

Intertek C&E Management System		Page 1 of 5
Work Instruction (Inspection)		Document No.: WI-R-EMEA-CERT-INSP-PCS039
EMEA CERTIFICATION SCHEMES - PRODUCT CONTROL SPECIFICATIONS		
Issue Date:	Revision Date: 11 th Feb 2015	Approved by: Anders Delsborn
	Effective Date: 19 th 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: Transformers
Standards: IEC 61558 series
Marks: S, ASTA, BEAB, GS, BG, TICK, ENEC

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 (for Intertek Certification Marks)

Inspection/test	Test parameters	Sampling plan
Visual inspection	Visual appearance, including markings and distortion of mouldings	100%
No load output voltage	The no-load output voltage shall comply with the declared value and tolerance stated by the manufacturer and shall in addition not exceed the maximum no-load output voltage required by the relevant part 2.	100%
Products with integral plug pins	Dimensions: For pin configurations in accordance with BS 1363, this shall be by use of a calibrated gauge in accordance with Figure 5 of BS 1363-3 or agreed alternative method. For other pin configurations this shall be by measurement and reference to the appropriate standard sheet alternatively by the use of appropriate gauges. Pin retention: pull test of 40N Pin surfaces: inspection: no sharp edges	At least three samples, or quantity agreed in the proposed sampling plan, shall be selected every hour and checked for plug pin dimensions
Earthing continuity test	Products of Class I shall be tested as follows: A current of at least 10 A, (Intertek recommend 25 Amps) derived from an a.c. source having a no load voltage not exceeding 12V, is passed between those metal parts and the earth conductor of the mains supply cord for 3 seconds. The resistance shall not exceed $0.1+R$ Ohms, where R is the resistance of the supply cord.	100%
Dielectric strength test	The insulation is subjected to the following voltages from a substantially sine-wave source at rated frequency. The source should be capable of supplying a current of at least 200mA when it's output terminals	100%

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	<p>are short-circuited. The voltage shall be applied for at least one second. No flashover or breakdown shall occur and the leakage current shall not exceed the value below.</p> <table border="1"> <thead> <tr> <th>Application of test voltage</th> <th>Voltage applied</th> <th>Limit of leakage current</th> </tr> </thead> <tbody> <tr> <td>Live parts of the input circuit and any accessible conductive parts of the transformer</td> <td>2000</td> <td>5mA</td> </tr> <tr> <td>Live parts of input circuits and live parts of output circuits (basic insulation)</td> <td>2000</td> <td>5mA</td> </tr> <tr> <td>Live parts of input circuits and live parts of output circuits (double or reinforced insulation)</td> <td>4000</td> <td>5mA</td> </tr> </tbody> </table> <p>Note: above values relate to typical transformers with rated voltages not exceeding 240V. In case of doubt, refer to IEC 61558-1 Table 8a.</p>	Application of test voltage	Voltage applied	Limit of leakage current	Live parts of the input circuit and any accessible conductive parts of the transformer	2000	5mA	Live parts of input circuits and live parts of output circuits (basic insulation)	2000	5mA	Live parts of input circuits and live parts of output circuits (double or reinforced insulation)	4000	5mA	
Application of test voltage	Voltage applied	Limit of leakage current												
Live parts of the input circuit and any accessible conductive parts of the transformer	2000	5mA												
Live parts of input circuits and live parts of output circuits (basic insulation)	2000	5mA												
Live parts of input circuits and live parts of output circuits (double or reinforced insulation)	4000	5mA												
Mounting of a protective device (if fitted) to ensure correct operation	Checked by inspection or test	100%												

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3.3 Required inspections and tests (for ENEC Marked products)

In addition to the inspections and tests detailed in section 3.2, the requirements of document ENEC 303 Annex P shall be fulfilled.

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 Mark	Frequency	PVT/periodic testing required
S, ASTA, BEAB, GS, BG, TICK		<p>PVT /periodic testing is not mandatory but Intertek recommends that compliance of manufactured products are checked annually against the certified types and the product standard according to the following tests. The results should be retained for examination by certification or enforcement authorities.</p> <p>Recommended PVT:</p> <ul style="list-style-type: none"> Clause 8 Marking Clause 9 Protection against electric shock Clause 11 Output voltage and output current under load Clause 15 Short-circuit and overload protection Clause 16 Mechanical strength Clause 18 Insulation resistance and electric strength Clause 20 Components Clause 24 Provision of protective earthing Clause 26 Creepage distances, clearances and distances through insulation <p>Integral plug pins:</p> <ul style="list-style-type: none"> Locked against rotation: 0.4Nm for 1 minute Fixed to body: test at 70°C, 40N ($\leq 2.5A$), 50N ($>2.5A$)
ENEC	Annual	A sample of each series/family (same basic construction) shall be subjected to complete tests or the main critical tests depending on the results of the pre-Licence tests according to the standard

5.0 Surveillance testing by the Certification Body

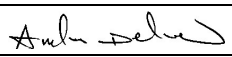
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If required, samples are selected during the factory inspection and the manufacturer should send these to the address provided. If samples are required but not available at the time of the inspection, the manufacturer should send these as soon as they 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.

Certification Mark	Surveillance testing requirements
ASTA, BEAB	Samples to be selected each year as detailed on the sample selection record (ASTA 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
ENEC	Samples for product surveillance are selected by the inspector at the time of factory inspection, to be sent to Intertek Semko AB

Document History				
Revision No.	Date	Changes	Name & Title	
			Author	Approving Official
1	11/02/2015	Original issue	Rajesh Sodha/ R W Hayward	

End of Document

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