TYPE APPROVAL CERTIFICATE

Certificate No:
TAS00000KM
Revision No:
3

This is to certify:

That the Sacrificial Anode Material for Corrosion Protection

with type designation(s)
Al-Zn-In-based Sacrificial Aluminium Anode Material

Issued to
METEC CATHODIC PROTECTION LIMITED
South Shields, Tyne and Wear, United Kingdom

is found to comply with
DNV GL class programme DNVGL-CP-0107 – Type approval – Sacrificial anode materials
DNV GL rules for classification – Ships
DNV GL offshore standards
DNV recommended practice DNV-RP-B401 – Cathodic protection design, May 2021

Application :

The mean current capacity of the sacrificial anode material after 12 months free running testing is 2713 Ah/kg. The mean closed circuit potential is -1083 mV vs. Ag/AgCl seawater. The approval is given for use in seawater at temperatures below 30ºC.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2021-09-03**

This Certificate is valid until **2026-09-02**.
DNV local station: **Manchester**

Approval Engineer: **Gisle Hersvik**

for **DNV**
Digitally Signed By: Løken, Sondre
Location: DNV Høvik, Norway
Signing Date: 03.09.2021 , on behalf of

Gustav Heiberg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

Al-Zn-In-based Sacrificial Aluminium Anode Material.

Manufactured by

Metec Cathodic Protection Limited, Visage House, 2 Shaftesbury Avenue, Jarrow, Tyne & Wear, NE32 3UP, United Kingdom

DNV station: Manchester

Metec Sarl, Economiques Bizerte Parc Activites, 7050 Menzel Bourguiba, Bizerte, Tunisia

DNV station: Casablanca

Responsibility

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

Approval is given for the sacrificial anode material; not for anode design.

The mean current capacity of the sacrificial anode material after 12 months free running testing is calculated to be **2713** Ah/kg. The mean closed circuit potential is -1083 mV vs. Ag/AgCl seawater.

The recommended design electrochemical capacity for aluminium based alloys in seawater is 2000 Ah/kg (ref. DNV-RP-B401).

The approval is given for use in sea water at temperatures below 30°C.

Type Approval documentation

1. Assessment Report from DNV Newcastle of 2021-05-20.
2. DNV GL Technical Report No. 2016-5136, Rev. 01 “Long term anode testing of one Al-Zn-In-based alloy according to DNV-RP-B401 (2010), Annex C” of 2018-03-16.
3. Application for Type Approval of 2017-02-23.
4. Assessment Report from DNV GL Newcastle of 2017-05-25.
5. Email from Metec CP Ltd. of 2017-05-19, incl. various Work Instructions.
6. “Anodes Pre-Qualification Test results report”, M0000-17-DNVGL-PQTO1 Rev.00, of 2017-05-30.
7. Application for type approval of 2016-05-25.
8. Assessment Report from DNV GL Casablanca of 2016-06-14.
9. ISO 9001-Certificate.
10. DNV GL Technical Report No. 2016-5136, Rev. 0 of 2016-04-21.
11. METEC; Short term test and calibration certificates.
12. METEC; Index of the quality system documentation.
13. METEC; Documentation for Type Approval Certificate.
14. METEC; Procedure P09.01-MI-E Production Process Control.

Tests carried out

Type Testing carried out according to **Type Approval documentation**. Refer to DNV GL Technical Report No. 2016-5136, Rev. 01 of 2018-03-16 for details on testing performed.

Testing has been performed with basis in DNV-RP-B401 (2010).

Marking of product

The products are to be marked with *Manufacturer’s name* and/or *trade name*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention and Certificate Renewal) shall be performed according to DNVGL-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnvgl.com

END OF CERTIFICATE