SRI LANKA STANDARD 949 : PART 1 : 1992

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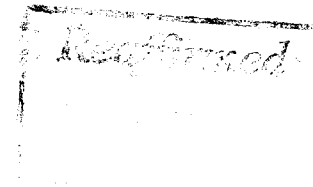

SPECIFICATION FOR

DIMENSIONS OF HOT ROLLED STEEL BARS FOR STRUCTURAL AND GENERAL ENGINEERING PURPOSES

PART 1 – ROUND BARS

SRI LANKA STANDARDS INSTITUTION

SPECIFICATION FOR DIMENSIONS OF HOT ROLLED STEEL BARS FOR STRUCTURAL AND GENERAL ENGINEERING PURPOSES

PART 1 ROUND BARS

SLS 949 : Part 1 : 1992

(Attached AMD 221)

Gr.5

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

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

AMENDMENT NO. 01 APPROVED ON 1996-10-17 TO SLS 949 : PART 1 : 1992

SRI LANKA STANDARD SPECIFICATION FOR DIMENSIONS OF HOT ROLLED STEEL BARS FOR STRUCTURAL AND GENERAL ENGINEERING PURPOSES
PART 1 : ROUND BARS

PAGE 1 AND PAGE 3

Title of Standard

Delete the existing title of the standard and substitute the following:

‘SPECIFICATION FOR HOT ROLLED STEEL BARS FOR STRUCTURAL AND GENERAL ENGINEERING PURPOSES
PART 1 - ROUND BARS’

PAGE 3

Clause 1 Scope

Delete the contents and substitute the following:

“This standard specifies the requirements for chemical composition, manufacture, finish, mechanical properties, dimensions, marking, testing and sampling of hot rolled round steel bars used for structural and general engineering purposes”.

PAGE 8

Clause 6.3.5

Incorporate the following after Table **4**.:

“6.4 Chemical composition

The chemical composition of hot rolled round steel bars shall be in accordance with **6.1** of **SLS 1006 : Part 1 : 1993** or **6.1** of **SLS 1006 : Part 2 : 1993** as applicable**.**

6.5 Manufacture

The manufacture of hot rolled round steel bars shall be in accordance with **6.2** of **SLS 1006 : Part 1 : 1993** or **6.2** of **SLS 1006 : Part 2 : 1993** as applicable**.**

6.6 Finish

The finish of hot rolled round steel bars shall be in accordance with **6.3** of **SLS 1006 : Part 1 : 1993** or **6.3** of **SLS 1006 : Part 2 : 1993** as applicable

6.7 Mechanical Properties

The mechanical properties of hot rolled round steel bars shall be in accordance with **6.4** of **SLS 1006 : Part 1 : 1993** or **6.4** of **SLS 1006 : Part 2 : 1993** as applicable

7 MARKING

The marking of hot rolled round steel bars shall be in accordance with **7** of **SLS 1006 : Part 1 : 1993** or **7** of **SLS 1006 : Part 2 : 1993** as applicable

8 METHODS OF TEST

The methods of test of hot rolled round steel bars shall be in accordance with **8** of **SLS 1006 : Part 1 : 1993** or **8** of **SLS 1006 : Part 2 : 1993** as applicable

9 CERTIFICATE OF COMPLIANCE

The certificate of compliance of hot rolled round steel bars shall be in accordance with **9** of **SLS 1006 : Part 1 : 1993** or **9** of **SLS 1006 : Part 2 : 1993** as applicable

PAGE 9

Incorporate the following after Figure **2:**

“APPENDIX A

Sampling and criteria for conformity

The sampling and criteria for conformity of hot rolled round steel bars shall be in accordance with Appendix **A** of **SLS 1006 : Part 1 : 1993** or Appendix **A** of **SLS 1006 : Part 2 : 1993** as applicable”.

SRI LANKA STANDARD

SPECIFICATION FOR DIMENSIONS OF HOT ROLLED STEEL BARS FOR STRUCTURAL AND GENERAL ENGINEERING PURPOSES

PART 1 ROUND BARS

FOREWORD

This standard was approved by the Sectoral Committee on Metal and Metal Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 92-10-07

With the formulation of SLS 874 : 1989 Steel Products it became necessary to revise SLS 74 : 1969 Dimensions of round and square steel bars for structural and general engineering purposes and SLS 75 : 1969 Dimensions of steel flats for structural and general engineering purposes.

This standard is issued in five parts to meet that necessity and it supersedes SLS 74 : 1969 and SLS 75 : 1969.

The other parts of this standard are :

Part 2 Square bars
Part 3 Hexagonal bars
Part 4 Octagonal bars
Part 5 Flats

All values given in this standard 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 result of a test or an analysis shall be rounded off in accordance with SLS 102. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this standard.

The Sri Lanka Standards Institution gratefully acknowledges the use of the following publications of International Organization for Standardization and the British Standards Institution in the preparation of this standard.

ISO 1035 : Part 1 : 1980 (E)
Part 4 : 1980 (E)

BS 4449 : 1988

1 SCOPE

This standard specifies dimensions and tolerances of hot rolled round steel bars used for structural and general engineering purposes.

2 REFERENCES

SLS 102 Presentation of numerical values
SLS 874 Steel products
Part 1 Classification and definitions
Part 2 Identification markings

3 DEFINITIONS

For the purpose of this standard the following definition shall apply:

round bar : Finished product with uniform cross-section of diameter not less than 8 mm manufactured by hot rolling or forging and supplied in straight lengths.

4 SYMBOLS

The symbol used in this standard shall have the meaning assigned to it as given below :

d = diameter of round bar (see Figure 1)

5 DESIGNATION

Round bars shall be designated by the word 'Round' followed by the diameter in 'mm', as given below :

Round d

EXAMPLE :

Round 8 (see Table 1)

6 REQUIREMENTS

6.1 Dimensions

Diameter shall be as given in Table 1(a) and Table 1(b) (see Figure 1)

6.2 Mass

The mass per metre length shall be as given in Table 1(a) and Table 1(b).

TABLE 1 (a) Diameter, sectional area and mass per unit length (Preferred size)

Diameter (d) mm (1)	Sectional area mm^2 (2)	Mass per unit length kg/m (3)
8	50.3	0.395
10	78.6	0.617
12	113.1	0.888
14	154.0	1.21
16	201.1	1.58
18	254.6	2.00
20	314.3	2.47
22	380.3	2.98
25	491.1	3.85
28	616.0	4.83
30	707.1	5.55
32	804.6	6.31
35	962.5	7.56
40	1257.1	9.87
45	1591.1	12.5
50	1964.3	15.4
55	2376.8	18.7
60	2828.6	22.2
65	3319.6	26.0
70	3850.0	30.2
75	4419.6	34.7
80	5028.6	39.5
90	6364.3	49.9
100	7857.1	61.7
110	9507.1	74.6
120	11314.3	88.8
140	15400.0	120.9
160	20114.3	157.9
180	25457.1	199.8
200	31428.6	246.7

NOTE

The values of mass are based on a density of steel 7.85 kg/dm^3.

TABLE 1 (b) Diameter , sectional area and mass per unit length (Second preference size)

Diameter (d) mm (1)	Sectional area mm^2 (2)	Mass per unit length kg/m (3)
9	63.6	0.499
11	95.1	0.746
15	176.8	1.39
17	227.1	1.78
19	283.6	2.23
21	346.5	2.72
23	415.6	3.26
24	452.6	3.55
26	531.6	4.17
27	572.8	4.49
34	908.3	7.13
36	1018.3	7.99
38	1134.6	8.91
42	1386.0	10.9
47	1735.6	13.6
48	1810.3	14.2
52	2124.6	16.7
63	3118.5	24.5
85	5676.8	44.5
95	7091.1	55.6
130	13278.6	104.2
150	17678.6	138.8
170	22707.1	178.3
190	28364.3	222.7
220	38028.6	298.5

NOTES

1. *The values of mass are based on a density of steel 7.85 kg/dm^3.*

2. *Table 1 (a) gives the preferred sizes of round bars and Table 1 (b) gives the second preference sizes which should be ordered when it is not possible to use the sizes given in Table 1 (a)*

6.3 Tolerances

6.3.1 *Tolerance on diameter*

The tolerance on diameter shall be as given in Table 2.

TABLE 2 - Tolerance on diameter

Nominal diameter (d)		Tolerance on diameter
Over mm (1)	Up to and including mm (2)	mm (3)
	15	± 0.4
15	25	± 0.5
25	35	± 0.6
35	50	± 0.8
50	80	± 1.0
80	100	± 1.3
100	120	± 1.6
120	160	± 2.0
160	200	± 2.5
200	-	± 1.5% of diameter

6.3.2 *Tolerance on length*

Each bar shall be cut to a ± 25 mm of the length specified by the purchaser.
Where a minimum length is requested it shall be subject to a

tolerance of +50 mm.
-0

Where a maximum length is requested it shall be subject to a

tolerance of +0 mm.
-50

6.3.3 *Tolerance on mass*

The tolerance on mass shall be as given in Table 3.

TABLE 3 - Tolerance on mass

Nominal size mm (1)	Tolerance on mass per metre length in per cent (2)
8 and 10	± 6.5
12 and over	± 4.5

6.3.4 *Tolerance on roundness*

The permissible ovality for all diameters of round bars, measured as the difference between the maximum and minimum diameters of the same cross-section, shall be 75 per cent of the total tolerance specified on the diameter according to Table 2.

EXAMPLE :

1.2 mm for a nominal diameter of 40 mm.

6.3.5 *Tolerance on straightness* (see Figure 2)

The tolerance on straightness shall be as given in Table 4.

TABLE 4 -Tolerance on straightness

Measurement over (1)	Tolerances on straightness (2)
Any one metre length	4.0 mm/m
The total length (l)	0.004 x

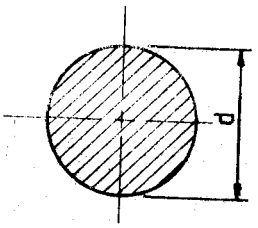

FIGURE 1 - Section of round bar

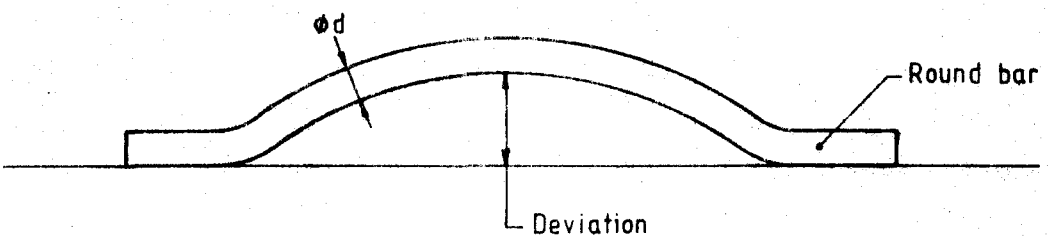

FIGURE 2 - Deviation from straightness

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.*

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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.

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