

**STANDARD FOR SHORE POWER AND SHORE TELEPHONE CONNECTIONS  
IDENTIFICATION IN FLOATING EQUIPMENTS, LANDINGS, AND SIMILARS  
2600ESS-303**



**1.0 PURPOSE**

Uniform the identification of shore power and shore telephone connections in floating equipments, landings, ports, piers, docks, and other similar structures.

**2.0 BACKGROUND**

At the present time, a formal identification system does not exist and the need to have one has been determined in order to avoid personal injuries and damages to equipment due to inappropriate connections.

**3.0 SCOPE**

This Standard is of mandatory compliance to all units of the Panama Canal Authority (ACP) and contractors involved in the operation of floating equipments, landings, ports, piers, docks, or locations that are used as temporary landings (e.g., locks walls) or permanent, in areas under the responsibility of the ACP.

**4.0 LEGAL FOUNDATIONS**

This Standard is based in Agreement No. 12 of the Board of Directors of the ACP, Panama Canal Authority Regulation on Safety and Occupational Health”, Chapter 1, Article 3, and in Resolution 361-98, dated October 14, 1998 of the Engineering and Architecture Technical Board, Electrical Installations Regulations of the Republic of Panama, Article 555.

**5.0 DEFINITIONS:**

For the purposes of this Standard, the following definitions are established:

**5.1** Wires: Electrical conductors, energized or not.

**5.2** Shore power connection: Device located in a floating equipment, landing, pier, dock, or similar structure installed with the purpose of providing electric power to floating equipment.

**5.3** Pin and sleeve: Type of electric connector where the plug has pegs that are inserted into the holes of the socket to create a watertight (waterproof) connection. There is one peg for each wire that reaches the plug.

**5.4** Twist-lock: Type of electric connector with pins in form of an arc that secures connection with a quarter-turn motion once the plug is inserted in the slots of the socket.

**6.0 GENERAL**

**6.1 SHORE POWER CONNECTION CONFIGURATION AND IDENTIFICATION**

**6.1.1** Each shore power connection shall be marked indicating the approved voltage and color.

**6.1.2** Shore power connection for portable equipment of 120VAC, 3 Wires, up to 20 Amperes, shall use devices of the OUTLET type with ground fault protection, and shall be identified with the color **YELLOW**.

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**6.1.3** Shore power connection of 120VAC, 3 Wires, up to 60 Amperes, shall use devices of the TWIST-LOCK type and shall be identified with the color **YELLOW**.

**6.1.4** Shore power connection of 240VAC, 3 or 4 Wires, up to 200 Amperes, shall use devices of the PIN AND SLEEVE type and shall be identified with the color **BLUE**.

**6.1.5** Shore power connection of 480VAC, 3 or 4 Wires, up to 400 Amperes, shall use devices of the PIN AND SLEEVE type and shall be identified with the color **RED**.

**6.2 SHORE TELEPHONE CONNECTION CONFIGURATION AND IDENTIFICATION**

**6.2.1** Shall use materials identified as adequate for use in installations in marine-type environments.

**6.2.2** Shall be of the threaded type for telephone use, compatible with the existent system, and approved by the ACP Telecommunications Branch (IMTT).

**6.2.3** Shall be identified with the word "TELEPHONE" written in black letters with white background.

**6.3 SHORE POWER CONNECTION INSTALLATION**

**6.3.1** The area must be adequately lighted. When general lighting in the surroundings does not reach 5 foot candle in the area of the outlets and/or connections, local lighting must be installed.

**6.3.2** Shore power connections of the "pin and sleeve" type must finished in an elbow of 45 degrees downward where the conditions allow. The elbow must be of a similar material to the connection box, and both must be designed for marine-type application. When conditions do not allow the installation of an elbow, the area shall be adequately protected against weather conditions.

**6.3.3** All new installations built at less than 0.90 meters from the border of the pier shall be designed in such a way that they do not interfere with the operations carried out in the pier.

**6.3.4** All new installations built over 0.90 meters from the border of the pier shall have 1.20 meters height above finished floor level and shall be protected against physical damages.

**6.3.5** Shall have a disconnect mechanism and an automatic over-current protection, either a thermo magnetic device ("breaker") or a fuse according to its capacity, located nearby and accessible at all moments.

**6.3.6** Shall be synchronized in their phases.

**6.3.7** Shore power connections already in existence shall be modified to adequate them to what is established in this Standard, as they are scheduled for preventive maintenance.

**6.4 VOLTAGES HIGHER THAN 600 VOLTS AC**

**6.4.1** Any wiring connection higher than 600 Volts AC done through connections boxes (e.g., boots or other mechanism) shall be carried out by qualified personnel. Any connection by direct wiring shall be processed through the Water and Electrical Division (SIE).

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**7.0 RESPONSIBILITIES**

**7.1** The unit operating the floating equipment, landing, port, pier, dock, or the location that serves as temporary landing is responsible for implementing this Standard, and to keep shore power and shore telephone connections according to what is established herein.

**7.2** All shore power connection users should be familiarized with this Standard and should follow the procedures indicated in Appendix # 1, "Connection and Disconnection Procedures for Shore Power Connections."

**7.2.1** Units, users of these connections, are responsible for providing training about the application of this Standard to all persons affected thereby.

**8.0 INQUIRIES**

Any information or clarification of the content or application of this Standard must be requested in writing to the ACP, Electrical Subcommittee of the Safety and Health Committee through the Safety Division.

**9.0 EXCEPTIONS**

Not applicable.

**10.0 TERM**

This Standard shall remain in force until amended or revised.

**11.0 REFERENCES**

**11.1** NATIONAL FIRE PROTECTION ASSOCIATION. Marine Terminals, Piers, and Wharves, NFPA 307. Boston, 1985.

**11.2** NATIONAL FIRE PROTECTION ASSOCIATION. National Electric Code, NFPA 70. Boston, 1999.

## **APPENDIX #1**

### **SHORE POWER CONNECTION AND DISCONNECTION PROCEDURES**

**For voltages 240 VAC or more: Personnel doing the connection or disconnection shall use the electrical protection gloves with leather gloves placed on top of rubber gloves. Before use, gloves shall be inspected and shall have the proper test certification from the Water and Electrical Division.**

#### **CONNECTION**

1. Identify the shore power connection point. Verify that colors, voltages, and phases are the same between the shore power connection from the shore side and the one in the vessel side.
2. Verify that the electric disconnect mechanism of the shore power connection is in the open (disconnected) position.
3. Connect the wire to the shore power connection.
4. Activate the switch of the outlet of the shore power connection.
5. Turn the transfer switch onboard floating equipment to change from onboard generator power to shore power.
6. Follow established procedures for shutting down on board generators.

#### **DISCONNECTION**

1. Follow established procedures to switch on aboard generators.
2. Turn the transfer switch onboard floating equipment to change from shore power to onboard generator power.
3. Identify the shore power connection box.
4. Activate the switch of the outlet of the shore power connection to place it in open (disconnected) position.
5. Disconnect the shore power cable in the shore side.