

## **TERMS OF REFERENCE FOR THE R&D PROJECT**

**1. Title of the Project:** Study of Constructional particulars and performance requirements for handloom cotton voile.

### **2. Background**

Handloom cotton voile is a lightweight, breathable, and sheer fabric known for its soft and delicate texture. It's often used for making comfortable, flowy clothing, curtains, and other lightweight textiles.

The existing standard prescribes constructional particulars and other requirements for handloom cotton voile having minimum mass of 48 g/m<sup>2</sup> and 42 g/m<sup>2</sup>. The existing standard specifies the constructional particulars like ends/dm, picks/dm, gsm and dimension of handloom cotton voile. The existing standard also includes other important performance requirements like dimensional change, scouring loss, colour fastness to light, and washing. In order to take holistic view on the subject and to revise an indigenous Indian Standard, a detailed study of already developed specification for handloom cotton voile is required to be conducted to incorporate additional varieties.

This standard specifies the requirements for two varieties of handloom cotton voile. The outcome of research and development will provide additional varieties along with their respective requirements. The revision of IS 12388 will be beneficial for the handloom industries, as it will enhance awareness and earnings of handloom weavers.

### **3. Objective**

The project aims to generate and collect technical data for constructional particulars like ends/dm, picks/dm, gsm and dimension of handloom cotton voile and important performance requirements like dimensional change, scouring loss, colour fastness to light, and washing.

### **4. Scope**

**4.1** Undertake study and analyse of the existing literature which includes but not restricted to the followings:

- a) Books and magazines
- b) National/International standards and regulation
- c) Journals and research papers
- d) Standard operating procedures (SOPs)/ instructions/ guidelines issued by ministry/ regulatory body concerned
- e) Studies/research conducted by any organization
- f) Any other relevant published information

**4.2** Collection of data for manufacturing base, testing infrastructure and users in the country.

**4.3** Collection of the import and export data, type of standards and technical regulations being followed by domestic/foreign manufacturers and carry out comparative analysis of these standards and technical regulations.

**4.4** Undertake visits to 5 manufacturers to collect the data/information for the following:

- a) types of raw material being used
- b) manufacturing processes
- c) in process quality checks being exercised during manufacturing
- d) varieties being manufactured
- e) Standards being followed
- f) in process test facilities
- g) post manufacturing quality checks/ in-house data
- h) marking and labelling
- i) packaging and storage conditions
- j) sustainability practices [energy consumption, renewable energy sources, sustainable practices, 3Rs (Reuse, Reduce and Recycle), waste management and disposal mechanisms, carbon footprints]
- k) Focused group discussions with teams involved in production, testing, and R&D to address quality issues, discuss challenges faced, and gather suggestions for improvement
- l) The feedback from other manufacturers (where visit is not carried out) shall be collected by circulating suitable questionnaire covering above information through email or any other digital means.

**4.5** Undertake 4 visits to users and 2 visits to testing labs to collect data/ 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 regulations being followed
  - ii) Test methods being followed
  - iii) Testing infrastructure
  - iv) Focused group discussion on testing related issues, challenges being faced and suggestion

**4.5.1** The feedback from other users and labs where visit is not carried out shall be obtained through suitable questionnaire covering above information.

**4.6** Collect 2 samples from each manufacturer and generate data after testing the product for constructional particulars like ends/dm, picks/dm, gsm and dimension of handloom cotton voile

and important performance requirements like dimensional change, scouring loss, colour fastness to light, and washing.

**4.7** Preparation of comprehensive project report on entire scope covered above.

## **5. Research Methodology**

**5.1** Collect and analyse the data/information as specified in the scope [4(a), (b) and (c)].

**5.2** Visit manufacturers, users and labs to collect data/information as specified in the scope [4(d) and (e)].

**5.3** Collect and test the samples as specified in the scope 4(f).

**5.4** Analysis the data/information and prepare a comprehensive project report.

## **6. Deliverables**

**6.1** Comprehensive report in both digital and hard copy formats of study on covering all the aspects mentioned in scope.

**6.2** Questionnaire feedback, testing report, focussed group discussion report, other relevant documents and information shall be appended to the project report.

## **7. Requirement for the CVs**

Bachelor Degree OR Diploma in Textile/ Handloom/ Khadi

## **8. Timeline and Method of Progress Review:**

The timeline for the project shall be 180 days from the date of award of project, the stage wise timeline for execution of project shall be as follows:

<b>No. of Days (Timeline)</b>	<b>Task/Status of work to be done</b>
Up to 30 days	Literature review, desktop study and collection of data/information Note - The sampling plan for visit and collection of samples shall be discussed and finalized with nodal officer after literature survey and desktop research.
Up to 90 days	Mid Term Review (An interim report shall be provided by the proposer) Visit to manufacturers, users, testing labs and collection of samples
Up to 135 days	Testing of samples, preparation and submission of first draft report
Up to 180 days	Submission of final report of the project

## **9. Support BIS will Provide**

BIS will provide access to latest available editions of Indian standards and/ or international standards relevant to the project, on request.

## **10. Nodal Point**

Shri Swapnil, Sc-B/AD & Member Secretary, TXD 08

Email: [txd@bis.gov.in](mailto:txd@bis.gov.in)/[swapnil@bis.gov.in](mailto:swapnil@bis.gov.in)