DNV·GL

Certificate No:
TAE000032C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery (Accumulator)

with type designation(s)
FNC : L - M - H - X

Issued to
Hoppecke Batterie Systeme GmbH
Brilon, Nordrhein-Westfalen, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

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

Issued at **Hamburg** on **2018-06-20**
This Certificate is valid until **2023-06-19**.
DNV GL local station: **Essen**

Approval Engineer: **Maik Gagern**

for **DNV GL**

Arne Schaarmann
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.

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Product description

Nickel Cadmium (NiCd) accumulator cells (1.2V). The cells can be combined to batteries with the desired voltage and capacity.

The Fibre structure Nickel Cadmium (FNC®) technology consists of electrodes with Nickel-plated steel tabs welded to the fibre structure.
The batteries have low internal electrical resistances, high energy density and good resistance to cycling.
The batteries are designed and tested in accordance with IEC 60623, edition 2001-09.

Four types of batteries are available with different performance characteristics for any application:
X-range: Engine Start, UPS
H-range: Engine Start, UPS, Switchgear
M-range: UPS, Switchgear, Emergency Power Supply
L-range: UPS, Switchgear, Emergency Supply, Energy Storage

Application/Limitation

For operation and maintenance manufacturer's instruction should be observed.

Type Approval documentation

Tests carried out

Guidelines for the Performance of Type Approvals Part 2, Edition 2003
IEC 60623: 2001-09

Marking of product

Manufacturer, type of accumulator

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are 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)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- 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.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE