

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

**INSPECTION OF ELECTRICAL INSTALLATION
FOR LINDO MAR RESORT – JACUZZI**

CLIENT: LIC. ROBERTO CHAVEZ
LOCATION: PUERTO VALLARTA, JAL.
DATE: FEBRUARY 19, 2021

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

INDEX

1.	GENERAL INFORMATION.....	2
2.	ACTIONS.....	2
2.1.	JACUZZI 1.....	3
2.1.1.	GENERAL LOAD CENTER.....	4
2.1.2.	EQUIPMENT.....	5
2.1.3.	PUMPS UNION.....	6
2.1.4.	WATER UNION ACCESORY CONNECTED TO FRONT PIPE.....	7
2.1.5.	ORIGIN OF THE UNION GROUNDING SYSTEM.....	8
2.1.6.	UNION OF RAILING WITH THE GROUNDING SYSTEM.....	10
2.1.7.	HEATER.....	12
2.1.8.	CALIBER #8 FOR THE UNION OF THE GROUNDING SYSTEM.....	13
2.1.9.	CONTINUITY TEST.....	14
2.2.	JACUZZI 2.....	15
2.2.1.	GENERAL LOAD CENTER.....	15
2.2.2.	EQUIPMENT.....	16
2.2.3.	PUMPS UNION.....	18
2.2.4.	WATER UNION ACCESORY CONNECTED TO FRONT PIPE.....	19
2.2.5.	ORIGIN OF THE UNION GROUNDING SYSTEM.....	20
2.2.6.	UNION OF RAILING WITH THE GROUNDING SYSTEM.....	22
2.2.7.	HEATER.....	24
2.2.8.	CALIBER #8 FOR THE UNION OF THE GROUNDING SYSTEM.....	25
2.2.9.	CONTINUITY TEST.....	26
3.	ATTACHMENTS.....	27
4.	CONCLUSION.....	31

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

1. GENERAL INFORMATION

Through this report I hereby advise that as a result of our visit to “Lindo Mar Resort” located at Int. 1190, Carretera Costera a Barra de Navidad Km. 2.5, Conchas Chinas, 48399 Puerto Vallarta, Jalisco. We issue the following report, which was made to verify the electrical installation in the areas of jacuzzi, in addition we include the new items which Imperial Swimming Pools is requesting.

References which appear are based on Official Mexican Standard NOM-001-SEDE-2012 Electrical Installations.

2. INSPECTION

We received a call from Lic. Roberto Chavez requesting an electrical inspection of the installations at Lindo Mar Resort. We were advised they needed a verification of their electrical installations, specifically the area of jacuzzi to see if they were in compliance with current standards.

3. ACTIONS

The jacuzzis were inspected, as well as their respective panels, switches and wiring of each of the equipment and their connections between phases, neutrals and grounding system. Each one of these were inspected thoroughly to learn about the specifications of the equipment.

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1 JACUZZI 1



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.1. GENERAL LOAD CENTER



Measurement of Initial Voltages

(V) L1-N =	121.0
(V) L2-N =	127.0
(V) L1-L2 =	215.0

Current Measurement

(A)L1 =	7.7
(A)L2 =	16.8

DESCRIPTION

It has a QO816L100F load center with four thermomagnetic switches with grounding fault detection. Three of these switches are 15A and one is 20A. The load center is supplied by caliber 8 AW6 conductors, the grounding system utilizes the same caliber conductor.

OBSERVATIONS:

- All switches are thermomagnetic with grounding fault detection of the same ampacity. (Section 680-40)
- There is a copper rod to ensure that the grounding fault system itself is duly grounded. (Section 680-6)
- There is a directory of circuits on the panel. Each circuit is legible indicating its purpose or specific use, evident and clear (Section 408-4 a).

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.2. EQUIPMENT



DESCRIPTION:

2 Pumps of 1 HP are installed to supply the jacuzzi. It also has 2 luminaires for the jacuzzi and one contact.

OBSERVATIONS:

- The motors have liquid tight flexible pipes for each one of them, this ensures greater safety on the installation (Section 680-21a)
- The motors are duly connected to the grounding fault system (Section 680-21)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

Following are the items requested by “Imperial Swimming Pools”

2.1.3. PUMP UNIONS



DESCRIPTION:

2 Pumps of 1 HP are installed, each one of the pumps are grounded to the same grounding system which is installed through a conductor caliber #8.

OBSERVATIONS:

- The motors are duly connected to the grounding fault system (Section 680-21)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.4. WATER UNION ACCESSORY CONNECTED TO THE FRONT PIPING



DESCRIPTION:

The union of each one of the pumps is observed connected to the water system with the adequate piping and correct accessories.

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.5. ORIGIN OF THE UNION GROUNDING SYSTEM



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

DESCRIPTION:

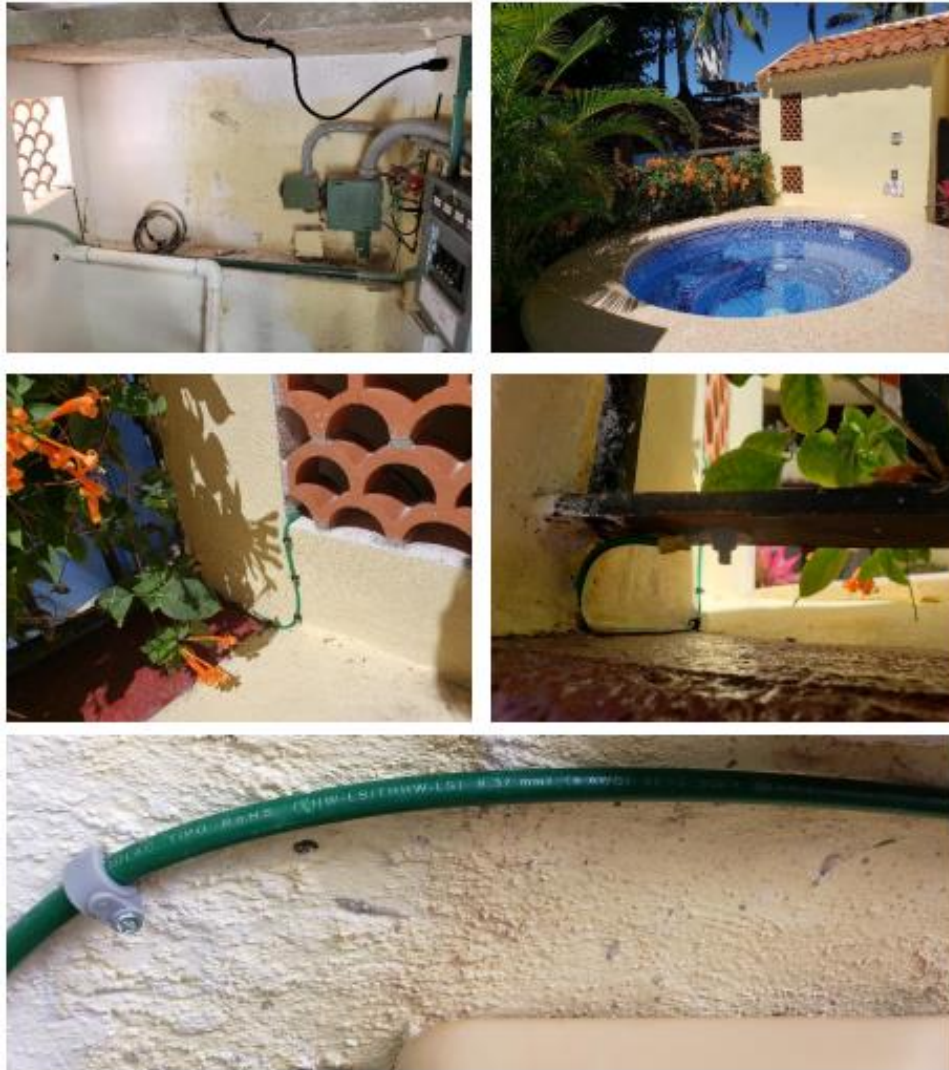
All the electrical equipment is duly connected to the grounding system.

OBSERVATIONS:

- There is a copper rod to ensure that the ground fault system itself is duly grounded. (Section 680-6)
- All the electrical equipment is duly connected to the grounding system. (Section 680-6)
- All motors are duly connected to the grounding fault system (Section 680-21)
- The contacts are connected to the grounding fault system (Section 680-22)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.6. UNION OF RAILING WITH THE GROUNDING SYSTEM



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

DESCRIPTION:

The grounding system is connected to all the equipment and also to the structures around the jacuzzi, in this case with an equipotential union bridge to the railing by way of a caliber #8 conductor.

OBSERVATIONS:

- There is a copper rod to ensure that the grounding fault system itself is duly grounded. (Section 680-6)
- The junction box is connected to the grounding fault system and complies with the necessary distance. (Section 680-24)
- Railings were united within the perimeter set forth (90 cm) by the standard through a caliber #8 conductor, this conductor forms an equipotential bonding bridge with the grounding fault system. (Section 680-26)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.7. HEATER



DESCRIPTION:

Jacuzzi 1 has a pool heater, above is a picture of its data plate. The pool heater is connected to a contact which has a ground fault pin, this contact is grounded to the grounding fault system and which at the same time has a thermomagnetic switch with grounding fault detection.

OBSERVATIONS:

- The contact is located at the correct distance. (Section 680-22(b)(1))
- The contact is connected to the grounding fault system and has a thermomagnetic switch with grounding fault detection. (Section 680-22(a))

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.8 CALIBER #8 FOR THE UNION OF THE GROUNDING SYSTEM



DESCRIPTION:

The grounding system has naked cable which goes directly to the grounding fault system of the complex and has caliber #8 cable which is connected to a copper rod to ensure it is duly grounded.

OBSERVATIONS:

- There is a copper rod to ensure that the grounding fault system itself is duly grounded. (Section 680-6)
- A caliber #8 conductor is being used as union bridge. (Section 680-26)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.1.9 CONTINUITY TEST



DESCRIPTION:

A test was performed to measure the continuity between the railing located in the area of the jacuzzi and the grounding system it has, the results indicated that indeed continuity exists in the system and that it is correctly grounded.

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2 JACUZZI 2

2.2.1. GENERAL LOAD CENTER



Measurement of Initial Voltages

(V) L1-N =	115
(V) L2-N =	122
(V) L1-L2 =	210

Current Measurement

(A)L1 =	15.6
(A)L2 =	25.0

DESCRIPTION:

It has a QO816L100F load center with five thermomagnetic switches with grounding fault detection, two thermomagnetic switches are 20A and three thermomagnetic switches are 15A. The load center is supplied by caliber 8 AWG conductors, the grounding system utilizes the same caliber conductor.

OBSERVATIONS:

- All the switches of this load center are adequate, all are thermomagnetic with grounding fault detection of the adequate ampacity. (Section 680-40)
- There is a copper rod to ensure that the grounding fault system itself is duly grounded. (Section 680-6)

(Electrical Projects Works and Expert Opinions)

- There is a directory of circuits on panels. Each circuit is legible indicating its purpose or specific use, evident and clear (Section 408-4 a).

2.2.2 EQUIPMENT



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

DESCRIPTION:

2 Pumps of 0.75 HP are installed to supply the jacuzzi. It also has 2 luminaires for the jacuzzi, one service contact which is for the heater and one fountain pump for the lighting of the jacuzzi. (Section 680-22)

OBSERVATIONS:

- The conductor which supplies the pool luminaire is duly connected and grounded.
- The motors have liquid tight flexible pipes for each one of them, this ensures greater safety on the installation (Section 680-21a)
- The motors are duly connected to the grounding fault system. (Section 680-21)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.3. PUMP UNIONS



DESCRIPTION:

Jacuzzi 2 has 2 pumps of 0.75 HP installed, each one of the pumps are grounded to the same grounding system. The pumps have a conductor caliber #8 to be grounded.

OBSERVATIONS:

- The motors are duly connected to the grounding fault system. (Section 680-21)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.4. WATER UNION ACCESSORY CONNECTED TO THE FRONT PIPING



DESCRIPTION:

Each one of the pumps is connected to the water system with the adequate piping and correct accessories.

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.5. ORIGIN OF THE UNION GROUNDING SYSTEM



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

DESCRIPTION:

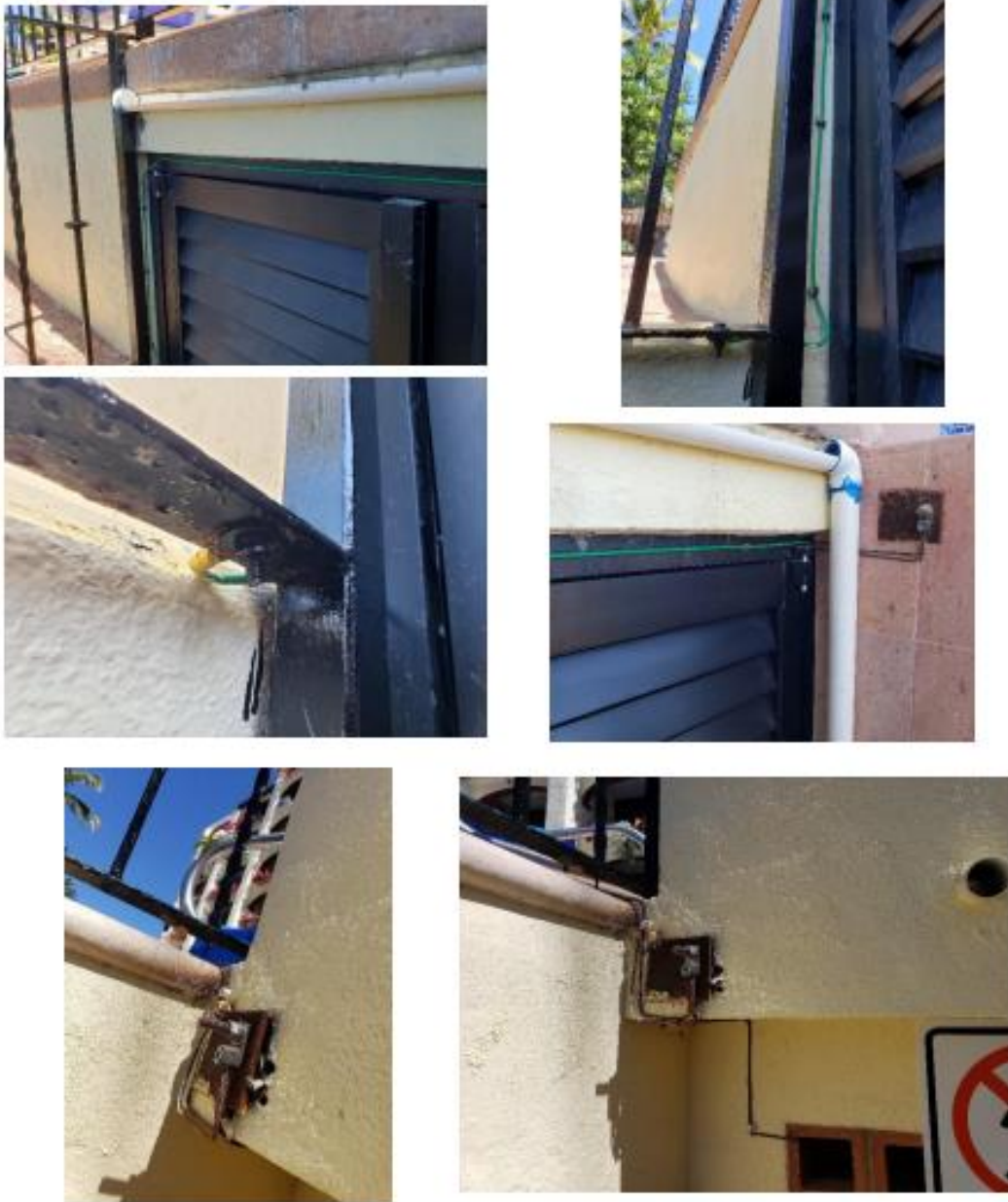
All the electrical equipment is duly connected to the grounding system of the Lindo Mar complex and in addition, has a copper rod which is likewise grounded.

OBSERVATIONS:

- There is a copper rod to ensure that the ground fault system itself is duly grounded. (Section 680-6)
- All the electrical equipment is duly connected to the grounding system. (Section 680-6)
- All motors are duly connected to the grounding fault system (Section 680-21)
- The contacts are connected to the grounding fault system (Section 680-22)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.6. UNION OF RAILING WITH THE GROUNDING SYSTEM



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

DESCRIPTION:

Structures located around jacuzzi 2 are grounded to the same grounding system, there is an equipotential union bridge to the railing by way of a caliber #8 conductor. There are two railings on the jacuzzi and both are connected to the grounding system.

OBSERVATIONS:

- There is a copper rod to ensure that the grounding fault system itself is duly grounded. (Section 680-6)
- The junction box is connected to the grounding fault system and complies with the necessary distance. (Section 680-24)
- Railings were united within the perimeter set forth (90 cm) by the standard through a caliber #8 conductor, this conductor forms an equipotential bonding bridge with the grounding fault system. (Section 680-26)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.7. HEATER



DESCRIPTION:

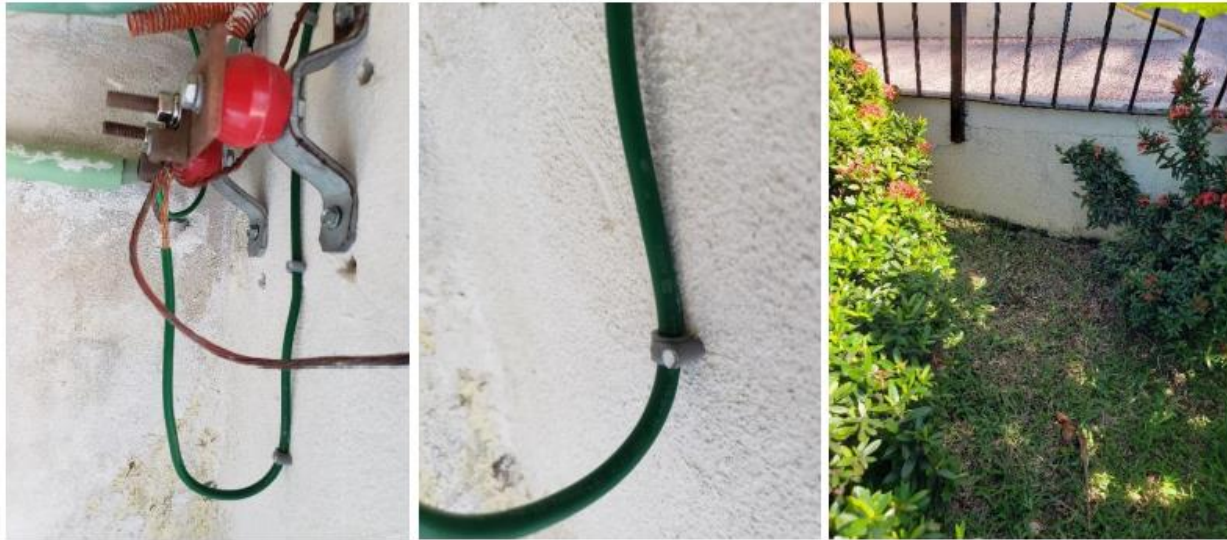
In the same manner, Jacuzzi 2 has a pool heater. The pool heater is connected directly to the load center, which has a thermomagnetic switch with grounding fault detection.

OBSERVATIONS:

- The equipment is grounded and has the necessary distance to be able to be installed. (Section 680-27)
- It has a thermomagnetic switch with grounding fault detection. (Section 680-22(a))

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.8 CALIBER #8 FOR THE UNION OF THE GROUNDING SYSTEM



DESCRIPTION:

The grounding system has naked cable which goes directly to the grounding fault system of the Lindo Mar complex and in addition has caliber #8 cable which is connected to a copper rod to ensure it is duly grounded.

OBSERVATIONS:

- There is a copper rod to ensure that the grounding fault system itself is duly grounded. (Section 680-6)
- A caliber #8 conductor is being used as union bridge. (Section 680-26)

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

2.2.9 CONTINUITY TEST



DESCRIPTION:

A test was performed to measure the continuity between the railing located in the area outside the jacuzzi and the grounding system; the results indicated that indeed continuity exists in the system and that it is correctly grounded.

Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

3. ATTACHMENTS



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)



Proyectos Obras y Peritajes Electricos, S.A. de C.V.
(Electrical Projects Works and Expert Opinions)

4. CONCLUSION

The electrical installations are in good operating conditions, the conductors meet all the necessary requirements according to the Mexican Standard for Electrical Installations.

All switches are thermomagnetic with grounding fault detection, this ensures safety not only for the operator but also for the client. The equipment, lighting and bars around the jacuzzi are duly grounded through a caliber #8 conductor which goes directly connected to the grounding system which has a copper rod. Panels are labeled and identified in a correct manner.

I hope this [report] is useful to you. Let me know if you have any question or doubt.

Yours truly,

(a signature)

IME Jose Hector Monroy Flores
General Director

PROF. REGISTRATION 1732519
Reg. 1-13-1-51-M
Reg. ACOEO SV-01