# *For BIS Use Only*

**BUREAU OF INDIAN STANDARDS**

(New Delhi)

**AGENDA**

# Technical Textiles for Mobiltech Applications 11th Meeting

# Sectional Committee, TXD 38

|  |  |  |
| --- | --- | --- |
| **Date/Day** | **Time** | **Venue** |
| 29th November 2024(Friday) | 1100 h | Through Video Conferencing |

**Chairman:** Dr M S Parmar, **Member Secretary:** Ms. Shikha Yadav

Director (Labs), NITRAScientist B, BIS

# Item 0 WELCOME AND INTRODUCTORY REMARKS BY THE CHAIRMAN

# Item 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

**1.1** The minutes of the 10th meeting of the committee held on 30th August 2024 (Friday) were circulated vide BIS DG letter No. TXD 38/A2.10 dated 17 September 2024.

 No comments were received.

**1.1.1**  The Committee may **APPROVE** the minutes as circulated.

# Item 2 COMPOSITION AND SCOPE OF TXD 38

**2.1** The present composition and scope of TXD 38 are given in **Annex 1 (Pages 4 to 5).**

**2.1.1** The committee may **NOTE and REVIEW.**

**Item 3 ISSUES ARISING OUT OF THE PREVIOUS MEETING**

**3.1** A summary of actions taken on the various decisions of the 10th meeting of TXD 38 is given in **Annex 2 (Page 6).**

**3.1.1** The committee may **NOTE.**

**Item 4 FORMULATION OF INDIAN STANDARDS ON NEW SUBJECTS**

**4.1** In the 10th meeting of TXD 38 held on 30th August 2024, the committee scrutinized the inputs received from SRF Ltd, Gurugram, and MRF Ltd. Chennai on the new subject ‘Polyester Tyre Cords’. The committee requested Shri Jeevan Prakash, SRF Limited, Gurugram, and Shri Baiju Mani, MRF Limited, Chennai, and Shri Veeresh M Hiremath, Century Enka Limited, Bharuch to provide inputs on the working draft of polyester tyre cord.

The inputs so received from Century Enka Limited, Bharuch (Shri Veeresh M Hiremath), MRF Limited, Chennai (Shri Baiju Mani), and SRF Limited (Shri Jeevan Prakash) are given in **Annex 3, 4, and 5** respectively (**attached separately**).

**4.1.1** The committee may **DECIDE.**

**4.1.2** As per the directions of the competent authority, the working group should be formed for the effective and expeditious preparation of P-drafts on the new work item proposals. In view of the above, the following list of members has been proposed based on their active contribution and valuable technical inputs on “Polyester Tyre Cords” during our recent committee meetings.

Working group name - **Polyester Tyre Cords**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Organisation** | **Member Name** |
| **1.** | NITRA, Ghaziabad |  Dr. Neha Kapil (Convenor) |
| **2.** | SRF Limited, Gurugram | Shri Jeevan Prakash |
| **3.** | MRF Limited, Chennai | Shri Baiju Mani |
| **4.** | Century Enka Limited, Pune | Shri Veeresh M Hiremath  |
| **5.** | Kusumgar Corporates Private Limited, Vapi  | Shri Munendra Singh |
| **6.** | Bureau of Indian Standards, New Delhi | Ms. Shikha Yadav |

**4.1.2** The committee may **DECIDE.**

**4.3** In the 10th meeting of TXD 38 held on 30th August 2024, the committee scrutinized the inputs received from Dr Neha Kapil, Principal Scientific Officer, NITRA to formulate an Indian standard on “Textiles - Jute-Based Roofliner used in the automobile for acoustic purposes” as given in **Annex 6** (**Pages 7 - 14**). The committee decided that NITRA shall review the existing draft and provide the revised draft with suggested technical inputs to BIS.

The technical inputs are still awaited.

**4.3.1** The committee may **DECIDE.**

**Item 5 Research and Development project**

**5.1** In the 8th sectional committee meeting of TXD 38, the ToR (Term of Reference) for the subject "Automotive Headliners" was finalized by the committee. The evaluation and selection of the R&D project was done as per the Quality and Cost Based Selection (QCBS) method (Rule 192, GFR 2017), and the project was assigned to Dr. Neha Kapil, Principal Scientific Officer NITRA, Ghaziabad.

**5.1.1** The duration of the Research and Development project was 4 months, However, the Principal Investigator requested a two-month extension, citing the reasons outlined in **Annex E** (**attached separately).**

The mid-term progress report and related documents of fund utilization were forwarded to the chairperson and all committee members for their approval via email dated 25 September, 2024 with the subject “**R&D project 'Headliners for Automobiles' progress report TXD 38 for approval**” and hence the second installment fund was released with an extension of two months for the R&D project "Automotive Headliners".

**5.1.2** The committee may **NOTE.**

**5.1.3** The completion date for this Research and Development project **'Headliners for Automobiles'** is scheduled for December 4, 2024. The PI is requested to submit a pre-standardization report, final progress report with fund utilization certificate, and all the deliverables as per the Terms of Reference given in **Annex 7** (**Pages 15 - 19**) for the R&D Projects (TXD 38, Technical Textiles for Mobiltech Applications Sectional Committee**)** on or before4th December, 2024**.**

The details of deviations from the Terms of Reference are given in **Annex 8** (**Pages 20 - 21**) in the Research and Development activities from the Terms of Reference.

**5.1.4** The committee may **DECIDE.**

**Item 6 DATE AND PLACE OF NEXT MEETING**

**Item 7 ANY OTHER BUSINESS**

**ANNEX 1**

(*Item* 2.1)

**Scope & Composition of Technical Textiles for Mobiletech Applications Sectional Committee, TXD 38**

**Scope:** To formulate Indian Standards for terminology, testing and specification for technical textiles for mobile-tech applications such as automobiles, railways, ships, aircraft etc.

 **Meeting Held Date**

 8th meeting 16th Nov 2023 through WebEx video conference

 9th Meeting 22nd May 2024 through WebEx video conference

10th meeting 30th Aug 2024 through WebEx video conference

|  |  |  |  |
| --- | --- | --- | --- |
| **S.L.****No** | **Organization represented** | **Name of representative****Principal/Alternate** | **ATTENDANCE** |
| **1.** | Chairperson | Dr M S ParmarNorthern India Textile Research Association, Ghaziabad | **3/3** |
| **2.** | Arvind Limited, Ahmedabad | Ms. Mamtha Chaudhary(Shri Pabitra Sahoo) | **1/3** |
| **3.** | Autoliv India Ltd, Mysore | Shri Boobalan N**(**Shri Rahul Guglani**)** | **3/3** |
| **4.** | Autotech Nonwovens Private Limited, Surat | Shri Sanjeev Saxena(Shri Punit Sirohia) | **2/3** |
| **5.** | Century Enka Limited, Pune | Shri Veeresh M Hiremath(Shri Alok Updhyay ) | **2/3** |
| **6.** | Consumer VOICE, New Delhi | Shri M A U Khan(Shri B K Mukhopadhyay) | **2/3** |
| **7.** | Federation of Indian Chamber of Commerce & Industry, New Delhi | Shri Tushar Patel(Shri A R Rajesh) | **3/3** |
| **8.** | ICAR- Central Institute for Research on Cotton Technology, Mumbai | Dr G Krishna Prasad(Dr A Arputharaj) | **2/3** |
| **9.** | Indian Technical Textile Association, Mumbai | Dr Anup Rakshit(Shri Ankit Desai) | **1/3** |
|  **10.** | Kusumgar Corporates Pvt Ltd, Mumbai | Shri Siddharth Y Kusumgar(Shri Munendra Singh) | **3/3** |
| **11.** | MRF Limited, Chennai | Ms. P. Indumathy(Shri Baiju Mani) | **2/3** |
| **12.** | Northern India Textile Research Association, Ghaziabad | Dr Neha Kapil | **3/3** |
| **13.** | Office of the Textile Commissioner, Mumbai  | Shri Humayun K(Shri Ajay Pandit) | **2/3** |
| **14.** |  RFM Automotives, Binola, Haryana | Shri H K Dua(Shri Anurag Gupta) | **3/3** |
| **15.** | Railway Design & Standards Organization, Lucknow | Nomination Awaited | **--** |
| **16.** | Sanrhea Technical Textiles Limited, Kalol, Gandhinagar, Gujrat | Shri Mahendra Singh Hada(Shri Bhavesh B Shah) | **3/3** |
| **17.** | S G S Limited, Gurugram | Shri Dr. Karthikeyan K.(Shri Dinesh Sivabalan) | **3/3** |
| **18.** | SRF Limited, Gurugram | Shri Bharat kumar(Shri Jeevan Prakash) | **3/3** |
| **19.** | Supreme Nonwoven, Mumbai | Shri Punit Gupta(Shri C K Jain) | **2/3** |
| **20.** | Testtex India Laboratories P Ltd, Mumbai | Smt. Meeta Shingala | **3/3** |
| **21.** | The Synthetic & Art Silk Mills Research Association, Mumbai  | Shri Sanjay Saini(Shri Premnath Surwase) | **3/3** |

**ANNEX 2**

(*Item* 3.1)

**SUMMARY OF ACTIONS TAKEN ON THE MINUTES OF THE 9th MEETING OF TXD 38**

|  |  |  |
| --- | --- | --- |
| **Item No.** | **Decision** | **Action taken** |
| **2.1** | Changes in scope and composition of TXD 38 | The updated scope and composition are given inAnnex 1. |
| **4.** | **FORMULATION OF INDIAN STANDARDS ON NEW SUBJECTS**  |  |
| **4.1** | Polyester Tyre Cord   | Coming up for discussion under Item No. 4.1 |
| **4.2** | Automotive Seat Belt Webbing | Subject Dropped |
| **4.3** | Textiles - Jute-Based Roofliner used in the automobile for acoustic purposes | Coming up for discussion under Item No. 4.3 |
| **6** | **ANY OTHER BUSINESS** “P1-Panel for review of Indian standard under TXD 38” | Dissolved |

**Annex 6**

(Item 4.3)

*Preliminary Draft on*

TEXTILES — JUTE-BASED ROOFLINER USED

IN THE AUTOMOBILE FOR

ACOUSTIC PURPOSES— SPECIFICATION

**1 SCOPE**

* 1. This standard prescribes the acoustic requirements of the jute-based roofliner material to be used for automobiles.

**1.2** This standard covers moulded material to be used for automotive roof liner.

* 1. This standard does not specify the color of the roofliner.

**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:

**Standard No. Title**

ASTM D6242-98(2004) Standard Test Method for Mass Unit Area of Nonwoven

 Fabrics

ASTM D5736-95(2001) Standard Test Method for Thickness of High Loft Nonwoven Fabrics (Withdrawn 2008)

ASTM D5035-11(2019) Standard Test Method for Breaking Force and Elongation of

 Textile Fabrics (Strip Method)

ISO 10534 Determination of sound absorption coefficient and

 impedance in impedance tubes

ASTM E2611-19Standard Test Method for Normal Incidence

 Determination of Porous Material Acoustical Properties

 Based on the Transfer Matrix Method

FMVSS 302 Flammability of Automotive Materials

ISO 11339 adhesive determination of field strength of bonded

 assemblies

1. **TERMINOLOGY**
	1. **Nonwoven:** Nonwoven fabrics are broadly defined as sheet or web structures bonded together by entangling fiber or filaments (and by perforating films) mechanically, thermally or chemically. They are flat or tufted porous sheets that are made directly from separate fibres, molten plastic or plastic film.
	2. **Composite:** A realistic model arrangement of materials used in the finished product. A composite material (also called a composition material or shortened to composite, which is the common name) is a material which is produced from two or more constituent materials.
	3. **Acoustic:** relating to sound or the sense of hearing.
	4. **Insulation:** the act of covering something to stop head, sound or electricity from escaping or entering.
	5. **Longitudinal direction and cross direction:** longitudinal direction means the length of the automobile between front and rear and cross direction means the width of the automobile between the right side and left side.
2. **MANUFACTURE AND FINISH**
	1. The composite is produced from the Jute-PP-based Nonwoven fabric for automotive acoustic properties.
	2. For the development of nonwoven sheets, around 50% Jute and around 50% polypropylene fibre may be used. Jute fibres of approximately 6-10 Denier with a cut length of 64-78 mm, density of around 1.5g/cm3 with a tenacity of 30 Cn/tex may be used. The Polypropylene fibres of 3.8-4.0 Denier fineness with a density of around 0.90–0.91 g/cm3 with a tenacity of 35Cn/tex. were used. Punch density may be 190-200 punches/cm2.The thickness of ready jute PP nonwoven sheet may be 4 to 5 mm and the mass ranges between 1200-1500 g/m2.
	3. **Freedom from Defects**

 The roof liner shall not have any defect, such as a remarkable sheer, tear, stain, spot and/ or wrinkle on the base material and skin surface. It shall be free from any other defect which may significantly mark the appearance.

1. **GENERAL CONDITION OF THE TEST**
	1. **Standard condition of the test piece.**

The standard condition in the test room shall be subject to standard atmospheric conditions for testing by setting at 23 ± 20 C in temperature and 50 ± 5% in relative humidity respectively. **As the test specimens are under standard atmospheric conditions, they should be left for more than 24 hours before being tested.**

* 1. **Selection and cutting of the test specimens**

**The specimens shall be selected from the flat portion of the roof liners in a designated shape. Minimum 03 test specimens shall be selected and cut from the sample, The size and shape of the specimens shall be as per the specific requirement of the test method.**

1. **REQUIREMENTS**
	1. The roof liner shall conform to the requirements given in Table 1.
	2. If in order to illustrate or specify the indeterminable characteristics, such as general appearance, feel, and texture of the roof liner (face), a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respect.
	3. The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.
2. **MARKING**

Each roof liner shall be marked with the following:

1. Name and Model of the vehicle
2. Length and width;

c) Manufacturer’s name, initials, or trade-mark; and (as per buyer requirement)

d) Any other information required by the law in force and/or by the buyers.

**Table 1- Requirements of the roof liners used in the interiors of the automobile for acoustic purpose**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **Characteristic** | **Requirement** | **Test Method** |
|  | Appearance  | No sheer, Tear spot or crease on the skin or base material | Visual  |
|  | Identification of Material  | Jute -50%, PP- 50% | IS 667 |
|  | Mass, g/m2, *Min* | 800 | ASTM D 5736 |
|  | Tensile Strength, *Min* | 450 | ASTM D 5035 |
|  | Sound Absorption Coefficient (SAC) ,*Min* |  95% | ISO 10534 |
|  | Sound Transmission Loss (STL), ,*Min* | 250-1000Hz: average 9dB or more 1000-2000 Hz: average15dB or more | ISO 10534 |
|  | Horizontal Burning Rate, Max  | 80 mm/min  | FMVSS 302  |
|  | Areal Density, *Min* | 750 | ASTM D 6242 |
|  | Thickness, mm | 5.5- 6.5 | ASTM D 5736 |
|  | Hot-Cold repetition resistance  | No deformation, discolouration or wrinkle  | Appendix -1 |
|  | Dimensional change by heating,% | ± 0.20 or more (for both length/width | Appendix -2 |
|  | Peel strength of Bonded assemblies T-peel test, kN/m | 1.0 or more (both room temperature and after cycles test ) | ISO 11339 |

1. **PACKAGING**

The roof liners shall be packed in the box, as required by the buyer.

1. **SAMPLING AND CRITERIA FOR CONFORMITY**
	1. **Lot**

The number of roof liners of the same type and composition and constructional particulars delivered to a buyer against one dispatch note shall constitute a lot.

* 1. The number of roof liners to be selected at random shall be according to columns 2 and 3 of Table 2. To ensure the randomness of the selection, IS 4905: 2015/ISO 24153: 2009 may be followed.
	2. **Number of Tests and Criteria for Conformity**
		1. The number of pieces to be selected for major flaws shall be in accordance with column 3 of Table 2. For constructional details, such as thickness, mass in g/m2, length, width and finish, the number of pieces selected shall be in accordance with column 5 of Table 2. For all other tests, the number of pieces selected shall be as given in column 6 of Table 2.
		2. All the samples selected from the lot shall be visually examined for major flaws and tested for all other requirements as specified in **4.3** and Table 1. A sample shall be declared defective if it contains one or more major flaws or does not meet any of the requirements specified in Table 1. The lot shall be declared conforming to the requirements of this standard if the total number of defective pieces does not exceed the value given in column 4 of Table 2.

**Table 2- Sample Size**

(*Clauses* 7.2, 7.3.1, *and* 7.3.2)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl No. | Lot Size | Sample Size | Permissible Number of Non-conforming Pieces | Sub-sample Size | Sub-sample Size |
| (1) | (2) | (3) | (4) | (5) | (6) |
| i) | Upto 50 | 5 | 0 | 3 | 2 |
| ii) | 51 to 150 | 8 | 0 | 5 | 3 |
| iii) | 151 to 300 | 13 | 1 | 5 | 3 |
| iv) | 301 to 500 | 20 | 1 | 8 | 5 |
| v) | 501 to 1 000 | 32 | 3 | 10 | 7 |
| vi) | 1 001 and above | 50 | 3 | 10 | 7 |

**APPENDIX -1**

**HOT COLD REPETITION RESISTANCE TEST**

Select and cut three test pieces with the size of 250 mm x 250 mm and put the back of the test species in the thermos-hydrostat bath. Conduct three times of a cycle test, as mentioned below

**One Cycle**

800 C x 3h 230 C x 1h -300 C x 3h 230 C x 1h 500C \* 95% RH x 15h

 230 C x 1h

Check if any of deform, discoloration and /or wrinkle is found after the test.

**APPENDIX -2**

**DIMENSIONAL CHANGE BY HEATING**

The test 03 specimens shall be selected and cut with the size of 40mm wide and 300 mm long, a total of 06 specimens shall be cut. The length of test specimens shall be measured exactly up to 1/100 mm by a vernier caliper (L0).

The test specimens shall be horizontally placed in the thermos hygrostat bath at 850C by putting the skin surface down, and leaving it for 24 hours. Then leave it another 24 hours at room temperature.

Measure the length of the test piece (L1).

Dimension changes due to the effect of varied, heat conditions shall be calculated by the following formula for the average of 3 test specimens cut from the longitudinal direction and cross direction.

**Reporting of results :**

Round off to significant digits.

Dimension changes due to effect of varied heat condition (%)= (L1-L0)/(L0X100)

 L1 : length before the test

L0 : Length after ( 850 C, 24h RT,24 h)

**Annex 7**

(Item 5.1)

# TERMS OF REFERENCE FOR THE R&D PROJECTS

(TXD 38, Technical Textiles for Mobiltech Applications Sectional Committee)

1. **Title of the Project:** Study of quality, performance and constructional parameters of ‘Headliners for Automobiles’.

# Background

* 1. **Technical Committee:** Technical Textiles for Mobiltech Applications Sectional Committee- TXD 38 under Textile Division Council.
	2. Headliners for automobiles are materials used to provide thermal and acoustic insulation as a primary requirement within a vehicle. Headliners are designed to enhance passenger comfort by reducing heat transfer, minimizing noise from outside the vehicle, and offering thermal insulation. They are commonly positioned within the internal structure of the roof of vehicle.
	3. Headliners are manufactured by small, medium and large-scale industries, but there is no common standard among them. To keep consistent performance and quality of Headliners for automobiles, we need a research project on this topic and outcome of this project will serve as the basis for developing an Indian standard which will ensure consumer protection and safety.

# Objective:

To collect the technical data and scientific evidence for quality, performance and constructional requirement of Headliners for Automobiles from primary and secondary sources.

# Scope

* 1. Study of the available literature on Headliners but not restricted to the following:
		1. International standard and regulation,
		2. Journals and research papers,
		3. Standard operating procedures (SOPs)/guidelines of users/regulators,
		4. Studies conducted by any organization
		5. Any other published information.
	2. Collection of the database for manufacturers (small, medium and large-scale), testing infrastructure and users in the country.
	3. Collection of import and exports data, type of standards and regulation being followed by domestic/foreign manufacturers, comparative analysis of these standards and regulation.
	4. Undertake 2 visits to each of small, medium and large-scale industries, focused group discussion with (production, quality control and R &D team) manufacturer and collect the information on the following aspects :
		1. Types of raw material being used;
		2. Manufacturing process;
		3. In-process controls being exercised during manufacturing;
		4. Varieties being manufactured;
		5. Standards being followed;
		6. Testing method being used;
		7. Testing infrastructure available;
		8. Post manufacturing quality/in-house data for quality, performance and constructional parameter for all the varieties being manufactured;
		9. Sampling plan being followed;
		10. Marking and labelling of the product;
		11. Packaging;
		12. Sustainability practices [sustainable raw material, energy efficient processes and methodologies, renewable energy sources, 3Rs (Reduce, Reuse and Recycle), waste management and disposal mechanisms]
		13. Focused group discussions with teams involved in production, testing, and R&D to address quality issues, discuss challenges faced, and gather suggestions for improvement
	5. The feedback from other manufacturers (where visit is not carried out) shall be collected by circulating questionnaire through email or any other digital means.
	6. Undertake 2 visits to users and 2 visits to testing labs (both NABL accredited lab) to collect information including but not restricted to the following:

# User

1. Standards and regulations being followed;
2. Focused group discussion on quality issues, challenges being faced and suggestions if any.

# Lab

1. Standards and regulation being followed;
2. Testing methods being followed;
3. Testing infrastructure;
4. Focused group discussion on testing related issues, challenges being faced and suggestion.
	1. Collection of 4 samples each from (small, medium and large-scale manufacturer) of all varieties and generation of test data for various parameters but not restricted to the following requirements for Headliners after getting the samples tested from 2 NABL accredited labs:
		1. Dimensional stability;
		2. Flammability test;
		3. Sound and thermal insulation;
		4. Odour and smell test;
		5. Abrasion resistance;
		6. Resistance to dust and dirt;
		7. Thickness;
		8. GSM; and
		9. Constructional particulars.
	2. Collecting the users feedback on the products involving the issues/ problems being faced by them.
	3. Preparation of analytical report of the entire scope.

# Methodology:

* 1. Collect and analyse the data/information as specified in the **4.1**, **4.2** and **4.3**.
	2. Visit manufacturers, users and labs and collect data/information as specified in **4.4** and **4.6**.
	3. Collect and test the samples as specified in the **4.7**.
	4. Analyse the data/information and prepare a comprehensive project report.

# Deliverables

* 1. Comprehensive report in soft/hard form of study covering all the aspects detailed in the scope of the R & D project.
	2. Questionnaire feedback, testing report, focused group discussion report, other relevant documents and information shall be appended to the project report.

# Requirement for the CVs:

Graduate in textile technology or textile engineering or textiles chemistry or fibre science and technology or manmade fibre technology.

# Timeline and Method of Progress Review:

* 1. The duration of the project is 120 days from the date of the award of the project. The stagewise indicative timelines are as follows:

|  |  |
| --- | --- |
| **Indicative Time line** | **Method of progress** |
| 0 to 20 days | Literature review, desktop study, collection of data andinformation.The sampling plan for visit and collection of samples shall be discussed and finalized with nodal officer after literature survey and desktop research |
| 21 to 60 days | Visit to manufacturer, user, testing lab and collection ofsamples. |
| 61 to 104 days | Testing of samples (except long duration test with testing time more than 30 days) preparation and submission of first draftreport |
| 105 to 120 days | Submission of the final project report. |

1. **Support BIS will Provide:**
2. All the relevant Indian Standards/ISO Standards or any other standards required during the project will be provided by BIS.
3. Facilitate/introduction of the project/organization to relevant Industry and industry association, testing lab, institute, academia, user, regulator/ministries.
4. Facilitate testing of samples in BIS Lab/BIS Recognized Lab.

**10. Nodal Point:**

In case of queries/clarification, Contact Member Sect. TXD 38 : Shri Banothu Ranga ;

Mail: banothurenga@bis.gov.in ; Mob: 8639075790 ; Tel : 011-23238474

**Annex 8**

(Item 5.1)

**BIS HEADLINER PROJECT**

**NK**

Neha Kapil <nehakapil@nitratextile.org>

Mon, 25 Nov 2024 3:26:59 PM +0530

To

"Textiles BIS"<txd@bis.gov.in>

Cc

"Dr. Arindam Basu"<drabasu@nitratextile.org>,"drpreetisachdeva@nitratextile.org"drpreetisachdeva@nitratextile.org

Dear Ms Shikha ,

This is regarding the project "Study of quality, performance and constructional parameters of ‘Headliners for Automobiles’. There are some deviations from the proposed proposal. The deviations are as follows :

Automobile headliners are expensive and rarely replaced components in four-wheelers, typically only replaced in cases of sagging or accidental damage. The team faced significant challenges in sourcing headliners, initially encountering difficulties obtaining them from authorized workshops and dealers who were unwilling to mandate and regularize their manufacturing. This unwillingness and the challenges encountered made it impossible to adhere to the proposed sampling plan, resulting in deviations. Despite these obstacles, the team managed to arrange 08 headliner samples from different brands and segments. The details of the headliners are as follows

|  |  |  |  |
| --- | --- | --- | --- |
| **Small Segment** | **Middle Segment-suv** | **Sedan Segment** | **Large-commercial** |
| 1. Maruti- Wagon R

 | 1. Maruti – Brezza
2. Ford – EcoSport
3. Hyundai – Creta

 | 1. Maruti – Ciaz
2. Volkswegan – Virtus

 | 1. Volvo Truck
2. Sonalika Tractor

 |

After analyzing the samples for material identification, it was observed that Maruti headliners across small, medium, and large segments are made of the same material. Therefore, we considered them as one sample. In the case of commercial samples from Volvo and Sonalika tractors, these are the latest samples developed by NITRA. Consequently, we finally summed up with only four samples of passenger vehicles, each representing a different segment and brand. The samples were finally taken up for further testing are as follows

* **SMALL SEGMENT**
	1. Maruti- Wagon R

* **MIDDLE SEGMENT-SUV**
	1. Ford – EcoSport
	2. Hyundai – Creta
* **SEDAN SEGMENT**
	1. Volkswegan – Virtus

However, due to the delays in sourcing the samples, testing of the collected headliners are currently ongoing.