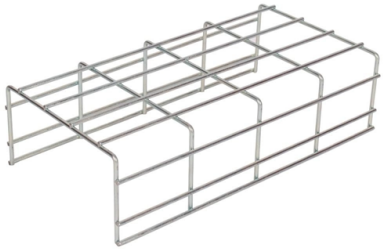
ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Method for intermediate connection of tubular busbars



Overview

A Comprehensive Guide to Jointing Busbars: Which Planning and executing a low-resistance, effective, reliable jointing of busbars requires analysis of CN20.

Key Takeaways

Intermediate connections for insulated tubular busbars are typically achieved using specialized connecting devices that ensure mechanical stability, electrical continuity, and equipotential treatment.Overview of Intermediate Connection

Tubular busbars, often made of copper or aluminum and externally insulated, require reliable intermediate connections to extend their length or connect segments within substations or power assemblies. The connection must maintain high current-carrying capacity, mechanical strength, and electrical safety, while preventing galvanic corrosion and ensuring proper insulation .

Common Methods



© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

1. Bolted Joints Bolted connections involve overlapping busbar ends and securing them with bolts and washers. This method is field-friendly and provides reliable mechanical and electrical contact. Proper torque and washer sizing are critical to ensure uniform pressure and minimize contact resistance . 2. Press-Fit or Solderless Connections High-force press-fit interfaces allow busbars to be connected without soldering. These connections provide excellent conductivity, handle thermal expansion, and reduce assembly complexity. They are particularly suitable for high-current, compact power applications where heat-sensitive components are present . 3. Forming with Auxiliary Elements This method uses mechanical interlocking, such as semi-tubular rivets inserted through aligned holes in the busbar ends. It generates high contact pressure along the overlapping area, improving electrical performance and mechanical stability. Progressive forming tools can perform lancing, bending, and forging operations to secure the joint . 4. Specialized Intermediate Connection Devices For insulated tubular busbars, patented intermediate devices include a connecting body with a lining core and components for equipotential treatment. These devices allow the ends of insulated busbars to be joined while maintaining insulation integrity and electrical safety. They can incorporate manual wrapping, insulating shields, or cold-shrinkable joints to enhance performance and reliability .

Key Considerations

• Material Compatibility: Ensure copper-to-aluminum connections are treated to prevent electrochemical corrosion .

• Current Rating: The number of clamps or connection points should match the busbar's continuous current rating .

• Mechanical Strength: Connections must withstand short-circuit forces, wind loading, and thermal expansion .

• Insulation and Safety: Intermediate devices should maintain insulation and provide equipotential bonding to prevent electrical hazards .

Conclusion

The choice of intermediate connection method depends on current rating, environmental conditions, and installation constraints. For insulated tubular busbars, using a dedicated intermediate connection device with proper equipotential treatment is the most reliable approach, while bolted or press-fit connections may be suitable for less demanding applications or field assembly. Proper design ensures long-term electrical performance, mechanical integrity, and safety.

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Article Content

A Comprehensive Guide to Jointing Busbars: Which

Planning and executing a low-resistance, effective, reliable jointing of busbars requires analysis of

CN202949049U

The utility model provides a tubular busbar intermediate connection device applied to joint of insulated tubular busbars.

CN103618272A

The invention provides a middle connection structure of a tubular busbar, and aims to achieve connection of two tubular busbars.

Intermediate connection joint of tubular bus and connection method ...

The intermediate connection joint has the advantages of stable connection, simple assembly, smooth surface after insulation

Busbar Jointing Methods Explained: Bolted vs Welded connections

There are many jointing techniques available for busbars, but the two most common today are bolted and welded. Each has its own

Busbar Connectors in Substation Design

Common forms of busbars include overhead conductors supported by insulators, indoor aluminum or copper bars, and isolated

Step-by-Step Busbar Installation Guide | Artizono

Properly align busbars with circuit breakers or connection terminals to prevent loose contacts, arcing, and overheating.

Copper Busbar Jointing Methods

Bolted joints are formed by overlapping the bars and bolting through the overlap area. They are compact, reliable and

How are bus bars connected?

Learn about the different methods of connecting bus bars and how they are used in electrical systems. Get insights

DL/T 5789-2019 | Technical guidelines for (PDF English)

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

5.1 General provisions 5.1.1 The laying path of insulated tubular busbars shall be connected to water, heating, oil, gas

Copper Busbar Jointing Methods

Bolting and clamping are used extensively on-site. Shaped busbars may be prefabricated by

Formulas calculating the reactance of tubular busbars and their ...

An interesting vector synthesis method was proposed in reference17 to solve the stray inductance of the laminated busbars

Busbar Connectors in Substation Design

The document discusses the key design considerations for conductors and busbars used in electrical substations. The main

What Is a Busbar: Types, Applications, & Simulation

What is an Electrical Busbar: Types, Applications, & Simulation Busbars are metallic strips or

Busbar Fabrication: Techniques for Efficient Assembly

How do you transform raw copper and aluminum into critical components for electrical systems? This article delves

Busbar Terminal | Terminal connections for tubular busbars

The tubular busbar plays an irreplaceable role behind the rectangular busbar. The following describes the connection method of the

Shaping and connecting rigid busbars in low voltage switchgear

Busbars – machining, bending and shaping The busbars constitute the real “backbone” of every low voltage

Catalogue SIMABUS-EPP-2829-8-16 rev2-HD

The contact profile of the connector surface, as shown on the figure 4 provide multiple contact lines with the tubular conductor,

Busbars Installation and Acceptance Standards | MachineMFG

Busbars Installation and Acceptance Standards Are you aware that improper installation of busbars can lead to costly

Copper Busbar Jointing Methods: Bolted, Clamped, Welded

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Learn efficient copper busbar jointing techniques: bolted, clamped, riveted, soldered, and welded. Understand joint resistance and

Agrawal-28New

The conductor and its metallic shield are made of tubular section for ease of construction and to also extend flexibility in manoeuvring

What is a Busbar? A Detailed Guide

Connection – Busbars join more than one electrical device, along with transformers, generators, and circuit breakers,

Electrical Busbar Assemblies Installation Method Statement

This electrical method statement covers the installation of bus bar electrical assemblies. Following this procedure

Formulas calculating the reactance of tubular busbars and their ...

This method is based on the partial inductance theory. In particular, the impedances of a three-phase system of

How to Connect a Busbar

Learn how to connect a busbar correctly for safe and efficient power distribution. This guide explains what a busbar

Types of Busbars & Schemes – Explained with Applications

Understand Types of Busbars and how they make complex power distributions simpler in electrical power distribution,.

Medium Voltage Tubular Busbar Switchgear

The shape of the bus has a round, rectangular (including all rounded corners and right angles), tubular, D

Busbars and Connectors in HV and EHV installations

Learn about materials, connection methods, thermal management, and their vital role in power distribution for industrial and data

Joining by Forming of Busbars for Electrical Applications

The new injection lap riveted busbars are the least prone to corrosion with an increase in the electrical resistance of only 10% after

DL/T 5789-2019 | Technical guidelines for (PDF English)

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

DL/T 5789-2019 | Technical guidelines for construction of insulated tubular busbar (PDF English). Price & delivery, and

Copper Busbar Jointing Methods

Bolting and clamping are used extensively on-site. Shaped busbars may be prefabricated by

Formulas calculating the reactance of tubular busbars and their ...

An interesting vector synthesis method was proposed in reference17 to solve the stray inductance of the laminated busbars

Busbar Connectors in Substation Design

The document discusses the key design considerations for conductors and busbars used in electrical substations. The main

What Is a Busbar: Types, Applications, & Simulation

What is an Electrical Busbar: Types, Applications, & Simulation Busbars are metallic strips or

Busbar Fabrication: Techniques for Efficient Assembly

How do you transform raw copper and aluminum into critical components for electrical systems? This article delves

Busbar Terminal | Terminal connections for tubular busbars

The tubular busbar plays an irreplaceable role behind the rectangular busbar. The following describes the connection method of the

How are bus bars connected?

Learn about the different methods of connecting bus bars and how they are used in electrical systems. Get insights

Busbar

In electric power distribution, a busbar (also bus bar) is a metallic strip or bar, typically housed inside

Installation tips for prefabricated busbar systems and

Installation configuration The term installation configuration, when applied to prefabricated

Shaping and connecting rigid busbars in low voltage switchgear

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Busbars – machining, bending and shaping The busbars constitute the real “backbone” of every low voltage

Catalogue SIMABUS-EPP-2829-8-16 rev2-HD

The contact profile of the connector surface, as shown on the figure 4 provide multiple contact lines with the tubular conductor,

Busbars Installation and Acceptance Standards | MachineMFG

Busbars Installation and Acceptance Standards Are you aware that improper installation of busbars can lead to costly

Copper Busbar Jointing Methods: Bolted, Clamped, Welded

Learn efficient copper busbar jointing techniques: bolted, clamped, riveted, soldered, and welded. Understand joint resistance and

A Comprehensive Guide to Jointing Busbars: Which

Planning and executing a low-resistance, effective, reliable jointing of busbars requires analysis of

CN202949049U

The utility model provides a tubular busbar intermediate connection device applied to joint of insulated tubular busbars.

CN103618272A

The invention provides a middle connection structure of a tubular busbar, and aims to achieve connection of two tubular busbars.

Intermediate connection joint of tubular bus and connection method ...

The intermediate connection joint has the advantages of stable connection, simple assembly, smooth surface after insulation

Busbar Jointing Methods Explained: Bolted vs Welded connections

There are many jointing techniques available for busbars, but the two most common today are bolted and welded. Each has its own

Busbar Connectors in Substation Design

Common forms of busbars include overhead conductors supported by insulators, indoor aluminum or copper bars, and isolated

Step-by-Step Busbar Installation Guide | Artizono

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Properly align busbars with circuit breakers or connection terminals to prevent loose contacts, arcing, and overheating.

Copper Busbar Jointing Methods

Bolted joints are formed by overlapping the bars and bolting through the overlap area. They are compact, reliable and

How are bus bars connected?

Learn about the different methods of connecting bus bars and how they are used in electrical systems. Get insights

DL/T 5789-2019 | Technical guidelines for (PDF English)

5.1 General provisions 5.1.1 The laying path of insulated tubular busbars shall be connected to water, heating, oil, gas

A Comprehensive Guide to Jointing Busbars: Which

Planning and executing a low-resistance, effective, reliable jointing of busbars requires analysis of

CN202949049U

The utility model provides a tubular busbar intermediate connection device applied to joint of insulated tubular busbars.

CN103618272A

The invention provides a middle connection structure of a tubular busbar, and aims to achieve connection of two tubular busbars.

Intermediate connection joint of tubular bus and connection method ...

The intermediate connection joint has the advantages of stable connection, simple assembly, smooth surface after insulation

Busbar Jointing Methods Explained: Bolted vs Welded connections

There are many jointing techniques available for busbars, but the two most common today are bolted and welded. Each has its own

Busbar Connectors in Substation Design

Common forms of busbars include overhead conductors supported by insulators, indoor aluminum or copper bars, and isolated

Step-by-Step Busbar Installation Guide | Artizono

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Properly align busbars with circuit breakers or connection terminals to prevent loose contacts, arcing, and overheating.

Copper Busbar Jointing Methods

Bolted joints are formed by overlapping the bars and bolting through the overlap area. They are compact, reliable and

How are bus bars connected?

Learn about the different methods of connecting bus bars and how they are used in electrical systems. Get insights

DL/T 5789-2019 | Technical guidelines for (PDF English)

5.1 General provisions 5.1.1 The laying path of insulated tubular busbars shall be connected to water, heating, oil, gas

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: https://zithatech.co.za
Technical inquiry: https://zithatech.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved