SPECIFICATION FOR LEAD-ANTIMONY ALLOY WIRE FOR BULLET CORES

Dt: 12.02.25

1. SCOPE:

The specification covers the requirement of Lead-Antimony Alloy Wire of different diameters used in the manufacture of Bullet Cores for Small Arms Ammunitions.

2. RELATED SPECIFICATION:

Lead-Antimony Alloy Wire to the specifications:

(a) JSS 9530-02:2020 (fourth Revision) Grade: PbSb 2

(b) IS 1654:1992 Reaffirmed 2023. (Third Revision)Grade: PbSb 2

3. CHEMICAL COMPOSITION:

3.1 Lead Antimony Alloy Wire shall confirm to the following Chemical Composition: **PbSb2**

Sl. No.	Elements	PbSb2 %	
		Min.	Max.
1.	Antimony	1.8	2.2
2.	Tin	----	0.10
3.	Copper	----	0.05
4.	Arsenic	----	0.01
5.	Zinc	----	0.001
6.	Lead	Rem	
7.	Bismuth	----	0.06
8.	Iron	----	0.005
9.	Silver	----	0.02

3.2 The total elements other than Lead and Antimony shall not exceed 0.15%

4. SUPPLY CONDITION:

4.1 The wire shall be supplied with winding on plastic spools. Each spool shall contain 50 kg of Lead-Antimony Alloy Wire.

5. MANUFACTURE:

The wire shall be rolled/extruded from ingot confirming to IS 1654 Grade PbSb2 to the dimensions and tolerance as stated on the order.

6. GRADE OF INPUT MATERIALS (LEAD & ANTIMONY):

Grade of raw Lead and Antimony ingot used for manufacturing Lead-Antimony Alloy Wire shall be as follows:

a) PIG LEAD : Grade Pb 99.7 to the Specn. IS 27:1992 (Reaffirmed 1997) Fourth Revision AMND. No 1

b) ANTIMONY INGOT : Grade Sb 99.5 to the Specn. IS 211:1992 (Reaffirmed 1997) Fourth Revision

7. MARKING:

Manufacturer's name or trademark, year of manufacture, batch number and the type of material shall be stamped on all accepted wire where practicable or otherwise legibly marked on a metal tag. To be securely fixed to the package.

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8. QUALITY ASSURANCE

8.1 The material when analyzed In accordance with IS 403 shall conform to the chemical composition as given Clause 3.

8.2 Material Test report of lead antimony wire conforming to Clause 3 above to be furnished by supplier from **NABL accredited** labs.

9. SAMPLING

9.1 Formation of Lot

9.1.1 The delivery shall be visually inspected by the Quality Assurance Officer at the spot in the first instance to ascertain its homogeneity in respect of size, shape and manufacturing batch. Separate lot should be formed as per manufacturing batch number and all the bars with the same batch number should be treated as one lot for the purpose of sampling.

9.1.2 The supplier shall arrange the units of each homogeneous lot in such a way that all the units are easily accessible to the Quality Assurance Officer to enable him to draw samples from any portion of the homogeneous lot.

10.2 **Sampling Procedure**

Sampling of stores shall be done adopting the technique of 'Simple Random Sampling' as per IS 4905.

10.3 **Scale of Sampling**

The number of sample units drawn for assessing the quality of stores would be in accordance with Table 3 for laboratory testing (Chemical tests) and Table 2 for dimensional/non-destructive/visual inspection.

Table 2 Lot Wise Sample Sizes and Acceptance Number for Dimensional/Non-Destructive/Visual Inspection

Lot Size (Spool Qty)	Sample Size	AQL 4% No. of Defectives Permissible
2 to 8	2	0
9 to 15	3	0
16 to 25	5	0
26 to 50	8	0
51 to 100	13	1
101 to 150	20	2
151 to 300	32	3
301 and above	50	5

Table 3 Lot Wise Sample Size for Laboratory Testing (Chemical Composition)

Lot Size (Spool Qty)	Sample Size
2 to 8	2
9 to 15	2
16 to 25	3
26 to 50	3
51 to 100	5
101 to 150	5
151 to 300	8
301 and above	13

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10.4 Sampling for Inspection (Dimensional/Non-Destructive/Visual)

The Quality Assurance Officer shall draw samples as per Table 2 of Clause **10.3** for dimensional/non-destructive/Visual inspection to assess the quality of the lot. If the quality of the lot indicates conformity to the standard as laid down in Table 2 of Clause **10.3**, sampling for laboratory test shall be done. Otherwise the lot shall be straightway rejected.

10.5 Sampling for Laboratory Testing

If the lot is considered conforming to the quality standard as specified in Table 2 of Clause **10.3** sampling for laboratory testing shall be carried out as per Table 3 of Clause **10.3 and** sample shall be subjected to the laboratory testing.

10.6 Bulk Inspection

If the laboratory test report indicates that the lot does not conform to the standard as specified in Clause **3.1** when tested as per Table 3 of Clause 10.3, the whole lot shall be rejected. Otherwise the lot shall be inspected hundred percent thoroughly for workmanship and finish, dimensions and other critical and visual defects. All bars found defectives shall be rejected.

11 CRITERIA FOR CONFORMITY

If all the samples tested meet the laid down requirement of chemical composition as specified in Clause **3.1** and the laid down the standard of the visual inspection/non destructive testing/dimensional inspection as give in Table 2, the lot shall be accepted. Otherwise the lot shall be rejected.

12 WARRANTY

The stores against this section shall be deemed to bear warranty of the manufacturer/contractor against defective material for a period of 12 months from the date of receipt of stores at consignee end. If during this period, the stores supplied are found to be defectives, the same shall be replaced immediately with the serviceable stores by the manufacturer /contactor at site, free of any charges or cost or the manufacturer /contactor supplying such defective stores shall accept a suitable price penalty for the defective stores as may be decided by the purchasing officer or the Quality Assurance Authority.

13 PACKING

All accepted rods shall be packed and marked in accordance with instructions as stipulated in the order/contract.

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