

Norm IEC 80005-3 concerning Low Voltage Shore Connection systems

1. Introduction

At the end of 2014, the preliminary version (PAS) of *IEC-80005-3: Utility connection port – Part 3: Low Voltage Shore Connection (LVSC) systems – General Requirements* was published. The final version is expected during the second half of 2015.

This norm is the first international guideline that describes low voltage shore connection systems with a maximum capacity of 1MVA. The provisions in the norm describe the requirements on the installations on the shore, on the ship, test script etc. Installations that are restricted to 250A (and max. 125 A per cable) are not described in IEC-80005-3 and thus are not subject to the provisions stated. In practice this means that most shore side electricity installations for inland waterway shipping do not need to comply with these provisions; those for river cruises must, however, comply.

2. Situation in Flanders

River cruises that visit Flanders also typically pass through various cities in the Netherlands and Germany. At a large number of berths for river cruises in the Netherlands and Germany, shore side installations for river cruises have been in use for several years. For connection, the Powerlock system is used (is historically accepted as standard, both on land and on the ships). This is a system whereby each connection (limited to 630A per connection) consists of 5 cables (L1, L2, L3, N and Pe), each with a separate plug. The plugs and connection points are designed in such a way that the connection always takes place in the same way and thus excludes a phase exchange. A Powerlock connection box (with the 5 connection points) is provided for such installations on the quay. The cables, for the connection between ship and land, are always on board the ship.

This Powerlock system is, however, not reconcilable with the provisions stated in the norm. The norm stipulates first that the amperage per cable be limited to 350A per cable (compared to 630A with Powerlock!), second that a connector of the Cavotech type should be used (with a weight of 26 kg per plug) and third that the cables should be located on the quay on a cable suspension system (cable crane). In order to comply completely with the provisions of the norm, both ships and berths must be completely rebuilt into a new system that, moreover, requires a much larger investment than the existing Powerlock system.

3. Solution

In order to avoid having to convert an existing and good system and thus unnecessary investments, a clear signal must be given to the norm committee. The norm includes an Annex for another existing system, namely OVS, in such a way that this system also meets international guidelines. Such a measure could also be possible for the Powerlock system.