

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 11715)
- 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 HL2 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 μm and be of white color.

b. Insulating sleeve

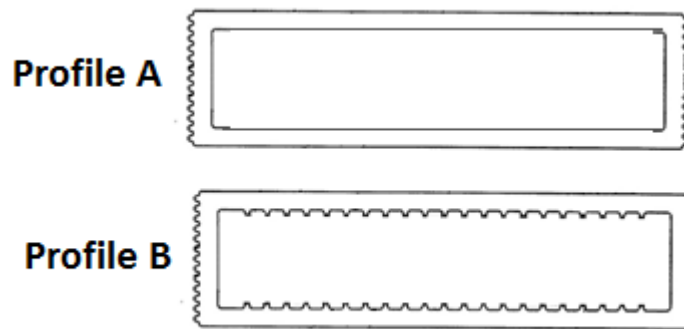
The insulating sleeve is made of extruded Thermoplastic Elastomer (TPE). The TPE have an elongation performance of 500% and a dielectric strength of 20kV for 1mm of insulation. The TPE is self-extinguishable and rated to class V0 according to UL94 and Glow Wire Test 960 °C, according to IEC® 60695-2-12.

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.

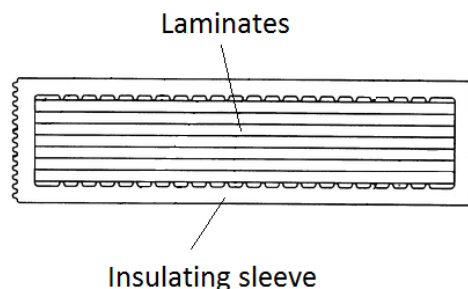
4. PRODUCT CHARACTERISTICS

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.