

**Amendment-1 dated 29.08.2018, Ref: NIT No. 2093 dated: 17.08.2018**

<b>S. No.</b>	<b>Clause No./Page No.</b>	<b>Existing Provisions</b>	<b>Proposed Revised Provisions</b>
2	Page No 62, Section V, GS Stay Set (16 MM).	GS Stay Set (16 MM) as per IS 7887 (Part1) Complete with Plate 200X200X6mm conforming to IS 7887(1992) or any amendment up to date.	GS Stay Set (16 MM) as per IS 7887(Part1) Complete set with Plate 300X300X8mm conforming to IS 7887(1992) or any amendment up to date.  <b>The above materials shall be supplied in compliance with relevant IS and standards to updated revisions as applicable.</b>
3	Page No 63, Section V, GS Stay Set (20 mm)	GS Stay Set (20 MM) as per IS7887(Part1) Complete with Plate 300X300X8mm conforming to IS 7887(1992) or any amendment up to date.	GS Stay Set (19 MM) as per IS 7887(Part1) Complete set with Plate 300X300X8mm conforming to IS 7887(1992) or any amendment up to date.  <b>The above materials shall be supplied in compliance with relevant IS and standards to updated revisions as applicable.</b>
3	Page No 11, Section V, AAC conductors <b>Addition.</b>		All aluminum conductors as per IS 398(Part1) and IS 398(Part 2) with latest revisions applicable. For packing and drums as per IS 1778 (1980) with latest update applicable.  1. ANT (50 sqmm). 2. GNAT (25 sqmm).  Please refer <b>Annexure II</b> for Technical Details.  <b>The above materials shall be supplied in compliance with relevant IS and standards to updated revisions as applicable.</b>
4	Page No 26, Section V, <b>SINGLE CORE LT XLPE Insulated Cable (up to 1100V)</b> <b>Addition.</b>		SINGLE CORE LT XLPE Insulated Cable (up to 1100V) 95 sqmm as per IS 7098 (Part 1, 2 and 3) 1988 or updated revisions as applicable, IS 10418 and IS 8130 with updated revisions applicable.  Please refer <b>Annexure II</b> for Technical Details.

			<b>The above materials shall be supplied in compliance with relevant IS and standards to updated revisions as applicable.</b>
5	Page No 26, Section V, <b>SINGLE CORE LT XLPE Insulated Cable (up to 1100V) Addition.</b>		SINGLE CORE LT XLPE Insulated Cable (up to 1100V) 150sqmm as per IS 7098 (Part 1, 2 and 3) 1988 or updated revisions as applicable, IS 10418 and IS 8130 with updated revisions applicable.  Please refer <b>Annexure II</b> for Technical Details.  <b>The above materials shall be supplied in compliance with relevant IS and standards to updated revisions as applicable.</b>
6	Page No 72, SECTION-VI  COMMERCIAL TERMS, CONDITIONS & OTHER PROVISIONS, Point No. 2	Earnest Money Deposit	In case of Consortium/JV, EMD exemption shall be extended only if both partners of Consortium/JV meet the requirement of MSME/NSIC certification.
7	Page No 73, SECTION-VI  COMMERCIAL TERMS, CONDITIONS & OTHER PROVISIONS, Point No. 4 , Delivery	<b>DELIVERY:</b> The materials must be delivered timely as per conditions specified in this NIT to sub-divisional headquarters of Power & Electricity Department, Govt. of Mizoram in the State of Mizoram so as to complete the work within sanctioned period.	<b>DELIVERY:</b> The materials must be delivered timely as per conditions specified in this NIT to sub-divisional headquarters of Power & Electricity Department, Govt. of Mizoram in the State of Mizoram <b>mentioned in Table A below</b> , so as to complete the work within sanctioned period.
8	Page No 109, Annexure-XVI	<b>Financial Bid</b>	<b>Financial Bid</b> as per revised <b>Annexure-I</b> below.

**Table A**

DELIVERY: The materials must be delivered timely as per conditions specified in this NIT to here specified places in the State of Mizoram as mentioned below,																	
Name of Delivery Location	DTR (nos.)			ACSR Conductor (km)	AAC Conductors (km)		LT XLPE Cable (mtrs)						Polymer Insulators (Set)		Stay Set (Set)		GI Wire 8 SWG (kg)
	25 KVA	63 KVA	100 KVA	Weasel 30 sq mm (km)	Ant 50 sq mm (km)	Gnat 25 sq mm (km)	16	35	50	95	70	150	Pin Insulator	Disc Insulator	16mm	19mm	
Rural Sub-division, Aizwal	3			2.84	9.82	5.18	75	225	200	150			7	14	66	23	46.98
Darlawn Power Sub-division	8	2		9.54	20.81	11.56	200	600	50	150			24	48	145	76	124.24
Thingsulthliah Power Sub-division	4			8.98	2.27	1.26	100	300	0	0			23	46	16	71	40.3
Saitual Power Sub-division	4			5.67	32.8	18	100	300					14	29	227	45	129.58
Mamit Power Sub-division	7	3		22.05	23.5	13.1	175	525	75	225			56	112	164	175	156.58
W Phaileng Power Sub-division	7	14		24.1	28.2	16	175	525	350	1050			61	122	200	191	221.1
Zwalnuam Power Sub-division	3	11		20.73	21.07	11.71	75	225	275	825			53	105	147	165	162.38
Lungsen Power Sub-division	44	19		94.25	88.5	48.3	1100	3300	475	1425			239	479	609	748	707.28
Hnahthial Power Sub-division	2			1.73	16.84	6.79	50	150					4	9	92	14	50.11
Kolasib Power Sub-division		8	3	25.2	41.14	18.8			200	600	75	225	64	128	247	200	199.4

Vairengte Power Sub-division	3	1		5.04	6.71	3.73	75	225	25	75			13	26	47	40	46.9
Serchip Sub-station Sub-division		2		3.21	10.19	5.66			50	150			8	16	71	26	46.46
Serchip Power Sub-division	2			0.46	1.7	0.95	50	150					1	2	12	4	14.27
Champhai Power Sub-division	1	3	4	25.99	43.25	20.09	25	75	75	225	100	300	66	132	297	206	211.88
Rural Sub-division, Champhai	1			0.6	0.62	0.35	25	75					2	3	4	5	7.12
Lawngtlai Power Sub-division	8	6	1	38.27	28.95	12.03	200	600	150	450	25	75	97	195	162	304	201.6
Bungtlang S Power Sub-division	34	21		66.47	70.27	34.57	850	2550	525	1575			169	338	446	528	544.12
Tuipang V Power Sub-division	12	7		35.91	26.35	14.64	300	900	175	525			91	182	184	285	228.04
Saiha Power Sub-division	8	9		21.86	14.55	8.1	200	600	225	675			56	111	102	174	155.84
Distribution division, Aizwal		3	6	26.62	41.6	13.9			75	225	150	450	68	135	198	211	165.9
Khawzwal Power Sub-division	0	0	0	0	1.9	1.1	0	0	0	0			0	0	13	0	6
Transmission & Switchyard Sub-division, Bairabi		2	1	2.05	2.5	1.4			50	150			5	10	17	16	23.7
Revenue Sub-division, Lunglei		3		20.48	18	6			75	225			52	104	86	163	85.2
<b>Total</b>	<b>151</b>	<b>114</b>	<b>15</b>	<b>462.05</b>	<b>551.54</b>	<b>273.22</b>	<b>3775</b>	<b>11325</b>	<b>3050</b>	<b>8700</b>	<b>350</b>	<b>1050</b>	<b>1173</b>	<b>2346</b>	<b>3552</b>	<b>3670</b>	<b>3574.98</b>

**Annexure I**

Supply of Materials for Sub-transmission & Distribution Network in Mizoram for electrification works under SAUBHAGYA/DDUGJY										
Name of the Company										
S. No.	Item Description	Unit	Quantity	Per Unit Rate (in Rs.)	Total Amount without GST (in Rs.)	GST Percentage	GST Amount (in Rs.)	Total Amount including GST (in Rs.)	Freight & Insurance (including taxes) (in Rs.)	Total Amount (including GST, Freight & Insurance) (in Rs.)
A	B	C	D	E	F = D x E	G	H = F x G	I = F + H	J	K = I + J
1	Supply of Three Phase 25KVA, 11kV/433V-250V Distribution Transformer, Aluminium/ Copper wound as per scope of work	Nos.	151		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
2	Supply of Three Phase 63KVA, 11kV/433V-250V Distribution Transformer, Aluminium/ Copper wound as per scope of work	Nos.	114		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00

3	Supply of Three Phase 100KVA, 11kV/433V-250V Distribution Transformer, Aluminium/ Copper wound as per scope of work	Nos.	15		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
4	Supply of weasel ACSR conductor (30mm <sup>2</sup> ) as per scope of work	KM	462.05		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
5	Supply of ANT AAC conductor (50mm <sup>2</sup> ) as per scope of work	KM	551.54		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
6	Supply of GNAT AAC conductor (25mm <sup>2</sup> ) as per scope of work	KM	273.22		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
7	Supply of Single Core LT XLPE armoured Cable (1X16 sq. mm) as per scope of work	Meter	3775		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
8	Supply of Single Core LT XLPE armoured Cable (1X35 sq. mm) as per scope of work	Meter	11325		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
9	Supply of Single Core LT XLPE armoured Cable	Meter	3050		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00

	(1X50 sq. mm) as per scope of work								
10	Supply of Single Core LT XLPE armoured Cable (1X70 sq. mm) as per scope of work	Meter	350		₹ 0.00		₹ 0.00	₹ 0.00	₹ 0.00
11	Supply of Single Core LT XLPE armoured Cable (1X95 sq. mm) as per scope of work	Meter	8700		₹ 0.00		₹ 0.00	₹ 0.00	₹ 0.00
12	Supply of Single Core LT XLPE armoured Cable (1X150 sq. mm) as per scope of work	Meter	1050		₹ 0.00		₹ 0.00	₹ 0.00	₹ 0.00
13	Supply of 11 KV Polymer Pin Insulator (3 Nos.) with GI Pin as per scope of work	Set	1173		₹ 0.00		₹ 0.00	₹ 0.00	₹ 0.00
14	Supply of 11 KV Polymer Disc Insulator T&C type (3 Nos.) with hardware fittings as per scope of work	Set	2346		₹ 0.00		₹ 0.00	₹ 0.00	₹ 0.00
15	Supply of LT Stay Set (16 mm) along with stay set wire as per scope of work	Set	3552		₹ 0.00		₹ 0.00	₹ 0.00	₹ 0.00

16	Supply of HT Stay Set (19 mm) along with stay set wire as per scope of work	Set	3670		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
17	Supply of 8 SWG GI Wire as per scope of work	MT	3.57499		₹ 0.00		₹ 0.00	₹ 0.00		₹ 0.00
<b>Sub-Total (in Rs.)</b>										₹ 0.00
<b>Grand Total in figure(in Rs.)</b>					<b>₹ 0.00</b>					
<b>Grand Total in words (in Rs.)</b>										



## **Annexure II**

### **AAC CONDUCTORS**

#### **1. SCOPE**

This Specification covers the details of the conductors for use on LT overhead lines in rural electric distribution systems. The sizes of conductors standardized for lines of different voltages are indicated below:

LT Lines

- 1) AAC GNAT  
7/2.21 mm (25mm<sup>2</sup> aluminum area)
- 2) AAC ANT  
7/3.10 mm (50mm<sup>2</sup> aluminum area)

#### **2. APPLICABLE STANDARDS**

Except when they do not comply with the specific requirements in this specification, the conductors shall comply with the Indian Standard Specification IS:398 (Pt.I)-1976 and IS:398 (Pt.II)-1976 or the latest version thereof.

#### **3. SIZES**

The sizes and properties of Stranded All Aluminium Conductors shall be as under:

**TABLE – I**

**STANDARD ALUMINIUM STRANDED CONDUCTORS**

<b>Nominal Aluminium Area</b>	<b>Stranding and Wire Diameter</b>	<b>Sectional Area</b>	<b>Approx. Overall Diameter</b>	<b>Approx. Mass</b>	<b>Calculated Resistance at 20° C Max.</b>	<b>Approx. Calculated Breaking load</b>
1	2	3	4	5	6	7
mm.sq.	mm	mm.sq.	mm	Kg./Km	Ohm./Km	KN
25	7/2.21	26.85	6.63	74	1.096	4.52
50	7/3.10	52.83	9.3	145	0.5525	8.25

**4. ALUMINIUM WIRES**

THE PROPERTIES OF ALUMINIUM WIRES TO BE USED IN THE CONSTRUCTION OF THE STRANDED CONDUCTORS SHALL BE AS UNDER

**TABLE – III**

**SOLID ALUMINIUM WIRES USED IN THE CONSTRUCTION OF STRANDED ACSR CONDUCTORS**

Nominal	Diameter		Cross Sectional Area of Nominal Diameter Wire	Mass	Resistance At 20° C	Breaking Load Min.	
	Min.	Max.				Before Stranding	After Stranding
1	2	3	4	5	6	7	8
mm	mm	mm	mm.sq.	Kg./Km	Ohm./Km.	KN	KN
2.21	2.19	2.23	3.836	10.37	7.503	0.68	0.65
3.1	3.07	3.13	7.548	20.4	3.818	1.24	1.18

**5. FREEDOM FROM DEFECTS**

The wires shall be smooth and free from all imperfections, such as spills & splits.

**6. JOINTS IN WIRES & CONDUCTORS**

**6.1** All aluminum conductors: No joints shall be permitted in any wire.

**Aluminum Wires** : No two joints shall occur in the aluminum wires closer together than 15 meters.

## 7. STRANDING

7.1 The wires used in construction of a stranded conductor shall, before stranding satisfy all the requirements of this standard for solid wires.

### 7.2 Lay Ratio :

The lay ratio for aluminum wires in case of AAC shall be within limits given below :

No. of wires in conductors	Lay Ratio	
	Min	Max
7	10	14

## 8. TESTS

The samples of individual wires for the tests shall normally be taken before stranding. The manufacturer shall carry out test on samples taken out at least from 10% of aluminium wire spools and 10% of steel wire coils. However, when desired by the purchaser, the test sample may be taken from the stranded wires.

- a) The wires used for all aluminium conductors shall comply with the following tests as per IS:398(Pt.I)-1976.
- i) Breaking load test
  - ii) Wrapping test
  - iii) Resistance test

## 9. PACKING & MARKING

The conductors shall be wound in reels or drums conforming to IS:1778-1980 'Specification for Reels and Drums for bare wire' or the latest version thereof.

**9.1 Packing**

**9.1.1** The gross mass for various conductors shall not exceed by more than 10% of the values given in the following table:

<b>Conductor Size</b>	<b>Gross Mass</b>
<b>AAC</b>	
25mm <sup>2</sup> Al. area (7/2.21 mm)	500 Kg.
50mm <sup>2</sup> Al. area (7/3.10 mm)	500 Kg.

**9.1.2** The normal length of various conductors shall be as given in the following table :

<b>Conductor Size</b>	<b>Normal conductor length</b>
<b>AAC</b>	
25mm <sup>2</sup> Al. area (7/2.21mm)	1.0 Km.
50mm <sup>2</sup> Al. area (7/3.10mm)	1.0 Km.

**9.1.3** Longer lengths shall be acceptable

**9.1.4** Short lengths, not less than 50% of the standard lengths, shall be acceptable to the maximum extent of 10% of the quantity ordered.

**9.2 Marking:** The following information shall be marked on each package:

- a) Manufacturers' name
- b) Trade mark, if any

- c) Drum or identification number
- d) Size of conductor
- e) Number and lengths of conductor
- f) Gross mass of the package
- g) Net mass of conductor
- h) Name of Scheme i.e. DDUGJY or SAUBHAGYA
- i) I.S.I certification mark, if any

#### **10. INSPECTION**

All tests and inspection shall be made at the place of manufacture unless otherwise especially agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall afford the inspector representing the purchaser all reasonable facilities without charge, to satisfy him that the material is being furnished in accordance with this Specification.

**LT XLPE CABLE (95 sq.mm & 150 sq. mm)**

The parameters of the LT power cables to be supplied shall be as specified below:

Nom. cross sectional area (Sq.mm)	Nom. Thickness of XLPE Insulation mm main core	Armoured			Max.DC Conductor Resistance at 20°C (ohm/km)	AC current rating	
		Nom. Steel Armour size (mm)	Approx. Overall dia. (mm)	Approx, Weight (kg/km)		In air (amps)	In Grpund (amps)
95	1.10	4 X 0.8	35.8	1903.0	0.320	221	199
150	1.40	4 X 0.8	42.9	2720.0	0.206	294	255

The short circuit current of the LT cable to be as specified below:

Sq.mm of LT Cable	Short Circuit Current(KA)
95	9.030
150	14.200

**NOTE: All other specifications, terms & conditions shall remain same as mentioned in SECTION-V under the head "SINGLE CORE LT XLPE Insulated Cable (up to 1100V)".**