AMENDMENT NO. 3 APPROVED ON 2006-11-29
TO SLS 948 : PART 1 : 1991

SRI LANKA STANDARD SPECIFICATION FOR THREE-PIN PLUGS, SOCKET-OUTLETS AND SOCKET-OUTLET ADAPTORS

PART 1 : THREE-PIN PLUGS SOCKET-OUTLETS AND SOCKET-OUTLET-ADAPTORS

Clause 2

Immediately after the title add the following:

IEC 60695 Fire hazard testing

Part 2: Test methods

Section 1 : Glow wire test and guidance

SLS 268 ISO metric screw threads

Clause 4

Delete paragraph 1 and substitute with the following:

Three pin plugs, socket-outlets and socket-outlet adaptors (accessories) shall be so designed and constructed that in normal use their performance is reliable and without danger to the user or to the surroundings. Accessories complying with the standard shall be capable of meeting all the relevant tests specified in this standard.

The gauges illustrated in Figure **3**, Figure **4**, Figure **5** and Figure **6** shall be considered to comply with the dimensional requirements if the results of the measured values are within the specified dimensions and the uncertainty of measurement at not less than 95 per cent confidence level does not exceed ±0.005 mm.

Clause 4.9

Delete the text given in 4.9 and substitute with the following:

4.9.1 All material shall comply with the requirements given in **4.9.2** to **4.9.8**, where relevant.

4.9.2 Parts made of insulating material which might be exposed to thermal stresses due to electric effects, and deterioration of which might impair the safety of the accessory, shall not be unduly affected by abnormal heat and fire.

Except for parts made of ceramic material and small components such as washers, compliance shall be checked by the test described in **4.9.4.**

4.9.3 Current carrying parts shall be made of brass, copper, phosphor-bronze or other material at least equivalent with regards to its conductivity, resistance to abrasion and resistance to corrosion

Compliance shall be checked by the tests described in **4.9.6**, **9.2** and **9.7**.

4.9.4 The glow-wire test shall be performed in accordance with Clause **4** to Clause **10** of **IEC 60695-2-1: 1980**, and at the test temperature given in Table **5**.

TABLE 5 – Application of glow-wire test

Part	Glow-wire temperature	
	Portable accessories °C	Fixed accessories °C
Parts necessary to retain current carrying parts in position	750 ± 10	850 ± 15
Parts not necessary to retain current carrying parts in position (although they may be in contact with them)	650 ± 10	650 ± 10

NOTES

1. *If the test specified is required to be made at more than one place on the same specimen, it is essential that care is taken to ensure that any deterioration caused by previous tests does not affect the result of the test to be made.*

2. *Small parts unlikely to be subjected to abnormal heat and the failure of which to pass these tests would not materially affect the safety of the accessory are not subjected to this glow wire test.*

The glow-wire test shall be applied to ensure that an electrically heated test wire under defined test conditions does not cause ignition of insulating parts or to ensure that a part of insulating material, which might be ignited by the heated test wire under defined conditions has a limited time to burn without spreading fire by flame or burning parts or droplets falling down from the tested part onto a pinewood board covered with tissue paper :

The test specimen shall be either :

a) a complete accessory; or,
b) if the test cannot be made on a complete accessory, a suitable part may be cut from one for the purpose of the test.

The test shall be made on one specimen. In case of doubt, the test shall be repeated on two further specimens.

The test shall be made applying the glow wire once.

The specimen shall be positioned during the test in the most unfavourable position of its intended use (with the surface tested in a vertical position). The tip of the glow-wire shall be applied to the specified surface of the specimen, taking into account the conditions of the intended use under which a heated or glowing element may come into contact with the specimen.

The specimen shall be regarded as having passed the glow-wire test if :

a) there is no visible flame and no sustained glowing; or
b) flames and glowing at the specimen extinguish within 30 s after the removal of the glow-wire.

There shall be no ignition of the tissue paper nor scorching of the board.

4.9.5 Current carrying parts of copper alloy containing less than 80 per cent of copper, and which are press formed or produced in a manner which could induce excessive internal stresses, shall be resistant to failure in use due to brittleness, when tested in accordance with **4.9.6.**

WARNING

Refer to the supplier's health and safety data sheets for the precautions which are to be taken for the safe use of mercurous nitrate, nitric acid, ammonium chloride, alkalis and organic solvents.

4.9.6 The test specimen shall be degreased in a suitable alkaline degreasing solution or organic solvent, then immersed in an aqueous solution of mercurous nitrate containing 10 g of $Hg_2(NO3)_2$ and 10 ml of HNO3 (relative density 1.42) per litre of solution for 1/2 h ± 60 s at a temperature of (20±5) °C.

After the treatment, the test specimen shall be washed in running water, and any excess mercury shall be wiped off.
The sample shall immediately be examined visually.

There shall be no cracks visible with normal or corrected vision without additional magnification.

4.9.7 Ferrous parts shall be adequately protected against rusting. Compliance is checked by the test of **4.9.8**.

4.9.8 The test specimen shall be degreased in a suitable alkaline degreasing solution or organic solvent

The specimens shall then be immersed for (600 ± 30) s in a 10 per cent solution of ammonium chloride in water, at a temperature of (20 ± 5) °C.

Without drying, but after shaking off any drops, the specimens shall be placed for (600 ± 30) s in a box containing air saturated with moisture, at a temperature of (20 ± 5) °C.

The specimens shall be dried for at least 10 min in a heating cabinet at a temperature (100 ± 5) °C.

There shall be no traces of rust visible on the surface

NOTES

a) *Traces of rust on sharp edges, and any yellowish film removable by rubbing are ignored.*

b) *For small helical springs and the like, and for parts exposed to abrasion, a layer of grease may provide sufficient protection against rusting. Such parts are only subjected to test if there is doubt about the effectiveness of the grease film, and the test should then be made without previous removal of the grease.*

AMD No. 348 : 2006

Clause 5.4

Delete the word “shall” in the last line of paragraph **2** of **5.4** and substitute with “may”

TABLE 9

Delete the title of the table and replace with the following:

TABLE 9a – Dimension of terminals of plug pins

Clause 5.4

Delete the last paragraph of this clause and substitute with the following :

When pillar terminals are used they shall either :

a) meet the requirements given in Table **9a**, and have cheese-headed clamping screws long enough under the head to extend to the far side of the conductor holes and with slightly rounded ends to minimize damage to conductors; or

b) meet the requirements given in table **9b**. Terminal screws used in making electrical connections shall have a root area not less than that of the appropriate screws in Table **9b** and shall withstand the minimum torques given in Table 9b. If ISO metric screws are used, they shall comply with **SLS 268**.

TABLE 9b – Plug terminal screws : size and torque

Current rating A	Minimum thickness of the wall where the clamping screw passes through mm	Minimum nominal diameter mm	Minimum torque rating Nm
5	1.6	3.0	0.5
15	3.2	3.5	0.8

The size of the conductor hole and the clamping screw shall be such that the clearance between sides of the major diameter of the clamping screw and the conductor hole does not exceed 0.4 mm.

TABLE 12

Delete the title of the table and replace with the following:

TABLE 12a – Dimensions of pillar terminals of socket outlets

Clause 6.2

Delete paragraph **3** and substitute with the following :

When pillar terminals are used they shall either :

a) meet the requirements given in Table **12a**. and a cheese-headed clamping screws long enough under the head to extend to the far side of the conductor holes and with slightly rounded ends to minimize damage to conductors; or

b) meet the requirements given in Table **12b**. Terminal screws shall have the minimum root areas and shall withstand the minimum torques given in Table **12b**. If ISO metric screws are used, they shall comply with **SLS 268**.

TABLE 12b –Socket-outlet terminal screws : size and torque

Current rating of socket-outlet A	Minimum nominal diameter and minimum torque rating of ISO metric screws							
	Single screw with head		Two screws with head		Single screw without head		Two screws without head	
	Size mm	Torque Nm	Size mm	Torque Nm	Size mm	Torque Nm	Size mm	Torque Nm
5	3.0	0.5	2.5	0.4	3.0	0.25	2.5	0.2
15	3.5	0.8	2.5	0.4	3.5	0.4	2.5	0.2

The size of the conductor hole and the clamping screw shall be such that the clearance between the sides of the major diameter of the clamping screw and the conductor hole does not exceed 0.6 mm."

Clause 6.5

Delete this clause entirely

Clause 6.6

Delete this clause entirely

TABLE 13

Delete this table entirely

Clause 8

Delete paragraph 1 and substitute with the following :

Plugs, socket outlet and socket-outlet adaptors shall be legibly and durably marked with the following information which shall not be placed on screws, removable washers or other removable parts, or on parts intended for separate sale.

The name or trade mark of the manufacturer or responsible vendor together with the country of manufacture.

In addition they shall be marked with the following :

Clause 8.1

Delete the text in **(c)** of **8. 1** and substitute with the following :

The terminal for the connection of line and neutral conductors shall be identified by their respective symbols L and N. The symbol used for the protective terminal shall be either
(which is preferred) or which may be accompanied by the letter E.

Clause 8.2

Delete **(a)** and **(b)** of **8.2** and substitute with the following :

a) The rated current in amperes
b) The rated voltage, i.e. 250 Volts
c) Nature of supply, i.e. ~ (preferred) or a.c.
d) The terminals for the connection of line and neutral conductors shall be identified by their respective symbols L and N. The symbol used for the protective terminal shall be either (which is preferred) or which may be accompanied by the letter E.

NOTE

For the marking of the rated current and rated voltage of the socket outlet, figures may be used alone, the figures for the current rating being placed before or above that of the rated voltage and separated by a line.

If a symbol for nature of supply is used, it shall be placed next to the marking for rated current and rated voltage. Examples are as follows :

15A 250 V a.c. or 15/250 ~ or $\frac{15}{250}$ ~

Clause 9.2

Delete "individual socket" in line **4** of **9.2 (b)** and substitute with "individual current carrying socket"

Delete the Note immediately after **9.2 (b)**

Add the following paragraph at the end of **9.2 (b)**

The effectiveness of contact for metal components connected to an earth terminal of a socket–outlet shall be checked by the following test.

A current of (25 ± 0.75) A, derived from an a.c. source, having a no-load voltage not exceeding 12 V, is passed for a period of time in between (60 – 0) s and (60 + 5) s, and between the earthing terminal and plug pin inserted in the earthing socket contact.

The resistance between the terminal and any other part shall not exceed 0.05 Ω

Clause 9.6

Delete the entire clause and substitute with the following :

The breaking capacity of socket contacts shall be adequate.

Socket-outlets or adaptors shall be connected and mounted as in normal use

The socket contacts shall be capable of making and breaking a current 30 per cent in excess of their current rating, when tested in a substantially non-inductive a.c. circuit at (275 ± 5) V. The plug and socket outlet shall break the circuit 10 times in succession at intervals of approximately 30 seconds, a plug of the corresponding rating being withdrawn from the socket outlet at a speed of approximately 150 mm per second immediately after insertion

NOTE

For the purpose of this test, the fuse link, if any, may be replaced by a link of negligible impedance

After the test, the socket-outlet shall be capable of satisfying the subsequent tests detailed in **9.2** and **9.7**.

APPENDIX A

Delete **A.1 GO GAUGES FOR PLUGS AND SOCKET OUTLETS**

Number the text of the existing first paragraph of Appendix **A**, as **A.1**.

Insert the following as new paragraph 1 immediately after the title **GAUGES** :

The Gauges illustrated in Figure **3**, Figure **4**, Figure **5** and Figure **6** shall be considered to comply with the dimensional requirements if the results of the measured values are within the specified dimensions and uncertainty of measurement at not less than 95 per cent confidence level does not exceed 0.005 mm.