

CONCERN OVER POTENTIAL CORROSION OF STAINLESS STEEL ANCHORS IN CAVES

A concern has been raised over the potential for Chloride Stress Corrosion Cracking in stainless steel anchors which the Equipment and Techniques Committee of the British Caving Association has been looking into. BCA has sought information and advice from a range of sources including the BMC and the Stainless Steel Advisory Service. The advice obtained confirms that excepting caves near or on the coast, the presence of chloride ions in water is below that likely to induce Chloride Stress Corrosion Cracking in either 304 (A2) or 316 (A4) stainless steel. However, it is accepted that in some circumstances, a concentrating mechanism can occur which can raise the chloride ion concentration to levels where this corrosion mechanism may be a problem. We note that following a failure of a climbing anchor in a sea cliff in Thailand, the BMC have adopted a policy of using a different alloy for sea cliff anchors to avoid this concern.

Historically all anchor placed under BCA's scheme were made of 316 stainless steel. However more recently, some anchors made of 304 stainless steel have been placed in inland caves. There were also a few coastal caves where 316 stainless steel anchors had been placed under the scheme. But following loss of access, these anchors have been withdrawn from the scheme. Persons considering placing anchors near or on the coast should seek advice from BCA Equipment and techniques Committee on the appropriate choice of anchor.

N Williams
E&T Convenor
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