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BOTTLE LANES IN BEER BREWERY FREE OF CORROSION AGAIN

The heavily corroded stainless steel plating of a number of bottle lanes was an eyesore for a major beer brewery and undesirable from a hygiene perspective. Attempts to remove the corrosion were initially successful. However, the corrosive deterioration of the stainless steel plating soon returned with a vengeance.

Diagnosis

The bottle lanes of "line 8 and 16" were a particular cause for concern for the maintenance department. A treatment by the supplier of the bottle lanes appeared to be successful. However, the corrosion on the stainless steel returned again within several weeks. Inspectors from VECOM found the bottle lanes in a deplorable corrosive state. Measurements indicated that the fumes in the bottling plant were the main culprit. These fumes are released during addition of chemicals to the pasteuriser and the accompanying increased temperature. The chemical additives used in the lubrication of the lanes add to the problem. If the oxide skin has not been treated optimally, stainless steel AISI 304 will show signs of corrosion under such conditions. If maintenance is then performed near the plating, any remaining iron particles will leave visible traces of corrosion.

Actions

The heavily corroded stainless steel bottle lanes of lines 8 and 16 are pickled first and then treated with two types of protective sprays. After this treatment, a second pickling treatment is performed with the new product VECINOX. This makes the oxide skin of the stainless steel become passive more quickly and strongly reduces the chances of staining.



Conclusion and recommendations

The approach by VECOM appears to be successful. No further corrosion was observed since the pickling treatment was performed. Not even on the plates that were merely pickled. However, for added certainty about stainless steel AISI 304 in this aggressive environment, it is recommended that the stainless steel plating and parts be waxed after pickling. We also advise this method for stainless steel objects in other corrosive environments such as indoor swimming pools: railings, gates, foundations of diving boards, door hinges, advertising signs, etc. This also applies to works of art and stainless steel constructions in the offshore industry. In a maritime climate even the stainless steel type AISI 316 is not recommended and we recommend the stainless steel type Duplex.

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Before and after treatment