



TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

FPARX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org




RP-2425-022817

ULR No.: TC538924000025453F

**TEST REPORT**

SHEET 1 of 8

<b>NAME &amp; ADDRESS OF CUSTOMER</b> M. N. Rubber Limited, Survey No. 461/Paiky 2/A Behind Suraj Packaging Taluko Muli, At. Shekhar, Surendranagar - 363 510. Gujarat	<b>TEST REPORT NO. :</b> RP-2425-022817 <b>DATE OF ISSUE :</b> 28-10-2024 <b>CUSTOMER REF. NO:</b> Letter <b>DATED :</b> 09-08-2024 <table><tr><td><b>DATE OF SAMPLE RECEIPT</b></td><td><b>DATE OF TESTING</b></td></tr><tr><td>24-08-2024</td><td>16-10-2024 to 25-10-2024</td></tr></table>	<b>DATE OF SAMPLE RECEIPT</b>	<b>DATE OF TESTING</b>	24-08-2024	16-10-2024 to 25-10-2024
<b>DATE OF SAMPLE RECEIPT</b>	<b>DATE OF TESTING</b>				
24-08-2024	16-10-2024 to 25-10-2024				
<b>SAMPLE DESCRIPTION</b> (As provided by customer) Insulating Rubber hand gloves for electrical purpose Class of gloves : Class 0 Length of glove : 360 mm Size: 8" Category : RC Material : Natural rubber Make : LEEFIST HANDCARE Identification: Electrical rubber hand gloves	<b>SAMPLE IDENTIFICATION</b> Printing:  ERDA Sample Code: ERDA 00597028				
<b>TEST DETAILS</b> As per sheet 2 of 8	<b>TEST SPECIFICATION</b> EN:60903:2003				
<b>REMARK :</b> The sample conforms to all requirements of test specification for the tests at Sr. Nos. 1 to 7 as per sheet 2 of 8.					

CHECKED BY

Note:

1. This report relates only to the particular sample received for testing in good condition at ERDA, Vadodara.
2. This report cannot be reproduced in part under any circumstances.
3. Publication of this report requires prior permission in writing from Director, ERDA.
4. This report shall not be used for any purpose such as PR brochures, propaganda, advertisement and/or legal proceedings, unless for the granted purpose.
5. Only the tests asked for by the customer have been carried out.
6. Particulars of manufacturer/supplier, given in this report are based on information supplied by the customer, along with the test request/sample. ERDA does not assume any responsibility for the correctness of the information for above mentioned Sample Under Test (SUT). ERDA will not be responsible for any changes in SUT made after the test. This test report is given as per instrument status while testing.
7. In case of any dispute, Vadodara will be the exclusive jurisdiction & shall be construed as where the cause has arisen.

Caution: ERDA is not responsible for the authenticity of photocopied or reproduced test reports.

ERDA provides support to customers for verification of the authenticity of test reports issued by ERDA within 10 years of date of issue of report.

S. A. Panchal  
APPROVED BY

TC 3716233





TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

CPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org



ULR No.: TC538924000025453F

Discipline: Electrical

Group: Insulating Materials &amp; Insulators

TEST REPORT NO. : RP-2425-022817

DATE OF ISSUE: 28-10-2024

SHEET 2 of 8

**TEST DETAILS :**

Sr. No.	Cl. No. & test specification	Particulars of tests
1	As per Cl. No. 8.2.2 of EN:60903:2003	Dimensions
2	As per Cl. No. 8.2.3 of EN:60903:2003	Thickness
3	As per Cl. No. 8.3 of EN:60903:2003	Mechanical tests
4	As per Cl. No. 8.4 of EN:60903:2003	Dielectric tests
5	As per Cl. No. 8.5 of EN:60903:2003	Ageing tests
6	As per Cl. No. 8.6 of EN:60903:2003	Thermal tests
7	As per Cl. No. 8.7 of EN:60903:2003	Tests on gloves with special properties
8	As per Cl. No. 6.2.4 of EN:60903:2003	Tear resistance test

CHECKED BY



TC 3716389



TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33


Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org



ULR No.: TC538924000025453F

TEST REPORT NO. : RP-2425-022817		DATE OF ISSUE: 28-10-2024		SHEET 3 of 8	
Sr. No	Particulars of test & Cl. No.	Requirement as per Specification	Obtained value	Remarks	
1	<b>Dimensions</b> [As per Cl. No. 8.2.2 of EN:60903:2003] Length, mm	360 ± 15	373	Conforms	
2	<b>Thickness, mm</b> [As per Cl. No. 8.2.3 of EN:60903:2003]	Max. 1.60	0.996	Conforms	
3	<b>Mechanical tests</b> [As per Cl. No. 8.3 of EN:60903:2003] <b>Tensile strength and elongation at break</b> [As per Cl. No. 8.3.1 of EN:60903:2003] -Tensile strength, MPa	Min. 16	27.0	Conforms	
	-Elongation at break, %	Min. 600	885	Conforms	
	<b>Resistance to mechanical puncture</b> [As per Cl. No. 8.3.2 of EN:60903:2003] -Resistance to mechanical puncture, N/mm	Min. 18	Sample 1- 25.22 Sample 2- 26.55	Conforms	
	<b>Tension set test</b> [As per Cl. No. 8.3.3 of EN:60903:2003] -Tension set, %	Max. 15	1.39	Conforms	
<div> CHECKED BY</div>					

TC 3716390





TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org



ULR No.: TC538924000025453F

TEST REPORT NO. : RP-2425-022817

DATE OF ISSUE: 28-10-2024

SHEET 4 of 8

Sr. No.	Particulars of test & Cl. No.	Requirement as per Specification	Obtained value	Remarks
4	<b>Dielectric test</b> [As per Cl. No. 8.4 of EN:60903:2003] <b>AC proof test</b> -AC proof test after conditioning for moisture absorption by total immersion in water for a period of 16 hours $\pm$ 0.5 hours [As per Cl. No. 8.4.2.1 of EN:60903:2003] -AC Proof test current at 5 kV rms, mA  <b>AC withstand test</b> [As per Cl. No. 8.4.2.2 of EN:60903:2003]  - Withstand test voltage, kV rms	Sample shall withstand 5 kV (rms) for 3 minutes     Max. 14     Sample shall withstand 10 kV (rms)	Withstood     6.8 mA     Withstood	Conforms     Conforms     Conforms
5	<b>Ageing test</b> [As per Cl. No. 8.5 of EN:60903:2003] (ageing at $70 \pm 2^\circ\text{C}$ for 168 h and with less than 20% relative humidity) -Tensile strength at break after ageing, % of the unaged value -Tension set after ageing, % -Dielectric proof test without being subjected to the moisture conditioning after ageing  -AC Proof test current at 5 kV rms, mA	Min. 80 Max. 15 Sample shall withstand 5 kV (rms) for 3 minutes     Max. 14	94.4 1.53 Both gloves withstood.     Sample 1- 4.9 mA Sample 2- 5.1 mA	Conforms Conforms Conforms     Conforms

CHECKED BY

TC 3716234







TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org



ULR No.: TC538924000025453F

TEST REPORT NO. : RP-2425-022817

DATE OF ISSUE: 28-10-2024

SHEET 5 of 8

Sr No	Particulars of test & Cl. No.	Requirement as per Specification	Obtained value	Remarks
6	<b>Thermal test</b> [As per Cl. No. 8,6 of EN:60903:2003] <b>Low temperature test</b> [As per Cl. No. 8.6.1 of EN:60903:2003] -Low temperature test at (-25 ± 3 °C for 1 hour)  -Dielectric proof test without being subjected to the moisture conditioning after low temperature test  -AC Proof test current at 5 kV rms, mA  <b>Flame retardancy test</b> [As per Cl. No. 8.6.2 of EN:60903:2003]	No tear, break or crack shall be visible on the gloves  Sample shall withstand 5 kV (rms) for 3 minutes  Max. 14  Flame shall not have reached the reference line located on the test piece 55 mm from its edge, within 55 second after withdrawal of the flame	No tear, break or crack was visible on the gloves  All three gloves withstood  Sample 1- 7.4 mA Sample 2- 7.2 mA Sample 3- 7.3 mA  Flame did not reach the reference line located on the test piece 55 mm from its edge, within 55 second after withdrawal of the flame	Conforms  Conforms  Conforms  Conforms

  
 CHECKED BY

TC 3716392





TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

FPARX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org



ULR No.: TC538924000025453F

TEST REPORT NO. : RP-2425-022817

DATE OF ISSUE: 28-10-2024

SHEET 6 of 8

Sr. No	Particulars of test & Cl. No.	Requirement as per Specification	Obtained value	Remarks
7	<b>Test on Gloves with special properties</b> [As per Cl. No. 8.7 of EN:60903:2003] <b>Category A – Acid resistance</b> [As per Cl. No. 8.7.1 of EN:60903:2003] (after immersion in 32 °B Sulfuric Acid solution at $23 \pm 2$ °C for $8 \pm 0.5$ hrs) -Dielectric proof test without being subjected to the moisture conditioning after acid immersion  -AC Proof test current at 5 kV rms, mA  <b>Tensile strength and elongation at break after acid immersion</b> - Change in tensile strength, Percent of the value unexposed to acid - Change in elongation at break, Percent of the value unexposed to acid  <b>Category H – Oil resistance</b> [As per Cl. No. 8.7.2 of EN:60903:2003] (after immersion in liquid 102 at $70 \pm 2$ °C for $24 \pm 0.5$ hrs) -Dielectric proof test without being subjected to the moisture conditioning after oil immersion -AC Proof test current at 5 kV rms, mA  <b>Tensile strength and elongation at break after oil immersion</b> - Change in tensile strength, Percent of the value unexposed to oil - Change in elongation at break, Percent of the value unexposed to oil	Sample shall withstand 5 kV (rms) for 3 minutes  Max. 14  Min. 75%  Min. 75%  Sample shall withstand 5 kV (rms) for 3 minutes Max. 14  Min. 50%  Min. 50%	Both gloves withstood  8.6 mA 8.4 mA  86.7  87.0  Both gloves withstood  8.8 mA 8.4 mA  77.5  75.7	Conforms  Conforms  Conforms  Conforms  Conforms  Conforms  Conforms  Conforms

TC 3716393

CHECKED BY





TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org



ULR No.: TC538924000025453F

TEST REPORT NO. : RP-2425-022817

DATE OF ISSUE: 28-10-2024

SHEET 7 of 8

Sr. No.	Particulars of test & Cl. No.	Requirement as per Specification	Obtained value	Remarks
	<b>Category Z - Ozone resistance</b> [As per Cl. No. 8.7.3 of EN:60903:2003] The gloves shall be conditioned in an oven for 3h $\pm$ 0.5 h at a temperature of 40° C $\pm$ 2° C and an ozone concentration of 1mg/m <sup>3</sup> $\pm$ 0.01 at standard atmospheric pressure of 1013 mbar  -Dielectric proof test without being subjected to the moisture conditioning  -AC Proof test current at 5 kV rms, mA	After conditioning the gloves shall exhibit no cracks under visual inspection  Sample shall withstand 5 kV (rms) for 3 minutes  Max. 14	No any crack was observed in both gloves  Both gloves Withstood  8.9 mA 9.1 mA	Conforms  Conforms  Conforms
	<b>Category C - Extremely Low temperature resistance</b> [As per Cl. No. 8.7.4 of EN:60903:2003] -Extremely low temperature test at -40 $\pm$ 3 °C for 24 $\pm$ 0.5 hours  -Dielectric proof test without being subjected to the moisture conditioning after low temperature test  -AC Proof test current at 5 kV rms, mA	No tear, break or crack shall be visible on the gloves Sample shall withstand 5 kV (rms) for 3 minutes  Max. 14	No tear, break or crack was visible on the gloves  All three gloves withstood  Sample 1- 7.4 mA Sample 2- 7.6 mA Sample 3- 7.2 mA	Conforms  Conforms  Conforms
8	<b>Tear resistance test</b> [As per Cl. No. 6.2.4 of EN:60903:2003]	Not applicable	Not applicable	-

CHECKED BY

TC 3716394





TC-5389

# ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Hoad, Makarpura Industrial Estate, Vadodara-390 010, India.

EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org

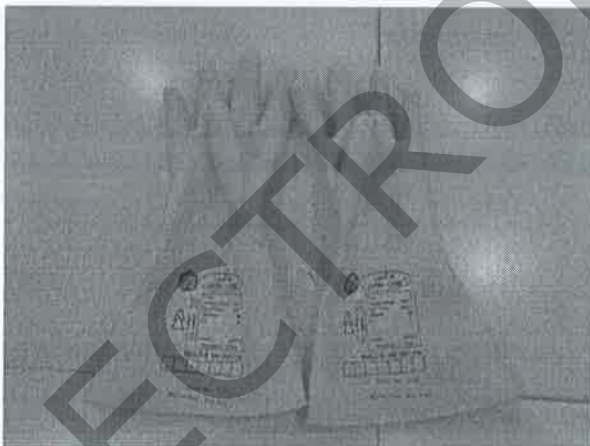


ULR No.: TC538924000025453F

TEST REPORT NO. : RP-2425-022817

DATE OF ISSUE: 28-10-2024

SHEET 8 of 8



CHECKED BY

\*\*\*\*\* End of Test Report \*\*\*\*

TC 3716395

