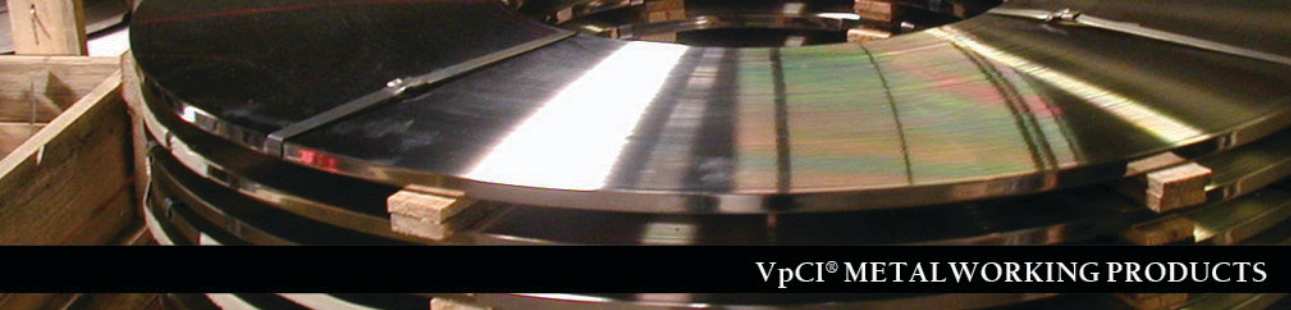




CASE HISTORY

Corrosion Protection in Harsh Conditions



Photo courtesy of Adobe Stock

DATE

September 1983

CUSTOMER

Short Brothers Limited Technical Group

LOCATION

Queen's Island, Belfast

PRODUCT

VpCI®-337

PROBLEM

Short Brothers Limited Technical Group wanted to test the effectiveness of VpCI®-337 as a universal corrosion preventative for most metals, including aluminum. They evaluated VpCI®-337 for use on components, sheets, stacks, and coils stored in-house. They also wanted to find out if VpCI®-337 would contaminate metal parts.

APPLICATION

Short Brothers tested VpCI®-337 in four different environments: a) hot and humid, b) acid (positioned near pretreatment phosphoric and chromic acid anodizing solutions), c) ambient (room temperature), and d) cold and dry. They fogged four stacks of three 4" x 4" (10 cm x 10 cm) light gauge aluminum alloy plates with VpCI®-337 spray. Also four stacks without VpCI®-337 were placed in the environments as controls. They examined the plates periodically over three months.

To determine contamination, Short Brothers sprayed VpCI®-337 on individual sets of lamp shear, crack extension and climbing drum peel tests prior to chemical treatment. The plates were deoxidized and sprayed with BB127, and then bonded with FM123-5 adhesive film at 274 °F (120 °C), 4.14 bar (60 psi), for 60 minutes.

CONCLUSION

VpCI®-337 provided corrosion protection despite harsh conditions. In environments a, c, and d, observations showed no deterioration due to corrosive attack in either the test stacks or control specimens. In the acid environments, the control stacks suffered severe corrosive attack. Although near pretreatment phosphoric and chromic anodizing solutions, the stack treated with Cortec® VpCI®-337 showed only some initial pitting on the top plate. In the contamination tests, each sample exceeded expectations. Pretreatment completely removed Cortec® VpCI®-337, probably during the vapor degreasing operation.

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