

SRI LANKA STANDARD 525:1981
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SPECIFICATION FOR
CORE WIRE OF COATED ELECTRODES USED
IN ARC WELDING OF MILD STEEL

BUREAU OF CEYLON STANDARDS

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USED IN ARC WELDING OF MILD STEEL

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Gr. 4

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

SRI LANKA STANDARD

SPECIFICATION FOR CORE WIRE OF COATED ELECTRODES
USED IN ARC WELDING OF MILD STEEL

FOREWORD

This Sri Lanka Standard has been prepared by the drafting committee of the Bureau on Core wire of coated electrodes used in arc welding of mild steel. It was approved by the Mechanical Engineering Divisional Committee of the Bureau of Ceylon Standards and was authorized for adoption and publication by the Council of the Bureau on 1981-07-28

All values in this standard have been given in SI Units.

This specification covers the requirements for the core wire of coated mild steel arc welding electrodes.

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 observation shall be rounded off in accordance with CS 102. The number of figures to be retained in the rounded off values shall be the same as that of the specified value in this standard.

The assistance derived from the publications of the Indian Standards Institution and the Japanese Standards Association in the preparation of this standard is gratefully acknowledged.

1 SCOPE

This specification covers the requirements for core wire of coated electrodes used in arc welding of mild steel.

2 REFERENCE

CS 102 Presentation of numerical values.

IS 228 Chemical analysis of steel (Indian Standard).

3 DEFINITIONS AND TERMINOLOGY

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

- 3.1 coated electrode : An electrode which provides filler metal and having a covering of flux.
- 3.2 arc welding : Fusion welding in which heat for welding is obtained from an electric arc or arcs.
- 3.3 wire rod : Mild steel wire produced directly by hot rolling.
- 3.4 core wire : Mild steel wire produced by cold drawing of wire rod.

4 METHOD OF MANUFACTURE

- 4.1 The wire rod shall be manufactured from mild steel ingots/billets made by electric furnace, open hearth furnace or L.D. converter by hot rolling.
- 4.2 Sufficient reduction and discard shall be made from each ingot to ensure freedom from piping, segregation and other harmful defects.
- 4.3 The core wire shall be cold drawn and shall not be heat treated.

5 CHEMICAL COMPOSITION

Chemical composition of the core wire shall be as given in Table 1.

TABLE 1 - Chemical composition of core wire

Constituent		Per cent
Carbon	C	0.09 Max.
Silicon	Si	0.03 Max.
Manganese	Mn	0.30 to 0.70
Sulphur	S	0.03 Max.
Phosphorus	P	0.03 Max.
Copper	Cu	0.15 Max.

6 QUALITY

6.1 The cross section of the core wire shall be circular.

6.2 The diameter of the core wire shall be constant throughout.

6.3 The surface of the core wire material shall be free from harmful defects and from rust, grease, oil or paint.

7 SAMPLING AND TESTING

7.1 Mild steel core wire

7.1.1 In any consignment of production, coils of mild steel core wire of the same type and diameter shall constitute a lot.

7.1.2 From each lot the number of coils given in Table 2, shall be selected for testing.

7.1.3 All these coils shall be taken at random from the lot, and to ensure randomness of selection random number tables shall be used.

TABLE 2 - Scale of sampling and criteria for conformity of core wire

No. of coils in lot	No. of coils to be selected	Permissible No. of defective test pieces
Up to 25	3	0
26 to 50	5	0
51 to 150	8	1
151 to 300	13	1
301 to 500	20	2
500 and above	32	3

7.1.4 From each coil selected, a test piece shall be cut from one end at a distance of not less than 1 m from the end and tested according to 7.1.5.

7.1.5 Testing for chemical composition shall be carried out according to IS 228, until such time Sri Lanka Standard on test methods for chemical composition is prepared.

8 SIZES AND TOLERANCES

8.1 The purchaser shall specify the nominal diameter of the core wire to be supplied.

8.2 Tolerance on size

The tolerance on the specified diameter of the core wire of the electrode shall be as given below :

Size of wire mm	Tolerance mm
Up to 8	+ 0.00 - 0.05
Over 8 up to and including 12.5	+ 0.00 - 0.10

9 PACKING

9.1 Each wire coil shall not be more than 100 kg and shall be suitably tied to enable easy and safe handling.

9.2 Purchaser should specify whether the wire coils should be suitably protected with non greasy covering.

10 MARKING

10.1 Unless otherwise agreed each wire coil shall be clearly marked with the following :

- a) Diameter of core wire ;
- b) Manufacturer's name and/or trade mark ; and
- c) Batch No.

10.2 The material may also be marked with the Sri Lanka Standard SLS certification mark, provided the manufacturer or processor is granted to use the SLS certification mark.

11 CONFORMITY TO STANDARD

11.1 The lot of mild steel wire coils shall be declared as conforming to chemical composition, if the number of defective test pieces tested as in 7.1.5, is less than or equal to the permissible number given in Column 3 of Table 2.

11.2 The quality and tolerance of mild steel core wire shall conform to the specifications given under 6 and 8 respectively.

11.3 Packing and marking of core wire coil shall conform to the specifications given under 9 and 10 respectively.

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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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