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TEST CERTIFICATE

Client	ROLEC Gehäuse-Systeme GmbH Kreuzbreite 2 D – 31737 Rinteln
Date of order	2016-09-07

TEST OBJECT

Enclosure of series aluCASE AC250 / 2 pieces

The certificate is valid in connection with the test report
No. 329/16

The specimens were tested in accordance with DIN EN 60529 : 2014-09 (VDE 0470–1) to determine the degrees of protection IP Code 66.

Criteria for passing the tests

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

TEST DECISION

The specimens have passed the above mentioned tests.

Leipzig, 2016-09-08

Laboratory for Environmental Testing and Material Testing

Dr.-Ing. Frank Erler
Laboratory Manager

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TEST REPORT

No. 329/16

Client	ROLEC Gehäuse-Systeme GmbH Mr. Volker Borcherding Kreuzbreite 2 D – 31737 Rinteln
Date of order	2016-09-07
Date of receiving the specimens	2016-09-07
Period of testing	2016-09-07 and 2016-09-08

1 TEST OBJECT

1.1 Designation / Number of pieces

Enclosure of series aluCASE AC250 / 2 pieces

- Enclosure with suction port for the test in accordance with sub clause 3.2

1.2 Producer see Client

2 TASK

2.1 Testing to determine the degrees of protection IP 6X in accordance with DIN EN 60529 : 2014–09 (VDE 0470–1)

2.2 Testing to determine the degrees of protection IP X6 in accordance with DIN EN 60529

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-tight)

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)

- Visual inspection with regard to entered dust

Test criterion — No dust shall be visible in the enclosure.

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 ∅	in accordance with figure 6 of DIN EN 60529
Exposition of specimen	distance jet nozzle / surface of enclosure 2.5 to 3 m; horizontal on turntable, jet affects 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 m² of splattered surface overall test duration 3 min

- Visual inspection with regard to entered water

Test criterion — No water shall be visible in the enclosure.

4 RESULTS

4.1 Initial visual inspection

Damages or defects are not visible.

4.2 IP Code 6X

No dust is visible inside the enclosure.
No changes are visible.

4.3 IP Code X6

No water is visible inside the enclosure.
No changes are visible.

5 EVALUATION

The specimens in accordance with sub–clause 1.1 have passed the tests to determine the degree of protection IP Code 66 in accordance with DIN EN 60529 : 2014–09 (VDE 0470–1).

Leipzig, 2016-09-08

Annex Sheet 1/1

Laboratory for Environmental Testing and Material Testing

Dr.-Ing. Frank Erler
Laboratory Manager

The test result is true only for the specimen(s) mentioned in the clause „test item (specimen)". It is allowed to copy the complete test report only. When the test report shall be copied in the form of extracts the agreement must be given by the test laboratory for them.

Figure 1 Exposition IP Code 6X

Figure 2 Exposition IP Code X6

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TEST CERTIFICATE

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

Date of order 2017-05-24

TEST OBJECT

Enclosure of series aluCASE Type ACF 200

The certificate is valid in connection with the test report
No. 161/17

The specimens were tested in accordance with DIN EN 60529 : 2014-09 (VDE 0470–1) to determine the degrees of protection IP Code 66 and IP Code 67.

The specimen was tested in accordance with ISO 20653 : 2013-02 to determine the degree of protection IP Code X9K.

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.
- IP X9K No water shall enter into the enclosure.

TEST DECISION

The specimens have passed the above mentioned tests.

Leipzig, 2017-06-06

Laboratory for Environmental Testing and Material Testing

Dr.-Ing. Frank Erler
Laboratory Manager

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TEST CERTIFICATE

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

Date of order 2017-05-24

TEST OBJECT

Enclosure of series aluCASE

Type AC 252 Type AC 300 Type AC 302 Type ACF 200

The certificate is valid in connection with the test report
No. 161/17

The specimens were tested in accordance with DIN EN 60529 : 2014-09 (VDE 0470–1) to determine the degrees of protection IP Code 66.

Criteria for passing the tests

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

TEST DECISION

The specimens have passed the above mentioned tests.

Leipzig, 2017-06-06

Laboratory for Environmental Testing and Material Testing

Dr.-Ing. Frank Erler
Laboratory Manager

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TEST REPORT

No. 161/17

Client	ROLEC Gehäuse-Systeme GmbH Mr. Volker Borcherding Kreuzbreite 2 D – 31737 Rinteln
Date of order	2017-05-24
Date of receiving the specimens	2017-05-31
Period of testing	2017-06-01 to 2017-06-06

1 TEST OBJECT

1.1 Designation / Number of pieces

1.1.1 Enclosure of series aluCASE AC 252 (250 mm x 380 mm x 120 mm) / 2 pieces

1.1.2 Enclosure of series aluCASE AC 300 (300 mm x 330 mm x 120 mm) / 2 pieces

1.1.3 Enclosure of series aluCASE AC 302 (250 mm x 380 mm x 120 mm) / 2 pieces

1.1.4 Enclosure of series aluCASE ACF 200 (200 mm x 230 mm x 90 mm) / 2 pieces

- one enclosure of each type with suction port for the test 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 to 3.5

1.2 Producer see Client

2 TASK

2.1 Testing to determine the degrees of protection IP 6X
in accordance with DIN EN 60529 : 2014–09 (VDE 0470–1)

2.2 Testing to determine the degrees of protection IP X6 in accordance with DIN EN 60529

2.3 Testing to determine the degrees of protection IP X7 in accordance with DIN EN 60529

2.4 Testing to determine the degrees of protection IP X9K in accordance with ISO 20653 : 2013-02

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

- Specimens in accordance with sub-clause 1.1.1 to 1.1.4
  The test is done in 2 runs.

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-tight)

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)

- Visual inspection with regard to entered dust

Test criterion — No dust shall be visible in the enclosure.

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

- Specimens in accordance with sub-clause 1.1.1 to 1.1.4

Jet nozzle 12,5 mm ∅	in accordance with figure 6 of DIN EN 60529
Exposition of specimen	distance jet nozzle / surface of enclosure 2.5 to 3 m; horizontal on turntable, jet affects 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 m² of splattered surface overall test duration 3 min

- Visual inspection with regard to entered water

Test criterion — No water shall be visible in the enclosure.

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

- Specimen in accordance with sub-clause 1.1.4

Dipping basin	water level over the enclosure	1 m from lower edge
Exposition of test object	immersed in general purpose	
Water temperature	difference to sample temperature no more than 5 K	
Test duration	30 min	

- Visual inspection with regard to entered water

Test criterion No water shall be visible in the enclosure.

3.5 Testing to determine the degree of protection – IP Code X9K – against ingress of water under high pressure steam jet cleaning in accordance with ISO 20653

- Specimen in accordance with sub-clause 1.1.4
- Test was done in 5 runs.

Flat jet nozzle and jet discharge	in accordance with figure 7 of ISO 20653 in connection with high pressure steam jet cleaner Kärcher Type HDS 13/20-4 S
Exposition of specimen	mounted on a rotating table in accordance with figure 7 of ISO 20653 table rotation speed (5 ± 1) rpm
Jet angles	90°, 60°, 30° and 0°
Flow rate of water	14 to 16 l / min
Water temperature and pressure	(80 ± 5) °C // 8000 to 10000 kPa
Test duration	30 s in each jet angle

- Visual inspection with regard to entered water

Test criterion No water shall be visible in the enclosure.

4 RESULTS

4.1 Initial visual inspection

Damages or defects are not visible.

4.2 IP Code 6X

No dust is visible inside the enclosure.
No changes are visible.

4.3 IP Code X6

No water is visible inside the enclosure.
No changes are visible.

4.4 IP Code X7

No water is visible inside the enclosure.
No changes are visible.

4.5 IP Code X9K

No water is visible inside the enclosure.
No changes are visible.

5 EVALUATION

The specimens in accordance with sub–clause 1.1.1 to 1.1.4 have passed the tests to determine the degree of protection IP Code 66 in accordance with DIN EN 60529 : 2014–09 (VDE 0470–1).

The specimens in accordance with sub–clause 1.1.4 have passed the test to determine the degree of protection IP Code X7 in accordance with DIN EN 60529.

The specimens in accordance with sub–clause 1.1.4 have passed the test to determine the degree of protection IP Code X9K in accordance with ISO 20653 : 2013-02.

Leipzig, 2017-06-06

Annex Sheet 1 to 3

Laboratory for Environmental Testing and Material Testing

Dr.-Ing. Frank Erler
Laboratory Manager

The test results are valid only for the specimen(s) mentioned in the section "test objects" / "test items". Copying of this report is allowed in its entirety only. Copying in extracts presupposes the permission of the test laboratory.

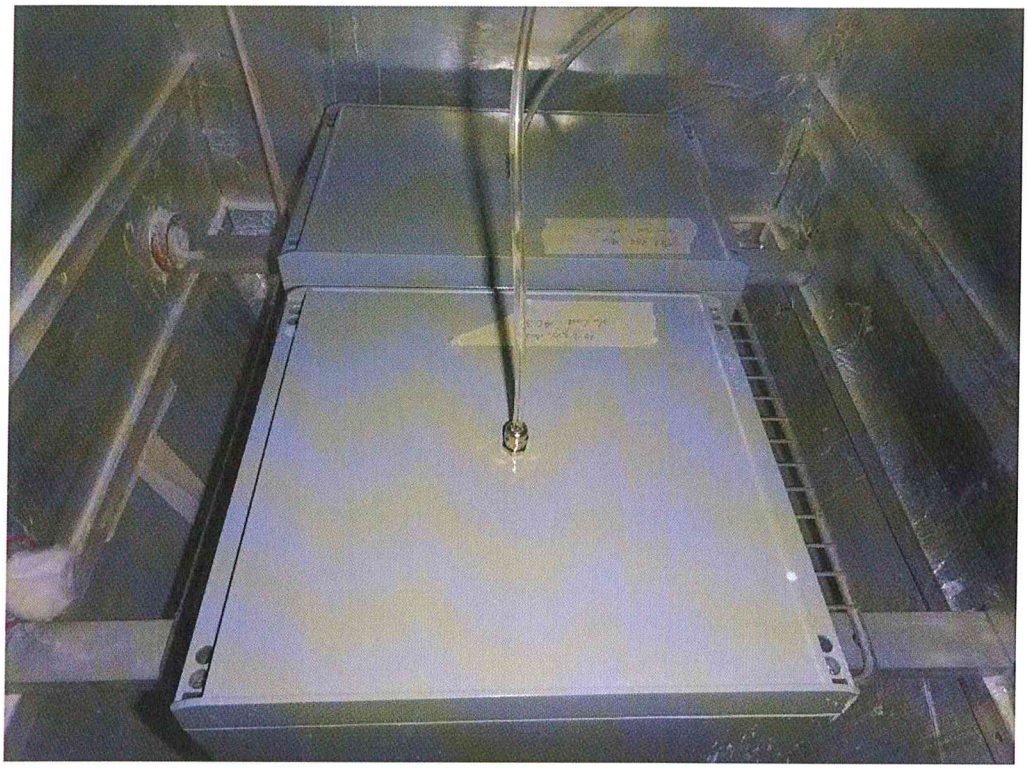

Figure 1 Exposition IP Code 6X, example

Figure 2 Exposition IP Code X6, example

Figure 3 Exposition IP Code X7

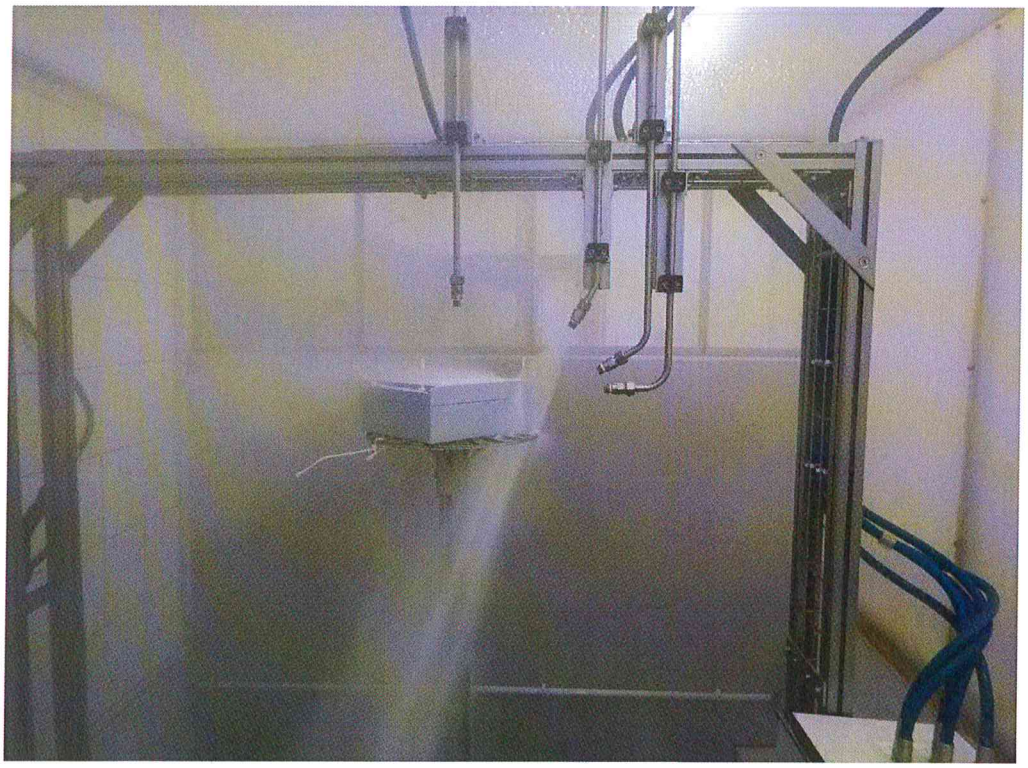

Figure 4 Exposition IP Code X9K, 60°, example

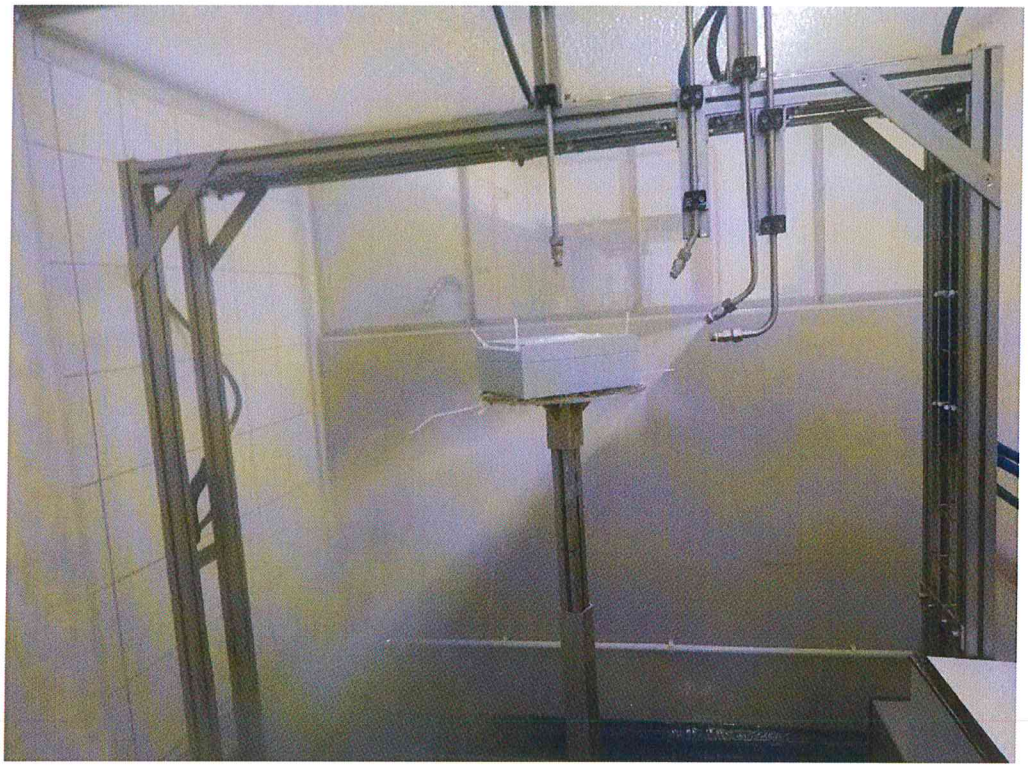

Figure 5 Exposition IP Code X9K, 30°, example