

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

**1. SUMMARY**

This specification covers the technical requirements of the ERIFLEX FLEXIBAR STANDARD 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 10531 and 11343)
- c. CSA® certified as appliance wiring material for a maximum of 1000 volts
- d. IEC 61439-1 “Low-voltage switchgear and controlgear assemblies”
- e. GOST certificate or Customs Union certificate
- f. ABS® American Bureau of Shipping certificate category “Marine & Offshore Applications - Low Voltage Industrial Power Distribution and Control, including Switchboards, Motor Control Centers, Panelboards, Industrial Control Panels, Power Supplies, Drive Units, Transformers, Electrical Machinery, HVAC Chiller Controls, Power Converters, and Busbar Systems.”
- g. RoHS 2002/95/EC Compliant

**3. PRODUCT COMPOSITION**

**a. Copper laminates**

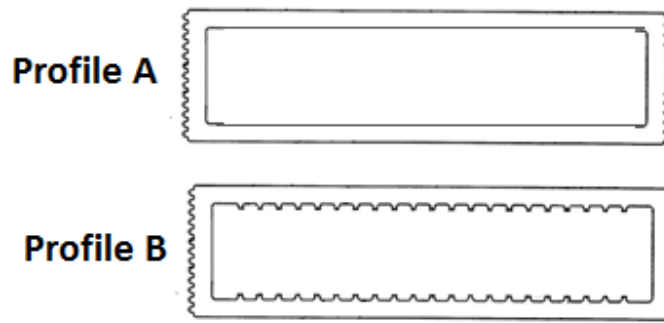
The copper laminates must be made with electrolytic copper Cu-ETP according to EN13599 and with purity of minimum 99.9%. The laminates may or may not be tinned depending on the type of finished flexible busbar. The thickness of the individual laminates should be 0.5mm, 0.8mm or 1mm and a width ranging from 6mm to 120mm. The maximum resistivity at 20°C shall be  $0.017241 \Omega \cdot \text{mm}^2/\text{m}$ .

In case of tinned laminates, the thickness of the plating should have a minimum thickness of 1µm and be of white color.

**b. Insulating sleeve**

The insulating sleeve should be made of extruded PVC. The PVC should have an elongation performance of 300% and a dielectric strength of 20kV for 1mm of insulation. The PVC should be self-extinguishable and be rated to class V0 according to UL94. It should have a thickness of 1.8mm minimum.

The sleeve should be 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 should be compliant with Chapter 8.4.4 – Protection by total insulation of the IEC 61439-1 standard

The insulating sleeve should be marked with a traceability code and be of black color.

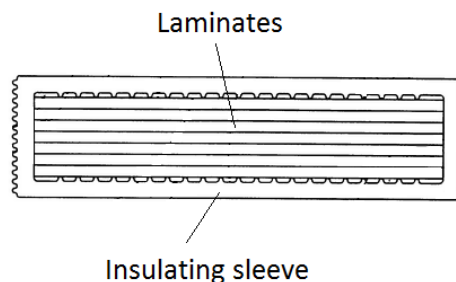
#### 4. PRODUCT CHARACTERISTICS

##### a. Physical

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

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

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



##### b. Environmental

The minimum working temperature of -25°C and maximum working temperature of 105°C.

##### c. Performance

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

The flexible busbar shall meet the requirements of GB/T 2423.8-1995 “Environmental testing for electric and electronic products – Parts 2:Test methods – Test Ed:Free fall” following a preconditioning at -30°C for 4h before the first free fall test and a second conditioning at -40°C for 4 hours before the second free fall test on the same sample.

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.