



ISSN 2278 – 0211 (Online)

## Using Indigenous Symbols to Enhance the Aesthetic Look of Ceramic Facial Tiles

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### **Abstract:**

*The use of facial slice as a facing finish in the Ghanaian building industry is burgeoning and only a few industries are into the production of the facial slices. The tiles found on the market are imported, which inadvertently increases the prices of the slice, thus making it difficult for the ordinary Ghanaian to purchase the product. The study, therefore, aims at incorporating indigenous designs on the plain surfaces of facial slices made, by using our local raw material clay, to enhance and cause an aesthetic sensation in the eyes of viewers, at the same time promoting, and preserving the rich cultural heritage of Ghana. The studio research method was used in carrying out a number of experiments, to ascertain the suitability of materials for the preparation of the slices. A physical test was conducted on clay body samples to establish their suitability and effectiveness using four procedures, which included the analysis of clay, generation of designs, mould preparation and decoration of slices. The clay was analyzed to obtain a clay body with its inherent properties, which were good for the production of facial tiles such as for Adinkra and dumedzadzrado symbols which, were modified into abstract designs for the decoration of the slices. A mould prepared with plaster of Paris (P.O.P.) was made for embossing the final design on the slices while a wooden stamp was also prepared to make imprints onto slice surfaces. The stamped and embossed techniques were for decoration of the slices. Results indicated that, Mfensi clay (75%) with manganese (25%) emerged the best clay body, suitable for the production facial slices based on the dry and fired shrinkage as well as water absorption test. The study revealed that, slices found on the open market, which are usually plain, can be decorated with modified indigenous designs to enhance their aesthetic look and that locally-available materials are better in the production of facial slices and their decoration with traditional motifs could enhance the aesthetic of the slices and promote cultural growth.*

**Keywords:** Facial slices, indigenous symbols, motifs

### **1. Introduction**

Facing tiles or bricks slices specially made by hand or machine is to serve the purpose of giving an attractive finishing look, and protecting the elements in buildings. According to Pyne (1997), “facial tiles in general are said to combine an attractive appearance with structural strength and good resistance to weathering. Slices and tiles should be noticed as high quality and attractive building materials. Their uses are in highly visible areas of structures such as the interior or exterior walls of houses. Memmott (1972) had it that, the making of tiles presents many possibilities of design to the potter. In view of this, interesting effects were created with glaze, using the glaze to convey the design. These were for mass effects or spot decoration. Their surfaces were for functional purposes such as top of tables.

However, facial slices are devoid of the use of indigenous designs, which would stimulate and cause aesthetic sensations in the eyes of the viewers. The main objective of the study is to produce facial slices using traditional designs to decorate, protect and enhance the surface of buildings. The study, therefore aims at preparing a clay body, using locally available raw materials (clay and manganese) and incorporating indigenous designs on the plain surfaces of the facial slices, to enhance and cause an aesthetic sensation in the eyes of viewers. Again, the study seeks to develop designs from some traditional symbols to add to the aesthetic qualities of the facial slices produced.

Hamilton (1978) stated that, there are different ways of producing tiles. Traditionally, tiles were limited in size so the handling would be easy. Any slight malformation in one tile would not entail remaking the whole design. Hamilton (1978) further documented that; the surface of the tile may be modified by hand modelling, to produce a decorative surface. The simplest technique involved was repeatedly pressing hard objects such as modelling tools into the clay tile so that a systematic pattern was produced.

Vicalex is a company at Mfensi in the Atwima Mponua District of Ashanti used the plastic method in the production of slices on demand. Mfensi clay is the material used by Vicalex. The General Manager (G.M) Mr. Asare (*pers. comm.*) revealed that, slice production goes on but on demand. Vicalex have a machine for both mixing and cutting of the product and rely on the natural air in drying the products, which are under a shed in the open. Clamp firing is used in the firing of the products and are able to produce about 400-1000 slices a day depending on the weather.

Owusu *et al.* (2008), state that a natural addition to the extensive Ruabon range of Welsh clay products is the new form of facial slices used on buildings to protect the surface from cold and frost (Figure 1). The product was developed specifically for the requirements of cladding systems manufacturers and installers in Europe (UK). It was fast becoming the number one choice for panel, archway and pre-fabricator chimney application.



Figure 1: Ruabon Facial Slices



Figure 2: Chamfered Full/Half Ruabon Facial Slice

Manufacture to exacting floor tile standard far exceeds the technical specifications of similarly priced brick-slices. These are available in full and half-modular sizes, of 215mm x 65mm x 15mm and 102.5mm x 65mm x 15mm in ranges of natural to earth tone shades. Mitered tiles were also available for corner applications. Each facial slice is fully frost resistant with very low water absorption and highly resistant to staining. The slices exhibit exceptional durability with remarkable resistance to deep abrasion. The edges are chamfered on all four sides with no sharp or ragged edges, to provide a superior finish and ease fixing and finishing of joints (Figure 2). Accurate dimensions give regular and even spacing of units and fixing the ribs on the reverse side to ensure secured and permanent adhesion and with negligible thermal and moisture expansion, they were designed to withstand the extreme climatic conditions. From the information gathered, on all the various productions and finishing methods, full and half-modular sizes were produced with weather resistant finishing, that could withstand the climatic conditions of Ghana with standard thermal shrinkage and moisture absorption.

Marshall (1984) suggested four basic principles of design, namely: proximity, alignment, repetition and contrast. These principles are the fundamentals for every design. The principle of repetition can be related to rhythm. In this vein, Ruher, (2002) suggested that, “repetition of visual elements throughout the design unites and strengthens a piece, by putting together or otherwise separating parts”. The study finds expression with the writer that repetition is very useful on a design piece or in a multiple design work of art.

Akrofi, as cited by Howard, (2001) stated that symbols are multifunctional in nature. They are appreciated for both artistic and communicative values. They are mostly non-verbal instruction of proverbs, parables, and maxims and they portray the philosophical thinking and the way of life of a people. Akrofi’s statement shows that symbols give graphical representation of sayings. In supporting Akrofi, the Akan symbol, *Akoko nan tia ba na ekumba* which literally means “the hen trades upon its chicks, but does not kill it” admonishes that, children are corrected by parents but are not harmed when corrected. The symbol also serves as a teaching aid to all in societies. Two traditional symbols were developed into unique designs. The purpose of incorporating traditional Ghanaian symbols as motifs for the actual design of the slices is to provide the communicative message.

## 2. Methodology

### 2.1. Tools and Materials

Tools and Materials used include knife, cutting wire, guide sticks, wooden templates, P.O.P. templates, heavy sticks, foam, modeling tools, clay, manganese and engobe.

### 2.2. Developmental Stages of the Symbols

The study employed the plastic method of production. Although, the manual plastic method was tedious, it was easy to manipulate to achieve desired designs. Two traditional symbols were developed into unique designs. These include *dwenini mmen adinkra* compiled by Glover (1971) and *agama, dumedzadzrado* by Agbo (2006). *Dwenini mmen* and *dumedzadzrado* were scanned onto the computer

and two design software, namely, CorelDraw and Adobe Photoshop were used for the final design. Preparation of template, clay body, embossing and application of designs, stamping and finishing techniques were employed for the work.

### 3. Production 1: Embossment Techniques

There are two methods in producing facial slices namely the plastic and dust press methods. Since there was no machine to do the dust pressing, the study employed the plastic method of production. Although, the manual plastic method was tedious, it was simple to manipulate to achieve desired designs.

#### 3.1. Preparation of Wooden Template 1

Due to the different methods used for the decorations, templates were produced for some of the decoration work. A hard wood with a dimension of 3" x 9½" was cut and designed as the template for stamping and embossing. The designs were carefully traced onto the wood and cut out with a hacksaw and carving tools.

#### 3.2. Preparation of Plaster of Paris (P.O.P) Mould for Template 2

Another template made of P.O.P was made for embossing the final design. The 600 grams of powdered P.O.P was poured into 40ml of water in a bowl. After the mixture got set, it hardens after some few minutes. It was shaped into a rectangular block of 10" x 4" x 2". The design was transferred by tracing it with a pencil unto the mould. A utility knife was used to cut the design out.

#### 3.3. Preparation of the Clay Body for Work

Clay was mixed with 25% of manganese with suitable amount of water. The clay was pugged in a pug mill, with manganese gradually poured unto clay to mix in the miller. Clay after pug milling was covered with heavy polythene bags to enable the body to age well for the work. This is to allow even distribution of water, and breaking down of particles that were not well mixed to have a good consistency.

Clay was cut into bits with a cutting wire to enable the smooth handling and kneading it to remove unwanted air bubbles and to enable the manganese to be evenly mixed with the clay. Kneaded clay was spread on a rolling board, rolled to a thickness of 5cm with a rolling pin, cut into 3 x 9 x 2 inches for the full sizes slice and 3 x 4½x2 inches for half size using a knife. Cut sizes of rolled clay were spread on the bear cemented floor to enable moisture to drain, and left to dry to a leather-hard state. With the help of two guard sticks of 1½cm thick, the leather-hard clay was beaten with a heavy stick to the thickness of guard sticks and re-sized with a template of wood for cutting the actual size of slices measuring 3½ x 9½ inches. The clay was placed on the working board and cut to size. A trowel was used to smoothen the surface of the slice after beaten. One hundred and twenty (120) pieces of full size of the slices were produced while eighty (80) pieces of the half sizes slices were also produced for the final work.

The P.O.P mould was utilized for the embossing technique. A reasonable amount of clay was pressed in the mould. The clay registered the designs of the mould. It was trimmed and shaped. Fifteen full slices and six half slices were selected. The design was transferred onto the facial slices by scratching the back of the design and with the help of slip as a binder, glued onto the surface of the slices. The same procedure was carried out on all the slices. However, with the half slices, a cut was made through the design into two from where the halves joined.

With the help of wet foam, the surfaces of the pieces were smoothened and excess slip was also removed with a spatula. A brush with white engobe was applied onto the surfaces of the slices. All slices were packed onto a big, flat, hard wood and covered with polythene sheet. This was to avoid warpage. The slices were left to dry under a controlled atmosphere. When work was leather hard, the polythene sheet was removed to allow the slices to dry very well for firing. The work was fired to bisque temperature of 1000 °C. After the first firing, the work was reassembled and a manganese solution applied. It was afterward fired to a temperature of 1150 °C.

### 4. Production 2: Stamping Technique

Some of the already beaten slices were assembled and arranged in half and full alternation. The already prepared wooden template was used to stamp the surfaces of the slices. However, the wooden stamp was oiled in order to avoid sticking into the clay. With the help of a small wooden mallet, registration of the design was hammered unto the leather hard slices gently.

Dry foam dipped into the white engobe was gradually and lightly brushed over the pressed slices and left to dry. A large polythene sheet under cover over the whole work was left, to enable them dry under a shed in the open. This method controlled warpage. The slices were turned daily for even drying. The work got bone dried and fired to bisque (1000 °C). After bisque firing, a manganese solution was brushed into the design cavities to highlight it. The final work was re-fired to gloss temperature (1150°C) to give it an interesting look.

### 5. Results and Discussion

The study exploited mainly unrealistic design concepts with some of the works having specific names with meanings that reflect Ghanaian cultural edifices or social and cultural values. During the preparation of the body, an amount of manganese added to the clay helped to fuse well. This gave the body the standard strength, and an outlook that is appealing. The preparation of the body and the firing temperatures helped the work to withstand the weather condition in Ghana.

### 5.1. Philosophical Discussion on Embossing

This is an *Agama* symbol by Agbo (2006) - *Dumedzadzrado* (Size of 57.15cm×74.93cm) an Ewe symbol which means reconciliation. The researchers decided to modify the original symbol, but the same meaning and explanations attached to them was retained (Fig. 3). Looking at the modified version the two curved shapes are symbols of hands and the two ovals with projections are heads that signify two factions embracing each other.

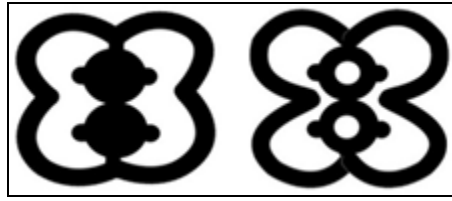


Figure 3: Original and Developed *Dumedzadzrado* Design

The moral value behind the original “*agama*” symbol is two heads are better than one, which teaches the society to be able to settle their differences through mutual compromise and reciprocal understanding. The final fired slices known as *kroye* or ‘oneness’ were rendered on a building as shown in Figure 3.



Figure 4: Embossed *Kroye* Slices on a Building.

### 5.2. Philosophical Discussion on Stamping

His work (size of 57.15cm×74.93cm) is a stamped work with a manganese finish in the design cavities to bring the work out. The design was developed from Akan traditional symbol *dwenini mmen* which literally means the horn of a ram (Figure 5). The ram uses the horn to fight but with carefulness and able to defend itself and move ahead. No matter how difficult his opponent may be it will fight until it succeeds and that is the character of the researchers.



Figure 5: Original and Developed *Dwenini Mmen* design

This is to point to the fact that one should not abandon a course midstream, but with a bit of advantage in hand, should strive hard until victory is won. The work is lightly finished with a white engobe and light brushes of Manganese. This design is known as *anieden* or perseverance. It can be used for both interior and exterior of buildings as shown in Figure 4.



*Figure 6: Embossed Anieden Slices on a Building*

## 6. Conclusion

The study has laid bare the fact that slices can be produced using locally available materials such as Mfensi clay and manganese. The study also revealed that the slices found on the open Ghanaian market that are usually plain, could be decorated to enhance their aesthetic look.

The findings revealed that it is practically possible to produce facial slices with the locally available materials, which can also withstand the atmospheric conditions of Ghana. Mfensi clay, the chief material, together with its required additive (manganese) can produce very healthy facial slices, which has the properties of any standard clay material.

Locally available materials are equally better in the production of facial slices and that decorating them with modified traditional motifs can enhance the aesthetic of the slices and promote cultural growth.

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