BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

(Not to be reproduced without the permission of BIS or used as an Indian Standard)

भारतीय मानक मसौदा

बेयरिंग के लिए एल्यूमीनियम मिश्रधातु कास्टिंग और स्ट्रिप्स – विशिष्टि

(आई एस 6751 का पहला पुनरीक्षण)

Draft Indian Standard

ALUMINIUM ALLOY CASTINGS AND STRIPS FOR BEARINGS — SPECIFICATION

(First Revision of IS 6751)

ICS 77.120.10

Ores and Feed Stock for Aluminium Industry, itsLast date of commentsMetals/Alloys and Products Sectional Committee,16 April 2024MTD 0717

FOREWORD

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

This standard was first published in 1972. This revision has been brought out to bring the standard in the latest style and format of the Indian Standards.

In addition, the following modification have been made:

- a) References clauses has been added;
- b) New clause on packaging has been added;
- c) Marking clause has been modified.

With the development of heavy engineering industry, the amount of bearing metal required is increasing at a very fast rate. The industry consumes large quantities of copper, lead, zinc, tin and antimony for bearings. Since these materials are scarce, need has been felt to substitute them with aluminium bearing alloys which have desirable properties and have been used in a wide variety of applications for many years. Requirements for two grades of cast and rolled alloys are specified in this standard. Cast alloys are used for solid bearings and rolled alloys are used in the form of strip for bimetal and trimetal backed bearings.

This standard has been prepared with a view to encouraging the industry to use aluminium bearing alloys.

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 of value should be the same as that of the specified in this standard.

Draft Indian Standard ALUMINIUM ALLOY CASTINGS AND STRIPS FOR BEARINGS — SPECIFICATION (First Revision)

1 SCOPE

This standard covers requirements of aluminium alloys in cast and rolled form for bearing used in automobile and other engineering applications.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below:

IS No.	Title		
IS 1586 (Part 1) : 2018/ ISO 6508-1 : 2016	Metallic materials — Rockwell hardness test : Part 1 Test method (<i>fifth revision</i>)		
IS 1608 (Part 1) : 2022/ ISO 6892 (Part 1) : 2019	Metallic materials — Tensile testing : Part 1 Method of test at room temperature (<i>fifth revision</i>)		
IS 6754 : 1972	Specification for aluminium alloy ingots for bearings		

3 RAW MATERIAL

Ingots of cast and wrought alloys specified in IS 6754 shall be used for making castings and strips for bearings.

4 PHYSICAL PROPERTIES

4.1 Castings — Rockwell hardness (H) of castings when tested in accordance with IS 1586 (Part 1) shall be as specified in Table 1.

Cast Alloy Designation	Condition	Rockwell H Hardness, <i>Min</i>
(2)	(3)	(4)
8482	Aged	102
8328	Aged	85
	Cast Anoy Designation (2) 8482 8328	Cast AlloyConditionDesignation(3)(2)(3)8482Aged8328Aged

Table 1 Properties of Cast Alloys at 27 °C

(Clause 4.1)

4.2 Strips — Tensile strength, elongation of strips for bearings when tested in accordance with IS 1608 (Part 1) and rockwell hardness (H) when tested as per IS 1586 Part 1 shall be as given in Table 2.

Table 2 Properties of Wrought Alloys in the Form of Strip

(*Clause* 4.2)

Sl No.	Wrought Alloy Designation	Condition	Rockwell H Hardness	Tensile Strength (kgf/mm ²)	Elongation Percent on 50 m Gauge Length
			Min	Min	Min
(1)	(2)	(3)	(4)	(5)	(6)
i)	83428	Cold reduction	99	22.5	7
		As rolled and annealed	67	15.0	29
ii)	89200	As manufactured	-	19.5	10.0

NOTE — In cold reduction, typical cold reduction of 28 percent is given to attain the properties.

5 SAMPLING

Cast bearings or rolled strips for bearings shall be divided into lots of 300 or fraction thereof and one test sample shall be taken from each lot for the purpose of tests. Separate test bars representing the bearing in the cast form shall be used for the purpose of testing.

6 REJECTION AND RETEST

If any test sample fails to comply with any of the test requirements of the standard, two samples from castings/strips from the same lot shall be taken and one such sample shall be from the castings/strips from which the original test sample was taken. If both these test samples satisfy

the test requirements the lot shall be deemed to comply with the requirements of this standard. If any of these two test samples fail to satisfy the requirements of this standard, the lot shall be rejected.

7 PACKAGING

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

8 MARKING

8.1 The material shall be marked with the following:

- a) The name of the manufacturer;
- b) Type (Castings/Strips); and
- c) Alloy designation and condition.

8.2 BIS Certification Marking

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