmania. New CEO Campbell Stott provides additional comments.

Western Australia's Kevmor has been in business for over 40 years, and recently won an international award for its work with Wagner Meters.

Thank you to our regular contributors, Tim Christopher and Peter Halliday as well as Colin Cass for his analysis on concrete shrinkage.

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Stay safe,



Betty Tanddo  
Editor

## FRONT COVER IMAGE

The Riflessi range from Ceramiche Refin is inspired by the Mediterranean, its panoramas, regions and traditions. It is characterised by bright colours — blue, green and orange — and "brush strokes" that reinterpret an artisanal, manual, decorative technique.



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# Passion, tradition, respect: A plan for ATC's future

**Aaron Genesin from Tectonic Tiling will work to keep the art and business of tiling alive through his stewardship of the Australian Tile Council. He is invested in promoting the potential of the tile industry to a younger generation.**

**A**aron was appointed national president and state president (SA/NT) of the ATC early in 2021. He comes to the role with two considerable assets: a real passion for tiling, which he gained from his father, and a solid knowledge of the business world.

Aaron is quick to acknowledge the achievements and efforts of his predecessor, WA-based Peter Carter from Crosby Tiles. As he told *Tile Today*: "Peter Carter did a fantastic job nationalising the ATC, and introducing processes and procedures, bringing it into the present.

"I bring a more 'calloused', hands-on tiler's perspective to the ATC, with the hope of stepping up our social media presence ... My aim is to continue to attract more members, who are tilers, and who can find value in being a member.

"Another focus will be to increase the ATC members benefit programme, while continuing to support and promote training programmes for both tradesmen and retailers alike.

"...I will [also] continue our support of RTOs [registered training organisations] like TAFE that are actively supporting apprentices and young people through CITBs (Construction Industry Training Boards) that are door-ways to a construction programme."

Aaron believes that a younger generation of people at school need to be exposed to the "prosperities and satisfaction that accompany this trade". He said, "Without the ongoing succession of tilers, apprentices and skilled labour in our industry we will be feeling the knock-on effects all the way to the retail outlet.

"If there are no skilled tradesmen to install the tiles then the building industry will move to replace tiles and the like with



alternative products. As president of the ATC and a representative of our industry, I will not allow this."

## Early start

Aaron found his passion for tiling at an early age. As he explains it: "My father, a tiler, would take me to work, sit me in a bath and let me grout a few tiles while he would finish the whole bathroom."

His father always told Aaron that he was never going to be a tiler, instead insisting he follow a professional path through more formal tertiary education. However, he would take his son to work when possible. Aaron loved that time with his father. He said, "If I had a free Saturday from school sport [or] a pupil free day, or even if I was too sick to go to school ... I would happily go to work, tiling with Dad."

Aaron did follow his father's dream, studying banking and finance at university. But his career in tiling really began when he eventually realised he couldn't spend his life behind a desk. "I loved working with my hands, I loved tiling, it was in my blood," he said.

"With the pressure of being

a third-generation tiler and with more than ten tilers in my extended family, I quit my studies and pursued my passion."

Aaron gained his full tiler's licence in the first year working with his father. He said, "I noticed the commercial tiling sector lacked any real competition and made a decision to partner up with the old man, form a company together and focus on making a footprint in this sector. That's when Tectonic Tiling Pty Ltd was born.

Today, Aaron is the sole director of Tectonic Tiling which remains a family business. It became a member of the ATC when the company was in its infancy. Aaron said, "From the age of 26, I was the only qualified tiler to sit on the ATC committee in South Australia, and the youngest committee member by some 20 years. I have contributed to the ATC in SA for the last 15 years."

In addition to his work with the ATC, Aaron also represents the council and the housing sector on the Housing Sector Committee for the CITB. "I am actively engaged in dispute resolution, problem solving, inspections and reporting," he said. ■





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# Pool and concourse tiling for all seasons

Constructing large entertaining areas with stone or tiles is a popular way to expand the living space of a dwelling, according to Tim Christopher from Consultile Consulting. Pools are often central to these outdoor spaces. As demand increases, tilers need to install tiles that are exposed to the elements all year round.





**T**here are some critical aspects to this type of installation that need to be adhered to if these projects are to be successful.

Indoor tiling usually has fewer demands placed on it compared to external tiling installations. If these differences are overlooked, problems are likely to arise after tiling is completed. These problems could lead to warranty claims and rectification work.

In many cases, these problems are easily avoided, sometimes without any additional cost to the installation process. In spite of this, there have been a number of critical issues I have observed over time that have been missed, misunderstood or not treated with the attention they deserve.

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→ **Movement joints**

Movement joints are crucial in any tiling installation. In external tiling installations, extra attention to these items is very important.

An external tiling application is under significant pressure from thermal expansion and contraction. A hot day during summer can cause the tile surface to heat up to 90 degrees Celsius and beyond. This creates a high stress load on the tiling installation so the tiles need to accommodate this kind of pressure.

To further exacerbate this pressure, a stormy day can cause thermal shock impact through the tiling system when the heated surface becomes saturated with cold rainwater coming down rapidly. This

phenomenon is also created when pool water is splashed on the surface of hot tiles. Expansion joints are an essential aspect to accommodating this type of pressure. Failing to accommodate these stressors will result in tiling bond failure.

The Australian Standards "Guide to the installation of ceramic tiles" (AS3958.1 2007) provides guidance for the installation of expansion joints and states:

*"Intermediate movement joints Intermediate joints type (CJ, OJ or EJ), Figure 5.1, should be inserted at intermediate positions to accommodate deflections of the base and movements in the flooring."*

*"They should be provided in evenly spaced position A at*

*approximately 4.5m centres, or at locations where stress might reasonably be expected in: (1) internal floors, where any dimension exceeds 9 m or 6 m if subjected to sunlight; and (2) external floors where any dimension exceeds 4.5 m."*

This indicates 4.5 metres is the minimum spacing required for movement joints. All walls, columns and slab joints are also required to be accommodated with movement joints.

Movement joints within the pool itself are also essential. These are required at changes of plane, pool shell/concourse junction and in the tiling layout when joints are smaller than 5mm. These joints are often left out. Subsequently, when there is a failure, many obscure causes are suggested to be to blame. Usually, failures turn out to be caused by neglecting to install these movement joints as per the guidelines.

**Stone tiles**

Many pool surrounds are tiled with natural stone tiles. It is important that these tiles are selected with their use in mind. Different stone types and thicknesses can influence the way stone tiles behave once fixed around a pool environment.

It is important to choose suitable tiles when specifying a stone tile for use in outdoor tiling. Some stones can be used in immersed conditions, but this should be done after further scrutiny for suitability.

Adhesive recommendations should be sought and followed when attempting to install a fully immersed installation. Often epoxy adhesives are required for this application.

Utilising an installation system provided by a reputable adhesive manufacturer is another step which can be taken to ensure a long-lasting installation. Often specific grouts, waterproofing membranes and moisture barriers are required to be used in conjunction with the specified adhesive. These extra items should not be omitted based on an installer's past applications or experiences.

**Moisture management**

The presence of moisture is something that needs to be



Adhesive bond failure due to omitting movement joints in the tiling installation



→ accommodated in a pool concourse installation. Rain, gardens, lawns, and the pool itself will create an environment where moisture is constantly present. Moisture needs to be managed from various aspects.

Surfaces should have adequate fall and enable water to evacuate without pooling. Adequate drainage points should be constructed to allow the tiling to be installed in a practical manner. This may require multiple drains and/or strip drains. Simply draining a pool concourse into the pool itself may seem to be a practical construction solution, however It is generally not recommended to use the pool as the drainage point.

### Efflorescence

Efflorescence is often seen as white residue leeching from tiling through the grout joints. This is particularly common around pools due to the high moisture levels present. Some efflorescence can be unavoidable when cementitious products are



Tiles delaminating or 'tenting' due to lack of expansion joints.

used. However, continuing and severe efflorescence can be prevented by employing a better methodology for installation.

Preventing sub surface moisture from travelling up through the tile joints will eliminate most of

this problem from occurring. The installation of a waterproofing membrane on the concourse will prevent the substrate from becoming saturated.

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## Moisture Seal

RLA Moisture Seal is a high performance, 2-part water-based epoxy waterproofing system — designed as a water and vapour proof coating under water proofing systems, coatings, tiles, resilient and timber flooring. It is designed for floor and wall applications where durability, water and chemical resistance are required.

Made in Australia, it has low VOC and a convenient mixing ratio 1:1. It withstands a head of water pressure up to 25 metres or can withstand up to 250Kpa of hydrostatic pressure. It complies with AS 4020:2005 “Products in contact with drinking water” and ASTM E96 Water vapour transmission. ■



## Epoxy Grout

A two-part anti-acid epoxy mortar. Part A consists of a mixture of epoxy resin, selected fine-grain inert aggregates, pigments and specific organic additives. Part B consists of an innovative organic catalyst. Once mixed together, the two parts form a creamy mixture with excellent smoothness, which is also suitable for vertical no-slip application. Once hardened, the product is high performing in terms of mechanical and chemical resistance. This product has been expressly formulated to meet the requirements of Part 5 of the IMO FTP Code 2010 as “finishing material for bulkheads and ceilings” for the naval sector. ■



## 1Kompöment

1Kompöment is a one component, flexible fibre reinforced waterproof membrane. With a specially formulated cementitious base incorporating graded aggregates and polymers, it produces a highly flexible waterproof membrane — capable of withstanding significant flexural strain. It is suitable for both positive and negative pressure — up to 25 metres (2.5 bars).

1Kompöment is easy to apply by brush/roller or spray and can be used on damp surfaces. It has high adhesion strength and a versatile mixing ratio, and good crack bridging. Suitable for exposure to UV rays and light foot traffic. RLA 1Kompöment is a class one membrane as per AS/NZS 4858. ■

## UniGrip

UniGrip is a premium grade polymer modified, highly flexible, white cement-based tile adhesive. It is non-slip/non slump and ideal for large format tiles, and is a C2S2ET adhesive.

It is designed for bonding all types of ceramic, stone and mosaic tiles onto a variety of substrates like concrete, render, brickwork, blockwork, Gyprock, plasterboard and fibre cement.

UniGrip can be used for fixing porcelain and vitrified tiles, and to fix tiles over existing tiles as long as the existing tiles have been coated with RLA Universal Primer. It can be used for fixing tiles in fully immersed situations like swimming pools and spas.

UniGrip can also be used to fix tiles over most waterproofing membranes. However, it is advisable to contact the manufacturer prior to commencing. This product is suitable for tile installations over screeds or green screeds, and can be used over some acoustic mats. Contact RLA for more information. ■

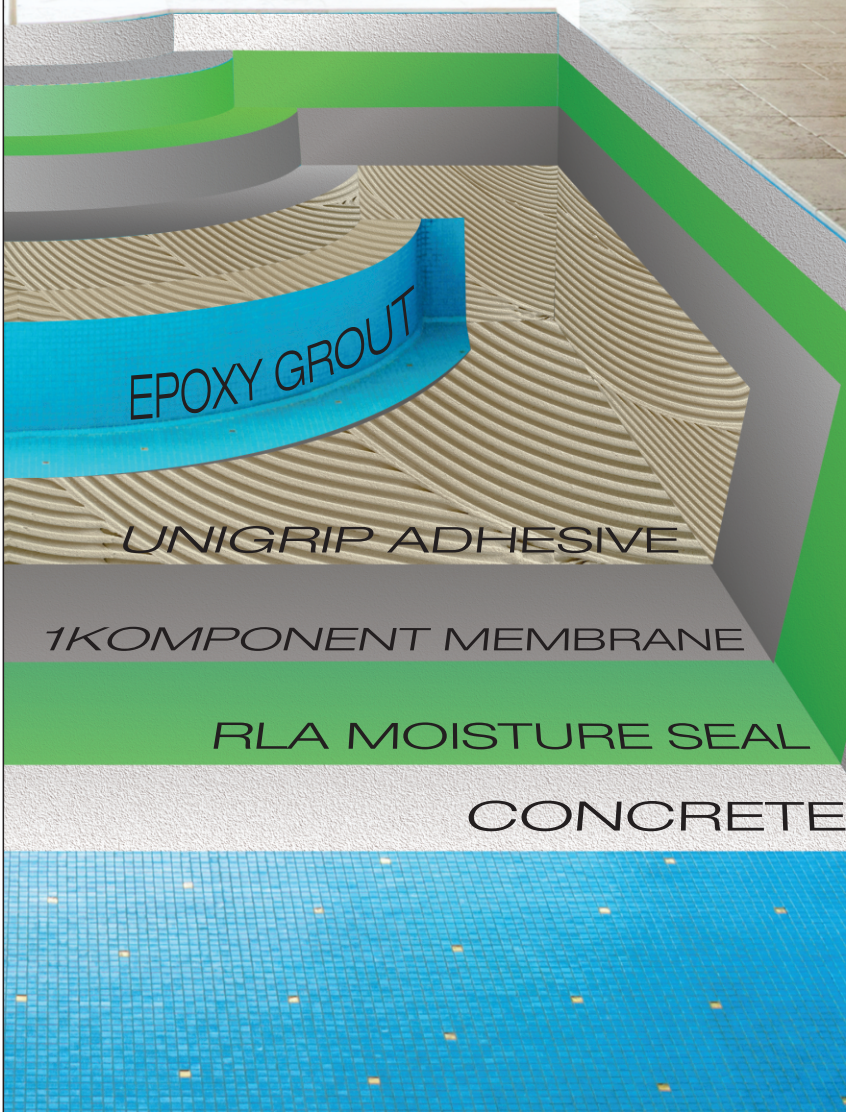






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Typical RLA swimming pool specification. Using class leading epoxy and cementitious technologies



Often a sand and cement screed layer is installed to create falls for drainage. Correction of the substrate is also commonly required and achieved by the installation of a leveling screed. This layer can act a reservoir for moisture. When this moisture tries to exit through the tile joints, efflorescence is formed. When this occurs repeatedly, it is unsightly and can be difficult to remove on an ongoing basis.

The installation of a waterproofing membrane is becoming more common and is the best way to avoid efflorescence leeching from the screed layer. A waterproofing membrane will eliminate the sponge like function of the screed layer.

Adhesives and grouts require adequate curing to prevent leeching and degradation from occurring. Rain and dew can add moisture to the numerous

tile installation components which can slow or retard setting and curing. This can cause leeching to occur on a continuing basis.

External installations should be carried out with regard to precipitation and temperatures which will have dramatic impacts on curing. Covering of the tile work with tenting or tarpaulins may be required to prevent water ingress.

## Waterproofing membranes

The use of water proofing membranes in and around pools is often either overlooked or disregarded. It is possible to install tile in a swimming pool or on a concourse without the use on a membrane. However, there are always other factors present which a tile installer cannot be in control of or predict.

Water ingress into substrates during installation

and after completion can cause issues such as those outlined previously. These problems can be managed by prevention. A waterproofing membrane is often recommended by adhesive manufacturers as part of a pool installation system.

Pool shells can exhibit unpredictable movement characteristics when there is a wet side and a dry side of the concrete. This occurs when comparing the moisture impact inside the pool in comparison with the opposite side of the shell.

Movement issues resulting from this difference can be mitigated in concrete design and specification but is not always sufficient for tiling installations to be unaffected. It is not possible for the tiler to quantify or calculate these impacts. A prudent course of action is to utilise a waterproofing membrane to



Efflorescence leeching from steps leading up to a pool concourse.



## POOL & OUTDOOR INSTALLATION TIPS

- 1) Movement joints are critical to outdoor tile installations. These are required by standards for any tiled surface over 6m in length that is subjected to sunlight.
- 2) Using a complete installation system provided by a reputable adhesive manufacturer is one way to assure a long-lasting installation.
- 3) Surfaces around a pool should be designed to prevent water pooling but should usually not drain into the pool itself.
- 4) Efflorescence is common around pools and can be exacerbated by levelling screeds. The best prevention is the installation of a waterproofing membrane.
- 5) Waterproofing membranes are also highly recommended for the installation of some stone tiles, especially limestone. This can help to prevent rectification disputes.
- 6) Slip resistance, especially in public areas, needs to be considered carefully. This includes not only the initial slip rating, but also the slip rating over time.

insure against unpredictable movement forces.

As mentioned previously, pool decks and concourses are affected by moisture in regard to efflorescence. Another overlooked aspect is the behaviour of stone tiles. For example, the thickness of some limestones becomes a critical consideration when moisture trapped beneath the tile exits rapidly through the face of the stone tile. This can cause the stone to crack across its surface. When this occurs, there are often disputes over the adequacy of such tiles for external use.

The main problem is that there are currently not any Australian or ISO (International Standards Organisation) standards that specify thickness of stone tiles for various applications.

I have been involved in disputes where the stone tiles are blamed for being too thin and the subsequent cracking on the surface is due to moisture exiting through the tile face.

In one case I observed, a limestone tile was laid in two adjacent installations around a pool. Some limestone tiles were cracked, while others were not. In this example, the question is,

are the tiles suitable for exterior use?

On further investigation, it turned out that the all the cracked tiles had been installed without a waterproofing membrane underneath, while the other installation, which used waterproofing, was crack-free. Fault for the cracking could be argued over for some time, but it was really explained by a direct comparison being available.

As a tile installer, it seems like good insurance to utilise a membrane to avoid having to defend yourself in this type of scenario. It remains true that there is a lack of guidance on stone tile thickness which could be referred to so as to make adequate specification choices.

A self-protection attitude should be taken by tile installers by installing waterproofing membranes beneath questionable stone tiles. This will act to avoid expensive investigations of such issues in the event of cracking occurring and subsequently avoid possible rectification costs.

Installing waterproofing membranes will also likely be the installation process recommended by the adhesive manufacturer. Utilising an approved and recommended installation specification



Cracking due to moisture exiting the face of stone tiles



→ provides an additional layer of protection for the tile installer.

## Slip resistance

Slip resistance of the tile surface needs to be thought through carefully in relation to safety. The tile retailer should be able to provide advice backed by documented testing which satisfies slip resistance suitability.

This is a complex topic worthy of its own article, but safety where surface water is present is an essential consideration. Requirements of the slip resistance of the tile surface should be considered in relation to legal exposure.

Where there is a commercial or public installations of tiles around pools, the quality of the tile should be considered carefully. There are tiles which pass a

specified slip rating which I have observed to have a deteriorated and significantly less slip resistant surface after as little as two years use in a commercial residential setting. These issues must be examined based on safety and legal liability issues as a minimum requirement.

Taking the time to seek advice from adhesive and tile suppliers is well worth doing to avoid call backs and defects. Most problems around and inside pools can be averted by additional attention to installation practice. It is more cost effective in the end.

The rectification work to be done when problems such as those just discussed becoming a dispute between the clients, builders and tilers is often significant and time consuming. These types of problems do not

serve tile installers, specifiers, retailers or contractors, and could cause long-term damage to the reputation of the industry. ■

**About the author:** Tim Christopher is a current member of the Technical Committee on both the Australian Standards AS3958 (Guide to Ceramic Tiling) and Australian Standards AS3740 (Waterproofing). He also serves as the vice president of TTIAA (Tiles and Tiling Industry Association of Australia), and is a technical advisor for TANZ (Tilers Association of New Zealand). Tim is Tile Today's technical specialist.

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# ARE TILING FAILURES IN SWIMMING POOLS RELATED TO DELAYED CONCRETE DRYING SHRINKAGE?

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This is a question posed by Colin Cass from Techtile Consulting. He writes that it is well understood that concrete shrinks as it dries, and that shrinkage takes longer to fully occur in thicker, denser and more highly reinforced concrete. It is also widely accepted that the drying conditions experienced by the concrete can have an impact on how rapidly drying shrinkage occurs.

This paper looks at the current recommendations for how long concrete should be allowed to cure before tiles are applied. It also looks at how concrete shrinkage measurement are taken, and if those measurements are helpful in determining if swimming pool concrete is suitable to receive tiles.

The findings produced in this paper are based upon investigations undertaken on commercial swimming pool structures and a review of the accepted industry drying shrinkage method AS1012.13:2015 (which is not dissimilar to most concrete drying shrinkage tests around the world).

It finds there is little correlation between concrete drying shrinkage test results to AS1012.13:2015 and the quantity of shrinkage within the same concrete onsite. While values from the concrete drying shrinkage test method may be used to assist in estimating the design shrinkage reinforcement required in a structure to control cracking, it is at best an estimate of what is actually happening onsite.

This paper calls for better methods to be developed to advise designers, builders and tiling contractors as to the likely shrinkage that is occurring in concrete placed onsite, because there is evidence that shows that delayed concrete shrinkage is contributing to tile delaminations in some swimming pools.

## WHAT IS “DELAYED CONCRETE SHRINKAGE?”

In terms that apply to this paper, the proposed definition of “delayed concrete shrinkage” refers to conditions where the average measurement of 3 standard concrete prisms exposed to the same climatic

→ 18



→ conditions as the site concrete is more than 400 microstrain in difference to the laboratory conditioned samples of the same concrete at the time tiling is set to commence. Input in refining this definition is welcome.

This 400 microstrain figure is used as it represents two-thirds of the 0.06% accepted in ISO 10545.10 1995 as the point after which irreversible moisture expansion in ceramic tiles could be considered as likely to contribute to differential movement failure in tiling systems (1). In that way, it allows for one third of the differential movement seen as acceptable for irreversible moisture expansion to occur with the tiles with the other two-thirds coming from concrete shrinkage. (400 microstrain represents 0.04% or 0.4mm/m.) Any remainder is regarded as a safety margin.

#### OBSERVATIONS AND DATA FROM POOL TILING SITES

In cases where there has been a tile delamination failure in a commercial pool, there are usually a number of investigators looking for the cause. The most common conclusion is that the tilers didn't achieve sufficient adhesive contact coverage on the tile backs. This, however, is an easy and convenient explanation for builders and designers, but it does not reflect all the causes of the failure, and, from experience it doesn't always match with other site evidence, as explained below.

There is a wide range of possible contributory factors to a delamination event inside a swimming pool. It is known that tile adhesives that are saturated have lower bond strength than dry adhesives. Installation conditions in pools can be challenging during construction, especially related to extremes of weather (skinning of adhesives, wet weather impacts, etc). There may be some irreversible moisture expansion of the tiles themselves (see ISO 13006.10). The depth and coverage of the adhesive comes into play, as does the location and performance of movement joints.

However, once the water is in the pool the ambient conditions



**FIGURE 1.** Shrinkage of the independent slabs at this construction joint has stretched the elastic joint so it detaches from the sides, strongly indicating that the concrete has shrunk after the tiles and sealant were installed.



**FIGURE 2.** The intermediate movement joint at this location had been completely compressed and the sealant exuded. This shows shrinkage of the underlying concrete slab has occurred after the tiles were laid, as the underwater thermal conditions were relatively stable.



→ are relatively stable compared to the immediately adjoining pool surround tiling, and shrinkage when concrete is wet generally slows or stops. So evidence of differential movement between the tiling veneer and the concrete substrate is unusual under these stable moisture and temperature conditions. Yet, two common features emerged. There was evidence of contraction at construction joints between concrete slabs, and evidence of movement joint compression at the intermediate joints within those slabs. (See Figures 1 and 2)

While there was sometimes evidence of poor intermediate movement joint detailing, and often there was only between 60% and 80% adhesive contact coverage, there was still differential shear and tensile failure when adhesive coverage was over 90% and intermediate movement joints were shown to be adequate and working properly. (See Figures 2, 3 and 4)

Sometimes the shearing was perpendicular to the notched adhesive and a regular peaked or



**FIGURE 3.** Delamination still occurred when 100% adhesive coverage was present. The directional rills in the adhesive indicate the direction of the shear stress.



**FIGURE 4.** Cohesive failure of the adhesive is a common factor (some adhesive left on the substrate, and some on the tile, indicating a shearing of the adhesive itself from excessive stress). Here there are areas of close to 100% adhesive coverage (blue circle) and areas where a “mixed mode” of failure is present (red circle). Sometimes the shearing was perpendicular to the notched adhesive and a regular peaked or wave like fracture was observed. (See Figures 5 and 6)





**FIGURE 5.** The shearing pattern looks similar to waves breaking on a beach.



**FIGURE 6.** Here, 90% plus adhesive coverage did not prevent delamination. The shearing of the adhesive layer regularly leaves little adhesive at one edge and a proud rib on the opposite edge, again like waves coming into a beach.

→ wave like fracture was observed.  
(See Figures 5 and 6)

In other words, having adequate adhesive coverage, and correct movement joints did not guarantee that failure was avoided. There had to be another cause of the significant differential movement stress required to cause these delaminations, the most obvious cause appears to be concrete drying shrinkage.

#### INDUSTRY GUIDANCE

Often other investigators looking into tiling failures would maintain that the “rules” that allow for concrete shrinkage were followed, and therefore the failure could not be down to shrinkage as a significant factor. For instance, the Australian Standard “Guide to the installation of ceramic tiles” states that concrete should have 42 days of continuous air drying and then it is suitable to receive tiles. No

guidance is given on what to do if the 42 days is interrupted. (See Figure 7)

Similar rules are set down in the United Kingdom as is shown in Figure 8.

The “Tile Council of North America Handbook 2014” does not stipulate drying times for concrete, but in the pools and water feature section it states that the architect must specify type and show location of



→ movement joints on the drawings. The recommended times may be adequate for drying shrinkage to occur on simple suspended or slab on ground concrete of 150mm or even 200mm thickness, but it is known to be slower for thick, higher strength concretes and highly reinforced structures such as swimming pools that are possibly exposed to poor drying conditions, such as drying from one side only, or being regularly rained upon. These recommended drying times were often incorrectly being relied upon without further analysis of the site conditions.

The extract from AS3958.2 “A guide to the design of a ceramic tiling system” provides some information pertaining to drying shrinkage of concrete, and in a statement that could have significant impact on swimming pool design, it advises that where thicker concrete is used, drying shrinkage is delayed (showing 400mm thick concrete may have only expressed 50% of its shrinkage after one year, and importantly, only 30% at three months or 90 days. Sometimes concrete thicknesses in pools exceeds 700mm so it is likely that shrinkage would be delayed even further. (See Figure 8)

An extract from BS5385.4

(See Figure 9) highlights the minimum time intervals that should be allowed at different stages of construction to account for changes in the pool shell due to moisture differences and shrinkage. It is acknowledged that in wet weather or poor drying conditions it may take longer so this should be factored into the construction program, but no guidance on how to calculate how much extra time is provided.

In a review of the specifications for commercial swimming pools no mention was found of any reference as to the role, responsibility or mechanism for assessing the impact of wet weather or poor drying conditions on concrete drying shrinkage. It seems the words can be in the specification but no method or mechanism for site assessment or application is ever stated. Concrete strain gauges cast into the pool shell could provide important data on concrete drying shrinkage — this rarely occurs — but perhaps it should be regular practice so better data is available.

A number of other tiling, concrete and adhesive experts and panels, have stated delayed swimming pool concrete shrinkage was a problem for pool tiling.

For instance, Sopro (the European adhesive conglomerate) comments on pool tiling and Laticrete also warn of delayed concrete shrinkage. (See Figures 10 and 11)

The German DIN 18157 Norm for the execution of ceramic linings by thin mortar bed technique; calls at paragraph 5.1 for there to be 6 months before directly bonding tiles to concrete.

This was also the opinion of Cyril Potter, chief chemist from ARDEX UK in his published article in “Ceramic Tiles World” June 1988 when he said: “Shrinkage delayed. Large concrete structures will, due to the restraint provided by the size and weight of the structure, delay shrinkage until the stresses build up and are large enough to cause the necessary movement, thus 6 months should be advised with large pools.”

The AS1012.13:2015 drying shrinkage test method takes specimens of 75mm x 75mm x 285mm concrete with cast-in stainless steel pins and after overnight storage in the moulds is stripped and stored in water at 23+20C for seven days. After the seven days, initial curing the samples are placed into a drying storage environment at 23+20C

→ 22

TABLE 4.3 CONCRETE FLOOR PREPARATION							
Fixing method		Applicability of finish				Minimum drying time of concrete	Maximum variation in plane of concrete*
Fixative	System	Screed	Wood float or broom	Power float	Steel trowel		
Mortar	In situ underlay	Yes	Yes	Yes	Yes	4 weeks	5 mm in 3 m
	Separating layer	Yes	Yes	Yes	Yes	4 weeks	5 mm in 3 m
	Sand/cement mortar bed	Yes	Yes	No	No	6 weeks	20 mm in 3 m
Adhesive	Thick-bed	Yes	Yes	Yes	No†	6 weeks	10 mm in 3 m
	Thin-bed	Yes	Yes	Yes	No†	6 weeks	5 mm in 3 m
	In situ underlays‡	Yes	Yes	Yes	No†	4 weeks	5 mm in 3 m

\* Unless concrete surface is prepared in accordance with adhesive manufacturer's requirements.  
† Surface preparation may make this surface satisfactory.  
‡ Refer to manufacturer's instructions for installation.

FIGURE 7. Extract from AS3958.1 2007 on ceramic tile installation showing up to 6 weeks (42 days) as the recommended minimum drying time before concrete can be tiled over.



→ and 50% relative humidity. The samples are then removed from storage, measured and returned to drying storage at seven days, 14 days, 21 days, 28 days and 56 days drying. This means the concrete is actually 63 days old when the 56 day drying figure is measured and has been in an optimal drying environment essentially continuously for 56 days at which point the drying shrinkage is reported as the average of the three concrete prisms used within the test.

This test does not represent what happens to concrete in the field. It has some problems (2) and is essentially a guide to what a particular combination of cementitious binders, aggregates, admixtures and water content will produce in an optimal drying environment to assist with the control of cracking.

Applying this then to a concrete pool shell that can be upwards of 1000mm thick that may be exposed to site weather conditions and intermediate wet

and dry cycles is not regarded as a valid comparison, but some assume the laboratory figures reflect the actual shrinkage on site.

While there are a number of factors that lead to variations in concrete drying shrinkage rates, such as aggregate type and size, cement type and content, the water/cement ratio the thickness of the concrete member, and ambient weather conditions, it appears that it is this last factor "weather" that is often overlooked

(f) **Moisture movement** The tile bed can be subjected to significant stresses caused by the movement of moisture in the supporting structure or substrate (see also Clauses 5.4.2 and 5.4.3).

The actual shrinkage of concrete depends on the water content of the mix, relative humidity, thickness of section and percentage of reinforcement. Typically the long-term shrinkage value for structural concrete may be taken as 0.03 percent; higher values may be more appropriate for concrete made with lightweight aggregate. Certain dense aggregates can exhibit higher shrinkage characteristics but these are not commonly used.

In interior environments in Australia, the rate of shrinkage (expressed as a percentage of its potential) may be assumed to be as shown in Table 4.2.

TABLE 4.2  
RATE OF SHRINKAGE OF CONCRETE

Effective thickness* of element mm	Period			
	14 days %	28 days %	3 months %	1 year %
100	20	40	60	80
200	15	25	45	70
400	10	15	30	50

\* Effective thickness is twice the volume of the concrete divided by the exposed surface area.

In addition, concrete exposed to the outdoor environment may exhibit seasonal, cyclic movement of +0.4 times its long term drying shrinkage. However, cladding the concrete frame can significantly reduce its seasonal movement.

FIGURE 8. Extract from AS3958.2 "A guide to the design of a ceramic tiling system".

*"The minimum time intervals that should be allowed to elapse between the successive stages are:*

- Between curing of the pool shell and rendering: 6 weeks;*
- Between completion of rendering and commencement of tile fixing: 3 weeks*
- Between completion of fixing and grouting: 3 days*
- Between completion of the grouting, movement joints and filling of the pool: 3 weeks.*

*Under no circumstances should these time intervals be reduced. In wet weather or poor drying conditions a longer period should be allowed."*

FIGURE 9. Extract from BS 5385.4 "Design and installation of ceramic and mosaic tiling in specific conditions" – Concrete swimming pools.



→ when estimating site drying shrinkage rates.  
The impact of humidity on drying shrinkage values is shown in table 3.2 from EN 1992-1-1 2004 (See Figure 12). The 40MPa in cylinders /50MPa in cubes (40/50), concrete has half the shrinkage at 80% Relative Humidity as the same concrete at

20% RH, and at 100% humidity shrinkage stopped completely.  
The proprietors of a major commercial pool tiling company in Australia with over 1300 pools completed over 20 years, provided data from some of their more recent sites where drying shrinkage of standard concrete prisms sampled under laboratory

conditions (to AS1012.13:2015) were compared to prisms of the same concrete left exposed on site to the prevailing site weather conditions. Large variations in drying shrinkage were reported between lab cured and site cured samples and the key factor that affected shrinkage rates was found to be  
→ 24

*"The minimum time intervals that should be allowed to elapse between the successive stages are:*

- a) Between curing of the pool shell and rendering: 6 weeks;*
- b) Between completion of rendering and commencement of tile fixing: 3 weeks*
- c) Between completion of fixing and grouting: 3 days*
- d) Between completion of the grouting, movement joints and filling of the pool: 3 weeks.*

*Under no circumstances should these time intervals be reduced. In wet weather or poor drying conditions a longer period should be allowed."*

**FIGURE 10.** Extract from BS 5385.4 "Design and installation of ceramic and mosaic tiling in specific conditions" – Concrete swimming pools.

*"Concrete Curing and Age of Concrete – The age of a concrete substrate is important based on the fact that as concrete cures and loses moisture, it shrinks. A common misconception is that concrete completes shrinking in 28 or 56 days. This is not true. Thick sections of concrete may take over 2 years to reach the point of ultimate shrinkage. Under normal conditions, 28 days is the time that it typically takes for concrete to reach its full design strength. At that point, concrete will have maximum tensile strength and can better resist the effects of shrinkage and stress concentration. Depending upon the curing techniques and exposure to humidity or moisture, there may be very little shrinkage in the first 28 days. Flexible adhesives, certain latex or polymer / fortified thin-set mortars (e.g. LATICRETE® 254 Platinum or LATICRETE 211 Powder gauged with LATICRETE 4237 Latex Additive), can accommodate the shrinkage movement and stress that may occur in concrete less than 28 days old. In some cases it may be recommended to wait a minimum of 30–45 days to reduce the probability of concentrated stress on the adhesive interface. Some building regulations or codes may require longer waiting periods of up to 6 months."*

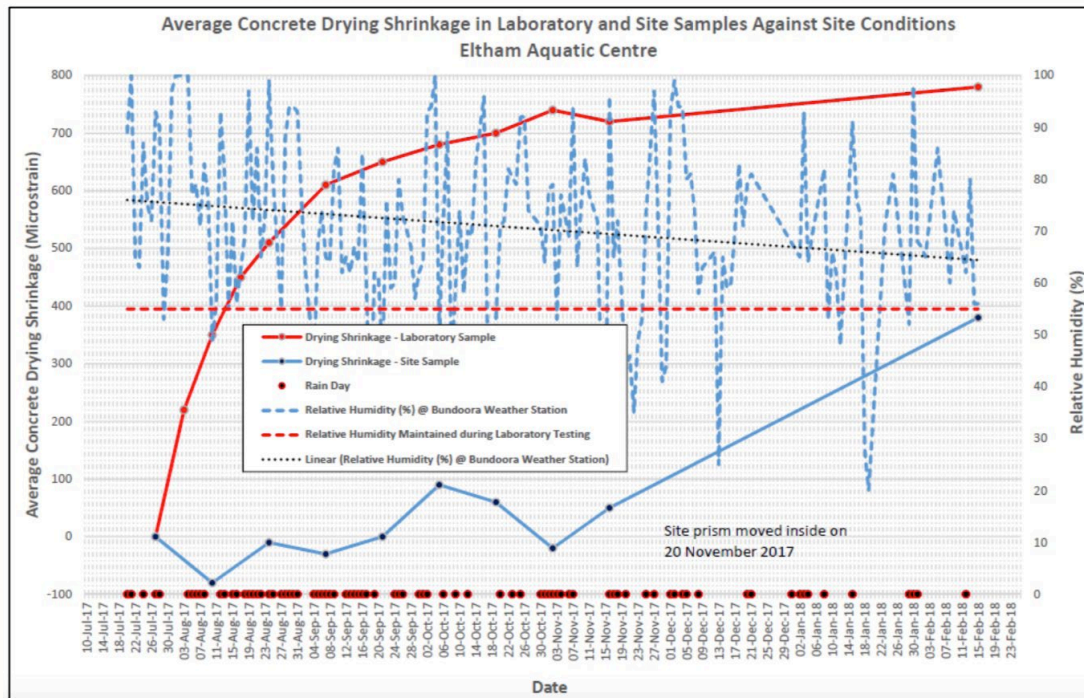
**FIGURE 11.** Extract from: Laticrete Tiled Swimming Pools, Fountains and Spas – Technical Design Manual 2009. P. 54

**Table 3.2 Nominal unrestrained drying shrinkage values  $\epsilon_{cd,0}$  (in ‰) for concrete with cement CEM Class N**

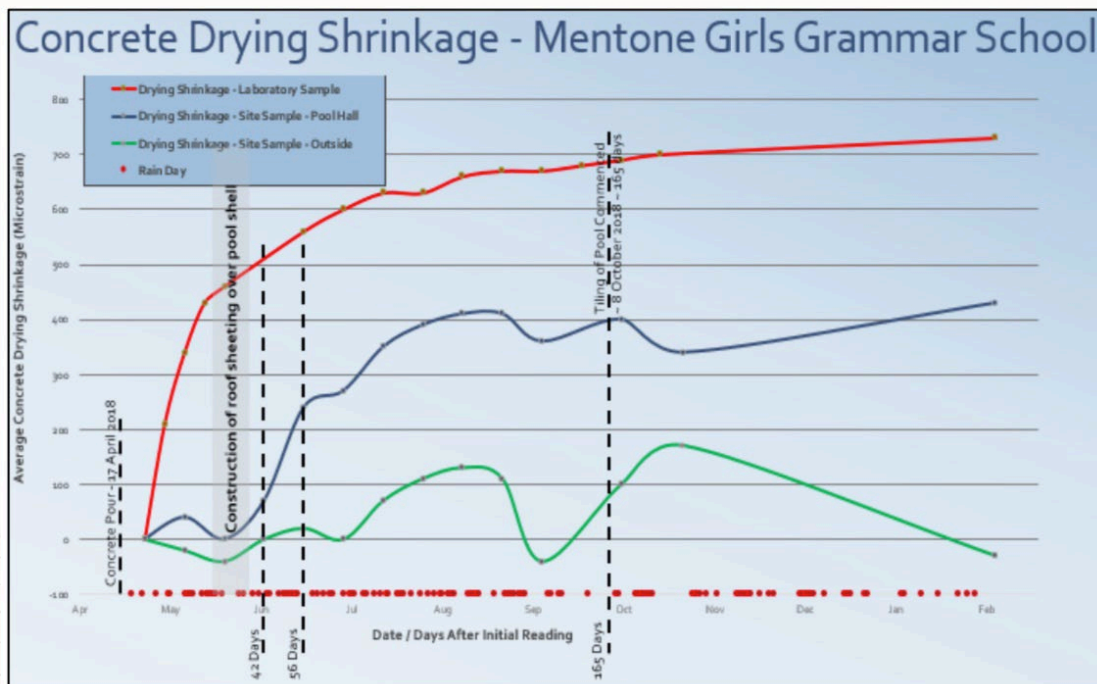
$f_{ck}/f_{ck,cube}$ (MPa)	Relative Humidity (in ‰)					
	20	40	60	80	90	100
20/25	0.62	0.58	0.49	0.30	0.17	0.00
40/50	0.48	0.46	0.38	0.24	0.13	0.00
60/75	0.38	0.36	0.30	0.19	0.10	0.00
80/95	0.30	0.28	0.24	0.15	0.08	0.00
90/105	0.27	0.25	0.21	0.13	0.07	0.00

**FIGURE 12.** Drying Shrinkage, Relative Humidity and Strength





**FIGURE 13.** (Eltham in Melbourne) The red line shows just about 560 microstrain shrinkage in the laboratory sample at 42 days, while the site sample (blue line) expanded some 25 microstrain at 42 days. At 80 days, the site sample was back at zero shrinkage while the lab sample was over 700 microstrain. The site sample was moved indoors at 75 microstrain and the only measurement taken (55 days later) showed just under 400 microstrain shrinkage.



**FIGURE 14.** (Mentone in Melbourne) Strain Gauge data from this covered and heated pool with a membrane showed no concrete shrinkage occurred for the first 9 months (3) but it started once the pool was filled reaching just over 100 microstrain in the following 7.5 months. The last months strain gauge figures are flat because the data is still to be added.



humidity and related rainfall.

As can be seen from [Figure 13](#) laboratory shrinkage continued to increase from July 2017 to February 2018. Shrinkage

samples from the same concrete cured onsite, however fluctuated up and down approx. 100 microstrain until the roof was put on the facility (November

2017). When the samples were protected from prevailing external conditions (under cover) the drying shrinkage commenced and increased rapidly to 400





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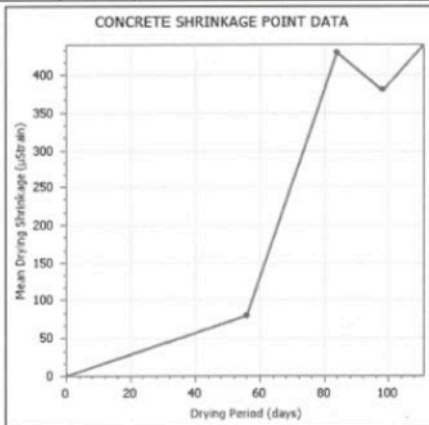
## CONCRETE SHRINKAGE REPORT

Client:	Top End Concrete Testing	Report Number:	320/R/9103-1
Client Address:	5/18 Anicton Rd, BERRIMAH	Project Number:	320/P/130
Project:	Concrete Shrinkages	Lot Number:	
Location:	Northern Territory	Internal Test Request:	320/T/2832
Component:		Client Reference/s:	Parap Pool-25m Pool, Walls Pour#2
Area Description:		Report Date / Page:	7/06/2017 Page 1 of 1

Sample Code:	320/C/17914		
Test Procedures:	AS1012.1 (7.2.1), AS1012.1 (Sect 6b), AS1012.3.1, AS1012.8.4, AS1012.13		
Condition Received:	-	Date of Demoulding:	8/02/2017
Concrete Supplier:	HB Concrete	Date of Initial Reading:	17/02/2017
Class of Concrete:	Not Provided	Sample Location:	Field Moulded
Specified Slump (mm):	- / -	Weather Conditions:	N/A

Plant Mix Code	Batch Number	Batch Time	Sampling Time	Date/Time Received	Initial Curing Time	Curing Conditions	Slump (mm)	Air Temp (°C)	Conc Temp (°C)
SBS 3220 Max 0.5 WC	184579	7/02/2017 4:48:00 PM	7/02/2017 5:02:00 PM	14/02/2017 10:00:00 AM	173 hours	DRY	80	30	32

Drying Period (days) (date)	Drying Shrinkage (µStrain)			
	Specimen 1	Specimen 2	Specimen 3	Average
56 12/04/2017	70	90	90	80
84 10/05/2017	410	440	450	430
98 24/05/2017	370	360	400	380
111 6/06/2017	420	440	460	440



Remarks: Variation from Test Method - Initial measurement taken at 8 days. Shrinkages stored in field conditions after initial measurement until 56 day reading. Samples stored in Shrinkage room until 28/04/17 when returned to be stored in Field conditions again. Returned for measurement at 84 days and immediately returned to be stored in field conditions again. Returned for measurement at 98 days and immediately returned to be stored in field conditions again. Returned for measurement at 111 days.

*[Signature]*

**FIGURE 15.** (Parap Darwin) Site prisms reached 300 microstrain at about 72 days and only about 400 microstrain at 100 days when the samples were stored in the lab.

Note: The text in the Remarks box states: "Variation from test method- Initial measurement taken at 8 days. Shrinkages stored in field conditions after initial measurement until 56 days reading. Samples stored in Shrinkage room until 28/4/17 when returned to be stored in Field conditions again. Returned for measurement at 84 days and immediately returned to be stored in field conditions again. Returned for measurement at 98 days and immediately returned to be stored in field conditions again. Returned for measurement at 111 days."



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→ microstrain over the next three months.

It should also be noted the fluctuations in moisture in the air (Relative Humidity) over January 2017 to February 2018 had likely affected the site drying shrinkage when exposed to the external environment but had little effect once the site specimens were under the facility roof and protected from these moisture changes. Figures 14, 15 and 16 are just a few of the results discovered when laboratory and site drying shrinkage samples were compared. (Note: the concrete in these figures all came from different suppliers.)

The strain gauges (by Rapid Consulting Engineers) were two (2) in the north wall (750mm thick) and two (2) in the west wall (1000mm thick) Moisture content of the concrete (about 3%) and humidity (about 80%) are being logged.

In this pool there was no concrete drying shrinkage until after the tiles were applied, therefore, all the shrinkage that had occurred would have added

differential movement stress to the tiling system. If, as is expected, the concrete continues to shrink, and it heads closer to the final amount experienced by the laboratory sample, the stress on the tiles will gradually increase. This will continue to be monitored. It would be useful to compare this strain gauge data with that from a pool where there was no membrane.

The concrete shrinkage in the outdoor drying shrinkage prisms stored on site is approximately three and a half times greater than the strain gauge readings — it matched at 12 months — but it is still believed to be more representative of what is likely happening in the concrete on site.

While the shrinkage performance of small prisms left on site will not be the same as the mass concrete pours, comparative shrinkage measurements taken on prisms of swimming pool concrete across different sites in various parts of Australia, indicates that site concrete drying shrinkage is likely to be significantly less than laboratory figures indicated. The strain gauge readings (so far

from just one pool) indicate mass concrete pours on site are likely to dry and shrink more slowly than the site prisms.

At the Mentone pool, the difference between the shrinkage in the laboratory sample and the outdoor prism and the strain gauges has been greater than 400 microstrain since about a month after the concrete was poured. This indicates “delayed concrete shrinkage” had occurred as defined earlier in this paper. herefore, commencement of tiling should be delayed, and if this is impractical, it would be prudent for more movement joints to be incorporated into the tiling works.

## CONCLUSIONS AND RECOMMENDATIONS

From observations, early data and a review of the recommendations made in prominent codes and guides, it is clear there is insufficient useable information available on which design and construction professionals can estimate the quantity of concrete drying shrinkage that has occurred onsite in actual concrete swimming

## MERIDIO FINISH FOR OUTDOORS AND FACADES

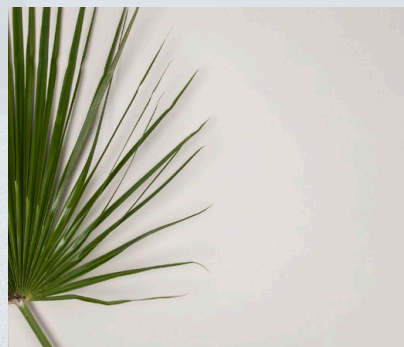
Lapitec's Essenza, Arabescata and Musa collections each employ the same technology developed over 20 years of research and covered by 25 patents. These sintered stone products are completely free of surface pores, which is non-absorbent and resistant to all temperatures and weather conditions, as well as to temperature changes, knocks, scratches, chemicals and acids. These properties, together with Lapitec's environmentally friendly and green ethos, have prompted the company to invest in further development and expand its offering in its outdoor ranges.

Meridio is the latest example of this, a new finish for Cersaie 2021, which introduces a new dimension to coverings: the delicate coarseness obtained by light machining gives the slabs — available in various thicknesses and sizes of up to 1500 x 3365mm — a high coefficient of friction to guarantee maximum safety.

The surface texture

also reveals the “full-body” nature of the material, which is uniform across its entire thickness thanks to a mixture free of resins and petroleum derivatives and creates unexpected plays of light that enhance the Lapitec shades.

Meridio is available in the shades Bianco Artico, Bianco Assoluto, Bianco Crema, Bianco Polare, Grigio Cemento, Grigio Piombo, Terra Avana, Terra Ebano, Terra Moca and Nero Antracite from the Essenza collection, and is ideal for use in ventilated facades, outdoor walkways and pool coverings, including below the waterline, as well as on vertical surfaces in interior spaces.





→ pool structures<sup>4</sup>. Without this information it is considered likely there have been, and will continue to be, a number of pools that are tiled where the delayed concrete shrinkage will contribute significantly to tile delaminations.

Where there is evidence of “peaking” of tiles in pools from differential movement stress, (See Figure 10) and testing of the tiles (to ISO13006.10) shows irreversible moisture expansion has had no significant impact on differential movement, the most likely conclusion would appear to be that the concrete has shrunk after the tiles were installed.

It should be noted that the drying conditions that the concrete is exposed to has a significant effect on the eventual concrete drying shrinkage. It is also known that shrinkage will be slower in thicker concrete members, but there is little information given on how the impact of these two factors should be calculated, or how to determine a safe time to tile

over the concrete.

Experience in Australia is that pool designers and builders do not collect and analyse site weather data and adjust construction schedules to allow for any significant delays in drying shrinkage. Assessing the drying conditions and its impact on shrinkage rates is an important task with no clear responsibility designated in most construction specifications or building schedules. Although, AS3958.1 2007 in the Scope states: “The designer should make known to the tiling contractor any structural or environmental conditions such as excessive deflection or the likelihood of excessive or delayed shrinkage onset of the substrate.”

As the author of this paper has no formal engineering or scientific qualifications, he hopes this paper will draw some focus from qualified professionals to further investigate delayed concrete shrinkage and its reliable measurement. In this way site shrinkage of concrete may be

better understood and allowed for when deciding when it is suitable for tiling operations over concrete to take place.

This aspect of the performance of concrete is an area where a reliable concrete shrinkage measurement system, possibly one involving the embedment of strain gauges in the concrete would help those with an interest in the successful long-term tiling of swimming pools.

When better systems are developed to calculate site shrinkage, they should be conveyed to those responsible for updating codes and guides, so industry practices improve in this area.

Until better data and concrete shrinkage assessment systems are developed, it seems prudent for pool designers to establish approximately how much the site concrete has shrunk so advice can be provided on when tiling operations can commence. It is suggested that if that estimate is

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# IF ONLY THEY KNEW...

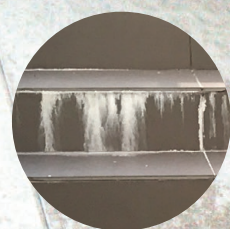


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## LAGOON FOR OUTDOOR SPACES

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The soft waves on the tiles' faces capture a leisurely day by beach and can create a tropical inspired oasis for spaces. The range comes in a matte finish and feels smooth and flawless on foot because of the technical benefits of Microtec.

Entirely unlike conventional slip resistance tiles that use randomly applied abrasives to create grip, Microtec is an advanced glazing technique where a fine, uniform coat of microscopic granules is applied during manufacturing to form a smooth yet grippy finish. Microtec technology provides slip-resistance that is smooth to touch.

This aspect of the Lagoon range makes them suitable, and most importantly, safe for outdoor use. It comes in an array of five on-trend neutral hues, including Grey, Light Grey, Dark Grey, Coal and Almond, as well as three different sizes: 600x600mm, 298x600mm and 298x298mm.

"Create a resort feeling in the comfort of your own backyard when you pair our Lagoon range, with an outdoor shower grate, like our 100mm 100x26 Midnight MWSFG Lauxes grate. The size of the grate means that you can go big and contain water runoff. The combo is simply luxurious," said Christie Wood, Beaumont Tiles design specialist.

"Lagoon in Almond is the perfect trans-seasonal flooring option, as its colours complement summer tonal palettes. Yet the high slip rating provides a safe flooring option in wetter and cooler months as when wet, the slip resistant properties come in play whether it's used outside or inside the home."







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less than 400 microstrain, then tiling should not commence, or more movement control joints be incorporated into the tiling.

In the meantime, to address this problem and to limit the likelihood of tiling failure inside the swimming pool in the two to seven year framework, the following is recommended.

(i) The allowance for longer concrete drying shrinkage time to be included in swimming pool construction schedules prior to the application of the tiles.

(ii) Engineers to adopt a proactive approach to determining site concrete shrinkage data to assist in determining if tiling and grouting operations are advisable. This could include tables where concrete pour details and weather conditions could be correlated, along with the measuring of site exposed prisms or measurements from strain gauges in the concrete.

(iii) Where possible, covering or enclosing of the pool shell as rapidly as possible to encourage drying shrinkage of the pool concrete prior to tiling.

(iv) If leak testing is undertaken by filling the pool before tiling, then tiling is delayed by double the time taken for leak testing.

(v) The complete pumping out of rainwater from unfinished pools as soon as possible after rain.

(vi) Consideration for the use of relatively thick waterproofing membranes over the concrete prior to tiling. This is more to provide a flexible layer to accommodate differential movement rather than to waterproof the concrete shell.

(vii) The use of minimum S1 and possibly S2 (according to ISO13007) flexible tile adhesives.

(viii) The regular testing and recording of the tile adhesive contact coverage being achieved.

(ix) A reduction in the distance between intermediate movement joints to between 3 and 3.5 metres.

(x) Close monitoring of the detailing of movement control joints in the tiling during construction to ensure they work at their design capacity.

#### POSTSCRIPT

Since the presentation of this paper in early 2020, I have received little

independent feedback regarding the likely role of concrete drying shrinkage on pool shell tiling. Respected pool engineers Geoff Nannes CP Eng MIE Aust NER and Brad Fong CP Eng MIE Aust NER have put forward some contrary points of view in Construction Engineering Australia V6.03, Jul/Aug 2020 edition. It can be found here at the following link: [https://issuu.com/epcmidiagroup/docs/c063\\_julaug2020/s/10859250](https://issuu.com/epcmidiagroup/docs/c063_julaug2020/s/10859250)

However, there seems to be little test data presented to support their specific points of view. No explanation is given of why almost always the tile delamination is marked by tiles arching away from their background, which fundamentally indicates the concrete has become smaller or the tiles larger or a combination of both. ■

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Email: [colin@cass.org](mailto:colin@cass.org)





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(2) A discussion on the Autogenous Shrinkage Interpretation from the Experimental Shrinkage Measurement Based on the Australian Testing Procedure AS1012.13 by W.A. Thomas, Mohammadi & South. [https://www.ccaa.com.au/imis\\_prod/documents/Library%20Documents/CCAA%20Technical%20Publications/Technical%20Manuscripts/A%20Discussion%20on%20the%20Autogenous%20Shrinkage.pdf](https://www.ccaa.com.au/imis_prod/documents/Library%20Documents/CCAA%20Technical%20Publications/Technical%20Manuscripts/A%20Discussion%20on%20the%20Autogenous%20Shrinkage.pdf)

(3) Strain gauge Series 2 measured a concrete shrinkage crack in the first weeks, it then tracked the same as the other gauges. (Refer to caption in Figure 14.)

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# SPECIFYING SLIP RESISTANT SURFACES

Carl Strautins reiterates that slip resistance is an important aspect of floor safety, as it delivers an assessment of the risk of slipping within the built environment

The two Standards Australia Handbook publications used for specifying slip resistance are:

- HB 198 (2014) Guide to the specification and testing of slip resistance of pedestrian surfaces
- HB 197 (1999), An Introductory Guide to the Slip Resistance of Pedestrian Surface Materials

HB198 was introduced in anticipation of the changes to slip resistance requirements in the 2014 version of the National Construction Codes (NCC2014). NCC2014 included deemed-to-satisfy provisions for ramps, stairs and landings with reference to the AS 4586 slip resistance classification.

While HB 197 is over 20 years old, it still provides useful information to consider when specifying new floor surfaces.

When considering the initial slip resistance classifications, the following general framework can help:

- Identify the level of slip resistance required within the building with reference to the above-listed documents
- Specify the slip resistance test method and document the classification required. The test method should be specified on the basis that it simulates the intended conditions during normal usage.
- Note that there is no correlation between ramp and pendulum slip test methods. In general terms, the wet pendulum and dry floor friction (Dry FFT) slip resistance testing methods should be used in all situations, while additional ramp slip resistance testing is for specific specialised industrial processes or barefoot situations.
- Accelerated wear slip resistance testing (AWT) can indicate limitations on products, and thus help avoid potentially dangerous products being specified.
- As well as providing slip resistive flooring, other design features should be considered to reduce the extent and likelihood of a slip and fall. These include water absorbent matting, ergonomic handrails, high visibility stair treads and routine floor inspections.
- Where different surfaces are considered, conduct slip testing and other tests such as stain resistance, gloss measurements and consider the aesthetics.
- Confirm that the specified product meets the performance

criteria by conducting onsite slip resistance testing upon installation and document the process to provide evidence of due diligence.

- Identify any subsequent reduction in slip resistance by conducting quarterly, twice-yearly or annual onsite slip resistance testing, as well as OHS property risk audits.

One misconception is that the recommended slip levels for new surfaces apply to existing surfaces as well — they do not. If the slip resistance of an existing surface is below the specification level for a new surface, then this requires further consideration via a risk assessment or performance case-based solution. This is where simple controls can be implemented to manage the risk of a slip and fall. These measures may include a wet weather management plan for entrances, a system of inspection and cleaning, and a review of footwear.

All too often a surface may not meet the guidance within HB 197 or 198, resulting in the surface being considered unsafe. However, it may not actually be unsafe, as there are a number of safety factors incorporated within these guidelines. These include: a highly conservative estimate of slope correction factors; an assumption people may not be aware a surface is wet, and thus compensate by walking more slowly; the association between ground reaction forces between the foot and the floor and its comparison with the measured slip resistance; and an inaccurate estimate of the reduction of slip resistance due to wear over time.

Table one of the HP197 document provides relevant qualitative descriptors of slip resistance to further consider when design specifications in regards to slip resistance may not be met. ■

*Carl Strautins is the current Chair of Standards Australia Committee BD-094 (Slip Resistance of Flooring Surfaces). He is a certified occupational hygienist and certified materials professional at Safe Environments, a NATA accredited testing and calibration facility and Australia's only NATA accredited Type A inspection body to assess design specifications and NCC requirements for slip resistance.*







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# Knowledge in waterproofing for building and construction

XtecGen's expertise in waterproof testing is needed more than ever as increased building activity across Australia is heavily focused on waterproofing to ensure many of the mistakes of the past few decades are not repeated

**B**uilding certifiers and authorities have stepped up their watch on compliance of waterproofing products and tiling systems, to keep product suppliers and manufacturers accountable.

The key path to compliance is testing to ensure products in the market meet the requirements of AS4858, AS4654.1 and ISO13007.5. Waterproofing and tiling systems used in domestic and commercial construction are being assessed more frequently than ever before as the industry is pushing to eliminate the costly problems attributed to inadequate product quality that have plagued building failures.

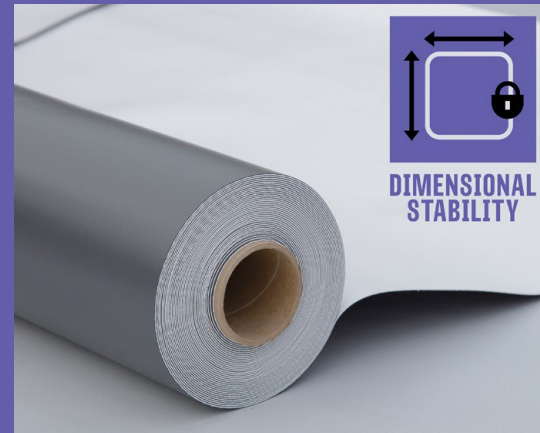
XTecGen Materials Testing Services, Australia's only NATA registered laboratory to evaluate waterproof membranes to AS4858 and AS4654.1, carries out testing to all the requirements of these respective standards including ISO13007.5.

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- Seam testing and Dimensional stability tests for sheet membranes
- Puncture and Tear resistance of sheet membranes
- Bond strength
- Adhesion to substrate or to specific primers
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- Bio resistance
- Temperature resistance

In addition to these services, XTecGen can test products to specific client needs that



may fall outside the limits of the Australian Standards, e.g. to British Standards, ASTM or ISO standards. Some of the largest global brands operating in the Australasian construction market are now utilising the testing services of XTecGen to have their waterproofing and tiling systems tested to ensure they have products that meet all the demands and requirements of Australian Building Standards. For more details on the testing bundles offered by XTecGen and services provided, contact [info@xtecgen.com](mailto:info@xtecgen.com) or 1300 152 298.

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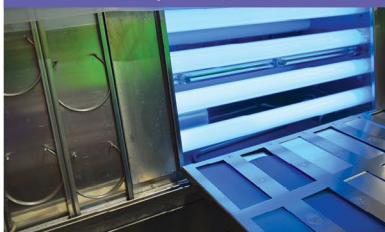


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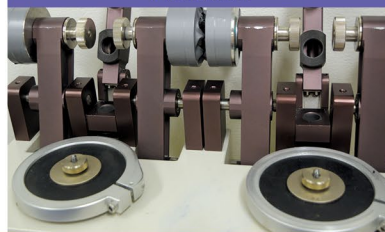
Cyclic Movement



UV/Weather



Abrasion



Elongation/Textile





# Ceramic tile imports bounce back in FY2020-21

Peter Halliday writes the latest figures from the Australian Bureau of Statistics for the 2020-2021 financial year ending on 30 June reveal a 10.9 per cent increase in ceramic tile imports above the 2019-2020 volume.

Total ceramic tile imports for 2020-2021 were 44,236,064 square metres. That is 5.6 per cent below the import peak level of 46.8 million square metres reached back in March 2017. The total Australian customs value of tile imports in 2020-2021 was AUD437,628,263, an increase of

only 0.7 per cent over the last financial year, the lower increase in value being due mainly to a significant improvement in the Australian Dollar foreign exchange rate during 2021.

The Australia to US Dollar exchange rate averaged 0.67 cents during 2019-2020 but rose to

average 0.74 cents during 2020-2021. Tile import volumes and Australian customs values over the last 10 years is shown in Fig.1.

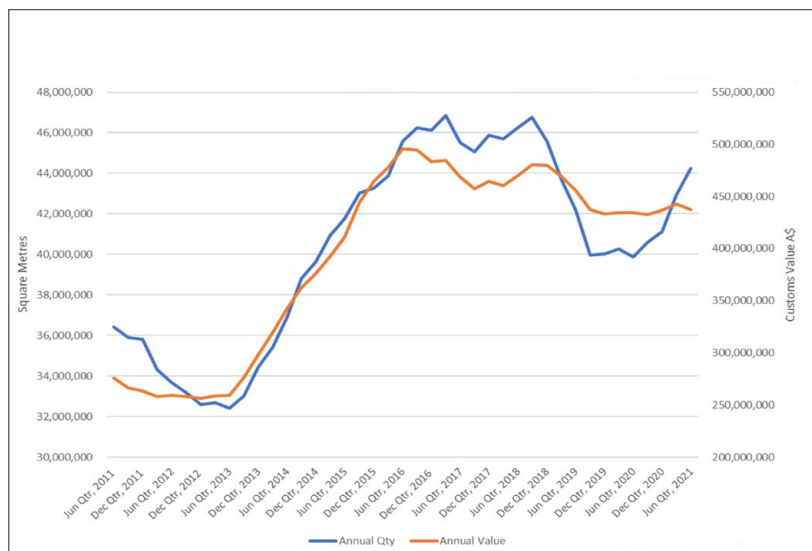
Details of the countries of origin, state volumes and total value is shown in Fig.2. Imports from China rose by 12 per cent over the previous financial year, to exceed 32 million square metres or 72.4 per cent of total imports, the highest volume since September 2018. The Australian customs value from China was 58.3 per cent of the total with an average value of AUD7.97 per square metre.

Imports from Italy increased by 24 per cent in volume and 2.9 per cent in value reflecting the trend towards higher-end product imports from Italy. Italian tiles made up 9.4 per cent of total volume and 20.4 per cent of total value. The average Australian customs value from Italy was AUD21.58 per square metre.

Spain overtook Malaysia last year and was again the third largest source of tiles with import volumes increasing by 30 per cent in 2020-2021 while the total value fell by 1 per cent. Spain supplied 5.1 per cent of total volume and 8.8 per cent of total value. The average Australian customs value was AUD17.13. This was significantly lower than the average from Spain of AUD22.51 in the previous financial year. During the June quarter 2021, the import quantity from Spain was 55 per cent higher than the March quarter while the average Australian customs value was much lower at AUD12.29.

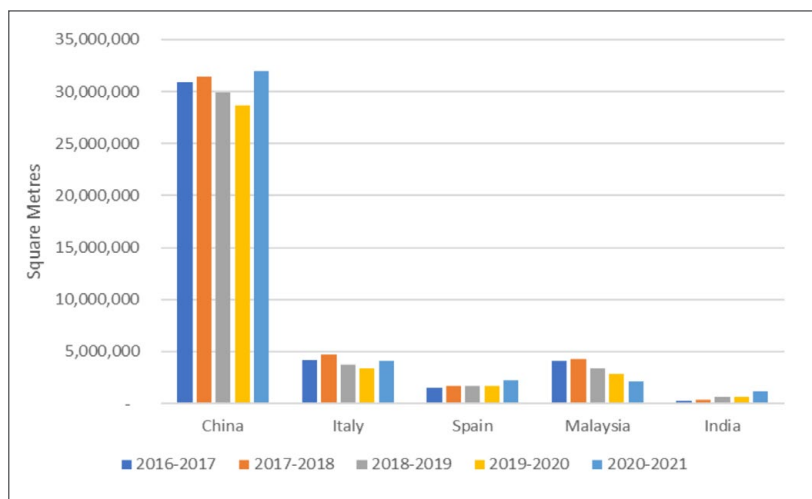
Malaysia represented 4.8 per cent of total imports and 3.5 per cent of the total value. Imports from Malaysia fell by 25 per cent over last financial year, which follows a 16 per cent fall over the 2018-2019 financial year. Imports

FIG.1 AUSTRALIAN CERAMIC TILE IMPORTS 2011 - 2021



Based on ABS data

FIG.3 TOP CERAMIC TILE SOURCE COUNTRIES



Based on ABS data



**FIG.4 STATE SHARE OF CERAMIC TILE IMPORTS**

	Financial Year	New South Wales (inc ACT)	Northern Territory	Queensland	South Australia	Tasmania	Victoria	Western Australia	Combined Total M2	% Change M2 to Previous Year
<b>State Total</b>	2016-2017	18,618,431	351,876	9,811,664	2,055,415	213,268	10,407,232	4,051,627	45,509,514	-0.2%
% of annual total		40.9%	0.8%	21.6%	4.5%	0.5%	22.9%	8.9%	100.0%	
<b>State Total</b>	2017-2018	18,762,413	359,866	9,542,365	2,017,243	202,181	11,499,975	3,851,270	46,235,311	1.6%
% of annual total		40.6%	0.8%	20.6%	4.4%	0.4%	24.9%	8.3%	100.0%	
<b>State Total</b>	2018-2019	17,512,744	249,604	8,012,069	2,012,168	236,768	10,808,548	3,345,253	42,177,154	-8.8%
% of annual total		41.5%	0.6%	19.0%	4.8%	0.6%	25.6%	7.9%	100.0%	
<b>State Total</b>	2019-2020	15,508,943	221,068	7,704,671	2,084,898	224,454	10,948,933	3,178,153	39,871,308	-5.5%
% of annual total		38.9%	0.6%	19.3%	5.2%	0.6%	27.5%	8.0%	100.0%	
<b>State Total</b>	2020-2021	16,683,099	358,272	9,559,133	2,281,658	218,872	11,433,552	3,701,476	44,236,064	10.9%
% of annual total		37.7%	0.8%	21.6%	5.2%	0.5%	25.8%	8.4%	100.0%	

Based on ABS data

from Malaysia have halved since September 2018.

Imports to Australia from India continued to increase, rising by 75 per cent over last financial year. Indian tiles represented 2.6 per cent of the total volume and 2 per

cent of total Australian customs value. The average value was AUD7.82. India has become the second largest global exporter of ceramic tiles after China.

The top five source countries supplied 94.2 per cent of all

ceramic tile imports. A five-year history of imports from those countries is shown in [Fig.3](#).

State imports are broken down in [Fig.4](#). New South Wales is the largest declared destination state,

→ 36

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→ followed by Victoria. While both states increased over the previous financial year, the increase for both was below the national average. Imports into Queensland and Western Australia were well above the national average increase at 24 per cent and 16.5 per cent respectively. South Australia increased by 9.4 per cent while Tasmania was the only state to record a fall in imports by 2.5 per cent. Imports to Northern Territory increased by 62 per cent. ■

Peter Halliday has a life-long involvement in ceramic tile design, manufacture, import and distribution of tiles, natural stone, and glass mosaics

**FIG.2 AUSTRALIAN CERAMIC TILE IMPORTS 2020-2021**

COUNTRY OF ORIGIN	DECLARED DESTINATION STATE							Total Imports (Square Metres)	Total Australian Customs Value (AUD)
	New South Wales	Northern Territory	Queensland	South Australia	Tasmania	Victoria	Western Australia		
Argentina						991		991	\$12,974
Australia (Re-imports)	3,003					189		3,192	\$78,494
Bangladesh			16,248					16,248	\$44,572
Belgium	4,179			7,437		83		11,698	\$233,169
Belize			1,080					1,080	\$19,183
Brazil	75,741	1,115	18,922	2,058		14,838	9,762	122,435	\$1,693,110
Bulgaria				173	262		135	570	\$7,357
Canada	503					829		1,331	\$45,441
China (excludes SARs and Taiwan)	12,026,667	292,983	7,101,230	1,821,814	146,178	8,181,601	2,435,787	32,006,260	\$255,029,944
Czechia		6,372		6,228			5,409	18,009	\$174,097
Egypt			200					200	\$4,062
France	8,171		36,419	2,206		1,381	18,013	66,189	\$663,348
Germany	71,839		17,011			30,524	5,443	124,817	\$3,990,976
Hong Kong (SAR of China)	1,172			5,804		748		7,725	\$97,197
India	601,697	2,087	112,552	99,184	5,187	203,651	108,476	1,132,834	\$8,862,463
Indonesia	93,956	13,065	101,239	11,581	9,088	34,362	43,119	306,410	\$2,935,966
Iran	990					729		1,719	\$13,612
Italy	1,537,151	8,412	897,495	115,085	25,003	1,024,040	531,969	4,139,156	\$89,332,658
Japan	72,061		4,105			89,154	969	166,288	\$3,394,404
Korea, Republic of (South)	176,853		1,916				276	179,045	\$1,524,488
Malaysia	419,155	19,033	537,477	168,534		913,824	80,093	2,138,116	\$15,467,669
Mexico	25,316		1,025			107	57	26,505	\$141,594
Morocco	11,954		924	77		4,512	48	17,515	\$1,106,181
Netherlands	2,298					5,031		7,328	\$216,688
New Zealand	2,431		259			500	26	3,216	\$75,681
Oman						2,534		2,534	\$12,808
Poland	10,623					53,690		64,313	\$152,480
Portugal	19,085	975	22,026			19,260	8,242	69,589	\$1,371,185
Russian Federation	2,115							2,115	\$177,201
Singapore						1,244		1,244	\$8,680
Spain	1,036,069		463,291	16,745	33,153	502,677	197,956	2,249,891	\$38,541,106
Sri Lanka	65,375	1,169	83,130			6,234	176,944	332,852	\$3,356,807
Taiwan	1,463		7,305	4,765		2,307		15,840	\$158,217
Thailand	72,135		35,385	4,638		70,422	30,705	213,285	\$1,745,080
Turkey	62,770		55,140	9,585		71,807	20,400	219,702	\$2,658,998
United Arab Emirates	159,291	11,624				43,722		214,637	\$2,500,605
United Kingdom	501		125	130		1,824	289	2,869	\$337,014
United States of America	11,559		22,864			705	18	35,145	\$253,523
Vietnam	106,977	1,437	21,766	5,615		150,033	27,341	313,170	\$1,189,231
<b>Grand Total</b>	<b>16,683,099</b>	<b>358,272</b>	<b>9,559,133</b>	<b>2,281,658</b>	<b>218,872</b>	<b>11,433,552</b>	<b>3,701,476</b>	<b>44,236,064</b>	<b>\$437,628,263</b>
<b>State Share</b>	<b>37.7%</b>	<b>0.8%</b>	<b>21.6%</b>	<b>5.2%</b>	<b>0.5%</b>	<b>25.8%</b>	<b>8.4%</b>	<b>100.0%</b>	

Based on ABS data



# Kevmor's top tools for tilers

From its beginnings as a carpet flooring specialist, Kevmor has evolved in to a “go to” place for tiling tools and equipment. It looks for inventive solutions for customers after gaining a deep understanding of their needs.



Kevmor's premises in Belmont (WA). It celebrated 40 years in business in 2020.

**K**evmor has proved itself very adept at selecting tiling tools that tilers want to use. Based in Western Australia (WA), the company celebrated its 40th anniversary in 2020, and currently employs around 20 staff and has over 10,000sqm of warehouse and showroom space. Its work representing Wagner Meters' Rapid

RH L6 Complete Starter Kit in Australia has won the company an International Distributor of the Year award.

Jason Spangler, sales manager for US-based Wagner Meters, said: “A big factor in Kevmor's remarkable success as an overseas Wagner Meters distributor has to do with shared company values.

The people, dedication, and enthusiasm for an industry are what separate Kevmor from many in the business.

“It's not just about making money; it's about making a difference. This is one of the reasons Wagner and Kevmor have created such a strong partnership in the Australian market, we have many common business philosophies.”

“We are thrilled to receive the top international distributor award from Wagner Meters ... With the new Australian standards requiring an improved moisture testing regime, we stock the Wagner Moisture Metres which include the latest Bluetooth technology sending results straight to your phone,” Kevmor said.

The Kevmor team have a knack for sourcing products with strong potential in the local market. The Novoryts floor repair kits from Switzerland have recently been added to the company's offering.



Kevin Mort is surrounded by three of his children who work in the business, Simon, Vincent and Virginia



→ Kevmor discovered these products at a trade show and immediately ordered them for its stock lines.

Today, Kevmor has grown into a complex importer and distributor supplying an extensive range of flooring installation tools, carpet tiles, sheet vinyl, planks, rigid core and marine carpet. They have a keen eye for innovation, develop strong relationships with their suppliers and are driven to find products that make an installer's job easier.

### It began with carpets

From being primarily a carpet wholesaler, the business has constantly evolved and maximised opportunities to diversify and extend their offering. Located in Western Australia, where there is a scarcity of trade supply outlets, Kevmor saw the potential to service a growing demand and stock a large range of tool products that crossed over multiple flooring industries.

Kevin J Mort Agencies was originally established in 1980 by husband-and-wife team, Kevin and Shirley. The business initially provided United Carpet Mills products. It soon expanded to include upholstery fabrics and an extensive range of carpets, as well as accessories for furniture manufacturing.

The company has become known for stocking a wide range of tools to suit all types of flooring applications. This matches the move by a number of tile stores to sell hybrid flooring and vinyl planks that require specific tools for a different range of materials. Available tools include much-needed basics such as kneepads,

tile cutters, scrapers, grinders and adhesives. Kevmor also stocks some specialty lines, such as the Janser German made floor removal machines, Polivac floor sanders, Husqvarna floor grinders, air ionisers and dust collectors.

### Family and future

As the business has grown, it has become even more of a family affair, with three of Kevin and Shirley's seven children becoming part of the business. Together, their different skill sets have been integrated into the company. Simon's sales background and Vincent's extensive technical knowledge are very useful for repairing tools, making purchasing decisions and checking suitability for the market. Virginia's accounting and marketing experience further complements the management team. They are well supported by long serving and experienced staff that will help them continue to develop Kevmor into the future.

In terms of product development, the company has been very influenced by the trend towards sustainability. Its latest products are focused on being environmentally safe for the contractor and the end consumer. For example, Kevmor has a range of water-based adhesives that are green building certified such as Mapei's water-based formulations that reduce dust during mixing and application, have very low volatile organic compounds and low emissions of bad odours. All Ardex products are also virtually 100% recyclable.

Initially, it found that some contractors were challenged

by these products, but now the industry sees the health benefits and prefers to use them over the solvent-based products.

### Training

Kevmor is also heavily involved in providing industry training. Many years ago, the company was originally approached by the local TAFEs to train apprentices on different tools and techniques. The Floor Covering Institute of Australia also requested its assistance to develop training techniques and video demonstrations.

Kevmor is focused on ensuring its customers understand how to use the right product for the right application, to avoid problems in the future. Unfortunately, due to COVID-19 a lot of training programs have been cancelled. However, there are more slated for later this year, if everything goes well.

To meet the ongoing demand for customers asking for demonstrations, the company has made several "how to" videos available online.

### Business impact

Every year the Kevmor directors travel to all the major exhibitions around the world, sourcing the latest innovations. Obviously, the pandemic has impacted the way Kevmor searches for new products. Not only are there harsh travel restrictions, but far fewer trade shows are taking place.

Video conferencing has helped the business to keep in touch, but there are times it has been difficult not having the face-to-face



Kevmor is very involved in providing industry training at its premises





contacts with customers and suppliers.

"It's been difficult and very disappointing having to postpone all our training events. There are still new products becoming available, and suppliers are still sending samples through. But having a live demonstration is always preferable, being able to see how products and tools perform [in person], experiencing a hands-on trial and being able to ask questions directly to the experts in the field has been sorely missed over the last 18 months," said Kevmor.

The company prides itself on having extensive knowledge and experience in the field, and being able to access the latest products for its customers. In addition to its bricks-and-mortar premises, Kevmor's digital presence allows customers to access an extensive product range that is shipped Australia wide. ■

## Wagner Meters at Kevmor

The Rapid RH® L6 sensors feature a customised version of the SHT35 humidity sensor from Sensirion that has a +/-2% accuracy tolerance at 50% and 90% relative humidity (RH). This important aspect of the L6 concrete RH testing system puts it in direct compliance with ASTM F2170. Standard SHT35 humidity sensors, found in other concrete RH test systems, start to deviate from the +/-2% tolerance at RH levels as low as 50%.



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# National Tiles in Tasmania

After the successful launch of its mega store in Alexandria (NSW), National Tiles has launched a flagship showroom in Hobart (TAS). The store holds large quantities of stock on site which gives it a key competitive advantage in the market.



An overview of National Tiles' Hobart store

**T**he opportunity to enter the Tasmanian market came about when the National Tiles team discovered a 3,500sqm site with ample parking space located in Cambridge, a suburb of Hobart. A former K&D hardware store was re-purposed and updated to become the group's flagship showroom and trade mega store in Tasmania.

Prior to the store's opening, National Tiles had supported a number of local builders with tiles from Melbourne. CEO Campbell Stott said, "Convenience is so important to our customers. We believe that our onsite stock availability will significantly alleviate the traditionally long lead time Tasmanian shoppers have faced in getting tiles and flooring..."

"Our trade customers in particular love the convenience of being able to get all of their tiling materials and supplies from the one location, all from an [on-site] drive-through. Importantly, our

customers are enjoying the stock availability on offer for all our ranges. Having a warehouse on site means that our customers can get their product the same day ... Traditionally Tasmanians have had to wait three or four months to get

stock. Our ability to immediately assist our customers with their home renovations by having stock on hand has been critical and has worked incredibly well."

Since opening, over 1200 customers are visiting the store



The Hobart team is a fantastic group of people from all different backgrounds, according to CEO Campbell Stott



every week, exceeding the group's expectations. The store is part of the Cambridge Centre which is anchored by Harvey Norman and about 15 minutes from the Hobart CBD. It is sign posted from the main road, and situated on the highly trafficked Tasman Highway.

Within the store, the timber collection has been popular with local customers. "We have created an amazing timber space within the store, wall to floor, and customers are really enjoying being able to see, feel and walk on the timber. Around 20% of our retail orders are timber and hybrid timber hard flooring which is reflective of the Tasmanian market," said Campbell.

There has also been a major interest in large format tiles with the depth and breadth of the complete range unlike anything Tasmanians have enjoyed before, according to Campbell.

National Tiles has put together a Tasmanian store team that includes store manager, Andrew Long and Jacob Daniels who looks after trade.

From Andrew's perspective, the opening was a great success. He said, "Feedback from customers is that they love how open, modern and welcoming the showroom is, as well as how friendly and easy the team is to talk to. With the addition of National Tiles

to the Cambridge Homemaker Centre, it has really become the one-stop destination for all home renovation and building needs.

"We bring a refreshing facelift to the Tasmanian market, offering tiles and flooring options from around the world including Spain, Italy and Australia ... We look forward to seeing our tiles in many beautiful Tasmanian homes in the coming years."

Jacob adds, "Having products readily available at an affordable price is a luxury to Tasmanians, so the tradesmen are delighted to have us here. We have already had a great deal of positive feedback regarding our location, pricing,

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In-store displays in National Tiles' Tasmanian store



The trade drive-through is ideal for installers and specifiers getting their product quickly and conveniently



Customers in Tasmania have responded well to the range of large format tiles



→ and range of stock. From the professional tilers and builders to the DIY home renovators, our trade store has something for everyone."

In addition to retail and trade specialists working at the store, there is a business development manager who is focused on partnerships with local builders, developers and interior designers. Campbell said, "There's a really terrific vibe. It's been a great start and we're really excited about the opportunities in Hobart, and for all Tasmanians who can order online and have stock delivered to them no matter their location."

### Sydney store progress

In Alexandria, there was a real air of excitement about what National Tiles was offering, according to Campbell. "The showroom itself really is spectacular. So we started with a flurry of activity and new customers," he said.

"Unfortunately when lockdown hit Sydney, we were faced with some wild fluctuations in terms of COVID-19 restrictions and currently there is no browsing allowed in store. We have had to be agile and innovative, and re-work our business model for that store. We focused on developing new ways to connect with our customers, including click-and-collect for samples and for online orders. Our trade store has



Timber flooring is very popular in the Tasmanian market

remained open for local trades who continue operating.

"We had to pivot in a way that still offers our customers a fantastic range and mix of products. Obviously we can't gauge the success of the new store by foot traffic, however our ability to service our customers in other ways has established a really solid foundation for National Tiles in the Sydney marketplace."

The Sydney team has responded well to the challenges of managing a retail store during lockdowns despite being quite new. Much effort was made to make them feel part of the

National Tiles family. Campbell explains, "We have done our best to foster a great working environment for them despite the circumstances – having regular Zoom meetings and organising lunch deliveries for them – to ensure they feel supported, connected and valued.

"What they have been going through together will be build such a strong bond between the store team, the warehouse team and the trade team.

"Whilst we can't control the 'uncontrollables', our mantra has been to control the elements that are within our power. Helping



The National Tiles store in Tasmania is located within the Cambridge Centre, only 15 minutes from the Hobart CBD



customers with their needs, getting them samples and products as quickly and efficiently as possible in the safest way we can, is what we have been able to achieve.

"The magnitude of the operation in Sydney is unlike anything National Tiles has done elsewhere, with the largest showroom and the largest drive-through trade store. It is a big site to manage, so great teamwork is so important. Building a team that can handle the variety and scale of customer needs has been vital to the success of the store."

Retail manager, Jacob Watmore said, "Customers are absolutely loving the showroom design, service and ease of access to the location. National Tiles is unrivalled in Sydney when it comes to tiles and flooring."

The Alexandria store has attracted a lot of interest through its European range of tiles, especially the terrazzo collection. The large format tiles seem to have gained more interest in NSW than other states, according to Campbell.

"From a trade perspective there has been tremendous interest in our tool range – our trade customers have been really impressed by the depth and breadth of our offering. Alexandria has double the trade customer base of any store in the country," he adds.

Trade manager, Ben Wright said, "The whole offering indoors with the drive-through has been extremely popular. Tradesman are saying we are a one-stop-shop. With our opening hours and location, we will only continue to grow."

The Tile Bar and Tiles Express design tools were highly sought after when the store first opened. The Tile Bar offers inspiration around the individual tile – a QR code on the back of the tile integrates with the software so customers can deep dive into the specifics of the tile and how it can be used. Tiles Express creates 3D images of individual house plans so our customers can see how their selected tile will look in situ.

"This service has worked really successfully for our builders, designers and developers, and we are now developing this opportunity for our retail customers as well," said Campbell. ■

## About National Tiles CEO, Campbell Stott



Campbell comes into the CEO role as an experienced retail leader after holding retail director, managing director and CEO roles across the liquor, fresh foods and home/residential flooring sectors. Prior to National Tiles, Campbell was the managing director of Dan Murphy's, and has led large teams in retail merchandising and operations within the liquor and fresh food categories at both Coles and Woolworths. He specialises in leading high performing teams, retail execution and strategy.

"Earlier this year, Frank's son Nick Walker, who joined the business in the 1990s and took over as CEO nine years ago, passed the baton and gave me the opportunity to take on the challenge of leading National Tiles," he said.

"I am thrilled that Nick will be joining the Board, and continue to add his tremendous insights and industry knowledge to the business.

"Having been in the company for two years as executive director – sales, marketing and strategy, I am honoured and privileged to be steering this family company into the next chapter of its incredible story. Our vision is to be THE destination for hard wall, floor and outdoor surfaces, our mission is to inspire our customers to the very best tile, timber and stone finish — and my mantra is that, if we put our customers and team first great things will happen!

"National Tiles is more than just a business, we are a family. We acknowledge our humble beginnings whilst always looking to the future. Our core values are centred around respect, team work, customer commitment, innovation and a relentless desire for improvement, which keeps us on target as the ultimate tile, timber and stone destination."



# A POST-PANDEMIC PICK-ME-UP FOR TILING?





**AFTER AN UNPRECEDENTED YEAR THAT HAS SEEN THE CANCELLATION OF ALL MAJOR CERAMIC TILE EXHIBITIONS AROUND THE WORLD DUE TO THE PANDEMIC, COVERINGS PROVIDED THE FIRST LIVE SHOWCASE FOR NEW CERAMIC AND PORCELAIN TILE DESIGNS AND INSTALLATION PRODUCTS, SINCE CEVISAMA 2020. TILE TODAY INTERNATIONAL CORRESPONDENT, JOE SIMPSON REPORTS.**

Coverings — considered the largest international tile and stone exhibition in North America — returned to the Orange County Convention Center in Orlando, Florida from 7th to 9th July.

Obviously, it was far from business as usual. Health concerns, travel restrictions, and social distancing protocols affected overall attendance and the feel of the event itself. But for the international ceramic tile industry, this was a welcome first step on the path back to normality.

As well as attractions for on-site attendees, Coverings 2021 curated an interactive, virtual event

in parallel with the live show. For people who could not attend the event, they could still participate in the event as it was happening. The virtual event provided online access to global tile and stone exhibitors and educational sessions. Coverings' virtual platform was available from late June, just prior to the start of the in-person event.

"Coverings' onsite and online offerings allow attendees of the show to join us in their own way," explains Jennifer Hoff, president of event organiser, Taffy Event Strategies. "By providing a hybrid platform, which comprises a wide array of onsite and web-based

learning opportunities, Coverings is creating a means to learn and engage with the ceramic tile and natural stone industry in a variety of ways.

"Coverings is the world's stage for introducing the most innovative tile, stone and installation products," said Hoff. "We have organised a cutting-edge show floor that will allow visitors from every facet of the industry to touch, feel and compare the newest and trending products. In addition, attendees will gain access to many networking and education opportunities, including



- complimentary Continuing Education Units through sessions, live installation demonstrations, interviews with industry thought-leaders, and business-building resources.”

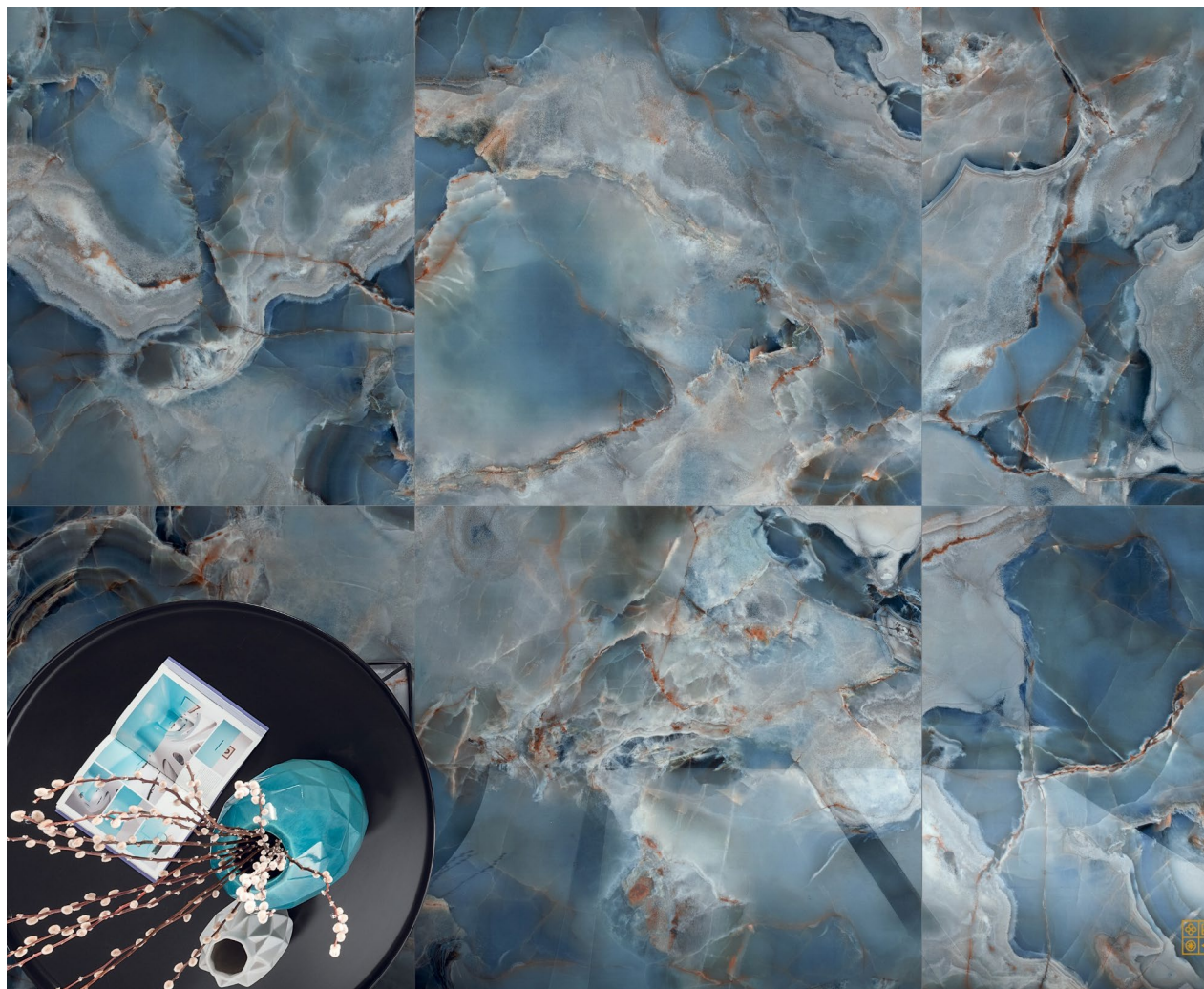
A key element of the event returned in 2021. The Coverings Rock Stars program recognises 16 of the best and brightest young talents in the sector. Now in its seventh year, this program is part of Coverings’ mission to support the growth and success of the industry.

One of the newest attractions, the Coverings Lounge, hosted the Artisans in Tile program and presentation, during which The National Tile Contractors Association (NTCA) broadcast a live installation of a freestanding mosaic with a Florida alligator theme.

Contractor Tours, organised



Wisp combines deco tiles and porcelain field tiles with hexagon mosaics and 2x2 mosaics in a collection of soft tones. Offered in both matte and polished, Wisp mirrors the look of natural stone.



Onice Reale by Tagina pays homage to a rare variety of Persian Onyx with its deep emerald tones, differing intensity of the shading, and characteristic colour tones ranging from grey to white, green to brown





Ceramica Fondovalle has extended its nature-inspired Dream collection with a new Garden décor. It has a colourful and delicately textured wallpaper effect.

by the NTCA, took participants around the show floor \to see the latest tools and equipment.

The Coverings Lounge also accommodated interviews with industry leaders, and the Society of American Mosaic Artist's One Hundred Moments in Mosaic exhibit.

Dog houses remain one of the focal points at Coverings. This year NTCA member companies worked with the Pet Alliance of Greater Orlando to create one-off tiled dog houses that were briefly inhabited by puppies in the charity's care. This is a never-to-be-forgotten experience for dog-lovers and tile-enthusiasts alike.

### EXHIBITORS ON SHOW

One of the best displays at the show was Strada Dinamica, the

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La Fabbrica's Pierre des Chateaux range calls to mind the stone used in French castles. Pictured is the tile in Chambord (grey). Other colour options include Chenonceau (dark grey), Cheverny (light grey), Fontainebleau (sand), and Ussé (white). Pierre des Chateaux comes in various formats in an 8.8mm thickness, plus an R11 anti slip version in 20mm for outdoor spaces.



## COVERINGS 2021

- Ceramics of Italy stand. Designed by e+i Studio, it was modelled on an Italian streetscape with tiled furniture, an info kiosk, and a meeting point for visitors to enjoy authentic Italian coffee and gelato.

Ceramics Of Italy participated in the annual Global Tile Trends session where industry professionals discussed upcoming tile trends, developments in materials and technology, creative design ideas, and more.

Other companies to show off their latest ranges at Coverings 2021 include Pastorelli, Ceramiche Refin and Grespania.

The Nordic and refined shades in the Colourful range from Pastorelli are Cotton, Concrete, Sand, Mud, and Ocean, complemented by light and dark Stracciatella decors. The main format options are 1,200 by



Mus\_art from Sichenia is a range of coloured body porcelain stoneware tiles



The Mélange Oltremare (blue) tile from the Ragno brand is one of the nine different shades offered in this tile series. Mélange borrows from the Moroccan ceramic tradition and is part of Storie, a series of small-size collections with a hand-crafted aesthetic.



Art project by Sichenia focuses the concept of hand decoration onto porcelain stoneware. Shown is the Tropical range that features metallic colors and iridescent grits.

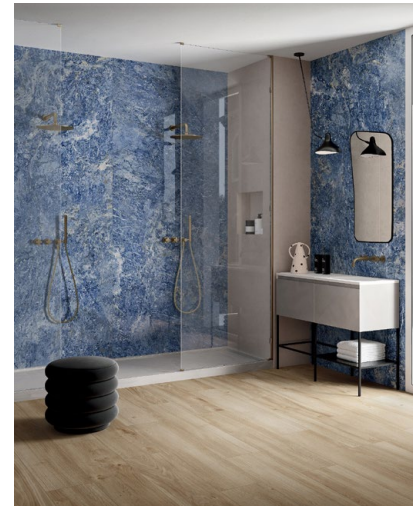




Stone Trace is part of Panaria's antibacterial Protect collection of porcelain stoneware products featuring surfaces with a silver ion shield that can eliminate up to 99.9% of bacteria. The collection features five colour variants: from the light, bright shades of Glade to the minimal tones of grey interpreted by Creek and Abyss, the warmer shades of beige presented by Crest, and Hollow, a striking design with rust-coloured inserts on a dark charcoal base. This range is one to feature Panaria's bold 1,200 by 2,780mm format, which is particularly effective for cladding applications.



Porcelánicos HDC is inspired by the marble mountains of Vietnam with its 3D porcelain stoneware collection, Thuy. It is ideal for bringing a vibrant and sculptural touch of marble into the home.



Sophisticated glossy and true to real stone, the Infinito 2.0 range from Fondovale is a stunning stone look in four colours and is able to be book matched. The sizes available enables the creation of slab look walls.

→ 1,200, 600 by 1,200, 800 by 800, 600 by 600, and 300 by 600mm, plus 300 by 300mm 36-piece sheet mosaics, and 300 by 600mm striped decors. The collection is completed by 75 by 400mm glazed brick-effect wall tiles in Cotton, Concrete, Carbon, Sunflower, Pine Green, Ocean, and Mud.

Out 2.0 is the collection of 20mm thick tiles specifically designed by Ceramiche Refin for outdoor applications. Stand out designs include Risseu with its marked three-dimensionality, and the Pietra di Cembra, a Porphyry effect in three colours — Natural, Grey and Rust — in 900 by 900 and 450 by 900mm formats.

The Verdigris colour from Refin's Foil collection, highlights how this porcelain range looks like metal



La Fabbrica's Chromatic is an extensive collection with a palette of 80 colours (18 prime colours in stock and 62 project on demand colours). The collection is enriched by decorative modular tiles designed by Massimo Iosa Ghini, an important figure in Italian architecture and design.

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## COVERINGS 2021

→ plates with small scratches and marks that are all but invisible at first glance. This range has a post-industrial retro charm that fits in well with the popular Wabi Sabi aesthetic.

Large format slabs are becoming ever more popular as fewer joints helps minimise bacterial growth. Grespania's Coverlam is manufactured in slabs of up to 1,200 by 3,600mm, opening up possibilities in the field of construction and interior design. Typical designs include Coverlam Ankara and Coverlam Calacata Gold.

Tiles with a polished finish can be cleaned more easily and are more durable for areas that need to be disinfected frequently. Grespania has captured this trend with Artic, an 800 by 1,600mm porcelain tile or Coverlam Corinto Infinity in 1,200 by 2,600mm.

Green shades such as Coverlam Saint Denis Verde, or Grespania's Icon Rambla 75 by 300mm porcelain tiles, meet the growing



In Del Conca's Terre Garzate, geometric shapes are repeated and overlap with each other in an infinite array of combinations and visual effects. This collection of 200 by 200mm floor and wall tiles features warm and deep colour effects: Gesso, Cenere, Pepe Nero, Terra, Caffè, Senape, and Guado.



Inspired by natural stone and venetian terrazzo, the Camelot collection from Ceramica Happy House Italia comes in eight colours, including four terrazzo-effect designs, and three sizes up to 900 by 900mm.



→ demand for natural materials with character and personality.

Biophilic designs, ideal for rooms seeking to convey calm to improve psychological well-being, are popular right now. Grespania taps into this trend with Indiana, or the Marsella (600 by 1,200mm) and Selva (290 by 1,600mm) from its Bellacasa brand.

## PRODUCT PREVIEW

A number of companies previewed some of its newest tile and stone products for Coverings 2021.

Four new colours — Amazonite, White Beauty, Sodalite Blue, and Patagonia — have been added to Infinito 2.0, the porcelain collection from Ceramica Fondovalle that reinterprets the finest marbles.

American Wonder Porcelain's light and airy Annora™ Porcelain series is a contemporary interpretation of a linear stone look and is offered in two finishes, two subtle colours and a diverse

size package featuring large formats.

Inspired by trending shapes elevated with metallic accents, the On the Edge collection from Anthology Tile has a timeless palette of white, blush and grey ceramic framed with real gold, platinum and rose gold metals.

Watercolour from Bestile is a marble look tile collection that can create "exciting movements" with its depth of colour undulation in white, grey and marine shades. These detailed marble effect porcelain tiles in 1,200 by 1,200mm and 600 by 1,200mm are an eye-catching choice for walls and floors.

Inspired by the look and texture of Luserna stone, the Lavaredo collection's stone-effect porcelain tiles by Ceramica Del Conca are available in two standard sizes, 600 by 600mm and 1,200 by 1,200mm. Colours range from



A precious slab suitable for refined interiors, Patagonia is the new marble look in EnergieKer's Ekxtreme collection. It is available in matte or polished finishes and sizes up to 1,200 by 2,600mm.

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Pastorelli's Colorful range evokes concrete material with a gentle and velvety texture that is soft to the touch, and suitable for all uses, both private and public.



Colorful by Pastorelli features seven coloured concrete-effects, plus seven glazed brick options. All the tiles are in a palette that is inspired by the timeless beauty of Venetian terraces.



- distinctive green, grey, and brown pigments to a variety of neutral tones.

The Multiplier mosaic tile collection by Crossville presents a concise offering of colours and shapes for modern floor and wall tile designs, as well as ease of installation and custom creativity.

The Amplify ceramic wall tile series from Florida Tile has a raucous mix of texture, pattern and colour that pushes design boundaries. The brand's East Village HDP colour-body, a porcelain floor and wall tile collection boast a wide range of rectified formats complemented by a dramatic, oversized waterjet-cut hexagon and five colour options.

Spanning a variety of formats, thicknesses, finishes, and effects, the Coverlam Corinto series by Grespania is notable for its 3D feel generated by abundant veining. Tonal changes range from bluish greys to rusty reddish shades. It includes the Corinto Infinity, a sequence of four pieces in 1,200 by 2,600mm format with continuous veining that forms an eye-catching 4,800 by 1,200mm tapestry.

Imola Ceramica's Trail18 is a range specifically created for pavements, driveways, courtyards, and residential zones with vehicle access. This 18mm thick range is available in a combination of small formats — 200 by 200mm, and 200 by 300mm — to offer easy maintenance and different laying patterns. The four colour options are red, greige, grey, and white.

The Chromatic porcelain tile range from La Fabbrica has a staggering palette of 80 colours and a series of decorative textures designed by architect Massimo Ghini, with 3D relief patterns in two finishes. Chromatic allows for endless arrangements on floors and walls with its organic surface and 10 sizes ranging from 100 by 100mm through to 300 by 600mm.

The Intrinsic Series by Lamosa USA is an arrangement of four multi-format stones. The timeless yet trendy Marquant, a Calacatta Gold, is a high-value porcelain tile with shiny gold veins over a bright white background. Sauvage is a statement stone with a highly



Play by Ceramiche Refin works on a palette of solid colours in large sizes, up to 1,200 by 2,780mm. There are six carefully selected matte colours — Beige, Black, Graphite, Greige, Grey, and White — in 1,200 by 1,200, 600 by 1,200, and 300 by 600mm, plus the larger 6mm sheet format in White only.



Life is Co from STN Ceramica is about mixing, blending and sharing. It is part of STN's Blocs series and reflects Nordic, Industrial, Stone Look and Boho-Chic decorative trends.



The 4Ever collection in Ponti Blue shown here, uses the Frank Gehry quote, "Architecture should speak of its time and place, but yearn for timelessness", as its main source of inspiration.

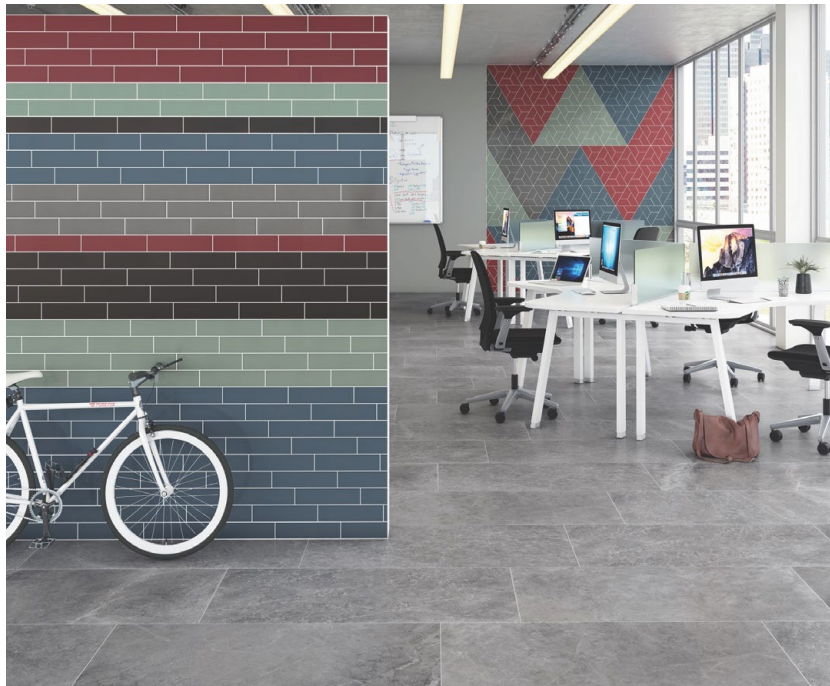




Trendy like the neighborhood of New York it is named after, Soho is a new brick design from Rondine. Fashionable and bold, the tile's surface is glossy, imperfect, and delivered in eight bold colours.



Natucer's D'Autore Enzo Caldaia tile offers five different designs with high quality raw materials and glazes to create 3D effects, metallic finish options, reactive glazings, craquel effects or solid colours.



Emotive by Florida Tile is a glazed ceramic wall tile that links art, aesthetics, and the built environment. Available in ten colours: Astonished White, Bashful Beige, Coy Grey, Triumphant Taupe, Gratitude Dark Grey, Envy Green, Pride Blue, Mischievous Red, Stoic Brown, and Bravado Black, all come in glossy or silk finishes. It is also GREENGUARD® certified.



Realonda Dakhla Aqua Circle.jpg  
Inspired by classic ceramic lattices, the DAKHLA porcelain range from Realonda combines the soft texture of natural terracotta with the traditional decorations reminiscent of lattices.

→ detailed, multi-tone look and textured feel that evokes the mineral and structural changes within the natural stones. The Intrinsic Series is available in 300 by 600mm, 600 by 600mm, and 600 by 1,200mm formats, and various matte finishes.

Natucer's Imagine is a wall tile that offers designers the possibility

to play, create and customise with colours, shapes and sizes.

Synesthesia by Lea Ceramiche has a soft, silky surface and marble-effect graphics that create veining patterns. Suitable for floors and walls of contemporary, luxurious interiors, this collection consists of four ceramic marble-effects, two decor effects, three

sizes up to 1,200 by 2,600mm, and three ultra-thin formats.

The Scenario glazed porcelain collection by Marazzi emulates tone-on-tone brush strokes typical of majolica tiles found in Mediterranean architecture. Available in 200 by 200mm matte

→ 54



→ tiles and decors, Scenario presents an interplay of opposites within six decors and three solid colours, creating abstract imagery through curves and clean lines.

The Big Slabs brand by Nuovocorso specialises in the production of large-format porcelain slabs, which are available in numerous styles and effects. Suitable for both interior and exterior applications, the slabs come in four finishes, three thicknesses, a 1,600 by 3,200mm size, and a brand-new 1,600 by 1,600mm format specifically designed for outdoor flooring.

XXL Lux Pamesa Ceramica is a new series of large format slimline slabs. The 1,200 by 2,600mm format is one of the most popular for big indoor areas. When it is combined with more conventional large formats, such as 1,200 by 1,200mm, interiors with visual continuity can be achieved.

Piqué by estudi{H}ac from Peronda is a tile collection inspired by an 18th century mechanised technique for weaving double cloth with a heavy cording weft. From realistic reproductions of fabric textures to upside-down 3D mosaics, the Piqué range includes many formats, shades, relief patterns, and textures.

The distinctive aesthetic of the Cement Block from Portobello America is created by chromatic nuances and fragments of aggregates. With more subtlety and smoothness, this new material brings the versatility of the cement and the refreshing air of pastel tones to walls or floors.

Lea Ceramiche's Synesthesia is a marble-effect collection that delivers a strong visual impact with an original, soft and silky surface. The colours include Gray Marble, Golden Borg (beige), Pure Statuario (white), and Calacatta Emerald (green).

Graphic dynamism, chromatic control, and studied metamorphic traits are all revealed in Italgraniti's Shale, a stone-effect range. The 9mm tiles are available in natural and ribbed surface variations in 800 by 1,600, 300 by 600, 600 by 1,200, 800 by 800, 100 by 600, and 100 by 309mm. A 20mm



Amazonite is produced by Spanish company, Cifre Ceramica. Considered as the "stone of hope" by the Egyptians, the Amazonite collection is inspired by this uniquely beautiful gemstone. With its water green colour, Amazonite has a dense and mottled texture and a chromatism that goes from brown tones to peach with white and grey incursions.



Rondine's Le Lacche design draws inspiration from the typical aspects of traditional Majolica earthenware but delivers modern and trendy tones. The range features twelve colours, and through the brightness of the surfaces, offers striking design options.



The Woods collection from Prissmacer is for "people looking for the warmest option in wood combined with the properties of ceramics, in a faithful digital reproduction".



Porto Petro is a wall tile from Grespania in a 45 x 120cm format. This collection draws on natural sandstone, with a rather cement-like look, characterized by a tonal softness and small contrasting details.



exterior version is available in 600 by 1,200, and 600 by 600mm.

There is an unusually extensive range of special pieces, plus mosaic options. The six colours in the Shale palette are Greige, Dark, Ash, Moon, Sand, and the recently added Taupe hue.

The Look collection by Ragno Ceramiche pays homage to the majolica tradition and the rich history of Italian ceramics. These 75 by 250mm porcelain stoneware tiles have a handcrafted aesthetic with unrectified edges, a glossy, imperfect finish, and organic variations in colour and pattern.

The elegance and nobility of marble are displayed in the geometric designs of the Venato series by Realonda. Thanks to Activ antibacterial technology, the Venato series offers hygiene and safety to any area.

Inspired by authentic artwork and hand-painted designs, the Mus\_art collection from Sichenia is created when layers of coloured dyes are poured onto the surface, producing an unique cohesion of shades. Available in four chromatic variation and a honed surface gives the slabs a semi-glossy reflection. This finish, called Soft-Touch, has a silky feel that is pleasant to the touch.

The Onice Reale range by Tagina pays homage to a rare version of Persian Onyx, with its rich colour palette and differing shade intensities. The collection spans six colours enhanced by a high-gloss finish, two thicknesses and five sizes, including two large formats: 1,200 by 2,600mm, and 1,600 by 3,200mm.

Tagina's Lilac pays homage to a natural oriental marble whose dramatic black veining against a white background sometimes creates a pale violet shade. Available in large and medium sizes, Lilac is for floors, walls, tables and bathroom basin tops, and stylish cladding for curtain walls. Lilac's extra-bright surface is obtained by using special granules during the manufacturing process. It



Fornace by Refin revisits terracotta in a modern key with large formats, subtle textures, graphic contrasts, and rich colours: Earth, Ivory, Saffron-yellow, Rosé, and Taupe.



Annie Blue is part of the marble-look, polished porcelain range from Alaplana Ceramica. It encapsulates the "design, style and precision" motto of the company.



BORGIO by Bestile can transform the look of rooms into a piece of art. The collection is available both matte or shine finishes.



The On the Edge collection from Anthology is made up of genuine rose gold, platinum, and 14K gold framed tiles in three colours of 4x16-inch and 6-inch hexagonal shapes



→ is available in both natural and rectified, and gloss/polished and rectified.

Paying homage to Tuscany's finest marble, Tagina's Statuario recreates the elegant marble beloved of classical sculptors. Statuario's appeal can be appreciated in oversize slabs measuring 1,600 by 3,200mm (available in both gloss and natural finishes). These have a brilliant background and cold grey veining, and are available in 6mm or 10mm thicknesses.

### THE NUMBERS

Face-to-face networking made its way back to the forefront of business-building at Coverings 2021, which had almost 10,000 registered attendees.

The 10,000 registrations is roughly 40% of the 25,000 who attended the expo in May 2018, when Coverings took place in Atlanta, Georgia. In 2017, when the show was last held in Orlando, Coverings reported the highest attendance in several years, with nearly 28,000 professional visitors, a 9% increase from Chicago in 2016, and a 10% up on Orlando in 2015.

Exhibitors' feedback confirmed that show-goers who attended Coverings 2021 were able conduct



Crossville's Shades 2.0 carries the cachet of the original Shades porcelain tile range with 13 elemental hues, patterned accent tile, and a choice of formats. The palette is a sophisticated mix of 13 modern neutrals: Frost, Vapor, Ink, Midnight, Mist, Ash, Thunder, Fog, Clay, Haze, Foam, Camel, and Russet. Shades 2.0 also offers a multi-directional graphic in a new patterned accent tile. The interior field tile formats are 24 by 24-inch, 24 by 48-inch, 12 by 2-inch, and 6 by 24-inch. Additionally, there is a 12 by 12-inch right triangle and smaller mosaic sizes.

business, make purchasing decisions and reconnect with the tile and stone industry.

For more information about

Coverings 2021, and Coverings 2022, which will take place 5th to 8th April, 2022, in Las Vegas, Nevada, visit [coverings.com](https://coverings.com). ■



The Trivial collection from Cevica features 135 by 135 by 135mm triangle wall tiles produced in eight colours, both gloss and matte. There is a choice of fancy decors to combine with the colours.



Trail 18 is a new collection designed specifically for outdoor installations in urban and residential settings. The porcelain tiles are 18mm thick and are available in two small sizes: 200 by 200mm, and 200 by 300mm.



# Houzz Pro visualisation tools help bring clients' projects to life

The leading online platform for home renovation and design, Houzz, has introduced a set of visualisation tools within Houzz Pro. The 3D Floor Planner and Mood Board tools, now available with any Houzz Pro subscription, helps residential construction and design professionals to easily communicate their vision for a renovation or design project to clients.

The Houzz Pro 3D Floor Planner allows designers, renovators and other professionals to create accurate 3D interior models which can be presented in walkthrough or dollhouse views to give clients a realistic preview of the finished project. Pros can use the built-in augmented reality (AR) room measurement tool within the Houzz Pro app to capture and store room dimensions.

The tool automatically generates both 2D floor plans and 3D models, which can then be modified in the 3D Floor Planner to include windows, doors, furniture and other room features to scale. A library of colour accents and floor finishes such as tile, wood and carpet, let pros customise walls and floors.

"We developed the Houzz Pro 3D Floor Planner and Mood Board tools to help designers, builders, and renovators communicate their vision and align with their clients on important project decisions early in the process,"

said Tony Been, Houzz Australia and New Zealand managing director.

"Considering recent supply chain constraints on timber materials for building or cabinetry, we're pleased that pros can use the Houzz Pro visualisation tools to expedite the decision-making process and order materials as soon as possible."

As kitchens are one of the most consistently popular projects among homeowners, the Houzz Pro 3D Floor Planner includes a robust set of kitchen features such as islands, cabinetry, drawers, sinks and taps. These details help pros demonstrate the value of making significant changes to a kitchen, such as adding an island or expanding cabinet space. Pros can even include nuanced surface details from hardware materials and finishes to benchtop styles and edges, offering a realistic look at the future space. Appliances are also available in a variety of sizes, such as refrigerators, dishwashers, stovetops, microwaves, ovens and range hoods.

Houzz Pro Mood Boards enable pros to showcase a project's look and feel through products, colours and inspiration photos. Products can be uploaded from a computer or added through the Houzz Pro Product Clipper, which captures and stores product images and information from any website. Pros can edit product images within each mood board,

including removing backgrounds, layering products on top of each other, and presenting the room with a 3D perspective to offer a comprehensive look at the space.

"As a designer, it is important for me to showcase my value right from the onset and using Houzz Pro's powerful visualisation tools takes the customer experience to the next level," said Natasha Hodgson, principal at property styling and interior renovation firm Bankson Design.

"Being able to show clients and leads a Mood Board or a 3D floor plan of their project helps them to envision the complete layout and their life in the space. They can see significant changes like removing a wall or adding an island, and in a click, they can give direct feedback such as approve or decline products. The entire process moves forward more smoothly because we're confidently aligned."

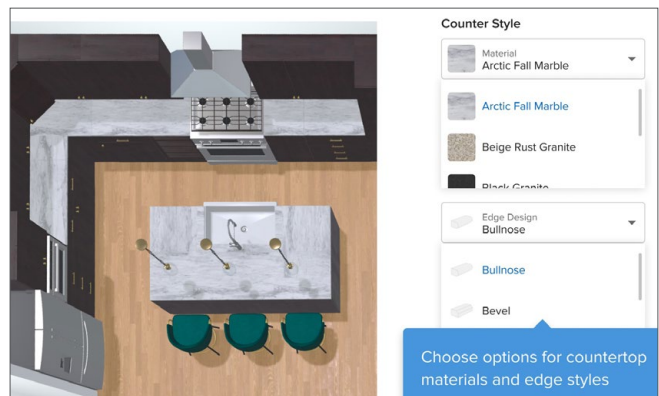
The 3D Floor Planner and Mood Board tools addresses key business needs across the entire project lifecycle from marketing to management. Combining these tools in one place streamlines processes for designers, renovators and other professionals.

Watch demo videos of the Houzz 3D Floor Planner here:

<https://www.youtube.com/watch?v=0X9ORFvpuQo>

Demo videos of the Mood Boards can be found here:

<https://www.youtube.com/watch?v=qs1vuHgIn2U>





# Cersaie returns as an in-person show

The ceramic tile industry's biggest event, Cersaie is coming back to the Bologna Exhibition Centre from 27 September to 1 October 2021. The 38th edition of the show will host around 600 exhibitors, including 41% international companies from 26 different countries.

This year, Cersaie Digital is a recent addition to the show and is intended to complement rather than substitute the physical show, according to organisers. The virtual platform will be available online for three weeks from 20 September to 8 October.

It will enable visitors to plan their days at the event and request meetings with exhibitors based on their availability. The business matching algorithm will give exhibitors and visitors the opportunity to find each other. Visitors can also consult 3D maps of the exhibition halls and zoom in on individual stands.

The Congress Center section will present the events planned for Cersaie, some of which will be streamed.

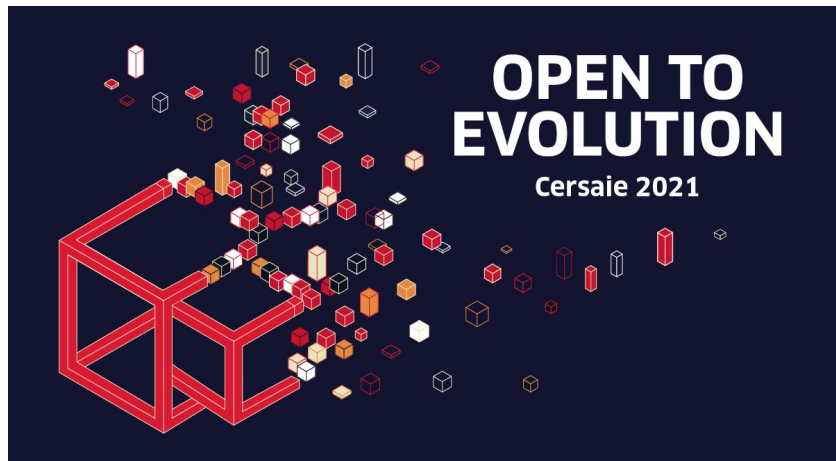
Along with a preview of the latest products and collections showcased at the show, the online platform will help attendees to continue exploring new products from manufacturers and consolidate business relations, after the in-person exhibition has come to an end.

On the first day of the live event, there will be the official opening of the Contract Hall and Archincont(r) act, a new space devoted to networking between producers and architecture firms and their clients in the real estate and contract sectors.

The Contract Hall will host leading Italian suppliers in kitchens, interior and exterior finishes, lighting technology, home automation, wellness and outdoor design. It has a C-shaped layout, a letter that symbolises the Contract sector as well as the concept of Connection and Concreteness. At its centre stands Archincont(r)act, a 2000sqm space organised in cooperation with the Italian Ministry of Foreign Affairs and the Italian Trade Agency ITA. It will be occupied by ten internationally acclaimed



A render of the Contract Hall that will be part of Cersaie 2021



The latest logo for Cersaie

architectural firms known for their high-quality work in different areas of property development.

Cersaie's Keynote Lecture will once again be given by a Pritzker Prize laureate. This year's guest speaker is Japanese architect Shigeru Ban, who will give a presentation in the Palazzo dei Congressi following an introduction by architecture historian Professor Francesco Dal Co.

Once again, Cersaie is hosting "Tiling Town", the meeting place for tile laying professionals. On each of the five days of Cersaie, Tiling Town will host technical seminars, both in-person and as webinars, by expert tile layers focusing on outdoor spaces and large slabs. Architects and designers who attend them will be able to earn professional training credits.

These tile-laying events are organised by Assoposa's technical partners, Fila, Mapei and Raimondi. Assoposa is the national ceramic tile layer's association in Italy.

Most importantly, organisers have worked hard to ensure the safe participation of attendees and exhibitors to Cersaie through its "from the doorstep to the exhibition booth" initiative.

Put simply, it is about compliance with the relevant health and safety protocols during every step of the journey to Bologna and the time spent in the city and the exhibition centre.

At a meeting in July with local organisations and businesses involved with Cersaie including the city's transport system, hotels and restaurants, it was decided that admission to the exhibition centre for booth fitters, event organisers, exhibitors and visitors is subject to presentation of a Green Pass.

The group is working together to create a COVID-free environment and developed a "Bologna together with Cersaie" digital poster which is a tool for keeping up to date with health regulations during the event. ■



# Mediterranean stylings for any space

The Riflessi series is the result of a research project inspired by Mediterranean regions, and the coastal panoramas where the colours of the sun and the sea meet with those of the vegetation and the land.

This collection of porcelain tiles is characterised by bright colours and "brush strokes" that reinterpret an ancient manual decorative technique. The dimensions of the sizes, unusually large, enhance the graphic effects of the surfaces and the glossy finish accentuates the light reflections.

The palette of colours includes two neutrals — a white and a light grey — and three bright tonalities: blue, green and orange. The range also has three different decorative motifs — Amalfi, Fiore and Forme — and the Caleidos mosaics, which recall the styles and colours of the ornamental motifs typical of the Mediterranean.

Amalfi features different multicolour patterns; Fiore embodies a single-tone stylised flower that can be laid as a repetitive design or used to create a bigger shape; and Forme replicates a geometric sign to create an abstract, potentially infinite pattern.

In the Caleidos mosaics, the arrangement of tesseras creates an irregular decorative movement. ■



## Ceramic tiles lead the way with first international standard for sustainable products, launching at Cersaie

Architects, construction companies and building materials manufacturers are becoming increasingly aware of the need for action to reduce the environmental impact of buildings and to create more sustainable living spaces.

Through their production processes and levels of performance, construction products can make a contribution to achieving these objectives. With this in mind, the International Organisation for Standardisation (ISO) published the world's first standard outlining the requirements of a sustainable product, in this case ceramic tiles.

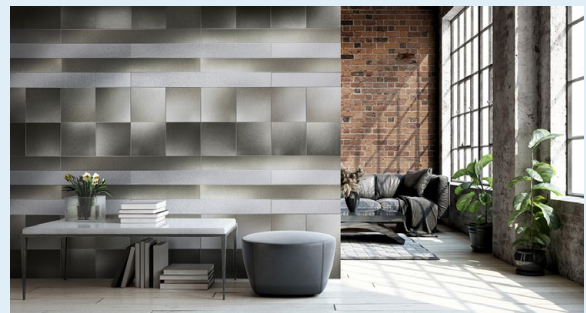
The new ISO standard will be presented during Cersaie 2021 at a conference entitled, "Sustainable tiles? Now there's an ISO standard" on 30 September. Andrea Contri from Confindustria Ceramica, project leader and convenor of the group of experts that developed the standard, will outline the structure of the standard and the various sustainability indicators. Maria Chiara Bignozzi, director of the Centro Ceramico and a professor at the University of Bologna, will provide a simulation of how the standard will apply to a typical Italian tile production activity. Marco Mari, chairman of GBC Italia, will discuss the potential role of the new standard in building rating systems.

The standard ISO 17889-1:2021 "Ceramic tiling systems — Sustainability for ceramic tiles and installation materials — Part 1: Specification for ceramic tiles" is a pioneering standard in terms of sustainability in construction products. It outlines the requirements for sustainable ceramic tiles

according to environmental, economic and social criteria. The standard also includes evaluation to enable the results of assessments to be compared, thus supporting certification schemes. It also helps architects and customers to select products that contribute most towards sustainability in buildings.

This standard is part of the Sustainable Development Goals (SDGs) defined by the United Nations as part of its 2030 Agenda, ie. goal number 12: responsible consumption and production.

A second part of the standard is currently in development and will specifically apply to tile installation materials such as adhesives, grouts and membranes. ■



Eco-sustainable tiles from DVNE® are good for the environment. The aluminium alloy used in DVNE tiles uses hydroelectric energy for the melting of metal. This conscious choice is more supportive of the environment and helps to make the eco-sustainable tiles 100% recyclable.



# Mosaics form a refined background

Combining simplicity and casual elegance, the Ignite and Ignition range of mosaic tiles are the latest addition to Beaumont Tiles' range of mosaic and decorative tiles.

The Ignite and Ignition elongated finger shape means it is positioned to envelope itself around curved surfaces, making it ideal for curved wall and kitchen island installations. This aspect of the range also makes it suitable for pool tiling.

These mosaics come in a range of trending colours, with Ignite available in White and White Speckle, and Ignition in Mint and Navy. The two styles come in slightly different sizes, with each tile varying slightly in shade and design.

This collection has been carefully crafted to reflect the light in a playful way that captures its linear shape. Its sleek gloss finish with greige undertones provides a rustic yet sophisticated feel. Christie Wood, Beaumont Tiles design specialist, said: "Give your home a minimalistic and elegant



The Ignite mosaic in White from Beaumonts

touch by pairing Beaumonts Ignite and Ignition ranges with vivid slimline brushed nickel tapware, such as our Tall Spring Sink Mixer. The pairing is perfect for farmhouse styling with a touch of contemporary nuance.

"The Ignite in White Speckle is the perfect backdrop for a kitchen

splashback and outdoor BBQ area. The neutral hues and simple mosaic can create a backdrop to layer other elements in, reflective of the zone in the house."

Epoxy grout is best used for wet area applications because it is easier to keep clean, added Christie. ■



The Ignition mosaic in Navy used in a bathroom





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# Pastel colours, geometries gain popularity

Two major ceramic manufacturers have released tile ranges that reflect the pastel colour trend.

Joint is the latest line of porcelain stoneware surfaces by Micro., a Terratinta Group brand. Conceived by designer Roberto Cicchinè, these tiles are available in 13 colours.

Their versatility allows them to adapt easily to many different surroundings, giving life to settings and scenarios that are different from each other but united by a distinctive style.

Ceramiche Refin's ranges are designed to broaden the horizons of the bathroom. It offers a selection of bathroom solutions, inspired by different sources and with several textures.

In the Foil collection, the porcelain stoneware tiles look like metal plates on the surface of which shiny effects, small scratches and marks that are invisible at first glance, are reminiscent of the car bodies of the past. This can create a post-industrial and vaguely retro charm.

The charm of terracotta comes back to life in a modern way in the Fornace collection, which updates a rustic influence with contemporary formats. The chromatic palette of warm and sensorial tones can give rooms a sense of new familiarity and timeless charm.

The Pietra di Cembra series includes a shower covering in Naturale. The range is completed by "arch" and "peacock tail" effect decorative tiles that recreate the appearance of porphyry with the functional advantages of stoneware.

Plain is a collection that is characterised by clouds and patterns with slight micro-cracks typical of when the volume of concrete contracts due to temperature changes. Small holes (pitting) are recreated by air bubbles trapped between the casting and the formwork. The surface, rich in detailed signs and nuances, appears at a distance as a solid, uniform and compact space.



Joint is made by Micro., a Terratinta Group brand and available in 13 colours



The Foil collection and concrete finish of Urbex Style by Ceramiche Refin

Prestigio are natural marbles that come from renowned Italian and European quarries, with their typical shades of colour and original veining highlighted by a polished finish. The range becomes the expression of a classic style

with different thicknesses and formats, including large sizes.

The concrete finish of Urbex Style is suitable for lofts and converted industrial facilities that are becoming more popular and sought after. ■



# Hydraulics, wood and marble deliver new ideas for tiles at Gayafores

Gayafores' theme "Feel with us the essence of Cersaie" sets the tone for its latest collections for the 2020-21 season.

The company is focused on conveying a message of confidence and renewed energy as the world deals with the pandemic. Despite COVID-19, Gayafores continues to develop decorative solutions for today's homes.

Although Cersaie was not held in 2020, Gayafores wants to share with clients and collaborators the essence of this event, with new presentations of its ceramics.

Grace is a collection that reinterprets the traditional hydraulic tile with a continuous modular pattern. Its eclectic design is based on the repetition of a pattern composed of unique stylised motifs.

These tiles are suitable as a floor or wall covering in interior spaces, exclusively or in combination with other finishes, such as wood, soft stone or neutral cement. They can also be used as a decorative border of specific areas.

Colours have been chosen for their mixes: beige combines pink beige and maroon; blue includes a medium-cold grey and a classic blue; and grey is composed of a warm, ochre-coloured grey. They are completed with flashes of brown and anthracite as the common denominator.

Lama Haya is a range of ceramic wood tiles inspired by plywood. Thin strips, placed side by side, and the union between them facilitates a different continuous surface effect. This collection represents a particular evolution of plywood, developed from strips of natural wood.

With Lama Haya, wood takes on the appearance of beech wood strips, with their uniform texture, light tonality, linear fibres and fine grain. It is available in 20x120mm and



Grace from Gayafores reinterprets traditional hydraulic tiles with a continuous modular pattern

15x90mm formats and in two tones: Natural, inspired by the appearance of the original steamed wood and in which

whitish browns are combined with warm ochres, and Soft, which provides clarity and luminosity typical of whites. ■



Gayafores' Lama Haya is a wood-effects range released for 2021



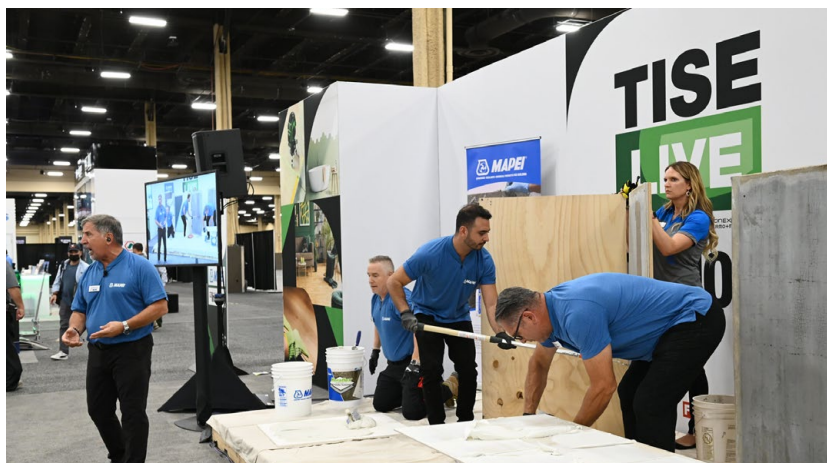
# “Best Of” awards from TISE

The International Surface Event (TISE) has chosen the “Best Of” Awards winners for its 2021 event. They celebrate industry innovation and ingenuity, and manufacturers’ contributions to the floor covering, stone, and tile industry.

For 2021, awards were segmented into four categories: innovation, style & design, sustainability, and technology. Award winners are determined by a panel of judges appointed by the official publication sponsors including Stone World Magazine, Floor Trends Magazine, Floor Covering Installer Magazine, Stone World Magazine, TILE Magazine, and Contemporary Stone & Tile Design Magazine. They include:

- Best of Product SURFACES – Mohawk, Wet Protect
- Best of Product StonExpo/Marmomac – Blick Industries, Suction Cups
- Best of Product TileExpo – Wagner Meters, Concrete Moisture Test Starter Kit+ with Rapid RHL6
- Best of SURFACES Style & Design – Johnson Hardwood, Public House Collection
- Best of SURFACES Innovation – i4F, Digital Printing Capabilities
- Best of SURFACES Technology – Schönnox, HS Sturdy Rapid-dry Smoothing Compound
- Best of SURFACES Sustainability – Mohawk, Recover Carpet Recycling Program
- Best of StonExpo/Marmomac Technology – Commandulli, Athena
- Best of StonExpo/Marmomac Innovation – Stone Profit Systems, Jobsite Mobile App
- Best of TileExpo Innovation – MAPEI, Ultrabond Eco GPT
- Best of TileExpo Style & Design – Arizona Tile, Chymia Tile Collection

The TISE in-person event held in June 2021 gathered a professional crowd whose purpose was to connect with their fellow industry professionals, source products from over 190 exhibiting brands, and get back to networking throughout the exhibit hall. In addition, TISE held a hybrid virtual experience, sponsored by Mannington, offering online



TISE in 2021 combined virtual and in-person events



The Chymia Tile collection from Arizona Tile is a TISE 2021 “Best Of” winner

attendees the same education and demonstration content, connection to the Vegas attendees, exhibitor product sourcing, as well as live updates and interviews from the show floor by the TISE Tv Crew.

The June experience had several differentiators from the previously held TISE events. One key difference was the TISE Live Main Stage and the TISE Live Demo Stage, sponsored by Mapei and Floor Covering Installer Magazine. TISE converted the popular CONVERGE education and Design & Installation Hub (DISH) programming into 30-minute hot-topic sessions and demonstrations on the show floor.

Topics covered everything from enhancing the quality of a workforce to charging the worth of installers, marketing strategies using podcasts and celebrity design stories to technical sessions on producing quality work and meeting standards.

Industry professionals can still request access to the virtual event and watch the programming on demand.

Another change for the June event was an opportunity for TISE to kick-off the National Installer of the Year Semi-Finals Competition produced in conjunction with CFI (International Certified Flooring Installers Association) and sponsored by Mohawk and ProInstaller Magazine. Sixteen finalists in the resilient and carpet categories were selected prior to the event and competed on the show floor. Eight finalists were chosen and will compete against each other at TISE 2022 to vie for the National Installer of the Year title.

This year, TileExpo saw products from Arizona Tile and Emser Tile, plus American Olean / Daltile / Marazzi who presented virtually for 2021. Launched during the virtual event was the TISE 2021 Product Lookbook.

TISE 2022, organised by Informa Markets, is scheduled to be held February 1-3, 2022, at the Mandalay Bay Convention Center in Las Vegas, Nevada. For information, visit [www.intlsurfaceevent.com](http://www.intlsurfaceevent.com).



# Spain-led ceramic trends

The Observatorio de Tendencias del Hábitat (Observatory of Habitat Trends) in conjunction with ASCER (Spanish Ceramic Tile Manufacturers' Association) and the Tile of Spain Awards, the international brand representing 125 ceramic tile manufacturers belonging to ASCER have presented their trends in ceramic tile finishes for 2021/2022.

This season, ceramic surfaces will have a "calming and balanced" approach because of a sensitive use of neutral and raw colours. They will be tactile as result of matte and porous finishes, which evoke a natural and artisan aesthetic.

"Essential" is a trend where ceramic wall and floor tiles aim to establish a more authentic connection with nature. Using ceramic material, it seeks to convey an artisan aesthetic, generating irregular surfaces and enhancing imperfections, ultimately celebrating natural beauty. The Essential trend offers three categories: Bio-Nature, Craft-raw and Re-Circular.

In the Bio-Nature category, nature becomes a genuine source of inspiration, making a clear, visual



Le Giare from Argenta Cerámica is an interpretation of resin cement. It combines glossy and matte finishes in a colour palette of five colours: white, grey, blue, natural and sage. It is a 30×90 cm rectified, white paste wall tile.

connection with it. Craft-raw has an aesthetic that expresses a raw side, with rough, eroded surfaces and porous textures and an artisan style. Re-Circular is the evolution of terrazzo and stracciatellas in ceramic tiles. It is made from fragmented and dense textures, similar to gravel.

The "Emotional Care" trend

emphasises designs that offer a feeling of softness and comfort. Within this trend, there are variants: Satori, In-Protection and Flex-Living.

Satori are spaces based in the "less is better" aesthetic so ceramic tiles are used in minimalist lines, with minimal graphics, and surfaces

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The Bali Stones series from Mainzu seeks to represent the textures and materials from the island of Bali, Indonesia



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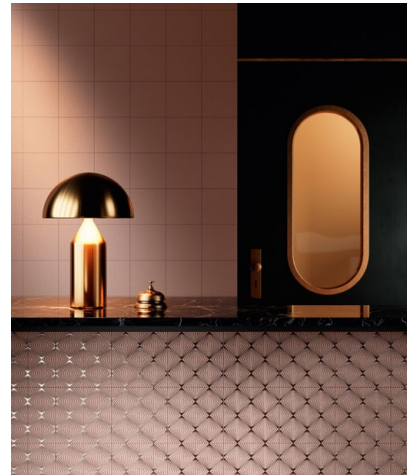
### → Spain-led ceramic trends

that provide visual and tactile softness. As part of In-Protection, the hygienic and antibacterial qualities of ceramic tiles become essential. In Flex-Living, ceramic tiles work to allow adaptability and versatility in the different spaces of the home. The timeless and neutral materials provide the continuity, distribution or boundaries of spaces.

The “Euphoric” trend brings about “expressive” and “provocative” designs with touches of craftsmanship and history. These ceramic surfaces are dominated by colour with eclectic styles that convey joy. This trend has three categories: Artful, Maximalist Craft and Hyper Geos.

Artful are surfaces that are turned into works of art, with explosions of colour and creative finishes. In the Maximalist Craft category, ceramic pieces of artisan inspiration mix saturated colours with finishes that elicit natural materials. Hyper Geos is inspired by antique geometric designs, with a modern approach. The tile surfaces play with the sizes and scales of the graphics.

Spaces in the “Elegant & Refined” trend enhance the typical patterns



The Gatsby range from ZYX is representative of the Neo Art Deco category. ZYX is a brand backed by the Colorker Group with a three-dimensional ceramic collection.

of marble or metallic finishes. Within this trend, there are three categories: Neo Art Deco, Refined Glam and Maximal Luxe.

Lines and geometry dominate Neo Art Deco as well as metallic gold which is inspired by Art Deco. Refined Glam is dominated by futuristic-inspired surfaces with digital colour and finishes in bright hues. In Maximal Luxe, ceramic surfaces become decorative elements on their own, with finishes inspired by marble in large formats. ■



Pop Tile is a new porcelain collection by Vives reminiscent of the 1960s. It stands out for its rectified finish that minimises the width of the joint gap and achieves a sense of continuity throughout the surface. The non-slip finish allows it to be used in all types of commercial and residential projects.





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