

# RESTORATION OF THE CERAMIC TILE MURAL OF THE FINCA DIAGO, IN CASTELLÓN.

**Pepe Castellano**

Cerámica Decorativa

## 1. INTRODUCTION

The Diago family name is closely linked to the development of the ceramic industry and particularly to the production of ceramics in the city of Castellón, although it originally came from the town of Vall d'Uixó. The first Diago production centre was established in Alcora, and in 1945 it moved to the city of Castellón, with the purchase of an already existing factory located Avenida Valencia, later bought by Antonio Diago Piñón and his sons Germán, Antonio, Manolo and Jesús, who would give their name to the company Hijos de Antonio Diago SL. The other brother, Fernando Diago, founded Cerámicas Diago S.A., based in Castellón and adjacent to his brother's company in Avda. Valencia, as well as another production centre located in Onda.



*Figure 1. Portrait of Antonio Diago, painted by Soler Blasco, 1957.*

The factory which made possible the development of the "Finca Diago" mural was Hijos de Antonio Diago, whose origins date back to 1950. Originally, the factory had Moorish kilns, which used woodland firewood. Later, they began to use dual-channel kilns to produce double-fired earthenware tiles with the following sizes: 10.8x10.8, 15x15, 14x28, 10x20, 7.5x15, and 20x20 as maximum size.

Back in 1960, the Alcora production plant initiated the production of frits

and glazes to supply a large part of the artistic ceramics industry of Castellón and Manises, but the deep economic downturn of 1970 and 1972 had a deep impact on the Manises industry and forced the Alcora plant to suspend the production of frits and glazes, this being a pioneering company in Castellón long before the establishment of firms such as Figueroa, Ferro, etc., which introduced zirconium as opacifier, compared with the use of arsenic, which had been commonly used until then.

Despite all this, the Hijos de Antonio Diago factory was working well, and in the 1960-1970 decade the company made material for several emblematic buildings in Castellón province, which already used ceramic tiles to provide these buildings with a unique personality. Examples of these buildings are: Bex. Rey Don Jaime, Asensi, Benicasim, etc.

The "Finca Diago" building was designed in 1960 by Miguel Prades, a prestigious architect from Castellón. The four Diago brothers (Germán, Antonio, Manolo, and Jesús) proposed that Prades should use ceramics in all possible areas of the building: bathrooms, kitchens, and floors, as well as in ceramic murals that would later be used in the building arcade.



*Figure 2. Present view of the building.*



*Figure 3. External ceramic lattice by "La Fábrica de Agustinet".*

A lattice was designed for the outside, covering the entire gallery. It was produced in Castellón by "La Fábrica de Agustinet".

An artistic mural was also designed and incorporated as final touch to the building, covering the whole eastern façade, providing a unique touch to the construction.

## **2. BIOGRAPHICAL SUMMARY**



*Figure 4. The ceramist Alberto Guallart.*

Alberto Guallart Ramos was born in Castellón de la Plana, in 1936. Like his brothers Rafael and Ferran, he learned the basics of ceramics and drawing from his father, the prestigious ceramist Rafael Guallart Carpi, in the family workshop located in Nuñez de Arce street.

Guallart studied Fine Arts at the Escuela de San Carlos in Valencia, where besides having Juan Bautista Porcar as teacher, with whom there was a close family relationship, he was awarded the Roig prize in 1957 and 1958.



*Figure 5. Alberto Guallart and fellow students with Professor José Mª Bayarri.*

After he had finished his studies and obtained the degree of Drawing Teacher in 1959, he soon devoted himself to teaching, working at high schools and higher education centres. He participated as a teacher in the founding Board of Teachers and Professors of the University College of Castellón between the years 1962-72. He also taught at the School of Fine Arts & Craftwork until 1979, and at the University of Distance Education (UNED), in Vila-real.



*Figure 6. Mural for the UNED headquarters, in Vila-real.*

He presented his paintings and ceramics in group exhibitions in Valencia in 1957-60 and in Alicante in 1961. He also exhibited in the city of Castellón, at the University College (1972), at the Municipal Cultural Centre (1973), in the Painting Contest of the County Council and in several important institutional exhibitions such as the "Colectiva de Artistas Castellonenses de la Diputación Provincial" and in the González Martí National Museum of Ceramics in Valencia.

Guallart worked closely with his father in designing several ceramic pieces, such as the panels of the Patrons in Lledó, the fishing port market, the heraldic crests of regional localities between screens, in the large ficus holder in the María Agustina square, and in others such as the great murals of residential buildings on Asensi and Mayor (Segarra pharmacy) streets, or in the Clavé square, the Penyagolosa high school, the Diago factory, the Sanchis Yago and Sensal schools in Castellón or Pintor Sorolla in the Alquerías del Niño Perdido, the Furió Bus Station in Onda, and in the Grau (Castellón) or La Pelechana churches. He was also involved in the creation of the ceramic pieces installed in the Sailing Academy and the Santiago Apóstol Chapel, in Benicàssim.



*Figure 7. Ceramic tile mural of the Saint Peter's Church, in the Grau de Castelló.*

Following his design concept, he created an allegory of ceramics and work. It describes how the family's and an individual's own effort, through study and work, can lead us to reach peaks that are so high that they bring us closer to the sun, an element used in the mural as a supreme source of productive energy that humankind can reach by their efforts.



Allegory to work. 1963.  
Ceramic tile mural (sketch)



Allegory to work. 1963.  
Ceramic tile mural (sketch)



Figure 8. Preliminary and final sketches of the mural.



Figure 9. Photograph of the author taken during the restoration process.



Figure 10. Detail of the mural.



Figure 11. Restoration team with the author.



Figure 12. Handwritten detail that appeared on the back of the mural during the restoration work.



Figure 13. Beginning of the restoration work, from the bottom up, to avoid detachments.



Figura 14. Final restoration process.

### 3. MURAL REPAIR PROCESS

The repair process for the existing installation and the installation of the new pieces was commissioned to PROALSO, a national non-profit association at the service of ceramic tile installers, which seeks to answer their needs and defend the interests of self-employed professionals and companies that specialize in ceramic coverings.

The person in charge of supervising the mural installation process was Ernest Boira i Sales, from PROINSKER, a PROALSO trainee technician and expert in ceramic pathologies.



*Figure 15. Beginning of the restoration work. Removal of pieces, from the bottom up.*

#### 3.1. Diagnosis of the existing mural.

Approximately 10% of the total number of pieces of the mural are detached and/or broken, and the rest is under serious risk of detachment.

No movement joints were made in the surface of the mural. The structural displacement caused pieces to break and has impaired the consistency of the bonding material used in that period, making it lose some of its properties. The result is that the ceramics were under compression and under imminent risk of detachment (in fact, some areas of the mural had already become detached).

When tapped, the tiling sounded hollow, indicating that the ceramic tiles had detached from the background.



*Figure 16. Surface state of the mural before the restoration work.*

### **3.2. Installation of a lifting platform for the work.**



*Figura 17. Lifting platform.*

### **3.3. Removal of the pieces.**

The pieces were removed from the bottom up, to avoid breakages.

Once the pieces had been removed, they were cleaned, since they contained significant rests of the old bonding materials, and numbered.

Nearly 10% of the pieces, from an approximate total of 5400, displayed cracks and/or broken parts, and had to be recomposed. Each fragment was numbered to facilitate its subsequent installation.



*Figure 18. Cleaning and numbering of the original pieces.*

### **3.4. Preparation of the substrate.**

The next step consisted of rehabilitating the substrate. The rests of the old bonding materials were removed and the empty areas of the substrate were chipped to ensure the homogeneity and consistency of the entire surface.

A bonding primer was applied to increase the surface resistance to tensile stress.

A repair mortar was applied to regularize the substrate.

A C2TE cementitious adhesive was applied, together with a fibreglass mesh to unify the installation surface.



*Figure 19. Previous state of the substrate and restoration process.*

### **3.5. Installation.**

An 8x8 mm notched trowel was used to apply a layer of C2FT cementitious adhesive (enhanced, quick-hardening, and with reduced vertical displacement), in accordance with UNE EN 12004 standard, and an S1 adhesive (deformable), in accordance with the UNE EN 12002 standard. The application was performed using a buttering and floating technique.

The ceramic pieces were correctly installed on the treated surface, observing the previous numbering.

The installation was performed by 1 m high area, with 5 rows of pieces, to avoid damaging the original pieces and causing any possible detachment.

After the removal of a row, the tiles were cleaned and put back after the surface treatment, except one row. This facilitated removal of the next section.

Finally, the replacements were installed, according to the foregoing scheme.

In observance of the original design, the mural was not grouted.

During the installation process a movement joint was made beneath each deck (7 in all), to prevent the ceramic piece from being subject to compression. When these joints were made, fractioning and control cuts were performed in the substrate, with a joint thickness of 8 mm, and each cut being sealed with polyurethane mastic.



Figure 20.

### 3.6. Supervision of the result and cleaning of the mural.

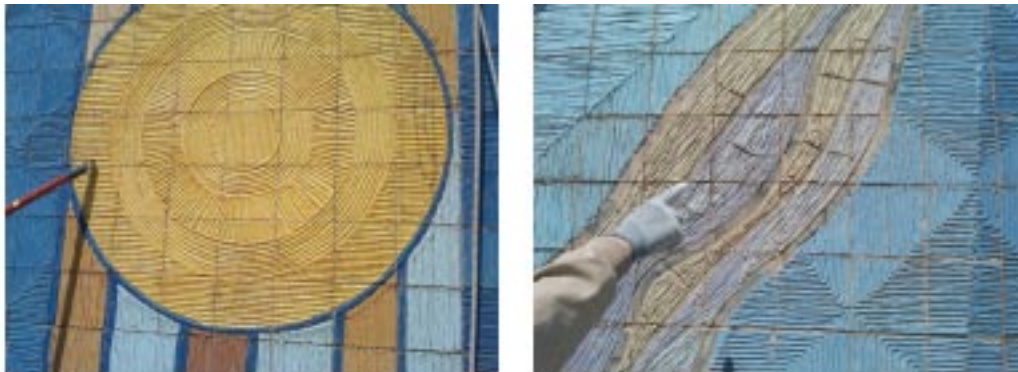


Figure 21.

## 4. MATERIALS USED

- SIKA repair mortar.
- CERCOLL rete 25 fibreglass (mesh), resistant to the alkalinity of the mortar.
- BASF Grisogrunnt bonding primer.
- CERCOLL C2TE mesh anchoring.
- CERCOLL C2FT adhesive.
- SIKAFLEX polyurethane mastic, with a roofing tile colour.



Figura 22.

## 5. DESCRIPTION OF THE RESTORATION PROCESS OF THE CERAMIC PIECES OF THE MURAL AT THE FINCA DE DIAGO

The manufacturing process of the tiles needed to fully restore the ceramic tile mural was performed at the Cerámica Decorativa factory under the direction of José Castellano, with Javier Gimeno as technical director.

The first step was to make the ceramic body of 15x15x1 cm needed to restore the broken and missing pieces. In the Cerámica Decorativa laboratory, thorough research was carried out in order to match the colours that had been used in the original mural, as well as the glaze needed for the re-creation of the embossed lines to provide texture to the colour when applied with a "bulb" through a "tubing" process, but with thicknesses that reached almost 10 mm.

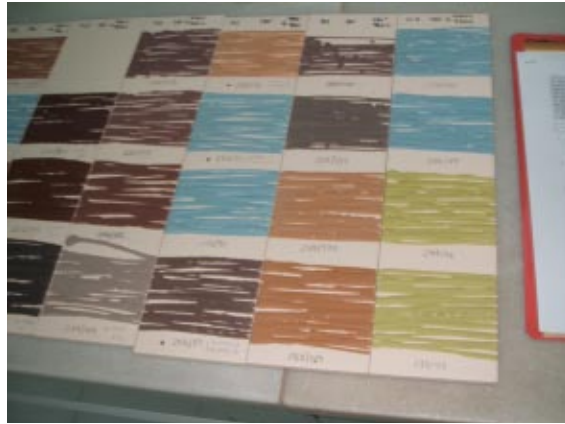


Figure 23.

Once the colours had been selected, an original-scale drawing was made on the mural, and after this had been photographed it was reproduced on the ceramic pieces, drawing directly on the biscuit and painting the embossings with water and manganese dioxide with iron.



Figure 24.

After these profiles had been painted with a brush, the different areas of the drawing were filled, using a “bulb”. These sometimes depicted:

- The sky.
- The sun.
- People.
- Pottery.

This matt glaze, which was subsequently coloured, yielded more than different 60 colours.



*Figure 25.*

The project addressed the reparation of the Diago building mural, which had two missing panels: one with 33 pieces and another one with 168 pieces, plus some loose pieces.

The restoration process begun by analysing the method used in the original design.

The technique used by **Antonio Guallart** and his team was based on the manual application of a coloured-engage using a bulb. The panel was laid on a table where it was prepared for the application, the different and diverse motifs that made up the graphic design of the work being drawn in situ. Guallart’s team selected 43 colours, which amplified the chromatic richness of the final panel. The skilled hand of the artist created multiple forms and drawings, describing thick lines whose layout created changes of shades depending on the incidence of light.

**Elaboration process:**

Once the background had been learned, small samples were taken from the panels in order to match the colours and the light matt finish of the original pieces.

**Development of the engobe:** An engobe was developed, similar to the original one, capable of being applied by large tubing. The following characteristics were to be observed:

- Suitable colour development.
- Light matt effect.
- No crazing.
- Good bonding to the piece.
- No cracking during drying.

**Ceramic body:** a white-body 14.8x14.8x0.8 biscuit was used.

**Colour development:** A total of 20 different colours were prepared for the panels that had missing pieces. The colours included yellow, brown, ochre, turquoise blue and dark blue, indigo, terracotta, lilac, green, ... etc.

**Preparation of the panels:**

The pieces were arranged on a table and the master lines were drawn freehand following the plans, so that each line of the drawing matched the original panel.

The outlines were hand painted.

Each colour was then applied by bulb, following the original drawings and matching the directions of the design layout and the geometric drawings, just as they were in the original.



Figure 26.



Figure 27.