

SPA6. Stress Corrosion Cracking Of Aluminum Alloys

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Introduction

Aluminum Alloys with high amounts of alloying elements such as Copper, Magnesium, Silicon, and Zinc are more susceptible to Stress Corrosion Cracking (SCC). An analysis of Stress Corrosion Cracking of Aluminum Alloys will be taken to configure what kind of alloys and stress initiate Stress Corrosion Cracking. The analysis will include in depth research of articles and pictures to illustrate.

Technical Approach & Results

The poster will illustrate the specific causes for initiation and propagation of Stress Corrosion Cracking. The various causes of Stress Corrosion Cracking typically belong to one of three classes. These classes will be illustrated on the presentation as well as, three conditions for (SCC) to occur. There will be a schematic view of (SCC) and corrosion fatigue cracking, along with an explanation of how Stress Corrosion Cracking occurs and begins. Following the schematics will be a graph to represent the problem once it has began and will illustrate the growth rate of (SCC) cracks. this will show and explain through stages how quickly it accelerates and will include a discussion on what would happen to the graph when resisting the metal from (SCC).

Next, after carried through the process of (SCC), there will be a conclusion on possibilities of controlling Stress Corrosion Cracking. This overview will have schematics and graphs to give the audience the visual aspect of the cause of (SCC), the stages, and the ways of controlling the problem. There will be a short view of different types of Aluminum and their uses, giving an idea of where (SCC) might be found.

Conclusions

The presentation of Stress Corrosion Cracking will give a description of a problem that is worldwide, and give the audience the knowledge about the problem, it properties, and the effects of (SCC). The presentation will give a better understanding about Stress Corrosion Cracking and how to prevent it.