

GLAZED TILES AND CERAMICS OF MULTAN

Mrs. Anjum Javed Pirzada

According to the archaeological survey of Pakistan, compiled by Alexander Cunningham, Multan is said to have been founded by Kasyapa, father of Haranga Kasipa after whom it was named as Kasyapa pura. This is the oldest name of this place which is preserved by Abu Rihan Al Bairuni, under its Sanskrit's The First mention of Muhastrana pura (city of the temple of the sun) which undoubtedly, gave its name to the modern city of Multan.

Beautiful *glazed pottery* work in blue and white pattern and in plain colors has been made at Multan from the time of early Muslim period. That art is known under the name of Chini and according to local tradition, was introduced from China through Persia, by the Mughals. The origin of glazed pottery in the Indo-Pakistan sub-continent is traced by some writers to Changez Khan, after his conquest of China in 1212 AD brought back a Chinese wife and through her the Chinese art of glazing pottery is believed to have been carried to Iran and to India, more especially Sindh. The practice of decorating walls of mosques with colored porcelain seems to have been introduced simultaneously with the conquest of Iran by the Mughals has always been famous for the elegance of design and superiority of finish of its very fine glazed tile work, garden vases dishes and other forms of pottery.¹

Glazed tiles are one of the most characteristic of the decorative crafts of Multan region and the most striking application of the technique is on the small tomb chamber of the Shah Yousof Gardezi. This simple cubical structure is entirely covered with dazzling blue and white tiles which though replaced from time to time, probably retain the character of the original as it was built in 1152 some four hundred years after the death of the saint whose

grave it covers. The most elegant of the Multan shrines are the tomb of Sheikh Baha-ul-Din Zakarya and Shah Rukan-e-Alam. Brick and bands of timbering add strength to its form, while sparing introduction of decorative brick work and glazed tiles make it the finest achievement of Multan builders.² The tomb of Sultan Ali Akbar is very important contribution towards adaptation and spread of the Multan style of architecture where almost every characteristic of the Rukan-e-Alam, including embellishment with colorful tile work and glazed terracotta can be seen.³

The recently identified tomb of Khalid Walid in Kabir Wala near Multan may be the earliest known Muslim funerary memorial in the sub-continent.

The glaze which is used now is not to be so durable as that on the old work. The method of making the glaze as mentioned and noted by Lock Wood Kipling for the 1923-24 addition of Multan district gazetteer is as follows:

One part of powdered lime stone and two parts of powdered soda are mixed with water and made into balls. These are dried for fifteen or twenty days in the sun. They are then burnt in earthen vessels in a strong fire for twenty-four hours and put into cold water to set. When required for use, it is powdered in a mill and mixed with water to the required consistency. It is not applied with brush but is poured over the object or article, which is kept on the move until the whole surface is covered. Multan industry is relic of the time which enameled tiles of light and dark blue colors, with geometrical patterns and pious inscriptions were fashionable on tombs and mosques. In its origin it was entirely subsidiary to architecture, but later various kinds of vases and other fancy objects found their market with Europeans.⁴

They are first prepared by ordinary potters (Kumbhars) and then glazed and painted by Kashigars. Formerly the painting was done by Kamangars (who were originally, the makers of painted bows and arrows) but with the passage of time Kashigars assumed the status of

separate trade. The enamel is made with lime stone and soda. The best colors used being dark blue from cobalt and very fine turquoise from copper violet, brown green and other colors have recently been introduced. The three traditional colors of Multan's blue ceramic are:

1. Cobalt blue
2. Turquoise
3. White

The formula used for making the proper blend for color is as follows:

White Colour

1. Glaze 75%
2. Flour glue 25%
3. Tin oxide 2%

Blue Colour

1. Glazed 75%
2. Flour glue 25%
3. Cobalt oxide 2-1/2%

Turquoise Colour

1. Glazed 75%
2. Flour glue 25%
3. Copper oxide 7%
4. Cuprous oxide 2%.⁵

It was not until the Muslim period that the decoration came to be used in media, and even then it was almost exclusively restricted to buildings raised by the followers of Islam. On the monuments of Pathans and earlier period, it became one of the most favorite modes of architectural decoration. The finest example of pre-Mughal period is the tomb of Shah Rukan-e-Alam, the glory of Multan. The saint lived in the reign of Ghiyasuddin (1320-24 AD) the first king of Tughlaq dynasty, and that of his son Mohammed Shah(1324-51AD).

It is a sad fact that some of the old Kashigars have now ceased to work for their ancestral craft and the young generation of their families hardly find any encouragement

or incentive for the work. There are three basic reasons for this situation:

1. The Kashigars are poor class and do not possess any capital.
2. They are getting no aid and protection from the government either by way of contracts or through bulk purchase.
3. The ustad do not like to pass on their skill to others.
4. They are over see to new designs and methods.⁶

The Multan city is in the southern region of Punjab. The glazed ceramics produced in Multan have very good popularity than those of any other city in Pakistan. Despite the popularity in reputation of the pottery the number of work-shops in Multan is very small. This craft is traditional in the families. They work independently for more than a half century. The government shops were developed under their supervision. Multan's glaze ware potteries are full time professional and work all year round. The work-shops are established separately from their homes, unlike of these potters in other areas, such as Hala and Peshawar. Division of work is evident that each work-shop with the apprentices potters to form the wares and decorators or master potters apply glaze and decoration. Although apprentices are recruited from within the potters family, other members are little involved in the work, particularly women who rarely are called on to assist. Potters are now more willing to discuss their working technique than were in the past. Ordinary unglazed work for domestic use is also produced in and around Multan but there is no relation between the glazed ware. All the potters in Multan use the same clay deposit. This is in the field near Hafiz Jamal Shah which is lightly over a kilometer from Daulet Gate of the old Multan city. Potters usually buy clay by the bullock cart-load. It is also possible for the potter to mine their own clay free of charge if they so wish. The best potter in Multan prefer to use this clay because it is refined and has a better fired strength than other deposits in Multan and cities like others. These deposits are in use more than two hundred years.

Apart from the blue, white, red and earthen- ware such as cooking pots and water storage jars are made around Multan.⁷

The clay is prepared by two methods one use fresh clay brought from the deposit of raw material, the other recycled waste clay from the pottery. The material is placed on prepared area on the ground so that impurities are not introduced from the ground surface. Lumps are broken up with a stick and the clay is then spread in a hollow-centred pile. Water is sprinkled evenly over the surface of the pile. The amount of water varies according to how wet or dry the clay is initially, but six gallon per three maunds of clay is an average amount. The material is left for two to four days to soak, again depending on how wet or dry is the clay, and also how urgently it is required. Some times during the soaking, material is moved from the edge of the pile to the center. Raw clay (Mitti) is brought from the deposits stored in pile on the ground. The moisture content of the clay is variable. The first step in processing is to spread the clay on ground in the sun so it can dry for two or three days depending on how wet it is originally. When the clay is spread on the gorund the larger lumps are broken to about size to speed up the drying. When the clay is dry the lumps are further broken up with stick so that the largest pieces remaining are all smaller than 2.3 cm in diameter. This is the finest size to which the clay is crushed. It is usually fire textured up free from any coarse graft.⁸

After the clay is dried and crushed it is weighed. Usually mounds are used as the amount of clay for body preparation. This gives sufficient body for two week production in the work shop. After weighing the clay is again spread on the ground. Sand for addition to pedy is then weighed in proportion to the amount of clay. The standard proportion is one maund (forty seers) of dry clay

and ten seers of sand. It means four parts of clay and one part of sand. When the material is weighed, the body is prepared in the normal manner by spreading the clay on the ground in flat hollow conical pile, leaving the clay to soak absorb water.

For kneading maund of clay is trodden into flat round pile, which then doubled over and trodden out again. Each maund of clay is kneaded three times for one and half hours. Between each of these kneading the whole mass is turned upside down. This ensures complete blending of the clay and also an even distribution of moisture in the body. This preparation and kneading is done by either the thrower or and assistants, not by the master potter.

After Kneading the plastic stored under wet jute sacking in shaded areas of the work shop, the soaking is wetted periodically so it remains permanently moist. This method of storage is standard in all work shops in Multan, while in other hot and dry locations in Punjab the potters store clay in under- ground pits.⁹

For blue and white pottery the proportion of body preparation is 11/2 (chhitang) of common salt for two seers of clay. The salt water is then added to the dry clay and the body is then prepared with the same addition of 20% of sand.

The product of Multan vessels can be divided into two major categories. Tile and architectural pieces and decorative wares including vases, dishes and other domestic vessels. In work shop all the forming operations are done by one potter(Kumbhar) - a skilled person who forms pottery vessels. The master called *ustad* does not do this work but basically concentrates on the glazing and decoration of the wares. However *ustad* is skilled in all aspects of craft and he teaches others all the techniques.

The first step in forming of vessel is to knead the clay so that it becomes even in moisture content and that the air bubbles are removed. In normal production potter prepares about 20% kg of plastic clay body (Sinni Mitti) and then work at the wheel, until the amount of clay is used. For hand- kneading the clay is divided into lumps each weighing about 3kg. The lump is placed on Jute sack and rolled to a cylindrical form. This rolling and flattening is repeated about ten cycles before the clay is considered ready for use on wheel.

Multan potter uses a pit wheel (Cak - the traditional iron point and stone cup) lower bearing has been replaced by a modern ball-bearing race at the bottom of the shaft.¹⁰

The pit is excavated in the earth floor of the work shop but not brick lined compared with other Punjabi practice.

Several of the common techniques are used forming vessels by potters. The most economical in term of the time and labor is to throw vessel in one piece and then refine the shape by turning. Small bowls, flowers, vases and bottle vases are formed in this way. Some of these shapes particularly the bottle shapes are the most difficult because in that they require the greatest skill.

The first stage is to place a large lump of clay on the wheel-head with the size varying according to the type of vessel to be made, where 5kg to 10kg is usual amount. The potter centers the top of the lump and forms a vessel from this centered portion. The vessel is then cut off with thread called (dhaga) held tight between both hands and piled straight through under the base of the vessel. When the vessel is placed aside the process is repeated, this continues until the entire lump of clay is used to produce a number of clay. When these vessels dry to leather hard

they are turned to thin the walls and refine the shape. Bottles are placed upside down on the wheel-head. After the shape is defined by turning wheel vessels are polished with circular piece of sheet metal about 8cm diameter held at an acute angle to the wall of the vessel as it revolves on the wheel.¹¹

Hollow wares such as plates and dishes are formed by other method. The potter first places three small pieces of soft clay on the wheel-head. He then places a fixed tile on these three pieces of clay and presses tile down firmly so that it is fixed to the piece of clay and the wheel-head. A lump of kneaded clay of correct weight for the vessel being formed is then placed on the tile, centered and thrown to shape. The tile with the vessel still fixed to it, is lifted from the wheel-head and placed aside for the dish or plate to dry to leather hard. The vessel is then cut from the tiles and turned in the normal way. This technique is used because of the difficulty of removing a hollow ware vessel thrown directly on wheel-head without distorting the soft piece. By using the tile the potter is able to avoid touching the vessels until it has dried enough to with-stand handling without distortion.

An other common forming technique is to form vessel in sections, separate pieces being thrown and then joined together when they are leather hard. Potter places large lump of kneaded clay, sufficient to make all the separate parts of one vessel, on the wheel-head and then begins to throw the separate parts of the vessel.

The raw cotton is added to the clay body. Raw cotton is prepared by shredding with the hands until all the pieces are very fine. The amount of the cotton added to the body clay is estimaed at four parts of clay and one part of compressed cotton. According to the potter that cotton reduces the shrinking of the plastic clay so that the leather hard section of vessel has the same shrinkage as

the plastic joints, and there is no cracking of the vessel due to uneven shrinkage stresses.¹²

FORMATTING TECHNIQUES OF TILES

Tiles are the major ceramic product in Multan. Tiles for recent tombs are being the major output, but tiles are also used in continuous program of renovation of older tombs and mosques. Most of these tiles are used locally by contrast with the production of hollow ware pottery. Much of which is consumed by tourist market or exported to other cities of Pakistan. Tiles are made from the same body used in the making of hollow ware pottery. This clay is stored under wet bags in the work shop to keep it moist.

In few of Multan's work shops a continuous supply of about half a ton of clay is kept. Most Multan's potters produce tiles on individual order. Some-times as small as only one tile. Each tile maker has a large range of standard design from which the customer selects his choice. The actual forming of tile is simple in process. The most common tile shapes are square, rectangular and arch shaped, that is basically rectangular shaped with one end cut down to pointed arch shape. Special tiles are shaped to suit a specific application.

For tiles the clay is kneaded quickly by hands. The tile is then shaped roughly on flat area of the earth floor by beating out the clay with the help of hands. The size of the pad of clay produced is larger than the size of the final tile. Both drying and firing shrinkage are allowed at this time. The tile is then left to dry leather hard. The edges are trimmed to size. For square tiles a ruler and tri-square are used to set out the dimensions accurately, with allowance made for shrinkage. A chisel is used to trim the edges to the size. More complex shapes are set out with the help of metal template.

Some tiles have recessed on the face which are

hollowed with a knife at the leather hard stage. The most common example of this type of tiles is the Lauh-i-Mazar tile (used as grave stone or tomb inscription plates). The recessed area eventually become the area with a written inscription and the raised border area serves as a frame. If the face of the tile is not flat enough at leather hard stage it is scraped down with a flat steel scraper. It also at this stage that the holes are cut in tiles. The limits of holes are marked out and the holes are cut with fine blade knife. Waste pieces are pushed out and returned to the waste clay stock to be reprocessed later.¹³

When these operations are completed the tiles are set aside to dry out completely. It is observed that no special precautions are taken to avoid warping of the tiles during the drying. Measurement of some typical fired tiles show that tiles averaging 15.2cm square have an average thickness of 1.9cm and those averaging 22.6cm square have an average thickness of 2.7cm. When the tiles are fully dried, they are prepared for slipping, decorating and glazing in the same way as the domestic pottery ware. The tiles are formed in continuous strip along the street in front of the work-shop. The top surface of tile is leveled within a half centimeter, so that the tile will later require careful smoothing and finishing. One day's production of tiles uses about six maunds of clay. This represents 2 1/2 hour of work by one tile maker.

The next stage in tile forming is to cut this large strip of clay into pieces according to sizes of tiles. As the width of the strip of clay is fixed, this process is simplified by the use of measuring stick. The point of the knife is used to mark the clay. This knife is broad bladed with a rounded end. The entire length of the strip is cut by using the knife free hand without any support. The cut is made to a depth corresponding to half the thickness of the tile. The clay is not cut right through. The strip is then left to dry to leather hard. After drying the individual tiles are

broken away from the strip and the edges trimmed with knife. Individual tiles are then finished by the methods already described above.¹⁴

GLAZING

The Multan's potter use two basic materials for glaze making, quartzite stone calcined plant ash. Borax usually is used in most compositions. Ground glass is also used as cheap addition to glaze. The quartzite is obtained from the deposit of this material at Sakhi Sarwar 8 km away from Dera Ghazi Khan city. Potters from Multan collect the material on cooperative basis. The Karund (quartzite) store is prepared for glaze making first by breaking up the large lumps with hammer and then crushing these pieces with iron mortar. This obtained powder is then washed by placing it in a vessel and pouring in water to cover the powder, stirring the mixture and then pouring of the water. This washing is repeated three or four times until the water is clear. The purpose of washing is mainly to remove all the extra particles which have been mixed in quartzite powder. After washing the powder is spread out on a cloth and sun dried. Plant ash (Khar) is obtained from dealer in Multan bazaar. Investigation revealed that large quantities of khar are produced in the Cholistan Desert. Borax (suhaga) is sold in the form of medium crystals. Potters by only clear window glass or bottle glass that has no pieces of colored glass mixed. The pieces of broken glasses are crushed with an iron mortar. The resulting powder obtained after grinding is called kac in the Multani term. The stone quern is used for grinding in the work shop. The lower stone disc is fixed and the upper stone disc revolves via wooden handle fixed permanently in a hole in the top disc. The material to be ground is introduced through a central hole in the top disc. The first stage of glazed preparation is obtaining and preparation of raw material. The next stage is to mix the powder (khar and karund). Usually 10 to 15 kg are prepared at one time. The powders of two materials

are weighed to give batches consisting of equal amount of each. Materials are then mixed in an iron dish ¹⁵.

When the blend is thoroughly mixed by hand, cold water is sprinkled over the powder. A minimum of water is used just enough to wet the powder. When the moisture is evenly distributed through the powder, the balls are formed with the mixture by hands into balls. These balls are placed in the sun to dry for 10 to 15 days. As they dry a white floescence is formed on the surface of the originally dark green colored balls. The balls are then sintered in the kiln. At the end of normal firing when the kiln reaches maximum temperature and the stroking ceased, so that there is no more smoke and only ash is left in the fire box, the balls are thrown into the bottom of the fire box. The mouth of the stock hole is then sealed off so that no cold air can enter the kiln and damage the pots inside. The kiln cool for 3 to 4 days. At this stage fire box is still red hot, the temperature in the fire box is estimated around 900c. The balls heat very quickly when placed in the fire box and then cool slowly within 3 to 4 days period. When the kiln cools the balls are removed from the fire box. The balls are quite variable in appearance. All balls vary in color, the areas which were resting on ash has a light green color, central portion appears dark green. The balls are crushed using an iron mortar and this crushing does not produce any extermely fine powder, some particles being as large as 3 to 4 mm.

After that stage the procedure varies from batch to batch. The next stage is to add a fusible material such as Borax (sohaga) or ground glass to the powder obtained by crushing the fused (khar karund bals). If the balls fused normally, the borax addition is as follows:

Add 1 part by weight crystalline borax to 16 parts by weight of crushed khar kurand balls. These proportions vary according to the degree of initial fusion of balls. If

fusion is more extensive than normal, then less borax is added for 1 part of borax to 48 parts ball crushed powder. These two powders of equal proportion are thoroughly mixed by hand in a large dish. When this homogenous is then ground in a quern and this form is ready to use. When the frit is fired and the crucibles removed from the fire box the crucibles are broken with hammer. This block material is broken first with hammer and then with an iron mortar. The material is ground in quern with the top plate set as low as possible to produce the finest grade of powder. This powder is used as the final glaze known in Multani as kac.

After preparation of the raw material, both slip and glaze are in the form of dry powders. Both are applied by the similar techniques, but at different times. The slip is applied to the vessel or tiles when they are completely dried. The decoration is applied over the slip when it has dried and then the glaze is applied as the final stage before firing the vessels or tiles. The setting pattern of tiles for firing; the tiles are set in pairs back to back and separated by piece of plastic clay. Each tile is separated from below by small piece of plastic clay placed along the lower edge at the appropriate points. The setting is continued in this way until the firing chamber is full. The domestic vessels, dishes, plates vases and other are set with stilts and props, using setting methods of the glazed ware producing centers. Dishes are set with the interior facing up, with a three pointed stilt placed in the center of the dish and foot of the next vessel resting on this stilt. In some cases large dishes or plates are standing on edge and leaning against the chamber.¹⁶

Once the kiln is set the door is bricked up and the kiln is ready for firing. The best fuel for firing is the tree populous. If this fuel is unavailable the potters use other types of wood which are kikar, ber or jand. The firing is started only a small fire. This water smoking period is

maintained for about 1 1/2 hour. The fire is then built up gradually to a full fire. The usual time of completing the fire is about 9 hours. The master potter judges temperature by several different criteria. The degree of glazed fusion is estimated from observation of the reflectance and glossiness of the glaze. When the correct temperature is reached then the glaze becomes "Mirror like" and vessel forms are reflected on the glazed surface of others. At the finishing temperature, the potters terminate the firing by ceasing stoking. No more wood is added and the wood already in the fire box is allowed to burn down. The bricks are used to seal the stock hole, and soft clay is plastered over the bricks to prevent cold air enter into the kiln. The top fuse are left open to allow heat to slowly escape from the chamber. After the firing is finished the kiln is allowed to cool for 24 to 36 hours and then some bricks are moved from the top of the kiln. The kiln is left for another two days before the vessels are removed.

TOOLS USED IN MAKING TILES

A wide variety of tools are used in making the tiles. These tools can be classified into three categories:

1. Modelling tools
2. Cutting tools
3. Shaping and texturing tools.

The modelling tools are made of wood, metal and plastic. They are hard, sharp and fine.

Cutting tools are made of copper, bronze and metal. Cutting wires, knives, hole cutters, needles and turning tools are included among them.

Sharpening and texture tools are used to fan the clay into an exact shape. These tools are also used to produce design and patterns. They include profiles, stamps, moulds and rolling pins. Most of these tools used in Multan are made of clay which the potter makes

himself.¹⁷

LOCAL TERMS

Aster : slip carving.

Chikni mitti : very fine clay.

Gut-kay : stilts.

Kumbhar : potter

Kashikari : the art of decorating a pot or a tile. .

Kashigar : the master who decorates the pot or the tile.

Karund : a stone used for making the glaze.

Khar : plant ash.

Kac : glass.

Mun: unit of wieght equvallent to approximately 45kg.

Kohan : a tree used as a fuel.

Seer : unit of wieght equvallent to 1kg.

Ustad : master.

REFERENCES

1. Sajad Haider, Tile Work in Pakistan, National Institute of folk and Traditional Heritage, Islamabad, Pp.81 & 84.
2. Kamal Khan Mumtaz, Architecture in Pakistan, 1985, Concept of Media PTC, Ltd., Grange Road Orchid Building Singapore, 0923, Pp.43, 44 & 45.
3. Multan History and Architecture, 1983, Institute of Islamic History, Culture and Civilization, Islamia University, p.236.
4. Sajad Haider, op.cit., Pp.84 & 85.
5. Ibid., Pp.87 & 88.
6. Ibid., Pp.87 & 88.
7. Owen S.Rye & Clifford Evan, Traditional Pottery Techniques of Pakistan, Smith Sonian Institution Press, Washington, Pp.89 & 96.
8. Ibid., p.90.
9. Ibid., p.96.
10. Ibid., p.91.
11. Ibid., p.92.
12. Ibid., p.92.
13. Ibid., p.93.
14. Ibid., Pp.93 & 94.
15. Ibid., p.94.
16. Sajad Haider, op.cit., p.95.
17. Ibid., p.101.