

REDUCE MAINTENANCE EXPENSES

The extraordinary durability of stainless steel means very little maintenance is required to preserve the original appearance, provided a suitable grade is used for the building's environment. Finish selection also plays a major role in maintenance costs. Building owners are best served when designers take this into consideration.

Stainless steel buildings are quite durable. The dome of the Chrysler building in New York is a great example. Having only been cleaned twice since its construction in 1929, there is no doubt that it will continue to perform its duties until such time as the building is taken down. While stainless steel in and of itself is a very low maintenance material, it is important to select a suitable grade for the building's environment in order to minimize maintenance and energy costs. Further, a surface finish that matches up with the service conditions that it will be subject to goes a long way toward reducing costs.

Stainless steel is available in a variety of grades for a variety of applications. In architecture, the most common grades are types 304 and 316, which cover the majority of exterior applications. Type 304 is suitable for interiors and can be used outdoors in mild climates away from salt water or locations where deicing salts used. Type 316 is the normal marine grade, which has sufficient pitting corrosion resistance to perform under deicing salt exposure and typical marine environments.

It is important to specify a grade that does not react with the environment for three basic reasons. First, to prevent panel failure in the event corrosion is severe enough to perforate the material, although this condition is somewhat rare in stainless steel. Second, corrosion must be avoided in order to maintain energy efficiency. Unlike painted metals or bare ones that oxidize, stainless does not degrade. Therefore, the initial energy efficiency remains intact over time (see **The Insulation Value of Stainless Steel** on our website). The third reason is to maintain an attractive appearance with very little maintenance. Selecting a suitable grade for the environment enables the



building owner to merely clean the surface as necessary for cosmetic reasons.

Stainless steel can perform in any inhabited location on Earth, including severe marine environments like the Middle East and Hawaii where Type 316, the normal marine grade will rust. Contrarian Metal Resources pioneered the use of duplex alloys for environments like these. It is now possible to have truly sustainable metal panels that do not corrode or lose their energy efficiency over time in the most severe environments on Earth.

Proper finish selection is a very important step in minimizing the maintenance expenses of stainless steel building panels. In general, rolled-in finishes provide the best dirt resistance and are, by their nature the easiest to clean. For building exterior applications, Contrarian Metal Resources' InvariMatte® stainless steel is ideal for roofing and other exterior panels where glare is an issue. More information about the dirt resistance of this product can be found on our website in the paper entitled **The Enhanced Thermal and Solar Reflectance of InvariMatte®**. For panels that can tolerate a glossier appearance, InvariLux™ is the most dirt resistance and therefore easiest to clean of any stainless steel finish that does not have a coating applied. Spandrel panels on skyscrapers, storefronts and high-traffic areas that are subject to the accumulation of fingerprints can pose less of a maintenance burden on the owner where InvariLux is used. Since they are rolled in finishes that are very smooth at the microscopic level, both InvariMatte and InvariLux are much more dirt resistance and easier to clean than the vast majority of stainless steel finishes on the market, especially those that are abraded, like the typical home appliance finish.

For interior applications such as elevators, where the visual design requirements might lead to more elaborate patterns, textures and color treatments, the addition of an anti-fingerprint coating like FG3 from Tsukiboshi Art Company has merit. This treatment is rather expensive, but that investment returns in the form of reduced maintenance. It seldom needs to be cleaned.

Stainless steel buildings are cheap to maintain. Enveloping a building in stainless steel can also **Reduce Energy Consumption** and **Reduce Damage Losses** compared to more common materials. There is no doubt that the investment in a stainless steel building returns on the owner's investment. A Contrarian Metal Resources product consultant would be pleased to assist you in selecting the best grade and finish combination that balances design aesthetics with maintenance costs.



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