 An ISO 9001:2015 Company	INSULATION SYSTEMS ENGINEERING	IN.SK. 46121
	BHEL BHOPAL	Rev. No.: 00
	ADDITIONAL EVALUATION PARAMETERS FOR SEMI CONDUCTING TAPE TO IN. SK. 46089	Rev. Dt.: 13/08/2022
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Semi conducting tape to IN. SK. 46089 is used for End Corona Protection in High Voltage A.C. machine stator coils with VPI technology.

This specification gives the details of evaluation parameters for Semi conducting tape in addition to parameters mentioned in IN. SK. 46089.


Conditions for technical acceptance of the material (In addition to IN. SK. 46089)

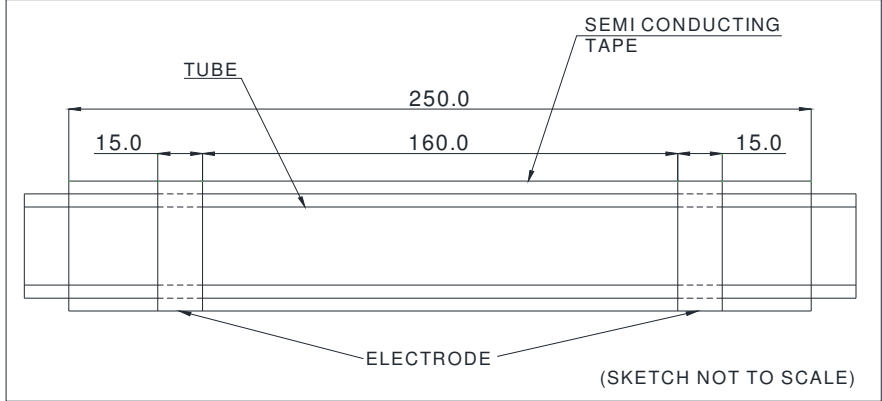
The following evaluation is to be conducted on first supply of each supplier/ trial/ development orders or as and when required.

Distribution:	Date of Rev.00: 13/08/2022	Name	Signature
ISE CIM MDX QFD AME	Prepared by	Abha Otti	
	Checked by	Nidhi Gupta	
	Approved by	Bishwanath Oraon	
	Issued by	Abha Otti	

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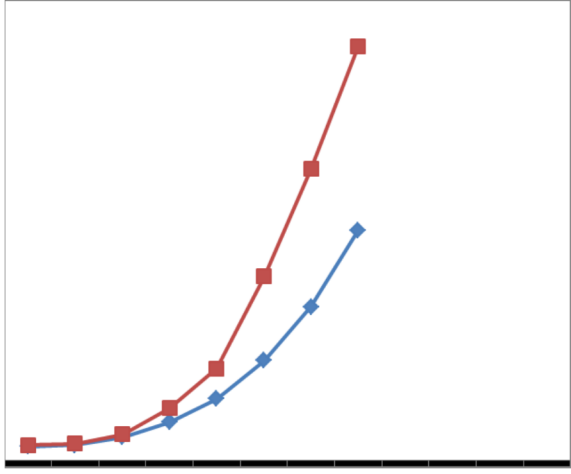
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Sl. No.	Type of Test	Desired Parameters
1.0	Lab Evaluation	
1.1	Voltage endurance test on 11 kV rated voltage sample bar(s)/coil(s) (12 kV/mm stress on insulation)	The bar(s)/coil(s) shall pass the test voltage for minimum 10 hours. No appreciable audio and visual corona shall occur during testing.
1.2	<u>High voltage test on tube:</u> One-half overlapped layer of the semi-conducting tape is applied on a phenolic cotton laminate/ glass/ fibreglass laminate tube of outer diameter approx. 40 mm and of length approx. 400 mm. This is dried in oven for about 2 hours at 50-60 °C. Aluminium foil electrodes are applied as per the arrangement shown in Figure-I. The sample is subjected to the following tests:	<p>FIGURE-I</p> 

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(a)	Voltage current measurement at 1-40 kV DC	<p>The voltage current (VI) characteristic should be similar to the symbolic graph given below.</p>  <p>X-axis – Voltage, Y-axis - Current</p>
(b)	High voltage test at 60 kV for 10 minutes between the two electrodes	<p>The sample is considered to have passed the test, if there is no flashover or tracking during the test duration and no excessive heating is observed on the surface of the sample after completion of the test.</p>

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2.0	Shop Application (Application on stator coils)	
2.1	Physical observation	Tape should be satisfactory in application. No breaking of tape, stiff and dry tape should be observed. Adequate stretchability and adhesion should be present for tightening and sticking of adjacent layers.
3.0	Routine and type testing of motor	
3.1	Routine and type testing of one motor (of rating 11 kV)	One motor (of 11 kV rating) with the subject tape applied shall be subjected to all routine and type tests as per testing plan.

After successful results in these tests, the material will be considered technically suitable.

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