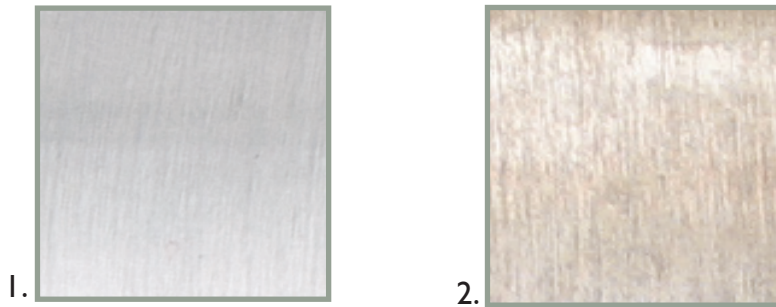


ROUTINE MAINTENANCE (CLEANING) FOR STAINLESS STEEL LUMINAIRES

Stainless Steel features as the main exterior metal of many luminaires; many of us recognise that a stainless steel is intrinsically attractive (1.) – but these fittings require maintenance like all others.

Stainless steel enjoys a strong and enduring reputation for long term appearance and structural integrity. But like all materials stainless steel may become stained or discoloured over time, impairing the overall look. This brown discolouration is referred to as “tea staining”. Tea staining (2) can be defined as: Discolouration of the surface of stainless steel that does not affect the structural integrity or the longevity of the material.



CONTRIBUTING FACTORS

The relationships between the contributing factors are complex, but generally become increasingly critical closer to marine environments

ENVIRONMENTAL FACTORS

Tea staining occurs most commonly within about five kilometres of the sea and becomes progressively worse closer to the marine source. However, wind exposure, pollution levels and higher temperatures can create environments where tea staining might occur 20 kilometres or more from the nearest body of sea water. Swimming pool surrounds must also be treated in the same manner; particularly indoor pools. These same factors also increase corrosion rates of alternative materials.

SURFACE FINISH

Rough surface finishes promote tea staining: the smoother the surface, the better. Smoother surface finishes stay cleaner between washes and don't have deep surface grooves where chlorides (salts) and other contaminants can collect and cause staining. Even smooth stainless steel finishes in coastal environments may show tea staining if not washed regularly.

SELECTING STAINLESS STEEL LUMINAIRES

Care in the selection of luminaires for any application will avoid problems and disappointment; some considerations for selection include: -

Appropriate Grade Selection. Exposure of a particular grade of stainless steel to a more aggressive environment than it can resist will contribute to tea staining. Grade 316 should be selected as a minimum within five kilometres of the sea. The less expensive grades (such as 304 or 430) will probably become tea stained or even suffer more severe corrosion.

Appropriate Surface Finish. Keep in mind the maxim; ‘the smoother the better’ when selecting any stainless steel luminaire that will be used in a marine environment. Avoid selecting items with grooves/fins and swirls as features in the design

Prevention - Perform regular maintenance

Washing removes contaminants (such as salt) that can cause corrosion and is necessary to avoid tea staining. Rain washing over the surface is helpful in reducing tea staining. For best results wash with soap or mild detergent and warm water followed by rinsing with clean cold water. The appearance of the surface can be improved further if the washed surface is wiped dry. Most householders wash the wall & eaves of their home a couple of times per year to get rid of accumulations of dust, leaves and cobwebs; take the time to ensure that the stainless steel exteriors also be washed when cleaning of the surrounding area takes place.

More technical information about stainless steel is available from sources such as the Australian Stainless Steel Association @ www.assda.asn.au