

Wrought Iron/ Metal Fencing and the Effects of Atmospheric Corrosion

Wrought iron use is commonly used for homes, business and condominium security fences, grills and gates.

Q? How do you protect wrought iron features from the corrosive elements of Hawaii?

A: Proper design is the first step.

1. Systems that are anchored within the ground should require that the poured anchor system top anchor point be above ground elevation and not below. Over time, the concrete that is below the ground fills in with debris and where the anchor system is found in residential or condominium use, the debris composts to earth and grass will slowly grow into the area. The earth, debris and grass holds moisture against the metal system and slowly causes anchor point to rust which can lead to failure of the metal at the anchor point.
2. The concrete anchor mix should include **CORTEC MCI Mini Grenades**. CORTEC MCI Mini Grenades will provide decades of corrosion protection at this important area to insure that at the wrought iron/metal post interface that corrosion will not occur. By insuring the finish pour is above grade will also insure the elimination of water ponding during heavy rainfall by allowing the water to shed from this point, similar to a sloped roof design.



A: Properly maintained a wrought iron system will provide many years of service.

1. Improperly maintained wrought iron will be destroyed in a short amount of time depending on location and exposure.
2. The cost of corrosion inhibiting coatings versus the cost of labor play into the reality of wrought iron systems ownership, and when left unattended will result in loss of expensive wrought iron systems. Safety and liability issues arise with unmaintained wrought iron security and decorative systems. When one considers the fact that large properties may have several hundred feet of wrought iron built systems, the cost of renewed coatings can become staggering.
3. After installation of a wrought iron fence that is coated in various colors, most often black, the life cycle of the coating comes into play. After construction, the wrought iron system is most often surface prepared, primer applied and then coated with a corrosion resistant finish. When many of the wrought iron systems are built into the ground, moss rock or stone walls, further cost association for replacement can end up a costly repair for the owner.
4. Should a new wrought iron system be installed, focal points of annual inspections should be conducted of weld points of the constructed wrought iron feature. Included focal points are the windward side of the wrought iron feature, bottom rails where water can accumulate and direct burial points where support structure enters either the earth or where the wrought iron system enters the concrete pour which anchors the system to the ground or to rack, stone or CMU walls.
5. The result of the moisture accumulation can be seen over years of this condensation cycle as the locations of the cycle are the first to be damaged by corrosion. Left unattended, these weld locations will slowly and ultimately be destroyed.
6. Regardless of how much surface preparation and painting is done, these weld locations will remain corrosion hot spots and pests to getting the full life of wrought iron.



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Wrought Iron/ Metal Fencing and the Effects of Atmospheric Corrosion - continued

A: Key to maintenance is the Weld Points

1. Often overlooked are weld points. When metal is welded, spatter occurs and can be heard with a popping sound. The welder can fill these holes in, but often tiny spatter holes occur which can go undetected by the welder who is constructing the wrought iron system. As the weld cools, condensation occurs within these locations. Once coated over the small or tiny spatter hole then allows further condensation development. Wrought iron features coated in dark colors allows the wrought iron system to heat during daylight hours as Hawaii's tropical climate allows constant elevated temperatures to occur. As the sun sets, and through the night the wrought iron cools allowing further condensation to build up at the small spatter hole locations.



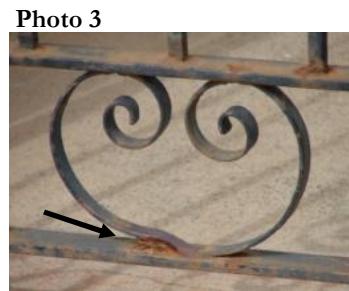
Maintained welds annually with CarWell CP90



Unmaintained –destroyed by the effects of corrosion. Preventable with annual application of CarWell CP90.

2. Below the wrought iron ornamental fence corrosion hot spots with both examples are seen at weld points and also where water rests at contact points as each area is not completely welded. As seen in Photo 1 a wedge shaped piece of rust scale looks as if it was inserted. This phenomenon is caused by the corrosion process, where the path of corrosion energy once spent leaves the spent fuel of consumed metal deposits which are now rust scale somewhat loosely affixed to the good metal substrate. Photo 2 corrosion has consumed the decorative wrought iron. Photo 3 on the decorative circle, corrosion activity has lifted and pushed the decorative loop upwards as compared to the location just to the right side at the bottom rail weldment.

A: Treatments to wrought iron fences with CarWell CP-90 are easy to do and require only about 1 to 2 hours a year to perform. Focus points - corrosion hot spots (welds). This insures that corrosion activity can be held at bay with a minimum amount of time requirement and financial investment of tools and coatings. Photo 4— original 25 year old fence maintained annually with CarWell CP90.



Photos 1 –3 are wrought iron fences at different residences in Village Park, Oahu. Photo 4 is our fence. All these fences were installed within months of each other in mid 1980.

Note:

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Go to Buy Now Link on our site for retail locations.

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