BUREAU OF INDIAN STANDARDS

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Draft Indian Standard

SPECIFICATION FOR ALUMINIUM FOILSTOCK

[*First Revision* of IS 10257]

ICS 77.150.10

Ores and Feed Stock for Aluminium Industry, its Metals/Alloys and Products Sectional Committee, MTD 07

Last date for receipt of comments is **XXXX**

FOREWORD

(*Formal clauses of the foreword will be added later*)

This standard was first published in 1982. This revision has been brought out to bring the standard in the latest style and format of the Indian Standards. In addition, following significant changes have been made:

a) A new clause on ordering information added;

b) Supply of material clause has been modified;

c) New grades of foil stock added;

d) New thickness ranges added in the standard;

e) Clauses on packaging, test certificate and retest added; and

f) Marking clause has been modified.

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 analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values *(second revision)*'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

SPECIFICATION FOR ALUMINIUM FOIL STOCK

(First Revision)

1 SCOPE

This draft standard covers the requirements of wrought aluminium foil stock.

2 REFERENCES

The Indian Standards listed below contains provisions which through reference in this text, constitutes provisions of this standard. At the time of publication the edition indicated was valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

IS No.	*Title*
IS 504 (Part 1 to 12) : 2002	Chemical analysis of aluminium and its alloys : Parts 1 to 12 *(second revision)*
IS 504 (Part 13 to 16) : 2003	Chemical analysis of aluminium and its alloys : parts 13 to 16 *(second revision)*
IS 737 : 2024	Wrought aluminium and aluminium alloy sheet and strip for general engineering purposes — Specification
IS 1608 (Part 1) : 2022/ ISO 6892-1 : 2019	Metallic materials — Tensile testing : Part 1 Method of test at room temperature (*Fifth Revision*)
IS 5047	Glossary of terms relating to aluminium and aluminium alloys
(Part 1) : 1986	Part 1 Unwrought and wrought metals (*second revision*)
(Part 2) : 1979	Part 2 Plant and operations, thermal treatment, control and testing, finishing
(Part 3) : 1979	Part 3 Geometrical properties and tolerance, structural and surface defects
IS 5052 : 1993	Aluminium and its alloys — Temper designations (*first revision*)
IS 10259 : 1982	General condition for delivery and inspection of aluminium and aluminium alloy products

3 DEFINITION AND TERMINOLOGY

For the purpose of this standard, the following definition, in addition to those given in IS 5047 (Part 1), IS 5047 (Part 2) and IS 5047 (Part 3) shall apply.

3.1 Foil Stock — Semi-finished coiled strip for further rolling to foil.

3.2 Profile — The measure for shape/flatness of the sheet.

4 ORDERING INFORMATION

The ordering information shall include the following information:

a) Alloy/ temper;
b) Quantity, in kg;
c) Coil form inner diameter and coil width (in mm); and
d) Packing mode.

5 SUPPLY OF MATERIAL

5.1 General requirements for the supply of aluminium products shall conform to IS 10259.

5.2 Temper – The material shall be supplied in fully annealed "O" or H12/H22 or H14/H24 or H16/H26 or H18 or H19 or F temper, as specified in IS 5052. If required by the purchaser, the material may be supplied in any other temper, as mutually agreed between the purchaser and supplier.

6 FREEDOM FROM DEFECTS

6.1 The metal shall be commercially free from defects likely to give rise either to excessive breaks or pin holing when rolled to lower foil gauges by the correct practice.

6.2 The attribute of grain size criteria is applicable for foil stock supplied in O temper. The grain size of such foil stock, at the annealed temper, should be uniformly small. The exact value of the grain size may be as agreed between the supplier and the purchaser.

6.3 The surface shall be commercially free from all harmful defects, such as, rolled-in-dirt, roll coating, burnt oil stains, water stains or corrosion or mechanical damage.

6.4 The coils shall be free from buckles, pinch marks and wavy edges.

6.5 The coils shall be supplied cleanly trimmed, free from edge cracks and block edge effects.

6.6 The coils edges shall be free from 'belling' tendency.

6.7 The coil shall be free from "breaks".

6.8 The coils shall be properly wound without telescoping.

7 CHEMICAL COMPOSITION

7.1 The aluminium foil stock shall be made from the alloys 19000, 19000A, 19002, 19350, 19500, 19600, 31000, 31000A, 31200, 31400, 31500, 31500A, 31500B, 31500C, 31540, 40800, 81000, 81000B, 81400, 81400A, 81400B, 81472, and 82300, as specified in IS 737.

7.2 The chemical composition as mentioned in **7.1** shall be determined either in accordance with the methods specified in IS 504 (Part 1 to 12) and IS 504 (Part 13 to 16) or by any other established instrumental / chemical method. In case of any dispute the method specified in relevant part of IS 504 shall be used as referee method. However, when the method is not given in relevant parts of IS 504, the referee method shall be as agreed between the purchaser and the supplier.

8 MECHANICAL PROPERTIES

The Material shall be tested for tensile properties. The material when tested for tensile properties, in accordance with IS 1608 (Part 1), on the test pieces prepared from test samples selected as specified in **9**, shall conform to the values for the grades as mentioned in IS737. Tensile properties of the grades and/or thickness not mentioned in IS737 may be subject to the mutual agreement between purchaser and manufacturer.

9 SELECTION OF TEST SAMPLES

9.1 The test samples shall be selected as specified in **9.1.1.** Before the test samples are cut off, they shall be marked to identify them with the lot they represent.

9.1.1 Atleast one sample of the foil stock shall be tested for mechanical properties as mentioned in **8**, from any of the part coils which are made from one mother coil or parent ingot.

10 DIMENSIONS AND TOLERANCES

10.1 Thickness

The nominal thickness of foil stock shall be as mutually agreed between the supplier and the purchaser. The recommended thicknesses are 0.20, 0.26, 0.30, 0.35, 0.40, 0.45, 0.55, 0.60 and 0.80 mm.

10.1.1 The thickness tolerance on nominal thickness of foil stock shall be +/- 6 percent.

10.1.2 The profile of the foil stock may be measured using a method mutually agreed between the supplier and the purchaser, and the acceptable limits for profile to be mutually agreed between the supplier and the purchaser.

10.2 Width

10.2.1 The width of the foil stock shall be mutually agreed between the supplier and the purchaser.

10.2.2 The tolerance on all widths of foil stock shall be ±1 mm for widths up to 1200 mm and ± 2 mm for widths greater than 1200 mm or as agreed between purchaser and supplier.

10.3 Coil Diameter

Coil outside diameter : The minimum and maximum outside diameter of coils of the foil stock shall be as agreed between purchaser and supplier.

Coil inside diameter : The inside diameter of the coils of the foil stock shall be as agreed between purchaser and supplier.

10.4 Coil Density

The coil density of the foil stock coil shall be as mutually agreed between the purchaser and the supplier. Coil density (in kg/mm) shall be calculated by dividing the coil weight in kg by the overall width of the coil in mm.

11 RETESTS

For the purpose of this standard, the clauses as given in IS 10259 shall apply.

12 PACKAGING

12.1 For the purpose of this standard, the following packaging methods and those given in IS 10259 shall apply.

12.2 Coils of foil stock should be wrapped with a suitable waterproof material to prevent corrosion and should be otherwise wrapped and secured to prevent slippage.

12.3 When supplied with Core**,** the type of core material (steel, aluminium, plastic, paper etc.), and inner, outer diameter of the core, length of the core, any other features of the core, shall be as agreed between purchaser and supplier.

13 MARKING

13.1 The material shall be marked with the following:

a) Indication of the source of manufacture;
b) Grade designation, size;
c) Condition
d) Batch number
e) Quantity; and
f) Date of manufacture.

The supplier shall furnish a certificate that the material supplied complies with the requirements of this standard.

13.2 BIS Certification Marking

The products (s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provision of the *Bureau of Indian Standard Act*, 2016 and the Rules and Regulations framed thereunder, and the product may be marked with the Standard Mark.