

**WOOL FELT - PROOFED****1. GENERAL :**

This specification governs the quality of dry and clean general purpose Wool Felt-Proofed for resistance to insect, moth and rot with appropriate proofing agent and specifies the requirements for eight varieties of felt i.e. extra hard, hard, extra firm, firm, medium firm, medium, soft and extra soft. BHEL order shall clearly state the varieties to be supplied.

Note :

The proofing shall be carried out using HDUD or PC PL in accordance with the normal process given in IS : 11662 – 1986 (R.A 2002) : Preservative Treatment for Textiles.

2. APPLICATION :

Used for sealing of oil in gear cases and lubricating bearings in traction machines and for general packing and lining purposes.

3. COMPLIANCE WITH NATIONAL STANDARDS :

The material shall comply, with the requirements of the following National Standard and also meet the requirements of this specification.

IS : 1719 – 2000 : Pressed Wool Felts
With additional requirement of Oil Retention specified at clause 7.2.4

4. DIMENSIONS AND TOLERANCES :

Thickness, width and length of the felt sheet shall be as stated on our order.

4.1 Tolerance on Thickness and Density :

Thickness mm	Tolerance on Thickness & Density \pm Percent	Tolerance on individual value of thickness \pm Percent
4 and below	20	25
4.1 to 10	15	20
Above 10	10	15

Revisions :

Cl: 34.1.13 of MOM of MRC- E

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Note: The minimum tolerance of ± 0.5 mm shall be permitted on the individual value of thickness .
Standard thicknesses are 1.5, 3, 5, 6, 8, 10, 13, 16, 19, 22, 25, 30 and 40 mm .

4.2 Width & Tolerance :

Standard widths are 1000, 1500 mm with tolerance ± 10 mm .

4.3 Length and Tolerance :

Length Shall be as Specified on our order. No negative tolerance is permitted on length .

5. FINISH :

The soft variety shall be hardened finish and other varieties shall have milled finish . The edges of the felt shall be uniform .

6. TEST SAMPLE :

Two sheets of required thickness in size 300 x 300 mm shall be supplied for testing and approval purposes .

7. PROPERTIES :

When tested in accordance with the relevant clauses as mentioned in IS:1719 – 2000 the test samples shall show the following properties .

7.1 Physical :

7.1.1. Density :

Variety	g/cm^3
Extra Hard	0.60 \hat{I}
Hard	0.46 \hat{I}
Extra firm	0.40
Firm	0.34
Medium firm	0.27
Medium	0.23
Soft	0.18
Extra soft	0.15

Note: Tolerance on density as given in cl .4 .1 .

**7.2 Chemical :****7.2.1 pH of Aqueous Extract : 5 to 8****7.2.2 Ash Content : 4% maximum****7.2.3 Sulphate Content : 1% maximum****7.2.4 Oil Retention Test : 100% minimum****7.3 Mechanical****7.3.1 Tensile Strength**

Variety	N / mm ² , Min.
Extra Hard	4.1 \hat{I}
Hard	3.4 \hat{I}
Extra Firm	2.9
Firm	2.4
Medium firm	1.5
Medium	1.4
Soft	0.9
Extra soft	Not applicable.

7.3.2 Splitting Resistance (Above 6 mm Thickness in firm and Medium Varieties) :

Variety	N / mm ² , Min.
Extra Hard	75 \hat{I}
Hard	65 \hat{I}
Extra Firm	55
Firm	40
Medium firm	26
Medium	22

8. TYPE TEST :**8.1 Non – Wool Content : 5% maximum**

**10. TEST CERTIFICATES :**

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment, giving the following information :

AA 23121 (Rev.No.03) : Wool Felt – Proofed.

BHEL Order No.

Manufacturer's / Supplier's name.

Batch / Lot No.

Trade mark, if any.

Quantity supplied.

Test results for clause 4, 7 & 8

11. PACKING AND MARKING :

Felts of bigger sizes (of 14 M length) shall be rolled individually. In case of felts of smaller sizes (of 4 M length) ; 3 pieces shall be rolled together. The rolls shall be wrapped with one layer of polyethylene film of minimum 0.04 mm thickness and shall then be covered by heavy cloth or Hessian to form a bale, tightly stitched with jute twine; the distance between the adjacent stitches shall be not more than 51 mm.

Each package shall be marked with the following information

AA 23121 : Wool Felt-Proofed.

BHEL Order No.

Batch/Lot No.

Manufacturer's and / or supplier's Name and Grade.

Thickness, Width & Length.

Variety.

Quantity supplied.

12. REJECTION AND REPLACEMENT

If the material does not comply with the requirements of this specification during receipt inspection at BHEL or if any defect is found during further processing of the material, BHEL reserves the right to reject the whole consignment notwithstanding any previous certification of satisfactory testing and / or inspection and the supplier shall replace the material free of cost.

13 REFFERED STANDARDS (Latest Publication including Amendments)

IS : 1719

IS : 11662