

**SPECIFICATION FOR  
“ERIFLEX FLEXIBAR ADVANCED” INSULATED FLEXIBLE BUSBARS  
or engineering approved equivalent per the specification below**

**1. SUMMARY**

This specification covers the technical requirements of the ERIFLEX FLEXIBAR ADVANCED insulated flexible busbar for use in low-voltage power applications where electrical connections between live parts are required.

**2. COMPLIANCE REQUIREMENTS**

- a. ANSI/UL67 “Panelboards” (listed by Underwriters Laboratories under this category)
- b. ANSI/UL758 “Appliance Wiring” (listed by Underwriters Laboratories under this category and style file 11992)
- c. CSA® certified as appliance wiring material for a maximum of 1000 volts
- d. IEC® 61439-1 “Low-voltage switchgear and controlgear assemblies”
- e. IEC® 61439.1 Class II (reinforced/double insulation)
- f. IEC® 60695-2-11 (Glow Wire Test 960 °C)
- g. UL 94V-0 : Flame retardant
- h. UL® 2885 (Outline of Investigation for Acid Gas, Acidity and Conductivity of Combusted Materials)
- i. IEC® 60754-1 (Test on gases evolved during combustion of materials from cables – Part 1: Determination of the halogen acid gas content)
- j. Smoke, Toxicity and Acidity Rating: IEC® 60754-2
- k. IEC® 62821-1 (Electric cables - Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V)
- l. IEC® 61034-2 (Measurement of smoke density of cables burning under defined conditions)
- m. EN 45545 obtaining an HL3 classification for chapters R22 and R23
- n. UV Rating: UL 2556 and UL 854
- o. RoHS 2002/95/EC Compliant
- p. CE marked
- q. Bureau Veritas (Marine & Offshore)
- r. EAC certified for Russian territory
- s. ABS American Bureau of Shipping (Marine & Offshore)

**3. PRODUCT COMPOSITION**

**a. Copper laminates**

The copper laminates is made with electrolytic copper Cu-ETP according to EN13599 and with purity of minimum 99.9%. The laminate is tinned. The thickness of the individual laminates is 0.5mm, 0.8mm or 1mm and a width ranging from 6mm to 120mm. The maximum resistivity at 20°C shall be 0.017241  $\Omega \cdot \text{mm}^2/\text{m}$ .

For tinned laminates, the thickness of the plating have a minimum thickness of 1 $\mu\text{m}$  and be of white color.

#### **b. Insulating sleeve**

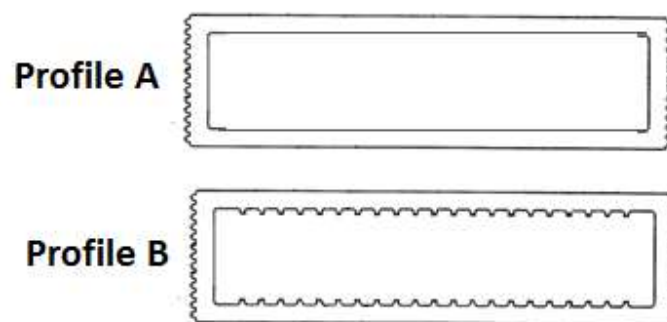
The insulating sleeve is made of extruded Thermoplastic Elastomer (TPE). The TPE have an elongation performance of 500% and a dielectric strength of 20kV for 1mm of insulation. The TPE is self-extinguishable and rated to class V0 according to UL94 and Glow Wire Test 960 °C, according to IEC® 60695-2-12.

The TPE is Halogen free according to UL 2885, IEC® 60754-1 and IEC® 62821-2.

The TPE is Low smoke classified according to UL 2885 and IEC® 61034-2.

It have a thickness of 1.8mm minimum.

The sleeve is 100% dielectrically tested during extrusion and have the two profiles below (referred as profile A and profile B). The insulating sleeve cannot be manually welded together.



The insulating sleeve is compliant with Chapter 8.4.4 – Protection by total insulation of the IEC 61439-1 standard (Class II: reinforced/double insulation)

The insulating sleeve is marked with a traceability code and be of green color.

The insulating sleeve material is black.

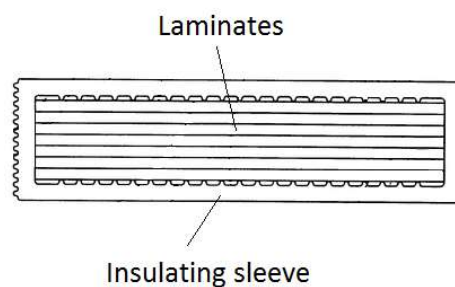
### **4. PRODUCT CHARACTERISTICS**

#### **a. Physical**

The flexible busbar include a central conductor comprising multiple laminates of the same thickness and nature (tinned copper) and an insulating sleeve.

Flexible busbars made of 4 or less laminates is insulated using an insulating sleeve with profile A.

Flexible busbars made of 5 or more laminates is insulated using an insulating sleeve with profile B.



**b. Environmental**

The minimum working temperature of -50°C and maximum working temperature of 115°C.

**c. Performance**

The product is rated at 1000V AC and 1500V DC per the UL 785 & IEC 61439-1 standards. It is rated at 600V DC/AC per UL67.

The flexible busbar shall meet the requirements of UL1581-2001 section 580 “Electrical Wires, Cables, and Flexible Cords – Cold Bend” following preconditioning at -30°C for 4h.

**5. MANUFACTURER’S QUALIFICATION AND QUALITY CONTROL**

- a. Manufacturer shall be ISO9001:2008 certified and manufacturing and quality control be done accordingly.
- b. Manufacturer shall be following a health & safety program at least as stringent as the United States Occupational Health & Safety Administration program.