

1086069/2022/HEP-SW/12985



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12985 REV.00

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SPECIFICATION OF ELASTOMER INSULATING MATS FOR ELECTRICAL PURPOSES

OBJECTIVE: This Product Standard covers specification of Insulating Mats upto 33kv HT switchgear application.

A.1 Technical Parameters for Item-01- 11KV Insulating Mat

S/No	Parameters	Value	Vendor Compliance
1	Nominal Voltage	11KV	Complied/Not Complied
2	Thickness	2.5 mm	Complied/Not Complied
3	Piece Length	2 Mtr	Complied/Not Complied
4	Width	1 Mtr	Complied/Not Complied
5	Applicable Standard	IS 15652: 2006	Complied/Not Complied
6	Class of Mat As per IS 15652:2006	Class B	Complied/Not Complied
7	Operating Temperature Range	-10 to 55 °C	Complied/Not Complied
8	Minimum Tensile Strength(N/MM ²)	15	Complied/Not Complied
9	Minimum Elongation (%)	250	Complied/Not Complied
10	Insulation resistance with water at 500 V	1,000,000 M Ω	Complied/Not Complied
11	Maximum Leakage Current at 11 KV	10 mA	Complied/Not Complied
12	AC Dielectric Strength	45 KV	Complied/Not Complied
13	AC Proof Voltage 1) Type Test for 3 Min. 2) Routine Test for 1 min.	22 KV	Complied/Not Complied
14	Flame Retardance	5.0 Sec	Complied/Not Complied

A.2 Technical Parameters for Item-02- 33 KV Insulating Mat

S/No	Parameters	Value	Vendor Compliance
1	Nominal Voltage	33 KV	Complied/Not Complied
2	Thickness	3.0 mm	Complied/Not Complied
3	Piece Length	4 Mtr	Complied/Not Complied
4	Width	1 Mtr	Complied/Not Complied
5	Applicable Standard	IS 15652: 2006	Complied/Not Complied
6	Class of Mat As per IS 15652:2006	Class C	Complied/Not Complied
7	Operating Temperature Range	-10 to 55 °C	Complied/Not Complied
8	Minimum Tensile Strength(N/MM ²)	15	Complied/Not Complied
9	Minimum Elongation (%)	250	Complied/Not Complied
10	Insulation resistance with water at 500 V	1,000,000 M Ω	Complied/Not Complied
11	Maximum Leakage Current at 11 KV	10 mA	Complied/Not Complied
12	AC Dielectric Strength	65 KV	Complied/Not Complied
13	AC Proof Voltage	36 KV for 1 min	Complied/Not Complied
14	Flame Retardance	5.0 Sec	Complied/Not Complied

REV.	PRINTS TO:-	APPROVED –	DATE
ALTD.		MHN	
APPD.	SWE-CEG SWE-PDG SWE-TDR	PREPARED	ISSUED
DATE.	1 1 1	SKS	NM
			06.03.2020

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B. Other Salient Points to be complied by bidder for Item-01 & 02

S/No	Parameters	Value	Vendor Compliance
1	Effect of Acid as per IS 15652 clause 8.5 and conditioning procedure described in C-6 (Tensile Strength Elongation)	(%age change from original)	Vendor to provide test reports as per IS along with offer and establish applicability of test reports inline with requirements mentioned in IS.
2	Effect of Alkali as per IS 15652 clause 8.5 and conditioning procedure described in C-6 (Tensile Strength Elongation)		
3	Effect of Oil as per IS 15652 clause 8.5 and conditioning procedure described in C-6 (Tensile Strength Elongation)		
4	Effect of Diesel as per IS 15652 clause 8.5 and conditioning procedure described in C-6 (Tensile Strength Elongation)		
5	Ageing Properties at 70±1°C for 168 hrs. (Tensile Strength Elongation (%))		
6	MAT shall be ISI marked		Complied/Not Complied
7	Mats shall be free from cracks, blisters, cuts, voids etc		Complied/Not Complied
8	One surface shall be Anti-Skid, surface shall have small aberration (rough surface without edges) to avoid slippery effect		Complied/Not Complied
9	Other surface shall be plane finished slip resistant		Complied/Not Complied
10	Mat should be marked at every meter with ISI mark, Class, Lot no. and manufacturers identity		Complied/Not Complied
11	Vendor to specify Insulating mat shall be pastable type, to be fixed permanently on the front/rear side of the switchgear panels.		Complied/Not Complied
12	Supply to accompany additional sample pieces for tests called in IS.		Complied/Not Complied
13	Vendor to give quality plan along-with offer clearly mentioning the routine tests to be conducted before dispatch.		Complied/Not Complied
14	Vendor to enclose 1 set of type tests (as per IS) along-with the offer. Type test reports from NABL accredited is only acceptable. Further 2 sets of all routine test reports (as per IS) shall be submitted along-with each supplied lot of items.		Complied/Not Complied
15	Colour shall be informed at the time of order placement. Vendor shall take conformation of color from BHEL before mass manufacturing		Complied/Not Complied

C. Packing and Shipping

Mat shall be suitably packed so that no damage is done during transport. Suitable separation between pieces/rolls, if needed to be ensured by vendor.

D. ACCEPTANCE CRITERIA :

- 1) Visual checks for cracks and surface finish.
- 2) Availability of all routine test certificates as per IS.

E. PERFORMANCE GUARANTEE :

The supplier shall guarantee satisfactory performance of the Mats for 63 months from the date of supply.