



PERMANENT DOCUMENT

**ENEC 303
Annex AI**

**Annex AI
to Routine Test Requirements for manufacturers
(as per Article 9 of the Agreement)**

**Cord sets and interconnection cord sets
covered by EN 60799**

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Annex AI to PD ENEC 303

Cord sets and interconnection cord sets covered by EN 60799

1 Introduction

The indicated tests are minimum requirements. The manufacturer shall perform additional tests or checks if he considers it necessary for a special product.

The indicated tests and surveillance measures have to be specified by the manufacturer in a testing or working instruction.

The performance of the tests has to be confirmed in writing; the records shall contain the main conditions. The test records have to contain the following information:

- Product type
- Date of test
- Place of manufacture (if manufactured at several places)
- Tested quantity
- Number of rejected products and measures, i.e. destroyed/repaired.

Prior to the use of the test equipment it has to be checked as to correct functioning. It has to be calibrated at least once a year.

2 ROUTINE TESTS (100%)

A.1 General

All factory-wired cord sets and interconnection cord sets shall be subjected to the following tests, as appropriate.

Type of accessory	Test to be performed according to clause
Two-pole cord sets and interconnection cord sets	A.2, A.5
Three-pole interconnection cord sets	A.2, A.3, A.4, A.5

The test equipment or manufacturing systems shall be such that failed samples are either made unfit for use or separated from satisfactory products in such a way that they cannot be released for sale.

NOTE – “Unfit for use” means that the accessory is treated in such a way that it cannot fulfil the intended function. It is, however, accepted that repairable products (by a reliable system) may be repaired and retested.

It shall be possible by process or manufacturing system to identify that accessories released for sale have been subjected to all the appropriate tests.

The manufacturer shall maintain records of the tests carried out which show the:

- type of product;
- date of test;

- place of manufacture (if manufactured in more than one place);
- tested quantity;
- number of failures and actions taken, i.e. destroyed/repaired.

The test equipment shall be checked before and after each period of use and for periods of continuous use, at least every 24 h. During these checks the equipment shall show that it indicates faults when known faulty products are inserted or simulated faults are applied. Products manufactured prior to a check shall only be released for sale if the check is found satisfactory.

Test equipment shall be verified (calibrated) at least once a year.

Records shall be kept of all checks and any adjustments found necessary.

A.2 Polarised systems; phase (L) and neutral (N) – Correct connection

For polarised systems the test shall be made using safety extra-low voltage SELV applied for a period of not less than 2 s between the L and N pin or contact and the corresponding L and N pin or contact at each end of the cord set or interconnection cord set.

NOTE – The period of 2 s may be reduced to not less than 1 s on test equipment with automatic timing.

Other suitable tests may be used.

Polarity shall be correct.

A.3 Earth (E) continuity

The test shall be made using SELV applied for a period of not less than 2 s between the corresponding E pin or contact of the accessory at each end of the interconnection cord set.

NOTE – The period of 2 s may be reduced to not less than 1 s on test equipment with automatic timing.

Other suitable tests may be used.

Continuity shall be present.

A.4 Short circuit/wrong connection and reduction in creepage distance and clearance L or N to E

The test shall be made between the L and N conductors and the E conductor

- by applying at the supply end, i.e. plug connector, an a.c. voltage of $2\,000\text{ V} \pm 200\text{ V}$, 50 Hz or 60 Hz for a period of not less than 2 s,

NOTE – The period of 2 s may be reduced to not less than 1 s on test equipment with automatic timing.

or

- by an impulse voltage test using 1,2/50 μs wave form, 4 kV peak value, three impulses for each pole, with intervals of not less than 1 s, the test voltage being applied at the supply end, i.e. plug connector.

The L and N conductors may be connected together for this test.

No flashover shall occur.

A.5 Contour check

Stray Strands

It shall be checked that live parts, e.g. loose strands are not accessible.

The following tests or similar one (e.g. impulse voltage test) shall be performed unless it can be clearly demonstrated that this can be prevented by the construction itself and suitable manufacturing process.

If this cannot be assured by the design or the production method itself then the following test is to be carried out.

The hazardous parts of the external surface of the plugs, plug connectors, connectors, etc. except the engagement areas of connectors, are to be scanned with adapted surface electrodes at a pressure of 20 N whilst a voltage of 2000 V AC is applied on the live parts for at least 1 second.

Neither a flash-over nor a breakdown shall occur.

NOTE: The max. tripping current is not to be higher than 100 mA. It is recommended to set the tripping device to 30 mA or less. The high voltage transformer is to be capable of maintaining the specified voltage until the tripping current flows. Tripping of the current sensing device (indicated by audible and/or visual means) is considered a breakdown.

3 PERIODIC VERIFICATION TESTS

The manufacturer has to guarantee by suitable periodic tests that the manufactured products comply with the certified version. For this purpose he has to introduce a suitable working instruction to ensure that only materials and components are used corresponding with the certified version
