Norsk
Elektroteknisk
Komite

NEK NSPEK 411:2022

Maritime battery systems

Safety requirements for secondary lithium cells and batteries

Norwegian spesification

Engelsk utgave

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NORSK ELEKTROTEKNISK KOMITE

NORWEGIAN SPECIFICATION

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Maritime battery systems – Safety requirements for secondary lithium cells and batteries

FOREWORD

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This document has been developed according to the guidelines for NEK Norwegian Specification:

- The lack of international standards covering marked demands.

  NOTE Plausible cause being technology moving faster than the IEC consensus process
- The need for intermediate specifications, while IEC standards are prepared internationally.
- To support and speed up the IEC process by providing technical input to the international work.

This document has been recognized by NEK Technical Committee NK 18: Electrical installations of ships and of mobile and fixed offshore units. NEK/NK 18 is the Norwegian mirror committee of IEC TC 18.

This second edition cancels and replaces the first edition published in 2020 and constitutes a technical revision.

This document has as far as possible been drafted in accordance with the ISO/IEC Directives, Part 2.

This document supplements or modifies the corresponding clauses of IEC 62619:2022.

NOTE The following numbering system is used:

– Clauses, notes, tables and figures that are numbered starting from 101 are additional to those in IEC 62619
– Additional annexes, if any, are lettered AA, BB, etc.

According to NEK guidelines this document may remain unrevised until NEK decides to either:

- withdraw,
- replace by a revised edition, or
- amend.

INTRODUCTION

This document has been developed to meet the demand from the maritime industry. Standards developed by IEC TC 18 in general covers this demand. However, the technology for battery systems currently moves faster than the development of international standards.

At the time of publishing this document the development work on batteries within IEC TC 18 is in the early stages, which takes about 33 months on an average.

IEC 60092-305 and IEC 60092-401 are also relevant standards that may include requirements to battery rooms as well as battery system requirements.

The intention of this document is to provide a solution that contributes to the steps necessary to comply with the authority requirements. In that sense, this document alone may not include sufficient requirements. Depending on a situation, other requirements may also be necessary, for example classification society rules or contractual requirements.

For the preparation of this document, it is considered that the IEC 62619:2022 contains the necessary basic requirements for lithium-ion battery systems and that supplementary requirements for marine application are necessary.

This document constitutes an assessment of IEC 62619 to whether each requirement is suitable for maritime applications. Where IEC 62619:2022 is found insufficient, this document suggests additional or modified requirements.

MARITIME ELECTRICAL INSTALLATIONS –

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in maritime industrial applications

1 Scope

This clause of IEC 62619:2022 is applicable except as follows:

Add after the last paragraph:

This document applies to battery systems:

– with rated voltage up to 1500 V DC.
– below 2000 m above sea level

NOTE 1 The limitations are in line with IEC 60664

NOTE 2 Other requirements are necessary for clearance and creepage distances where ionized gases can occur.

This document does not apply to

– the use of liquid insulation
– the use of gas insulation other than uncompressed air
– requirements to battery rooms

NOTE 1 Requirements to battery rooms are under considerations in IEC 61892, IEC 62485 and IEC 60092-401

NOTE 2 Requirements to battery rooms can be found in NEK 400-8-806. However, NEK 400 requirements are not considered for marine applications and may therefore not all be suitable.

2 Normative references

This clause of IEC 62619:2022 is applicable except as follows:

Addition:

IEC 62620:2014, *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for use in industrial applications*

IEC 61439-1, *Low-voltage switchgear and controlgear assemblies – Part 1: General rules*

IEC 61439-2, *Low-voltage switchgear and controlgear assemblies – Part 2: Power switchgear and controlgear assemblies*

IEC 60092-101, *Electrical installations in ships - Part 101: Definitions and general requirements*

IEC 60092-201, *Electrical installations in ships - Part 201: System design – General*

IEC 60092-202, *Electrical installations in ships - Part 202: System design – Protection*