

FRANKE KITCHEN SYSTEMS

WHY FRANKE

www.frankeksd.com

What Puts The “Luxury” In Franke Luxury Stainless Steel: Why It Makes A Better Sink

Seventy percent of sinks are made of stainless steel. As the world's largest purchaser of stainless steel, Franke has its choice of the best raw materials. But that is only the beginning of the evolution from fine to Franke. By lavishing this material with cost, care and craftsmanship Franke creates a stainless steel that is “uncommon.” Let us tell you about the choices, the processes and the skills that Franke invests to raise its stainless steel systems to the quality, beauty and longevity its discerning customers deserve.

The “Why” of Stainless Steel

The reasons almost 70% of all sinks are stainless steel:

- Does not alter the essence and flavor of food
- Surface is easy to clean
- Requires very little upkeep
- 100% recyclable, making it right for today's environmentally conscious world
- Resists corrosion and has hygienic and aseptic properties
- Does not require the labor-intensive application of an added surface treatment

The “What” of Stainless Steel

Stainless Steel is an alloy of iron, chromium and nickel, generated to create advantages that individual pure metals do not offer. So

it's a whole greater than the sum of its parts. The name refers to the rust resistant properties of the metal: which is “stain-less”, but not “stain-proof.” These are its ingredients:

- **Austenite** is a nonmagnetic solid solution of carbon in iron, used in making corrosion-resistant steel of the kind used for making cutlery, hospital and food-service equipment, and tableware.
- **Chromium (Cr)** is a hard, malleable, glossy, gray, chemical element with no odor or taste, used in alloys to give them corrosion resistance and a glistening look. It is most responsible for the corrosion resistance of stainless steel.
- **Nickel (Ni)** is a hard, ductile, silvery-white, chemical element, a high-luster metal with a high level of corrosion resistance.
- **Passivation Layer** – When stainless steel contains a sufficient amount of chromium, a hard, invisible, virtually impenetrable film of chromium oxide forms on the surface. Although only a few atoms thick, this prevents further surface corrosion when the stainless steel is exposed to corrosive materials and prevents any corrosion from spreading into the metal's internal structure. By definition, stainless steel resists corrosion, the gradual degradation of a metal or alloy especially by oxidation or chemical reaction. (Gold, platinum and palladium are the only metals not subject to corrosion.) But the level of corrosion



resistance varies, based on factors in manufacturing:

- Chemical composition of the metal
- Temperature and temperature variations
- Oxygen content and exposure to oxygen

Even slight variations in chemical compositions result in wide variation in quality. In other words, **NOT ALL STAINLESS STEEL IS CREATED EQUAL.**

There are several different types, and many different grades of stainless steel, so to deserve its “luxury” designation, Franke insists on creating and maintaining “differences that makes a difference to you.”

Gauge of Franke Stainless Steel

“Gauge” describes the thickness of the sheet of stainless steel on a scale from 8 to 30, the lower the number, the thicker the sheet of stainless steel. Gauge is a significant factor because a heavier gauge can help prevent denting and bowing. It also contributes to noise reduction from garbage disposals and items making contact with the sink. That doesn’t mean though that thicker is always better. For instance, the thicker the gauge the more difficult, at times impossible, it is to “**deep draw**”, or craft from a single sheet to reduce welding marks, during manufacturing. So, Franke carefully selects the proper gauge, best fitted to the manufacturing processes.

- Franke full size deep drawn sinks are 16 or 18 gauge
- Franke full size hand fabricated sinks are 16 gauge
- Franke’s smaller accessory bowls are 18 or 20 gauge

Grade of Franke Stainless Steel

The three most common grades available in stainless steel sheet metal are: 304, 316 and 410. Grade 304 is made up of at least 8% nickel (**Franke’s contains 10%.**) It is the most frequently used of the three grades, valued for its ability to provide corrosion resistance and to maintain the capacity of the sheet metal to be bent, welded, stamped and/or drawn. Franke relies on these properties to achieve the elegance and detail of its designs.

Franke’s Standards for “Uncommon” Stainless Steel Franke insists on an alloy of **18% chromium and 10% nickel** content by mass. **This higher nickel and chromium content provides a level of corrosion resistance and integrity** that is superior to any other category of stainless.

Franke Stainless Steel is **ductile**, meaning that it is malleable (moldable.) This ensures that it can be formed without cracking or breaking into parts.

Franke insists that its stainless steel be **nickel-rich** because when nickel is added the Austenite structure of iron is preserved. This crystal formation makes such steels non magnetic and less delicate at low temperatures. And it further contributes to the corrosion resistance. Franke places high value on two important physical properties:

- **Thermal Conductivity** - Austenitic stainless steels (i.e. T304 grade) have lower thermal reaction than carbon steels, helping

you maintain the chosen water temperature in the sink.

- **Thermal Expansion Rate** - While stainless steel is most commonly used for its corrosion resistance it is also valued for its ability to endure exposure to high temperatures. Because of its **high chromium content**, Franke’s stainless steel has the added benefit of high temperature strength and resistance to scaling (oxidation) at elevated temperatures. Its chromium content accounts for its resistance to oxidation. As an austenitic steel, with chromium contents of at least 18%, it can be used at temperatures up to 1598 degrees, essential when working with pots and pans that need to be set down and are at temperatures upwards of 500 degrees.

Sources and Sustainability of Franke Stainless Steel

Eco-Friendly Stainless steel is 100% recyclable, and Franke stainless steel is composed of nearly **70% recycled material**. In the light of that commitment it is important to consider the sources of Franke Stainless Steel. Much of the world’s stainless steel comes from low cost countries, but Franke chooses to invest in high cost stainless steel from Germany, Spain, Belgium and Finland. Franke takes pride in the fact that its European mills’ use of only the most modern production equipment, further ensuring the purity of its recycled steel materials.

Manufacturing Processes for Franke Stainless Steel

Sinks Franke uses a proprietary **deep draw manufacturing process** that also includes **annealing** when necessary.

Deep Draw

The deep draw is the method used for creating parts from flat sheet metal. The process involves pressing a disk into a die with a punch to form a variety of shapes, radii, diameters and lengths as the metal progresses through several work stations. Since existing technology does not enable the draw to create as deep a shape as desired in one draw, greater depths require multiple steps called “draw reductions.” The greater the depth, the more reductions are required.

Annealing

Deep drawing may also be accomplished with fewer reductions by using an annealing process in which the piece is heated. While it adds cost to the manufacturing process, it is done to **prevent the stainless steel from thinning out to a lesser gauge in the course of manufacturing**. The duration of time the piece is exposed to this temperature is kept to a minimum to prevent surface scaling and to control grain growth. This is how Franke eliminates the occurrence of “orange peel” texture on the stainless steel and maintains its smoothness to the touch.

Sheet Metal Tolerances

In order to maximize sink capacity, Franke raises the bar on sheet metal tolerances, by developing and perfecting processes that enable us still to use a deep draw process on tight radii in deep bowls. While this is the most advantageous process, unfortunately, these tight tolerances raise the cost of manufacturing significantly in order to deliver benefits expected by Franke’s discerning consumers.

Hand Fabricated Sinks

The joints are welded together and then a molten filler material is applied further to achieve a more perfect joining of the sink sides and corners. Here, the “Franke difference” is that we avoid Intergranular corrosion, which means:

- Austenitic stainless steels contain a small amount of carbon.
- Upon exposure to drastically high temperature, such as welding, the carbon causes ingrained chrome to develop chromium carbide around it, blocking adjoining sections of the chrome it needs to prevent its own corrosion. The Franke solution to this problem is to use a minimum carbon content stainless to avoid such corrosion.

Circle Weld

For Franke multi-bowl configurations, each bowl is circle welded to the frame, not seam welded. This prevents any unsightly weld seams from showing on the center saddle of the sink. This, of course, costs more than seam welding, but it is the Franke difference that helps us meet the expectations our customers have of a high-end luxury stainless steel kitchen sink.

Franke Finish

Sheet metal can be purchased pre-polished. There is a reason Franke never does so for it’s deep drawn sinks. While it could reduce costs in the manufacturing process, the Franke difference is a finish best achieved in the post-manufacture process. A Franke sink’s silky luster comes from machine and hand-finishing

operations that enable the sink to keep its beauty over its long life. Many feel that the look of a Franke hand-finished sink actually improves with age. And Franke’s luxurious and desirable ultra satin surface makes our stainless steel easier to clean. It is also an important sanitary feature. The smooth surface obtained by our manufacturing and polishing methods ensures better corrosion resistance.

Care & Maintenance of Franke Stainless Steel

Type 304 stainless steels (Austenitic) are vulnerable to potential damage from abrasives, bleaches and cleansers containing chlorine. Inevitably, stainless steel sinks are subjected to some very aggressive chemicals. What helps them withstand such abuse includes dilution by running water and thoroughly rinsing the sink to remove any lingering damaging substances. If this ongoing cleaning and use of water is not routine, the passive layer is vulnerable to corrosion.

For this reason, you should **NEVER** use abrasive or chlorine-based cleansers; rough or heavy duty sponges or steel wool pads.

Instead, you should use only a soft cloth and/or mild soap (remember, avoid any chlorine-based cleansers)

That is the path that leads from merely fine to Franke, and to years of enjoying the quality, beauty and longevity that define Franke Stainless Steel sink systems. Welcome.

WHY FRANKE COMPARISON

FRANKE	OTHER
✓ High Chromium Content: 18/10	✗ Lower Chromium Content
✓ High Grade Stainless Steel	✗ Lower Quality Stainless Steel from Low Cost Countries
70% Recycled Uncontaminated Stainless Steel	✗ Less/No use of Recycled Stainless Steel - assurance of no contamination
✓ Deep Draw Annealing Process (deeper manufactured bowls with tighter radius)	✗ Cold Formed Bowls (risk of cracking or splitting)
✓ Low Carbon Steel	✗ Unknown Carbon Content
✓ Circle Weld (hidden seam)	✗ Seam Weld (visible seam)
✓ Post-Manufacture Polishing for Ultimate Finish	✗ Pre-Manufacture Polish (lower quality appearance)

WHY FRANKE FIRECLAY SINKS

Franke Fireclay sinks are all handcrafted and many are created by the respected and world-renowned firm of Villeroy & Boch, which has been making fine ceramic creations for over 260 years. Still a family-owned business, Villeroy & Boch has served as Royal and Imperial Porcelain Manufacturer for royalty, aristocrats as well as becoming popular with the public due to the quality of their beautiful and distinctive designs.

How Fireclay is made

The slip (liquid ceramic) is comprised of quartz, china clay or ball clay (kaolinite) and chamotte (a ceramic raw material consisting of silica and alumina) which is injected into porous plaster molds at high pressure. When not quite dry, the still fragile pieces are fettled manually and the uneven places smoothed with coarse and soft sponges and water to create an even surface. Waste outlet and tap fitting holes are then punched out, each according to the individual design of the sink. At the same time, the first manual total quality inspection is completed. With large fireclay sinks, the drying time at room temperature takes several days. The final drying in the dryer reaches a maximum temperature of 160 degrees fahrenheit, and takes about 40 hours.

After drying, the sinks are fettled once again by hand, with the final glaze sprayed on the surface. The thickness of the glaze is 0.7mm to 1.0mm before firing and the consistency of color is closely monitored to assure uniformity.

The sink is then fired for 20 hours in a tunnel kiln at 2,200 degrees fahrenheit before the craftsman makes the last of numerous inspections before finishing. The shrinkage involved in the firing process from start to finish can result in a linear

shrinkage of up to 5% which can yield a 2% final variance in the size of each sink.

Each sink is tested to stringent tolerance guidelines using regularly calibrated testing equipment which detects the actual size of the pieces, faucet hole sizes, impurities and deformations.



For undermount sinks, the unglazed mounting rim is ground flat to ensure a perfect fit in the worktop. Premium finishing guarantees even surfaces for optimum fitting and perfect sealing and individual pieces are ground with rotating disks in a wet polishing operation to assure a perfectly leveled installation surface. The sink is then carefully packed to prevent damage during transport.

Practical and attractive accessories are available for many Franke Fireclay sinks, including grids and cutting boards.

Care and Maintenance

Franke Fireclay sinks offer:

- Extremely hard, scratch resistant surfaces
- Hygienic surfaces, with smooth dirt repellent finish
- Durability
- Insensitivity to acids and alkalis

The Franke Fireclay finish allows:

- Less cleaning time; stains from tea, coffee, red wine or limescale are easily removed
- Fewer cleaning agents; aggressive cleaning is unnecessary
- Reduced water consumption needed to clean a fireclay surface

Visit www.frankeksd.com for Franke's Fireclay product offerings.

For product inquiries please contact Franke Kitchen Systems Customer Service department:

Franke Kitchen Systems
Luxury Products Group
3050 Campus Drive, Ste 500
Hatfield, PA 19440
Phone: 800-626-5771
Fax: 888-685-0007
www.frankeksd.com