

Sealing Sacrificial Anodes



Application Description

When any two different metals are connected to one another, a tiny electrical current flows between them, and a chemical reaction occurs, where one of the metals is transferred, ion by ion, to the other. If immersed in a liquid that is not pH neutral, this activity is increased.

This effect is known as electrolytic action, and the liquid is called the electrolyte. The ions are transferred from the more electrically positive metal (anode) to the more electrically negative one (cathode). The effect is used to advantage in electroplating and in batteries but it also exists in other places where it is unwelcome. In this case, it is generally called corrosion.

Steel is an alloy, based on iron, but made up of a mixture of metals and elements. These differing metals continuously react with one another and the migrating ions react with oxygen in the air to produce rust. Applying moisture to a bare steel surface shows the evidence of corrosion in a very short time.

In the marine environment, it is rare to find a vessel structure that is totally free from metals. Many hulls are either aluminium or steel and most propellers are made of bronze.

Sea water is a particularly good electrolyte and encourages corrosion between each of the different metals exposed to it.

Sacrificial anodes are blocks of base metal that

are mechanically fixed from the inside of the steel hulls to help reduce the rate of galvanic corrosion. They achieve this as a result of their being more electrically attracted to the other metal boat parts than the ones that would otherwise have been corroded.

As fixing the anodes mechanically means that the hull is pierced, the anodes must therefore be sealed to the outside of the hull to prevent water ingress. Sikaflex®-291 provides a sound watertight seal for this application.

Sealing Sacrificial Anodes

Substrate Preparation

Painted Steel Hull



Aktivator

Pretreat the substrate with Sika® Aktivator or Sika® Aktivator 205, using a clean, lint-free rag or a paper towel. Change the rag frequently! Sika® Aktivator must be applied with the wipe on/wipe off method.



Flash-off: 10 minutes (min) to 2 hours (max)

Applying Sikaflex®-291 Sealant



291

Sikaflex®-291 should be applied around the hole and the bolt in a fillet around all the edges of the fixing once it is securely fastened



Use a plastic spatula to remove excess sealant squeezed out around the edges



208

Uncured Sika adhesives or sealants can be removed with Sika® Remover-208 or mineral spirits.



Do not use Sika® Aktivator or Sika® Aktivator 205 or any other cleaning agent or solvent for cleaning purposes



Fig. 80 Sikaflex®-291 is applied



Fig. 81 The anode is fitted

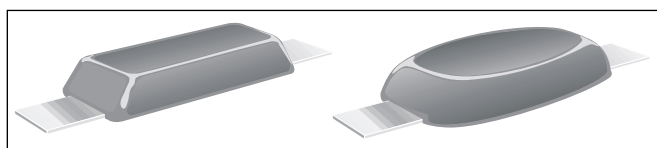


Fig. 82 Examples of weld-on sacrificial anodes

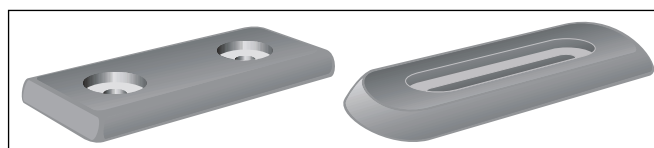


Fig. 83 Examples of bolt-on type sacrificial anodes