



sinks + faucets

Why stainless steel?

A White Paper from Elkay® Residential



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Introduction



Ever wonder why some raw materials seem to be perceived as more “green” or more environmentally-friendly than others? This is especially frustrating for consumers who are barraged daily with a mountain of advertising and editorial content that may or may not be based on facts. At Elkay[®], we certainly know a lot about stainless steel; we’ve been working with it for 89 years, making sinks, faucets and water coolers. We have assembled research from the leading associations pertinent to the production and manufacturing of stainless steel products, combined it with our own findings, and present to you, this white paper.

Durability



High quality stainless steel sinks can and do last for generations of daily use. There is a good chance that the stainless steel sink you grew up with is still performing today. Stainless steel is used for a multitude of applications that require durability. Note that the crown of the Chrysler building in New York, which was built in 1929, is clad with stainless steel.

Stainless steel won’t chip, crack, peel, stain or fade. What gives stainless steel its long life? A naturally occurring chrome oxide layer forms on the surface to protect the material from corrosion. The oxide layer is immediately self-healing when scratched, forming a new protective barrier.

Finishes

Stainless steel sinks come in a variety of surface finishes, including very bright/mirrored, more of a satin/muted finish and others. Homeowners should select a stainless steel sink finish that matches the intended use; for example, if the stainless steel sink is intended for heavy, daily use as a primary kitchen sink, a satin/muted finish would be more suitable. A stainless steel sinks with a “ground” finish can withstand heavy daily use, yet still be brought back to a like-new condition with a small amount of TLC [Tender Loving Care]. Even heavily soiled and neglected sinks with ground finishes have been revitalized to put a smile back on the owner’s face.

Recycle Me

Source: *Stainless Steel The Green Material*, Specialty Steel Industry of North America (SSINA). SSINA.

Source: Elkay vendor document confirming pre-construction stainless steel content.

Did you know that stainless steel is recycled more often than paper or glass? It's true. In fact, most stainless steel sink manufacturers use recycled stainless steel in sink production; the stainless steel used in Elkay sinks contains a minimum of 80% recycled content. Stainless steel is one of the few materials that does not degrade when recycled; so conceivably, every stainless steel product could be recycled and used in perpetuity, without ever contributing to a landfill. That sounds pretty green to us.

According to the Nickel Institute, there is no metallurgical reason why the recycled content of nickel-based stainless steel could not approach 100%. It's very probable that a stainless steel product that your great, great grandparents used in the 1920s has been recycled into other products that you and your family use today.

Clean Me

Stainless steel can withstand multiple cleaning cycles and is the preferred material for critical hygiene applications like surgical instruments, commercial kitchens, and food processing plants. It is immune to the effects of ultraviolet light and is unaffected by most household chemicals and foodstuffs. The passive, non-porous, oxide surface seals the sink and assures that no metals or chemicals can leach from the alloy to foods that may have incidental contact with the sink [NSF listed material].

Aesthetics

Stainless steel has the unique ability to present a neutral color palette to a room décor [on left, Elkay Mystic Wave sink]. Or if needed, stainless can become the main finish statement in the room by being paired with stainless steel appliances, cabinets, backsplash treatments, etc. Just like the appeal of other natural materials such as quality hardwoods and stone, stainless steel carries a sense of permanence and long-term quality, sustainability and value. Unlike some metals and alloys, you can count on the appearance to remain constant and tarnish-free with little effort.

The surface finish of stainless steel can also be tailored to create different effects, as it plays with the ambient or direct lighting in the room. Details such as a mirrored, high-shine treatment on the sink compartment's curved side wall, to the deep luster of a satin finish, stainless steel has numerous personalities to fit virtually every design style [on left, Elkay Vase design, co-created by Jamie Drake, ASID].



The Shape of Things to Come

The remarkable thing about working with stainless steel is its manufacturing flexibility. It can be drawn, stamped, stretched, welded, annealed [heated to improve formability by removing work-hardening effects], ground, polished, etched and the list goes on and on. What this means for the homeowner is that highly-skilled metal workers produce a multitude of sink shapes, sizes and with a variety of finishes to allow extreme personalization.



Ranging from the minimalist, modern-inspired sinks with flat bottoms and tight corners, to a more softened undermount sink with larger, rounded corners, to a huge collection of contemporary and traditional, deeply drawn products [up to 14" deep], and smooth flowing, organic shapes – for just about any design that can be dreamed, there is a combination of processes to produce the sink in stainless steel [on left, Elkay custom stainless steel countertop with integrated Mystic Puddle sink and Mystic Reverse Taper sink]. Also remember that there are loads of custom fabrication capabilities from stainless steel fabricators, such as Elkay, which include standard and custom countertops.

Design Matters

Many companies are pushing the envelope with the manufacturing of stainless steel products – exploring new sink designs to further expand the envelope of style and functionality with the goal of improving the user's experience and creating life-long satisfaction, given that the average useful life of a stainless steel product is 30 years. We also note that the high-end sink manufacturers' products have custom-fit accessories to increase the performance and enjoyment of using complete sink solutions.

Source: *Stainless Steel The Green Material*, Specialty Steel Industry of North America (SSINA)

Recent examples of Elkay's design acumen include the Gourmet Work Shelf line of sinks [on left, upper] with grids mounted above the sink bottoms by the integrated Smart Support System™, and the Work Bench™ feature [on left, lower] found in our Avado® sinks. The Work Bench™ is a 4" high, double bowl partition that is approximately 6" wide: it serves as a "landing pad" for hot pots or a place to air dry stemware. The Work Bench feature creates the aesthetics of a single bowl, but provide the functionality and water savings of a double bowl by having two compartments.



Performance



Command of the stainless steel manufacturing process allows the astute sink producer to make sinks that offer more capacity inside each compartment, with tighter radius corners, nearly flat bottoms, and straight side walls. The addition of heavy rubber pads strategically placed on the underside of the bottom and sides of the sink, and/or a coating of a heavy polymer spray provides a quieter sink experience. Astute consumers should look for these features, along with heavy gauge steel and custom-fit, complementary accessories to create the most utility for the kitchen sink space.

First Impression



Unfortunately, there are consumers who have had a bad first impression of a stainless steel sink. As mentioned earlier, stainless steel can be formed into a multitude of shapes and sizes; this flexibility means that it can also be made into poorly-designed products and installed in applications that are inappropriate. Bad product design is simply bad product design; it happens with all products manufactured in all materials; the bottom line -- changing the material will not fix a poorly-designed product. We strongly believe that once a person is able to use a well-designed, quality stainless steel product, the chance of buyer's remorse is extremely low [on left, Elkay Cascade sink design, co-created by Fu-Tung Cheng]



For those customers who absolutely, positively feel that stainless steel does not meet their application requirements, many sink producers also offers solutions in copper, granite, cast iron and fine fireclay materials [on left, Elkay Explore fine fire clay sink in white] which offer different combinations of color and feel.

Brand Matters

Today, consumer behavior suggests that when besieged with too much information, too many choices, and too many statements about sustainability, quality, longevity, etc., consumers will purchase a product brand they know, and emotionally trust. Along with the purchase of an Elkay sink comes the confidence and benefits of the Elkay name. We have successfully been in business for almost 90 years and stand behind our products. But don't take our word on what defines quality – Elkay sinks are made to conform to the Uniform Plumbing Codes, ASME [American Society of Mechanical Engineers] and IAPMO [International Association of Plumbing Mechanical Officials] standards.

Source: *The Brand Gap*,
Marty Neumeier.



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About the Author

After graduating with a design degree from Northern Illinois University in DeKalb, Illinois, Moran worked in the graphic, exhibit, and product design fields while completing a B.S. in Mechanical Engineering from the Illinois Institute of Technology [IIT] in Chicago. During the past 14 years, he has been with Elkay in engineering and management roles while continuing his education by completing an advanced degree in Metallurgy from IIT and completing the executive M.B.A. program at the Northwestern Kellogg School of Management.

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