

TEST REPORT

Customer:**AKSHAR BRASS INDUSTRIES**

Plot No 46,47,50, 51,

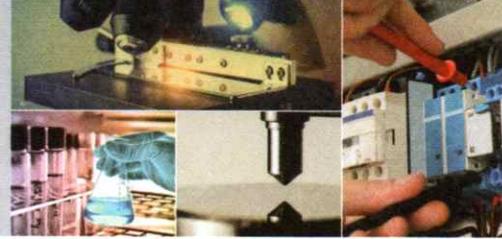
Survey No. 246,245, at Naghedi Industrial Area,

Jamnagar - 361006, Gujarat, India.

ELCA No.: E-2980-M**Date:** 08.05.2021**Pages:****ULR No:** TC574321000008887F**Customer Challan no.:** S/00133 dated 03.04.2021**Sample Description:** -Nickle Plated Brass Cable Gland for Non-Armoured;**Make of Cable Gland:** CABTEK**Discipline:** - Electrical Testing; **Group:** - Cable and Accessories

The above sample has been tested and the results are as below.

Sr. No.	Sample Description	ELCA No.
1.	Nickle Plated Brass Cable Gland M16 X 1.5	E-2980-A-M
2.	Nickle Plated Brass Cable Gland M20 X 1.5	E-2980-B-M
3.	Nickle Plated Brass Cable Gland M25 X 1.5	E-2980-C-M
4.	Nickle Plated Brass Cable Gland M32 X 1.5	E-2980-D-M
5.	Nickle Plated Brass Cable Gland M40 X 1.5	E-2980-E-M


Continuation Sheet of Test Report No: E-2980-M
1. CABLE ANCHORAGE TEST (Type A)
Equipment Used

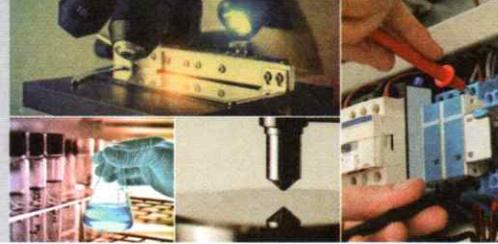
Sr. No	Instrument Name	Instrument Id	Calibration Done On	Calibration Due On
1	Digital Vernier Caliper	MECH-17T	19.09.2020	18.09.2021
2	Torque Wrench	EL-27	27.05.2020	27.05.2021
3	Weighing Balance	MECH-27R	12.11.2020	12.11.2021

Test Standard: IEC 62444:2010 Clause no. 9.3, BS EN 62444:2013 Clause no. 9.3 and BS EN

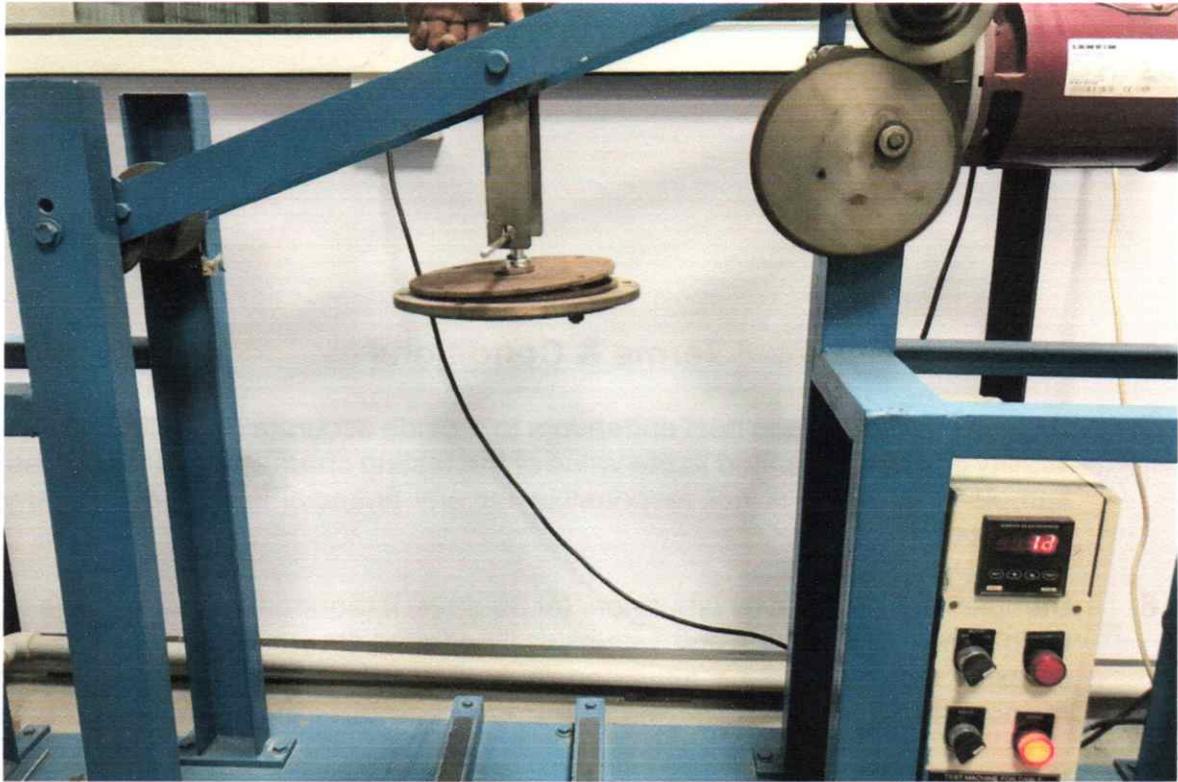
50262:1999 Clause No 9.3

Test Date: 13.04.2021 and 14.04.2021

Sr. No	Elca No.	Mandrel Size (mm)	Torque (Nm)	Applied Weight (N)	Observation	Results
1	E-2980-A-M	9.0	20	42	No displacement observed	Satisfactory
2	E-2980-A-M	10.0	20	42	No displacement observed	Satisfactory
3	E-2980-B-M	11.0	20	55	No displacement observed	Satisfactory
4	E-2980-B-M	14.0	20	55	No displacement observed	Satisfactory
5	E-2980-C-M	16.0	23	70	No displacement observed	Satisfactory
6	E-2980-C-M	19.0	23	70	No displacement observed	Satisfactory
7	E-2980-D-M	21.0	30	70	No displacement observed	Satisfactory
8	E-2980-D-M	25.0	30	80	No displacement observed	Satisfactory
9	E-2980-E-M	28.5	30	80	No displacement observed	Satisfactory
10	E-2980-E-M	32.0	30	90	No displacement observed	Satisfactory



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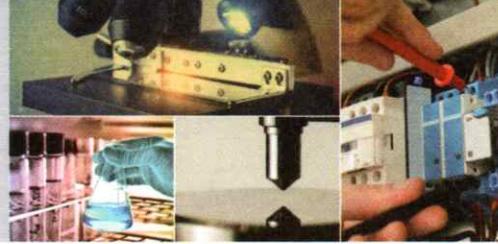


Typical Set-up for Cable Anchorage Test

Acceptance Criteria:

The test mandrel is pulled 50 times for duration 1 sec and end of the period the displacement shall not exceed 2mm.

Result: Satisfactory Not Satisfactory.


Continuation Sheet of Test Report No: E-2980-M
2. CABLE ANCHORAGE TWIST TEST
Equipment Used

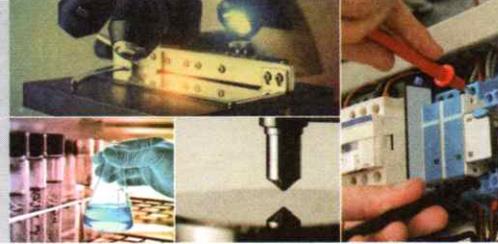
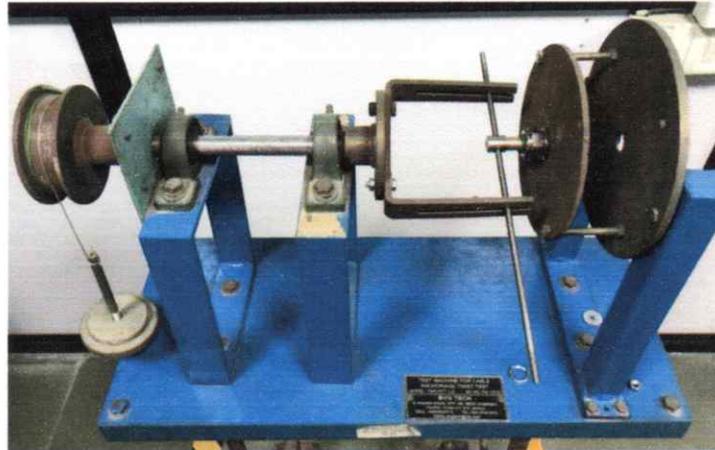
Sr. No	Instrument Name	Instrument Id	Calibration Done On	Calibration Due On
1	Digital Vernier Caliper	MECH-17T	19.09.2020	18.09.2021
2	Torque Wrench	EL-27	27.05.2020	27.05.2021
3	Weighing Balance	MECH-27R	12.11.2020	12.11.2021

Test Standard: IEC 62444:2010 Clause no. 9.3, BS EN 62444:2013 Clause no. 9.3 and BS EN

50262:1999 Clause No 9.3

Test Date: 15.04.2021 and 16.04.2021

Sr. No.	Elca No.	Mandrel Size(mm)	Torque (Nm)	Results
1	E-2980-A-M	9.0	0.15	Satisfactory
2	E-2980-A-M	10.0	0.15	Satisfactory
3	E-2980-B-M	11.0	0.35	Satisfactory
4	E-2980-B-M	14.0	0.35	Satisfactory
5	E-2980-C-M	16.0	0.60	Satisfactory
6	E-2980-C-M	19.0	0.60	Satisfactory
7	E-2980-D-M	21.0	0.60	Satisfactory
8	E-2980-D-M	25.0	0.80	Satisfactory
9	E-2980-E-M	28.5	0.80	Satisfactory
10	E-2980-E-M	32.0	0.90	Satisfactory

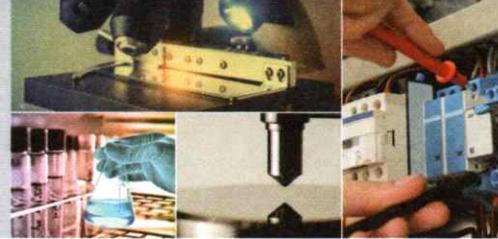

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Typical Set-up for Cable Anchorage Twist Test
Acceptance Criteria:

The torque is applied for 1 minute and deflection of test mandrel shall not turn by more than an angle 45°

Result: Satisfactory Not Satisfactory.

3. RESISTANCE TO IMPACT TEST (Category 7)
Equipment Used:

Sr. No	Instrument Name	Instrument Id	Calibration Done On	Calibration Due On
1	Digital Vernier Caliper	MECH-17T	19.09.2020	18.09.2021
2	Torque Wrench	EL-27	27.05.2020	27.05.2021
3	Weighing Balance	MECH-27R	12.11.2020	12.11.2021
4	Steel Scale	EL-25	17.10.2020	16.10.2021


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Test Standard: IEC 62444:2010 Clause no. 9.5, BS EN 62444:2013 Clause no. 9.3 and BS EN 50262:1999 Clause No 9.4

Test Date: 19.04.2021

Sr. No	ELCA No.	Mandrel Size (mm)	Striking Element Weight (Kg)	Drop Height (Meter)	Test Temp. (°C)	Observation	Remarks
1	E-2980-A-M	9.0	1	1.0	21.0	No cracks or damages found on impact areas.	Satisfactory
2	E-2980-B-M	11.0	1	1.0	21.0	No cracks or damages found on impact areas.	Satisfactory
3	E-2980-C-M	16.0	1	1.0	21.0	No cracks or damages found on impact areas.	Satisfactory
4	E-2980-D-M	21.0	1	1.0	21.0	No cracks or damages found on impact areas.	Satisfactory
5	E-2980-E-M	28.5	1	1.0	21.0	No cracks or damages found on impact areas.	Satisfactory

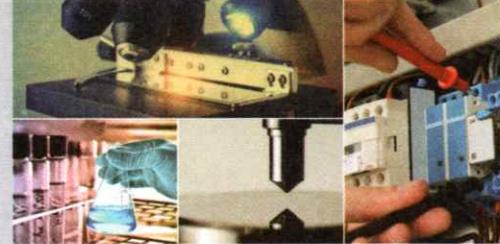


Typical Set-up for Resistance to Impact Test

Acceptance Criteria:

After the test there shall be no sign of disintegration nor shall there be any crack visible to normal or corrected vision.

Result: Satisfactory Not Satisfactory.


Continuation Sheet of Test Report No: E-2980-M
4. SEAL PERFORMANCE TEST AND EXCESS TIGHTENING
Equipment Used:

Sr. No	Instrument Name	Instrument Id	Calibration Done On	Calibration Due On
1	Digital Vernier Caliper	MECH-17T	19.09.2020	18.09.2021
2	Torque Wrench	EL-27	27.05.2020	27.05.2021

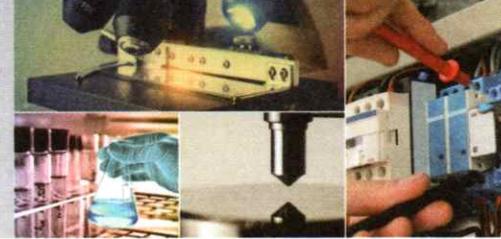
Test Standard: IEC 62444:2010 Clause no. 9.6, BS EN 62444:2013 Clause no. 9.6 and BS EN

50262:1999 Clause No 9.5

Test Date: 27.04.2021 and 28.04.2021

Sr. No	ELCA No.	Mandrel Size (mm)	Declared Torque (Nm)	Applied Torque (Nm)	Excess Torque (Nm)	Remarks
1	E-2980-A-M	10.0	20.0	20.0	30.0	No defect observed
2	E-2980-B-M	14.0	20.0	20.0	30.0	No defect observed
3	E-2980-C-M	19.0	23.0	23.0	34.5	No defect observed
4	E-2980-D-M	25.0	30.0	30.0	45.0	No defect observed
5	E-2980-E-M	32.0	30.0	30.0	45.0	No defect observed


Typical Set-up for Seal Performance Test and Excess Torque


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5. TEST FOR INGRESS PROTECTION (IP68 TEST)
Equipment Used:

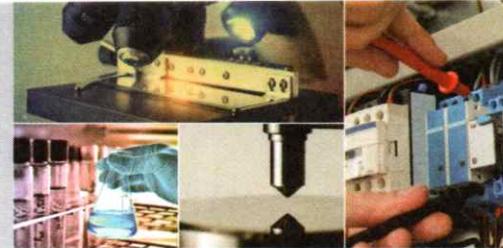
Sr. No	Instrument Name	Instrument Id	Calibration Done On	Calibration Due On
1	Dust Chamber	ENV/006	16.03.2021	16.03.2022
2	Stop Watch	EL-47	27.02.2021	27.02.2022

Test Standard: IEC 60529:2013

Test Date: Dust Test 23.04.2021 and Water Test 24.04.2021

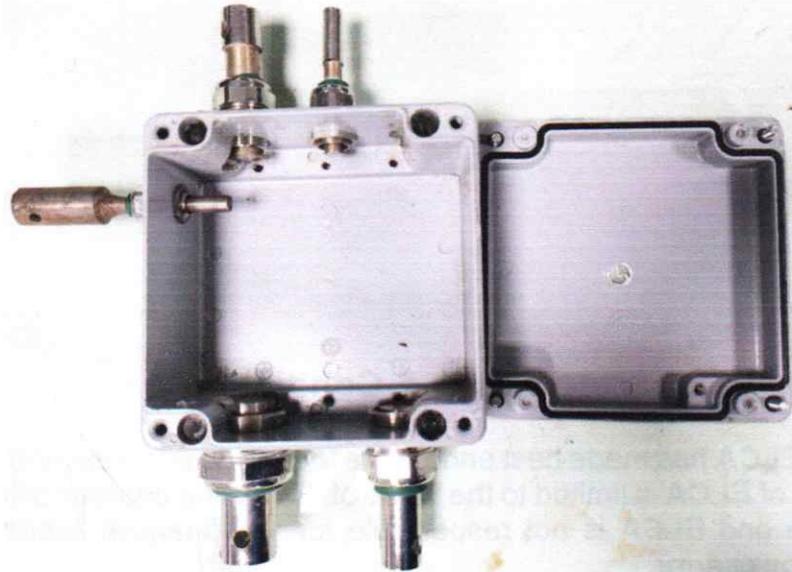
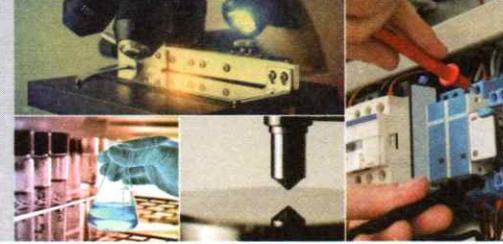
Sr. No.	Name of the Test	IEC 60529 Standard Reference	Standard Specification	Equipment Used
1.	Protection against Solid Foreign object indicated by the first characteristic numeral (Dust Test) IP6X	Cl. 13.4 Category 1	No talcum powder shall be allowed to deposit inside the enclosure at the end of the test.	Dust Test Chamber for IP6X
2.	Protection against ingress of Water indicated by the second characteristic numeral IPX8	Cl. 14.2.8	No water shall be allowed inside the enclosure at the end of the test.	Water tank for IP X8 (Test Condition: 1.5-meter depth for 30 minutes)

The IP test procedure is based on IEC 60529 (Degrees of Protection provided by enclosures IP Code). Cable glands with specified mandrels were fitted into enclosures for test purpose. After completion of each test, sample was visually inspected.


After Dust and Water Test

Sr. No.	ELCA ID	Mandrel Size (mm)	Name of test	Observations after test
1	E-2980-A-M	9.0	IP6X	No ingress of dust observed inside the enclosure
			IPX8	No ingress of water observed inside the enclosure
2	E-2980-B-M	11.0	IP6X	No ingress of dust observed inside the enclosure
			IPX8	No ingress of water observed inside the enclosure
3	E-2980-C-M	16.0	IP6X	No ingress of dust observed inside the enclosure
			IPX8	No ingress of water observed inside the enclosure
4	E-2980-D-M	21.0	IP6X	No ingress of dust observed inside the enclosure
			IPX6	No ingress of water observed inside the enclosure
5	E-2980-E-M	28.5	IP6X	No ingress of dust observed inside the enclosure
			IPX6	No ingress of water observed inside the enclosure





The sample after protection against dust and water test

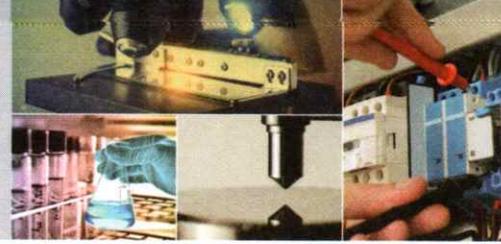
6. RESISTANCE TO CORROSION

Equipment Used:

Sr. No	Instrument Name	Instrument Id	Calibration Done On	Calibration Due On
1	Salt Spray Chamber	ENV/027	05.10.2020	04.10.2021

Test Standard: IEC 62444:2010 Clause no. 12.2/ BS EN 62444:2013 Clause no. 12.2

Temperature within exposure zone	34.8°C to 35.1°C
Exposure Period	120 hours
Loading Date and Time	06.04.2021 at 10.00 AM
End Date and Time	11.04.2021at 10.00 AM
Type of Salt	AR Grade
Method of cleaning	Running water
Method of supporting	Nylon Thread
Equipment used / ID:	Salt Spray Chamber
Salt Solution	5% NaCl
Type of Water	Distilled water


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Fog Collection device details: -

Collected volume in ml/hr/80cm²	1.7 to 1.9
Sp. gravity	1.027 to 1.032
pH Level	6.9

1) M16 X 1.5



Before Test



After Test

2) M20 X 1.5



Before Test



After Test

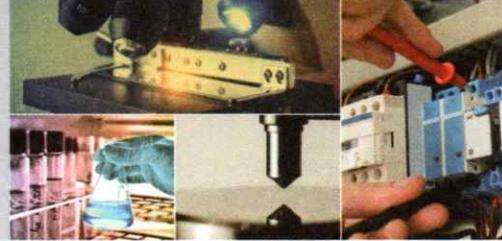
3) M25 X 1.5



Before Test



After Test



4) M32 X 1.5



Before Test



After Test

5) M40 X 1.5



Before Test



After Test

TEST RESULT

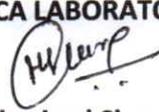
Sr. no.	Exposure period in hours	Observations
1	24	No rust observed.
2	48	No rust observed.
3	72	No rust observed.
4	96	No rust observed.
5	120	No rust observed.

The test results comply with relevant test as per IEC 62444:2010-08/BS EN 62444:2013

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 Checked By: 

For ELCA LABORATORIES


 Authorised Signatory
 Kartik Iyer / Hemant Ghare
 C.E./O. / Sr. Testing Engineer

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