



RESEARCH DEVELOPMENT AND TESTING NATIONAL INSTITUTE FOR  
ELECTRICAL ENGINEERING

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## TEST REPORT

**Nr. 139 / 11.12.2012**

**CUSTOMER:** SCHIRTEC AG Ignaz Kock Strasse 10 A-1210 Wien AUSTRIA

**MANUFACTURER:** SCHIRTEC AG Ignaz Kock Strasse 10 A-1210 Wien AUSTRIA

**TEST PRODUCT:** E.S.E.Lighting Conductors type Schirtec-A

**REFERENCE STANDARD:** NFC 17-102 / 2011 , Annex C 3.3.1 and Annex C 3.3.2;  
IEC 60068-2-52 /1996 ; SR EN ISO 6988/1997

**PERFORMED TESTS:** Environmental conditioning:  
I Cyclic salt mist conditioning  
II Humid Sulphurous atmosphere Treatment

**TEST PERIOD:** 03.12.2012 ÷ 13.12.2012

Report contains 8 pages. It is edited in 3 copies: copy No.1, remains in the laboratory and copies Nos 2 and 3 are sent to the customer.

**HEAD OF HIGH VOLTAGE DIVISION,**

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**1. Test product identification:**

<b>Name:</b>	E.S.E.Lighting Conductors
<b>Tip:</b>	Schirtec-A
<b>Serial number:</b>	prototype
<b>Technical specification:</b>	SCHIRTEC Specification(annex 1)
<b>Contract</b>	705.2/ 7946 /20.09.2012
<b>Product receipt date:</b>	03.12.2012
<b>Product condition at receipt:</b>	New product

**2. Technical characteristics:**

<b>Material</b>	Stainless steel
<b>Dimension (cm)</b>	59 x 12
<b>Weight (Kg)</b>	2,8

**3. Acceptance criteria:** No traces of oxide shall appear on product surface after the test

**4. Test program:** Environmental conditioning:  
I Cyclic salt mist conditioning  
II Humid Sulphurous atmosphere Treatment

**5. Persons responsible for tests :** Tehn. PETRIU Dumitru  
Tehn. CRAU Elena  
Eng. BURCIU Ion

**6. Test description and test result presentation:****I Cyclic salt mist conditioning**

1. Product receipt date : 03.12.2012
2. Test period : 03.12.2012 – 06.12.2012
3. Reference standard: NFC 17-102 / 2011 , Annex C 3.3.1; IEC 60068-2-52 /1996
4. Atmospheric conditions :  $t = 17,4\text{ }^{\circ}\text{C} \pm 19,8$  ,  $\text{RH} = 53\% \pm 67\%$
5. Used equipment :  
- climatic room Votsch Germany ,type VC 40 60 ,series 59566092700010 calibration certificate No. DJ – 013- 028-253 / 04.02.2011  
- salt mist room 8 m<sup>3</sup>

**6. Working mode:**

The product was placed in the salt mist room (fig.1,fig.2) and sprayed for 2 hours with a 5% salt solution at ambient temperature

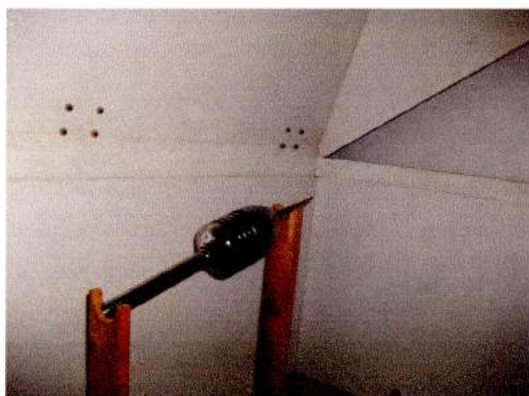


Fig.1



fig.2

After that salt spraying period the product was transferred in the climatic room (fig.3) and stored at a 40 °C temperature and 93 % moisture for 22 hours.



Fig.3



A cycle is constituted by the period of exposure to salt mist plus the period of storage to moisture.

The product was subjected to 3 (three) such conditioning cycles.

The test parameters are given in Fig.4

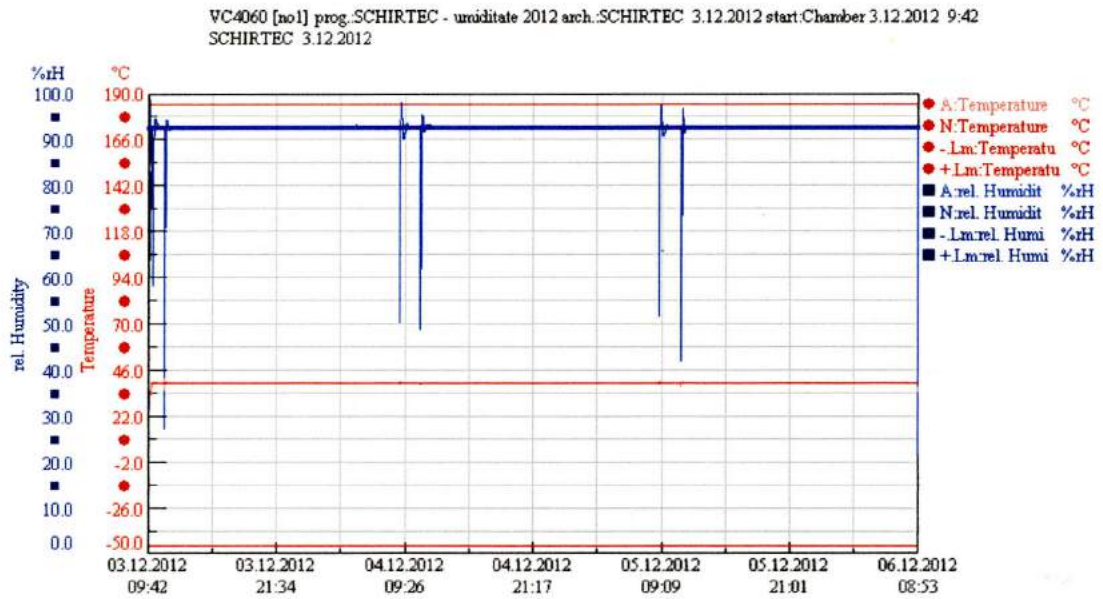


Fig.4

After the three cycles were finished the product was analysed and it was found out that the product was not affected by salt mist and moisture conditioning.

**7. Test responsible:**

Tehn.pr.CRAU Elena *[Signature]*  
Tehn.PETRIU Dumitru *[Signature]*

**8. Test result :**

Taking into account the acceptance criteria and the above findings the product passed the test.

*[Handwritten mark]*

## II Humid Sulphurous atmosphere Treatment

1. Product receipt date : 03.12.2012
2. Test period : 06.12.2012 – 13.12.2012
3. Reference standard: NFC 17-102 / 2011 , Anexa C 3.3.2; SR EN ISO 6988/1997
4. Atmospheric conditions :  $t = 19,4\text{ }^{\circ}\text{C} \pm 20,8$  ,  $\text{RH} = 53\% \pm 67\%$
5. Used equipment : - special room for Sulphurous atmosphere treatment
6. Working mode:

The product was subjected to 7 (seven) conditioning cycles in humid sulphurous atmosphere. One cycle lasted for 24 hours and consisted of an 8 hour exposure inside the room followed by a 16 hour exposure to environmental atmosphere.

The product was placed in the special room for sulphurous atmosphere treatment where  $2\text{ dm}^3$  distilled water had been placed previously (fig.1) . The room door was tightly closed and  $0,2\text{ dm}^3$  sulphur dioxide was introduced using the supply system of  $\text{SO}_2$  cylinder (fig.2) .



Fig.1



fig.2

Then heating was started and the temperature rose to  $40\text{ }^{\circ}\text{C}$ . The temperature was maintained within the limits  $(40 \pm 3)\text{ }^{\circ}\text{C}$  using a thermostating system (fig.2). The product was kept in the above conditions for 8 hours (fig.3).






Fig.3

After that 8 hour conditioning period the product was exposed to environmental atmosphere for 16 hours.

At the end of the 7 cycles the product was analysed and it was found out that the product was not affected by humid sulphurous atmosphere conditioning.

**7. Test responsible:**

Ing.BURCIU Ion

**8. Test result :**

Taking into account the acceptance criteria and the above findings the product passed the test.



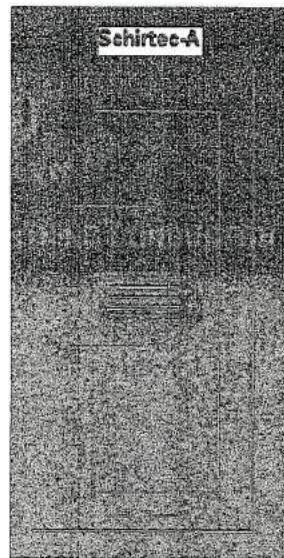


SCHIRTEC®

**SCHIRTEC-A E.S.E. LIGHTNING CONDUCTOR**



(a)



(b)

Figure 1. SCHIRTEC-A E.S.E. Lightning Conductor

SCHIRTEC-A E.S.E. Lightning Conductor is products that do not include radioactive materials but protect large fields from one point by becoming active with the lightning risk due to increasing atmospheric electrical field effect in lightning weathers. The head part of SCHIRTEC-A E.S.E Lightning Conductor is formed by four main parts;

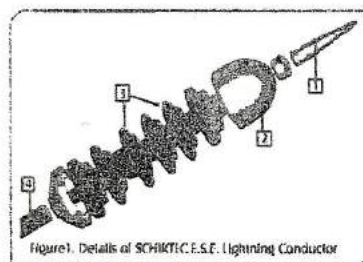


Figure1. Details of SCHIRTEC-A E.S.E. Lightning Conductor

1. Air Terminal
2. First Ion Generator
3. Accelerator and Atmospheric Electrodes
4. Grounding Connection Terminal

Figure 2. Details of SCHIRTEC-A E.S.E. Lightning Conductor

- end of test report -

