

**BUREAU OF INDIAN STANDARDS**  
(New Delhi)

**MINUTES**

**Aeronautical and Related Products Sectional Committee, TXD 13**

**16<sup>th</sup> Meeting**

<b>Date (Day)</b>	<b>Time</b>	<b>Venue</b>
11 July 2023 (Tuesday)	1100 h	(Hybrid) ADRDE, Agra

**ATTENDEES:**

1. **Dr. Manoj Kumar**  
(*Chairperson*) **Aerial Delivery Research and Development Establishment (ADRDE), Agra**
2. **Shri Puneet Gupta** **Aerial Delivery Research and Development Establishment (ADRDE), Agra**
3. **Shri Prasanta Kr Mallik** **-do-**
4. **Shri Dev Kishan Bairwa** **-do-**
5. **Shri Naga Suresh K Pachipulusu** **Directorate General of Civil Aviation, New Delhi**
6. **Shri Purushottam De** **Directorate General of Quality Assurance, Ministry of Defense, New Delhi**
7. **Dr. Santhosh B** **Indian Space Research Organization – Vikram Sarabhai Space Centre, Thiruvananthapuram.**
8. **Shri Anil Painuly** **-do-**
9. **Shri M K Talukdar** **Kusumgar Corporates Private Limited, Vapi**
10. **Shri Shailendra Mishra** **Motilal Dulichand Private Limited, Kanpur**
11. **Shri K K Toppo** **Ordnance Parachute Factory, Kanpur**
12. **Shri Sachin Khorla** **- do -**
13. **Shri Saurabh Phadtare** **Oriental weaving & Processing Mills and Pvt Ltd, Navi Mumbai**
14. **Shri Suryakant Satardekar** **-do-**
15. **Dr. Manisha Mathur** **Synthetic and Art Silk Mills Research Association, Mumbai**

- |     |                         |   |
|-----|-------------------------|---|
| 16. | Ms. Angelina Divya      | SRF Limited, Chennai                        |
| 17. | Shri Hemal M Thanawala  | Thanawala and Company, Mumbai               |
| 18. | Prof Mukesh Kumar Singh | UP Textile Technology Institute, Kanpur.    |
| 19. | Shri Anshul Nanavathy   | Urja Products Private Limited, Ahmedabad    |
| 20. | Shri Anu Handa          | Vardhman Yarns and Threads Ltd., Hoshiarpur |

**Invitees**

- |     |                                      |  |
|-----|--------------------------------------|--|
| 21. | Shri Nitin K V Yadav Sc E            | Aerial Delivery Research and Development Establishment (ADRDE), Agra |
| 22. | Shri Mahesh Kumar Verma, TO B, ADRDE | -do-   |
| 23. | Shri Sandeep Anand, TO-B, ADRDE      | -do-   |
| 24. | Shri Tulsi Ram                       | -do-   |
| 25. | Shri Ankit Kumar, STA-B              | -do-   |
| 26. | Ms. Gauri Shankar, STA-B             | -do-   |
| 27. | Shri Raman Kumar, TO B               | -do-   |

**BIS DIRECTORATE GENERAL**

- |     |                    |   |
|-----|--------------------|---|
| 28. | Shri Ranga Banothu | Scientist B (Textiles) & Member Secretary |
|-----|--------------------|---|

**Item 0 WELCOME & INTRODUCTORY REMARKS OF CHAIRPERSON**

Dr. Manoj Kumar, chairperson TXD 13 welcomed the members present in the meeting. He appreciated the efforts of BIS and ADRDE for frequent meetings of sectional committee. He described the importance of textile and technical textile in the aeronautical applications like life saving products parachutes and inflatables etc. Therefore, such products and their raw materials should be standardized and also needed a periodical review of those standards. He also encouraged the members for formulation of Indian standards as par to international standards.

Shri Ranga Banothu, member secretary has also welcomed chairperson and all members present in the meeting.

## **Item 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING**

In absence of any comments, the committee confirmed the minutes of the 15<sup>th</sup> meeting of TXD 13 held on 11 November 2022 and as circulated vide BIS DG letter no. TXD 13/A2.15 dated 29 November 2022.

## **Item 2 PROCESS REFORMS IN STANDARDIZATION ACTIVITY OF BIS**

**2.1** The Committee noted the process reforms in standardization activity of BIS as given in Annex A (addendum) to the agenda.

**2.2** The committee has approved the following tentative dates for holding the quarterly meeting of TXD 13 Sectional Committee.

<b>Quarter</b>	<b>Q2 July-Sept 2023</b>	<b>Q3 Oct-Dec 2023</b>	<b>Q4 Jan-Mar 2024</b>	<b>Q1 Apr-June 2024</b>
<b>Tentative Date</b>	11 <sup>th</sup> July 2023, Tuesday	23 <sup>rd</sup> Oct 2023, Monday	23 <sup>rd</sup> Jan 2024, Tuesday	25 <sup>th</sup> April 2023 Thursday

The committee further DECIDED that M/s ADRDE, Agra to provide the journal/magazines for subscription by BIS and any national/international meeting relevant to sectional committee TXD 13 which may help in understanding the development of technologies and helping in revising the current standards.

The following documents have been identified to take up for R & D projects under the domain of TXD 13 for amalgamating into a single standard for ‘Cotton Tapes for Aeronautical Purposes’:

- i) IS 714 : 1992 Textiles – Cotton reinforcing tapes for aerospace purposes – Specification (*third revision*)
- ii) IS 3255 : 1979 Specification for scoured or dyed cotton tapes for aerospace purposes (*first revision*)
- iii) IS 3846 : 1984 Specification for rot-proofed cotton tapes for aerospace purposes (*first revision*)
- iv) IS 14564 : 1998 Textiles — Cotton tapes for personnel parachutes — Specification

## **Item 3 SCOPE AND COMPOSITION OF TXD 13**

**3.1** The committee reviewed the present scope and composition of TXD 13 as given in **Annex 1** to the agenda and DECIDED as follows:

- a) The updated representation in the committee of following organizations is as under:
  - i) To seek fresh nomination from Directorate General of Civil Aviation, New Delhi for representation as the alternative member in the committee.

- ii) Directorate General of Quality Assurance, Ministry of Defense, New Delhi will be represented by Shri Purushottam De as the alternate member
- iii) Oriental weaving & Processing Mills and Pvt Ltd, Navi Mumbai will be represented by Shri Saurabh Phadtare as the alternate member of the committee.
- iv) To seek fresh nomination from RCMA Kanpur for representation as the principal member in the committee.
- v) To seek fresh nomination from Viraj Syntex Pvt Ltd, Kanpur for representation as the alternate member in the committee.

As per the directives of the competent authority BIS, Stakeholder/Organization with lack of participation in last three meeting may be excluded. In this regard, the committee DECIDED to withdraw the following organization after confirming with organization:

- i) Spica Elastic Limited, Pune

#### **Item 4 ISSUES ARISING OUT OF PREVIOUS MEETING OF TXD 13**

**4.1** The Committee NOTED the summary of actions taken on the various decisions of the 15<sup>th</sup> meeting as given in **Annex 2** to the agenda.

#### **Item 5 FORMULATION OF INDIAN STANDARDS ON NEW SUBJECTS**

**5.1** The committee DELIBERATED on the draft on Nylon Tapes for Aircraft Arrester Barrier received from M/s ADRDE, Agra as given in **Annex 3** to the agenda and DECIDED as follows:

*(Page 24 (of agenda), Appendix C, Test Method 1)* — Delete Carbon Arc exposure method for Ageing Test.

*(Page 24 (of agenda), Appendix C, Test method 2)*— Incorporate the UV xenon lamp method for ageing and Committee assigned the responsibility to provide inputs on the same to M/s ADRDE, Agra within the period of 15 days of time.

**5.1.1** The Committee further DECIDED that BIS shall prepare the draft standard on ‘Nylon Tapes for Aircraft Arrester Barrier’ after incorporating the above changes along with any editorial changes if any, in consultation with M/s ADRDE, Agra and the same shall be issued wide circulation for the period of 60 days for eliciting the comments from stakeholders.

#### **Item 6 DRAFT STANDARDS FOR FINALIZATION**

The Committee has DELIBERATED on the wide circulation drafts as given in **Annex 4 (a)** and **Annex 4 (b)** and DECIDED that the below draft standards be held to have been FINALIZED for publication as Indian standards after incorporating the below changes along with editorial changes, if any:

**a) TXD 13 (21136) Textiles — Braided Cotton Cord for Aerospace Purposes — Specification (Second Revision of IS 1402).**

[Page 34 (of agenda), Clause 4, Table 1, SI No. (iv), col (2)] — Substitute ‘Plaits per dm’ for ‘Plaits per 30 cm’.

[Page 38 (of agenda), Annex C] — Test method to be modified to measure the no. of plaits per dm.

**b) TXD 13 (21155) Scoured or Dyed Cotton Tapes for Aerospace Purposes — Specification (Second Revision of IS 3255).**

[Page 41(of agenda), Clause 5, Table 1] — To incorporate separate tables for the requirements of Cotton tapes woven on needle and shuttle loom.

[Page 42 (of agenda), Clause 5.2, Table 2, SI no. (iii), col (2)] — Substitute ‘4 or better’ for ‘5 or better’ for Washing Fastness.

The requirement of linear density of cotton yarn shall also be given in Ne along with Tex.

**Item 7 COMMENTS ON PUBLISHED INDIAN STANDARDS**

**a) IS 514 : 1992 Textiles — Mercerized cotton fabrics for covering aircrafts and gliders — Specification (*third revision*)**

Committee DECIDED to reallocate IS 524 to M/s ADRDE, Agra as ARP for inputs to revise the standard. Committee further DECIDED that BIS shall prepare the revision draft of IS 514 after incorporating inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.

**b) IS 1376 : 1998 Textiles — Cotton sewing threads for aerospace purposes — Specification (*third revision*)**

Committee DECIDED to reallocate IS 1376 to M/s ADRDE, Agra as ARP for inputs to revise the standard. Committee further DEICDED that BIS shall prepare the revision draft of IS 1376 after incorporating inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.

**c) IS 3449 : 1984 Specification for cotton webbing for parachutes (*second revision*)**

[(Page 50 (of agenda), Table 2, SI No.1, col (2)] — The requirement for washing fastness to be changed from ‘5 or better’ to ‘4 or better’.

Committee further DECIDED that BIS shall prepare the revision draft of IS 3449 after incorporating above changes and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.

**d) IS 3846 : 1984 Specification for rot-proofed cotton tapes for aerospace purposes (first revision)**

(Page 63, Table 1, Heading of col(4)] — Substitute ‘Ends in Full Width, min’ for ‘Ends in Full Width’

[(Page 64 (of agenda), Table 2, Sl No.(iii), col (2)] — the requirement for washing fastness to be changed from ‘5 or better’ to ‘4 or better’.

The table requirements for cotton tapes to be bifurcated into two for cotton tape woven on shuttle loom and needle loom.

Committee further DECIDED that BIS shall prepare the revision draft of IS **3846** after incorporating above changes and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.

**e) IS 6349 : 1981 Specification for tape, nylon, tubular for aerospace applications (first revision)**

(Page 4, Clause 2) — Clause 2.1 and 2.5 to be made into a single table along with tolerance to the linear density and the responsibility of the same has been assigned to M/s ADRDE, Agra within 15 days of time.

[Page 5, Table 1, Sl No. (iii)] — Thickness measurement is specified under 200 g/cm<sup>2</sup>.

[Page 5, Table 1, Sl No. (v)] — Tolerance for Picks per dm shall be minimum.

[Page 5, Table 1, Sl No. (viii)] — Elongation shall be 18% minimum.

Colour fastness and pH for dyed tapes shall be specified the responsibility of technical inputs on the same shall be sought from M/s ADRDE, Agra within the period of 15 days.

Committee further DECIDED that BIS shall prepare the revision draft of IS 6349 by incorporating above changes and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.

**f) IS 4726 : 1984 Specification for light weight nylon fabric for parachutes**

(Page 74(of agenda), Clause 2.2) — Weave repeat shall be incorporated in numbers also.

Incase of Dimensional Stability a detailed study is required to incorporate fabric stability. Therefore stability of fabric may be excluded this time. Meanwhile ADRDE will study fabric stability of all fabric with respect to test method developed by ADRDE and same shall be shared with BIS.

Committee further DECIDED that BIS shall prepare the revision draft of IS 4726 by incorporating above changes and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.

#### **Item 8 REVIEW OF PUBLISHED STANDARDS**

The committee DELIBERATED on the list of pre 2000 standards under the domain of TXD 13 and DECIDED as follows:

<b>SI. No.</b>	<b>IS No.</b>	<b>Title</b>	<b>Decision Taken by Committee</b>
1.	IS 514 : 1992	Textiles – Mercerized cotton fabrics for covering aircrafts and gliders – Specification ( <i>third revision</i> )	Decision has been taken at SI No. (a) of <i>Item 7</i> .
2.	IS 714 : 1992	Textiles – Cotton reinforcing tapes for aerospace purposes – Specification ( <i>third revision</i> )	The committee has DECIDED to take up this subject for R&D in order to incorporate all prevailing verities.
3.	IS 1376 : 1998	Textiles – Cotton sewing threads for aerospace purposes – Specification ( <i>third revision</i> )	Decision has been taken at SI No. (b) of <i>Item 7</i> .
4.	IS 1402 : 1992	Textiles – Braided cotton cord for aerospace purposes – Specification ( <i>second revision</i> )	Decision has been taken at SI No. (a) of <i>Item 6</i> .
5.	IS 2196 : 1985	Specification for linen (flax) sewing thread for aeronautical purposes ( <i>second revision</i> )	Committee DECIDED to allocate IS 2196 to M/s MLDC, Kanpur as ARP for inputs to revise the standard. Committee further DEICDED that BIS shall prepare the revision draft of IS 2196 after incorporating technical inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.
6.	IS 3255 : 1979	Specification for scoured or dyed cotton tapes for aerospace purposes ( <i>first revision</i> )	Decision has been taken at SI No. (b) of <i>Item 6</i> .
7.	IS 3449 : 1984	Specification for cotton webbing for parachutes ( <i>second revision</i> )	Decision has been taken at <i>Item 7</i> .
8.	IS 3846 : 1984	Specification for rot-proofed cotton tapes for aerospace purposes ( <i>first revision</i> )	Decision has been taken at <i>Item 7</i> .
9.	IS 4227 : 1998	Textiles – Braided nylon cords for aerospace purposes – Specification ( <i>second revision</i> )	The Committee NOTED that, the revision of this standard is under wide circulation for stakeholder comments.
10.	IS 4228 : 1979	Specification for nylon tapes for	The Committee NOTED that this revision of this standard is already



		aerospace purposes ( <i>first revision</i> )	under Publication.
11.	IS 4229 : 1992	Textiles – Nylon sewing threads for aerospace purposes – Specification ( <i>second revision</i> )	The committee has NOTED that, the revision of this standard is already under wide circulation for stakeholder comments.
12.	IS 4719 : 1984	Specification for wire-woven rayon fabric for aerospace purposes ( <i>second revision</i> )	The Committee DECIDED to revise the standard by updating the cross referred standards, Marking and packing clauses. Committee further decided that BIS, shall prepare the revision draft of the same and wide circulate for the period of 60 days for eliciting the comments from stakeholders.
13.	IS 4726 : 1984	Specification for light weight nylon fabric for parachutes	Decision has been taken at SI No. (f) of <b>Item 7</b> .
14.	IS 5746 (Part 1) : 1987	Specification for woven glass fibre fabrics for plastic laminates for aerospace purposes - Part 1 Loom-state fabrics ( <i>second revision</i> )	Committee DECIDED to allocate IS 5746 (Part 1) to M/s Urja Products Private Limited, Ahmedabad as ARP for inputs to revise the standard. Committee further DECIDED that BIS shall prepare the revision draft of IS 5746 (Part 1) by incorporating technical inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.
15.	IS 5746 (Part 2) : 1987	Woven glass fibre fabrics for plastic laminates for aerospace purposes - Part 2 Desized fabrics ( <i>second revision</i> )	Committee DECIDED to allocate IS 5746 (Part 2) to M/s Urja Products Private Limited, Ahmedabad as ARP for inputs to revise the standard. Committee further DECIDED that BIS shall prepare the revision draft of IS 5746 (Part 1) by incorporating technical inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.
16.	IS 5746 (Part 3) : 1987	Woven glass fibres fabric for plastic laminates for aerospace purposes - Part 3 Finished fabrics for use with polyester resin systems ( <i>second revision</i> )	Committee DECIDED to allocate IS 5746 (Part 2) to M/s Urja Products Private Limited, Ahmedabad as ARP for inputs to revise the standard. Committee further DECIDED that BIS shall prepare the revision draft of IS 5746 (Part 2) by incorporating technical inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.
17.	IS 6349 : 1981	Specification for tape, nylon, tubular for aerospace applications ( <i>first revision</i> )	Decision has been taken at <b>Item 7</b> .

18.	IS 10476 : 1983	Specification for woven roving glass fabric for polyester - glass laminates for aerospace purposes	Committee DECIDED to allocate IS 10476 to M/s Urja Products Private Limited, Ahmedabad as ARP for inputs to revise the standard. Committee further DEICDED that BIS shall prepare the revision draft of IS 10476 by incorporating technical inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.
19.	IS 11326 : 1985	Specification for nylon fabrics for coating with natural or synthetic elastomers	The Committee DECIDED to revise the standard by updating the cross referred standards, Marking and packing clauses. Committee further decided that BIS, shall prepare the revision draft of the same and wide circulate for the period of 60 days for eliciting the comments from stakeholders.
20.	IS 11367 : 1985	Glossary of terms relating to textile materials for aerospace purposes	Committee DECIDED to allocate IS 11367 to M/s ADRDE, Agra as ARP for inputs to revise the standard. Committee further DECIDED that BIS shall prepare the revision draft of IS 11367 by incorporating technical inputs and same shall be issued under wide circulation for the period of 60 day for eliciting the comments from stakeholders.
21.	IS 14564 : 1998	Textiles — Cotton tapes for personnel parachutes - Specification	The committee has DECIDED to take up this subject for R&D in order to incorporate all prevailing verities.

## Item 9 ANY OTHER BUSINESS

9.1 There being no other business, the meeting ended with a hearty vote of thanks to the *Chair*.