

Technical Report No.: 704012070701-00

Rev.: 00

Date: 2020-06-01

Client: Ningbo Haishu Seetronic Co., Ltd
NO.567 Hexiao East Road, Dongqiao Town, Haishu District
315000 Ningbo, Zhejiang Province, PEOPLE'S REPUBLIC OF
CHINA

Manufacturing place: Ningbo Haishu Seetronic Co., Ltd
NO.567 Hexiao East Road, Dongqiao Town, Haishu District
315000 Ningbo, Zhejiang Province, PEOPLE'S REPUBLIC OF
CHINA

Product: Power connector
Connector 1:
SAC3FX (SAC3FX-00~99, SAC3FX-LY, SAC3FG,
SACAF3-00~99);
Appliance inlet 1:
SAC3MPX (SAC3mPX-00~99, SAC3MPX-LY,
SACADM3-00~99, SAC3PX, CNAC-MPX, CNAC-
MPX-LY, CNAC-MX);
Type: Connector 2:
SAC3MX (SAC3MX-00~99, SAC3MX-LY, SACAM3-
00~99)
Appliance inlet 2:
SAC3FPX (SAC3FPX-00~99, SAC3FPX-LY, SACDF3-
00~99, CNAC-FPX, CNAC-FPX-LY)

Test specification: EN 60529:1991+ A1:2000+ A2:2013

Purpose of examination: Test according to the requirements for IP65 protection based on
test specifications.
Limited tests performed on provided sample to check the
compliance with the requirement.

Test result: **Pass.**

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Testing (China) Co., Ltd.
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No.151 Heng Tong Road
Shanghai 200070 P. R. China

1. Description of the test subject

1.1 Function

Manufacturer's specification for intended use: Power connector for household use only.

1.2 Consideration of the foreseeable use

- Not applicable
- Covered through the applied standard
- Covered by the following comment
- Covered by attached risk analysis

1.3 Technical Data

Model	:	Connector 1: SAC3MX (SAC3MX-00~99, SAC3MX-LY, SACAM3-00~99) Appliance inlet 2: SAC3FPX (SAC3FPX-00~99, SAC3FPX-LY, SACDF3-00~99, CNAC-FPX, CNAC-FPX-LY)
		Connector 2: SAC3FX (SAC3FX-00~99, SAC3FX-LY, SAC3FG, SACAF3-00~99); Appliance inlet 1: SAC3MPX (SAC3mPX-00~99, SAC3MPX-LY, SACADM3-00~99, SAC3PX, CNAC-MPX, CNAC- MPX-LY, CNAC-MX);
Rated Voltage	:	300V~
Rated Frequency	:	50-60Hz
Rated Current	:	20A
Protection Class	:	Class II
Protection Against Moisture	:	IP65

Remark:

Connector 1 and connector 2 with same construction except different appearance.
Appliance inlet 1 and Appliance inlet 2 with same construction except different appearance.



2. Order

2.1 Date of Purchase Order, Customer's Reference

2020-05-20

2.2 Receipt of Test Sample, Condition, Location

2020-05-20

2.3 Date of Testing

2020-05-20 to 2020-06-01

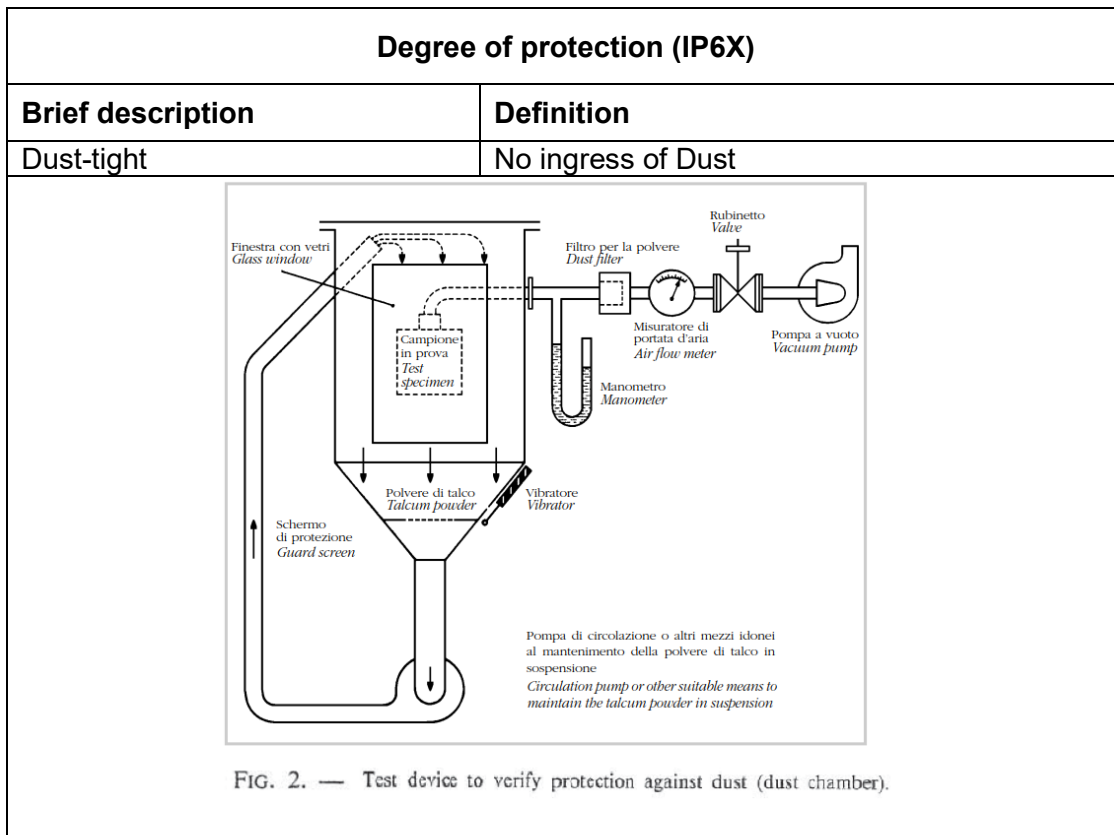
2.4 Location of Testing

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
 No. 1999, Duhui Road, Shanghai, 201108, P. R. China

2.5 Points of Non-Compliance or Exceptions of the Test Procedure

None

3. Test Results



The conditions to be observed are as follows:

The test is made using a dust chamber incorporating the basic principles shown in Fig. 2 whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50 µm and the nominal width between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.

Enclosures are of necessity in one of two categories:

Category 1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, e.g., due to thermal cycling effects.

Category 2: Enclosures where no pressure difference relative to the surrounding air is present.

Category 1 enclosures:

The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump. The suction connection shall be made to a hole specially provided for this test. If not otherwise specified in the relevant product standard, this hole shall be in the vicinity of the vulnerable parts.

If it is impracticable to make a special hole, the suction connection shall be made to the cable inlet hole. If there are other holes (e.g., more cable inlet holes or drain-holes) these shall be treated as intended for normal use on site.

The object of the test is to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour. In no event shall the depression exceed 2 kPa (20 mbar) on the manometer shown in Fig. 2.

If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h.

If, with a maximum depression of 2 kPa (20 mbar), the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through, or a period of 8 h has elapsed.

Category 2 enclosures:

The enclosure under test is supported in its normal operating position inside the test chamber, but is not connected to a vacuum pump. Any drain-hole normally open shall be left open for the duration of the test. The test shall be continued for a period of 8 h.

Category 1 and category 2 enclosures:

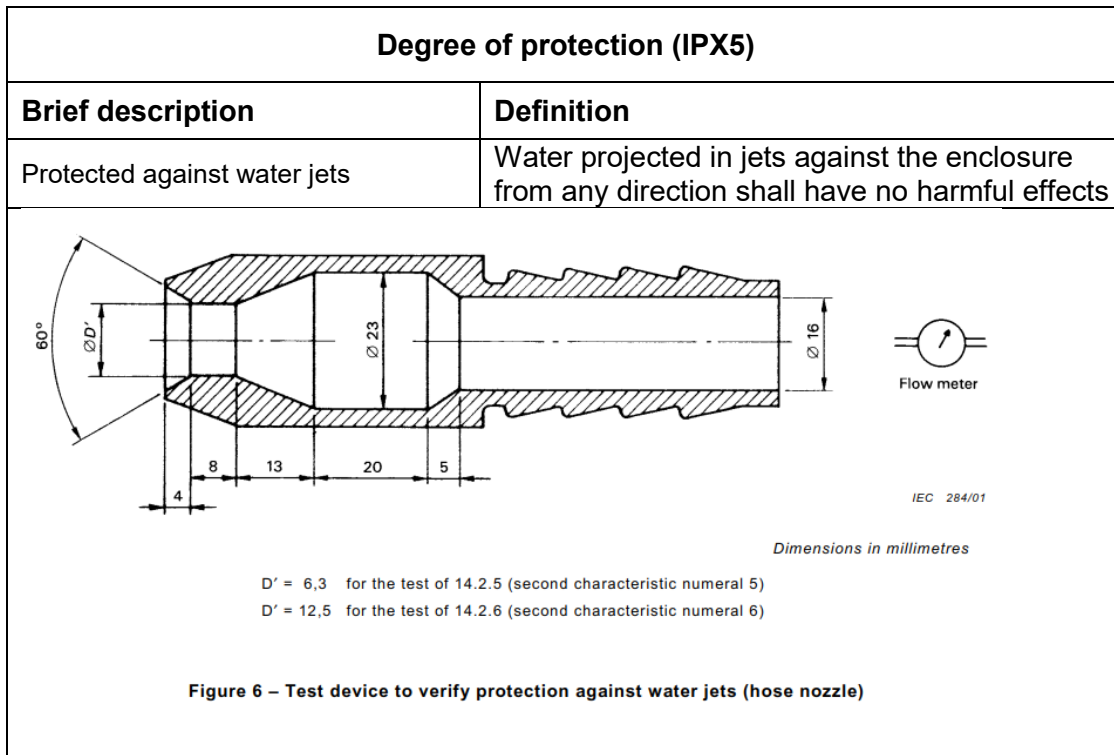
If it is impracticable to test the complete enclosure in the test chamber, one of the following procedures shall be applied:

- testing of individually enclosed sections of the enclosure;
- testing of representative parts of the enclosure, comprising components such as doors, ventilation openings, joints, shaft seals, etc., in position during test;
- testing of a smaller enclosure having the same full-scale design details.

In the last two cases, the volume of air to be drawn through the enclosure under test shall be the same as for the whole enclosure in full scale.

Acceptance conditions for first characteristic numeral 6:

The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.



The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure 6.

The conditions to be observed are as follows:

- Internal diameter of the nozzle: 6.3mm;
- Delivery rate: 12.5l/min+/-5%;
- Water pressure: to be adjusted to achieve the specified delivery rate;
- Core of the substantial stream: circle of approximately 40mm diameter at 2.5m distance from nozzle;
- Test duration per square metre of enclosure surface area likely to be sprayed: 1 min;
- Minimum test duration: 3min
- Distance from nozzle to enclosure surface: between 2.5m and 3m.

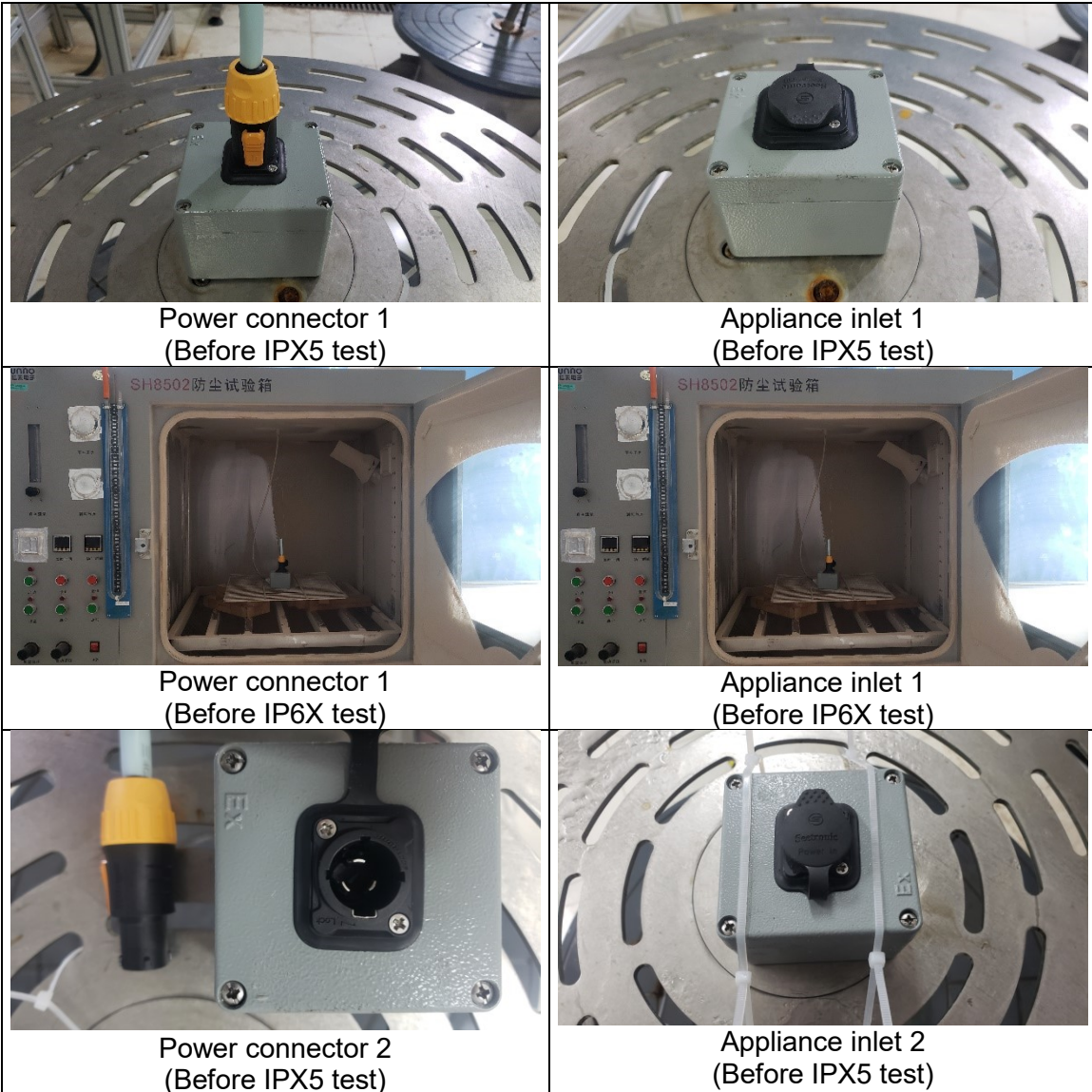
Acceptance conditions after testing,

In general, if any water has entered, it shall not:

- be sufficient to interfere with the correct operation of the equipment or impair safety;
- deposit on insulation parts where it could lead to tracking along the creepage distances;
- reach live parts or windings not designed to operate when wet;
- accumulate near the cable end or enter the cable if any.

4. Photo documentation

General view of the product:





Power connector 2
(Before TP6X test)



Appliance inlet 2
(Before TP6X test)

During test



Power connector 1
(During IPX5 test)



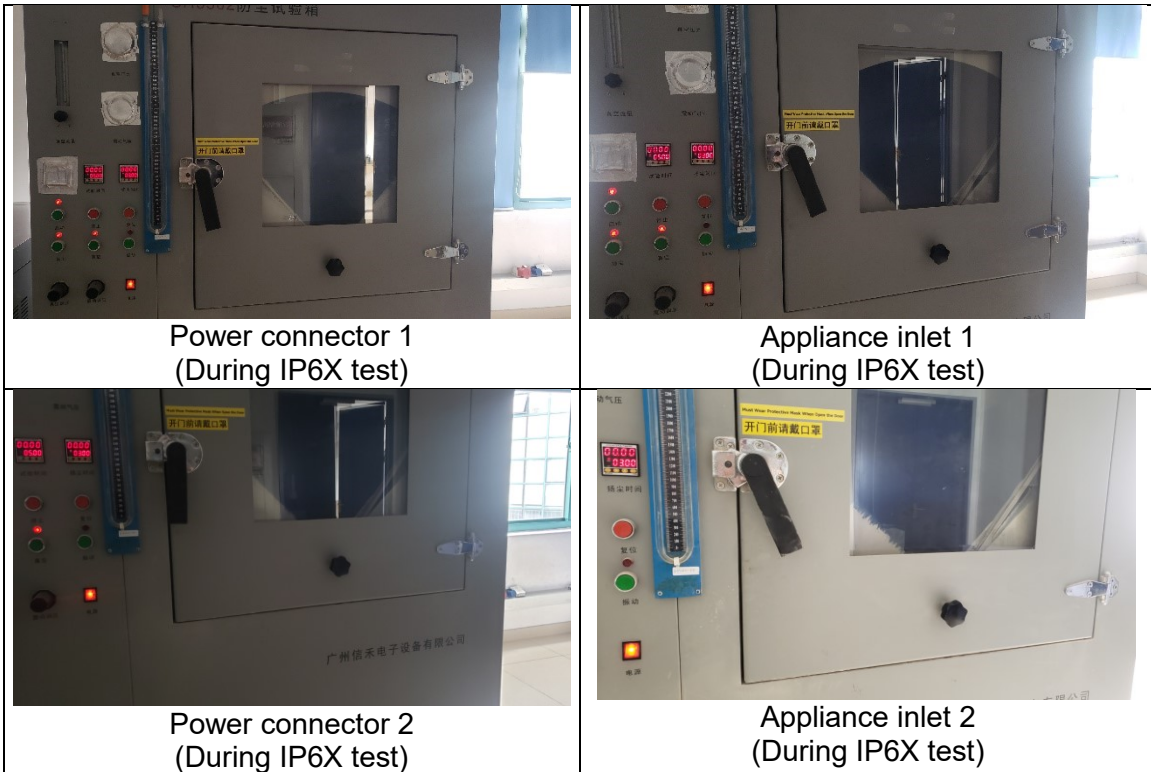
Appliance inlet 1
(During IPX5 test)



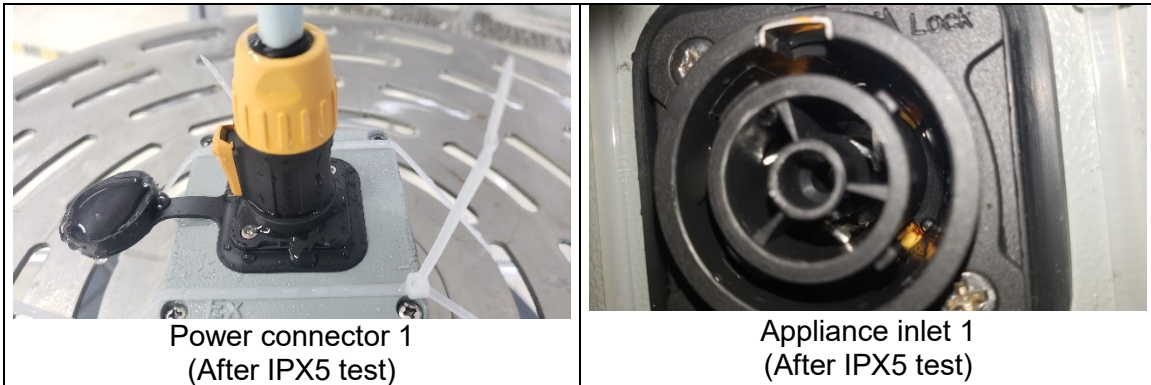
Power connector 2
(During IPX5 test)

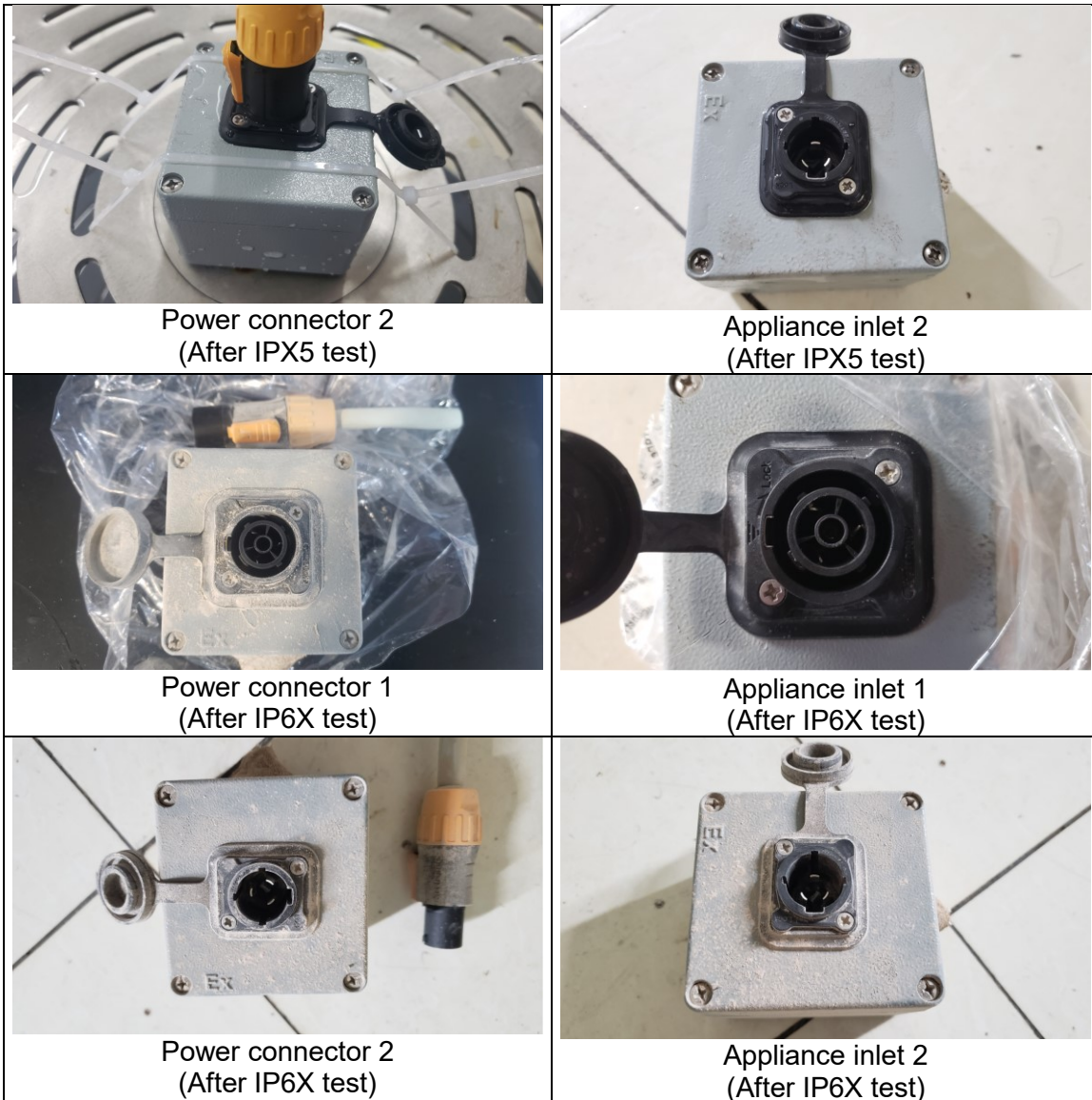


Appliance inlet 2
(During IPX5 test)



After test:





Test result:

No water is found in internal compartment and electrical compartment and no deposit of dust is observable inside the enclosure at the end of the test.

Test result is PASS.



5. Equipment list

Type	Manufacture	Model	Equipment ID	Next Calibration
Dust Test Chamber IP5X, IP6X	Xinghe (Guangzhou)	SH8502	S0712370-YQ	May-18-2021
Water Supply Station for IP Test	Bozhong	BZ2003-A	S1412912-YQ	May-17-2021
Withstanding Voltage Tester	KIKUSUI (Japan)	TOS5052	S0712356-YQ	May-17-2021
Check Box	TUVPS	75 kΩ for HV Tester	S0701291-YQ	May-18-2022

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
 TÜV SÜD Group

Tested by:


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 (Project handler)

Approved by:


 Mr. Xiong Zhuang LEI
 (Designated reviewer)