TERMS OF REFERENCE FOR THE R&D PROJECT
Mechanical Engineering Department
Sewing Machine Sectional Committee, MED 29

1. Title: To Study and establish various performance safety requirements and parameters, test methods and acceptance criteria for Overlock Sewing Machine.

2. Background:

2.1 An overlock sewing machine, also commonly known as a 'serger', is a specialized type of sewing machine that is designed to finish the edges of fabric and sew seams simultaneously. It is particularly useful for preventing fraying and creating a clean, professional-looking edge on garments or other sewn items.

2.2 The objective is to systematically gather comprehensive and pertinent data and information on overlock sewing machines. This involves conducting extensive research, collating technical specifications, performance metrics, safety features, and user feedback. The aim is to create a thorough repository of knowledge that encompasses the design, functionality, efficiency, safety, maintenance requirements, and any associated advantages or limitations of an overlock sewing machine.

3. Scope:

a) Study the available literature like national and international standards such as ASTM, EN, ISO etc. available on the subject, research papers, any study conducted by other organizations, companies' brochures. Identify the grades, their chemical, electrical and physical properties and any other requirements which can be included in the standard.
b) Collect data of the manufacturing base of the product.
c) Visit the manufacturers of the product and get the information on the following:
    i. Types of Raw material used
    ii. Varieties/grades manufactured
    iii. Quality parameters (chemical, electrical and mechanical properties) of different grades
    iv. Manufacturing process,
    v. Safety requirements
    vi. In process quality checks
    vii. Test facilities and test methods used
    viii. Marking and labelling being done

ix. Packaging requirement
x. Tests being undertaken
xi. Testing facilities in the country (including independent labs and manufacturers' test labs)
xii. Addressing sustainability in processes such as using energy efficient processes, using renewable energy sources, recycling and reuse.

4. Methodology:

a) Study the literature and analyze the findings.
b) Visit the manufacturing units (small and large scale) and
    a. Observe the manufacturing process,
    b. Examine in-process control measures,
    c. Conduct focused group discussion with quality personnel
    d. Collect the data as mentioned in the scope through a questionnaire.
    e. Draw samples of various grades and get it tested in laboratories having testing facilities.
c) Visit laboratories and make report on
    a. Test equipment required and parameters for which being used
    b. Test method being used
    c. Visit the users of the product and collect data as mentioned in the scope through a questionnaire.
    d. Analyze the data and test reports from diverse sources and include the same in the project report.

5. Sampling plan:

5.1 Two manufacturers each from large and MSME shall be visited.

5.2 Three samples for each grade shall be tested.

5.3 Two users of the product shall be visited.

5.4 Two laboratories, preferably one in the government sector and one in the private sector shall be visited.

6. Deliverables:

6.1 Final project report, in hard copy format as well as in soft copy, covering all aspects mentioned in the scope.

6.2 Questionnaire, discussion, visit reports, test reports to be appended with the final project report.

7. Timelines

The duration of the project is 6 5 months from the date of award of the project. The proposed indicative timeline stage-wise is given below:

Sl. No.	**Stage**	**Time from date of award of project (cumulative)**
1	Literature review and identification of manufacturing base, testing laboratories, user/user industry, and discussion with BIS for the finalization of sampling plan	1 month
2	Visit to manufacturers, testing laboratories, users and importers and exporters and data collection	4 months
3	Preparation and submission of first draft report to BIS	5 months
4	Submission of final project report	6 months

8. Support BIS will Provide:

- BIS will provide access to the latest available editions of Indian standards and/ or international standards relevant to the project, on request.
- Product manuals on overlock sewing Machines.
- Details of BIS and BIS recognized laboratories for overlock sewing Machines.

9. Relevant sectional committee and Nodal officer from BIS

Sectional committee :

- MED 29 –Sewing Machine Sectional Committee

Nodal officer :

- Mr. Shubham Tiwari, Scientist D/ Joint Director – Member Secretary MED 29,
- Email : med@bis.gov.in