Ontwikkeling standaard laagvoltage aansluiting zeeschepen en binnenvaart

Expertise- en InnovatieCentrum Binnenvaart

EICB

Opdracht

Uitvoeren van walstroom analyse voor binnenvaartschepen en riviercruise schepen en het opstellen van aanbeveling voor de ontwikkeling en invoering van een nationale standaard van low voltage aansluitingen voor deze type schepen en ligplaatsen in Nederland:

- *Inventarisatie scheepszijde*
- *Inventarisatie walzijde*
- *Analyse van de technisch optimale oplossing(en):*

Inhoud

- *Binnenvaart Normen en standaarden*
- *Compatibiliteit Zeevaart en Binnenvaart standaarden*
- *Toekomstige Walstroombehoefte Binnenvaart*

Directive 2014/94/EU Annex II

DIRECTIVE 2014/94/EU *OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 October 2014 on the deployment of alternative fuels infrastructure:*

- Article 2 Definitions:

- *(6) '**shore-side electricity supply**' means the provision of* **shore-side electrical power** *through a* **standardised interface** *to seagoing ships or inland waterway vessels at berth;*

- *Article 4 Electricity supply for transport:*
  - *5. Member States shall ensure that* **the need for shore-side electricity supply for inland waterway vessels and seagoing ships in maritime and inland ports** *is assessed in their national policy frameworks. Such shore-side electricity supply shall be installed as a priority in ports of the TEN-T Core Network, and in other ports, by 31 December 2025, unless there is no demand and the costs are disproportionate to the benefits, including environmental benefits.*
- **ANNEX II:** *TECHNICAL SPECIFICATIONS*
  - **1.8. Shore-side electricity supply for inland waterway vessels**

EU 2019/1745

Article 2: Shore–side electricity supply for inland waterway vessels

For shore-side electricity for inland waterway vessels, referred to **in point 1.8 of Annex II to Directive 2014/94/EU, the following technical specification shall apply***:*

The **shore-side electricity supply for inland waterway vessels** *shall comply with standard* **EN 15869-2 or standard EN 16840** *depending on energy requirements.*

ES-TRIN

Article 10.08: Connection to the shore or other external networks

1- The feed-in unit, that is the entire onboard equipment for transferring electrical power to the craft, must be designed as follows:

- *a) Transfer from shoreside power supply systems:*
  - **aa) For currents up to 125 A, the requirements of European Standards EN 15869-1:2019 and EN 15869-3 : 2019 are to be complied with.**
  - **bb) For currents greater than 250 A, the requirements of European Standards EN 16840:2017 are to be complied with.**

EN 15869-X:2019

EN 15869-X:2019 are standards for the supply of berthed inland navigation vessels with electrical energy

EN 15869-1:2019 *specifies requirements for* **electrical installations for the shore supply** *of berthing inland navigation vessels with electrical energy,*

- *three-phase current*
- **400 V,**
- *50 Hz*
- *Rated current of up to* **125A**

EN 15869-2:2019 *applies in connection with EN 15869-1 and specifies additional* **requirements for the on-shore unit of the electrical shore connection**

EN 15869-3:2019 *specifies additional requirements for the* **on-board unit** *of the electrical shore connection.*

EN 16840:2017

EN 16840:2017 *specifies requirements relating to electrical installations for the supply of electrical power to vessels in port.*

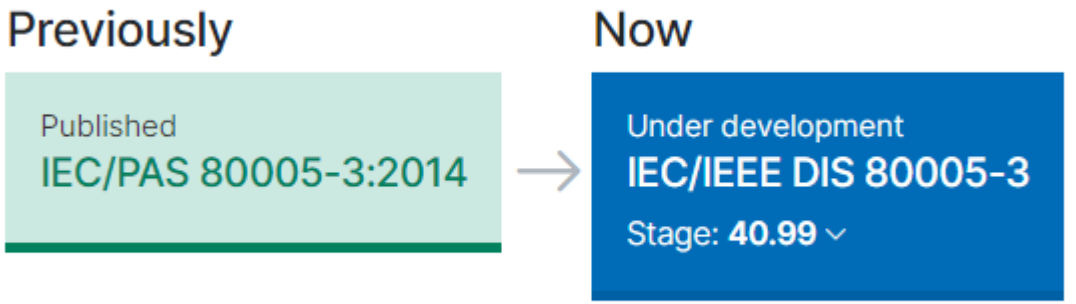
- *three-phase*
- **400 V,**
- *50 Hz*
- *current of at least* **250 A**

Annex A *stipulates general and safety requirements relating to the* **shore-based** *section of the electrical shore connection.*

IEC/IEEE DIS 80005-3

EC/IEEE DIS 80005-3 is a draft international standard for utility connections in port. It specifies general requirements for Low Voltage Shore Connection (LVSC) systems that supply vessels in port with electrical power:

- three-phase?
- AC - 1000 V?
- 50 Hz
- A?



EC/IEEE 80005-3 and EN 16840 compatibility?

Toekomstige behoefte Walstroom Binnenvaart

-Schepen met een **vaste batterij** aan boord
-Schepen met **uitwisselbare batterij**
-Schepen met **significante energieverbruik voor lading**

2021/0223(COD) Deployment of Alternative Fuels Infrastructure

Annex II: Technical Specs

4.1. Shore-side electricity supply for seagoing ships, including the design, installation and testing of the systems, shall comply at least with the technical specifications of the **IEC/IEEE 80005-1:2019/AMD1:2022 standard**, for **high-voltage**

4.1a. Plugs, socket-outlets and ship couplers for high-voltage shore connection, shall comply at least with the technical specification of the IEC 62613-1:2019.

4.2. **Shore-side electricity supply for inland waterway vessels** shall comply at least with the standard **EN 15869-2:2019** or standard **EN 16840:2017** depending on energy requirements.

4.3. .....

4.4. Technical specifications for **shore-side battery recharging points for inland navigation vessels**, featuring interconnectivity and system interoperability for inland navigation vessels.

4.5. .....

4.6. **Technical specifications for vessel-to-port grid communication interface in automated onshore power supply (OPS) and battery recharging systems for inland navigation vessels.**

4.7. **If technically feasible, technical specifications for battery swapping and recharging at onshore stations for inland navigation vessels.**

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Dank voor uw aandacht!

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