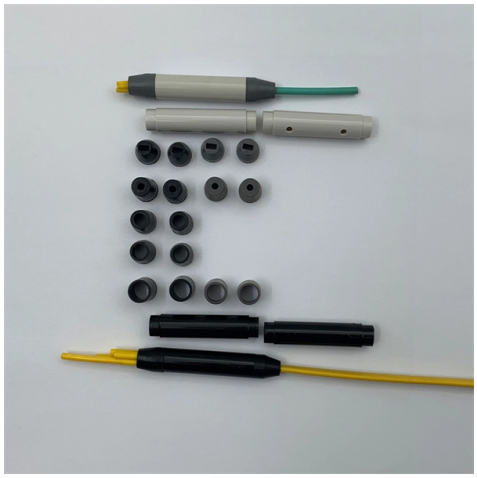
Types of Tubular Busbars



Article Overview

Tubular busbars are selected based on material, current rating, mechanical strength, heat dissipation, insulation, and compliance with industry standards to ensure safe and efficient power distribution.

Material Considerations

Tubular busbars are typically made from aluminum or copper. Aluminum is lightweight and cost-effective but has lower conductivity (60–65% of copper), requiring a larger cross-sectional area to carry the same current. Copper offers higher conductivity, mechanical strength, and long-term reliability, making it suitable for high-performance or space-constrained applications. For hybrid systems, aluminum-copper connections require precautions to prevent galvanic corrosion and electro-chemical deterioration ( ).

Current Rating and Heat Dissipation

The continuous current rating is a primary factor in busbar selection. Tubular busbars are designed to handle high currents efficiently, with ratings commonly at 1250 A or 2000 A for substation applications. Heat dissipation is enhanced by the tubular shape, which reduces the skin effect and allows better airflow. For copper busbars, a 10–15% safety margin is recommended to account for localized hot spots and high-altitude conditions ( ).

Mechanical and Electrical Design

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Business Documentation (DBD)

NPS/003/028 – Technical Specification for Tubular Busbars, Busbar Connectors and Terminal Fittings

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This series of products has unique material properties (LDRE rare-earth aluminum alloy, 6Z63 heat-resistant

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Aluminium tubular busbars are subject to wind-generated vibration and oscillation. Because of the low self-damping of tubular

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