



SIRIM QAS International Sdn.Bhd. (Company No.: 410334-X)
No.1, Persiaran Dato' Menteri, P.O.BOX 7035, Section 2,
40700 Shah Alam, Selangor Darul Ehsan, Malaysia
Tel. no: 03-55446253 / 55446251 Fax. no: 03-55446272
www.sirim-qas.com.my

TEST REPORT

| | |
|---|---------------|
| REPORT NO.: 2015EEA0580 | PAGE : 1 OF 5 |
| This Test Report refers only to samples submitted by the applicant to SIRIM QAS International Sdn. Bhd. and tested by SIRIM QAS International Sdn. Bhd. This test report shall not be reproduced, except in full and shall not be used for any purpose by any means or forms (including but not limited to advertising purposes) without written approval from Managing Director, SIRIM QAS International Sdn. Bhd. Please refer last page for Conditions Relating to the Use of Test Report contain in this Test Report shall apply. | |

Applicant : LUNA FAR EAST SDN BHD
LOT 40351, JALAN BUKIT KAPAR KUARI
42200 KLANG
SELANGOR

Manufacturer : LUNA FAR EAST SDN BHD
LOT 40351, JALAN BUKIT KAPAR KUARI
42200 KLANG
SELANGOR

Product : LIGHTNING PROTECTION SYSTEM COMPONENTS(LPSC) -
COPPER TAPE

Reference Standard / Method of test : IEC 62561-2 : 2012

Description of sample : Brand : LUNA
Model : -
Material : Solid copper
Sizes : 25 mm x 3 mm


Date received : 23 JUN. 2015

Job No. /Ref. No. : J20151420540

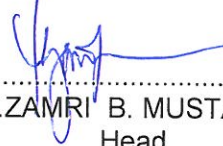
Overall test result : **COMPLIED (See page 2 for details)**

Issue date : 08 JULY. 2015

Approved Signatory


.....
(DANIAL NAIM B MAT RASHID)
Testing Executive




.....
(M.ZAMRI B. MUSTAFFA)
Head
Electrical & Electronic Section 1,
Testing Services Department

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SUMMARY NOTES ON TEST(S):

1. This is a partial test report.
2. The tests were conducted on submitted sample as in table below :

| Clause | Tests |
|--------|--------------------------|
| 4.3 | Dimension and tolerances |
| 4.5 | Marking |
| 5.2.4 | Environmental properties |
| 5.2.5 | Mechanical properties |
| 5.2.6 | Electrical properties |

3. All the tests were carried out at ambient temperature of $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$, unless otherwise specified.
4. The abbreviation used in this report denotes as follows;

Pass : Complied with the requirement
 NA : Not applicable
 Fail : Failed
 NC : Not conducted

SUMMARY OF RESULT(S)

The test sample as described in this test report complied with the requirements of IEC 62561-2 : 2012 for those tests conducted.

ADDITIONAL INFORMATION;

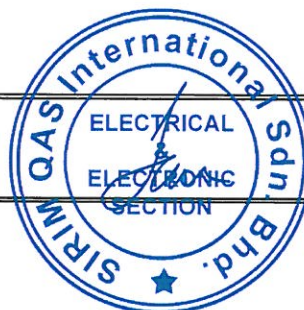
1. Tested by : Zulkifli Ismail
2. Checked by : M.Zamri B. Mustafa
3. Date of test sample (s) received:
 - 1st submission : 23 JUN. 2015
 - 2nd submission : Nil



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IEC 62561-2 : 2012

| Clause | Requirement – Test | Result – Remark | Verdict |
|--------|--|-----------------------|---------|
| 4 | Requirements | | |
| 4.3 | Dimensions and tolerances | | |
| | Cross sectional area, mm ² : $\geq 50 \text{ mm}^2$ | 75.82 mm ² | Pass |
| | Measured thickness, mm : 3 mm | 3.05 mm | - |
| | Measured width, mm : 25 mm | 24.86 mm | - |
| 4.5 | Marking | | |
| | The sample is marked with the following: | | |
| | a) Manufacturer's or responsible vendor's | LUNA | Pass |
| | b) Identifying symbol | Not provided | - |
| 5 | Tests | | |
| 5.2 | Conductors, air termination rods and earth lead-in rods | | |
| 5.2.4 | Environmental test | | |
| | A.1 <u>Salt mist</u> | | |
| | The salt mist test was conducted in accordance with IEC 60068-2-52 : 1996 | | Pass |
| | A.2 <u>Humid sulphurous atmosphere test</u> | | |
| | The humid sulphurous atmosphere treatment was carried out in accordance with ISO 6988 : 1985 with seven cycles with a concentration of sulphur dioxide of $667 \times 10^{-6} \pm 25 \times 10^{-6}$ | | NC |
| | After the tests, the base metal of specimens is not exhibit any visual corrosive deterioration when inspected with normal or corrected vision without magnification. | | Pass |



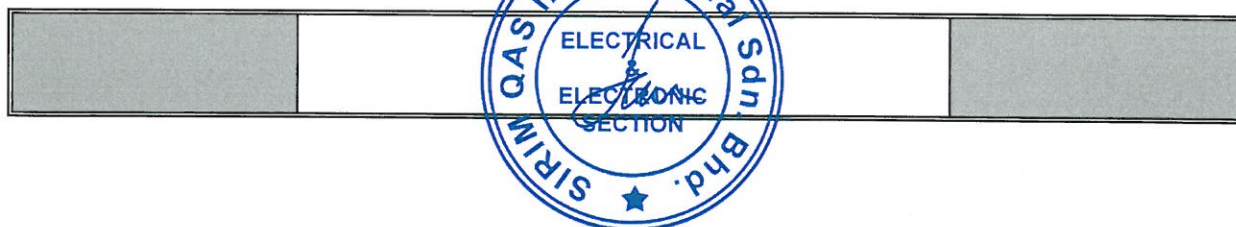
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IEC 62561-2 : 2012

| Clause | Requirement – Test | Result – Remark | Verdict |
|--------|---|-------------------------|---------|
| 5.2.5 | Tensile tests | | |
| | The sample is subjected to tensile strength tests | | |
| | Tensile strength, N/mm ² : 200 N/mm ² to 450 N/mm ² | 229 N/mm ² | Pass |
| 5.2.6 | Electrical properties | | |
| | The resistance measurement is taken over a 1m (± 1mm) distance, using a micrometer, and the reading corrected to 20°C using appropriate correction factors. | | |
| | Air ambient temperature, °C | 26.0 °C | - |
| | Length of sample, m : | 0.5 m | - |
| | Measured cross-sectional area of sample, mm ² : | 72.82 mm ² | - |
| | Measured resistance of sample, mΩ : | 0.1184 mΩ | - |
| | Temperature coefficient of resistance at 20 °C, /°C : | 3.93 x 10 ⁻³ | - |
| | The resistivity of the conductor is calculate with the formula below: $(\rho) = \frac{R \times A}{l}$ where: R = resistance in ohms (Ω) A = cross-sectional area (m ²) l = unit length (m) | | - |
| | Required : ≤ 0.019 μΩm | 0.017 μΩm | Pass |
| 5.5 | Marking test | Marking is engraving | - |
| 5.5.1 | The marking is checked by inspection and by rubbing it by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked with white spirit/mineral spirit. | | NA |
| 5.5.2 | All markings shall be legible | | NA |

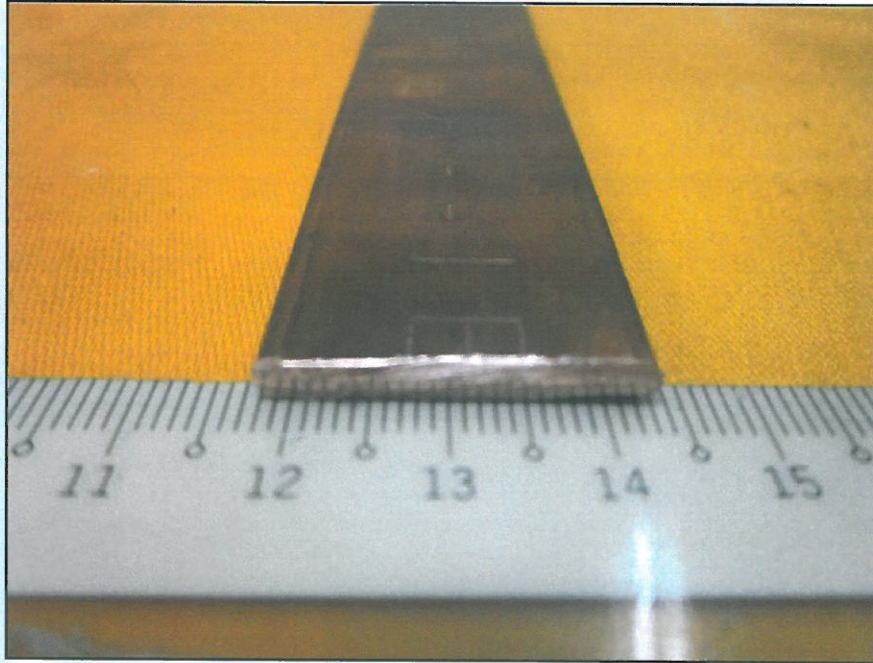
MARKING:

“ LUNA IEC62561 - 2 ”



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PHOTOGRAPH(S) OF TEST SAMPLE(S)



7.0 CONDITIONS RELATING TO THE USE OF SIRIM QAS INTERNATIONAL TEST REPORT

- 7.1 A Test Report will be issued in respect of Testing Services conducted and shall relate only to the Sample actually -tested. SIRIM QAS International makes no warranty whatsoever and the Applicant shall not represent in any manner that any duplication or mass production of the Product is same as the Sample actually tested or that SIRIM QAS International has tested any of the duplicated or mass produced Product.
- 7.2 The Test Report shall not be amended, changed, varied or modified in any manner whatsoever by the Applicant or otherwise.
- 7.3 If the Test Report is to be furnished to any third party or to the public, each such Test Report shall be furnished in full, legible and in its entirety.
- 7.4 The Test Report shall not be reproduced and shall not in any manner be used for any advertising purposes or whatsoever without written approval from the Managing Director of SIRIM QAS International of No. 1, Persiaran Dato' Menteri, Building 8, Section 2, P.O. Box 7035, 40700 Shah Alam, Selangor Darul Ehsan.
- 7.5 Further or in the alternative, it is strictly forbidden unless with prior written approval from the Managing Director of SIRIM QAS International, to represent in any manner whatsoever that SIRIM and/or other SIRIM's subsidiaries has endorsed, approved or validated the Product of the Applicant in any manner whatsoever.
- 7.6 The use of SIRIM QAS International, SIRIM or other SIRIM's subsidiaries logo and/or words such as "SIRIM: Tested and Proven" and similar representations are strictly forbidden in any manner whatsoever without the prior written approval from the Managing Director of SIRIM QAS International.
- 7.7 In the event the Applicant is found in breach of this provision, SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries without prejudice to any other right and remedies may take whatever action necessary including but not limited to:
- a) Informing and placing a notice in the media;
 - b) Obtaining an injunction from Court (cost on a solicitor-client basis to be borne by the Applicant);
 - c) Refusing to accept any further Product for Testing Services from the Applicant or whosoever related to the Applicant, whether subsidiary or otherwise;
 - d) Instructing the Applicant to withdraw and recall the advertisement, statement or document in question and advertise a clarification and apology to SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries twice in a national publication of SIRIM QAS International's choice at the Applicant's sole cost; and
 - e) Informing or lodging a report pertaining the Applicant's Test Report with the relevant authorities.
- 7.8 In the event of an investigation from any third party concerning the Applicant's Test Report, SIRIM QAS International may disclose the same for purposes of such investigation.
- 7.9 If such approval is obtained from the Managing Director of SIRIM QAS International, the Applicant may only include the phrase. "A sample of this product has been tested by SIRIM QAS International... (Test Report No) ... (dated) (for what test) ... (to which standard)" or such similar words which stress that only the Sample was actually tested.
- 7.10 Certified true copies of the Test Report may be issued upon request by the Applicant upon payment of the relevant fee.