

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)

MARINE & LEISURE, Start AGM (EM) and Dual AGM (EP) series

Issued to

EXIDE TECHNOLOGIES SAS

Gennevilliers CEDEX, Hauts de Seine, France

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-07-02**

for **DNV GL**

This Certificate is valid until **2024-06-30**.

DNV GL local station: **Madrid**

Approval Engineer: **Nicolay Horn**

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Trond Sjøvåg
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.



Job Id: **262.1-008822-3**
Certificate No: **TAE00000EJ**
Revision No: **1**

Product description

Valve Regulated Lead-Acid batteries for engine start and dual supply. AGM technology.

Product Code	20h Capacity (Ah)	CCA-EN (A)	Voltage (V)
EM900	42	700	12
EM1000	50	800	12
EP450	50	750	12
EP500	60	680	12
EP600	70	760	12
EP800	95	850	12
EP1200	140	700	12
EP1500	180	900	12
EP2100	240	1200	12

Manufactured by

EXIDE TECHNOLOGIES Acebo,
s/n – Pol.Empresarium
E-50720 La Cartuja Baja Zaragoza
Spain

EXIDE TECHNOLOGIES
Viale Danthe Alighieri,
100/106, 24058 Romano di
Lombardia BG
Italy

ANHUI LEOCH POWER
SUPPLY CORP.
Economic development zone
Suixi town, Huaibei city
China

Application/Limitation

Batteries for use in ships and offshore Units. To be installed as described for valve regulated batteries in the DNV GL rules.

Type Approval documentation

Datasheet: EM900 & EM1000 (11/06/2010), EP450 (28/10/2008), EP500, EP600 & EP800 (20/12/2018), EP800 (04/03/14), EP1200 & EP1500& EP2100 (08/06/2010).

Test reports: ML Product Certification with DNV ORBITAL GR34 & GR86 (16/12/2010), Leoch Battery Testreport (23/12/2010.)

Tests carried out

Capacity (EN 50342), Cold Cranking (EN 50342), Short Circuit (IEC 60896-21), Recharge Behaviour (IEC 60896-21), High Current Tolerance (IEC 60896-21) and Vibration Resistance (EN 50342, V3).

Marking of product

EXIDE MARINE & LEISURE – Product Code – Capacity (Ah) – CCA (A)

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.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE