

# CERAMICS IN PORTUGUESE ARCHITECTURE – CURRENT TRENDS AND FUTURE PERSPECTIVES

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## ABSTRACT

The objective of this paper is to present the current situation of craft and industrial activity in ceramics focused on architecture and interior design, simultaneously identifying the most significant decorative, technical, or application trends: the trends that are still ongoing and those that now stand out. We shall attempt to answer the following questions: How does contemporary Portuguese architecture use ceramic claddings today; in what types of buildings are they used; through which applications; with what colours or types?

This paper also addresses the perception that exists today in Portugal regarding the heritage and identifying value of ceramics applied to architecture, including industrial ceramics, as well as the increase in the market of replica products. A brief overview sets out the different ways the various players in Portuguese architecture – private owners, public bodies, designers, restorers, building companies, etc. – conceive ceramic tilings and what objections still persist against such claddings.

For this purpose, a small research survey was performed in the field on the situation of ceramic uses in Portuguese contemporary architecture, which was conducted together with architects, developers, and some industrial units.

Some data are presented on the manufacture and commercialisation of tiles in Portugal, with a brief review of the supply of those ceramics by Portuguese manufacturers and through imports from Spain and other countries.

The perspectives that exist in the current situation and in the near future in building construction in Portugal, based on the cultural perception of ceramics by architects and developers, as well as on the technical-economic feasibility of using these materials in current Portuguese building construction, are rounded off with a brief overview, illustrated by a number of recent examples: applications

in public buildings, in large residential buildings, and other types of external and internal applications. Some of the most emblematic cases of problems that are currently occurring in the acceptance of ceramics as a contemporary architectural resource are described, showing some errors of use that still persist, as well as the increasing use of ornamental stones in cladding, an industrial sector that has undergone considerable development in Portugal.

## 1. INTRODUCTION

In Portugal, tiles are a well-known cladding and decorative solution: first, as sumptuous products and, a few centuries later, as a must in several kinds of urban architecture. However, as their acceptance grew, tiles also became increasingly discarded as desirable product solutions for upper-class housing. By the beginning of the 20<sup>th</sup> century, with the exception of special friezes and figurative panels, some of these purposely signed by famous painters, tiles were no longer a reasonable option for the Portuguese elites. The problem was not a technical one, but mainly artistic and sociological. Tiles were by then omnipresent in larger towns and had been increasingly adopted by the lower social classes, which led to certain prejudices against tiles to take root, roots which are still very hard to remove today. In fact, though tiles are a distinctive feature of Portuguese architecture, the present attitude towards tiles and other architectural ceramic solutions is quite often contradictory.

During the second decade of the 20<sup>th</sup> century, Portuguese ceramic factories that specialised in pattern tiles for internal and external coverings, as well as in other ceramic artefacts for crowning façades and decorating gardens, suffered from declining demand. Former clients no longer felt a need for the same type of artefacts they had in their houses, increasingly seen as old-fashioned and, by the elites, even considered to be in bad taste. New clients for this kind of production had lower purchasing capacity, with smaller surfaces to clad and decorate, and thus bought artefacts of increasingly lower quality. This led to an even greater prejudice against the ceramic artefacts that were in use since the middle of the previous century. Prejudice spread even to urban middle classes and, by the 1930s, pattern tiles for façades were already just a small slice of the architectural ceramics market in Portugal. It was clear that the past trend had reached its end. In order to survive, existing factories had to change their production; either by specializing in non-decorative construction materials in red clay (bricks and roof artefacts), in stoneware (drain pipes mostly), or by changing the style of their decorative production, limiting this to tiles designed for interiors, in order to cope with the artistic trends of that time. The first path mentioned was followed by the Fábrica de Cerâmica das Devesas (the most important in Portugal at the end of the 19<sup>th</sup> century). Considering the beginning of its generalization in rural areas, the production of sanitary furniture was also an escape for the survival of some existing ceramic factories. In fact, by the 1930's, the Portuguese production of

decorative tiles was quite small, compared with fifty years earlier: the quality of pattern tiles decreased and their use became almost limited to kitchens and bathrooms; figurative panels had a small rebirth, although confined to some major public buildings, and were less a cladding solution than a means of decoration and way of passing on a religious, nationalist, advertising or tourist message.

Since the market for figurative tiles had become small by then, only about four Portuguese factories were able to keep producing these for some time: Fábrica do Carvalhinho (Porto / Vila Nova de Gaia), Fábrica de Louça de Sacavém (Lisbon), Fábrica Viúva Lamego (Lisbon), and Fábrica Aleluia (Aveiro). Just the last two factories still exist, and continue to produce some figurative panels, even though they now suffer some competition from new, rather smaller and more versatile ceramic workshops, which are specializing both in contemporary author panels, and in the manufacturing of replicas or revivalist panels.

## 2. CURRENT SITUATION

The transformation years that followed the restoration of Portuguese democracy, in 1974, were very difficult for the existing ceramic factories, as well as for those that had abandoned the production of figurative tiles long ago, and even for those that no longer produced pattern tiles. Forced by circumstances, it was the right time for restructuring the Portuguese ceramics industry, which also meant the creation of new industrial projects. Obviously, this process took at least two decades before the outline of a new trend became clear.

In terms of artistic tendencies, along with the previous trend for the use of figurative panels in some public buildings – a major example being the stations of the Lisbon subway – ceramic claddings returned, although not so massively, to new housing buildings, which were individual or collective. However, it seems to us that it was middle and lower-class housing that was most frequently covered with ceramic artefacts, particularly in some of the more conservative Portuguese regions or those with a greater tradition in tile claddings.

Aside from faience tiles (used in exteriors and interiors), one of the most widely used products in those years – 1960s and 1970s – were small glazed tiles popularly called “pastilha” (figure 1), like the brand “Evinel”. Their plastic and chromatic characteristics pleased some architects. However, the pieces were first glazed on both surfaces, making them difficult to adhere. At that time, cementitious adhesive was not yet in use and the existing mortars gave no total guarantee of fixing “pastilha” glazed tiles, unless the application had been performed with great precaution.

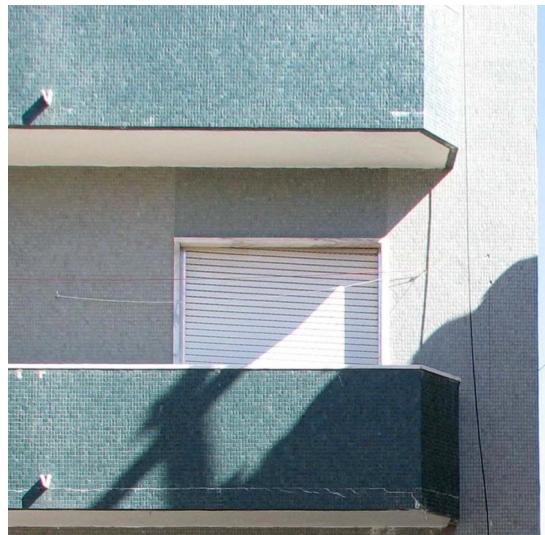


Figure 1. Surface covered with "pastilha" (Sabugal, c. 1970s).

In view of these problems, the so-called "pastilha" glazed tiles were then produced without glaze (in stoneware) or just glazed in one surface. Nevertheless, the first type was not so versatile for covering surfaces, from an aesthetic point of view, and the second type demanded higher manual labour, making it impossible to maintain the production costs after the change in regime of 1974 and the resulting rise in wages. Furthermore, the "pastilha" solution, with its many joints, entailed a greater likelihood of seepages, this problem being made much greater by the relatively small size of the tiles. As a result, the "pastilha" was gradually abandoned as façade cladding. Nowadays, it is quite common in Portugal to find "pastilha" or the covering of "pastilha" surfaces being completely replaced with paint and other opaque materials, mostly to address the overall bad appearance and frequent water infiltrations into many buildings with this solution of the late 1960s, 1970s and early 1980s, after some years of decay.

On the other hand, glazed faience tiles then in use in exteriors had mostly weak mechanical properties, compensated with a strong glaze, which led to higher cracking levels, more visible in monochromatic bright-coloured tiles (figure 2). This strengthened even further the prejudice against faience tiles on outside walls, which continued to be viewed as associated with naïf and poor architecture and were, thus, a trivial and non-interesting solution for architectural surfaces (unless they were figurative, and could therefore not be used as a full covering solution for housing).

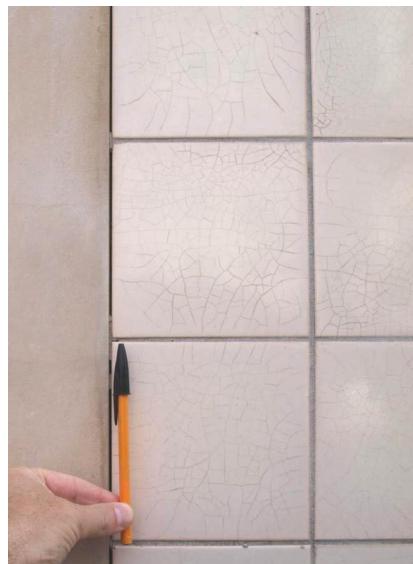


Figure 2. Cracking in façade tiles (Porto, late 1990s).

At the same time, by the 1980s, the introduction of fine porcelain stoneware (grés) tiles (just fired once) and extruded stoneware tiles captured the attention and preference of Portuguese architects and promoters. This occurred gradually and was initially confined to floors. Some years later, stoneware tiles also began to be viewed as good alternative for façade cladding. This premonitory change in taste also marked the beginning of an effective polyvalence in architectural ceramic artefacts, since some new industrial products could be used with good results both in covering walls and floors (internal or external). This change also increased the use of ceramic floors in certain housing compartments, which formerly were not paved with ceramic artefacts or even with hydraulic artefacts.

Hydraulic mosaic, for instance, although used in Portugal for more than a century, has only been gradually replaced in the last 20 years by other flooring solutions, namely by extruded stoneware tiles. The traditional hydraulic mosaic, made on concrete and with a visible surface similar to marble (called "marmorite"), is still in use in Portugal, due to its high colour plasticity and strength. Nevertheless it is a very thick material, confined to smaller external areas of buildings and also seen as old-fashioned, being gradually replaced by stoneware (grés) artefacts. One of the last emblematic works made with hydraulic mosaic is the new Soares dos Reis school (Porto), by the architect Carlos Prata. Nowadays, Portuguese hydraulic mosaic is produced by smaller workshops and has lost some of its quality.

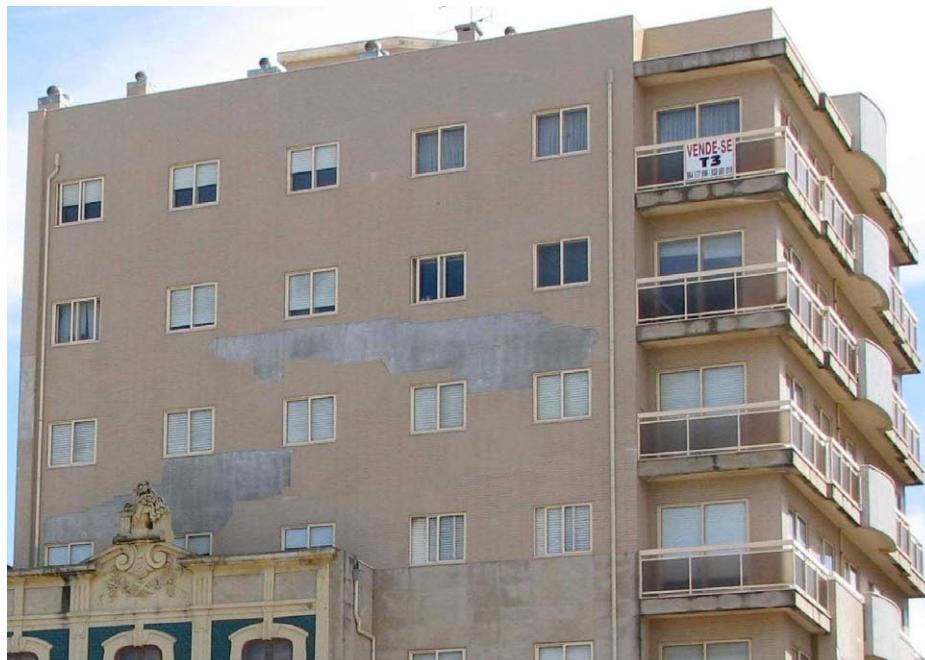
With regard to the first extruded stoneware tiles applied in Portuguese façades (not pressed, as they are today), architects accepted these in view of the low maintenance required, their earth-like light colour and also the possibility of having exteriors with a certain chromatic rhythm, particularly with tiles whose shape could simulate brickwork, like the popular brand "Litocer", by CINCA. However, these first extruded stoneware tiles applied in Portuguese façades lost some interesting characteristics in terms of tonal variations, when the traditional widespread kilns

built with refractory bricks were replaced by new facilities: these were more efficient in terms of energy saving, but the product lost the features that had made it popular amongst architects and well-accepted by owners or promoters. After the implementation of new furnaces, a certain void in the Portuguese offer of this kind of products was filled by the Spanish factory Porrigrés, mainly to the north of the country.

From the late 1980s to the middle 1990s, there was a strong expansion of new collective housing on the outskirts of Portuguese towns. Many opportunist constructors built this with unskilled workers. By that time, considering these and other circumstances, Spanish producers could export to Portugal large amounts of ceramic products, both for exterior and, particularly, interior coverings (walls and floors). These products were mostly low range, being applied in collective middle-class houses. Negligence in the application, wrong mortars, inexperience with the new materials; all of this concurred with the frequent seepages and detachment of tiles in many buildings (figure 3). Obviously, this had a negative effect on the attitude towards ceramic claddings.

The persistent prejudices against ceramic claddings had an indirect beneficiary. In fact, roughly polished stone slabs have been increasingly used in Portugal since the late 1980s, not only in contemporary urban spaces, but also in upper-class housing façades, thus also desirable by middle-class owners. Rustic effects and irregularities, in opaque and light earth-like colours, are nowadays in fashion for outside coverings and therefore, the current trend of Portuguese architectural ceramics is also closely linked with this phenomenon. New ceramic solutions tried in the last 20 years reflect the intention of providing surfaces with the plastic qualities of stone, adding also other benefits, like price.

Regarding the decorative brickwork solutions (with real bricks or only with substitutes, with or without joints), which were not a feature of traditional Portuguese architecture and provided external surfaces with a mottled opaque tone, their acceptance has not been widespread, but it is clearly bigger than thirty years ago, perhaps also as consequence of foreign influences in Portuguese architecture. It has been used in some entire neighbourhoods for lower income people, as well as in some of the more luxurious buildings and villas.



*Figure 3. An example of collective housing dating from the 1990s, covered with monochromatic tiles (Espinho). This solution was very common in the abovementioned decade, in some specific Portuguese regions, but not in others, perhaps as the result of a mimetic phenomenon. This solution is now being used slightly less, not only because of tile detachment problems and seepages that occurred a few years after the completion of many buildings, but also because the image of such façades is predominantly one of a middle and lower-class housing cladding solution. However, one can see in this photo, on the right, that stone slabs covering balconies have a bad response to wet dirt. If it were not for the tile detachments, this building would have in its stone slabs the most unpleasant part of the façade, with the passing years.*

Extruded stoneware tiles were well received by Portuguese architects, first for floors and later for outside walls, particularly in view of their irregular surface. This feature could provide a façade appearance that was more similar to roughly polished stone, with its desirable shadowed effects, leading to even further decrease in the use of traditional faience tiles in outside coverings, which continued to be used just in some collective housing buildings. In a way, in the last few years, Portuguese tiles have clearly converged with stone, in terms of effect, in order to recover the long-lost aura of a noble material.

### 3. ANTICIPATING FUTURE TRENDS

An auspicious future for architectural ceramics in Portugal depends on many factors. In the last decade, Portuguese factories have been able to adapt and innovate, thus also to recover from Spanish exporters a larger part of the Portuguese tile market. Nevertheless, the principle of minimalism that can be seen as a must in the most erudite Portuguese contemporary architecture has problems of coexistence with ceramic claddings, mostly based in preconception.

On the one hand, the owners and the promoters of new architecture are still

prejudiced against traditional faience tiles, particularly in exteriors, which are seen as artefacts of the past or, if with clear contemporary appearance, as suitable only for houses of people with lower incomes and therefore not desirable for paradigmatic architecture projects. This prejudice, as already stated, has its roots in the strong Portuguese tile tradition and the way it declined, after use peaked in the late 19th century. However, recent projects by some of the more famous Portuguese architects (like Álvaro Siza Vieira and Alcino Soutinho) have recovered faience tiles for external cladding, although they are monochromatic and linked to minimalism (figure 2). Still, it is not yet clear if this could represent a future trend or just a whim of Portuguese contemporary architecture.

A future trend that can be anticipated with more certainty is the market of replicas for filling voids in façades with 19<sup>th</sup> century pattern tiles. Yet, this trend is still incipient and its growth depends on the growing perception of façade tiles as an important part of tile heritage in Portugal. There is still an absence of awareness, as a result of a great lack of academic knowledge about tiles in this period and an even scarcer perception of their value. Therefore, most of the replicas are being made on a smaller scale for figurative panels, considered of greater artistic value. Since this is a kind of work that is related to restoration procedures, only some Portuguese factories with traditional know-how are now able to compete with small workshops. This now constitutes a very small slice of the Portuguese market of architectural ceramics, particularly the replicas of pattern tiles, even though it may have positive side effects in diminishing prejudice against tiles in new exteriors. On the other hand, since it is widely accepted that Portugal needs to pay more attention to existing architecture, particularly to buildings in the hearts of towns, which are very often covered with pattern tiles, there may be good perspectives as regards this type of production with high added value and greater handwork.



*Figure 4. One of the most admittedly (and exaggeratedly) stone-like new types of tiles, presented in the Tektonica exhibit of 2009.*



*Figure 5. Two of the most admittedly new ceramic-like stone slabs, presented in the Tektonica exhibit of 2009.*

The question of prejudice against façade tiles also applies to architects. Even though it is usually accepted by experienced architects that tiles grow old better than other façade-cladding solutions, there is some resistance to their use in exteriors. Besides, architects depend also on the ideas of promoters and constructors, highly influenced by the abovementioned prejudice. On the other hand, Portuguese contemporary architects dislike repeating solutions / products, unless they liked the previously obtained result very much. Thus, an investment in the quality of products is crucial in order thoroughly to erase existing prejudices against ceramic coverings on the outside of houses.

In view of these factors, in order to increase the use of ceramics in Portuguese architecture, the ceramic industry interested in this market needs to innovate and, in the short term, also to promote new products that do not appear to be ceramic. Almost all Portuguese factories are now adopting this approach, especially exploring the possibilities of obtaining ceramic artefacts very similar to stone in appearance (a trend that seems to have started with floors), but with an even better response to climate aggressions and the natural decay of buildings, while of course being cheaper. Tiny slabs of stone to clad parts or complete external walls have been very popular in Portugal in the last 20 years, even for middle-class housing, in view of their price. However, the smaller the slabs, the greater the problem of stains, which means that ceramic substitutes, with similar appearance and size, have good growth possibilities in the Portuguese market.



*Figure 6. Panels made of wood-based materials are being increasingly used in contemporary Portuguese architecture, despite certain inconveniences after some years of exposure to climate aggressions. Overall, ceramic materials respond better to these problems and can be the better alternative in ventilated façades.*

Nevertheless, the ceramic industry must be watchful of what the stone industry is also creating, since that sector is beginning to present stone surfaces that are very similar to ceramic effects (figure 5). Price can be a very important factor in choice between similar products, even though one should not ignore existing prejudices against ceramic claddings, particularly for outside surfaces. Thus, we insist: limitations to the expansion of the architectural ceramics market in Portugal are mostly due to a question of mentality.

The growing use of ventilated façades, that is, back-ventilated curtain walls (rain-screen system), may be a good opportunity for having more ceramic artefacts in exteriors. However, one must consider that this technique can be used with other materials, like thin stone slabs, panels made of aluminium, as well as those made of wood-based materials and resins (figure 6), which are now very popular in contemporary architecture, despite some inconvenient decay effects in the medium and long term.

In terms of outdoor use, ventilated façades are a good opportunity for the producers of ceramic artefacts. In fact, ceramic panels can now be considerably larger and thinner, losing hardly any mechanical properties, while also being very versatile in terms of colours and textures, along with a clean appearance for longer periods of time. Aluminium panels are less versatile in terms of texture and colour variations, although their cleanliness and the possibility of slot solutions make them desirable. Nevertheless, aluminium is also viewed with prejudice in Portugal, it still being linked to industrial or to non-conventional architecture. With regard to natural stone slabs in ventilated façades, since they are still considered a noble material, their use preferred by many architects. However, they entail certain limitations

in terms of size, thickness, and compare unfavourably to stoneware-based tiles in terms of coefficient of absorption and expansion, strength and cleanliness, particularly in the medium and long term.

In Portugal, ceramic artefacts are also facing other competitors in outside walls:

- the “betão à vista” (fair-face concrete), very suitable for minimalist solutions, yet with further conservation problems and, apparently, a solution with a short growth potential in the future.
- the “monomassas” (single-layer mortars), a simple solution for covering, requiring no high maintenance, but demanding good-quality mortars, which represents a substantial price difference compared with other competing materials.
- the “capoto” (a system that combines thermal isolation with surface coating), widely used today in Portugal, its biggest disadvantage being its weakness, which discourages use in public areas at the ground-floor level.



*Figure 7. The “Ecran Building”, in Lisbon (2000), may be considered an exception in Portuguese contemporary architecture, in view of the extension of the decorative tile composition and the fact of being mostly a private housing building.*

In terms of ceramic solutions for non-ventilated external walls, besides the abovementioned exogenous brickwork decorative solutions in housing (both with bricks and, mainly, with substitutes made of extruded stoneware), with their growing acceptance in Portugal, one should also mention tiles with irregular surfaces, like the brand called “Cervan” (very similar to traditional faience, but coarser and more porous, produced by extrusion). Low-resistance glazes and irregular finishing, giving tiles an almost non-industrial appearance, are presently also highly appreciated in Portugal. Nowadays, some architects even prefer tiles with crazing in the glaze (figure 2), even though with a limited range of colours and no decorative patterns. This overall trend forces ceramic artefacts to return to some of the earlier and

poorer covering solutions, making it even more difficult to overcome the existing prejudice against decorative tiles in outside walls, with the exception of authors' works in important public buildings or large decorative compositions obtained by mixing monochromatic tiles – that is, based on designs that are imposed on factories, as opposed to factory proposals. The current minimalist trend, together with the prejudice against tiles, is the framework that nowadays seems to justify the complete removal of pattern tiles from older façades, in renovation work, this being visible both in urban fronts with 19<sup>th</sup> century tiles and in later applications in houses, churches and public buildings. Therefore, pattern tiles in external walls are not yet a re-emerging trend.

However, in Portugal we are witnessing a timid comeback of pattern tiles in internal walls, and not only in kitchens and bathrooms. This trend was already observable 20 years ago. Nevertheless, it has gone beyond the initial revivalist intentions. In fact, we now have much more diversity and also aesthetic solutions that can cope with minimalist projects. Thus, many of these new pattern tiles for interiors have a discreet design: mostly monochromatic and only with very slight relief effects. A large part of these effects are illusionist and metallic, depending on the incidence of light, with makes them particularly suitable for interiors (figure 8).

In spite of this, other recent solutions by the Portuguese factories RECER, REVIGRÉS, PAVIGRÉS, CINCA, MARGRÉS or ALELUIA, some of them based on the collaboration with well-known designers, range from polychromatic "retro-kitsch" (figure 9) to almost ethnic tiles. Obviously, many of these new types of decoration are not widely accepted, even for interiors, but are confined to smaller walls and more irreverent groups.

Some of these new tiles continue to be faience-based. However, stoneware or porcelain tiles (made with "grés") are also taking over the Portuguese market for interior surfaces, as occurs with tiles for external purposes.



Figure 8. One of the numerous metallic pattern tiles presented in the Tektonica exhibit of 2009.



Figure 9. One of the "retro" pattern tiles presented in the Tektonica exhibit of 2009.

Variety in terms of formats and sizes is also very noticeable today, this being an important factor in captivating architects and promoters, in view of their versatility and exclusiveness. In fact, these new sorts of tiles, despite being industrial artefacts, enable many combinations to be made (figure 10).

The Portuguese ceramic industry is still rather diversified and we recognise that the Portuguese tradition in ceramic surfaces, even though it is sometimes an obstacle to the wider acceptance of external claddings with tiles in the national market, can open up possibilities in foreign markets with a more incipient tradition in architectural ceramics. In addition, some of the products that are not widely accepted in Portugal are being produced here for other countries. We should mention the TopCer factory, specialized in more technical and more demanding products, whose decorative production is mainly directed to Ireland, Russia and other parts of the world. This is an exception in the Portuguese ceramic industry, since most of its decorative production is based on previous Victorian models for floors. Nevertheless, it seems to us that, even in the national market, revivalism will be a stronger trend in the future, if allied to innovation.

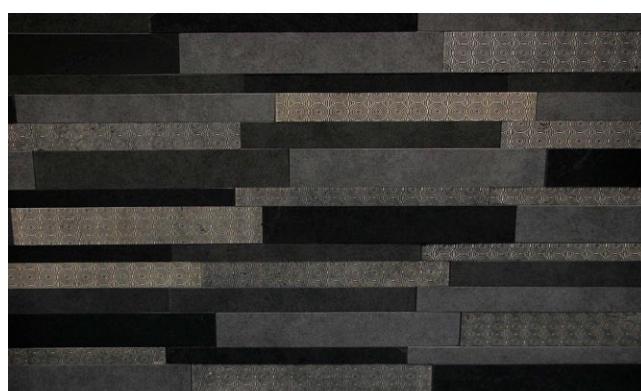
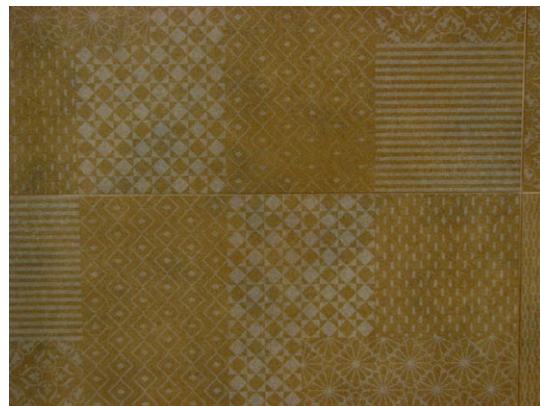


Figure 10. A composition sample of tiles with diversified sizes and shapes, both monochromatic and slightly patterned (Tektonica exhibit of 2009).



*Figure 11. These pieces are a paradigm of the current trend in Portugal, regarding interior applications: thin and large, monochromatic and light earth-like coloured, with a metallic glazing, displaying patterns from several historical periods as a revivalist solution, yet very sober, discreet, almost minimalist when seen at a certain distance (Tektonica exhibit of 2009).*

## ACKNOWLEDGMENTS

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