

ISO IEC 17025 Accredited

Test report : 2536

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LQF-510-02

# TEST REPORT

Project No.: *TI-1640-160529*

IP55 Test Report for: *Box (Empty Enclosure)*

Dimension(mm): *500 x 200 x 700 (W\*D\*H)*

S/N: *AK 5070215*

Manufactured by: *Niroo Sazeh Sogand*

Tested according to: *IEC 60529 ED.2 2001*

No. Pages

8

Issue date

01- July- 2013

Prepared: Test Engineer

*B. Hamidifard*

Verified: Head Of LV Lab

*S. M. Mirfallah*

Approved:

*Mirfallah*

Vice President of CEO

*S. M. Mirsadri*

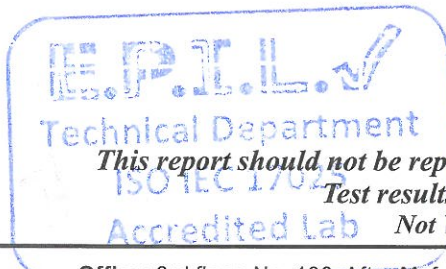
Engineering Deputy of  
Test and Inspection

*Prof. B. Vahidi*



This test report does not include an assessment of the manufacturer's production.

Conformity of the production with tested sample is not the responsibility of EPIL.



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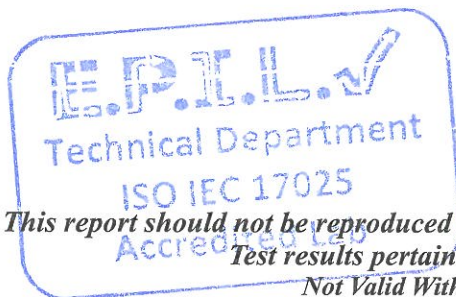
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**1. GENERAL INFORMATION**

**1.1 Product Information**

Equipment under test	: Box (Empty Enclosure)
Dimension (mm)	: 500 x 200 x 700 (W*D*H)
S/N	: AK 5070215
Normative document	: IEC 60529 Ed.2 2001

**1.2 Client Information**

Applicant	: Niroo Sazeh Sogand
Contact person	: Mr. Momeni
Telephone	: +98 261 4763091

**1.3 Tests Performed**

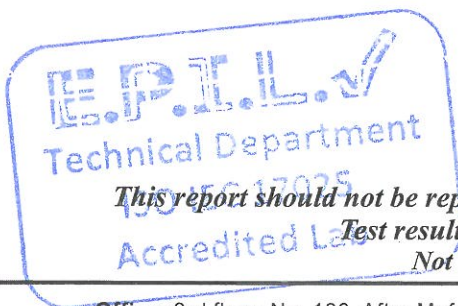
IP5X, Test for Protection Against Dust	IP5X	01-July-2013
Protection against access to hazardous parts	IP5X	01-July-2013
protection against water	IPX5	09-Jun-2013

**1.4 Results Of Tests**

IP5X, Test for Protection Against Dust	IP5X*
Protection against access to hazardous parts	IP5X
protection against water	IPX5

\*Note: EUT passed the test after following changes:

1- Door is changed	: please see Figure 2
2-Gaskets are changed	: please see Figure 2



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## 2. PERFORMANCE AND RESULTS OF TESTS

### 2.1 IP5X , Test for Protection Against Dust

#### 2.1.1 Test data

Location	: E.P.I.L.
Date	: 01-July-2013
Engineer of EPIL	: B. Hamidifard
Normative document	: IEC 60529 Ed.2 2001

#### 2.1.2 Ambient conditions

Ambient Temperature	: 29 °C
Relative Humidity	: 37 %
Atmospheric Pressure	: 86.5 kPa

#### 2.1.3 Instrument used for the test

Dust Chamber

#### 2.1.4 Procedure of test

The enclosure under test is placed in its normal operating position in dust chamber and the powder circulation pump worked. Talcum powder shall be used. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50  $\mu\text{m}$  and the nominal width of a gap between wires 75  $\mu\text{m}$ . The amount of talcum powder to be used is 2 kg per cubic meter of the test chamber volume. It shall not have been used for more than 20 tests (according to IEC 60529). The duration of the test was 8 h (according to IEC 60529).

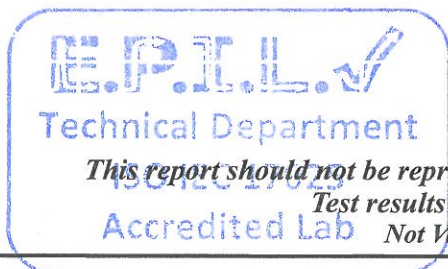
#### 2.1.5 Acceptance conditions of test

The protection is satisfactory if on inspection, talcum powder has not accumulated in a quality or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety, expect for special cases to be clearly specified in the relevant product standard, no dust shall be deposit where it could lead to tracking along the creepage distance.

#### 2.1.6 Result of test

The test was done according to IEC 60529 and it passed the test. (Please see note of Page 3)

✓ **PASSED**





**2.2 IP5X, Test for Protection Against Access to Hazardous Parts**

**2.2.1 Test data**

Location	: E.P.I.L.
Date	: 01-July-2013
Engineer of EPIL	: B. Hamidifard
Normative document	: IEC 60529 Ed2.1 - 2001

**2.2.2 Ambient conditions**

Ambient Temperature	: 29 °C
Relative Humidity	: 37 %
Atmospheric Pressure	: 86.5 kPa

**2.2.3 Instrument used for the test**

Standard rigid steel rod 1 – 1.05 mm diameter (figure D of table VI - IEC60529).

**2.2.4 Procedure of test**

The standard probe is pushed against any openings of the enclosure with the force 1±10%N.

**2.2.5 Acceptance conditions of test**

The protection is satisfactory if adequate clearance is kept between the access probe and hazardous parts.

Low – voltage part:

The access probe shall not touch hazardous live parts. If adequate clearance is verified by signal circuit between the probe and hazardous parts, the lamp shall not light.

High – voltage part:

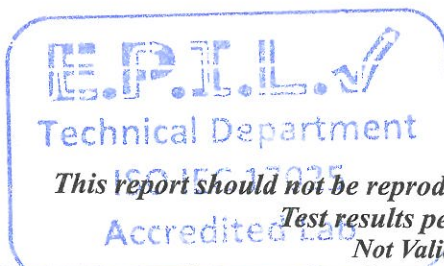
Verification may be made either by dielectric test or by inspection of the specified clearance dimension in air which would ensure that the tests would be satisfactory under the most unfavorable electric field configuration.

**2.2.6 Result of test**

Test was done according to IEC 60529 and it passed the test.



**PASSED**



3. Figures:

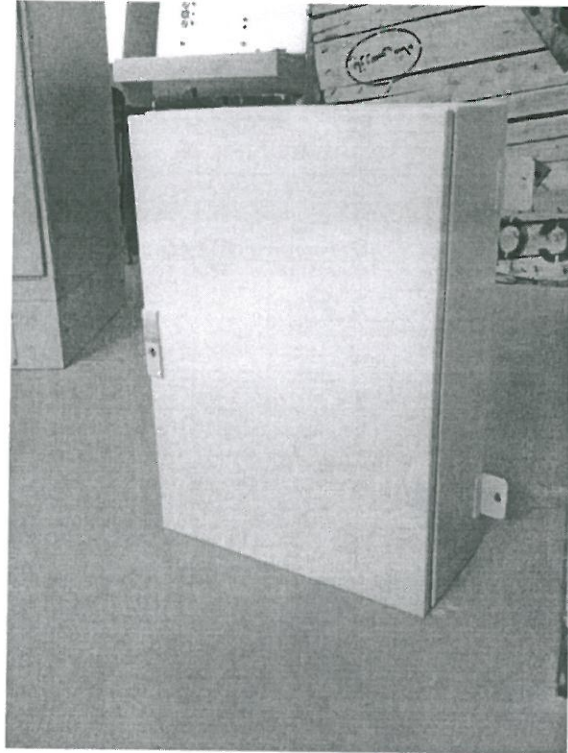


Figure 1: EUT

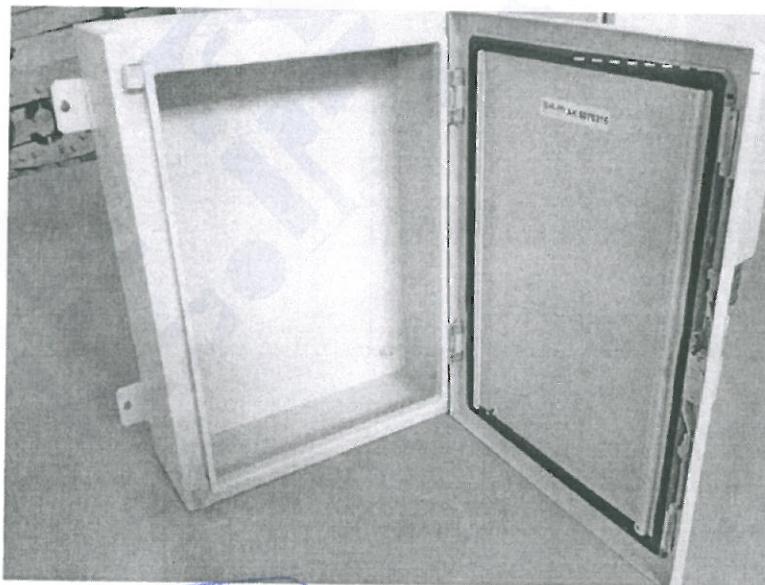
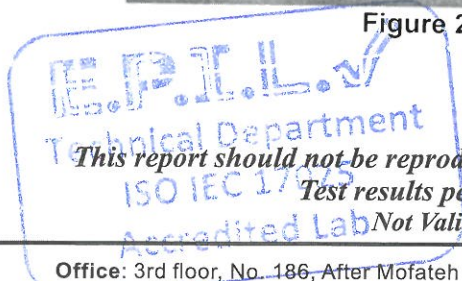


Figure 2: Inside of the EUT

Gasket



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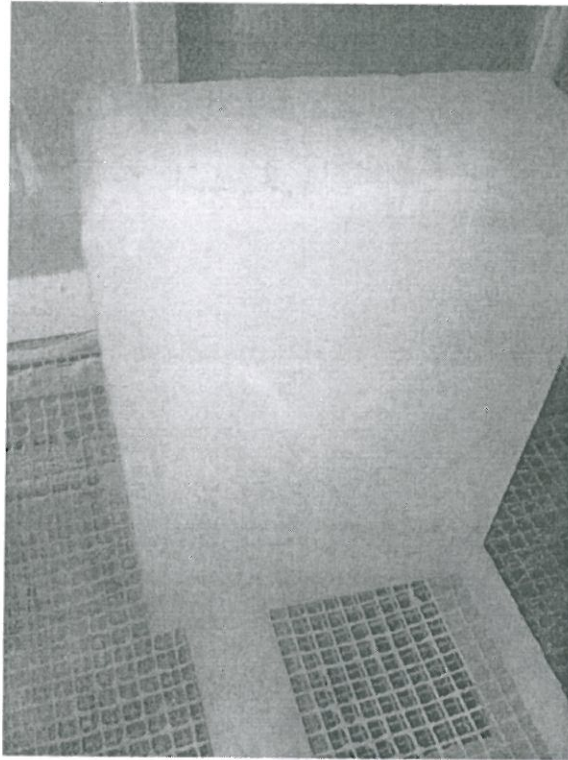


Figure 3: EUT after IP5X

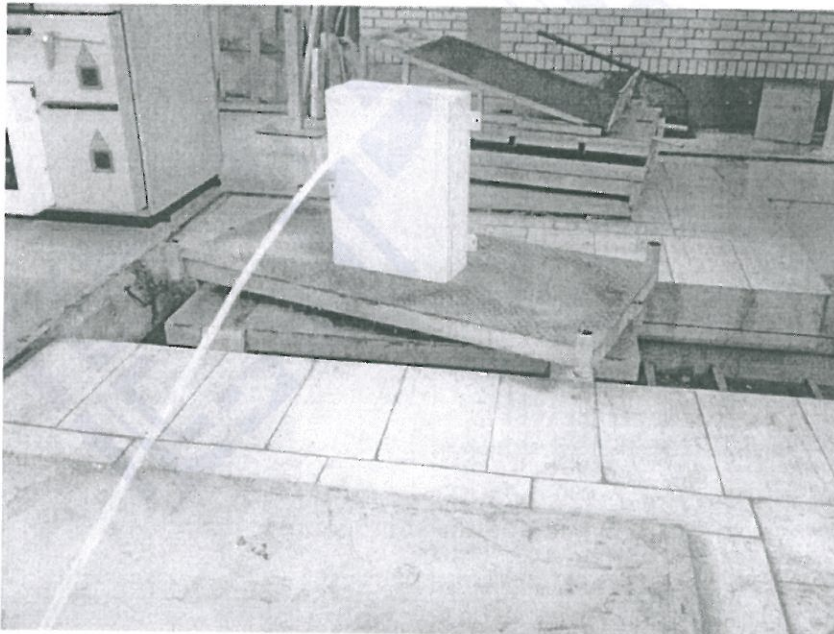
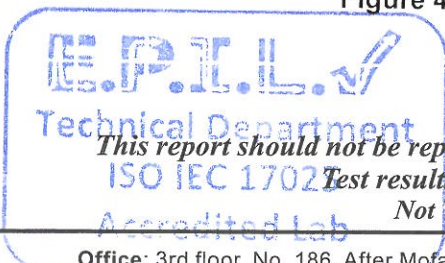


Figure 4: EUT under IPX5



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## 2.3 IPX5, Test For Protection Against Water

### 2.3.1 Test data

Location : E.P.I.L.  
Date : 09-Jun-2013  
Engineer of EPIL : B. Hamidifard  
Normative document : IEC 60529 Ed.2 2001

### 2.3.2 Ambient conditions

Ambient Temperature : 26.5 °C  
Relative Humidity : 39 %  
Atmospheric Pressure : 86.5 kPa

### 2.3.3 Instrument used for the test

Water Jet

### 2.3.4 Procedure of test

The test is made by spraying the enclosure from all practicable direction with a stream of water from a standard test nozzle .

The conditions to be observed are as follows:

Internal diameter of the nozzle: 6.3 mm;

Delivery rate: 12.5 l/min  $\pm$  5% ;

Water pressure: to be adjusted to achieve the specified delivery rate;

Core of the substantial stream: circle of approximately 40 mm diameter at 2.5 m distance from nozzle;

Test duration per square meter of enclosure surface area likely to be 1 min;

Minimum test duration: 3 min;

Distance from nozzle to enclosure surface: between 2.5 m and 3 m;  
(according to IEC 60529).

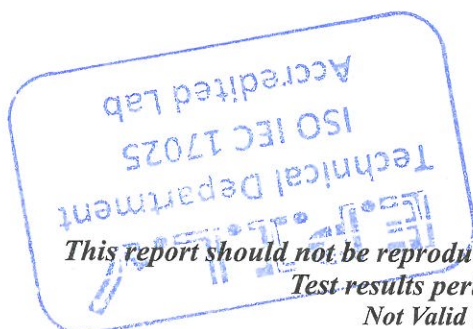
### 2.3.5 Acceptance conditions of test

After testing the EUT shall be inspected for ingress of water according to conditions that are specified in IEC 60529.

### 2.3.6 Result of test



**PASSED**



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