



# Empowering India with Revolutionary

Flexi Tough eB-HFFR Wires





Green Initiative By V-MARC India Limited



Founded in 2006, V-Marc India has established itself as a trusted leader in wire and cable manufacturing. We specialize in producing a wide range of products, including LT/HT Power Cables, Medium Voltage Covered Conductors (MVCC), Aerial Bunched Cables, and various Domestic and Industrial Wires and Cables. At V-Marc India, innovation and customer satisfaction form the cornerstone of our vision and mission.

We are committed to continuous improvement and have recently expanded our manufacturing facilities with cutting-edge technology.

We are excited to introduce first time in India our latest innovations: the 'Flexi-Tough eB-HFFR' wires and 'eB+ power and solar cables,' developed using advanced e-Beam technology. With a strong focus on quality and a customer-centric approach, we look forward to shaping the future of wire and cable manufacturing.

## Certifications

- ISO Management System: ISO 9001:2015, ISO 14001:2015, ISO 45001:2018
   ISO 27001:2022
- CE Europe by Certiva Ltd
- RoHS Compliance by Accenture International Certification
- BIS License: IS -694 (2010), IS-17048 (2018), IS-1554, (Part 1&2: 1988), IS 7098
   (Part-1: 1998), IS-7098 (Part-2: 2011), IS-7098 (Part-3:1993), IS-14255 (1995), IS-398
   (Part-2:1996), IS-398 (Part 4: 1994), IS-17293 (2020), IS-17505 (2021)

## Flexi Tough Electron Beam Cross-Linked

Single and Multicore Flexible Cables - (confirms to IS 17048:2018)

Conductor: The conductors drawn from 99.97 % bright electrolytic grade Copper-Class- 2/5 with more than 100% conductivity. Annealed plain copper wires are bunched together to get uniformity of resistance and flexibility as per reference standards.

Insulation: The bunch conductors are insulated with specially formulated e-Beam XL Halogen Free flame-retardant compound with a high insulation resistance value. These cables are insulated with specially formulated & in-house manufactured HFFR compound by incorporating eB technology that enhances electrical, thermal, fire and mechanical property of wire & cables.

Sheath: HFFR EBXL (for multicore cable)

Operating Temperature Range: Up to 150°C

#### **Products Range:**

· Single Core - Up to 300 sq mm

• 2/3/4 Core - Up to 50 sq mm

#### Colour:

Single Core - Available in all colors as per specifications including Bi-color (optional) Multicore – Black

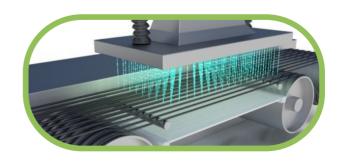


## **Technical Comparison chart**

S. No.	Flexi Tough eB-HFFR Wire	Traditional Wire	
1	Conductor Operating Temp. Upto 150°C	Conductor Operating Temp. Upto 70°C	
2	Short circuit temperature 250°C	Short circuit temperature 160°C	
3	Hot Set Property at 200°C = 50% (Max)	Hot Set – Not Available	
4	Smoke Emission (Light Transmission) 90%	Smoke Emission (Light Transmission) 40%	
5	Smoke Density 5%	Smoke Density 60%	
6	Hydrogen Chloride Free	Hydrogen Chloride 20% Maximum	

## Features: Flexi Tough eB-HFFR Wires

- 80% Extra current carrying capacity
- Rated Temperature: 150°C
- No short circuit
- Insulation with Special e-Beam Cross-linked XLPO polymer non-toxic, sustainable materials.
- Superior fire resistance
- No smoke during contact with flame
- No harmful or poisonous gas emission
- Lasting performance beyond 60+years





#### Solar & Photovoltaic DC Cable-

(IS-17293: 2020, EN-50618, IEC-62930)

#### Construction:

Conductor: Electrolytic annealed Flexible tinned Copper conductor, as per IS: 8130 : 2013, confirms to IEC 60228, Class 5.

Insulation/sheath: Cross-linked XLPO e-Beam compound.

Material Properties Like fire performance, Smoke emission, Halogen emission, Toxicity Ozone Resistant, Weathering Resistance are as per reference Indian / International Standards.

Products Range: up to 400 sqmm

#### **Features**

- Electron Beam Cross Linked
- Rated Temperature: Upto 120°C (20,000h)
- Short Circuit Temp: 250°C for Max. 5 Sec.
- RoHS compliant
- UV & Ozone resistant
- Improved oil, chemical resistance & improved crack resistance
- Enhanced mechanical properties in extreme temperature conditions
- Better ageing resistance
- Halogen Free, Flame Retardant, Fire Retardant, Low Smoke Emission
- Flexibility & Stripability for fast and easy installation
- Internal test voltage : 6500 AC for 5 mins



## eB<sup>†</sup>Power Cables

#### **Product Construction:**

Conductor: Aluminium conductor complying with IS: 8130: 2013

**Insulation**: Cross-linked e-Beam XLPE compound . **Inner sheath**: PVC / as per Customer Specification.

Armouring: Galvanized GI Strip / Wire

Outer sheath: PVC ST-2 / HFFR EBXL / as per Customer Specification

#### **Technical Data:**

Operating Temperature: -15°C to 125°C Short Circuit Temperature: 250°C Bending radius (min): 12 x Cable Dia

Rated Voltage: 1.1 KV

Test Voltage: 3.0 kV for 5 mins. Specification: IS:7098 Part-1



## Advantages of e-Beam Cross-Linked XLPE Over Conventional XLPE System

S. NO	Parameters	e-Beam Cross Linking	Coventional XLPE
1	Cross-Linking Bond	C - C	C – S x -C or C – O x -C
2	Operating Temperature	Up to 125°C	Up to 90°C
3	Life of Cable	40 Years (Min.)	10 Years (Min.)
4	Variation in Mechanical Parameters after Ageing at 135°C / 7 Days.	-5%	-25%
5	Effect on High Overload Current	Not Burned	Burned
6	Impurity in Compound	No Colour Pigment	Impurity adding by colour pigment
7	Cold Bend Test	- 40°C	- 15°C
8	Blooming Effects	No Effect.	Chances to bloom to Outer Layer Leading to surface deterioration.
9	Polymer Degradation during cross- linking	No As eB Cross Linking occurs at room temperature	Yes As cross-linking occurs at higher temperature (90°C)
10	Oxidative degradation	No	Yes

## Features: eB<sup>+</sup>Power Cables

- e-Beam Cross-Linked "Power Cables".
- Offers 30% higher current carrying capacity\*(during overload conditions)
- Rated Temperature: 125°C
- Minimize current leakages with high insulation resistance
- Resistant to corona effect
- Low direct electric losses
- High insulation resistance at elevated temperature. prevents fires caused due to overloads.
- Life Span 40+ years



### PRESTIGIOUS CLIENTS











































































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