SRI LANKA STANDARD 989 : 1993

UDC 621 . 315 . 674

OUTSIDE DIAMETERS OF CONDUITS FOR ELECTRICAL INSTALLATIONS AND THREADS FOR CONDUITS AND FITTINGS

SRI LANKA STANDARDS INSTITUTION

OUTSIDE DIAMETERS OF CONDUITS FOR ELECTRICAL INSTALLATIONS AND THREADS FOR CONDUITS AND FITTINGS

SLS 989 : 1993

Gr. 5

SRI LANKA STANDARDS INSTITUTION
53, Dharmapala Mawatha,
Colombo 3,
Sri Lanka.

SRI LANKA STANDARD

OUTSIDE DIAMETERS OF CONDUITS FOR ELECTRICAL INSTALLATIONS AND THREADS FOR CONDUITS AND FITTINGS

FOREWORD

This standard was approved by the Sectroal Committee on Electrical Appliances and Accessories and was authorized for adoption as a Sri Lanka Standard by the Council of the SLSI on 1993-01-21.

All values given in this specification are in SI units.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the results of a test or an analysis shall be rounded off in accordance with SLS 102. The number of figures to be retained in the rounded off values shall be the same as that of the specified value in the standard.

In the preparation of this standard, the assistance derived from BS 6053 : 1981 Specification for Outside diameters of conduits for electrical installations and threads for conduits and fittings is gratefully acknowledged.

1 SCOPE

This standard specifies outside diameters of conduits for electrical installations and threads for conduits and fittings. It is applicable to all kinds of conduits for electrical installations, independent of their material and their nature (rigid or flexible, plain or threaded) taking into consideration all existing conduit entries and the metric threads.

2 REFERENCES

ISO 161 Thermoplastics pipes for the transport of fluids-Nominal outside diameters and nominal pressures.
ISO 262 ISO general purpose metric screw threads-Selected sizes for screws, bolts and nuts.
ISO 1502 ISO general purpose metric screw threads
SLS 102 Presentation of numerical values.
SLS 103 Preferred numbers.
SLS 268 ISO metric screw threads.
Part 1 : Basic and design profile.
SLS 569 ISO system of limits and fits.

3 Outside diameters

The values specified for outside diameters of conduits for electrical installations and for threads for conduits and fitting are based on ISO 262, SLS 103, SLS 268 : Part 1 and SLS 569. The tolerances for the conduit diameters are derived from the Standard tolerance grade IT 13 of Table 1 of SLS 569 : Part 1 : 1980.

TABLE 1 - Tolerances for the Conduit Diameters

Nominal size	Outside diameter of conduit mm	Tolerance mm	Metric thread
(1)	(1)	(3)	(4)
12*	12	-0.3	
16	16	-0.3	M 16x1.5
20	20	-0.3	M 20x1.5
25	25	-0.4	M 25x1.5
32	32	-0.4	M 32x1.5
40	40	-0.4	M 40x1.5
50	50	-0.5	M 50x1.5
63	63	-0.6	M 63x1.5

**Non-preferred size for special applications only, normally not threaded.*

4 Threads

The metric thread shall be chosen according to SLS 268 : Part 1 : 1974 (8 g, and 7H), with 1.5 mm pitch for all diameters.

The metric thread shall be as given in Table 1. Details on the thread are given in Table 2 as well as in Figure 1.

The basic profiles of the screw threads shown in Fig. 1 has been chosen according to SLS 268 : Part 1 : 1974.

TABLE 2 - Details on the thread

Nominal size of conduit or fitting	Major diameter d		Effective diameter d_2		Minor diameter d_1		Major diameter D	Effective diameter D_2		Minor diameter D_1	
	max.	min.	max.	min.	max.	min.	min.	max.	min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
16	15.968	15.593	14.994	14.770	14.127	13.795	16.000	15.262	15.026	14.751	14.376
20	19.968	19.593	18.994	18.770	18.127	17.795	20.000	19.262	19.026	18.751	18.376
25	24.968	24.593	23.994	23.758	23.127	22.783	25.000	24.276	24.026	23.751	23.376
32	31.968	31.593	30.994	30.758	30.127	29.783	32.000	31.276	31.026	30.751	30.376
40	39.968	39.593	38.994	38.758	38.127	37.783	40.000	39.276	39.026	38.751	38.376
50	49.968	49.593	48.994	48.744	48.127	47.769	50.000	49.291	49.026	48.751	48.376
63	62.968	62.593	61.994	61.744	61.127	60.769	63.000	62.291	62.026	61.751	61.376

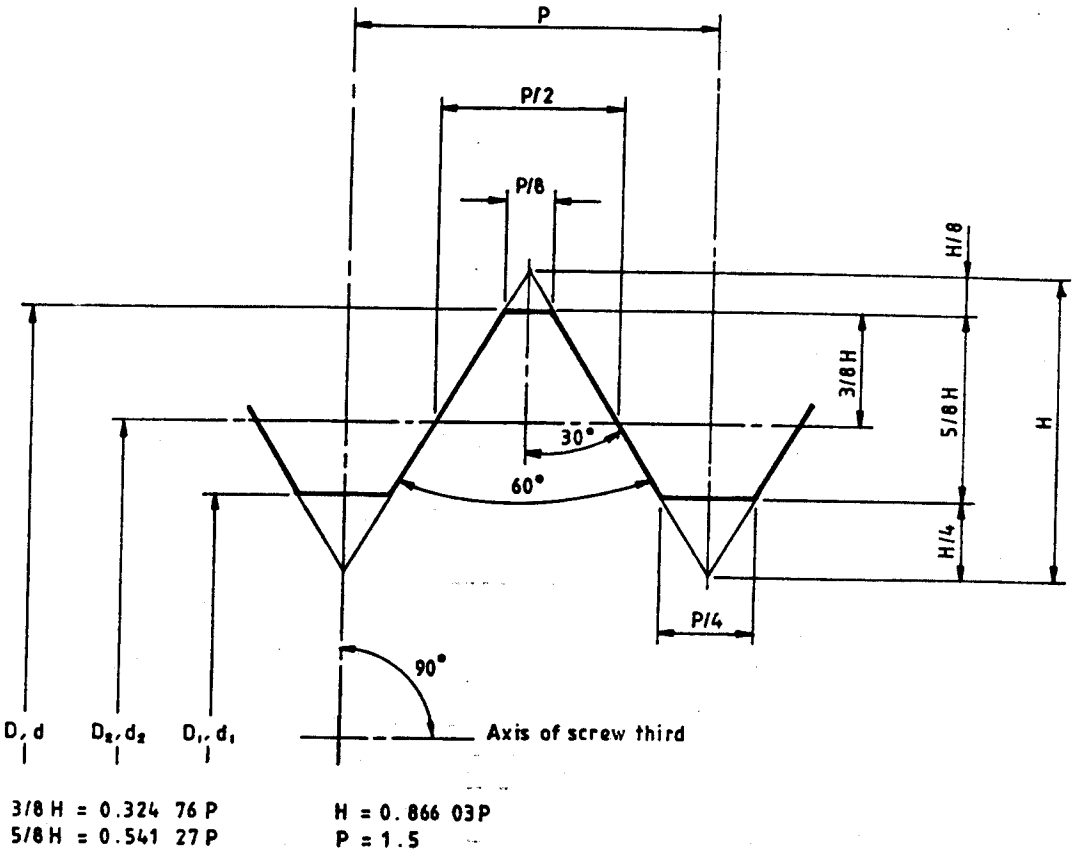

FIGURE 1 - Basic Profile of the Screw threads

5 Gauges

Gauges for checking the maximum outside diameter of conduits having the dimensions specified in Clause 3 shall be as given in Figure 2. It shall be possible to slide the appropriate gauge completely over the conduit, under its own weight.

Gauges for checking the thread for threaded conduits specified in Clause 4 shall be given in Figure 3. It shall be possible to screw the threaded gauge into the conduit without undue force. It shall not be possible to pass the gauge, according to Figure 1 over the thread without undue force.

Gauges for checking maximum outside diameter of conduits are shown in Figure 2. The material of the gauge shall be steel.
The dimensions of the thread gauge are shown in Table 4 in accordance with ISO 1502

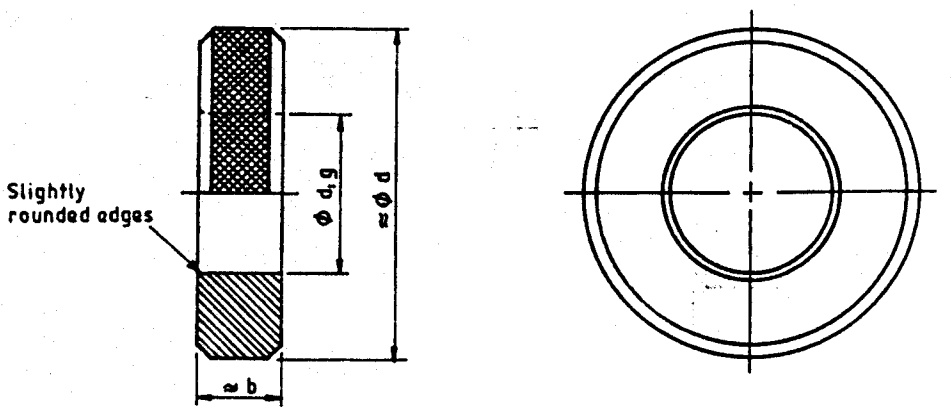

Figure 2 - Gauges for checking maximum outside diameter of conduits

The dimensions of gauges for checking outside diameter of conduits are shown in Table 3.

TABLE 3 - Dimensions of gauges for checking outside diameter of conduits

Size of conduit	d_1 g* mm	b mm	d mm
(1)	(2)	(3)	(4)
16	16.04	12	45
20	20.04	12	45
25	25.04	16	60
32	32.04	18	70
40	40.04	18	70
50	50.04	20	85
63	63.04	20	100

* *Manufacturing tolerance : - 0.01 mm*
Admissible wear : + 0.01 mm.

Gauges for conduit screw threads are shown in Figure 3

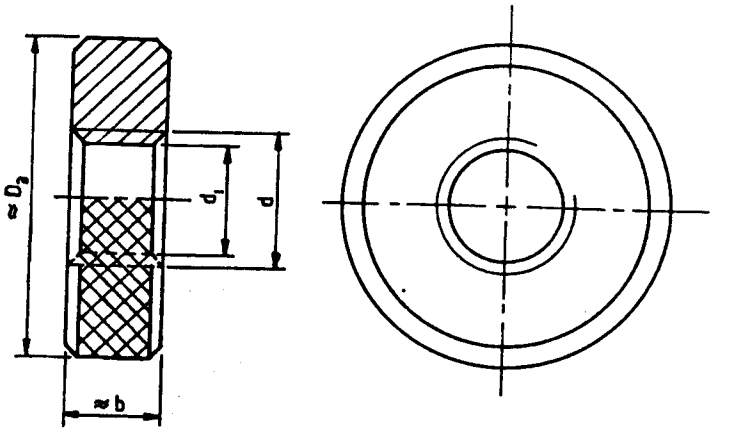

Figure 3 : Threaded gauge

TABLE 4 - Dimensions of the threaded gauge

Designation of gauge	Threaded gauge						Diameter of hole for plain gauge	Overall diameter of gauge	Thickness of gauge
	Major diameter d min. mm	Pitch diameter d_2 ± 0.012 mm	Admissible wear for diameter d	Minor diameter d_1 ± 0.012 mm	Manufacturing tolerances: Pitch, over ten thread mm	Manufacturing tolerances: Half-angle of screw thread minutes	D_A ± 0.015 mm	D_3 mm	b mm
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
M16	16.090	14.982	+0.0255	14.344	±0.005	±12	15.593	45	12
M20	20.090	18.982	+0.0225	18.344	±0.005	±12	19.593	45	12
M25	25.090	23.982	+0.0225	23.344	±0.005	±12	24.593	60	16
M32	32.090	30.982	+0.0225	30.344	±0.005	±12	31.593	70	18
M40	40.090	38.982	+0.0225	38.344	±0.005	±12	39.593	70	18
M50	50.090	48.982	+0.0225	48.344	±0.005	±12	49.593	85	20
M63	63.090	61.982	+0.0225	61.344	±0.005	±12	62.593	100	20

SLS CERTIFICATION MARK

The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI *which includes surveillance inspection of the factory, testing of both factory and market samples.*

Further particulars of the terms and conditions of the permit may be obtained from the Sri *Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.*

Printed at SLSI (Printing Unit)

SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.

Printed at the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.