

## **CEREMIC ARTS**

### **1. INTRODUCTION:**

Ceramic art is art made from ceramic materials, including clay. It may take forms including art ware, tile, figurines, sculpture, and tableware. Ceramic art is one of the arts, particularly the visual arts. Of these, it is one of the plastic arts. While some ceramics are considered fine art, some are considered to be decorative, industrial or applied art objects. Ceramics may also be considered artifacts in archaeology. Ceramic art can be made by one person or by a group of people. In a pottery or ceramic factory, a group of people design, manufacture and decorate the art ware. Products from a pottery are sometimes referred to as "art pottery".[1] In a one-person pottery studio, ceramists or potters produce studio pottery.

Most traditional ceramic products were made from clay (or clay mixed with other materials), shaped and subjected to heat, and tableware and decorative ceramics are generally still made this way. In modern ceramic engineering usage, ceramics is the art and science of making objects from inorganic, non-metallic materials by the action of heat. It excludes glass and mosaic made from glass *tesserae*.

There is a long history of ceramic art in almost all developed cultures, and often ceramic objects are all the artistic evidence left from vanished cultures. Elements of ceramic art, upon which different degrees of emphasis have been placed at different times, are the shape of the object, its decoration by painting, carving and other methods, and the glazing found on most ceramics.

### **2. PRODUCT & ITS APPLICATION:**

Ceramic arts have very ancient history and developed all over the world. In India have very good scope, as the artisans are available at very low cost. Some of the international type of ceramic arts are Surface treatments, China painting, Slipware, Terra sigillata, Forms, Tile,

Figurines, Terracotta (artworks). Studio pottery is pottery made by amateur or professional artists or artisans working alone or in small groups, making unique or short runs. Typically, all stages of manufacture are carried out by the artists themselves. Studio pottery includes functional wares such as tableware, cookware and non-functional wares such as sculpture. Studio potters can be referred to as ceramic artists, ceramists, ceramicists or as an artist who uses clay as a medium. Much studio pottery is tableware or cookware but an increasing number of studio potters produce non-functional or sculptural items. Some studio potters now prefer to call themselves ceramic artists, ceramists or simply artists. Studio pottery is represented by potters all over the world.

### **3. DESIRED QUALIFICATIONS FOR PROMOTER:**

Graduate in any discipline. , Must have better knowledge of art work.

### **4. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:**

There is a long history of ceramic art in almost all developed cultures, and often ceramic objects are all the artistic evidence left from vanished cultures, like that of the Nok in Africa over 2,000 years ago. Cultures especially noted for ceramics include the Chinese, Cretan, Greek, Persian, Mayan, Japanese, and Korean cultures, as well as the modern Western cultures. Prehistoric pottery, Ceramics as wall decoration, is developed in East Asia, Cambodia, China, Japan, Korea, Western Asia and the Middle East.

In India, both common tableware and studio pottery have very good opportunity

### **5. RAW MATERIAL REQUIREMENTS:**

Different types of clay, when used with different minerals and firing conditions, are used to produce earthenware, stoneware, porcelain, and bone china (fine china).

Earthenware is pottery that has not been fired to vitrification and is thus permeable to water. Many types of pottery have been made from it from the earliest times, and until the 18th century it was the most common type of pottery outside the far East. Earthenware is often

made from clay, quartz and feldspar. Terracotta, a type of earthenware, is a clay-based unglazed or glazed ceramic, where the fired body is porous. Its uses include vessels (notably flower pots), water and waste water pipes, bricks, and surface embellishment in building construction. Terracotta has been a common medium for ceramic art.

Stoneware is a vitreous or semi-vitreous ceramic made primarily from stoneware clay or non-refractory fire clay. Stoneware is fired at high temperatures. Vitrified or not, it is non-porous; it may or may not be glazed. One widely recognized definition is from the Combined Nomenclature of the European Communities, a European industry standard states "Stoneware, which, though dense, impermeable and hard enough to resist scratching by a steel point, differs from porcelain because it is more opaque, and normally only partially vitrified. It may be vitreous or semi-vitreous. It is usually colored grey or brownish because of impurities in the clay used for its manufacture, and is normally glazed. Porcelain is a ceramic material made by heating materials, generally including kaolin, in a kiln to temperatures between 1,200 and 1,400 °C (2,200 and 2,600 °F). The toughness, strength and translucence of porcelain, relative to other types of pottery, arise mainly from vitrification and the formation of the mineral mullite within the body at these high temperatures. Properties associated with porcelain include low permeability and elasticity; considerable strength, hardness, toughness, whiteness, translucency and resonance; and a high resistance to chemical attack and thermal shock. Porcelain has been described as being "completely vitrified, hard, impermeable (even before glazing), white or artificially colored, translucent (except when of considerable thickness), and resonant." However, the term porcelain lacks a universal definition and has "been applied in a very unsystematic fashion to substances of diverse kinds which have only certain surface-qualities in common"

Bone china (fine china) is a type of soft-paste porcelain that is composed of bone ash, Feldspathic material, and kaolin. It has been defined as ware with a translucent body containing a minimum of 30% of phosphate derived from animal bone and calculated calcium phosphate. Developed by English potter Josiah Spode, bone china is known for its high levels of whiteness and translucency, and very high mechanical strength and chip resistance. Its high strength allows it to be produced in thinner cross-sections than other types of porcelain. Like stoneware it is vitrified, but is translucent due to differing mineral properties. From its initial development and up to the later part of the twentieth century, bone china was almost exclusively an English product, with production being effectively localized in Stoke-on-Trent.

Most major English firms made or still make it, including Minton's, Coal port, Spode, Royal Crown Derby, Royal Dolton, Wedgwood and Worcester. In the UK, references to "china" or "porcelain" can refer to bone china, and "English porcelain" has been used as a term for it, both in the UK and around the world. Fine china is not necessarily bone china, and is a term used to refer to ware which does not contain bone ash.

## 6. MANUFACTURING PROCESS:

The Red burning Plastic clays are weathered and mixed with water allowed to age for about a week. These clays are then crushed and mixed homogeneously by use of wooden hammer. Wet clay is placed in potter's wheel to give the clay shape. The moulded products are carefully collected on wooden plants and allowed to dry in sheds. Then these are dried in Sun again. When these clay-wares are dry these are burned in coal fired up draft kiln to 600 C to 700 C so that partial vitrification takes place and products get a pleasing light red colour. In case of water Filter the two parts are cast in Moulds and dried in shade before burning. After burning the top part is filled with Water-Filter-Candle and placed over the bottom part. Process Flow: Weathering of Clay Mixing Water Ageing Pugging Moulding Drying Casting burning Cooling Finishing.

## 7. MANPOWER REQUIREMENT:

The unit will provide employment to the 6 persons and all of whom are locally available.

Sr. No.	Designation of Employees	Monthly Salary ₹	Number of employees required				
			Year-1	Year-2	Year-3	Year-4	Year-5
1	Machine Operators	12,000	1	1	1	1	1
2	Helpers@ Rs. 8000	24000	3	3	3	3	3
1	Production supervisor	15,000	1	1	1	1	1
2	Accounts/Stores Asset	12,000	1	1	1	1	1
3	Office Boy	9,000	0	0	0	0	0
	Total	72000	6	6	6	6	6

## 8. IMPLEMENTATION SCHEDULE:

The project can be implemented in 3 months' time as detailed below:

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	1.00
2	Construction (if applicable)	
3	Procurement & installation of Plant & Machinery	2.00
4	Arrangement of Finance	2.00
5	Recruitment of required manpower	1.00
	Total time required (some activities shall run concurrently)	3.00

## 9. COST OF PROJECT:

1) Land & Building:	Covered area 100 sq. Mtrs.	On Rent
2) Plant & Machinery		
a) Two Potter's wheel		Rs. 35,000/-
b) One Up- draft coal fired kiln of 5 diameter		Rs.45, 000/-
c) Wooden pallets, planks, Misc. hand tools		Rs.55, 000/-
d) 3 moulds for water filter		Rs.21, 000/-
	Total	Rs.1, 56,000/-
3. Miscellaneous Fixed Assets:		
a) Electrification		Rs.17, 500/-
b) Water Installation		Rs. 5,500/-
c) Furniture & Miscellaneous others		Rs.55, 000/-
	Total	Rs.78, 000/-
4. Provision for contingencies		Rs.2, 000/-
5. Preliminary & pre-operative expenses		Rs.2, 500/-
Total Fixed Capital:		Rs.2, 35,500/-

The project shall cost ₹ 4.39 lacs as detailed below:

Sr. No.	Particulars	₹ in Lacs
1	Land	-
2	Building	-
3	Plant & Machinery	1.56
4	Furniture, Electrical Installations	078
5	Other Assets including Preliminary / Pre-operative expenses	0.05
6	Working Capital	2.00
	Total	4.39

## 10. MEANS OF FINANCE:

Bank term loans are assumed @ 75 % of fixed assets. The proposed funding pattern is as under:

Sr. No.	Particulars	₹ in Lacs
1	Promoter's contribution	1.14
2	Bank Finance	3.25
	Total	4.39

## 11. WORKING CAPITAL CALCULATION:

The project requires working capital of ₹ 2.00 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	0.50	25	0.12	0.38
2	Receivables	1.00	25	0.25	0.75
3	Overheads	0.50	100	0.50	0.00
4	Creditors	-		-	-
	Total	2.00		0.87	1.13

## 12. PROFITABILITY CALCULATIONS:

The unit shall operate for single shift of 8 hours per day for 300 working days per annum to have an annual installed capacity to produce the following:

Routine type ceramics:	25000 nos.	@ Rs. 20-50	Rs. 8, 00,000/-
Small size art pieces:	500 nos.	@ Rs. 1000-2000	Rs. 7, 00,000/-
Medium Size art pieces:	10 Nos.	@ Rs. 10000	Rs. 1, 00,000/-
Special Art work high quality pieces	4 Nos.	@ Rs. 100000	Rs. 4, 00,000/-
Total Turn over	Rs. 20.00 lakhs		

#### Raw Materials:

The Clay required for pottery is available in most localities in the State. Clay is dug out and stored in the Pottery Unit site for use as and when required.

The unit required raw materials of Rs. 7, 20,000/-.

#### Utilities:

The unit will require a total connected load of 200 KVA and a maximum demand of 190 KVA.

Water requirement is about 500KL per annum.

Water: The water required for the unit per day shall be 100 Liters.

#### Total Expenses per month

1.	Salary & Wages	Rs. 72,000/-
2.	Administrative expenses	Rs. 12,500/-
3.	Selling expenses	Rs. 3,000/-
4.	Raw Materials	Rs. 60,000/-
5.	Utilities	Rs. 3,500/-
	Total for 12 months	Rs.18, 12,000/-
	Interest on Loan @ 10 %	Rs. 00, 35,000/-
	Deprecation @ 10 %	Rs. 00. 25,000/-
	Total	Rs. 18, 72, 000/-

Sr. No.	Particulars	UOM	Year-1	Year-2	Year-3	Year-4	Year-5
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1	Capacity Utilization	%	60%	70%	80%	90%	100%
2	Sales	₹. In Lacs	12.00	14.00	16.00	18.00	20.00
3	Raw Materials & Other direct inputs	₹. In Lacs	10.87	12.68	14.49	16.30	18.12
4	Gross Margin	₹. In Lacs	1.13	01.32	1.51	1.70	01.88
5	Overheads except interest	₹. In Lacs	0.15	0.15	0.17	0.18	0.19
6	Interest	₹. In Lacs	0.35	0.35	0.30	0.27	0.15
7	Depreciation	₹. In Lacs	0.25	0.22	0.20	0.18	0.15
8	Net Profit before tax	₹. In Lacs	0.38	0.40	0.84	1.07	1.39

### 13. BREAKEVEN ANALYSIS:

The project shall reach cash break-even at 18.08 % of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	20.00
2	Variable costs	₹. In Lacs	18.12
3	Fixed costs incl. interest	₹. In Lacs	0.34
4	BEP = $FC/(SR-VC) \times 100 =$	% capacity	18.08