TECHNICAL SPECIFICATION
FOR
SUPPLYOF
AL 59 CONDUCTOR
TO BE USED IN
THE DISTRIBUTION SYSTEM UNDER GUVNL

:: TECHNICALSPECIFICATIONS::

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1. SCOPE:

This specification covers design,manufacture,testing, inspection, packing and dispatch, to destination of (AL59), specified herein for their satisfactory operation in various distribution lines.The size of the conductor cover under this specification are as under:

1	CodeName	AL 59 Dog.
2	Size	19/2.8 mm
3	areainmm^2	117mm^2

2. Climate Conditions:

2.1	Area of Installation:	Gujarat
2.2	Maximum Ambient Temperature.. C	50
2.3	Minimum Ambient Temperature .C	0
2.4	Avarage Daily Ambient Temperature .C	35
2.5	Maximum Relative Humidity. %	95
2.6	Avarage Rainfall Per Annum (mm)	1150
2.7	Maximum Altitude Above Mean Sea Level- Mtrs	1000
2.8	Isometric Level i.e Average Number of Thunder Strom Days/Annum	15
2.9	Maximum Wind Pressure(Kg/Sq Meters)	200

2.10 Seismic level i.e. Earthquake Acceleration

a)	Horizontal Seismic Co-efficient (Acceleration) – g (Zone – 5)	0.08
b)	Vertical Seismic Co-efficient (Acceleration) – g (Zone – 5)	0.84

3. APPLICABLESTANDARDS:

The conductor shall conform to the following International/Indian Standards, which shall mean latest revisions, with amendments/changes adopted and published, unless specifically stated otherwise in the Specification.

In the event of the supply of conductor conforming to standards other than specified, the Bidder shall confirm in his bid that the standards are equivalent to those specified In case of award, salient features of comparison between the standards proposed by the Supplier and those specified in this document will be provided by the Supplier to establish their equivalence.

Sl. No.	International /Indian Standard	Title
1.	SS4240814	Aluminium alloy stranded Conductors for overhead lines Al59 specifications
2.	SS4240813	Aluminium alloy wire for stranded Conductors for over headlines- Al 59 wires
3.	Is 1778/1980	Reels and drums for bare conductor

4. PROPERTIESOFWIRES:

The Properties of AL-59 wire stobe used in the construction of the stranded conductors shall be as in the following table.

TABLE-I AL 59wires used in the construction of stranded conductors.

Diameter in mm			Cross Sectional area of wire (nominal dia.)	Mass Kg/Km	Minimum breaking load after stranding	Resistance (at20ºC) ohm /KM
Nominal	Min.	Max				Max.
2.80	2.77	2.83	14 mm2	16.94	1.53 KN	4.80

5. PROPERTIESOFCONDUCTORS:

ThepropertiesofstrandedAL59conductors ofvarious size sshall be as in the following table.

TABLE-II AL 59

Strands &wire dia.	Sectional area.	Approx. overall dia.	approx mass	Calculated resistance at 20ºC(max)	Approx. breaking load.
Mm	sq.mm	Mm	Kg/KM	Ohm/KM	KN
19/2.8	117	14	322	0.2578	29.20

6. **GENERAL TECHNICALREQUIREMENT**

6.1 The AL59 conductor shall be suitable for being installed directly in air supported on insulator or anchored through tension insulator strings at the cross arms of single circuit, double circuit or multi circuit distribution line poles.

6.2 The conductor shall therefore be suitable for satisfactory operation under the tropical climatic conditions listed in the relevant clause. The applicable design particulars of the conductor obsessed on these lines are furnished in Annexure-I."System Particulars".

Annexure –I

Electrical System Data:

a)	System Voltage	11 KV rms
b)	Max. Voltage	12 KV rms
c)	Lightning impulse withstand voltage (dry&wet)	75 KVP
d)	Power Frequency withstand voltage(wet)	28 KV rms
e)	Short circuit levelfor3 Sec.	20 KA
g)	Normal Span	65Mtr.
h)	Wind Span	75Mtr.
i)	Factor of safety at everyday temp and no wind	4

6.3 PhysicalConstants ofMaterials

The AL59 should be as per SS4240814 and its latest amendments. The material offered shall be of the best quality and workmanship. The AL59 shall have accurate chemical composition of Alloy so as to offer excellent corrosion resistance, better strength to weight ratio and improved conductivity. The solution treatment shall be done in a very sophisticated and advanced technology furnace with automatic quenching system.

a. Resistivity

The resistivity of AL59 depends upon its purity and its physical condition. However as per the specified value of purity in this specification the maximum value permitted is 0.02930 ohm.Sq.mm/mtr at 20Deg.C, and this value shall be used for calculation of the maximum permissible value of resistance.This value may be checked from the measured value of the resistance.

b. Density:

At at emperature of20 Degree Celsius the density of AL59 shall be 2.70g/cm3.

c. Constant-Mass Temperature Co-efficient of Resistance

At a temperature of 20 Degree Celsius the constant-mass temperature co-efficient of resistance of AL59 measured between two potential points rigidly fixed to the wire,the metal being allowed to expand freely,has been taken as 0.0039per degree Celsius.

d. Co-efficient of Linear Expansion:

The co-efficient of linear expansion of AL59 at 0 Degree Celsius has been taken as23.0x10-6 per Degree Celsius. This value holds good for all practical purposes over the range of temperature from 0 Degree Celsius to highest safe operating temperature.

6.4 Materials

a.Aluminium alloy

The aluminium alloy wire shall be an aluminium alloy meeting the mechanical strength and resistance of the wire properties as mentioned in the GTP.

The bidder should specify the source of raw materials along with the proof of last purchases made. The DISCOM may reject the tender of the Bidders whose raw material suppliers are found to be supplying any poor quality or Non-standard materials, to the DISCOM or any other purchaser.

6.5FreedomfromDefects

The wires shall be smooth and free from all imperfections such as spills, splits, slag inclusion, die marks, scratches, fittings, blow-holes, projections, looseness, overlapping of strands, chipping of aluminum layers etc.and all such other defects which may hamper the mechanical & electrical properties of the conductor as also the installation of the conductor at the site etc. Special care should be taken to keep away dirt, grit etc. during stranding.

6.6WireSizes

a. Nominal Sizeand Tolerances

The aluminum wires for the stranded conductor covered by this standard shall have diameters specified in clause3 and shall be within the tolerances indicated therein.

6.7Joints inWires

a. Aluminum Wires

Joints shall be permitted in the aluminum wires in the outermost layer as well as inner layer of the AL 59 conductor but tensile strength of joint wire should be at least 90% of the value required for an un joint wire.,but not such joints shall be less than 15mtr in conductor composed of 7 strands the center wire must no be jointed. Apart in the complete stranded conductor. Such joints shall be made by cold pressure butt-welding.

The joint should be trimmed so that its surface is smooth and the diameter as near to the wire diameter as possible.

6.8Stranding

The wires used in the construction of AL59conductorshallbeforestrandingand after stranding shall satisfy all the relevant requirements as per the standards indicated or any other standards with due justification.
{NOTE: Lithium soap grease corresponding to Grade II ofIS:7623-1974 (Specification for lithium soap greases is suitable for such application.}
The lay ratio of the different layers shall be within the limits as per standards.

In all constructions, the successively ers shall have opposite direction so flay, the outer most layer being right-handed. The wires in each layer shall be evenly and closely stranded.

In conductors having multiple layers of aluminum wires, the lay ratio of any aluminum layer shall not be greater than the lay ratio of the aluminum layer immediately beneath it.

7. STANDARDLENGTH:

7.1 The stranded Al 59Conductorshallbesuppliedin standard Lengths of

(a)1100metersforabove100mm^2 sizes.

7.2Thetoleranceforstandardlengthshallbe+/-2%(two percent).

8. Tests.

8.1The type acceptance, routine tests, tests any specifically demanded by the DISCOM and tests during manufacture shall be carried out on the conductor free of cost.

8.2 Type tests shall mean those tests, which are to be carried out to prove the process of manufacture and general conformity of the material to this specification. If the tender size test reports are not ready in that case the bidder may submit test reports for same items for higher size and before commencement of supply, bidder has to submit valid type test reports of offered items size in the event of placement of order. The offer without type test shall be ignored.

8.3Acceptance Tests shall mean those tests, which are to be carried out on samples taken from each lot offered for pre-dispatch inspection ,for the manufacturer's works in presence of DISCOM's representative before the dispatch of the materials to the site.

8.4 Routine Tests shall mean those tests,which are to be carried out on each strand/spool/length of the conductor to check requirements,which are likely to

vary during production. These tests shall be carried out by the manufacturer on each drum and shall have to furnish the reports to the DISCOM's representative during his visit for acceptance tests.

8.5 Tests during manufacture shall mean those tests, which is to be carried out during the process of manufacture and end inspection by the supplier to ensure the desired quality of the end product to be supplied by him, including all quality control checks &raw material testing.

8.6 Samples for individual wires for tests shall be taken before stranding from not less than ten percent of the spools in the case of aluminum wires. If samples are taken after stranding, they shall be obtained by cutting 1.2-2.0 meters from the outer end or inner end of the finished conductor from not more than ten percent of the finished reels.

8.7 The standards to which these tests will be carried out are listed against them. Where a particular test is a specific requirement of this specification,the norms and procedures of the test shall be as specified or as mutually agreed to between the supplier and the purchaser in the Quality Assurance Programme.

8.8 For all type and acceptance tests, the acceptance values shall be the values guaranteed by the Bidder in the "Guaranteed Technical Particulars", of his proposal or the acceptance value specified in this specification, which ever is more stringent for that particular test.

9. SAMPLINGCRITERIA:

The sampling criteria for acceptance test shall be 10% of the number of reels or drum of the lot size in accordance with Relevant standards.

10. Type Test:

Bidder shall submit the following Type test reports on AL-59DOG conductor along with technical bid. The type test reports should not be older than 7(Seven) years.

1. Measurement of Diameter

   a) Aluminium Wire

2. Breaking Load Test

   a)Aluminium Wire (before/after)

3. Elongation Test

   a) AluminiumWire

4. ResistanceTest

a) AluminiumWire

b) Conductor

5. Measurement of Lay Ratio

   a) First Layer (Alu. Alloy)

   b) Second Layer (Alu. Alloy)

   c) Third Layer (Alu. Alloy)

6. Stress Strain Test

   a) On composite conductor

7. Surface Condition Test

8. Ultimate Breaking Load of stranded conductor

11. Acceptance Tests

a)	Visual and dimensional check on drum	SS 4240814 and IS: 398(Part IV)1994/Relevant with latest Amendment.
b)	Visual check for joints, scratches etc. and lengths of conductor	- D O -
c)	Dimensional check on steel and aluminium Strands	- D O -
d)	Check for lay ratio of various layers.	- D O -
e)	Breaking load test on aluminum strands.	- D O -
f)	Wrap test on steel and aluminum strands.	- D O -
g)	DC resistance test on aluminum strands	- D O -
h)	UTS test on welded joint of aluminum strand	As per this specification

12. Routine tests

a) Check ensures that the joints are as per specifications.

b) Check that there are no cuts, fins etc. on the strands.

c) Check that drums are as per specification.

d) All acceptance tests as mentioned in Clause 11above shall be carried out on each coil.

13. MEASUREMENT OF LENGTH:

The supplier shall provide at his works the necessary facilities for measurement of conductor length of the drum. The conductor length of minimum one drum shall

be measured in presence of the inspector. The length measurement results shall be recorded in the test report.

In case the actual conductor length is found short than the declared length, then length of further 2 (Two) drums are to be verified. The results shall be recorded in the test report.

The Purchaser will have the option of measuring conductor lengths at on receipt of material at destination. If, so desired the supplier representative will be allowed to remain present at the time of the consignee taking the measurement, otherwise the findings of the consignee will be final and binding on the supplier.

In case of any shortage in length from declared value , the cost of short length shall be deducted from the relevant invoices / bills raised by the vendor, to take care of the shortage and penalty to the extent of 30% of the value of such short length shall also be levied.

14. Additional Tests

The DISCOM reserves the right of getting done any other test(s) of reasonable nature carried out at Supplier's premises, at site, or in any other place in addition to the aforesaid type, acceptance and routine tests to satisfy himself that the material comply with the specifications. In such case all the expenses will be to Suppliers account.

15. Test Reports

Record of routine test reports shall be maintained by the Supplier at his works for periodic inspection by the purchaser’s representative.

Test Certificates of test during manufacture shall be maintained by the Bidder.

These shall be produced for verification as and when desired by the Purchaser.

16. Test Facilities

The following additional facilities shall be available at Supplier's works:-

16.1 Test Laboratory for Routine and Acceptance test shall be available at manufacturer’s works and should be NABL approved.

16.2 Calibration Reports from Government approved testing laboratory/NABL accredited Lab of various testing and measuring equipment including tensile testing machine, resistance measurement facilities, burette, thermometer, barometer etc.

16.3 Standard resistance for calibration of resistance bridges.

16.4 Finished conductor shall be checked for length verification and surface finish on separate rewinding machine at reduced speed (variable from 8 to 16 meters

per minute). The rewinding facilities shall have appropriate clutch system and free of vibrations, jerks etc. with transverse layering facilities.

16.5 The bidder should have all the routine and acceptance testing facilities, in house.

17. INSPECTION OF CONDUCTOR

17.1 The supplier shall offer the material for inspection in lots as and when ready with him. The Purchaser shall arrange for inspection of each lot of material as early as possible within 15 days from the date of receipt of intimation. The lot offered shall not be dispatched by the supplier without having it inspected and tested by the Purchaser's inspector or issue of waiver of inspection by the Purchaser.

17.2 The acceptance tests on samples drawn from the offered lot for each size by the Purchaser's Inspector, as per sampling plan specified in the relevant Indian Standards, shall be carried out at the works of the supplier at their cost. The testing instruments should be in working condition and duly calibrated either by the original manufacturer of the instruments or by any NABL approved testing agency. Copies of calibration certificates shall be made available to the inspector.

17.3 The offered lot will be accepted only after samples selected for tests are found to pass all the acceptance test, In case of failure of sample in any test, procedure as per clause no. 13 of IS 398 (part-IV) 1994 will be applicable.

17.4 One Conductor drum for any one size shall be taken up for verification of actual length measurements. This shall form part of inspection for each and every lot offered for inspection by the manufacturer.

18 QUALITY ASSURANCE PLAN

18.1 The bidder shall invariably furnish following information along with his offer, failing which his offer shall be rejected.

a. Statement giving list of important raw materials names of sub suppliers for the raw materials, list of standards according to which the raw materials are tested, list of tests normally carried out on raw materials in presence of supplier's representative and as routine and / or acceptance during production and on finished goods, copies of test certificates.

b. Information and copies of test certificates as in (i) above in respect of bought out accessories.

c. List of manufacturing facilities available.

d. Level of automation achieved and list of areas where manual processing exists.

e. List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections.

f. List of testing equipment available with the Supplier for final

g. Testing of Conductor specified. In the case if the suppliers does not possess all the Routine and Acceptance testing facilities the tender will be rejected.

h. The DISCOM reserves the right for factory inspection to verify the facts quoted in the offer. If any of the facts are found to be misleading or incorrect the offer of that Bidder will be out rightly rejected and he may be black listed.

i. Special features provided to make it maintenance free.

18.2 The bidder shall also submit following information to the purchaser along with the technical Bid. .

a. List of raw materials as well as bought out accessories, and the name of suppliers of raw materials as well as bought out accessories.

b. Type test certificates of the raw material and bought out accessories.

c. Quality assurance plan (QAP)with hold points for purchaser's inspection.

18.3The Supplier shall submit the routine test certificates of all the bought out items, accessories etc.

19 PACKING AND MARKING:

The conductor shall be packed in wooden drums confirming to IS-1778/1980 with latest amendments if any and detailed specifications as under:

(a)The conductor shall be supplied in non-returnable strong wooden drums provided with lagging of adequate strength, constructed to protect the conductor against all damages and displacement during transit, loading, unloading during transport and subsequent handling and stringing operation in the field.

The Wooden drums shall be generally confirming to IS-1778/1980 with amendmentNo.1 of June-1989.

(b) All wooden components shall be manufactured out of seasoned soft wood which shall be sound and free from defects that may materially weaken the components parts of the drums. Preservative treatment shall be applied to the entire drum with preservatives of good quality which is not harmful to the conductor.

(c) The drum sizes and dimensions shall be in accordance with the IS-1778/1980 with amendment No. 1 June-1989.

(d) Before reeling of conductor, the barrel of the drum as well as inside and outside surface of flanges of drum shall be painted with Aluminum/bitumen based paint. One layer of water proof and abrasion resistant paper shall be used over barrel. After reeling the conductor the exposed surface of the outer layer of all conductors shall be wrapped with water proof and abrasion resistant paper.

(e) Minimum spacing between outer layer of conductor and inner surface of lagging shall be 75 mm. The external lagging shall be closely fitted and shall be thickness of not less than 38 mm. There shall be minimum 2 Nos. binders consisting of hoop iron/galvanized steel wire outside of the protective lagging.

(f) Arrangement for sealing (seal wire with lead seal) the outer end of conductor may be provided by supplier. The inspector may provide his seal after inspection.

(g) Each drum shall have the following information stenciled on it in indelible ink along with other essential details.

(I) Size and nomenclature of conductor.

(II) Purchaser's order No. and date.

(III) Name of manufacturer and address.

(IV) Number & length of conductor in meters.

(V) Drum number.

(VI) Net weight of empty drum with lagging.

(VII) Gross weight of drum with conductor and lagging.

(VIII) Property of (write name of relevant DISCOM). (IX) Name of consignee.

(IX) Reference IS Number & ISI Certification mark, if any.

(h) The following details shall also be etched on Aluminum /steel plate of minimum size of 10 cm x 6 cm on one face of each drum in addition to the above marking by ink.

(i) Name of manufacturer. (ii) Size and nomenclature of conductor. (iii)Purchase Order No. & Date. (iv) Drum Number & length in meters.

(i) If, the Conductor drum carries more than one length, measurement of each length of conductor and total of all of them shall be marked on drum. The outermost length on drum shall be numbered as first and the inner most shall be numbered as last.

20 GUARANTEED TECHNICAL PARTICULARS (GTP):

The manufacturer shall be deemed to be manufacturing conductor meeting the guaranteed technical particulars give.

Sr No.	Description	Requirement	Confirmation/ Supplier's Data
		AL-59 DOG	
1)	Standard according to which the conductor will be manufactured and tested	SS 4240814 SS 4240813	
2)	Quality of material & standard to which conform	SS 42 40814 & IS-9997	
3)	Number of strands and wire diameter in	19/2.8	
5)	Number Of Strands – Nos.	19	
6)	Diameter Of Strand – mm. I) Strands a) Nominal b) Maximum c) Minimum II) Overall Of Conductor	 2.80 2.83 2.77 14.00	
7)	Cross Sectional Area Of – Sq. mm. a) Whole Conductor b) Each Strand	 117 6.15	
8)	Laying Of Strands – Nos. a)Center b) First Layer c) Second Layer d) Third Layer e) Fourth Layer	 1 6 12 - -	
9)	Weight (Excl. Wt. Of Grease) – Kg /Km. a) Whole Conductor b) Strand (At Nominal Dia.)	 322 16.94	

10)	Calculated D.C. resistance at 20 0C - Ohms / Km a) Whole Conductor b) Strand	 0.25278 4.80	
11)	Ultimate Tensile Stress – KN a)Whole Conductor b) Stand i)Before Stranding ii)After Stranding	 29.20 1.53 1.45	
12)	Modulus of Elasticity – MPA	62000	
13)	Coefficient of linear expansion – per deg. C.	 23.0x10-6	
14)	Resistivity – Ohms Sq.mm / Mtr.	Max.0.02930	
15)	a) Continuous maximum current rating of conductor in still air at ambient Temperature (40Deg.C)	388 55	
16)	Lay Ratios a) First Layer i) Maximum ii) Minimum b) Second Layer i) First Layer ii) Second Layer	 16 10 14 10	
17)	Minimum tensile strength of the finished strand with joint if any made in base rod or semi finished wire a) Aluminium Alloy	As per Above Specification	

ANNEXURE - II TEST PROCEDURES

1.0 UTS TEST ON STRANDED CONDUCTOR

1.1 Circles perpendicular to the axis of the conductor shall be marked at two places on a sample of conductor of minimum 5 m length suitably compressed with dead end clamps at either end. The load shall be increased at a steady rate up to (50%) and held for one minute, the circles drawn shall not be distorted due to Relative movement of strands. Thereafter the load shall be increased at a steady rate to (100%) and held for one minute. The applied load shall then be increased until the failing load is reached and the value recorded.

2.0 SURFACE CONDITION TEST (Check)

2.1 A sample of the finished conductor for use in 11 KV system having a minimum recommended length of 5 meters with compression type dead end clamps compressed on both ends in such a manner as to permit the conductor to take its normal straight line shape, shall be subjected to a tension of 50 percent of the UTS of the conductor. The surface shall not depart from its cylindrical shape nor shall the strands move relative to each other so as to get out of place or disturb the longitudinal smoothness of conductor. The measured diameter at any place shall be not be less than the sum of the minimum specified diameters of the individual aluminium and steel strands as given in this specification.

3.0 D.C. RESISTANCE TEST ON STRANDED CONDUCTOR

3.1 On a conductor sample of minimum 5m lengths two contact clamps shall be fixed with a pre-determined bolt torque. The resistance shall be measured by a Kelvin double bridge by placing the clamps initially zero meter and subsequently one meter apart. The test shall be repeated at least five times and the average value shall be recorded. The value obtained shall be corrected to the value at 20 deg. C as per Clause No. 12.8 of IS: 398 (Part V) / 1996. The resistance corrected at 20 deg. C shall conform to the requirements of this specification.

4.0 STRESS-STRAIN TEST SURFACE CONDITION TEST

4.1 This test is contemplated to collect the creep data of the conductor from the Bidder. A sample of conductor of minimum 10 meters length shall be suitably compressed with dead end clamps.

4.2 Test Set - Up

4.2.1 The test sample shall be supported in a through over its full length and the through shall be adjusted such that the conductor does not get lifted by more than 10mm under tension. This shall be ascertained by actual measurement.

4.2.2 The distance between the clamp and the sleeve mouth shall be monitored with calipers during the test to ensure that after the test, it does change by more than +/-0.1 mm from the value before the test.

4.2.3 The conductor strain shall be evaluated from the measured displacements at the two ends of the gauge length of the sample. The gauge reference targets shall be attached to the clamps, which lock the steel and aluminum wires together. Target plates may be used with dial gauges on displacement transducers and care shall be taken to position the plate's perpendicular to the conductor. Twisting the conductor, lifting it and moving it from side-to-side by the maximum amounts expected during the test should introduce no more than 0.3 mm error in the reading.

4.3 Test Loads for Complete Conductor

4.3.1 The loading conditions for repeated stress-strain tests for complete conductor shall be as follows:

4.3.1.1 1 KN load shall be applied initially to straighten the conductor. The load shall be removed after straightening and then strain gauges are to be set at zero at zero tension.

4.3.2 For non-continuous stress-strain data, the strain readings at 1 KN intervals at lower tension and 5 KN intervals above 30% of UTS shall be recorded.

4.3.3 The sample shall be reloaded to 50% of UTS and held for 1 hour. Readings are to be noted after 5, 10, 15, 30, 45 and 60 Minutes. The load shall then be released.

4.3.4 Reloading up to 70% of UTS shall be done and held for 1 hour. Readings are to be noted after 5, 10,15,30,45 and 60 minutes and then load shall be released.

4.3.5 Reloading up to 85% of UTS shall be done and held for 1 hour. Readings are to be noted after 5, 10,15,30,45 and 60 minutes and then load shall be released.

4.3.6 Tension shall be applied again and shall be increased uniformly until the actual breaking strength is reached. Simultaneous readings of tension and elongation shall be recorded up to 90% of UTS at the intervals described under Clause 6.3.5.

4.4 Stress Strain Curves

The design stress-strain curve shall be obtained by drawing a smooth curve through the 0.5 and 1 hour points at 30%, 50% and 70% of UTS loading. The presence of any aluminium slack that can be related to any observed extrusion entering the span from the compression dead ends shall be removed from the lower ends of the design curves. Both the laboratory and design stress-strain curves shall be submitted to the purchaser along with test results. The stress- strain data obtained during the test shall be corrected to the standard temperature i.e. 20 deg. C.

5.0 CHEMICAL ANALYSIS OF ALUMINIUM

Samples taken from the Aluminium ingots/coils/strands shall be chemically / spectrographically analyzed. The same shall be in conformity to the requirements stated in this specification.

6.0 VISUAL AND DIMENSIONAL CHECK ON DRUMS

The drums shall visually and dimensionally check to ensure that they conform to the requirements of this specification.

7.0 VISUAL CHECK FOR JOINTS, SCRATCHES ETC.

Conductor drums shall be rewound in the presence of the inspecting officer. The inspector shall visually check the scratches, joints, etc. and that the conductor generally conforms to the requirements of the specification.

8.0 DIMENSIONAL CHECK OF ALUMINIUM STRANDS

The individual strands shall be dimensionally checked to ensure that they conform to the requirements to this specification.

9.0 CHECK FOR LAY-RATIOS OF VARIOUS LAYERS

The lay-ratios of various layers shall be checked to ensure that they conform to the requirements of this specification.

10 .0 BREAKING LOAD TEST ON WELDED ALUMINIUM STRAND

Two Aluminum wire shall be welded as per the approved quality plan and shall be subjected to tensile load. The welded point of the wire shall be able to withstand the minimum breaking load of the individual strand specified in this specification.