

# FURUTEC®

## Busduct System

A member of EITA Resources Berhad



# EITA Corporate Structure

- Established in year 1996 (28 years ago)
- > 650 staff force
- Core Business: Manufacturing, Marketing & Distribution, Services and High Voltage System
- EITA Resources Berhad is listed in Bursa Malaysia in year 2012



## EITA RESOURCES BERHAD

- **Furutec Electrical Sdn. Bhd.**
- EITA Elevator (Malaysia) Sdn. Bhd.
- EITA-Schneider (MFG) Sdn. Bhd.
- EITA KOP Sdn. Bhd.
- Sigriner Automation (MFG) Sdn. Bhd.
- EITA Electric Sdn. Bhd.
- EITA Power System Sdn. Bhd.
- EITA Technologies (Malaysia) Sdn. Bhd.
- EITA Research & Development Sdn. Bhd.
- Schneider Research & Development Centre Sdn. Bhd.
- EITA Technologies Pte Ltd (Singapore)
- TransSystem Continental Sdn. Bhd.
- TransSystem T&D Sdn. Bhd.

# About Furutec Electrical



- 30 years of experience in manufacturing and R&D of busduct system
- Wholly owned by EITA Resources in Malaysia since year 2008
- Established R&D department to ensure our compliance to IEC 61439-6, UL 857 & other international standards
- More than 20,000 meters of monthly manufacturing capacity
- Market presence in ASEAN, Asia & Middle East region



# Certification | Recognition | Approval



PSB Singapore



# Certification | Recognition | Approval

## Comprehensive Type Testing & Certification

**CERTIFICATE OF COMPLIANCE**

**Certificate Number** 20190220-E504022  
**Report Reference** E504022-20190104  
**Issue Date** 2019-FEBRUARY-20

**Issued to:** FURUTEC ELECTRICAL SDN BHD (057207-W)  
 Plot 89 Lorong Perindustrian Bukit Minyak 11  
 Kawasan Perindustrian Bukit Minyak  
 Mk13, Seberang Perai Tengah  
 14100 Penang MALAYSIA

**This certificate confirms that representative samples of** BUSWAYS AND ASSOCIATED FITTINGS  
 Busway and Associated Fittings, T type HP-ES aluminum busway series Feeder Busway.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 857 - Standard for Busway  
 CSA C22.2 No. 27- Standard for Busway

**Additional Information:** See the UL Online Certifications Directory at <https://q.ulprospector.com> for additional information.

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



UL  
 Member of the Intertek Group  
 3301 Central Expressway, Santa Ana, CA 92701  
 www.intertek.com

**TEST CERTIFICATE**

**Issued to:** Furutec Electrical Sdn. Bhd.  
 Plot 89 Lorong Perindustrian Bukit Minyak 11, Kawasan Perindustrian Bukit Minyak, MK 13, 14100, Seberang Perai Tengah, Penang Malaysia

**For the product:** low-voltage busbar trunking system (copper bar) without tap off unit outlet

**Trade name:** Furutec  
**Type/Model:** HP-ES3000C

**Ratings:**  
 In: 3000 A, 50 Hz  
 Ue: 690 V, Ui: 1000 V, Uimp: 8 kV, IP65  
 low: 3-phase 120 kA – 1.0 s with a peak of 264 kA  
 70 kA – 3.0 s with a peak of 154 kA  
 Neutral 72 kA – 1.0 s with a peak of 158.4 kA  
 42 kA – 3.0 s with a peak of 88.2 kA  
 PE 72 kA – 1.0 s with a peak of 158.4 kA  
 42 kA – 3.0 s with a peak of 88.2 kA

**Manufactured by:** Furutec Electrical Sdn. Bhd.  
 Plot 89 Lorong Perindustrian Bukit Minyak 11, Kawasan Perindustrian Bukit Minyak, MK 13, 14100, Seberang Perai Tengah, Penang Malaysia

**Subject:** Type tests

**Requirements:** IEC 60439-2, 3rd ed. 2000-03 and Amendment 1 2005-08  
 Clauses: 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.7, 8.2.9, 8.2.10, 8.2.12, 8.2.13, 8.2.14 and 8.2.15  
 Note: All type tests as required by the product standard were performed.

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in no. 3302705.12, dated 31 May 2012.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Amhem, 31 May 2012

Number: 3302705.111  
 DEKRA Certification B.V.  
  
 F.S. Strikwerda  
 Certification Manager

© Integral publication of this certificate and adjoining reports is allowed

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.

DEKRA Certification B.V. Utrechtseweg 310, 6812 AR Amhem, P.O. Box 5185, 6802 ED Amhem, The Netherlands  
 T +31 26 366 2000 F +31 26 352 6800 www.dekra-certification.com Company registration 09060399

**KEMA Quality**

**TEST CERTIFICATE**

**Issued to:** Furutec Electrical Sdn. Bhd.  
 Plot 89 Lorong Perindustrian Bukit Minyak 11, Kawasan Perindustrian Bukit Minyak, MK 13, 14100, Seberang Perai Tengah, Penang Malaysia

**For the product:** low-voltage busbar trunking system (copper bar) without tap off unit outlet

**Trade name:** Furutec  
**Type/Model:** HP-ES3000C

**Ratings:**  
 In: 6300 A, 50 Hz  
 Ue: 690 V, Ui: 1000 V, Uimp: 8 kV, IP65  
 low: 3-phase 150 kA – 1.0 s with a peak of 330 kA  
 86.6 kA – 3.0 s with a peak of 187 kA  
 Neutral 90 kA – 1.0 s with a peak of 198 kA  
 51.96 kA – 3.0 s with a peak of 112.2 kA  
 PE 90 kA – 1.0 s with a peak of 198 kA  
 51.96 kA – 3.0 s with a peak of 112.2 kA

**Manufactured by:** Furutec Electrical Sdn. Bhd.  
 Plot 89 Lorong Perindustrian Bukit Minyak 11, Kawasan Perindustrian Bukit Minyak, MK 13, 14100, Seberang Perai Tengah, Penang Malaysia

**Subject:** Type tests

**Requirements:** IEC 60439-2, 3rd ed. 2000-03 and Amendment 1 2005-08  
 Clauses: 8.2.16, 8.2.1, 8.2.2, 8.2.3, 8.2.4, 8.2.5, 8.2.7, 8.2.9, 8.2.10, 8.2.12, 8.2.13, 8.2.14 and 8.2.15  
 Note: All type tests as required by the product standard were performed.

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 3302705.17, dated 31 May 2012.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Amhem, 31 May 2012

Number: 3302705.116  
 DEKRA Certification B.V.  
  
 F.S. Strikwerda  
 Certification Manager

© Integral publication of this certificate and adjoining reports is allowed

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.

DEKRA Certification B.V. Utrechtseweg 310, 6812 AR Amhem, P.O. Box 5185, 6802 ED Amhem, The Netherlands  
 T +31 26 366 2000 F +31 26 352 6800 www.dekra-certification.com Company registration 09060399

**intertek**  
 Total Quality Assured.

Intertek Testing Service (Singapore) Pte Ltd  
 5 Persira Road  
 #06-01 Asiawide Industrial Building  
 Singapore 368025  
 65 6262 7167

**Test Verification of Conformity**

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the relevant specifications at the time the tests were carried out.

**Applicant Name & Address:** Furutec Electrical Sdn Bhd  
 Plot 89, Lorong Perindustrian Bukit Minyak 11,  
 Kawasan Perindustrian Bukit Minyak,  
 MK13, 14100 Seberang Perai Tengah, Penang, Malaysia


**Product Description:** Single/Double/Triple Stack Busbar Trunking System

**Ratings & Characteristics:** 690V / 1000V (Ue / Ui) (Also see appendix I)  
 500A; 630A; 700A; 800A; 1000A; 1300A; 1600A; 1800A; 2000A; 2500A;  
 3200A; 3500A; 4000A; 5000A; 6300A

**Model:** HP-ES-AL-Series  
**Brand Name:** Furutec  
**Relevant Standards:** IEC61439-6:2012 in conjunction with IEC61439-1:2011  
 Clause 10.2; 10.3; 10.4; 10.5; 10.7; 10.8; 10.9; 10.10; 10.11; 10.12;  
 10.10.1 & 10.10.2 (Also see appendix I & II)

**Verification Issuing Office:** Intertek Testing Services (Singapore) Pte Ltd  
**Date of Tests:** 22 May 2017 to 27 July 2017  
**Test Report Number(s):** 1707000105GP-001; 1707000115GP-001; 1707000125GP-001;  
 1707000135GP-001; 1707000145GP-001; 1707000155GP-001;  
 1707000165GP-001; 1707000175GP-001; 1707000185GP-001;  
 1707000195GP-001; 1707000205GP-001; 1707000215GP-001;  
 1707000225GP-001; 1707000235GP-001; 1707000245GP-001

This verification is part of the full test report(s) and should be read in conjunction with them.

  
**Signature:**  
 Name: Stanley Ong  
 Position: Assistant General Manager  
 Date: 27 July 2017

The verification is the exclusive use of Intertek and a pre-condition to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek does not accept liability for any errors, other than those due to the Client's inaccuracy in the agreement, for any errors, omissions or omissions caused by the Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek does not accept liability for any errors, other than those due to the Client's inaccuracy in the agreement, for any errors, omissions or omissions caused by the Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek does not accept liability for any errors, other than those due to the Client's inaccuracy in the agreement, for any errors, omissions or omissions caused by the Client.

[www.intertek.com](http://www.intertek.com) Page 1 of 3 OFT-OP-11a 24-Dec 2014

# Certification | Recognition | Approval

## Sustainability & Environment

- Commitment to our mother earth
- Certified as environmentally friendly by SGBP
- Monitor and control all our raw materials to meet the compliance of Restriction of Hazardous Substances (ROHS)



**SINGAPORE GREEN BUILDING PRODUCT CERTIFICATE**

AWARDED TO  
**FURUTEC ELECTRICAL SDN. BHD.**

Plot 89, Lorong Perindustrian Bukit Minyak 11  
Kawasan Perindustrian Bukit Minyak  
MK 13, SPT, PENANG, MALAYSIA  
Malaysia 14100

FOR THE PRODUCT  
**Sandwiched - Copper Conductor**

PRODUCT BRAND  
**FURUTEC**

PRODUCT MODEL  
**AH-500C, AH-630C, AH-700C, AH-900C, AH-1200C, AH-1350C,  
AH-1700C, AH-2000C, AH-2500C, AH-3000C, AH-3200C, AH-3500C,  
AH-4000C, AH-4500C, AH-5000C, AH-6300C ; AH-ES500C,  
AH-ES630C, AH-ES700C, AH-ES900C, AH-ES1200C, AH-ES1350C,  
AH-ES1700C, AH-ES2000C, AH-ES2500C, AH-ES3000C,  
AH-ES3200C, AH-ES3500C, AH-ES4000C, AH-ES4500C,  
AH-ES5000C, AH-ES6300C**

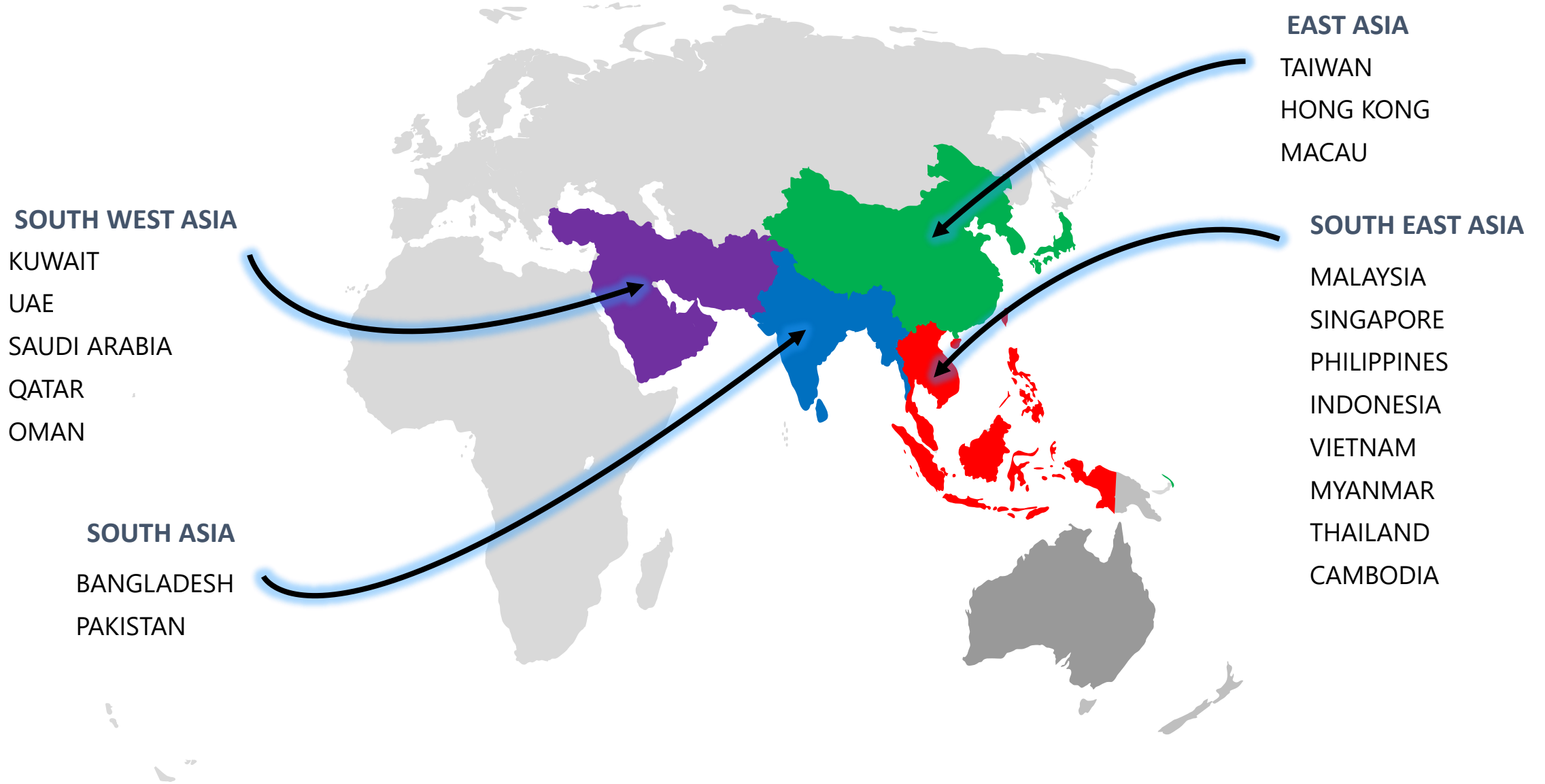
THE PRODUCT HAS BEEN ASSESSED ACCORDING  
TO THE ASSESSMENT CRITERIA OF SINGAPORE  
GREEN BUILDING PRODUCT CERTIFICATION SCHEME.  
IT HAS BEEN AWARDED THE RATING:



Director  
SGBC Pte Ltd

Certificate Number	Original Issue Date	Revised Date	Valid Till
SGBP 3452	26 June 2022	20 February 2023	25 June 2024

# Our Market Coverage



# Our Market Segment



**Data Centre**

**Transportation (MRT)**

**Medical & Healthcare**

**Industrial**

**Oil & Gas**

**Commercial**

**Residential**

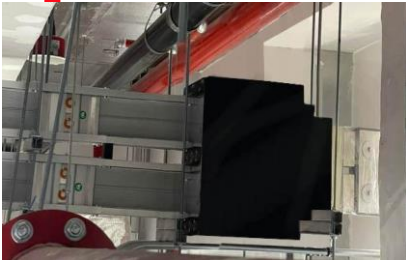
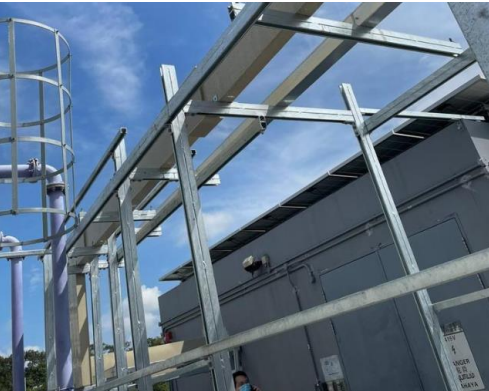
**Education**

**Government**

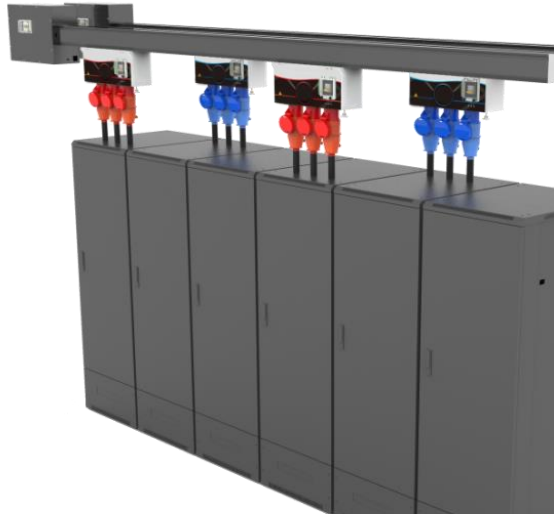
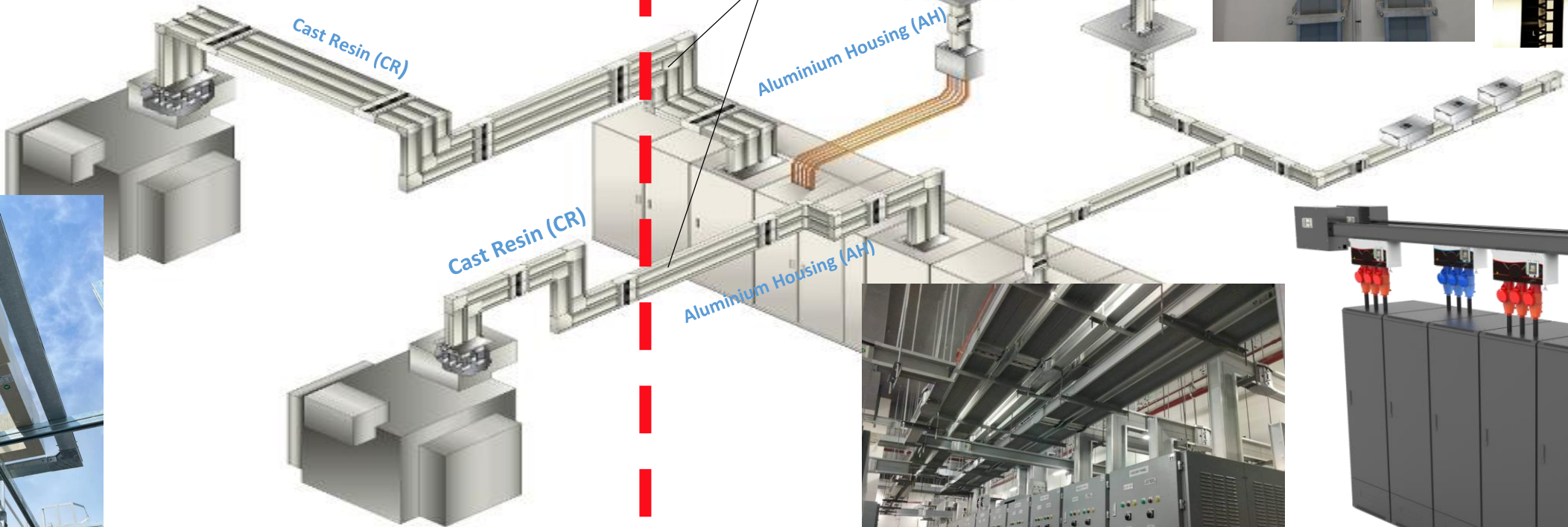
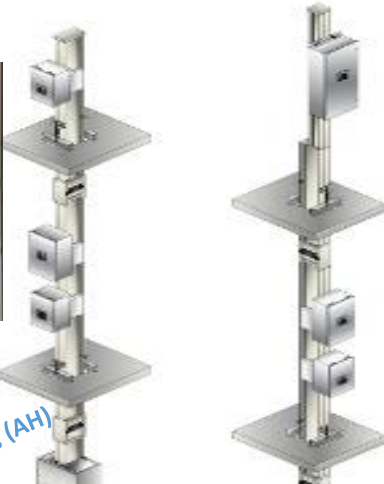
# Overview of Busduct Application

Outdoor Installation

Indoor Outdoor

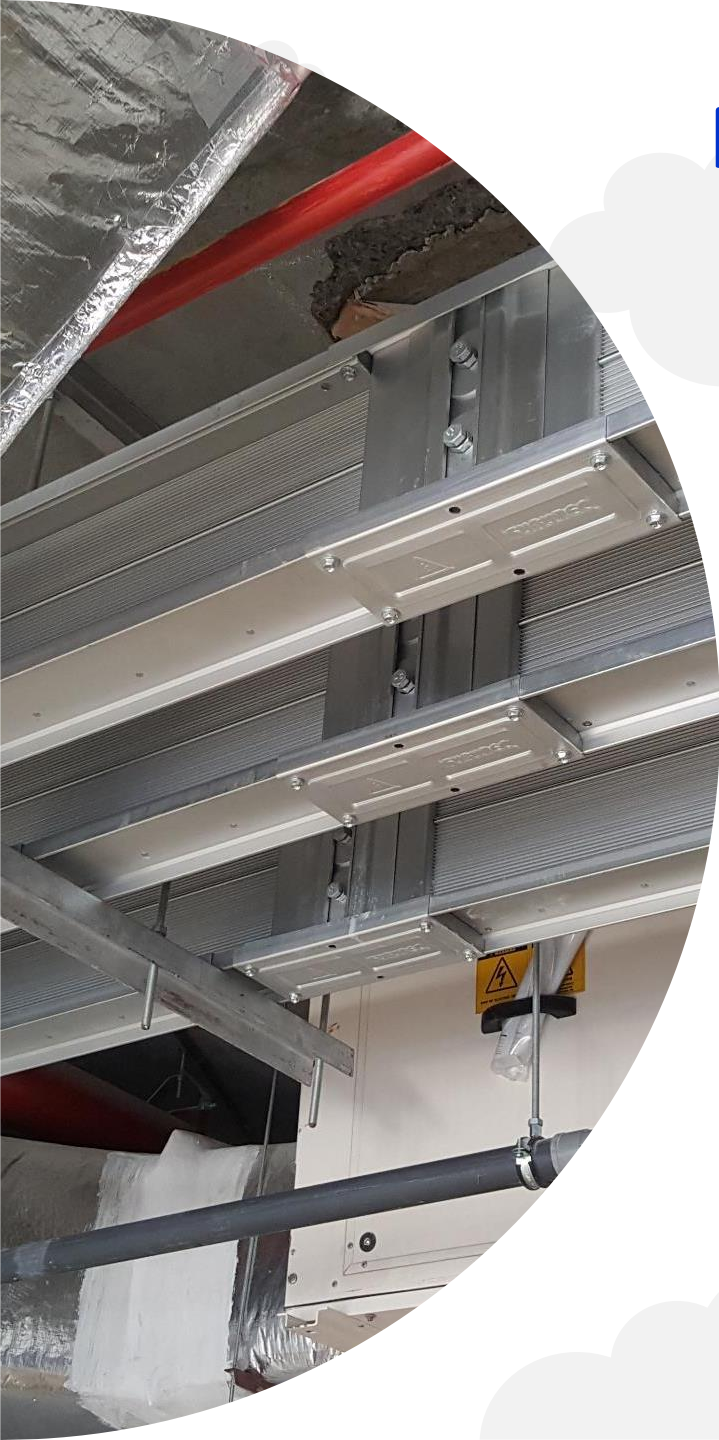


Transition Joint Box



# Furutec – Busduct Solution Provider

- Solution for Indoor Installation
- Solution for Outdoor & Harsh Installation
- Solution for Data Centre Application
- Solution for Intelligent Monitoring
- Solution for Project Coordination (BIM Ready)

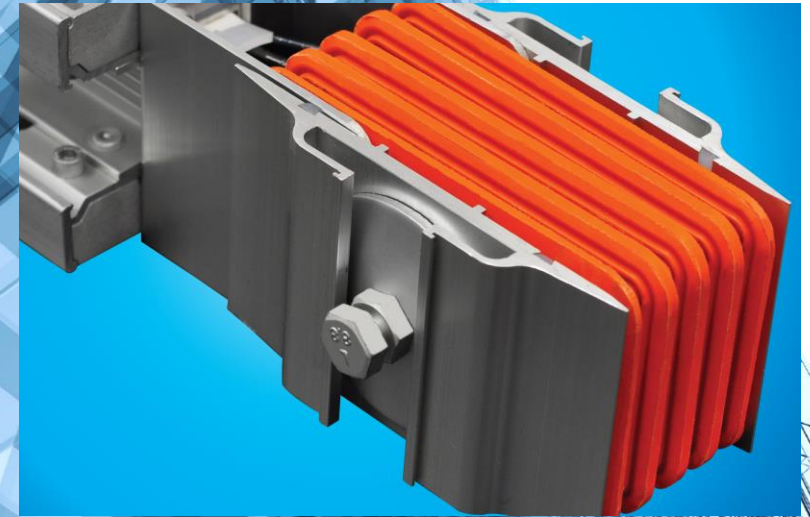


# Compact Sandwich Busduct for Indoor Installation

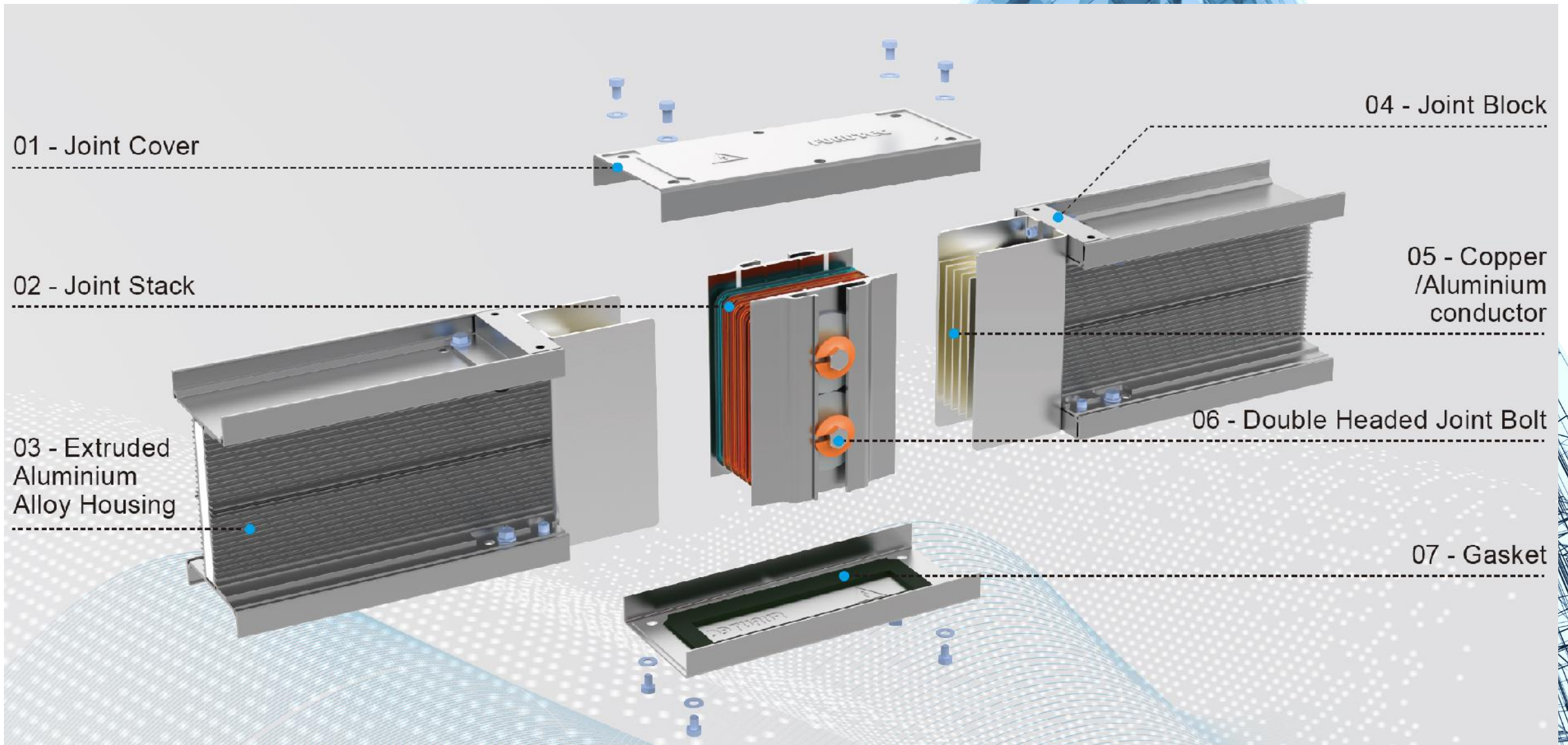


# Furutec Compact Sandwich Busduct

Description	Specification & Standards
Type	Compact Sandwich
Compliance Standard	IEC 61439-6 & IEC 61439-1 / UL857
Conductor Material	Copper / Aluminium
Conductor Conductivity	≥100% IACS
Rated Current	500A – 6300A
Rated Operational Voltage	1000V
Rated Insulation Voltage	1000V
Rated Impulse Voltage	8kV
System Frequency	50Hz / 60Hz
Short Circuit Strength	Up to 125kA/1sec
System Configuration	3P4W, 3P4W+50%E, 3P3W, 3P3W+50%E
Degree of Protection	IP65 / IP66
Mechanical Impact	IK10
Type of Earth Path	50% Copper Earth Bar / Housing Ground
Plating of Conductor	Tin-Plating
Insulation Material	Polyester Film
Busduct Housing Material	3.0mm Aluminium Housing Alloy 6063
Busduct Joint Design	Joint Stack with double headed joint bolt

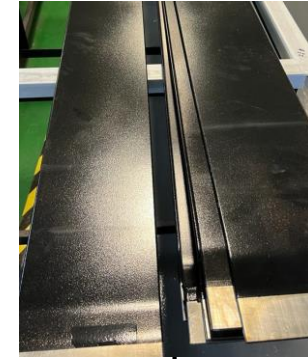
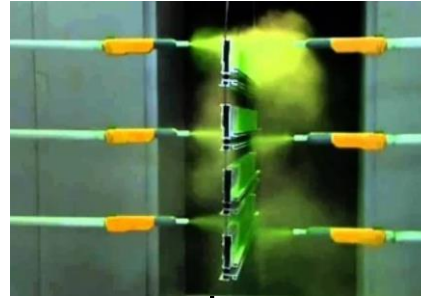


# Furutec Compact Sandwich Busduct



# PROCESS FLOW OF EPOXY INSULATION

## 7-Step Process



Pre-treatment Process

Masking Process for Contact Point

Pre-heat Conductor for 210°C for 20 Minutes

Electrostatic Spray Process

Curing Process (180°C for 60 Minutes)

Unmasking Process & Inspection

Tin-Plating Process



# Solution for Indoor Installation



**Busduct Type: Compact Sandwich**

**Busduct Rating: 500A – 6300A**

**Compliance Standard: IEC 61439-6 / UL 857**

**Conductor: Copper / Aluminium**

**Housing Material: Extruded Aluminium-Alloy**

**Degree of Protection: IP65**

**Mechanical Impact: IK10**

## Automated Assembly Process by RIVET Technology



Ensure a strong & reliable housing assembly and maintain consistent degree of protection (IP65) & Mechanical Impact (IK10)



# Solution for Outdoor Installation

Furutec cast resin busduct is engineered for outdoor and harsh environment in a broad range of market segments. It is safe, robust and reliable to be exposed to direct sun and rain in outdoor installation without having to install any additional protective cover or weatherproof canopy.

**Busduct Type: Cast Resin**

**Busduct Rating: 400A – 6300A**

**Compliance Standard: IEC 61439-6**

**Conductor: Copper**

**Housing Material: Casting Insulation Material**

**Degree of Protection: IP68**

**Mechanical Impact: IK10**

**Excellent Heat Dissipation and Fire, Corrosion & Chemical Resistance**



# Concerns on Outdoor & Harsh Environment

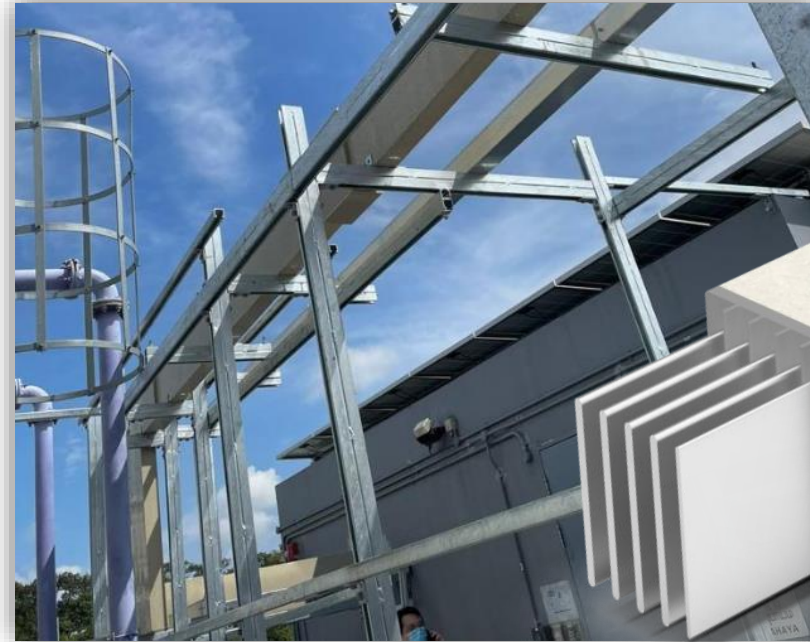
## Clients' Concerns:

- Exposure to direct sunlight & rain
- Heat dissipation
- Corrosion resistance



**Observation: Compact Sandwich Busduct installation with additional housing or canopy.**

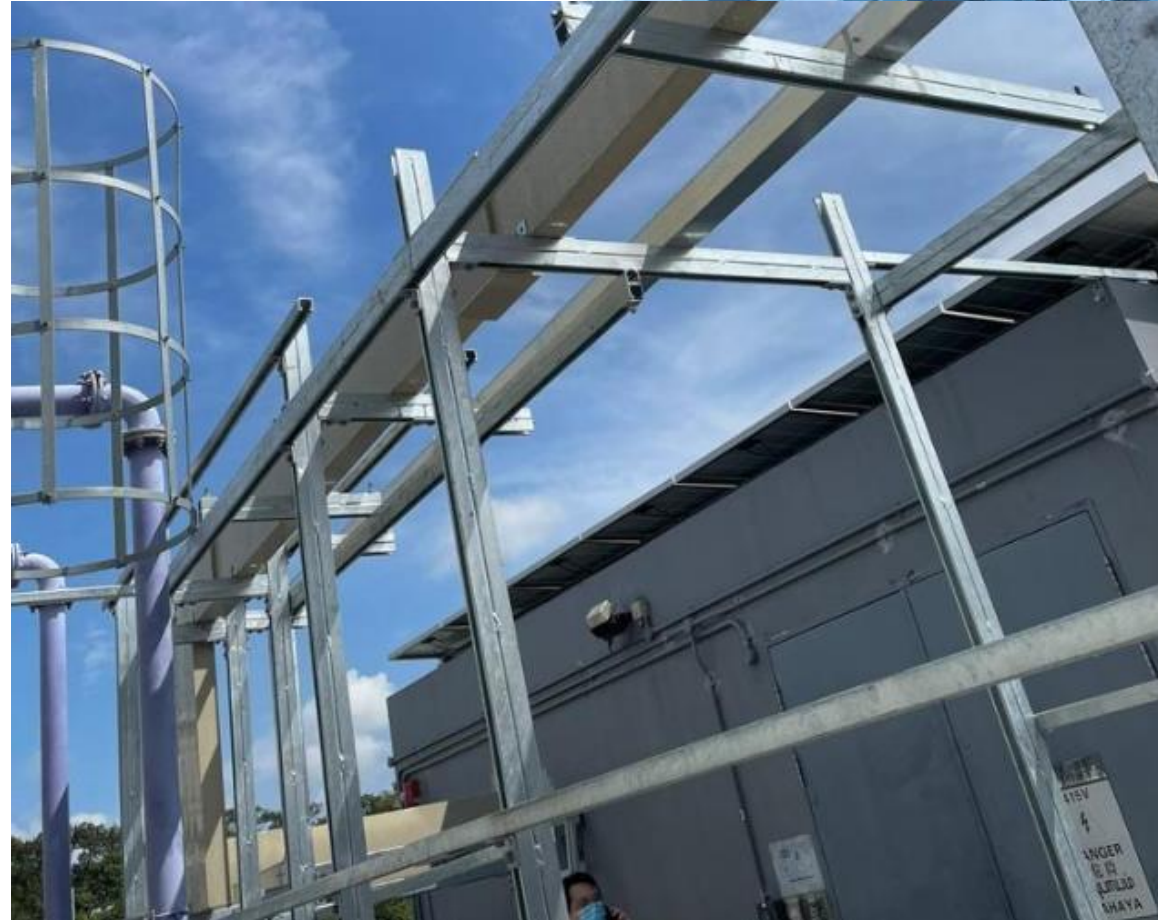
*(Conventional Method)*



**Cast Resin Busduct is engineered for outdoor & harsh environment without having to install any protective canopy.**

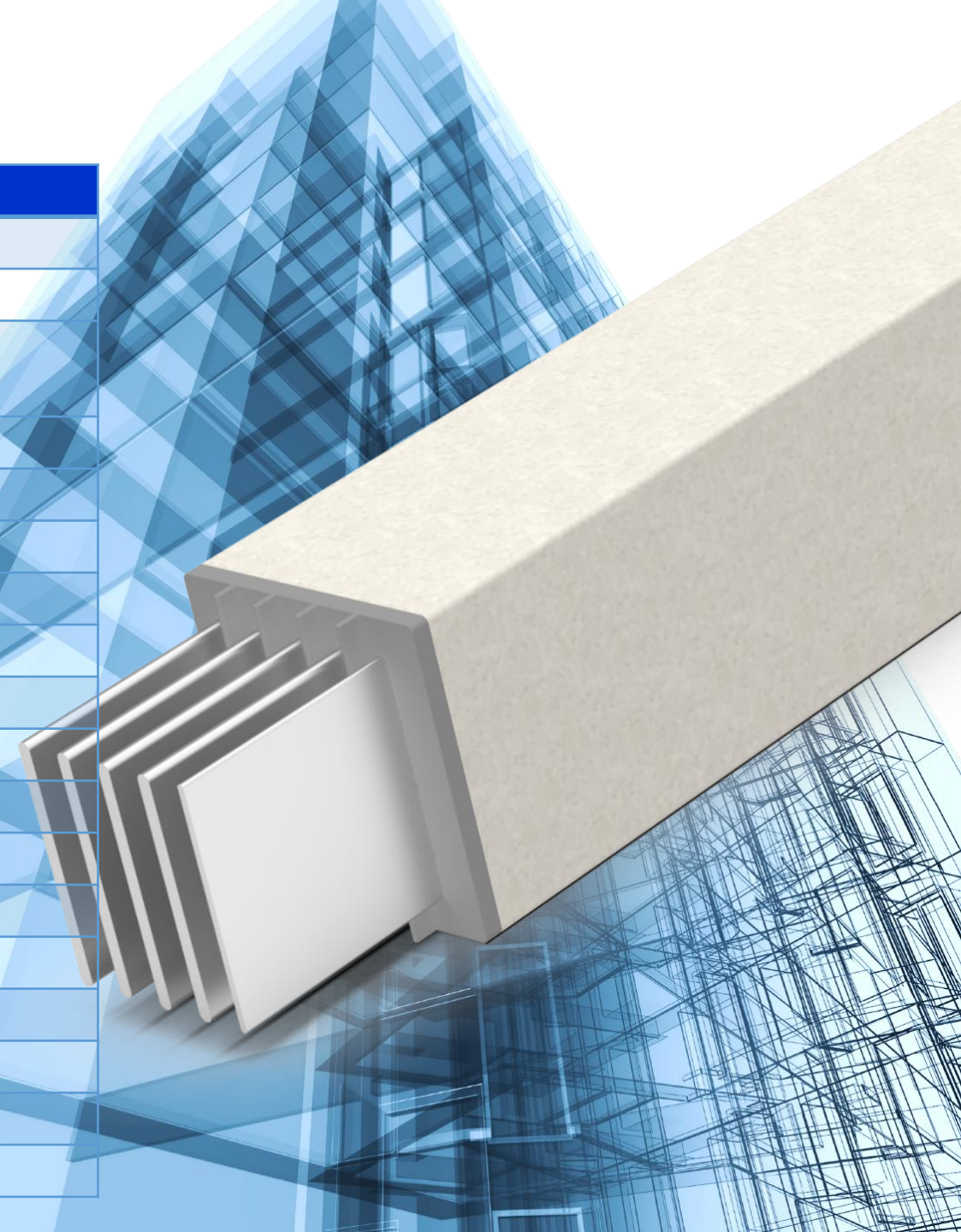


# Cast Resin Busduct for Outdoor & Harsh Environment

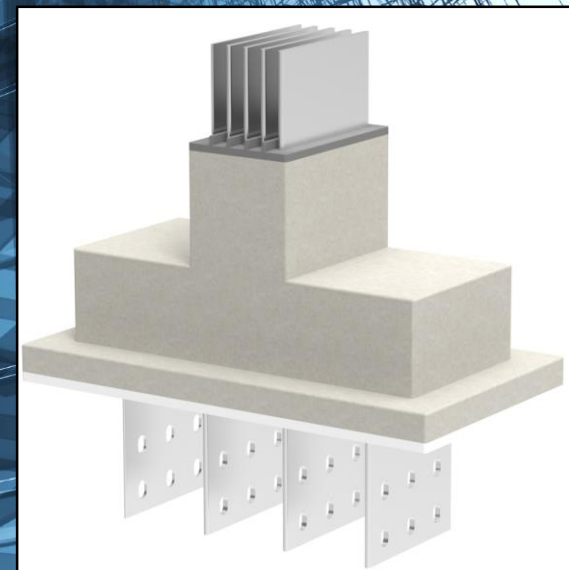
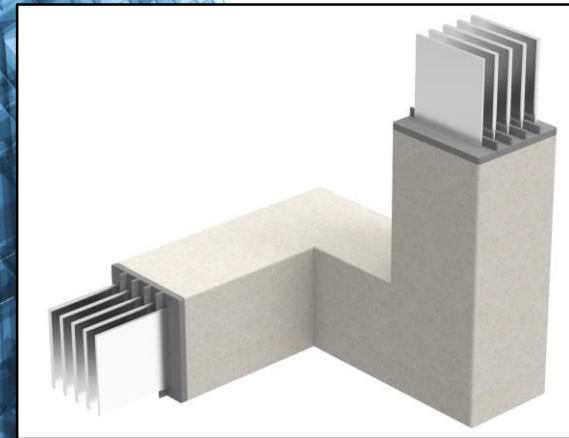
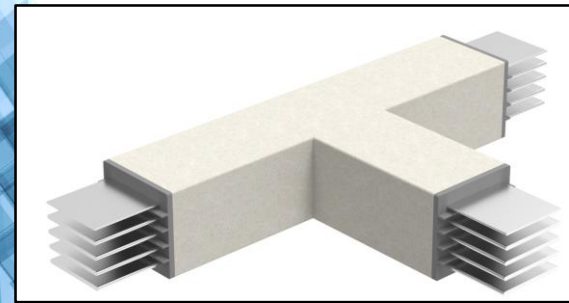
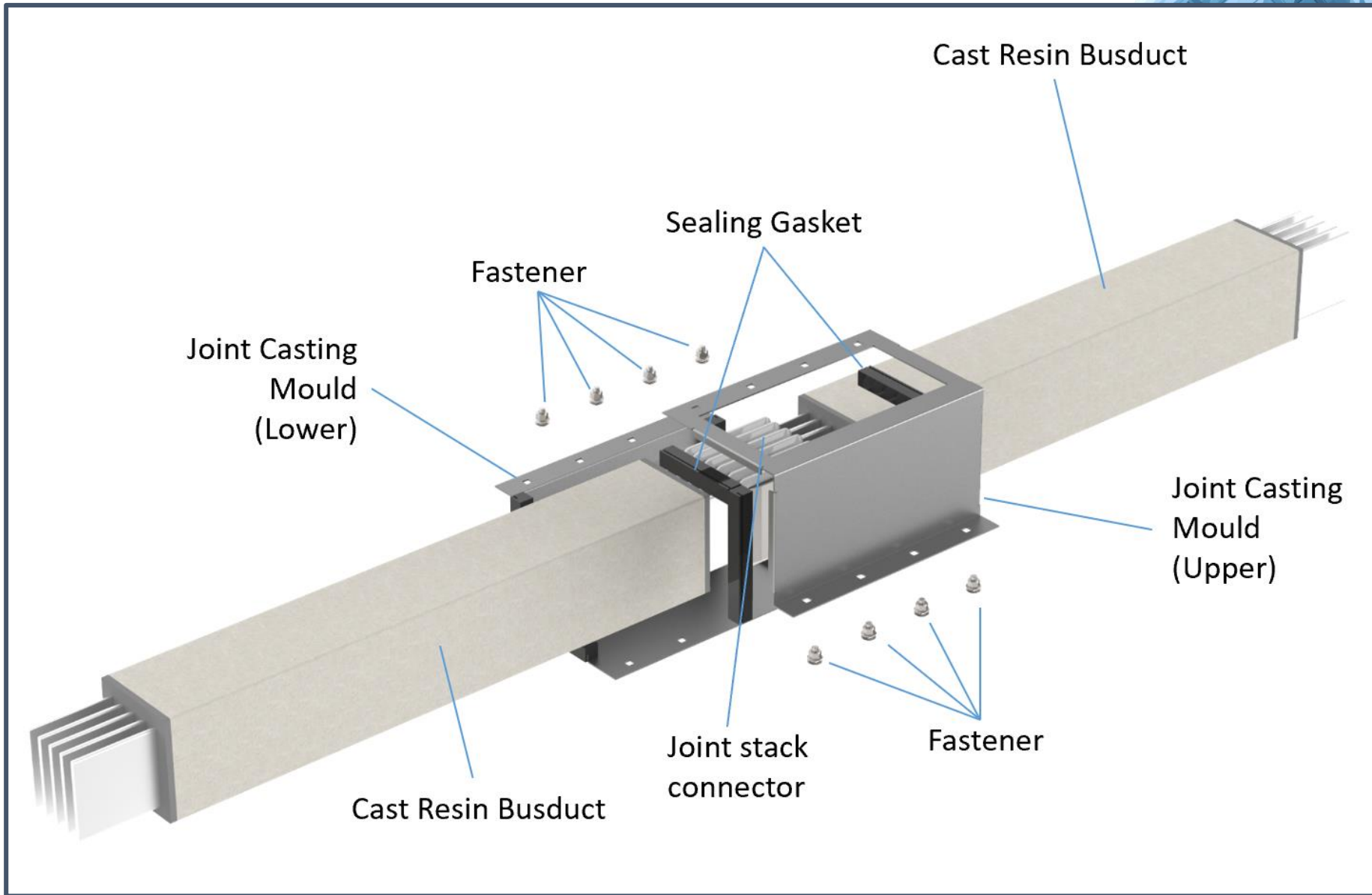


# Furutec Cast Resin Busduct

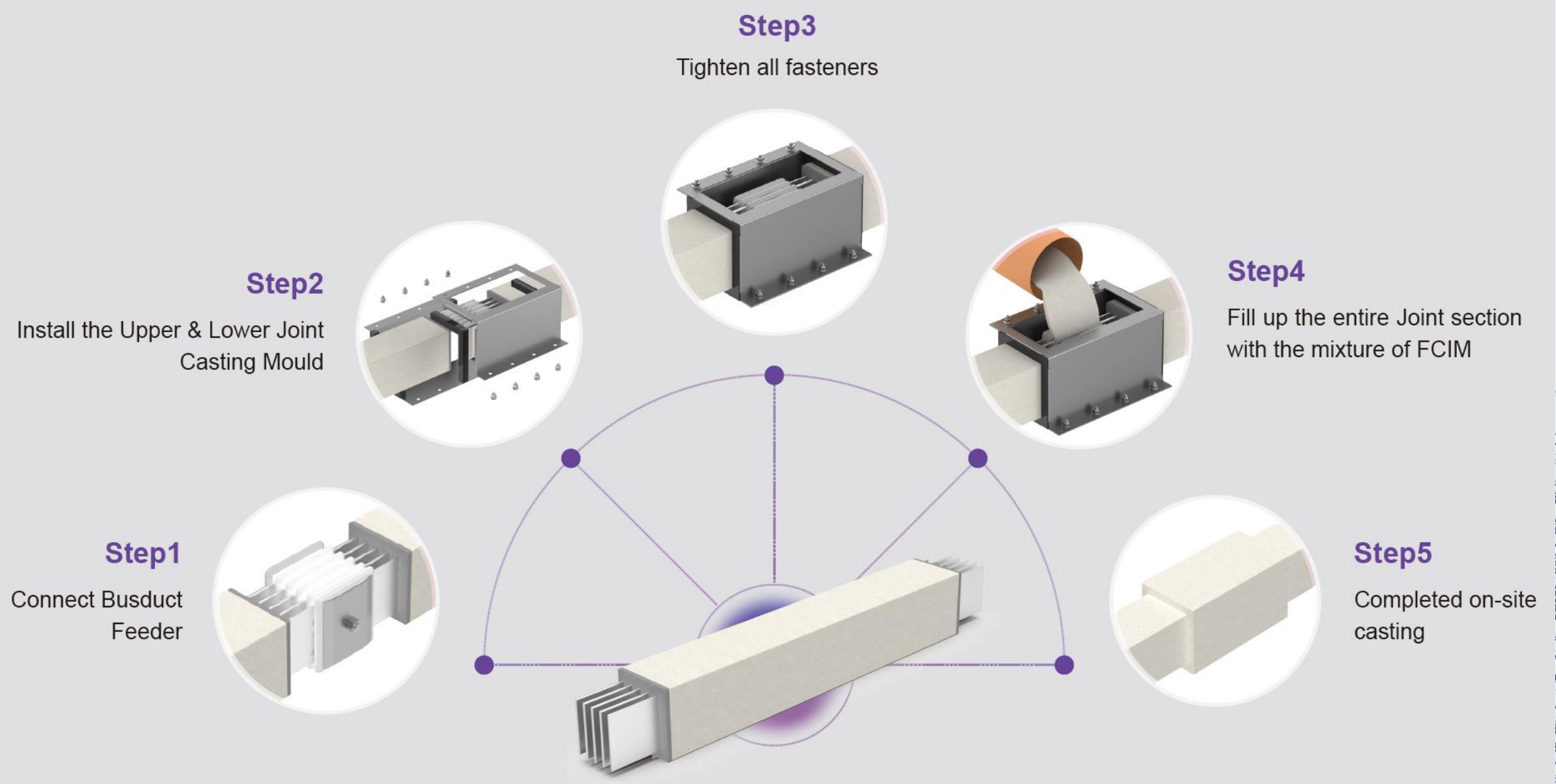
Description	Specification & Standards
Type	Cast Resin
Compliance Standard	IEC 61439-6 & IEC 61439-1
Fire Resistance Compliance	JIS C8364 & CNS 14286 Adoption: SS299, BS6387, IEC60331
Conductor Material	Copper / Aluminium
Conductor Conductivity	≥100% IACS
Rated Current	400A – 6300A
Rated Operational Voltage	1000V
Rated Insulation Voltage	1000V
Rated Impulse Voltage	12kV
System Frequency	50Hz / 60Hz
Short Circuit Strength	Up to 100kA/1sec
System Configuration	3P4W, 3P4W+50%E, 3P3W, 3P3W+50%E
Degree of Protection	IP68
Mechanical Impact	IK10
Type of Earth Path	50% Earth Bar (optional)
Plating of Conductor	Tin-Plating
Insulation Material	FCIM Cast Resin
Busduct Housing Material	FCIM Cast Resin



# Furutec Cast Resin Busduct



# Furutec Cast Resin Busduct



# Solution for Data Centre Application

Furutec i-DC Busduct is designed to meet the technical specification and requirement of critical power distribution in data center. It helps ensure the continuity of service in your data center and reduce the impact on the environment by reducing cabling and the waste generated during traditional retrofits.



**Busduct Rating: 250A – 630A**

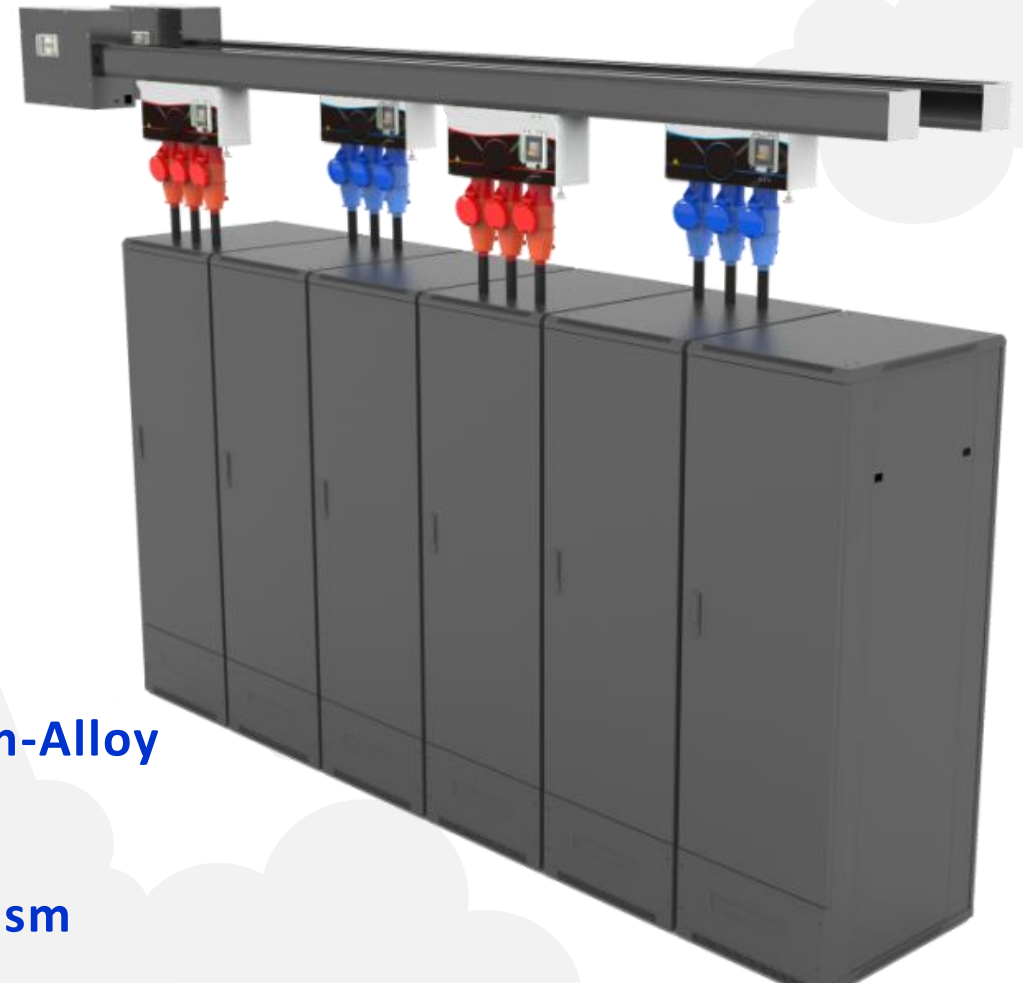
**Compliance Standard: IEC 61439-6**

**Conductor: Copper**

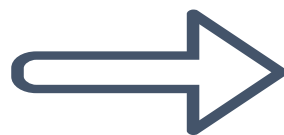
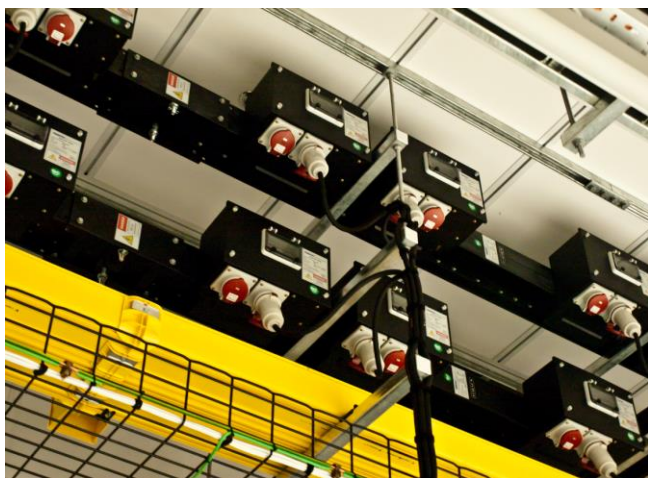
**Housing Material: Extruded Aluminium-Alloy**

**Degree of Protection: IP2X**

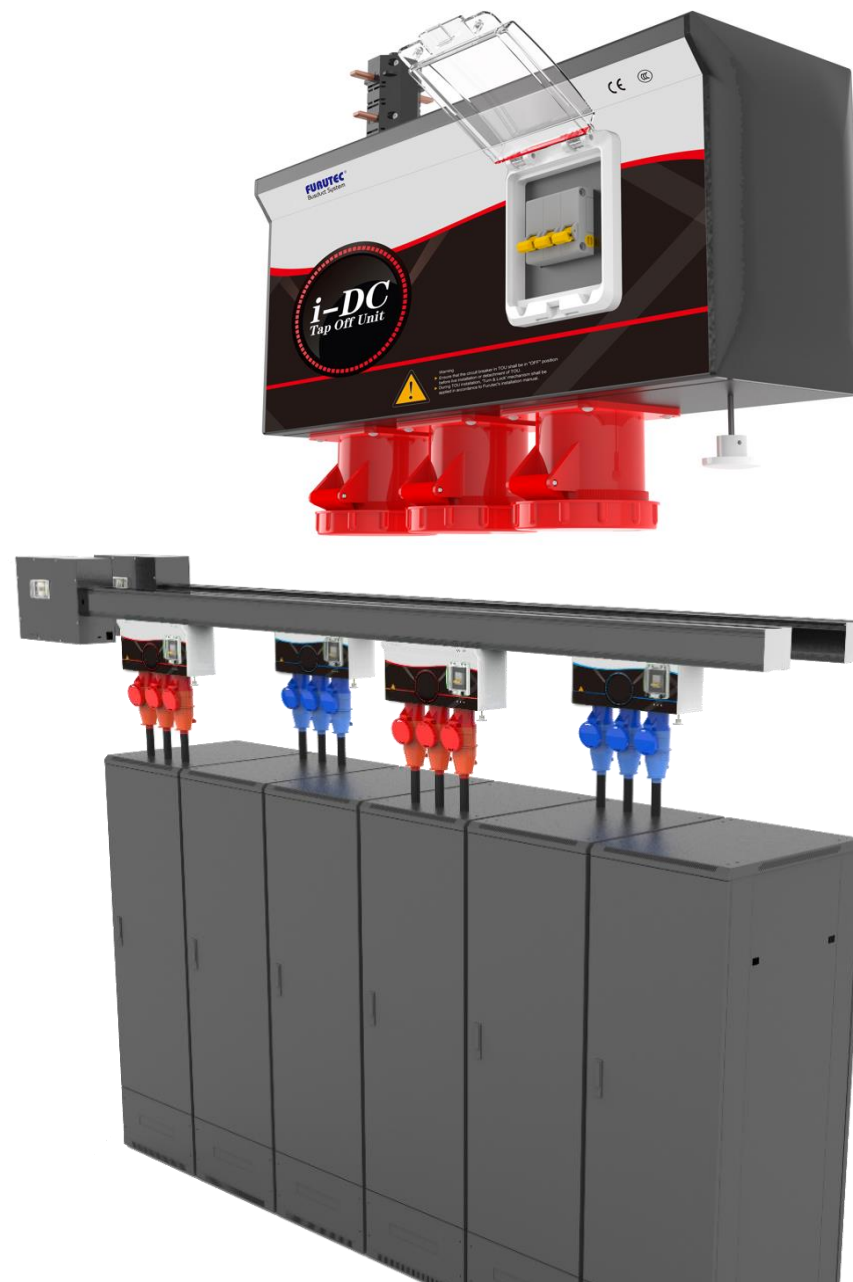
**TOU Installation: Turn & Lock Mechanism**



# Our Product Milestone



Data Hall Application



# Innovative Solution for Data Hall Application (Furutec i-DC Busduct)



# Why select Furutec i-DC Busduct for Data Hall Application



# What's make us DIFFERENTIATION



Intertek Testing Services (Singapore) Pte Ltd  
5 Pereira Road  
#06-01 Asiawide Industrial Building  
Singapore 368025  
65 62827187

## Test Verification of Conformity

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

### Applicant Name & Address:

Furutec Electrical Sdn Bhd  
Plot 89, Lorong Perindustrian Bukit Minyak 11  
Kawasan Perindustrian Bukit Minyak  
MK13, 14100 Seberang Perai Tengah  
Penang Malaysia

### Product Description: Ratings & Principle Characteristics:

Busbar Trunking System  
Ue=690V; Ui=1000V; IP=65; 3P5W

### Models: Brand Name:

HP-ES and AH Series  
Furutec

### Relevant Standards

The test method adopted "Acceptance Criteria for Certification by shake table testing on non-structural component (AC156), approved October 2010, editorially reviewed 2015" and to meet UBC SEISMIC ZONE 4

### Verification Issuing Office: Date of Tests:

Intertek Testing Services (Singapore) Pte Ltd  
31 July 2017

### Test Report Number(s):

171000022SGP-001

This verification is part of the full test report(s) and should be read in conjunction with them.

Signature  
Name: Stanley Ong  
Position: Assistant General Manager  
Date: 3 November 2017

This Verification is for the exclusive use of Intertek client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Verification. Only the Client is authorized to permit copying or distribution of this Verification. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test inspection results referenced in this Verification are relevant only to the sample tested/inspected. This Verification may itself cease to apply if the material, product, or service or has ever been used in an Intertek certification program.

## Tested for UBC Seismic Zone 4 where the Peak Ground Acceleration (PGA) shall be above 0.4g



# Factory Acceptance Test (FAT)



TMS – Temperature Monitoring System



Insulation Resistance Test  
(DC1000V and >100MΩ)

**100% of Finishing Goods have to “PASS”  
by Internal test before shipping out**



Dielectric Test  
(5kV for 5 Seconds and <100mA)

# VIETNAM - Residential



**RIVIERA POINT 1C – HO CHI MINH  
(Vietnam) 2024**



**SPLUS RIVERVIEW – BINH DUONG  
(Vietnam) 2023**



**VISTA RESIDENCES – DA NANG  
(Vietnam) 2025**



**AKIRA HOANG NAM – HO CHI MINH  
(Vietnam) 2020**



**WEST GATE – HO CHI MINH  
(Vietnam) 2023**



**PARK CITY RESIDENCE – HA NOI  
(Vietnam) 2022**



**MEWTATCO – HANOI**  
(Vietnam)



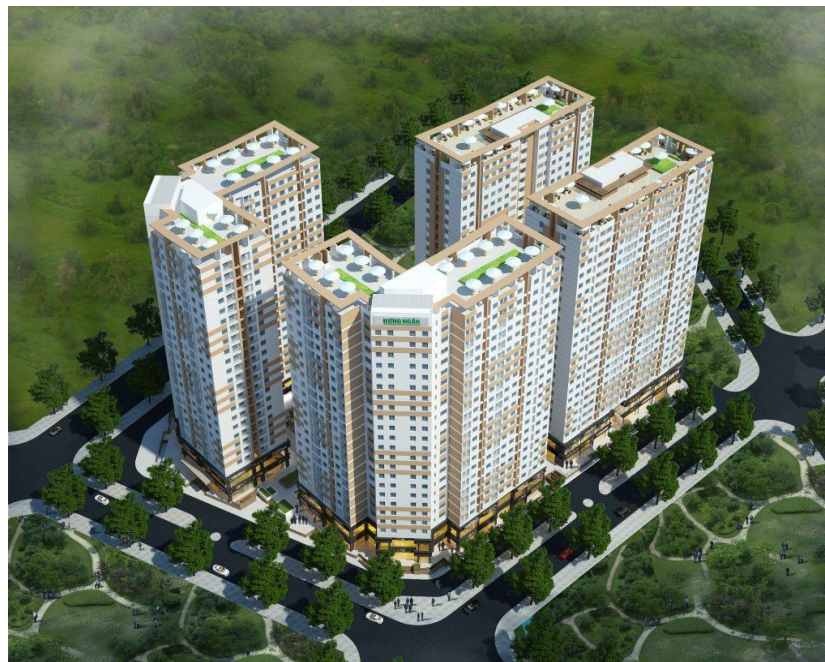
**HOPE RESIDENCE PHUC DONG – HANOI**  
(Vietnam)



**SUNNY PLAZA – HO CHI MINH**  
(Vietnam)



**HUNG NGAN A1/A2 – HO CHI MINH  
(Vietnam)**



**HUNG NGAN B1 – HO CHI MINH  
(Vietnam)**



**BELLEZA (BLOCK B) – HO CHI MINH  
(Vietnam)**

## DAMEN SHIPYARD – HAI PHONG (Vietnam) EXPANSION PHASE 2025



**DAMEN SHIPYARD – HAI PHONG  
(Vietnam)**

## ARISTO FACTORY – BAC NINH (Vietnam) REPLACEMENT 2025



**ARISTO FACTORY – BAC NINH  
(Vietnam)**



**DAMEN SHIPYARD – HAI PHONG  
(Vietnam) 2013**



**SANOFI FACTORY – HO CHI MINH  
(Vietnam) 2013**



**ARISTO FACTORY – BAC NINH  
(Vietnam) 2013**



**NO.1 FACTORY – HAU GIANG**  
(Vietnam)



**NO.1 FACTORY – CHU LAI**  
(Vietnam)



**NO.1 FACTORY – HA NAM**  
(Vietnam)



**SATRA CENTRE MALL – CU CHI  
(Vietnam)**



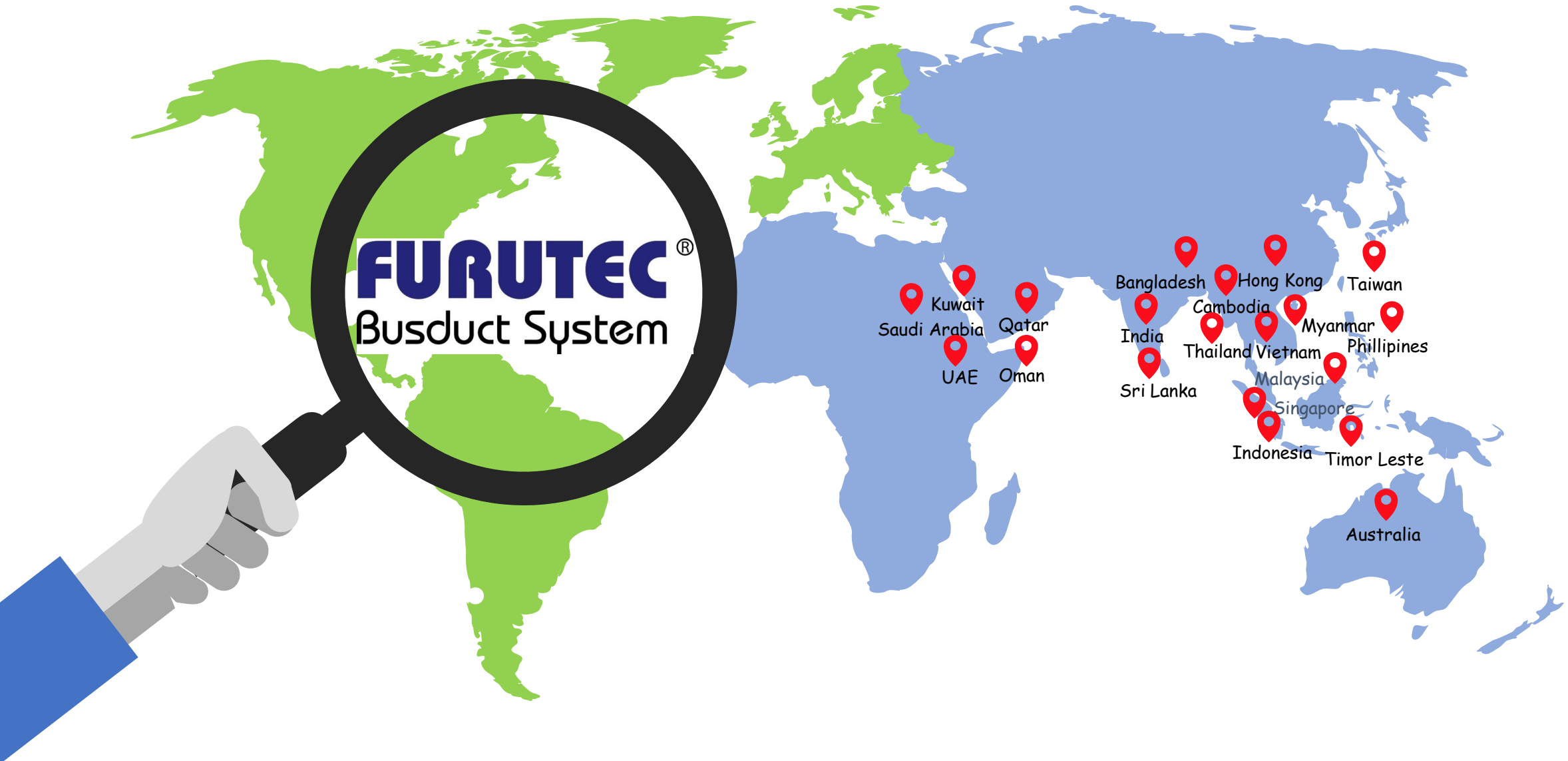
**FIRST TEAM FACTORY – TAY NINH  
(Vietnam)**



**HASEKO LBCT – HANOI  
(Vietnam)**



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**Contact us:**

**Tel: 0906 139 089 / 0772 011180**

**Email: [trungdang@furutech.com.my](mailto:trungdang@furutech.com.my)**

**Website: [www.furutech.com.my](http://www.furutech.com.my)**