

<b>Intertek C&amp;E Management System</b>		Page 1 of 4
<b>Work Instruction (Inspection)</b>		<b>Document No.:</b> <b>WI-R-EMEA-CERT-INSP-PCS040</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: Surge Protection Device  
Standards: IEC/EN 61643-11  
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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<b>Intertek C&amp;E Management System</b>		Page 2 of 4
<b>Work Instruction (Inspection)</b>		<b>Document No.:</b> <b>WI-R-EMEA-CERT-INSP-PCS040</b>
<b>EMEA CERTIFICATION SCHEMES - PRODUCT CONTROL SPECIFICATIONS</b>		
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### 3.2 Required inspections and tests

Inspection/test	Test parameters	Sampling plan														
Visual check of workmanship	Visual, check to work instructions	100%														
Dielectric strength test	<p>Tested between all interconnected live parts and the SPDs body accessible to accidental contact. The expression "body" in the sense of this test means</p> <ul style="list-style-type: none"> <li>- all touchable metal parts</li> <li>- a metal foil (or similar) on surfaces of insulating material.</li> </ul> <p>Test voltage should be applied for 2 sec and level as indicated in the table below:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>SPD continuous operating voltage (V)</th> <th>AC test voltage (kV)</th> </tr> </thead> <tbody> <tr> <td>Up to <math>U_c = 100</math></td> <td>1,1</td> </tr> <tr> <td>Up to <math>U_c = 200</math></td> <td>1,7</td> </tr> <tr> <td>Up to <math>U_c = 450</math></td> <td>2,2</td> </tr> <tr> <td>Up to <math>U_c = 600</math></td> <td>3,3</td> </tr> <tr> <td>Up to <math>U_c = 1\ 200</math></td> <td>4,2</td> </tr> <tr> <td>Up to <math>U_c = 1\ 500</math></td> <td>5,8</td> </tr> </tbody> </table> <p>No flashover or breakdown should occur.</p>	SPD continuous operating voltage (V)	AC test voltage (kV)	Up to $U_c = 100$	1,1	Up to $U_c = 200$	1,7	Up to $U_c = 450$	2,2	Up to $U_c = 600$	3,3	Up to $U_c = 1\ 200$	4,2	Up to $U_c = 1\ 500$	5,8	100%
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Up to $U_c = 600$	3,3															
Up to $U_c = 1\ 200$	4,2															
Up to $U_c = 1\ 500$	5,8															
Measuring of limiting voltage	<p>For type I and type II products one positive or one negative 1,2/50 voltage impulse is applied on one protected mode (selected at random). The level of impulse is set to 6kV.</p> <p>For type III products one impulse at <math>90^\circ \pm 10^\circ</math> or one at <math>270^\circ \pm 10^\circ</math> is applied at the open-circuit voltage <math>U_{oc}</math> using a combination wave generator. The impulse is applied on one</p>	100%														

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<b>Intertek C&amp;E Management System</b>		Page 3 of 4
<b>Work Instruction (Inspection)</b>		<b>Document No.:</b> <b>WI-R-EMEA-CERT-INSP-PCS040</b>
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	protected mode (selected at random). The limiting voltage, Up, is the recorded peak voltage. The measured limiting voltage should not be higher than the stated Up for that mode of protection.	
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#### 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.

<b>Certification Mark</b>	<b>Frequency</b>	<b>PVT/periodic testing required</b>
SEMKO ASTA BG TICK	Annual	For each basic type certified, the following tests according to the product standard: 6.1 Identification and marking 7.5 Voltage protection level, Up 7.9.7 Insulation resistance 7.9.5.1 Air clearances and creepage distances 7.9.8 Dielectric withstand 7.9.6 Resistance to heat and fire

#### 5.0 Surveillance testing by the Certification Body

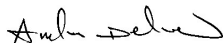
If required, samples are selected during the factory inspection and the manufacturer should send these to the address provided. If samples are required but not available at the time of the inspection, the manufacturer should send these as soon as they become available. If there is no stock or production,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

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<b>Intertek C&amp;E Management System</b>		Page 4 of 4
<b>Work Instruction (Inspection)</b>		<b>Document No.:</b> <b>WI-R-EMEA-CERT-INSP-PCS040</b>
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<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. Samples may be required if any deviations to the type tested or non-compliance with the product standard are suspected

<b>Document History</b>				
<b>Revision No.</b>	<b>Date</b>	<b>Changes</b>	<b>Name &amp; Title</b>	
			<b>Author</b>	<b>Approving Official</b>
1	11/02/2015	Original issue	Paul Klemets/ R W Hayward	

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