



**METALLURGICAL ENGINEERING LTD.**  
**CONSULTING ENGINEERING & TESTING SERVICES**

Anchortek Ltd.  
106, 2750 - 22 St. N.E.  
Calgary, Alta.  
T2E 7L9

May 23, 1989

Attention: Mr. Frank Bodell

Re: Corrosion Resistance of Aluminum  
ATK Q-Deck Hangers, in Concrete  
Our File : F-517

Dear Sir,

It is understood that the ATK Q-deck hangers are fabricated from the 6061-T6 aluminum alloy, and are to be embedded in poured concrete flooring.

It is further understood that concern has been expressed regarding the corrosion resistance of the aluminum hangers, in concrete.

The concrete will cause superficial (etching) attack of aluminum, mostly while the concrete is curing. This attack involves dissolution of the natural oxide film on the aluminum, and some of the aluminum itself, but a new film is formed that prevents further corrosion.

After construction, the effects of leaching by subsequent exposure to water, and conversion to carbonates, will lower the alkalinity and reduce subsequent corrosion attack.

Finally, partial embedment in concrete does not normally cause problems for aluminum, unlike some other metals.

In summary, the corrosion resistance of aluminum in concrete is good, and no significant corrosion problems are to be expected.

I trust this will be satisfactory; if we may be of further help, please give me a call.

Yours Truly,



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| PERMIT TO PRACTICE<br>FIRTH METALLURGICAL ENGINEERING LTD                             |
| Signature <i>[Handwritten Signature]</i>  |
| Date <i>23 May 89</i>   |
| PERMIT NUMBER: P 4083   |
| The Association of Professional Engineers,<br>Geologists and Geophysicists of Alberta |