Amendment on 29 June 2026
Resolved by Technical Committee on 29 January 2026

Ventilation Requirements for Battery Compartments

Object of Amendment

Rules for the Survey and Construction of Steel Ships Part H
Guidance for the Survey and Construction of Steel Ships Part H
Guidance for the Survey and Construction of Inland Waterway Ships

Reason for Amendment

IACS Unified Requirement (UR) E18 specifies formulae for calculating the ventilation capacity required for compartments where batteries are installed as well as requirements for maintenance records of batteries. This UR has already been incorporated into the NK Rules.

IACS recently reviewed the ventilation requirements and adopted an amended version of the UR with the addition of applicable international standards as UR E18(Rev.2) in June 2025 as a result.

Accordingly, relevant requirements are amended in accordance with UR E18(Rev.2).

Outline of Amendment

The main details of this amendment are as follows:

(1) Adds relevant international standards as references to the ventilation requirements for battery compartments.
(2) Amends the ventilation requirements for compartments installed with uninterruptible power systems units utilising valve regulated sealed type lead acid batteries.

Effective Date and Application

This amendment applies to ships for which the date of contract for construction is on or after 1 July 2026.

ID:DD25-22

Amended-Original Requirements Comparison Table (Ventilation Requirements for Accumulator Battery Compartments)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part H ELECTRICAL INSTALLATIONS** **Annex 3.3.3(3) UNINTERRUPTIBLE POWER SYSTEM UNITS** **1.2 Design** **1.2.2 Arrangements** **2** In cases where UPS units utilising valve regulated sealed type lead acid batteries are provided with the ventilation arrangements in accordance with the requirements of *IEC* 62040-1:2017+AMD1:2021+AMD2:2022, *IEC* 62040-2:2016, *IEC* 62040-3:2011, *IEC* 62040-4:2013 and/or *IEC* 62040-5-3:2016, the Society may approve the location of such UPS units in the compartment where normal electrical equipment is located. However, in a compartment where batteries connected to charging facilities which have charging power higher than 2 *kW* are placed, the quantity of air expelled is not to be less than that specified in **2.11.3(3)(c), Part H**.	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part H ELECTRICAL INSTALLATIONS** **Annex 3.3.3(3) UNINTERRUPTIBLE POWER SYSTEM UNITS** **1.2 Design** **1.2.2 Arrangements** **2** In cases where UPS units utilising valve regulated sealed type lead acid batteries are provided with the ventilation arrangements in accordance with the requirements of *IEC* 62040-1:2017+AMD1:2021+AMD2:2022, *IEC* 62040-2:2016, *IEC* 62040-3:2011, *IEC* 62040-4:2013 and/or *IEC* 62040-5-3:2016, the Society may approve the location of such UPS units in the compartment where normal electrical equipment is located. However, a compartment where batteries connected to charging facilities which have charging power higher than 2 *kW* are placed and a mechanical exhaust-ventilation system is provided, the quantity of air expelled is not to be less than that specified in **2.11.3(3)(c), Part H**.	With the incorporation of UR E18 Rev.2, the provision in H 2.11.3(3)(c) is to be also applicable to natural ventilation. Therefore, this provision is revised accordingly.

Amended-Original Requirements Comparison Table (Ventilation Requirements for Accumulator Battery Compartments)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part H ELECTRICAL INSTALLATIONS** **H2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **H2.11 Accumulator Batteries** **H2.11.2 Vented Type Batteries** **2** In applying **2.11.2(4), Part H of the Rules**, ventilation is to be as follows: (1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air. (2) The ventilation fans which are "to be constructed and to be made of such materials so as to render any sparking impossible in the event of impellers touching fan casings" specified in **2.11.2(4)(c), Part H of the Rules** mean those ventilation fans complying with **R4.5.4-1(2), Part R of the Guidance**. For the purpose of this requirement, protection screens of not more than 13 *mm* square mesh are to be fitted in the inlet and outlet ventilation openings of the ducts fitted with such fans on the open deck. (Deleted)	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part H ELECTRICAL INSTALLATIONS** **H2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **H2.11 Accumulator Batteries** **H2.11.2 Vented Type Batteries** **2** In applying **2.11.2(4), Part H of the Rules**, ventilation is to be as follows: (1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air. (2) The ventilation fans which are "to be constructed and to be made of such materials so as to render any sparking impossible in the event of impellers touching fan casings" specified in **2.11.2(4)(c), Part H of the Rules** mean those ventilation fans complying with the requirements given in **R4.5.4-1(2)**. For the purpose of this requirement, protection screens of not more than 13 *mm* square mesh are to be fitted in the inlet and outlet ventilation openings of the ducts fitted with such fans on the open deck. (3) In cases where mechanical exhaust-ventilation is	

Amended-Original Requirements Comparison Table (Ventilation Requirements for Accumulator Battery Compartments)

Amended	Original	Remarks
(3) In **2.11.2(4)(d), Part H of the Rules**, the calculation of quantity of air expelled for battery compartments may be replaced with the requirements specified in section 7.2 and 7.3 of *IEC* 62485-2:2010 or Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022, as appropriate.	provided, the requirements in **2.11.2(4)(d), Part H of the Rules** are, in principle, to be complied with. (4) In **2.11.2(4)(d), Part H of the Rules**, the calculation of quantity of expelled air of natural ventilation for battery compartments may be replaced with the requirements for cross sectional areas of inlet and outlet openings specified in Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022.	Incorporating UR E18(Rev.2). For both mechanical and natural ventilation, the application of appropriate standards according to the type of battery and charging method is permitted. (The same applies hereafter.)
H2.11.3 Valve-regulated Sealed Type Lead Acid Batteries **2** In applying **2.11.3(3), Part H of the Rules**, ventilation is to be as follows: (1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air. (Deleted)	**H2.11.3 Valve-regulated Sealed Type Lead Acid Batteries** **2** In applying **2.11.3(3), Part H of the Rules**, ventilation is to be as follows: (1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air. (2) In cases where mechanical exhaust-ventilation is provided, the requirements in 2.11.3(3)(c), Part H of the Rules are, in principle, to be complied with.	
(2) In **2.11.3(3)(c), Part H of the Rules**, the calculation of quantity of air expelled for battery compartments may be replaced with the requirements specified in section 7.2 and 7.3 of *IEC* 62485-2:2010 or Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022, as appropriate. (3) In **2.11.3(3)(c), Part H of the Rules**, in cases where several batteries are installed in the same compartment and are provided with completely independent charging facilities, the calculation of	(3) In **2.11.3(3)(c), Part H of the Rules**, the calculation of quantity of expelled air of natural ventilation for battery compartments may be replaced with the requirements for cross sectional areas of inlet and outlet openings specified in Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022. (4) In **2.11.3(3)(c), Part H of the Rules**, in cases where several batteries are installed in the same compartment and are provided with completely independent charging facilities, the calculation of	

Amended-Original Requirements Comparison Table (Ventilation Requirements for Accumulator Battery Compartments)

Amended	Original	Remarks
ventilation capacity may be carried out only for the batteries connected to the charging facilities with the highest output in the compartment, provided that immediate action can be taken in case of any abnormality in the batteries or charging facilities.	ventilation capacity may be carried out only for the batteries connected to the charging facilities with the highest output in the compartment, provided that immediate action can be taken in case of any abnormality in the batteries or charging facilities.	

Amended-Original Requirements Comparison Table (Ventilation Requirements for Accumulator Battery Compartments)

Amended	Original	Remarks
GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **2.11 Accumulator Batteries** **2.11.2 Vented Type Batteries** **2** In applying **2.11.2(4), Part 8 of the Rules**, ventilation is to be as follows: (1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air. (2) The ventilation fans which are "to be constructed and to be made of such materials so as to render any sparking impossible in the event of impellers touching fan casings" specified in **2.11.2(4)(c), Part 8 of the Rules** mean those ventilation fans complying with **3.5.5-1(2), Part 9**. For the purpose of this requirement, protection screens of not more than 13 *mm* square mesh are to be fitted in the inlet and outlet ventilation openings of the ducts fitted with such fans on the open deck.	**GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS** **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **2.11 Accumulator Batteries** **2.11.2 Vented Type Batteries** **2** In applying **2.11.2(4), Part 8 of the Rules**, ventilation is to be as follows: (1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air. (2) The ventilation fans which are "to be constructed and to be made of such materials so as to render any sparking impossible in the event of impellers touching fan casings" specified in **2.11.2(4)(c), Part 8 of the Rules** mean those ventilation fans complying with the requirements given in **3.5.5-1(2), Part 9**. For the purpose of this requirement, protection screens of not more than 13 *mm* square mesh are to be fitted in the inlet and outlet ventilation openings of the ducts fitted with such fans on the open deck.	

Amended-Original Requirements Comparison Table (Ventilation Requirements for Accumulator Battery Compartments)

Amended	Original	Remarks
(Deleted)	(3) In cases where mechanical exhaust-ventilation is provided, the requirements in 2.11.2(4)(d), Part 8 of the Rules are, in principle, to be complied with.	
(3) In **2.11.2(4)(d), Part 8 of the Rules**, the calculation of quantity of air expelled for battery compartments may be replaced with the requirements specified in section 7.2 and 7.3 of *IEC* 62485-2:2010 or Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022, as appropriate.	(4) In **2.11.2(4)(d), Part 8 of the Rules**, the calculation of quantity of expelled air of natural ventilation for battery compartments may be replaced with the requirements for cross sectional areas of inlet and outlet openings specified in Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022.	
2.11.3 Valve-regulated Sealed Type Lead Acid Batteries	**2.11.3 Valve-regulated Sealed Type Lead Acid Batteries**	
2 In applying **2.11.3(3), Part 8 of the Rules**, ventilation is to be as follows:	**2** In applying **2.11.3(3), Part 8 of the Rules**, ventilation is to be as follows:	
(1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air.	(1) In cases where accumulator batteries are arranged in two tiers or more, all shelves are to have not less than 50 *mm* in space, front and back, for the circulation of air.	
(Deleted)	(2) In cases where mechanical exhaust-ventilation is provided, the requirements in 2.11.3(3)(c), Part 8 of the Rules are, in principle, to be complied with.	
(2) In **2.11.3(3)(c), Part 8 of the Rules**, the calculation of quantity of air expelled for battery compartments may be replaced with the requirements specified in section 7.2 and 7.3 of *IEC* 62485-2:2010 or Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022, as appropriate.	(3) In **2.11.3(3)(c), Part 8 of the Rules**, the calculation of quantity of expelled air of natural ventilation for battery compartments may be replaced with the requirements for cross sectional areas of inlet and outlet openings specified in Annex CC.2 to *IEC* 62040-1:2017+AMD1:2021+AMD2:2022.	
(3) In **2.11.3(3)(c), Part 8 of the Rules**, in cases where several batteries are installed in the same compartment and are provided with completely independent charging facilities, the calculation of ventilation capacity may be carried out only for the	(4) In **2.11.3(3)(c), Part 8 of the Rules**, in cases where several batteries are installed in the same compartment and are provided with completely independent charging faciliteies, the calculation of ventilation capacity may be carried out only for the	

Amended	Original	Remarks
batteries connected to the charging facilities with the highest output in the compartment, provided that immediate action can be taken in case of any abnormality in the batteries or charging facilities.	batteries connected to the charging facilities with the highest output in the compartment, provided that immediate action can be taken in case of any abnormality in the batteries or charging facilities.	

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 July 2026.

2. Notwithstanding the amendments, the current requirements apply to ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.