



PURCHASING GUIDE  
**Porcelain & Bone China**  
— DINNERWARE —





## Porcelain and Bone China

The early history evolving around ceramic production as we know it today began in the city of Stoke-on-Trent in Staffordshire, England, now referred to as "The Potteries." This region has maintained its leadership status in the ceramic industry and continues to operate under the same traditions and skill sets that have been in place for over three centuries.

### When selecting china for your restaurant, first ask yourself the following questions:

- ▶ What style of dinnerware will enhance the look of my tabletops?
- ▶ Will the dinnerware complement my dining room ambiance?
- ▶ How will the dinnerware heighten the chef's culinary creations?

Many people are uncertain as to the difference between china and porcelain. In a literal sense, the two terms describe the same product. The term "china" comes from its country of origin, and the word "porcelain" is Latin, meaning seashell. It implies a product which is smooth, white, and lustrous. The term "porcelain" is preferred in Europe while "china" is favored in the United States.



### The primary difference between bone china and porcelain comes down to six properties:

- ▶ Plasticity
- ▶ Fineness of grain
- ▶ Color after firing
- ▶ Hardness
- ▶ Cohesion
- ▶ Ability to apply decoration



### CARE NOTE

Most porcelain and bone china are microwave and dishwasher safe.





# Porcelain

## Primary Characteristics

Porcelain china is white, hard, permanent, non-porous pottery.

Hardness is a primary attribute that is achieved through the types of material used and the firing process.

Porcelain is made up of a combination of feldspar, quartz and kaolin. These materials are then fired in a kiln at high temperatures, resulting in hardness more superior than that of bone china.

Typically porcelain is less expensive than bone china.

The materials contribute to a brittle composition which can lead to increased chipping.

Porcelain can be significantly heavier than bone china because of the ingredients used to make the clay.

The thicker composition of porcelain requires higher temperatures for firing – averaging around 1455 degrees Celsius.

Available colors vary in whiteness ranging from bright white, ivory and blue-grey.

## There are two primary types of porcelain:

### Soft Paste

Is creamier in color and remains somewhat porous. When broken, it reveals a grainy base covered by a glossy layer of glaze and will look similar to the inside of a porous Kit Kat candy bar.

### Hard Paste

Is a purer white color and non-porous. When broken, it's difficult to distinguish the base from the outside glaze and will look similar to the inside of a Hershey chocolate bar.







## Bone China

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### *Primary Characteristics*

Its translucency and fineness in composition creates a distinct chime that sets bone china apart from all other ceramic products.

Bone china is comprised of kaolin, feldspar and quartz, but its extra ingredient, bone ash (derived from oxen or cattle bone), gives it the greatest strength and highest chip-resistance of all ceramics.

The texture and appearance is opaque and its whiteness can best be described as "snow white."

The quality of finished bone china is determined by the total amount of bone ash. High-quality bone china should contain a minimum of 30% bone ash and may include as much as 40-50%.

The ox bone allows for more lively patterns or a wider range of colors to stain the china.

Thin-walled pieces are often used, producing a more delicate appearance than porcelain, but with a greater durability.

Some vegetarians and vegans avoid using bone china because of the use of ox bone in the clay mixture.

It is typically lighter in weight than porcelain, as it's usually thinner than its porcelain counterparts.

Bone china white has a warmer tone while porcelain white tends to be brighter.

The elegant appeal, lighter weight and body composition, and the additional manufacturing processes reflect the slightly higher cost of bone china over porcelain.

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**The glaze on bone china is softer than the exterior of porcelain, which makes for a softer texture, however a weaker surface layer.**

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## Production Process

The standard manufacturing process of bone china encompasses the steps below to ensure the highest quality product.



### 1. Mixing All Materials

#### Kaolin

Commonly known as clay. It is strong, hard, white-burning clay that is composed mainly of alumina and silica and is derived from volcanic rock.

#### Feldspar

A mineral that contains silicates of aluminum. It's found in granite rock, but at an earlier state of decomposition than kaolin, making it softer. Feldspar is added to the porcelain mixture to promote plasticity.

#### Bone Ash

Provides increased strength and whiteness. It gives the finished product a translucent quality that can be best observed when held up to the light.

After the raw materials have been selected, they are crushed through a multi-step process. Next, they are passed through a series of screens to remove any over or under-sized particles. Water is added to produce the desired consistency of the clay and then it is ready to be formed.

### 2. Forming

The mixture is formed into various shapes, most commonly achieved by pouring it into one or two-part plaster molds to stabilize the form of what will be the finished product.

The blend remains in the mold until it dries. At this stage, it is removed and gently sponged with water to eliminate any scratches or scars from the surface. The pieces are now referred to as "greenwares" and are ready for firing.

### 3. First Firing

The greenwares are placed into the kiln and fired at a set temperature.

Second step is differentiating the porcelain and bone china. With bone china, the greenwares are placed into a kiln and fired at a temperature of approximately 1260 degrees Celsius which makes them durable, white and translucent.

After the firing process is complete, the product is referred to as "biscuit".



#### 4. Glazing

This is applied to the biscuit after the first firing session to fill the pores with a glasslike coating which will ultimately result in a smooth, glassy surface.

Glazing is most commonly applied to the biscuit by a spraying or dipping process.

#### 5. Second Firing

After glazing, the biscuit returns to the kiln to undergo the second firing process, referred to as “glost”.

The temperature during this phase is always lower than the first firing session.

The glaze then melts and fuses onto the biscuit. This step hardens the body, making it impermeable to liquid. All products coming out of the kiln after glost are carefully inspected and any pieces showing imperfections are discarded.

#### 6. Decorating

If decorating is being applied, it occurs after glost. Decorating is a creative way to add a custom look to your dining room. Visit [Custom Design Services](#) for inspiration and to get started.

Decoration can be applied by the following methods:

- ▶ Spraying
- ▶ Decal transfer
- ▶ Gold finishing
- ▶ Hand painting

Once the decoration is applied, the pieces are fired again to fuse them to the glaze coating.



Knowing the fundamental differences between porcelain and bone china aides in the selection of the perfect dinnerware for your establishment.

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## Key Elements

*for Operational Use*

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### Prevent Cracking and Breakage

Drastic changes in temperature can shock and weaken your dinnerware. Take caution when serving entrees on plates that are not of similar temperature. Train staff to use lightly chilled plates to serve cold food or warm plates to serve hot entrees.

Encourage your team to carry less dinnerware in bus trays. Allowing dinnerware to knock against each other increases the likelihood of chips and cracks. Maintaining shorter stacks of dishes in storage and at the dishwashing stations promotes manageable loads to be moved by staff and reduces the chance of breakage.

Avoid transporting dinnerware and flatware in the same bus box or compartment. Scratches from metal flatware are easily prevented with dedicated dinnerware bus trays.

### Cleaning Best Practices

Use a gentle scraper or sponge, rubber is preferred, to remove leftovers from soiled plates. Do not soak dinnerware in a pre-rinse solution for more than a few minutes as overexposure can compromise glazes and lead to chipping.

For optimal appearance, dry china and porcelain dinnerware immediately after washing to avoid water spots. To prevent stacked dishes from sticking, be sure that water and soap residue are completely absent before storing.



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## Contact Us

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