



The SUPPORT Arts and Crafts  
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# Artisanal Handicraft Celadon



**Celadon** is classified as Celadon ware or earthenware with unique characteristics of clear jade color, with small cracks. It is made of black clay, molded and burnt in high temperature, resulting in bright green glazed surface with craze that is different from other earthenware. These are special features of Celadon. It renders resonant sound when striking. It is considered as one of the oldest porcelains in the world.

A term Celadon is from Sanskrit. “Sila” denotes stone and “Dol” means green color. Celadon hence means products in jade green or pale blue color. It is a result of human’s effort to imitate natural jade. In the old days, it was used to make utensils in various shapes, such as a plate, a bowl and an earthen jar. At present, it is used as decoration stuff or a souvenir. Important source of production is in Chiang Mai and Sukhothai where sources of good clays as raw material are located. Knowledge on how to produce earthenware has been carried on from generation to generation to make this kind of product that is beautiful and full of cultural value.





## Celadon: characteristics which reflect the local wisdom and artisan expertise

**Celadon pottery** is glazed with natural material, which is ash of *Terminalia alata* tree. There is an admixture of iron mixed with soil from paddy field that was burnt at 1260-1300 degrees Celsius. The burning is made through oxygen reduction (reduction firing), resulting in small cracks on the surface. It was caused by shrinkage of clay and glaze upon cooling down. **Visible identity of Celadon pottery includes its green color and craze on the surface. It has been said that pottery without these characteristics is not deemed to be Celadon.**

Celadon ware is used as home decoration and appliances in daily life such as dish, plate, and tea set. Each work features a unique pattern, depending on experience, expertise and imagination of a craftsman. In the old days, Celadon pottery was therefore valuable and considered as a must-have item of upper class.

Creators often proudly talk about “pale blue with craze” (Khiao Khai Ka Taek Lai Nga) which is a unique feature that is acquired by reduction firing. It is incomplete combustion when a ratio of oxygen is less than fuel. It is opposite to oxidation firing when the air is more than fuel.





Reduction firing

Normally, oxygen in the air contributes to good combustion upon perfect ratio of fuel and the air. If fuel is more than the air, that will cause Carbon Monoxide in a form of smoke. If there is too much smoke, the surplus Carbon Monoxide from combustion will retrieve oxygen in the glaze to cause complete combustion. This is a process of reduction firing which causes a change in glaze color. Iron that is reduced will create pale blue color of Celadon ware of Sukhothai.



Coating fine color solution onto a crack

Green color can be classified into various shades depending on how the glaze is mixed and temperature in a kiln. Brown pottery turning green is caused by reduction firing. Upon burning, if the clay has less value than the glaze, it will create beautiful pattern of the craze. It can be used as decorations. However, it is not suitable to use as a food container because germ can gather along the cracks. It can be fixed by coating fine color solution onto a crack and have it burnt one more time to weld the color. Then, it will be ready for re-use.



Pale blue with craze is a unique feature of celadon.



Celadon home accessories



### Special Features of Celadon

Jade green color which is caused by glaze, of which its admixture consists of ash of *Lithocarpus ceriferus* tree and *Terminalia alata* tree mixed with clay from paddy field. Then, it is burnt in high temperature.

Craze on the glaze which is caused by shrinkage of clay and the glaze once it is cooled down.

It is manually produced, which depends on experience and expertise of a craftsman. This makes it valuable and unique.

It is burnt at temperature of 1260-1300 degrees Celsius.

No chemical is added, hence, it is praised for its beauty and safety to be used as a food container.

It is used as home decorations and appliances in daily life. It can be used as a food container in a microwave oven which is not harmful to health as there is no chemical in a production process.





Chinese Ceramics that look similar  
to Thai Celadon ware

## Background of Celadon

It is assumed that it originated in China around 2,000 years ago. It was transferred to the prosperous Sukhothai kingdom where there was trading with other kingdoms. Important sources of production were at Sawankhalok District, Sukhothai Province up to Chiang Mai where located a source of black clay which is important raw material in production.

Celadon was very famous during the Song dynasty (960 – 1279). It was glazed porcelain, similar to Celadon ware of Thailand. Its surface was carved and coated with glaze which would be stagnant along a pattern. Once it was burnt, the color along a pattern looked darker than a background.

Influence of green glazed porcelain of China has been widely spread to the world since the 9th century onwards, starting from Europe, Indochina, islands along the Southeast, Arab countries to provinces on the east of Africa, such as Zanzibar. It proved that China was strong and expert in production. Even though it was believed that knowledge of some original porcelain got into China from Mesopotamia (Middle East), China has been praised to be a leader of glazed porcelain production. However, it was deteriorated around the 19th century during the time of Qing dynasty. The prosperous time of Celadon production was in the 12th century, during the Song dynasty. Chinaware was firstly invented during the time of the Yuan dynasty in the 13th- 14th century and in the time of the Ming Dynasty in the 15th century onwards. The glaze was of the same kind as the one used for Benjarong, the Thai porcelain with designs in five colors. It paved the way to new forms of colorful porcelain.



Chinaware during the Yuan dynasty



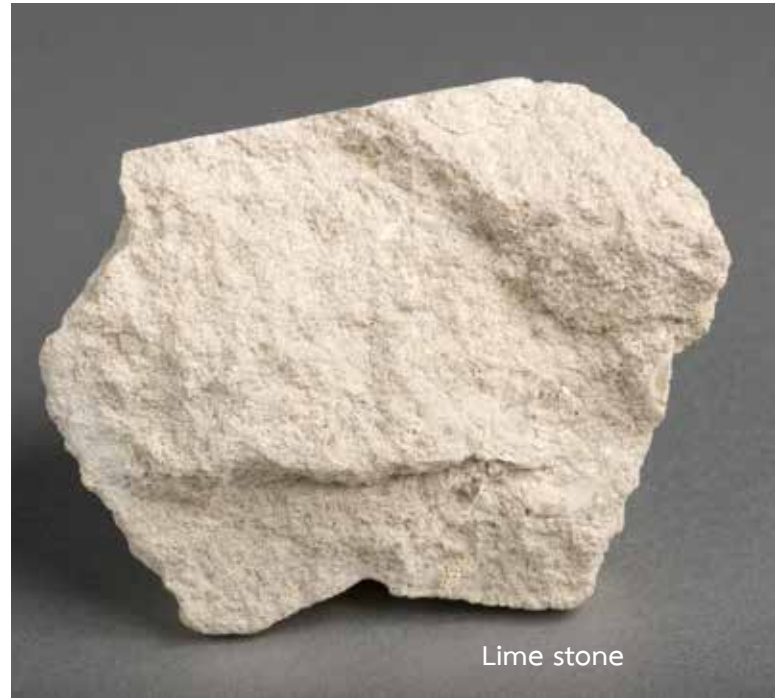
In Thailand, it is assumed that Celadon was produced in the North around the 17th Buddhist century. In Sukhothai kingdom, specific pottery called Celadonware was produced. However, it is believed that porcelain production in the North of Thailand had existed for a long time. Evidence includes Hariphunchai porcelain in Lamphun which was of the late Dvaravati culture around the 12th Buddhist century onwards. It reflects prosperity of art and culture in this area. As for porcelain aged after the 17th Buddhist century onwards, which fell on the time of Sukhothai and Lanna in the upper part of the North, many sources of production were found, such as at Sankampaeng, Chiang Mai. Porcelain of this area was exclusively called Sankampaeng Porcelain.

Celadon production expanded to the north of Thailand through trading with Chinese merchants during the Mangrai Dynasty. Chiang Mai was an important source of production where Celadon had been continuously produced until Chiang Mai was beaten in a war against Burma. All craftsmen were captured and herded to Burma, causing a pause of Celadon

production. Later on, Shan migrated from Shan state to settle down in the North of Thailand. Knowledge on porcelain production was also carried along to make as local craft and it was turned into business of a family. A kiln owner produced appliances for daily life on his own, such as a pot to immerse sticky rice or it is called a “Burma Crock”. It was a small-sized porcelain pot which was used to immerse sticky rice over the night before steaming on the next day. Apart from this, there was a tray with pedestal for tea leaves prepared for chewing (pickled tea-leave as a snack), pantry saucers and a flowerpot which were classified as rough clay pottery. It was made of clay mixed with fireclay through a local preparation process. A work was molded on a manually revolving potter’s wheel. The glaze was solution mixture of ash from Lithocarpus ceriferus tree and Terminalia alata tree and clay from paddy field. Upon burning, it turned pale green like Celadon glaze solution. It was burnt in a dragon kiln. Firewood was the major source of fuel. This porcelain production knowledge has been carried on up to the present time.







## How to Produce Celadon Porcelain

Nowadays, raw materials from nature become scarce, such as *Lithocarpus ceriferus* tree and *Terminalia alata* tree as well as clay from paddy field. Using natural raw material is also considered as a mean of destroying natural resources. With an advance of technology, there is extract from natural raw material that provides exactly the same characteristics of those that were used in the old days, such as ball clay, lime which is used instead of glaze, quartz, feldspar, Iron oxides and clay. Usage of these natural raw materials keeps Celadon up to the same standard and features as in the past.

As for a kiln, in the old days, a tunnel or a hole was dug to build a brick kiln. Presently, it is made of high heat resistant material, placed on the ground so it is movable. Temperature can be controlled as desired. Moreover, a mould is also used so that a volume of work in various forms can be produced to meet up with increasing demand of customers in a timely manner.





Black clay for molding

## Production Process

Prepare ball clay, which is high quality black clay, in a stone ware clay type, with low degree of rust. It provides strength and 20% humidity. It will be further moulded.

In general, molding can be done in 2 ways, namely:

- Manually moulding or moulding by a jiggering tool. It is an equipment similar to a potter's wheel. It is used together with a plaster mould with a bulging surface. There is a blade to mould. The clay will be moulded on a revolving potter's wheel as desired or according to imagination.

- Molding by using slip that is poured from a prototype. Melt the clay until it turns into slip liquid. Pour it into a mold. Thickness of utensil depends on how long the slip is in a mold. The longer it takes, the thicker the utensil will be. This also depends on how well plaster to make a mold can absorb water.



Jiggering tool



Hand molding



Molding stone ware clay



Leave it half dry.

## Production

- Manually mold the prepared stone ware clay on a potter's wheel to make into a utensil as desired, such as an earthen jar, a plate. Leave it half dry in a shady area. Never expose it in the sun as it might be broken or distorted.

- Leave it 50% dry and then have it scraped and decorated properly. Check further on more details.

- Wipe it with damp sponge and check for details properly.

- Proceed a work which is still in dry clay to biscuit firing. Advantage of this firing is that a product can be kept for a long period of time without distorting. Orderly place the works on top of each other in a kiln. Light a kiln to reach a temperature at 800 degrees Celsius to cause complete combustion. The burning takes 5-6 hours. Then, cooling down takes another 12 hours. Biscuit firing is normally done during day time so that the work will be left to cool down during night time till morning of the following day to complete the required time.

Biscuit firing can be done in a firewood stove, a liquid fuel stove and a gas stove. It takes some time to burn until the temperature is gradually getting high to dehumidify and remove leftover organic substance in a product.



Proceed a dry clay work to biscuit firing.





Remove dirt from burning.



Draw and paint patterns.



Immerse a product in Celadon

- Remove a product out of a kiln. Clean it with half dry sponge to remove dirt from burning.

- Draft a pattern with a pencil

- Draw a pattern with color according to a draft. Commonly used color is black or brown.

- Immerse a painted product in Celadon glaze that has been prepared.

- Burn it in a kiln for 12 hours at a temperature of 1260 – 1280 degrees Celsius in a reduction firing. Cool it down for 12-15 hours until it turns green and creates craze. It would take up to 48 hours if a work is huge to prevent any damages caused by abrupt change of temperature in a kiln.



Burn it in a kiln for 12 hours.



- Presently, Celadon has been customized into various forms to meet market demand. For example, liquid bright gold, which has pure gold as a main component, is drawn onto a work 5-6 hours prior to burning at a temperature of 800 degrees Celsius one more time. Make sure that there is no steam or humidity at all in a kiln as it will cause liquid bright gold not shiny.

Molding by using slip is done by spinning stone ware clay in a mixing bucket. Use  $\text{Na}_2\text{SiO}_4$  Sodium Silicate as solvent to mix clay and water into homogeneous texture, without precipitation. Once this mixed clay is put into a plaster mold, a product will be all even thoroughly.

Molding by pouring slip is meant for a very complex work with different angles, such as a sitting elephant, a sleeping elephant, a standing elephant, in a 360 degrees round relief. Once it is removed from a mold, proceed with decoration and burning similar to the first 1 type.



Liquid bright gold is drawn onto a work.





Celadon tea cup



## Development of Celadon

Presently, Celadon is registered as intellectual property as a Geographical Indication “GI” product of Chiang Mai. However, production can be found in many provinces of Thailand which make it become well-known. Celadon pattern reflects society, culture and way of life of Thailand, such as history, culture, tradition, literature and Thai patterns.

Thai Celadon has gained huge popularity in foreign countries. It represents a taste of a house owner. In each year it generates a lot of income for the country. Celadon pottery or sometimes called as Celadon porcelain is commonly molded into appliances, such as a plate, a bowl, a spoon or a tea set. It mostly emphasizes on utility, though adaption has been applied. Once it was simply used as a food container, now it is applied to meet specific requirements of consumers. For example, it is made as a container for aromatherapy or as an art work to decorate on the wall or around buildings.

Therefore “Celadon” is pottery that reflects knowledge of Thai people. It is valuable in terms of both beauty and craftsmanship. It is originated from Thai ancestors who settled down in Chiang Mai and produced Celadon pottery as a family business. It is a pleasure that Celadon has become a business that young generation pays more attention. Nowadays, there are still successors to make this Celadon an important export product that helps enhance reputation of Chiang Mai.







#### References

- Interview with Mr. Phonglak Suwanmalee, Master of Handicraft in 2011, specialize in earthenware and celadon*  
<http://info.gotomanager.com/news/details.aspx?id=2494>  
<http://www.manager.co.th/smes/ViewNews.aspx?NewsID=9580000100393>  
<http://info.gotomanager.com/news/details.aspx?id=2494>