

BUREAU OF INDIAN STANDARDS

MINUTES

**Textile Materials for Aeronautical and Related Products
Sectional Committee, TXD 13**

15th Meeting

Date	Time	Venue
11 November 2022 (Friday)	1000 h	Through Webex video conference

ATTENDANCE:

1. Dr. Manoj Kumar (**Chairman**) **Aerial Delivery Research & Development Estt. Agra**
2. Shri Prasanta Kumar Mallik Aerial Delivery Research and Development Establishment (DRDO), Agra
3. Shri Gaurav Singh -do-
4. Shri Dev Kishan Bairwa -do-
5. Shri Puneet Gupta -do-
6. Shri Daljeet Singh Directorate General of Aeronautical Quality Assurance, Ministry of Defence, New Delhi
7. Shri Ravi K Decca Directorate General of Quality Assurance, Ministry of Defence, New Delhi
8. Shri Col. Vijay Maurya -do-
9. Dr. Santhosh B Indian Space Research Organization - Vikram Sarabhai Space Centre, Thiruvananthapuram
10. Shri Anil Painuly -do-
11. Dr. M. K. Talukdar Kusumgar Corporates Private Limited, Vapi

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| 12. | Shri Shailendra Misra | Motilal Dulichand Private Limited, Kanpur |
| 13. | Shri K K Toppo | Ordinance Parachute Factory, Kanpur |
| 14. | Shri Sachin Khoria | -do- |
| 15. | Shri S Kondaiah | -do- |
| 16. | Shri Hemal M Thanawala | Thanawala and Company, Mumbai |
| 17. | Smt Ashwini Sudam | The Synthetic and Art Silk Mills Research Association, Mumbai |
| 18. | Shri Janak Nanavaty | Urja Products Private Limited, Ahmedabad |
| 19. | Shri Anu Handa | Vardhaman Yarn and Threads Limited, Gurgaon |

BIS DIRECTORATE GENERAL:

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| 20. | Shri Ranga Banothu | BIS, New Delhi
Scientist- B & Member Secretary |
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Item 0 WELCOME & INTRODUCTORY REMARKS

0.1 Shri Ranga Banothu, Member Secretary informed the members that Shri A K Saxena has retired from the services of ADRDE as Director and Dr Manoj Kumar is holding charges as the new Director, ADRDE. He welcomed the new Chairman, Dr Manoj Kumar and all the members of the committee.

0.2 Dr Manoj Kumar, Chairman, TXD 13 welcomed all the members and invitees present in the meeting. He explained the importance of standardization in Textile materials used in aeronautical applications. He also reminded the importance of periodical review of the standards for possible upgradation.

Item 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

1.1 In absence of any comments, the committee confirmed the minutes of the 14th meeting of TXD 13 held on 22 February 2022 and as circulated vide BIS DG letter no. TXD 13/A2.14 dated 10 March 2022.

Item 2 SCOPE AND COMPOSITION OF TXD 13

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

- i) Directorate General of Quality Assurance, Ministry of Defence will be represented by Shri Col. Vijay Maurya as principal member and Shri SS Kashyap as alternative member of the committee.
- ii) Thanawala and Company, Mumbai will be represented by Shri Hemal M. Thanawala as principal member and Shri Vivaan Thanawala as the alternative member of the committee.
- iii) The Synthetic & Art Silk Mills' Research Association, Mumbai will be represented by Dr. Manisha Mathur as principal member and Shri Ashwini Sudam as alternative member of the committee.

Item 3 ISSUES ARISING OUT OF PREVIOUS MEETING OF TXD 13

3.1 Committee NOTED the actions taken on the various decisions in the last meeting as given in **Annex 2** to the agenda.

Item 4 DRAFT STANDARDS FOR FINALIZATION

4.1 Committee scrutinized the comments received from Ordinance Parachute Factory, Kanpur and MLDC, Kanpur on the wide circulation draft **TXD 13/(19707) Textiles — Nylon tapes for aerospace purposes — Specification (Second revision of IS 4228)** as given in **Annex 4** and DECIDED to FINALIZE for publication as Indian standards after incorporating the below changes along with editorial changes, if any:

- i) [Page 3, Table 1, col (5), SI No. (4)] — Substitute ‘11’ for ‘23’ (only for needle loom)
- ii) [Page 3, Table 1, col (6)] — Delete entire column
- iii) [Page 3, Table 1, col (7)] — The maximum values of thickness shall be incorporated instead of range and the pressure on the tape shall be modified 200 gf/cm²
- iv) [Page 3, Table 1, col (8)] — The minimum values of ‘Ends in Full Width’ shall be incorporated instead of giving range
- v) [Page 3, Table 1, col (9)] — The minimum values of ‘Picks/ dm’ shall be incorporated instead of range.
- vi) [Page 3, Table 1, col (15)] — Delete entire column
- vii) [Page 3, Table 1] — The table shall be bifurcated into two tables as below:
 1. Requirements for the nylon tapes woven on shuttle loom
 2. Requirements for the nylon tapes woven on needle loom

The *Breaking load* and *Elongation at break* shall be same for the both the tables.

- viii) [Page 3, Table 1] — Substitute the following note under the Table 1

‘NOTE — In case of dyed threads, 5 percent relaxation shall be allowed to the values given in length per unit mass and extension at break.

Committee further DECIDED to assign the responsibility to ADRDE, Agra and MLDC, Kanpur for providing supporting technical information for use of resultant denier yarn in place of plied yarn in manufacturing of subject Nylon tapes. Accordingly, the information shall be placed before the committee for deliberation.

Item 5 COMMENTS RECEIVED ON PUBLISHED INDIAN STANDARDS

- a) Committee deliberated on the comments received from ADRDE Agra on **IS 4726 : 1984 Specification for light weight nylon fabric** given at **Annex 5** to agenda and DECIDED that the inputs for linear density, ends/dm, picks/dm, TPM, mass, thickness, breaking load on 5 × 20 cm strips, elongation, tear strength, width, length for the several varieties of nylon fabrics i.e. 32, 35, 42, 45, 48, 50, 75, 93 gsm etc. shall be provided by ADRDE, Agra to BIS within 30 days.

Committee further DECIDED to revise the above standard. BIS shall prepare the revision draft of **IS 4726** after incorporating the above inputs in consultation with ADRDE, Agra. The draft so prepared shall be issued under wide circulation for the period of 60 days for eliciting the comments from stake holders.

- b) Committee deliberated on the comments received from Ordinance parachute factory, Kanpur and ADRDE, Agra on **IS 4227 : 1992 Textiles — Braided nylon cords for aerospace purposes Specification (second revision)** given at **Annex 5** to agenda and DECIDED as follows:

- i) Substitute the following for existing:

Nominal Count tpm (Final)

70 dtex × 6	280 ± 15 percent
235 dtex × 1	100, <i>Min</i>
235 dtex × 2	320 ± 15 percent
235 dtex × 3	240 ± 15 percent
235 dtex × 4	220 ± 15 percent
235 dtex × 3 × 3	340 ± 15 percent
235 dtex × 5 × 3	280 ± 15 percent
235 dtex × 6 × 3	200 ± 15 percent
940 dtex × 2	160 ± 15 percent
940 dtex × 3	160 ± 15 percent
1400 dtex	100, <i>Min</i>
1175 dtex	520 ± 15 percent

- ii) [Page 1, Clause 3.1.2.1] — Insert the following note under the clause:

‘NOTE — In case of intermingled yarn, the spin/nil twist in single yarn shall also be allowed for variety no. 11 and 12’

- iii) [Page 2, Table 1, col (2), Variety no. (11) & (12)] — Substitute ‘235×5×3 or 1175×3’ for ‘235×5×3’
- iv) [Page 2, Table 1, col (9)] — The Minimum values for the breaking load shall be specified instead of range
- v) [Page 2, Table 1, col (9), SI No. (6)] — Substitute minimum value of breaking load ‘630’ for existing.
- vi) [Page 2, Table 1, col (2) and (3)] — The tolerance of $\begin{matrix} -5 \text{ percent} \\ + 10 \text{ percent} \end{matrix}$ shall be specified (except for Variety 11 & 12)
- vii) [Page 2, Table 1, Variety No. (11) & (12)] — The tolerance of $\begin{matrix} -5 \text{ percent} \\ + 12 \text{ percent} \end{matrix}$ for nominal linear density shall be inserted for Variety 11 & 12.
- viii) (Page 2, Table 1, Column (8), Variety no. 9) — Substitute ‘360’ for ‘320’
- ix) (Page 2, Table 1) — Insert the following note under the table :

‘NOTES

In case of dyed yarn 5 percent relaxation shall be allowed to the values given in mass and extension at break’

Committee further DECIDED to revise the above standard. BIS shall prepare the revision draft of **IS 4227** after incorporating the above inputs in consultation with ADRDE, Agra. The draft so prepared shall be issued under wide circulation for the period of 60 days for eliciting the comments from stake holders.

- c) Committee deliberated the comments from Ordinance parachute factory, Kanpur and ADRDE, Agra on **IS 4229 : 1998 Textiles — Nylon sewing threads for aerospace purposes Specification (second revision)** given at **Annex 5** to agenda and DECIDED as follows:

- i) [Page 2, Table 1, column (2)]— The entire column shall be substituted with ‘23.3’ for ‘23’
- ii) [Page 2, Table 1, column (2)] — The tolerance of $\begin{matrix} -5 \text{ percent} \\ + 10 \text{ percent} \end{matrix}$ shall be incorporated.

Length per unit mass shall be specified in range as provided by ADRDE in place of single unit mass values.

In case of bonded sewing threads, additional 10 percent relaxation shall be provided in length per unit mass and linear density of yarn.

Committee further DECIDED that BIS shall prepare the draft revision of **IS 4229** in consultation with ADRDE, Agra after incorporating the above changes. The draft so prepared shall be issued under wide circulation for the period of 60 days for eliciting the comments from stakeholders.

Committee assigned the responsibility to ADRDE for providing the relevant international standards related to **IS 4229** within 20 days to BIS. Accordingly, decision for changes in tolerance of linear density of the bonded yarn shall be taken to committee deliberation in next meeting.

Item 6 REVIEW OF PUBLISHED STANDARDS

6.1 The committee considered the Pre 2000 standards as given in **Annex 6** to the agenda. After deliberation, the committee DECIDED that the necessary technical inputs/information for the revision of standards will be provided by the following experts/committee members:

Sl No.	IS No.	Title	Allocation to the experts for technical inputs
1.	IS 514:1992	Textiles — Mercerized cotton fabrics for covering aircrafts and gliders — Specification (<i>third revision</i>)	M/s Ordnance Parachute Factory, Kanpur
2.	IS 1376 : 1998	Textiles — Cotton sewing threads for aerospace purposes — Specification (<i>third revision</i>)	M/s Ordnance Parachute Factory, Kanpur
3.	IS 3449:1984	Specification for cotton webbing for parachutes (<i>second revision</i>)	M/s MLDC, Kanpur
4.	IS 3846:1984	Specification for rot-proofed cotton tapes for aerospace purposes (<i>first revision</i>)	M/s MLDC, Kanpur
5.	IS 6349:1981	Specification for tape, nylon, tubular for aerospace applications (<i>first revision</i>)	M/s ADRDE, Agra
6.	IS 4726:1984	Specification for light weight nylon fabric for parachutes	M/s ADRDE, Agra

Committee DECIDED that the inputs/comments for the allocated standards shall be provided by the above members within 30 days. Accordingly, BIS shall prepare the draft revision of these standards in consultation with ADRDE, Agra and the same shall be issued under wide circulation for the period of 60 days for eliciting the comments from stakeholders.

Item 7 TECHNICAL WORK PROGRAMME OF THE COMMITTEE

7.1 Committee NOTED the list of published Indian standards under TXD 13 is given in **Annex 7** to the agenda.

Item 8 ANY OTHER BUSINESS

8.1 Shri Prasanta Kumar Mallik from ADRDE has informed the committee regarding the formulation of new Indian standard on Tapes used in Aircraft arresting barrier system. Committee decided that the ADRDE shall provide the inputs regarding the same to BIS and shall be placed in the next sectional committee meeting for deliberation.