

TEST CERTIFICATE

Client ROLEC Gehäuse-Systeme GmbH
Kreuzbreite 2
D – 31737 Rinteln

Date of order 2011-03-11

TEST OBJECT

Enclosure of series aluPLUS Typ AP 120 Typ AP 122 Typ AP 161 Typ AP 162

**The certificate is valid in connection with the test report
No. 096/11**

The specimens were tested in accordance with DIN EN 60529 : 2000-09 (VDE 0470–1) to determine the degrees of protection IP Code 66 and 67.

Criteria for passing the tests

- IP 6X No dust shall enter into the enclosure.
- IP X6 No water shall enter into the enclosure.
- IP X7 No water shall enter into the enclosure.

TEST DECISION

The specimens have passed the above mentioned tests.

Leipzig, 2011-03-29

Laboratory for Environmental
Testing and Testing Materials


Dr.-Ing. Frank Erler
Laboratory Manager

TEST REPORT

No. 096/11

Client	ROLEC Gehäuse-Systeme GmbH Mr. Volker Borchering Kreuzbreite 2 D – 31737 Rinteln
Date of order	2011-03-11
Date of receiving the specimens	2011-03-14
Period of testing	2011-03-16 to 2011-03-25

1 TEST OBJECT

1.1 Designation / Number of pieces

Enclosure of series aluPlus as follows:

1.1.1	Typ AP 120	/ 2 pieces
1.1.2	Typ AP 122	/ 2 pieces
1.1.3	Typ AP 161	/ 2 pieces
1.1.4	Typ AP 162	/ 2 pieces

- one enclosure of each type with suction port for the tests in accordance with sub clause 3.2
- one enclosure of each type without suction port for the tests in accordance with sub clause 3.3 and 3.4

The cover of the enclosure has to be screwed with a torque = 3 Nm. *given by the client*

1.2 Producer see Client

2 TASK

Tests to determine the degrees of protection IP Code 66 and 67 in accordance with
DIN EN 60529 : 2000–09 (VDE 0470–1)

3 TEST PROGRAMME

3.1 Initial visual inspection

3.2 Testing to determine the degree of protection against foreign objects/protection against access IP Code 6X in accordance with DIN EN 60529

3.2.1 Protection against touching dangerous parts

Test is cancelled because no relevant openings are existing.

3.2.2 Protection against the ingress of solid foreign bodies ("dust-proof")

Dust chamber	in accordance with figure 2 of DIN EN 60529
Test conditions	in accordance with DIN EN 60529, sub-clause 13.4
Test dust	in accordance with DIN EN 60529, sub-clause 13.4 (talcum powder)
<u>Test criterion</u>	No dust shall be visible in the enclosure.

- visual inspection with regard to entered dust

3.3 Testing to determine the degree of protection against strong jet of water IP Code X6 in accordance with DIN EN 60529 , Chapter 14.2.6 and table 8

Jet nozzle 12,5 mm Ø	in accordance with figure 6 of DIN EN 60529
Exposition of specimens	distance jet nozzle / surface of enclosure 2.5 to 3 m; horizontal on turntable, jet affects on the surface of enclosure from all possible directions
Flow rate of water	100 l / min ± 5 %
Water pressure	≈ 100 kPa
Test duration	1 min per m ² of splattered surface overall test duration 3 min
<u>Test criterion</u>	No water shall be visible in the enclosure.

- visual inspection with regard to entered water

3.4 Testing to determine the degree of protection IP Code X7 against temporary dipping in accordance with DIN EN 60529 , Chapter 14.2.7 and table 8

Dipping basin	water level over the enclosure	1 m from lower edge
Exposition of test object	immersed in general purpose	
Water temperature	difference of sample temperature no more than 5 K	
Test duration	30 min	
<u>Test criterion</u>	No water shall be visible in the enclosure.	

- visual inspection with regard to entered water

4 RESULTS

4.1 Initial visual inspection

Damages or defects are not visible.

4.2 IP Code 6X

No dust is visible inside the enclosures.

4.3 IP Code X6

No water is visible inside the enclosures.

4.4 IP Code X7

No water is visible inside the enclosures.

5 EVALUATION

The specimens in accordance with sub-clause 1.1.1 to 1.1.4 have passed the tests to determine the degrees of protection IP Code 6X, IP Code X6 and X7 in accordance with DIN EN 60529 : 2000-09 (VDE 0470-1).

Leipzig, 2011-03-29

Annex Sheet 1 and 2

**Laboratory for Environmental
Testing and Testing Materials**



Dr.-Ing. Frank Erler
Laboratory Manager

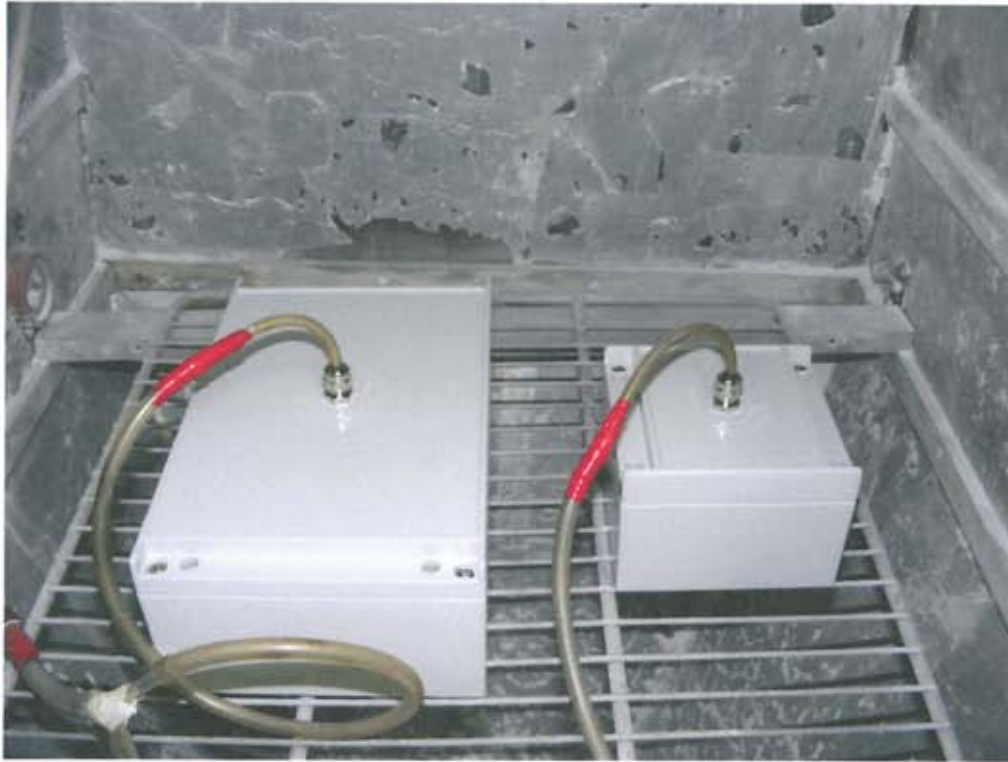


Figure 1 loading of dust, IP Code 6X, first run



Figure 2 loading of dust, IP Code 6X, second run



Figure 3 IP Code X6, loading by strong jet of water, exemplarily



Figure 4 IP Code X7, loading by dipping, exemplarily