

## Description of incident:

During planned maintenance on a barrel type casing compressor operating in a marine environment, one of the M30 end cover stud bolts was inadvertently knocked and failed.

## Findings:

Upon further inspection a number of the stud bolts were found to have failed or cracked.

Metallurgical examination revealed that in each case the studs had fractured at the area of highest stress concentration at the first engaged thread with the nut, caused by hydrogen induced stress corrosion cracking from exposure to moisture in the marine environment.

The material was to the correct OEM specification. No specific change out interval was defined by the OEM.



## Cause & Consequence:

Failure of vessels or pipework.

## Good Practice Guidance:

For marine environment installations, consider carrying out immediate inspection of End Cover Stud Nut Bolts where the life of the bolting cannot be determined, or historical inspection results are unavailable.

Consider setting a service life for End Cover Stud Nut Bolts appropriate to the operating environment and incorporating into planned maintenance.