CIN No. U99999MH1970GAPO14629

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Indian Electrical & Electronics Manufacturer's Association
501, Kakad Chambers
132, Dr. A. B. Road, Worli,
Mumbai 400 018
India
P +91 22 2493 0532
F +91 22 2493 2705
E mumbai@ieema.org
w www.ieema.org

Cir. No.: **111**/DIV/CAB/05 6th December 2017

To Cable Division and Utilities/SEBS, listed of purchasing organisations

Sub: a) New Price Variation Clause for LV & HV Ariel Bunch Cables & Solar DC Cables
b) Revision in the Price Variation Clause of Power and Control with XLPE Factors

You may recall our recent Circulars No. 97/DIC/CAB/05 dated 31st October 2017 & 103/DIV/CAB/05 dated 10th November 2017 vide which we have circulated new Price Variation Clause for LV & HV Aerial Bunch Cables and Revision in Price Variation Clause for Power & Control Cables with XLPE compound including Solar DC Cables.

IEEMA has felt the need to evolve Price Variation Clause for LV & HV Ariel Bunch Cables and Solar DC Cables; demand of which is increasing in the market.. The required factors of metal and insulating materials as per appropriate Indian standard have been worked out. It has also been decided to revise Price Variation Clause of Power and Control Cables including XLPE insulation factors; which was required by all stakeholders.

We are now making the draft PV formula operational w.e.f.1st November 2017 as we have not received any adverse comments on the draft.

Salient points of both these Price Variation formulae are XLPE factors are being worked out for the variation purpose represented by XLPE prices of representative grade.

We are enclosing the above mentioned Price Variation Clauses along with applicable table of factors for your perusal. We recommend all stakeholders to incorporate the appropriate PV clause in all the contracts/tenders henceforth for settlement of price variation.

Relevant prices/indices are being published in PV circular for Cable from November 2017.

Senior Director

Encl.: as above

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IEEMA (PVC)/AB CABLE/2017 **Effective from: 1st November 2017**

Price Variation Clause for LV and HV Aluminium & Aluminium Alloy, XLPE Aerial Bunch Cables

The Price quoted/confirmed is based on the input cost of raw materials/components as on the date of quotation, and the same is deemed to be related to the prices of raw materials as specified in the price variation clause given below. In case of any variation in these prices, the price payable shall be subject to adjustment up or down in accordance with the formulae provided in this document.

Terms used in price variation formulae:

P Price payable as adjusted in accordance with above appropriate formula **(in Rs/Km)**

P_o Price quoted/confirmed **(in Rs/Km)**

n No. of phase conductor

ALUMINIUM

Alph= Aluminium factor for phase conductor

Alm= Aluminium factor for messenger conductor

Alsl= Aluminium factor for street light conductor

Aln= Aluminium factor for neutral conductor

Al Price of LME average Cash SELLER Settlement price of Primary Aluminium in US$ per MT as published by London Metal Bulletin (LME) including Premium for Aluminium Ingot in US$ per MT converted in Rs./MT.
This price is as applicable of first working day of the month, one month prior to the date of delivery.

Al_o Price of LME average Cash SELLER Settlement price of Primary Aluminium in US$ per MT as published by London Metal Bulletin (LME) including Premium for Aluminium Ingot in US$ per MT converted in Rs./MT.
This price is as applicable on first working day of the month, one month prior to the date of tendering.

XLPE COMPOUND

CCFAlph = XLPE factor for phase conductor (For LV AB Cables)

CCF1Alph= XLPE factor for phase conductor (For MV_HV AB Cables)

CCFAlm= XLPE factor for messenger conductor

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CCFAlsl= XLPE factor for street light conductor

CCFAln= XLPE factor for neutral conductor

Cc Price of XLPE Compound in Rs/MT of a representative grade applicable for LV Aerial Bunch Cables; as quoted by supplier/s.

This price is as applicable of first working day of the month, one month prior to the date of delivery.

Cc_0 Price of XLPE Compound in Rs/MT of a representative grade applicable for LV Aerial Bunch Cables; as quoted by supplier/s.

This price is as applicable of first working day of the month, one month prior to the date of tendering.

PVC/PE Compound

CCF2Alph= PVC/ PE factor for phase conductor (For MV_HV AB Cables)

PVCc price of PVC compound (equivalent to CW-22 grade) in Rs/MT; as quoted by supplier/s.

This price is as applicable on first working day of the month, one month prior to the date of delivery.

$PVCc_o$ Price of PVC compound (Equivalent to CW-22 Grade) in Rs/MT; as quoted by supplier/s.

This price is as applicable on first working day of the month, one month prior to the date of tendering.

Copper

CuFtph= Cu tape factor for phase conductor

CU The LME price of Copper Wire Bars (in Rs./MT) is the LME average settlement price of Copper Wire Bars converted into Indian Rupees with average exchange rate of the month. This price is the landed cost, inclusive of applicable customs duty only.

This price is as applicable of first working day of the month, one month prior to the date of delivery.

CU_0 The LME price of Copper Wire Bars (in Rs./MT) is the LME average settlement price of Copper Wire Bars converted into Indian Rupees with average exchange rate of the month. This price is the landed cost, inclusive of applicable customs duty only.

This price is as applicable of first working day of the month, one month prior to the date of tendering.

The above prices and indices are as published by IEEMA vide Circular reference IEEMA(PVC)/CABLE(R-1)/--/-- prevailing as on 1st working day of the month i.e. one month prior to the date of tendering.

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The date of delivery is the date on which the cable is notified as being ready for inspection/dispatch (in the absence of such notification, the date of manufacturer's dispatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto), whichever is earlier.

All prices of raw materials are exclusive of GST and exclusive of any other central/ state.

Price variation formulae for 'LV & HV Aerial Bunch Cables'

1. LV Aerial Bunched Cables with Aluminium Conductor , XLPE Insulated and Aluminium Magnesium-Silicon Alloy Messenger Conductor

$$P = P_0 + Alph * n^* (Al\text{-}Al_0) + Alm(Al\text{-}Al_0) + Alsl(Al\text{-}Al_0) + Aln(Al\text{-}Al_0) + CCFAlph *n^* (CC\text{-}CC_0) + CCFAlm(CC\text{-}CC_0) + CCFAlsl (CC\text{-}CC_0) + CCFAln(CC\text{-}CC_0)$$

Table Reference

Alph/Alm/Alsl/Aln	Aluminium Factor for Phase/Messenger/Street light/Neutral Conductors
CCFAlph	XLPE factor for phase conductor
CCFAlm	XLPE factor for messenger conductor
CCFAlsl	XLPE factor for street light conductor
CCFAln	XLPE factor for neutral conductor

In case messenger is bare; XLPE factor CCFAlm= 0

2 HV Aerial Bunched Cables with Aluminium Conductor, Conductor screened, XLPE Insulated, insulation screened followed by copper tape and over all PVC/PE sheathe cores twisted around Bare Aluminium Magnesium-Silicon Alloy Messenger Conductor

$$P = P_0 + Alph *n *(Al\text{-}Al_0) + Alm(Al\text{-}Al_0) + CUFtph * n *(Cu\text{-}Cu_0) + CCF1Alph * n^* (CC\text{-}CC_0) + CCF2Alph * n *(PVCc\text{-}PVCc_0) + CCFAlm (CC\text{-}CC_0)$$

Table Reference

Alph/Alm	Aluminium Factor for Phase/Messenger Conductors
CuFtph	Copper tape factor for phase conductor
CCF1Alph	XLPE factor for phase conductor
CCF2Alph	PVC/ PE factor for phase conductor
CCFAlm	XLPE factor for messenger conductor

In case, Phase Conductor is of PVC, PE Factor is Nil & when Phase Conductor is of PE, PVC Factor is Nil

Authorised Signatory

HEAD OFFICE - DELHI
Rishyamook Building, First Floor, 85 A, Panchkuian Road, New Delhi 110001
P +91 11 2336 3013 / 14 • **F** + 91 11 2336 3015 • **E** delhi@ieema.org • **W** www.ieema.org

Table (Alph/Alm/Alsl/Aln)
Variation Factor for Aluminium for Phase/Messenger/Street Light/Neutral Conductor

Nominal Cross Sectional Area (in Sq. mm.) of Conductor	Aluminium Factor for Phase/ Messenger/ Street light / Neutral Conductors (Alph/Alm/Alsl/Aln)
16	0.046
25	0.073
35	0.101
50	0.137
70	0.197
95	0.274
120	0.346
150	0.425
185	0.533
225	0.655
240	0.703
300	0.879
400	1.126
500	1.418
630	1.828
800	2.34
1000	2.951

Table (CCFAlph/CCFAlm/CCFAln/CCFAlsl)
Variation Factor for XLPE for Phase/Messenger/Street Light/Neutral Conductor
As per IS-14255: 1995

Nominal Cross Sectional area of Conductor (In Sq.mm)	Factor for XLPE Phase Conductor (CCFAlph)	Factor for XLPE Messenger Conductor (CCFAlm)	Factor for XLPE Neutral Conductor (CCFAln)	Factor for XLPE Street Light Conductor (CCFAlsl)
16	0.024	0.032	0.024	0.024
25	0.029	0.032	0.029	0.029
35	0.033	0.032	0.033	0.033
50	0.047	0.037	0.047	0.047
70	0.055	0.052	0.055	0.055
95	0.064	0.059	0.063	
120	0.073	0.077	0.073	
150	0.085	0.092	0.085	
185	0.104	0.113	0.104	
240	0.126	0.135	0.126	
300	0.145	0.156	0.145	

Table (CCF1Alph/CCF2Alph/CUFtphCCFAlm/CCFAln/CCFAlsl)
Variation Factor for XLPE for Phase/Messenger/Street Light/Neutral Conductor
As per IS-7098-P2 Generally

Nominal Cross Sectional area of Phase Conductor (In Sq.mm)	11 KV HV Aerial Bunch Cables				33 KV HV Aerial Bunch Cables			
	Factor for XLPE (CCF1Alph)	Factor for PVC (CCF2Alph)	Factor for PE sheath (CCF2Alph)	Factor for Cu tape (CUFtph)	Factor for XLPE (CCF1Alph)	Factor for PVC (CCF2Alph)	Factor for PE sheath (CCF2Alph)	Factor for Cu tape (CUFtph)
35	0.161	0.203	0.132	0.027	0.522	0.386	0.250	0.043
50	0.176	0.216	0.140	0.029	0.549	0.363	0.235	0.046
70	0.198	0.232	0.151	0.031	0.600	0.382	0.248	0.049
95	0.223	0.253	0.164	0.034	0.653	0.403	0.261	0.052
120	0.241	0.265	0.172	0.036	0.693	0.418	0.271	0.054
150	0.261	0.281	0.182	0.039	0.738	0.436	0.283	0.056
185	0.285	0.330	0.214	0.042	0.790	0.497	0.322	0.059
240	0.318	0.358	0.232	0.046	0.862	0.527	0.342	0.062
300	0.345	0.381	0.247	0.049	0.921	0.598	0.388	0.066

Note: Factor for PVC and Factor for PE are alternatives