FURUTEC®



CR

Cast Resin Busduct

(ALUMINIUM CONDUCTOR)

FT(CR-AL)@2025/05 – 14.05.2025

Introduction

Furutec busduct system is the result of cumulative years of research and manufacturing experience. It offers a broad range of busduct systems in a variety of applications and market segments as the products meet the high expectations and specification of customers.

With the innovation of R&D team, Furutec busduct system is successfully type-tested and certified by various reputable testing and certification bodies in compliance to the international standards, namely IEC61439-6, IEC61439-1, IEC60529, CNS14286, JIS C 8364, BS6387(adoption), IEC60331(adoption), SS299 (adoption), UBC Seismic Zone 4, etc.

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.

Furutec cast resin busduct is known for:

- **High degree of protection (IP68)**
- **Flexible & modular in design**
- **Occupying lesser space, but carrying high current rating and full load tested**
- **Excellent heat dissipation**
- **Fire resistance & non-flammable propagation**
- **Earthquake resistance**
- **Corrosion resistance**
- **Chemical resistance**
- **Resistance to Ultra Violet (UV) radiation**
- **Mechanical impact resistance (IK10) & heavy duty**
- **Maintenance-free**
- **Suitable for connecting with Furutec indoor busduct by means of transition joint box**

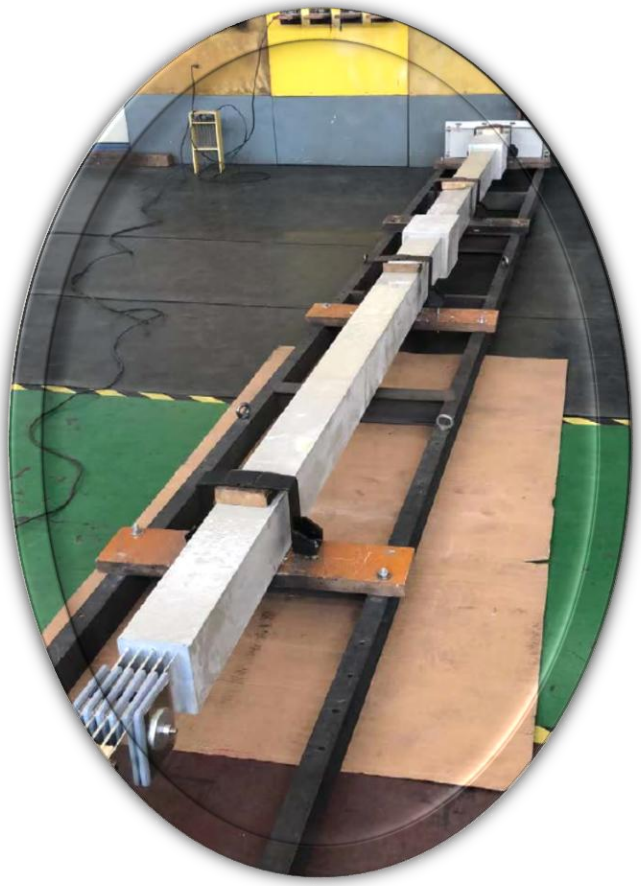
Our product has been accepted globally and successfully installed in various prestigious around the world. We take pride in further expanding our success to more countries through our regional distributors/business partners.

Product Specification

Description	Specification & Standard
Manufacturer	Furutec Electrical Sdn Bhd
Country of Origin	Malaysia
Brand	FURUTEC
Model	CR
Type	Cast Resin
Rated Current	630A – 6300A
Rated Operational Voltage	1000V
Rated Insulation Voltage	1000V
Rated Impulse Voltage	12kV
System Frequency	50/60Hz
System Configuration	3P4W (L1, L2, L3, N) 3P4W+50%E (L1, L2, L3, N, 50% Earth Bar) 3P3W (L1, L2, L3) 3P3W+50%E (L1, L2, L3, 50% Earth Bar) *Note: oversized neutral (N) & earth (E) are optional.*
Compliance Standard	IEC 61439-6 & IEC 61439-1
Degree of Protection	IP68
Mechanical Impact	IK10
Type of Earth Path	50% Earth Bar (optional) *Note: Grounding is not required for cast resin body*
Conductor Material	Aluminium
Plating of Conductor	Tin-Plating or Silver-Plating (optional)
Insulation Material	FCIM Cast Resin
Busduct Housing Material	FCIM Cast Resin

Product Specification

Short-Circuit Strength



Busduct Rating	Short Circuit Rating (kA/ 1 sec)	Short Circuit Rating (kA/ 3 sec)	Short Circuit Rating - Ipk (kA)
630A	20	12	40
800A	30	17	63
1000A	40	23	84
1250A	40	23	88
1600A	70	40	154
2000A	70	40	154
2500A	80	46	176
3200A	100	58	220
4000A	100	58	220
5000A	100	58	220
6300A	100	58	220

Note: The above is subject to changes without prior notice

Product Specification

Aluminium LV Cast Resin Busduct

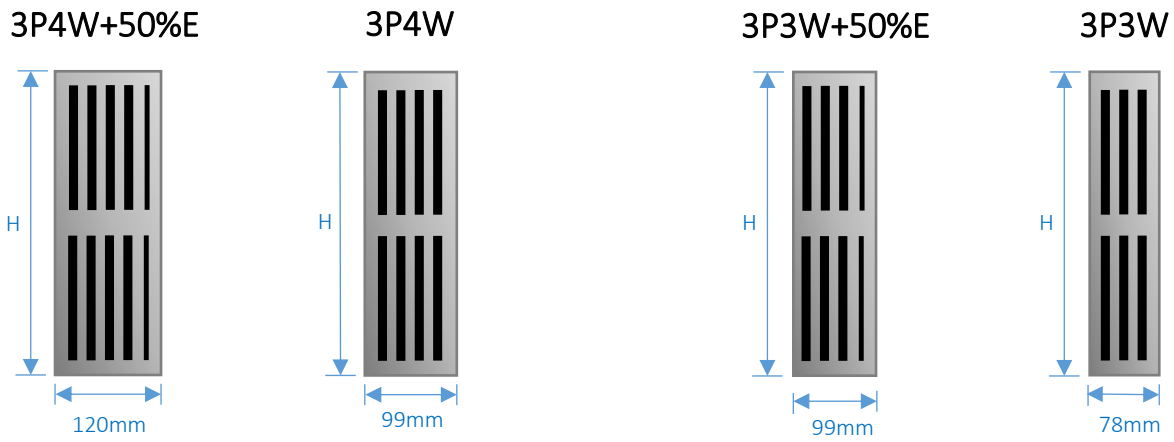
Busduct Rating	Product Code	3P4W		3P4W+50%E		3P3W		3P3W+50%E	
		Dimension H (mm)	Weight (kg/m)	Dimension H (mm)	Weight (kg/m)	Dimension H (mm)	Weight (kg/m)	Dimension H (mm)	Weight (kg/m)
630A	CR-LV-A630	70	12.5	70	15.8	70	9.8	70	12.4
800A	CR-LV-A800	90	16.3	90	20.5	90	12.8	90	16.2
1000A	CR-LV-A1000	110	20.2	110	25.3	110	15.8	110	19.9
1250A	CR-LV-A1250	140	25.9	140	32.4	140	20.3	140	25.5
1600A	CR-LV-A1600	190	35.4	190	44.2	190	27.7	190	34.9
2000A	CR-LV-A2000	230	43.0	230	53.7	230	33.7	230	42.4
2500A	CR-LV-A2500	280	52.5	280	65.6	280	41.1	280	51.7
3200A	CR-LV-A3200	380	80.9	380	98.9	380	63.0	380	78.6
4000A	CR-LV-A4000	460	102.1	460	124.0	460	79.4	460	98.7
5000A	CR-LV-A5000	560	124.6	560	151.3	560	97.0	560	120.5
6300A	CR-LV-A6300	560	129.3	560	156.2	560	100.5	560	124.6

Note: The above is subject to changes without prior notice

630A ~ 2500A CR Busduct



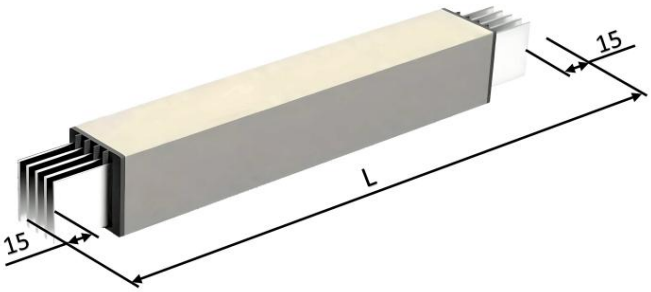
3200A ~ 6300A CR Busduct



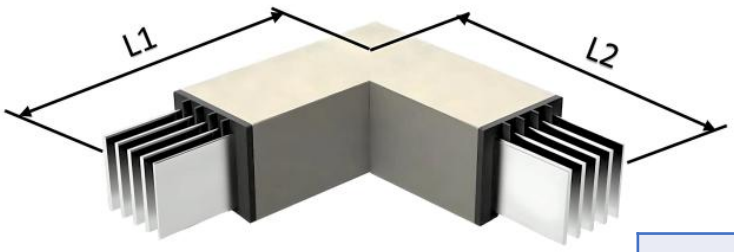
Functional Unit

Busduct Straight Feeder

Busduct Straight Feeder		
Busduct Rating	Minimum (mm)	Standard (mm)
	L	L
630A-6300A	350	3000

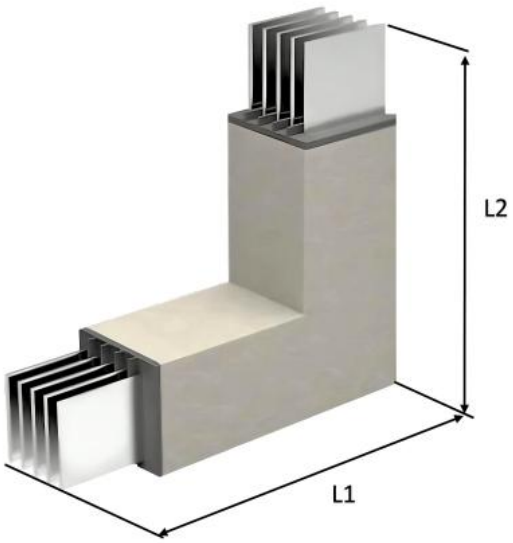


Edgewise Elbow



Edgewise Elbow				
Busduct Rating	Minimum (mm)		Standard (mm)	
	L1	L2	L1	L2
630A-6300A	300	300	500	500

Flatwise Elbow

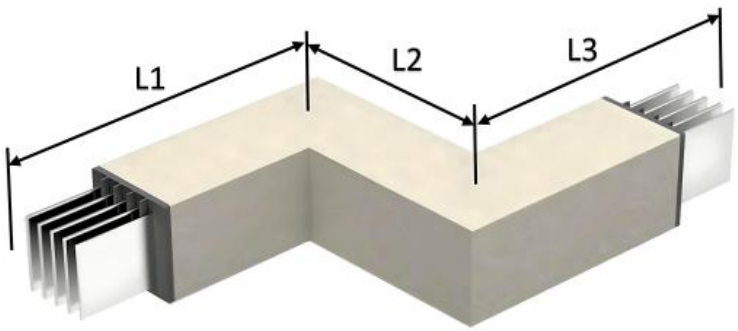


Flatwise Elbow				
Busduct Rating	Minimum (mm)		Standard (mm)	
	L1	L2	L1	L2
630A	240	240	500	500
800A	250	250	500	500
1000A	260	260	500	500
1250A	280	280	500	500
1600A	300	300	500	500
2000A	330	330	500	500
2500A	350	350	500	500
3200A	400	400	600	600
4000A	480	480	600	600
5000A	540	540	600	600
6300A	540	540	600	600

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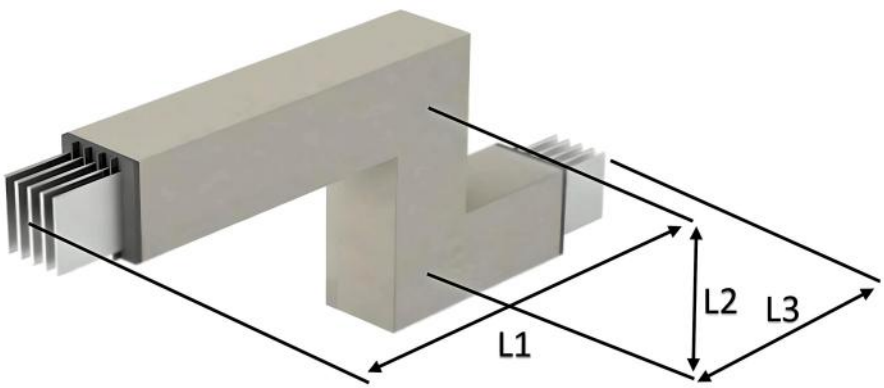
Functional Unit

Edgewise Offset Elbow						
Busduct Rating	Minimum (mm)			Standard (mm)		
	L1	L2	L3	L1	L2	L3
630A-6300A	300	100	300	500	500	500



Edgewise Offset Elbow

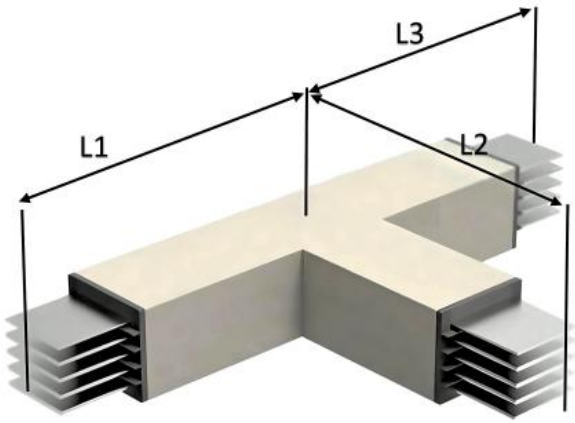
Flatwise Offset Elbow



Flatwise Offset Elbow						
Busduct Rating	Minimum (mm)			Standard (mm)		
	L1	L2	L3	L1	L2	L3
630A	240	100	240	500	500	500
800A	250	100	250	500	500	500
1000A	260	100	260	500	500	500
1250A	280	100	280	500	500	500
1600A	300	100	300	500	500	500
2000A	330	100	330	500	500	500
2500A	350	100	350	500	500	500
3200A	400	100	400	600	600	600
4000A	480	100	480	600	600	600
5000A	540	100	540	600	600	600
6300A	540	100	540	600	600	600

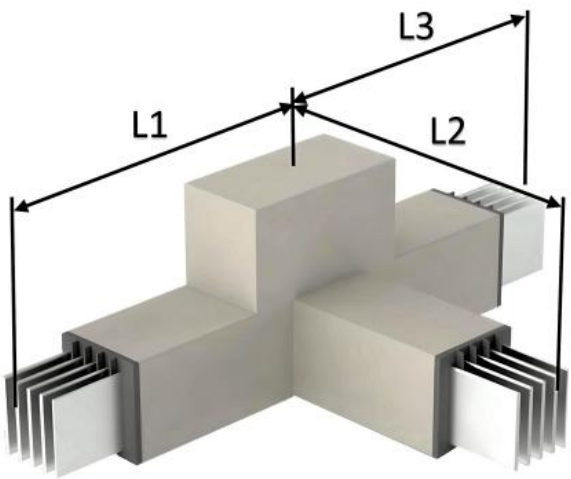
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Flatwise Tee Elbow



Flatwise Tee Elbow						
Busduct Rating	Minimum (mm)			Standard (mm)		
	L1	L2	L3	L1	L2	L3
630A	240	240	240	500	500	500
800A	250	250	250	500	500	500
1000A	260	260	260	500	500	500
1250A	280	280	280	500	500	500
1600A	300	300	300	500	500	500
2000A	330	330	330	500	500	500
2500A	350	350	350	500	500	500
3200A	400	400	400	600	600	600
4000A	480	480	480	600	600	600
5000A	540	540	540	600	600	600
6300A	540	540	540	600	600	600

Edgewise Tee Elbow



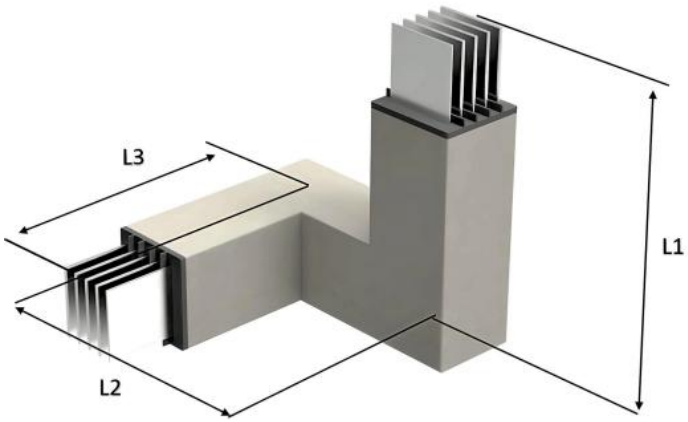
Edgewise Tee Elbow						
Busduct Rating	Minimum (mm)			Standard (mm)		
	L1	L2	L3	L1	L2	L3
630A	370	300	370	450	450	450
800A	390	300	390	450	450	450
1000A	410	300	410	450	450	450
1250A	440	300	440	500	500	500
1600A	490	300	490	550	550	550
2000A	530	300	530	600	600	600
2500A	580	300	580	600	600	600
3200A	490	300	490	600	600	600
4000A	530	300	530	600	600	600
5000A	580	300	580	600	600	600
6300A	580	300	580	600	600	600

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Functional Unit

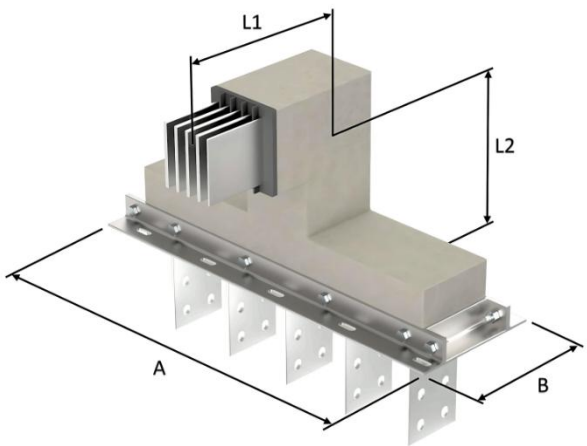
Combination Elbow						
Busduct Rating	Minimum (mm)			Standard (mm)		
	L1	L2	L3	L1	L2	L3
630A	240	200	300	500	500	500
800A	250	210	300	500	500	500
1000A	260	220	300	500	500	500
1250A	280	240	300	500	500	500
1600A	300	260	300	500	500	500
2000A	330	290	300	500	500	500
2500A	350	310	300	500	500	500
3200A	400	360	300	600	600	600
4000A	480	440	300	600	600	600
5000A	540	500	300	600	600	600
6300A	540	500	300	600	600	600

Combination Elbow



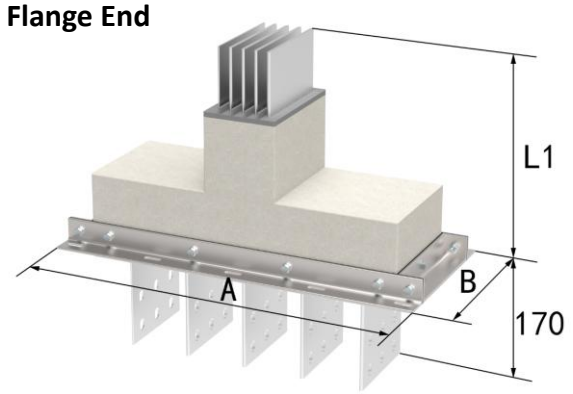
Flatwise Elbow With Flange End				
Busduct Rating	Dimension (mm)			
	L1	L2	A	B
630A	290	240	570	160
800A	300	250	570	180
1000A	320	260	570	200
1250A	340	280	570	230
1600A	380	300	570	280
2000A	420	330	570	320
2500A	450	350	570	370
3200A	460	400	650	470
4000A	500	480	650	550
5000A	560	540	650	650
6300A	560	540	650	650

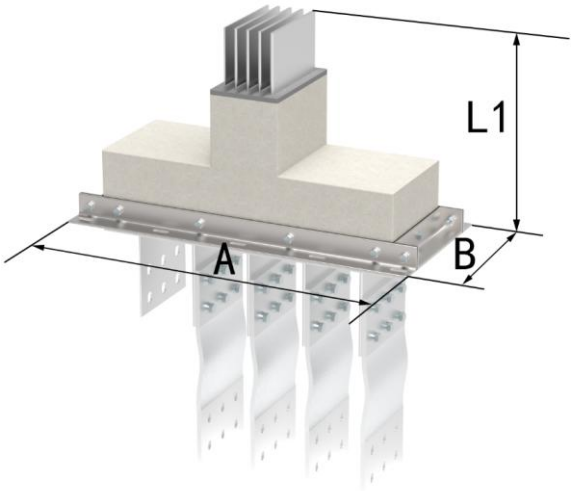
Flatwise Elbow With Flange End



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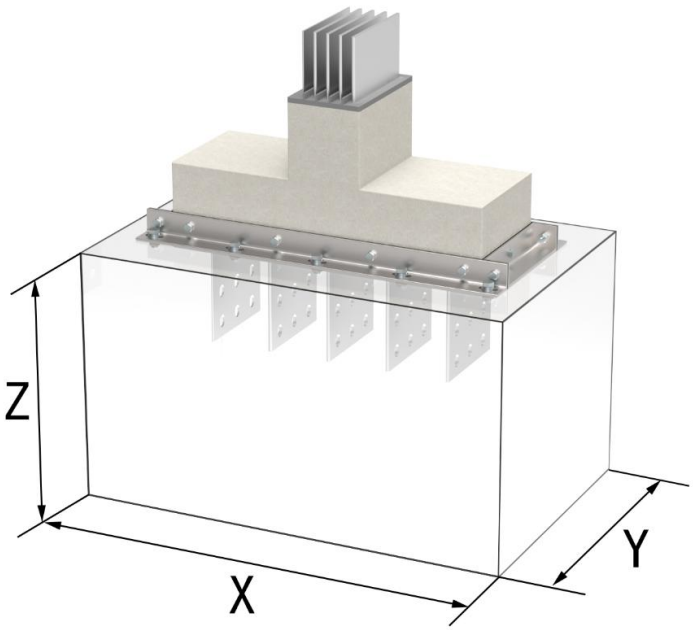
Flange End





Flange End			
Busduct Rating	Dimension (mm)		
	L1	A	B
630A	500	570	160
800A	500	570	180
1000A	500	570	200
1250A	500	570	230
1600A	500	570	280
2000A	500	570	320
2500A	500	570	370
3200A	500	650	470
4000A	500	650	550
5000A	500	650	650
6300A	500	650	650

Flange End Box

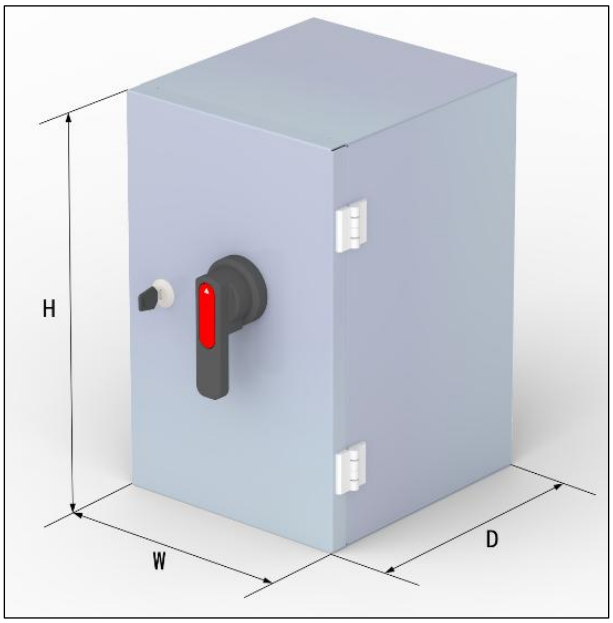


Flange End Box			
Busduct Rating	Dimension (mm)		
	X	Y	Z
630A	570	160	450
800A	570	180	450
1000A	570	200	450
1250A	570	230	450
1600A	570	280	450
2000A	570	320	450
2500A	570	370	450
3200A	650	470	450
4000A	650	550	450
5000A	650	650	450
6300A	650	650	450

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Functional Unit

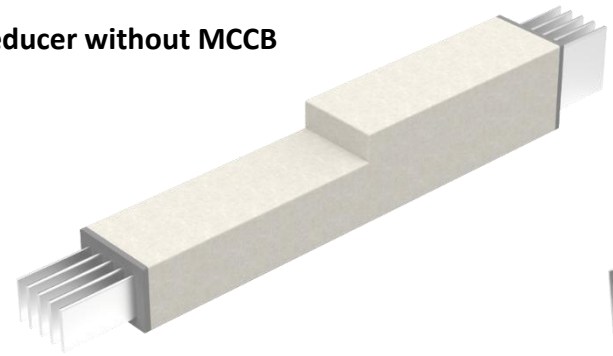
Tap Off Unit (TOU)



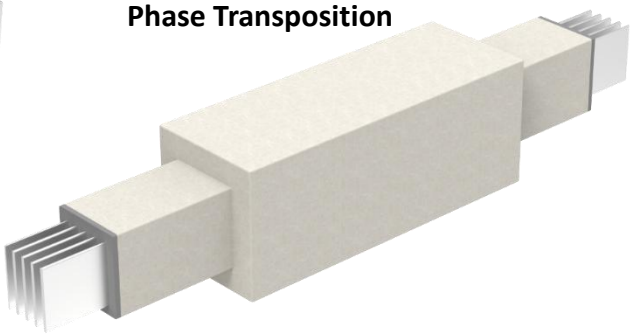
Tap Off Unit (TOU)			
TOU Rating	Dimension (mm)		
	W	D	H
16-80A	230	230	360
100-160A	250	250	400
200-250A	270	270	500
315-400A	310	310	650
500-630A	340	340	850
800A	450	400	900
1000-1250A	450	400	1000

Dimension of other functional units shall be provided in Furutec's detailed drawing.

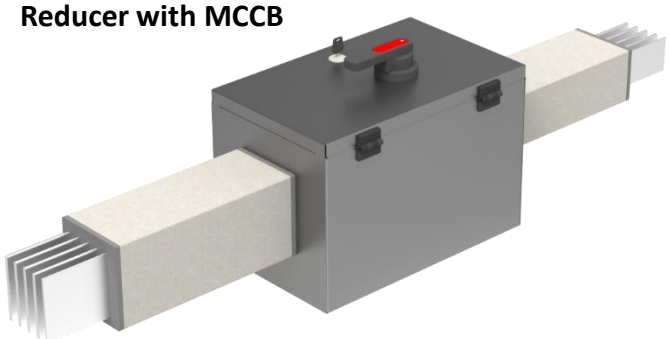
Reducer without MCCB



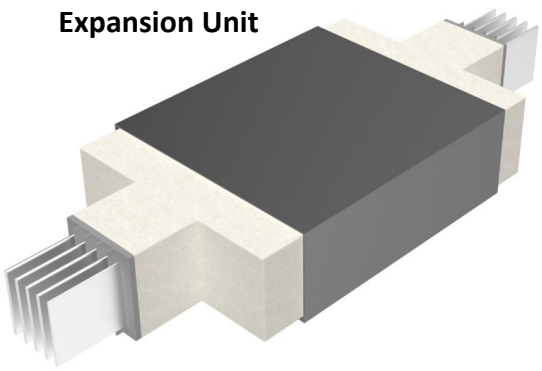
Phase Transposition



Reducer with MCCB

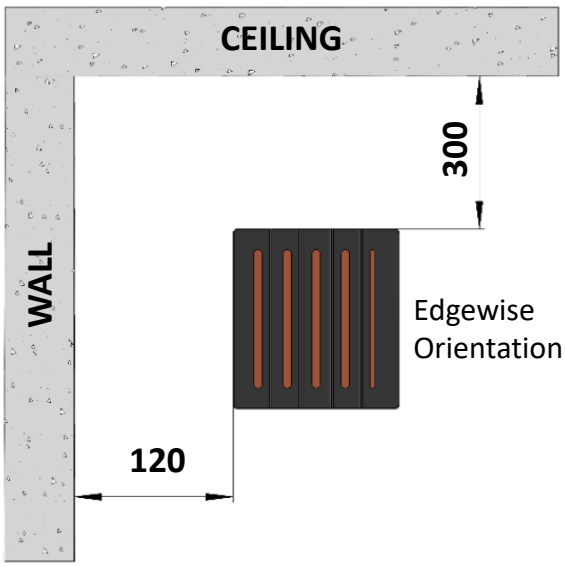


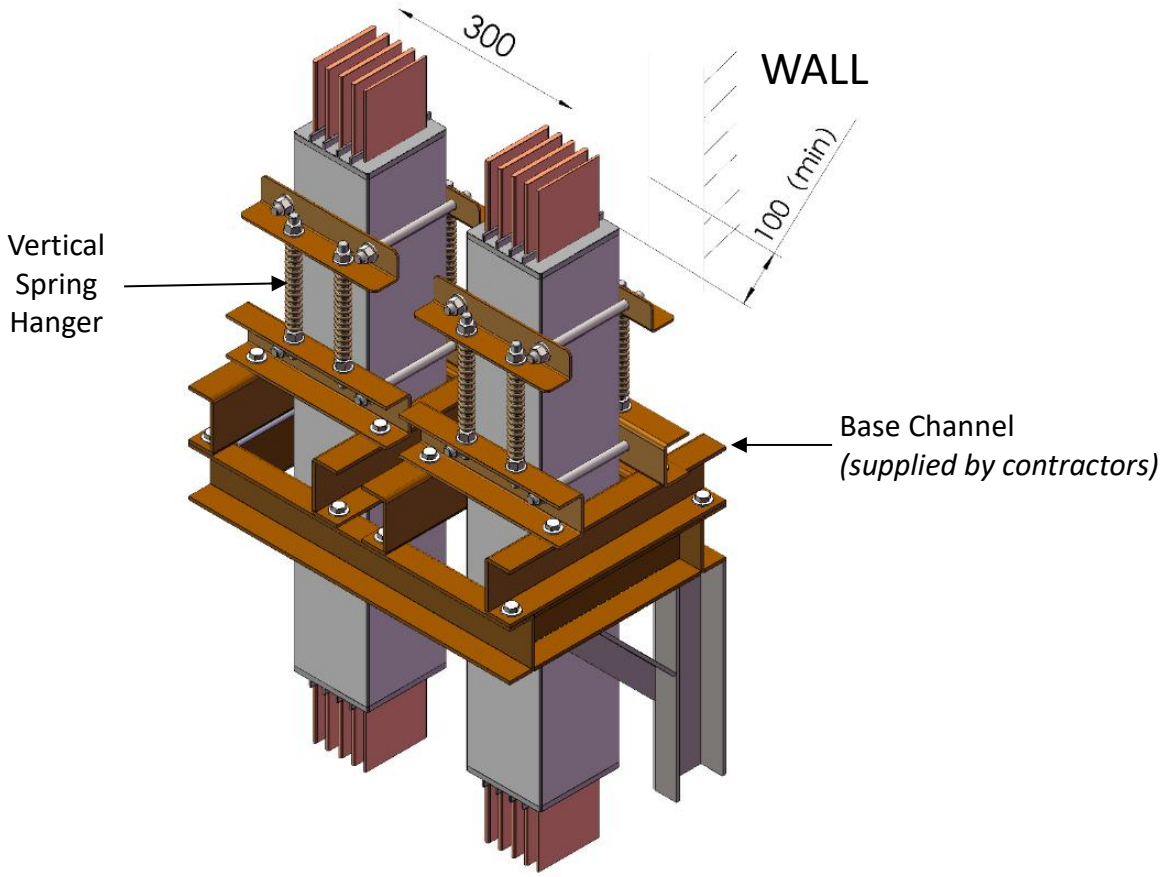
Expansion Unit



Note: Above pictures are shown for illustration purpose only and subject to changes without prior notice

Recommended distance between busduct and wall/ceiling

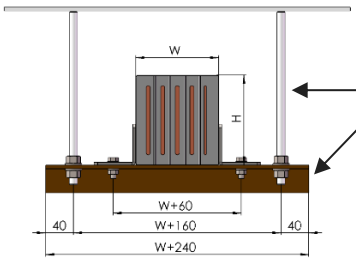




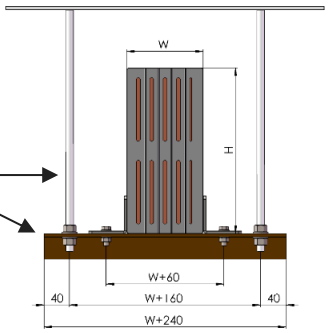
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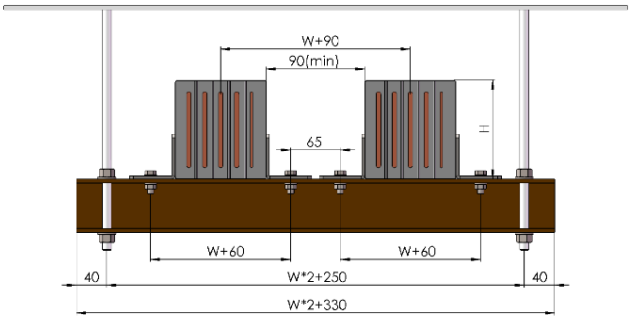
Installation & Maintenance Procedure

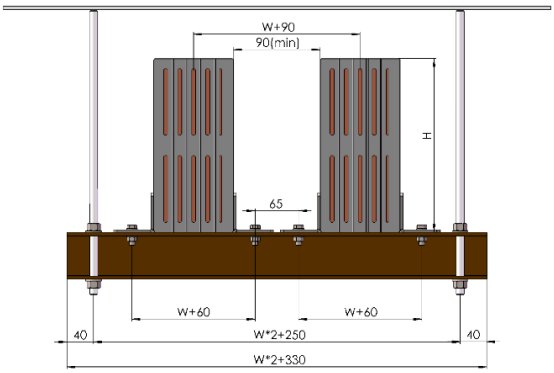
Installation Guideline of Horizontal Hanger

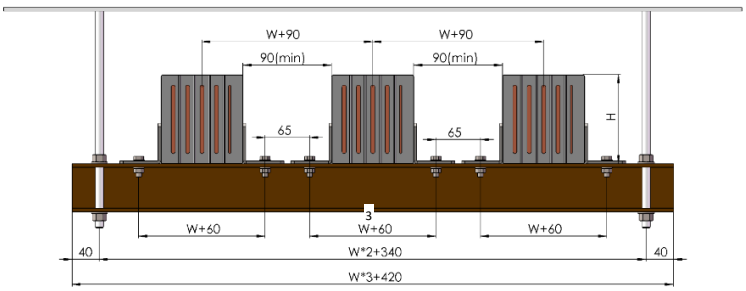


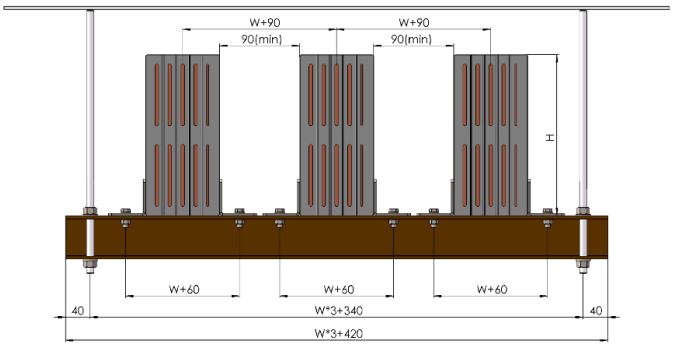
Hanger Rod & Angle Metal Bar
(supplied by contractors)

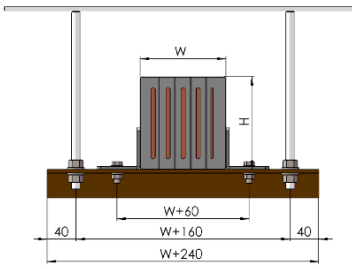


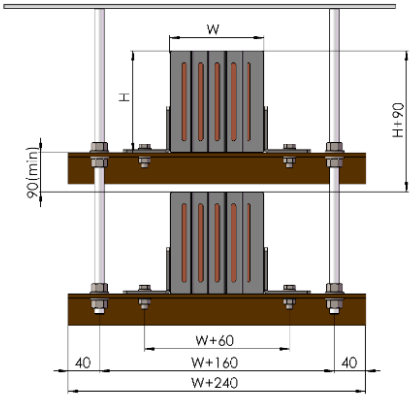


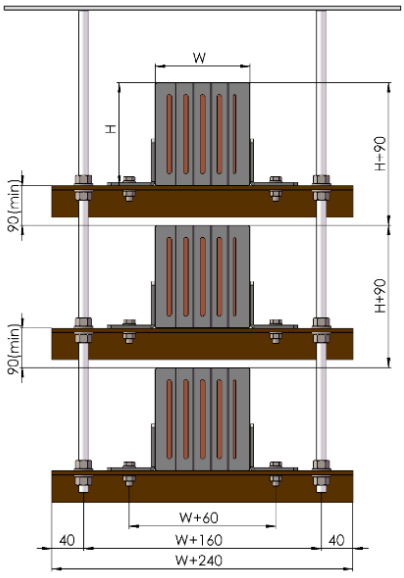








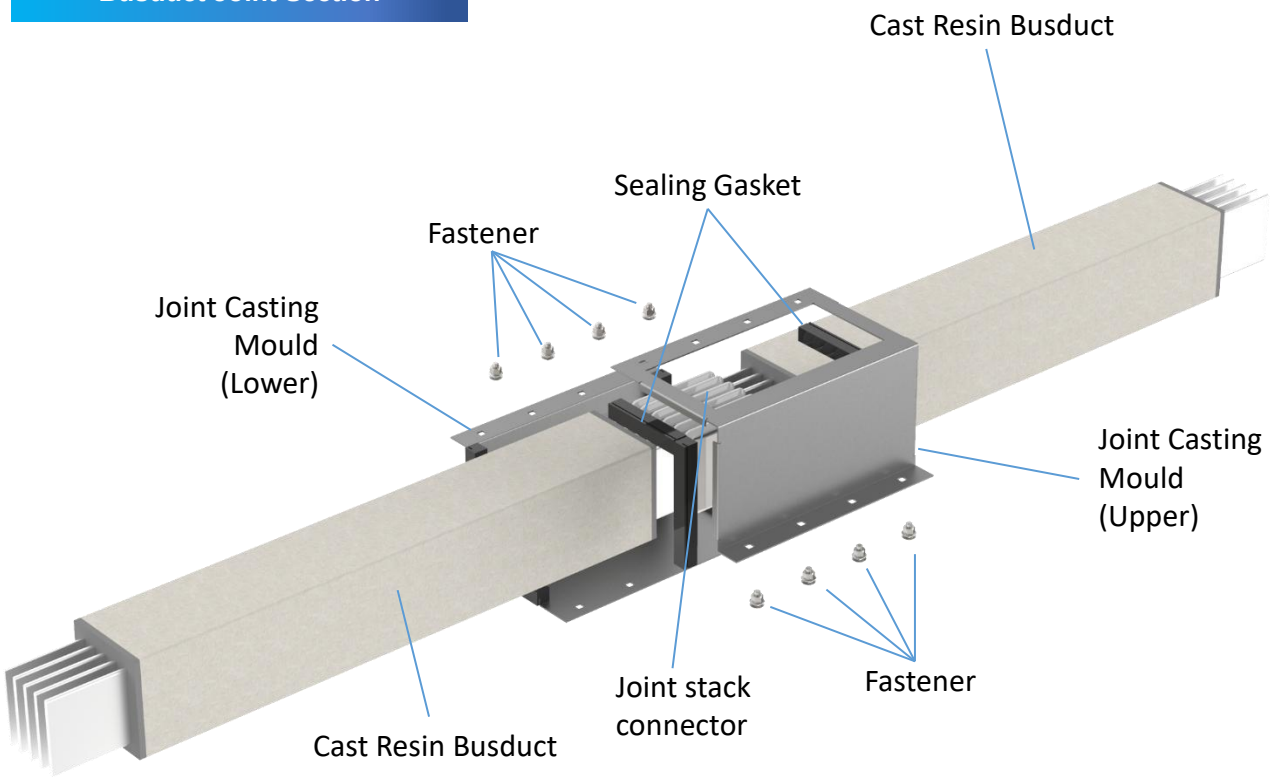




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Installation & Maintenance Procedure

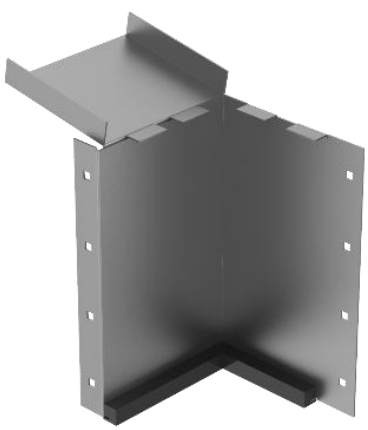
Busduct Joint Section





Joint Casting Mould
(for horizontal busduct)

It is installed at every busduct joint section in a horizontal busduct run.



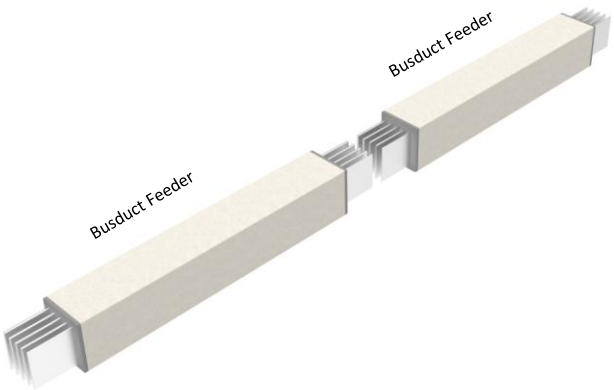
Joint Casting Mould
(for vertical busduct)

It is installed at every busduct joint section in a vertical busduct run.

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Installation & Maintenance Procedure

Busduct Joint Installation

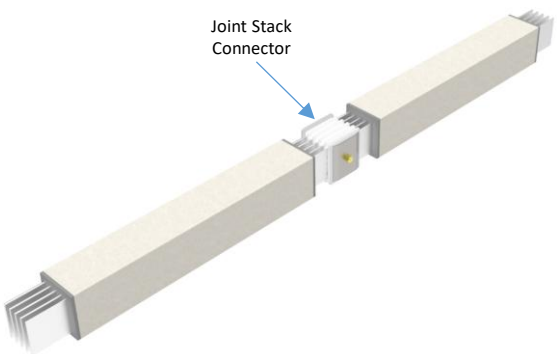


Step 1:

Align both busduct feeders to be connected at job site. As-built drawing shall be referred at all time.

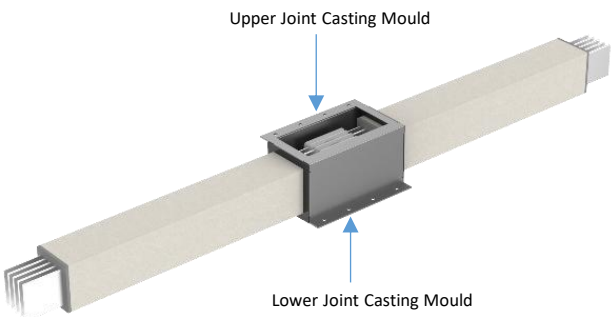
Note:

- Conductor surface must be clean and free from contamination.
- Ensure both phase orientations are matched and the distance between both busduct feeders shall be maintained at 30mm (+10mm, -0mm)



Step 2:

Connect both ends of busduct feeder by means of the joint stack connector. Tighten the double-headed joint bolt with 70Nm until the outer head shears off.



Step 3:

Install the upper and lower joint casting mould together with the provided sealing gasket to the connected busduct joint section and align it to the position where the joint stack connector is at the centre.

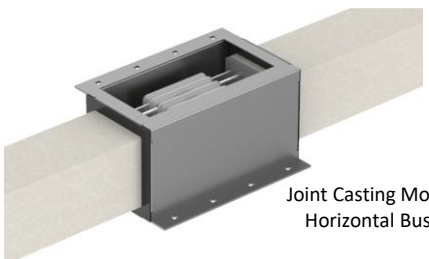
Tighten all fasteners and ensure that the sealing gasket fully seals up the gap between cast resin busduct body and joint casting mould to prevent FCIM material from leaking out during pouring process.

Recommendation:

- Apply a layer of mould release grease in the inner surface of joint casting mould before installation.
- Insulation resistance test (also named as Megger test) is recommended before on-site casting process.



Vertical Busduct

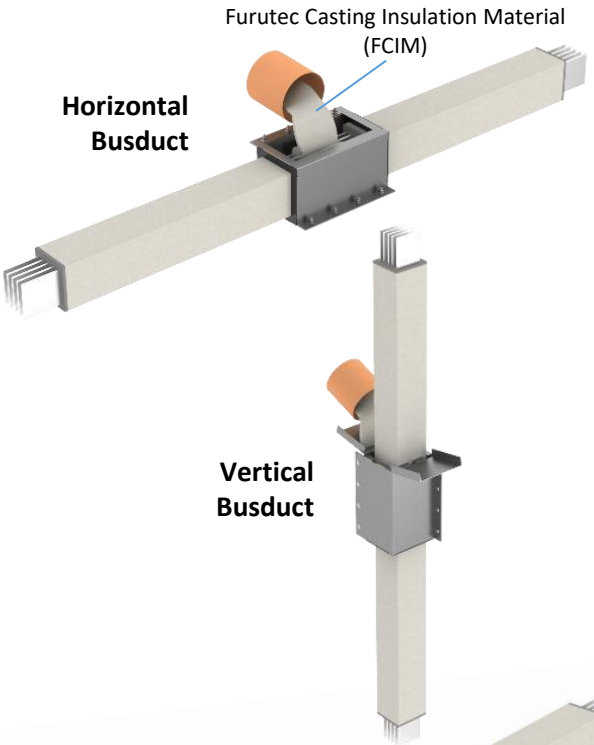


Horizontal Busduct

Note: Above pictures are shown for illustration purpose only and subject to changes without prior notice

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Busduct Joint Installation

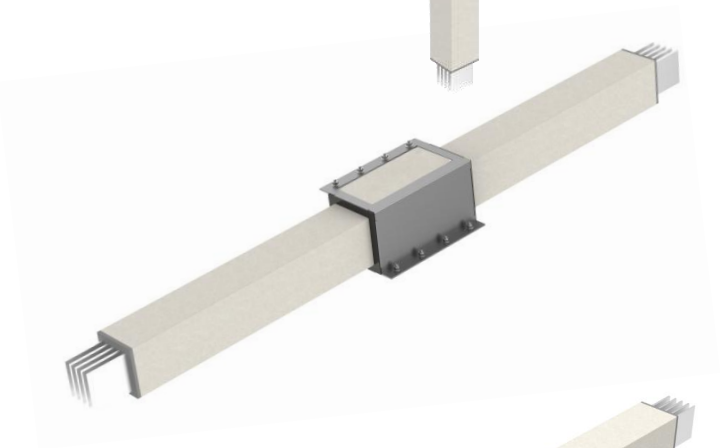


Step 4:

Furutec Casting Insulation Material (FCIM) comprises 1 bag of Filler, 1 bottle of Mixer A & 1 bottle of Mixer B. After mixing process, fill up the entire joint section with the mixture of FCIM until reaching the surface of the joint casting mould.

Attention:
FCIM mixture must be poured in one(1) direction/position to prevent air gap.

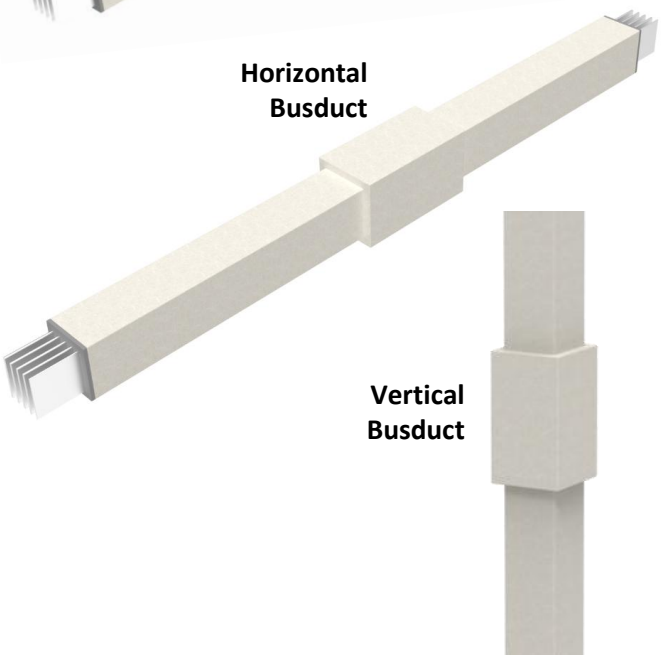
Refer to Furutec's detailed installation & maintenance manual for the correct procedure of mixing FCIM



Step 5:

A rubber mallet (rubber head hammer) can be deployed to gently tap on the joint casting mould to prevent FCIM from accumulating unevenly.

Clear the bubble on the surface of FCIM with a brush every 20 minutes



Step 6:

Entire curing process will usually take 6 hours at 25°C ambient temperature.

Note:
Only after curing process, the upper and lower joint casting mould could be dismantled from the cured joint section for reuse of the next joint installation, followed by deburring the sharp edge with hand deburring file.

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Busduct System

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