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'.

2. Background

2.1 Technical Committee: Technical Textiles for Mobiltech Applications Sectional Committee- TXD 38 under Textile Division Council.

2.2 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.

2.3 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.

3 Objective:

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

4 Scope

4.1 Study of the available literature on Headliners but not restricted to the following:

a) International standard and regulation,
b) Journals and research papers,
c) Standard operating procedures (SOPs)/guidelines of users/regulators,
d) Studies conducted by any organization
e) Any other published information.

4.2 Collection of the database for manufacturers (small, medium and large-scale), testing infrastructure and users in the country.

4.3 Collection of import and exports data, type of standards and regulation being followed by domestic/foreign manufacturers, comparative analysis of these standards and regulation.

4.4 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 :

a) Types of raw material being used;
b) Manufacturing process;
c) In-process controls being exercised during manufacturing;
d) Varieties being manufactured;
e) Standards being followed;
f) Testing method being used;
g) Testing infrastructure available;
h) Post manufacturing quality/in-house data for quality, performance and constructional parameter for all the varieties being manufactured;
i) Sampling plan being followed;
j) Marking and labelling of the product;
k) Packaging;
l) Sustainability practices [sustainable raw material, energy efficient processes and methodologies, renewable energy sources, 3Rs (Reduce, Reuse and Recycle), waste management and disposal mechanisms]
m) Focused group discussions with teams involved in production, testing, and R&D to address quality issues, discuss challenges faced, and gather suggestions for improvement

4.5 The feedback from other manufacturers (where visit is not carried out) shall be collected by circulating questionnaire through email or any other digital means.

4.6 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:

a) User

i) Standards and regulations being followed;
ii) Focused group discussion on quality issues, challenges being faced and suggestions if any.

b) Lab

i) Standards and regulation being followed;
ii) Testing methods being followed;
iii) Testing infrastructure;
iv) Focused group discussion on testing related issues, challenges being faced and suggestion.

4.7 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:

a) Dimensional stability;
b) Flammability test;
c) Sound and thermal insulation;
d) Odour and smell test;
e) Abrasion resistance;
f) Resistance to dust and dirt;
g) Thickness;
h) GSM; and
i) Constructional particulars.

4.8 Collecting the users feedback on the products involving the issues/ problems being faced by them.

4.9 Preparation of analytical report of the entire scope.

5 Methodology:

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

6 Deliverables

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

7 Requirement for the CVs:

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

8 Timeline and Method of Progress Review:

8.1 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 and information.

	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 of samples.
61 to 104 days	Testing of samples (except long duration test with testing time more than 30 days) preparation and submission of first draft report
105 to 120 days	Submission of the final project report.

9 Support BIS will Provide:

a) All the relevant Indian Standards/ISO Standards or any other standards required during the project will be provided by BIS.
b) Facilitate/introduction of the project/organization to relevant Industry and industry association, testing lab, institute, academia, user, regulator/ministries.
c) 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