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| <b>Work Instruction (Inspection)</b>                               |   | <b>Document No.:</b><br><b>WI-R-EMEA-CERT-INSP-PCS008</b> |
| <b>EMEA CERTIFICATION SCHEMES - PRODUCT CONTROL SPECIFICATIONS</b> |   |   |
| Issue Date:  | Revision Date: 11 <sup>th</sup> Feb 2015  | Approved by: Anders Delsborn                              |
|  | Effective Date: 19 <sup>th</sup> Feb 2015 |   |

### 1.0 Purpose

Product Control Specifications (PCS) specify the requirements for routine inspections, tests, Product Verification Tests and sample selection for products certified under an Intertek EU Type 5 certification scheme (including GS, S, BEAB, ASTA, ENEC, BAUART and TICK MARK). They are for use by manufacturers and by factory inspectors.

### 2.0 Scope

Products: Flexible cables and cords  
Standards: HD21, HD22, EN 50525 Series, SS 424 02 31 and SS 424 02 35  
Marks: S, ASTA, BG, TICK

### 3.0 Routine inspections and tests

#### 3.1 General

The following requirements apply to most products.

Variations may be permitted by prior, written agreement from the certification body.

The factory should have a quality plan defining all inspections and tests on materials, components and completed products as appropriate.

Completed products shall be marked to confirm satisfactory completion of all required testing.

Any products which fail inspection or testing shall be segregated and not allowed to continue through the process until rectified and re-inspected or retested.

Products shall not be released until the testing equipment has been checked again following a production batch.

Records of inspections and test should be maintained and held for at least two years.

Records shall include:

- Type of product
- Date of test
- Place of manufacture
- Quantity tested
- Number of failures and actions taken

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### 3.2 Required inspections and tests

| Inspection/test                  | Test parameters  | Sampling plan |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
|----------------------------------|--|---------------|----------|----------|---------------|---------|---------|---------------|---------|---------|---------------|---------|---------|-----------------|---------|----------|------|
| Production line tests:           | <p>The test shall be either, for single core cables, a spark test, or, for multi-core cable a voltage test, in the dry state and at ambient temperature, with duration of 5 min.</p> <p>The cable shall withstand the test voltage specified below without failure of the insulation.</p> <p>If the test is in conflict with the relevant standard for a specific cable the test according to relevant standard is valid.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Rating</th> <th>Ac Value</th> <th>Dc Value</th> </tr> </thead> <tbody> <tr> <td>300 V / 300 V</td> <td>2 000 V</td> <td>5 000 V</td> </tr> <tr> <td>300 V / 500 V</td> <td>2 000 V</td> <td>5 000 V</td> </tr> <tr> <td>450 V / 750 V</td> <td>2 500 V</td> <td>5 000 V</td> </tr> <tr> <td>600 V / 1 000 V</td> <td>8 000 V</td> <td>15 000 V</td> </tr> </tbody> </table> | Rating        | Ac Value | Dc Value | 300 V / 300 V | 2 000 V | 5 000 V | 300 V / 500 V | 2 000 V | 5 000 V | 450 V / 750 V | 2 500 V | 5 000 V | 600 V / 1 000 V | 8 000 V | 15 000 V | 100% |
| Rating                           | Ac Value   | Dc Value      |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| 300 V / 300 V                    | 2 000 V  | 5 000 V       |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| 300 V / 500 V                    | 2 000 V  | 5 000 V       |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| 450 V / 750 V                    | 2 500 V  | 5 000 V       |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| 600 V / 1 000 V                  | 8 000 V  | 15 000 V      |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| Resistance tests:                | Measurement of the resistance of conductors.   | Random        |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| Constructional requirements:     | Visual.  | Random        |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |
| Insulation and sheath thickness. | Measurement of insulation and sheath thickness.  | Random        |          |          |               |         |         |               |         |         |               |         |         |                 |         |          |      |

### 4.0 Product Verification Tests/Periodic testing (refer to CIG 021 clause 4.8)

Product verification tests are in addition to the production line inspection and routine tests and are performed on samples taken randomly from the production line.

The manufacturer is responsible for conducting or arranging for the following periodic testing to be completed. Records shall be available for review during factory inspection visits.

| Certification | Frequency | PVT/periodic testing required |
|---------------|-----------|-------------------------------|
|---------------|-----------|-------------------------------|

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| <b>Mark</b>                 |        |   |
|-----------------------------|--------|---|
| SEMKO<br>ASTA<br>BG<br>TICK | Annual | For each basic type certified, the following tests according to the product standard: <ul style="list-style-type: none"> <li>• Electrical Tests.</li> <li>• Constructional and dimensional measurement.</li> <li>• Mechanical properties.</li> <li>• Non electrical tests on completed cables.</li> </ul> |

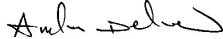
### 5.0 Surveillance testing by the Certification Body

If required, samples are selected during the factory inspection and the manufacturer should send these to the address provided. If samples are required but not available at the time of the inspection, the manufacturer should send these as soon as they become available. If there is no stock or production, the manufacturer should advise the certification body that samples will not be provided due to no production.

The certification body will arrange for the required testing to be completed. This will be charged to the manufacturer or Licence holder. A report of the testing will be provided.

| <b>Certification Mark</b> | <b>Surveillance testing requirements</b>  |
|---------------------------|---|
| ASTA                      | Samples to be selected each year as detailed on the sample selection record (form AFT-17) provided to the inspector before each visit.                                  |
| SEMKO, BG, TICK           | Regular selection of samples is not required.<br>Samples may be required if any deviations to the type tested or non-compliance with the product standard are suspected |

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| Document History |            |                |                              |   |
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| Revision No.     | Date       | Changes        | Name & Title                 |   |
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| 1                | 11/02/2015 | Original issue | Paul Klemets/<br>R W Hayward |  |
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|                  |            |                |                              |   |

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