भारतीय मानक

Indian Standard

IS 3825 : 2023

वस्त्रादि — जूट बुनाई के लिए इनसेट मेल वायर हील्ड्स — विशिष्टि

(तीसरा पुनरीक्षण)

Textiles — Inset Mail Wire Healds for Jute Weaving — Specification

(Third Revision)

ICS 59.120.30

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

September 2023 **Price Group 4**

Textile Machinery and Accessories Sectional Committee, TXD 14

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Textile Machinery and Accessories Sectional Committee had been approved by the Textiles Division Council.

This standard was subsequently revised in 1974 and 1990. The standard has been revised to incorporate the following changes:

a) References to Indian Standards have been updated; and
b) Marking clause has been modified.

The composition of the Committee responsible for the formulation of this standard is given in Annex B.

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.

Indian Standard

TEXTILES — INSET MAIL WIRE HEALDS FOR JUTE WEAVING — SPECIFICATION

(Third Revision)

1 SCOPE

This standard specifies requirements for inset mail wire healds for use in jute weaving.

2 REFERENCES

The standards listed in Annex A 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 agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

3 MATERIAL

3.1 Wire

Carbon steel wire of 0.71 mm ± 0.02 mm diameter with carbon content between 0.35 percent to 0.65 percent shall be used. The tensile strength of wire shall be 1100 MPa (or 110 kgf/mm^2).

NOTE — Wire of 0.90 mm ± 0.02 mm diameter may be used subject to the agreement between the purchaser and the manufacturer.

3.2 Inset Mail

Hardened and tempered steel wire or strip shall be used. The hardness shall be between 270 HV and 300 HV when determined by the method prescribed in IS 1501 (Part 1).

4 MANUFACTURE

4.1 Fixing of Inset Mail

The inset mail shall be inserted between two wires of the heald. The wires shall be tightly wound round an inset mail with twist as shown in Fig. 1. The position of the inset mail shall be at least 10 mm away from the centre of the heald towards the top end loop. However, the inset may be at the centre, provided the same is agreed to between the purchaser and the manufacturer.

4.2 Plating

The heald shall be tin plated by using tin anodes for electroplating conforming to IS 2384 and the plating shall be smooth, free from cracks and other flaws which are likely to cause yarn breakage. The grooves formed by two adjoining wires shall be smooth and regular. The coating mass of tin plating shall be 5.5 g/m^2 ± 0.7 g/m^2 when tested according to IS 1327.

4.3 Finish

All joints shall be smooth and free from sharp corners. The plating and soldering of wire healds shall not cause gloss silk to be caught at the mail or wire when the heald is repeatedly rubbed with it.

4.4 Painting

The top end loops shall be distinctly painted with air drying type of paint (*see* IS 168) in order to avoid the healds being put on the heald carrying rods with the heald frame upside down.

5 REQUIREMENTS

5.1 Shape

The shape of inset mail wire healds for jute weaving shall be generally as shown in Fig. 1. The major axis of both the end loops shall coincide with the major axis of the wire heald. The plane of the inset mail and that of the end loops shall be at an angle of 45^o ± 5^o unless otherwise agreed to between the purchaser and the manufacturer. If the wire heald is held vertical with the top end upward the minor axis of the inset mail shall be in the ‘Z’ direction as shown in Fig. 2. The twisted portion near the end-loop shall have two turns.

5.2 Dimensions

The dimensions and the corresponding tolerances of the two varieties of inset mail wire healds used for jute weaving shall be as given in Table 1. Other dimensions as agreed to between the purchaser and the manufacturer may be followed subject to the tolerances as given in Table 1.

6 OTHER REQUIREMENTS

The inset mail eyes shall be perfectly smooth and free from sharp corners. They shall be oval shaped and grooved at periphery.

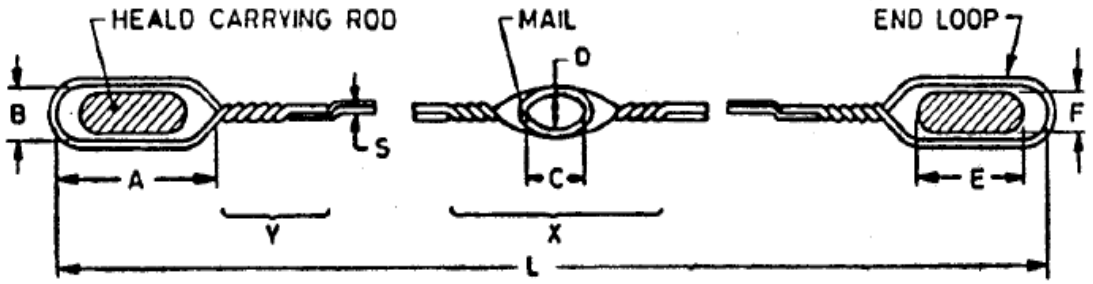

FIG. 1 INSET MAIL WIRE HEALDS FOR JUTE WEAVING

Table 1 Dimensions of Inset Mail Wire Healds for Jute Weaving

(*Clause* 5.2 and *Fig.* 1)

Sl No.	Variety No.	Length (L)	End Loop		Mail Eye	
		mm	Length, mm	Width, mm	Inside Length, mm	Inside Width, mm
			(A)	(B)	(C)	(D)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	1	280	22.0	6.5	6.0 or	3.0 or
ii)	2	330	18.0	5.0	7.6 or 10.0	4.2 or 6.0
Tolerance, mm	—	± 1.0	± 1.3	± 0.5	± 0.125	± 0.125

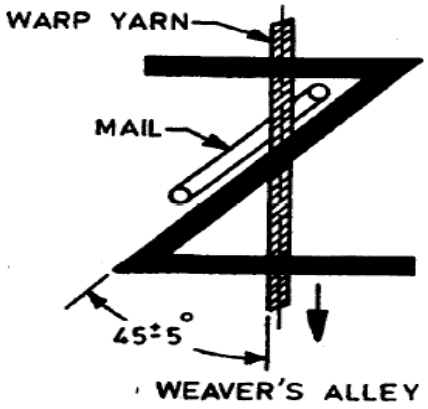

FIG. 2 DIRECTION OF MINOR AXIS OF MAIL

7 SAMPLING

To ascertain the conformity of inset mail wire healds for jute weaving to the requirements of this specification single sampling plan with Inspection Level I and Acceptance Quality Level (AQL) of 2.5 percent given in Table 1 and Table 2 of IS 2500 (Part 1) shall be followed unless otherwise agreed to between the purchaser and the manufacturer.

8 MARKING

8.1 Each bundle or package shall bear the following information:

a) Name of the product;
b) Indication of the source of manufacture;
c) Variety No.;
d) Gross and net mass;
e) Lot/batch number;
f) Country of origin; and
g) Date of manufacture.

8.2 BIS Certification Marking

The product 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 product may be marked with the Standard Mark.

9 PACKING

A set of 250 inset mail wire healds for jute weaving after having been applied with a suitable rust preventive coating and threaded through the end loops by adequately strong cotton thread, shall form a bundle. These bundles shall then be packed in paper (*see* IS 3962) or polyethylene bags and made into suitable packages.

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*	*IS No.*	*Title*
IS 168 : 2016	Ready mixed paint, air drying for general purpose — Specification (*fourth revision*)	IS 2384 : 1963	Specification for tin anodes for electroplating
IS 1327 : 1988	Method for determination of mass of tin coating on tinplate (*third revision*)	IS 2500 (Part 1) : 2000/ISO 2859-1 : 1999	Sampling procedures for inspection by attributes: Part 1 Sampling schemes indexed by acceptance quality limit (AQL) for lot - by - lot inspection (*third revision*)
IS 1501 (Part 1) : 2020/ISO 6507-1 : 2018	Metallic materials — Vickers hardness test: Part 1 Test method (*fifth revision*)	IS 3962 : 1967	Specification for waxed paper for general packaging

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Textile Machinery and Accessories Sectional Committee, TXD 14

Organization	*Representative(s)*
Central Manufacturing Technology Institute, Bengaluru	DR NAGAHANUMAIAN **(*Chairperson*)**
Amritlakshmi Machine Works, Mumbai	SHRI N. K. BRAHMACHARI SHRI N. K. RAUT (*Alternate*)
ATE Enterprises Private Limited, New Delhi	SHRI ABHIJIT KULKARNI SHRI ANIL KUMAR SHARMA (*Alternate*)
Bajaj Industries Private Limited, Kolkata	REPRESENTATIVE
Bhowmick Calculator, Kolkata	SHRI GOUTAM BHOWMICK SHRI VIVEKANANDA BHOWMICK (*Alternate*)
Central Manufacturing Technology Institute, Bengaluru	SHRI B. R. MOHANRAJ SHRI K. SARAVANAN (*Alternate*)
Confederation of Indian Textile Industry, New Delhi	SHRI AJAY KUMAR
Dashmesh Jacquard and Powerloom Private Limited, Panipat	SHRI RAJMEET DHAMMU (*Representative*)
HLL Lifecare Limited, Noida	SHRI AKHIL G. S. SHRI RATNAKAR GUPTA (*Alternate*)
ICAR-Central Institute for Research on Cotton Technology, Mumbai	DR N. SHANMUGAM DR T. SENTHILKUMAR (*Alternate*)
India ITME Society, Mumbai	SHRI PRASHANT MANGUKIA SHRIMATI SEEMA SRIVASTAVA (*Alternate*)
Indian Jute Industries Research Association, Kolkata	SHRIMATI SAUMITA CHOUDHURY SHRI PARTHA SANYAL (*Alternate*)
Indian Jute Mils Association, Kolkata	REPRESENTATIVE
Indian Textile Accessories and Machinery Manufacturers Association, Mumbai	SHRI N. D. MHATRE SHRI CHANDRESH SHAH (*Alternate*)
Inspiron Engineering Private Limited, Ahmedabad	SHRI SANJAY KOWARKAR SHRI ANKUR SONI (*Alternate*)
JCB Industries, Guwahati	SHRI DHRUBA SARMA SHRI ABHIJIT BHUYAN (*Alternate*)
Kusters Calico Machinery Limited, Karjan	SHRI DEVANG PARIKH SHRI SHUBHASIS SUR (*Alternate*)
Lakshmi Machine Works Limited, Coimbatore	MS KALPANA A. MS DIVYA V. (*Alternate*)
Laxmi Shuttleless Looms Private Limited, Ahmedabad	SHRI KETAN SANGHVI
Ludlow Jute Limited, Kolkata	REPRESENTATIVE

Organization	*Representative(s)*
Ministry of Heavy Industries and Public Enterprises, Department of Heavy Industry, New Delhi	SHRI SANJEEV GUPTA SHRI S. SUNDAR (*Alternate*)
National Safety Council, Navi Mumbai	SHRI LALIT R. GABHANE SHRI R. R. DEOGHARE (*Alternate*)
Office of the Textile Commissioner, Mumbai	SHRI C. R. KALESAN SHRI JAGRAM MEENA (*Alternate*)
Peass Industrial Engineers Private Limited, Navari	SHRI RAVI S. RAO SHRI JIGNESH B. PATEL (*Alternate*)
Technocraft Industries India Limited, Mumbai	SHRI RAVINDER KUMAR SHRI DURADUNDESHWAR HIREMATH (*Alternate*)
Textile Machinery Manufacturers Association, Mumbai	SHRI M. SHANKAR SHRI PRASHANT MANGUKIA (*Alternate*)
The Bombay Textile Research Association, Mumbai	SHRI VIJAY GAWDE SHRI R. A. SHAIKH (*Alternate*)
The Synthetic and Art Silk Mills Research Association, Mumbai	DR MANISHA MATHUR SHRI SANJAY SAINI (*Alternate*)
The Textile Association (India), Mumbai	SHRI J. B. SOMA SHRI ASHOK JUNEJA (*Alternate*)
Truetzschler India Private Limited, Ahmedabad	SHRI PRAVIN KANDGE SHRI SHILADITYA JOSHI (*Alternate*)
United Nations International Children's Emergency Fund, New Delhi	DR PRATIBHA SINGH SHRI YUSUF KABIR (*Alternate*)
Veermata Jijabai Technological Institute, Mumbai	DR SURANJANA GANGOPADHYAY SHRI S. P. BORKAR (*Alternate*)
BIS Directorate General	SHRI J. K. GUPTA, SCIENTIST 'E'/DIRECTOR AND HEAD (TEXTILES) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI SWAPNIL
SCIENTIST 'B'/ASSISTANT DIRECTOR
(TEXTILES), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: TXD 14 (22492).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices:		*Telephones*
Central	: 601/A, Konnectus Tower -1, 6th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	2323 7617
Eastern	: 8th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	2367 0012 2320 9474
Northern	: Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	265 9930
Southern	: C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	2254 1442 2254 1216
Western	: Plot No. E-9, Road No.-8, MIDC, Andheri (East), Mumbai 400093	2821 8093

Branches : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. CHANDIGARH. CHENNAI. COIMBATORE. DEHRADUN. DELHI. FARIDABAD. GHAZIABAD. GUWAHATI. HIMACHAL PRADESH. HUBLI. HYDERABAD. JAIPUR. JAMMU & KASHMIR. JAMSHEDPUR. KOCHI. KOLKATA. LUCKNOW. MADURAI. MUMBAI. NAGPUR. NOIDA. PANIPAT. PATNA. PUNE. RAIPUR. RAJKOT. SURAT. VISAKHAPATNAM.

Published by BIS, New Delhi