CIN No. U99999MH1970GAPO14629

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Cir. No.04/PVC/Conductor/05 **31 January 2023**

To Members of Conductor Division
To all State Electricity Boards, Utilities and Other purchasing organizations

Sub: MV covered conductors PV formulae

IEEMA received request from industry and utilities for price variation formula for MV Covered conductors. After discussion with stakeholders considering the demand for MVCC and price volatility, IEEMA Conductor technical committee decided to evolve the PV formula.

IEEMA collected weight factors in MT/KM of required raw materials and insulations for various types and sizes of MV Covered Conductors and averaged the same and prepared the draft formulae for MV Covered Conductor in consultation with technical committee members of IEEMA Conductor division. We had circulated draft formulae vide cir no. **43/PVC/Conductor/05 dated 21st Dec 2022.**

Since there are no adverse comments received; we are making these operational from 1st December 2022.

Although, these PV clauses are made effective from 1st December 2022, practically it can be incorporated in all the current new tenders/contracts starting from 1st January 2023.

We request and recommend all the users & stakeholders including Utilities, PSUs etc. to incorporate these new PV formulae in all the new tenders/contracts henceforth.

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MATERIAL PRICE VARIATION CLAUSE FOR MEDIUM VOLTAGE COVERED CONDUCTOR

The price quoted/confirmed for Medium Voltage Covered Conductor is based on the input cost of raw materials as on the date of quotation. It is deemed to be related to the prices of raw materials, as specified in the price variation clauses given below. In case of any variation in these prices, the prices payable shall be subject to adjustment up or down in accordance with the following formulae.

1. AAAC/AL-7/AL-59 Conductors

P = Po + WA (AL - ALo) + WSc (SC – SCo) + WI (IN – INo) + WO (IN – INo)

2. ACSR Conductors

P = Po + WA (AL - ALo) + WF (FE – FEo) + WSc (SC – SCo) + WI (IN – INo) + WO (IN – INo)

3. AL59 ACS Conductors

P = Po + WAL (AL - ALo) + WA (AL - ALo) + WF (FE – FEo) + WSc (SC – SCo) + WI (IN – INo) + WO (IN – INo)

Wherein,

P = Ex-works price payable in Rs. per km as adjusted in accordance with the price variation clause
Po = Ex-works price quoted/confirmed in Rs. per km.

WA = Variation factor of Aluminium in MV Covered Conductor as per the type of MVC conductor (Refer the enclosed annexure giving this factor for various types of MVC conductors)

WAL = Variation factor of AL-59 in MV Covered Conductor as per the type of MVC conductor (Refer the enclosed annexure giving this factor for various types of MVC conductors)

ALo = Price of LME CSP Average of Aluminium (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of tender opening.
AL = Price of LME CSP Average of Aluminium (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of delivery.

WF = Variation factor of Steel Content in ACSR and AL-59 ACS MVC Conductor as per the type of MVC conductor
(Refer the enclosed annexure giving this factor for various types of MVC conductors)

FEo = Price of High Tensile Galvanized Steel Wire in Rs./MT of appropriate size (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of tender opening.
FE = Price of High Tensile Galvanized Steel Wire in Rs./MT of appropriate size (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of delivery.

WSc = Variation factor of Semiconducting conductor screening as per the type of MVC Conductor
(Refer the enclosed annexure giving this factor for various types of MVC conductors)

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WI = Variation factor of inner insulation as per the type of MVC conductor
(Refer the enclosed annexure giving this factor for various types of MVC conductors)

WO = Variation factor of outer insulation as per the type of MVC conductor
(Refer the enclosed annexure giving this factor for various types of MVC conductors)

Note: For factor of HDPE, multiply XLPE factor by 1.2

SCo = Price of Semiconducting conductor screening in Rs./MT (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of tender opening.

SC = Price of Semiconducting conductor screening in Rs./MT (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of delivery.

INo = Price of XLPE Compound/ Polymeric Compound (HDPE) as used for inner/outer insulation in Rs./MT (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of tender opening.

IN = Price of XLPE Compound/ Polymeric Compound (HDPE) as used for inner/outer insulation in Rs./MT (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of delivery.

The above prices and indices are as published by IEEMA vide circular reference IEEMA(PVC)/MVCC/--/--

The date of delivery is the date on which the MVC Conductor 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.

Notes:

1. All prices of raw materials are exclusive of GST amount.
2. Price of Daily LME Cash SELLER Settlement price of Primary Aluminium in US$ per MT is as published by London Metal Bulletin (LME). Premium for Aluminium Ingot in US$ per MT is added in this Daily LME price and converted in Indian Rs./MT using exchange rate and adding appropriate customs duty
3. The price of High tensile Galvanized Steel Wire (in Rs./MT) for different sizes in mm is the price as quoted by manufacturer/s
4. Price of Polymer Compound (in Rs/MT) is the ex-work price of Polyethylene PE ST-7, as quoted by the manufacturer/s
5. Price of XLPE Compound (in Rs/MT) is the ex-works price, as quoted by the manufacturer/s
6. Price of Semiconducting conductor screening (in Rs/MT) is the ex-works price, as quoted by the manufacturer/s

Authorised Signatory

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AAAC/AL-7/AL-59					
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**	**11 kV (Combined Insulation Thickness - 2.3 mm (Nom)**		
Variation factor		**WA**	**WSc**	**WI**	**WO**
Raw material		**AAAC/AL-7/AL-59**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**				
50	7/3.08	0.1463	0.0439	0.0477	0.0546
55	7/3.15	0.1528	0.0449	0.0486	0.0555
70	7/3.57	0.1966	0.0520	0.0537	0.0605
80	7/3.81	0.2225	0.0568	0.0576	0.0666
99	7/4.25	0.2785	0.0632	0.0621	0.0688
100	7/4.26	0.2796	0.0634	0.0622	0.0688
120	19/2.84	0.3381	0.0778	0.0677	0.0743
125	19/2.89	0.3486	0.0793	0.0702	0.0789
148	19/3.15	0.4142	0.0867	0.0756	0.0843
157	19/3.26	0.4438	0.0900	0.0779	0.0865
173	19/3.40	0.4825	0.0958	0.0808	0.0894
200	19/3.66	0.5592	0.1041	0.0862	0.0947
232	19/3.94	0.6480	0.1141	0.0921	0.1004
241	19/4.02	0.6748	0.1169	0.0938	0.1020

Note: For factor of HDPE, multiply XLPE factor by 1.2

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AAAC/AL-7/AL-59					
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**	**22 kV (Combined Insulation Thickness - 2.42 mm (Nom)**		
Variation factor		**WA**	**WSc**	**WI**	**WO**
Raw material		**AAAC/AL-7/AL-59**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**				
50	7/3.08	0.1463	0.0455	0.0524	0.0563
55	7/3.15	0.1528	0.0492	0.0547	0.0597
70	7/3.57	0.1966	0.0561	0.0604	0.0648
80	7/3.81	0.2225	0.0594	0.0637	0.0678
99	7/4.25	0.2785	0.0663	0.0697	0.0732
100	7/4.26	0.2796	0.0664	0.0698	0.0733
120	19/2.84	0.3381	0.0811	0.0763	0.0791
125	19/2.89	0.3486	0.0825	0.0774	0.0801
148	19/3.15	0.4142	0.0902	0.0833	0.0854
157	19/3.26	0.4438	0.0936	0.0858	0.0877
173	19/3.40	0.4825	0.0995	0.0890	0.0905
200	19/3.66	0.5592	0.1081	0.0950	0.0958
232	19/3.94	0.6480	0.1183	0.1013	0.1015
241	19/4.02	0.6748	0.1212	0.1031	0.1032

Note: For factor of HDPE, multiply XLPE factor by 1.2

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AAAC/AL-7/AL-59					
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**	**33 kV (Combined Insulation Thickness - 3.63 mm (Nom)**		
Variation factor		**WA**	**WSc**	**WI**	**WO**
Raw material		**AAAC/AL-7/AL-59**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**				
50	7/3.08	0.1463	0.0525	0.1052	0.0742
55	7/3.15	0.1528	0.0534	0.1068	0.0751
70	7/3.57	0.1966	0.0585	0.1143	0.0782
80	7/3.81	0.2225	0.0644	0.1228	0.0838
99	7/4.25	0.2785	0.0707	0.1304	0.0874
100	7/4.26	0.2796	0.0719	0.1337	0.0898
120	19/2.84	0.3381	0.0861	0.1412	0.0936
125	19/2.89	0.3486	0.0886	0.1471	0.0971
148	19/3.15	0.4142	0.0968	0.1576	0.1028
157	19/3.26	0.4438	0.1005	0.1620	0.1052
173	19/3.40	0.4825	0.1066	0.1677	0.1083
200	19/3.66	0.5592	0.1157	0.1781	0.1140
232	19/3.94	0.6480	0.1265	0.1894	0.1202
241	19/4.02	0.6748	0.1296	0.1926	0.1219

Note: For factor of HDPE, multiply XLPE factor by 1.2

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ACSR						
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**		**11 kV (Combined Insulation Thickness - 2.3 mm (Nom)**		
Variation factor		**WA**	**WF**	**WSc**	**WI**	**WO**
Raw material		**Aluminium**	**HTGS**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**					
50	6/3.35 + 1/3.35	0.1477	0.0701	0.0459	0.0518	0.0610
80	6/4.09 + 1/4.09	0.2036	0.0962	0.0569	0.0611	0.0770
100	6/4.72 + 7/1.57	0.2807	0.1098	0.0710	0.0689	0.0878
150	30/2.59 + 7/2.59	0.4439	0.2954	0.0949	0.0855	0.0940
200	30/3.00 + 7/3.00	0.5953	0.3965	0.1168	0.0975	0.1057

ACSR						
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**		**22 kV (Combined Insulation Thickness - 2.42 mm (Nom)**		
Variation factor		**WA**	**WF**	**WSc**	**WI**	**WO**
Raw material		**Aluminium**	**HTGS**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**					
50	6/3.35 + 1/3.35	0.1477	0.0701	0.0482	0.0574	0.0622
80	6/4.09 + 1/4.09	0.2036	0.0962	0.0589	0.0675	0.0712
100	6/4.72 + 7/1.57	0.2807	0.1098	0.0733	0.0761	0.0904
150	30/2.59 + 7/2.59	0.4439	0.2954	0.0988	0.0942	0.0951
200	30/3.00 + 7/3.00	0.5953	0.3965	0.1213	0.1072	0.1068

ACSR						
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**		**33 kV (Combined Insulation Thickness - 3.63 mm (Nom)**		
Variation factor		**WA**	**WF**	**WSc**	**WI**	**WO**
Raw material		**Aluminium**	**HTGS**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**					
50	6/3.35 + 1/3.35	0.1477	0.0701	0.0527	0.1117	0.0778
80	6/4.09 + 1/4.09	0.2036	0.0962	0.0642	0.1296	0.0875
100	6/4.72 + 7/1.57	0.2807	0.1098	0.0793	0.1585	0.0958
150	30/2.59 + 7/2.59	0.4439	0.2954	0.1064	0.1768	0.1133
200	30/3.00 + 7/3.00	0.5953	0.3965	0.1300	0.1999	0.1259

Note: For factor of HDPE, multiply XLPE factor by 1.2

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AL59 ACS							
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**			**11 kV (Combined Insulation Thickness - 2.3 mm (Nom)**		
Variation factor		**WAL**	**WF**	**WA**	**WSc**	**WI**	**WO**
Raw material		**AL-59**	**STEEL**	**Aluminium**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**						
52.88	6/3.35 + 1/3.35	0.1477	0.0499	0.0069	0.0459	0.0518	0.0610
78.82	6/4.09 + 1/4.09	0.2204	0.0729	0.0093	0.0562	0.0611	0.0700
104.98	6/4.72 + 1/4.72	0.2933	0.1024	0.0114	0.0682	0.0689	0.0777
158	30/2.59 + 7/2.59	0.4439	0.2186	0.0267	0.0949	0.0855	0.0940
212	30/3.00 + 7/3.00	0.5953	0.2875	0.0358	0.1168	0.0975	0.1057

AL59 ACS							
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**			**22 kV (Combined Insulation Thickness - 2.42 mm (Nom)**		
Variation factor		**WAL**	**WF**	**WA**	**WSc**	**WI**	**WO**
Raw material		**AL-59**	**STEEL**	**Aluminium**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**						
52.88	6/3.35 + 1/3.35	0.1477	0.0499	0.0069	0.0482	0.0574	0.0622
78.82	6/4.09 + 1/4.09	0.2204	0.0729	0.0093	0.0589	0.0675	0.0712
104.98	6/4.72 + 1/4.72	0.2933	0.1024	0.0114	0.0714	0.0761	0.0789
158	30/2.59 + 7/2.59	0.4439	0.2186	0.0267	0.0988	0.0942	0.0951
212	30/3.00 + 7/3.00	0.5953	0.2875	0.0358	0.1213	0.1072	0.1068

AL59 ACS							
Conductor Sizes	**Conductor Const. No. of Strands/Dia. of Strands**	**Conductor**			**33 kV (Combined Insulation Thickness - 3.63 mm (Nom)**		
Variation factor		**WAL**	**WF**	**WA**	**WSc**	**WI**	**WO**
Raw material		**AL-59**	**STEEL**	**Aluminium**	**Semiconducting**	**Inner (XLPE)**	**Outer (XLPE)**
Sq.mm.	**Nos./mm**						
52.88	6/3.35 + 1/3.35	0.1477	0.0499	0.0069	0.0527	0.1117	0.0778
78.82	6/4.09 + 1/4.09	0.2204	0.0729	0.0093	0.0642	0.1296	0.0875
104.98	6/4.72 + 1/4.72	0.2933	0.1024	0.0114	0.0774	0.1447	0.0958
158	30/2.59 + 7/2.59	0.4439	0.2186	0.0267	0.1064	0.1768	0.1133
212	30/3.00 + 7/3.00	0.5953	0.2875	0.0358	0.1300	0.1999	0.1259

Note: For factor of HDPE, multiply XLPE factor by 1.2