



FLEX[®]

FOCUS CATALOGUE

FRP/GRP Cable Management System

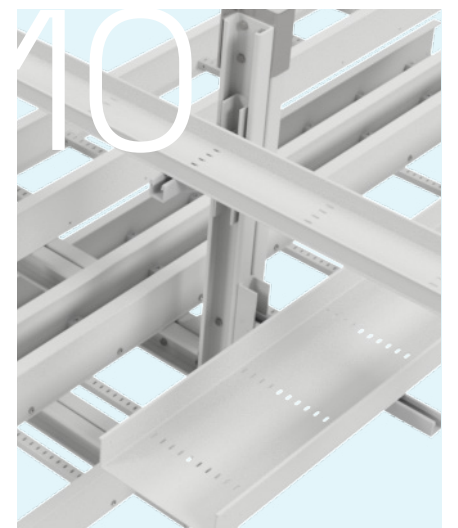
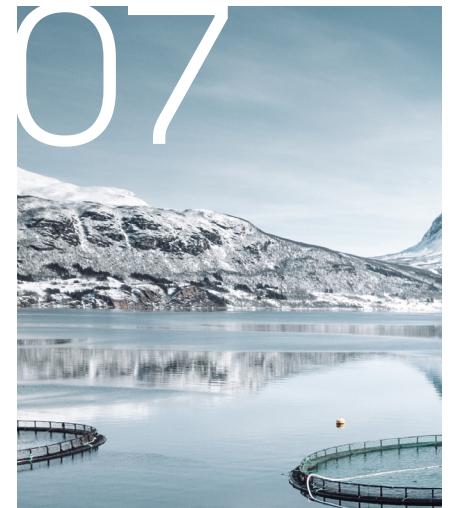


COMPOSITE
SOLUTIONS
FOR HARSH
ENVIRONMENTS



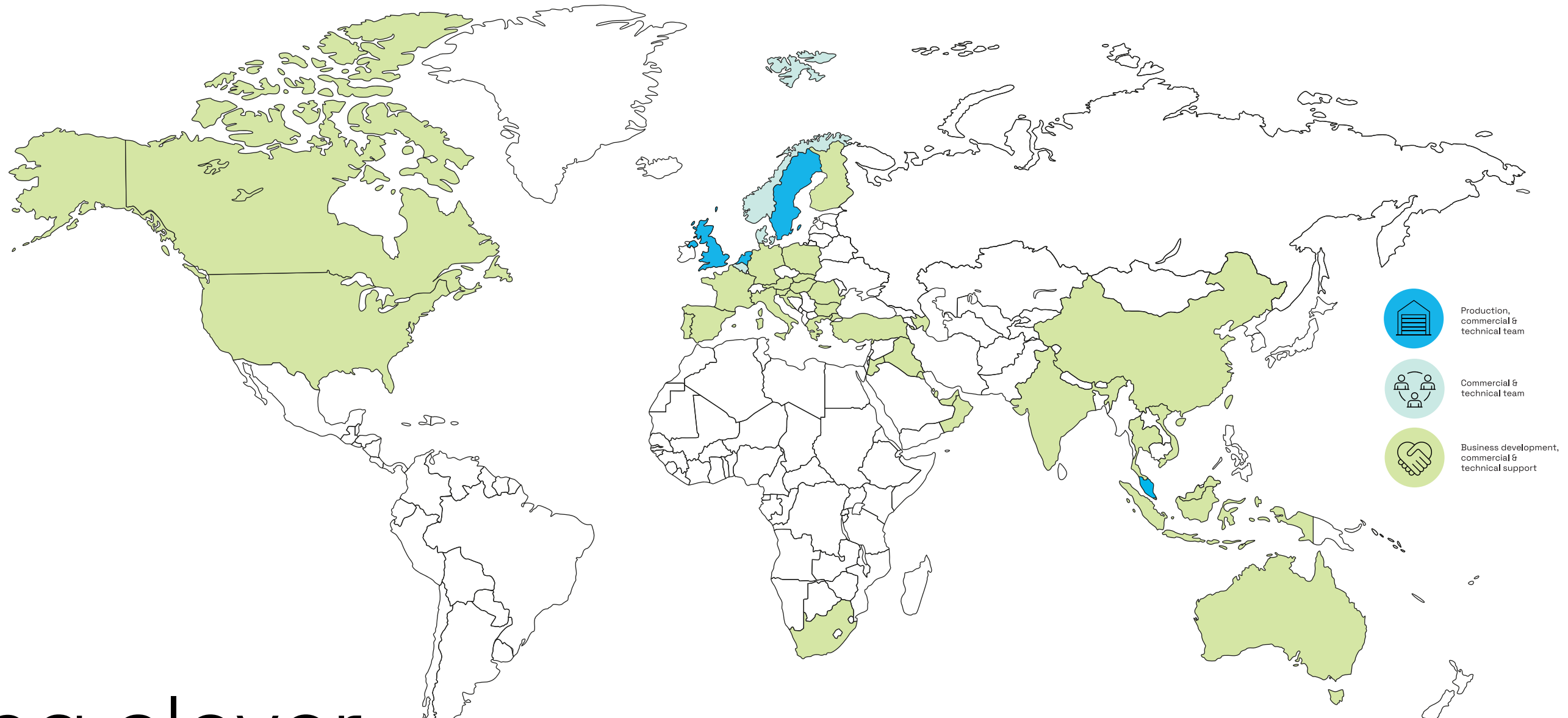
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for harsh corrosive environments
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Wibe Group presents; Mita Flex FRP/GRP Cable Management Solution

Welcome into our new catalogue presenting Mita Flex with Multi-Flex Support System – created for your bespoke configuration and freedom of installation. Discover the power of flexibility for harsh corrosive environments.



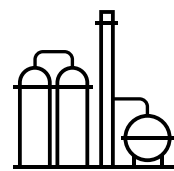
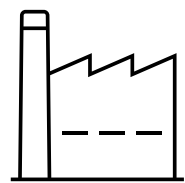
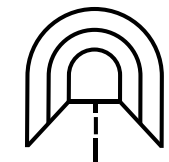
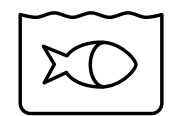
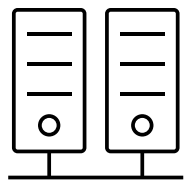
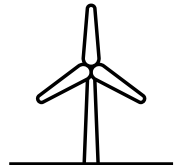
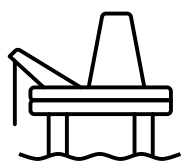
Creating clever,
uplifting solutions,
together with our
clients for almost
100 years.

Wibe Group specializes in cable management solutions for a wide variety of applications, ranging from commercial buildings to harsh corrosive industrial environments. We provide innovative and high-quality cable ladders, cable trays and mesh trays.

With our head office in Sweden and multiple in-house locations, where we combine expertise, production and distribution, we offer cable management solutions under our brands Wibe, Stago, Defem and Mita.

By the power of combining our brands, we are now able to offer a comprehensive offer in both FRP/GRP pultruded materials, as well as metal materials in surface treatments ranging from pre-galvanized Zinkpox to hot-dipped galvanized and stainless steel.

Mita Flex – our range of FRP/GRP cable management solutions for harsh corrosive environments



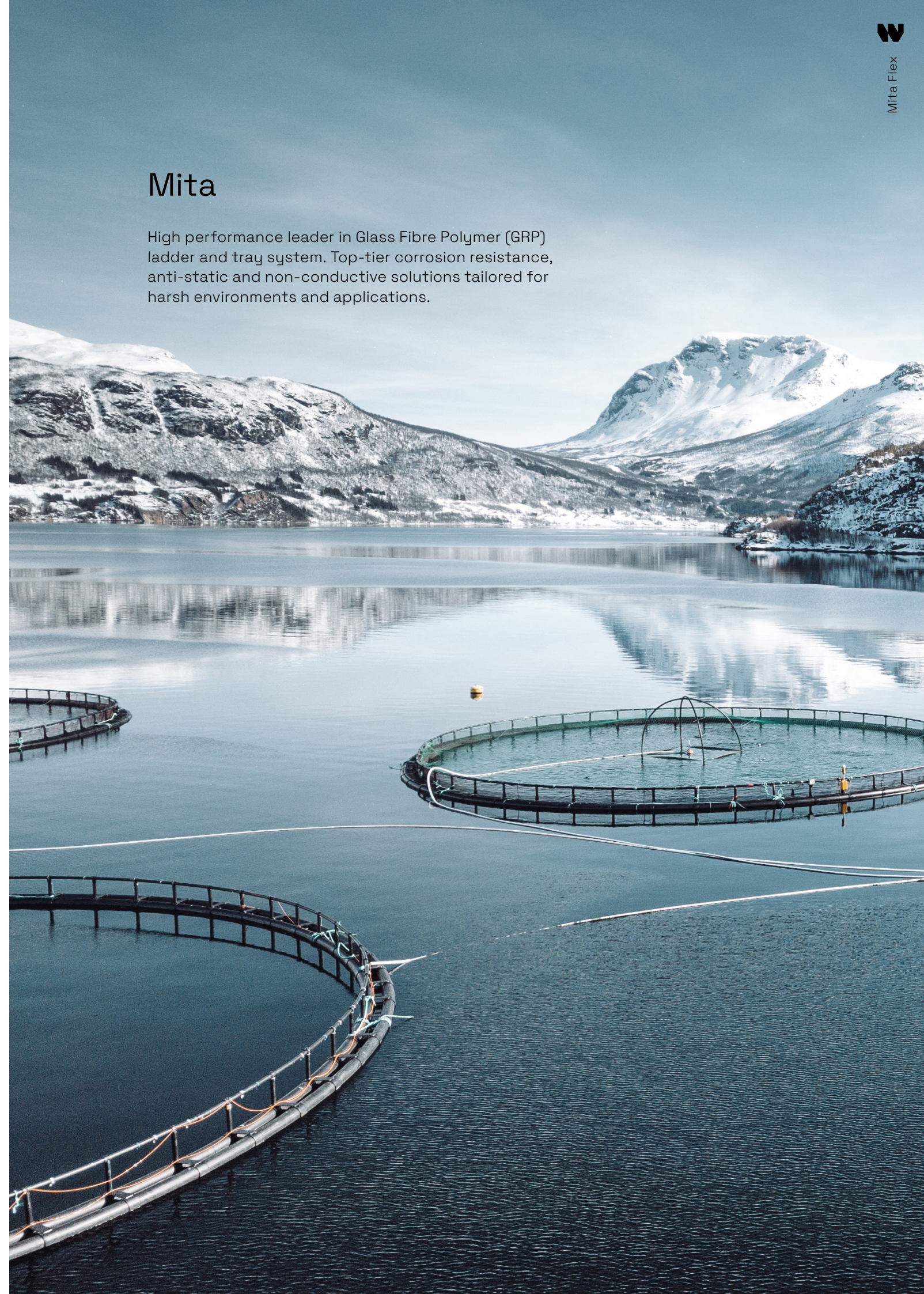
Mita Flex relates to our newest range of FRP/GRP pultruded cable management solutions, including cable ladders, cable trays, all related form pieces and accessories, as well as a new innovative and flexible support system, needed for a professional installation.

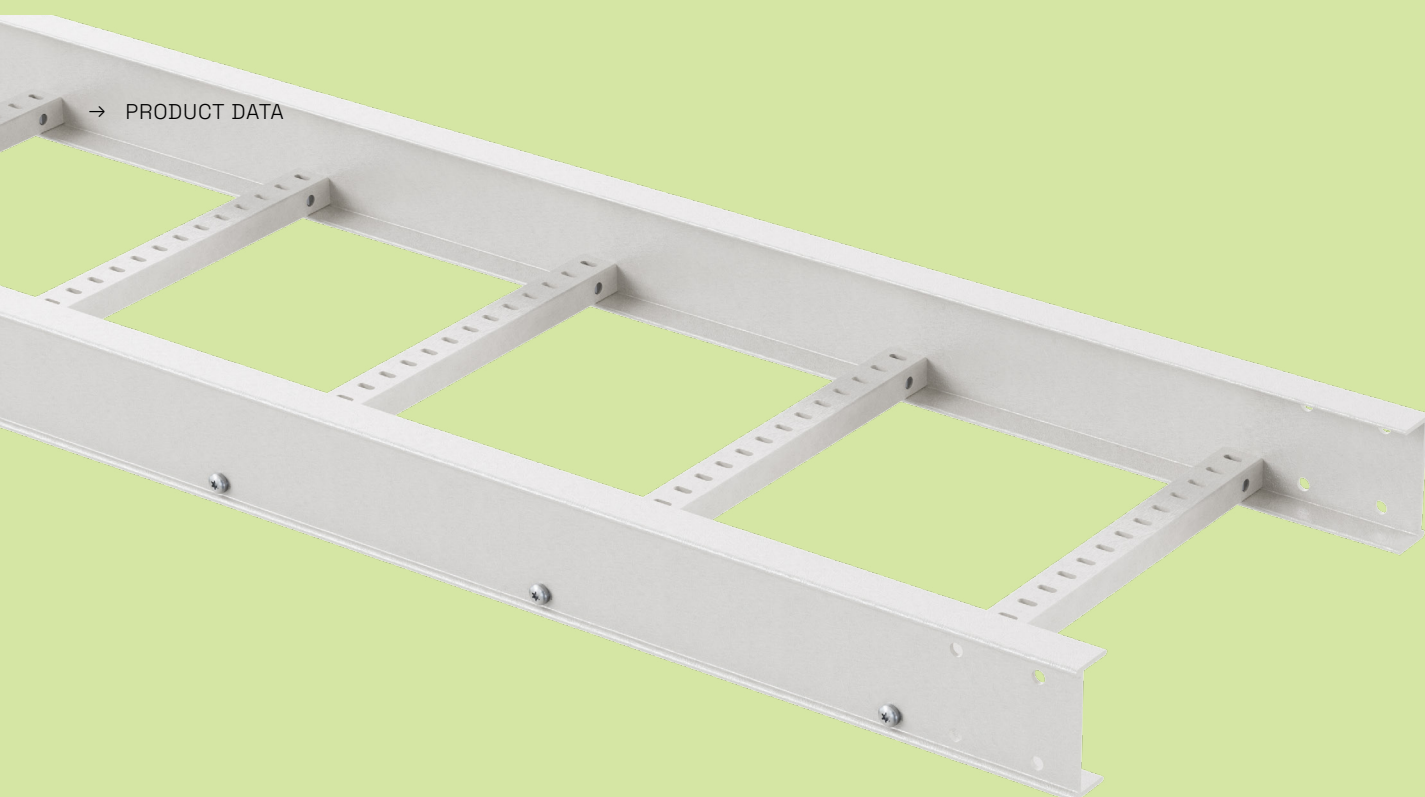
As the materials are produced in FRP/GRP, they are perfectly suited to be installed in harsh environments under harsh corrosive circumstances. Examples of such applications are:

- Oil and gas
- Wind energy
- Industry, e.g. petrochemical, water treatment
- Infrastructure, e.g. tunnels
- Datacenters
- Fish farms
- Marine

Mita

High performance leader in Glass Fibre Polymer (GRP) ladder and tray system. Top-tier corrosion resistance, anti-static and non-conductive solutions tailored for harsh environments and applications.





What is FRP/GRP?

FRP/GRP refers to Glass fibre Reinforced Polymer, meaning it is a man-made resin based material which makes it a polymer, reinforced with glass fibre.

The polymer itself is extremely strong, and in contrary to how it may sound, it is very durable. It is resistant to most chemicals, stretching and shrinking, resistant to mildew and abrasion as well. When it is reinforced with glass, it becomes a structural polymer. Further to

these, GRP does not conduct heat. It has extra durability to adverse weather conditions and is UV-resistant which makes it an excellent candidate for outdoor applications, even for wind substations built in the middle of the sea.

Long service life

- UV-resistant
- Corrosion resistance
- High chemical resistance
- Low maintenance

Fire resistance

- Low thermal propagation
- Halogen free
- Self-extinguishing material
- Lower toxic fumes

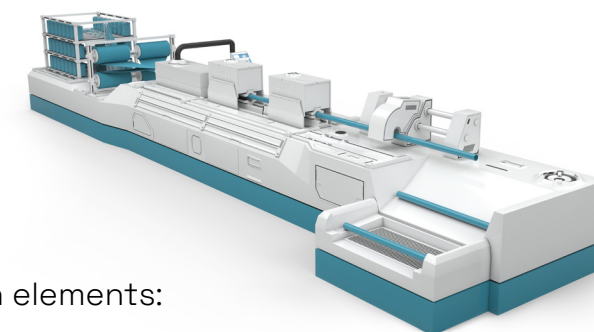
Insulation

- Excellent electrical insulator
- No earth needed
- Excellent cable protection
- Low thermal conductivity
- High dielectric strength

Materials

- Light, flexible and robust
- Light-weight & very strong
- None sparking
- UV resistance
- High mechanical resistance
- High temperature resistance
- Optimized design to reduce volume and handling

Mita Flex FRP/GRP is pultruded for optimal strength



Pultruded Composites consist of four or five main elements:

- 1) Glass rovings (strands) and mats -approx. 50% by weight
- 2) Resin - usually Polyester
- 3) Filler - usually Calcium Carbonate
- 4) UV Veil and UV additives
- 5) Fire Retardants as required

Pultruded composites remain largely impervious to corrosion regardless of application.

Resin types for any kind of application

Mita® Flex offers 4 main resin types to accommodate the requirements of various industrial applications which can be in chemically aggressive, demanding environments.

Polyester Class 1 (PC1)

Colour RAL7047

Polyester is the most widely used resin. It offers good weathering properties with resistance to ultraviolet light and offers resistance to corrosion. Our polyester resin has been specially formulated to meet certain fire and smoke standards and can be classified as a "class 1" resin in accordance with BS476 P7 and ASTM E84.

Acrylic (AC)

Colour RAL7047

Acrylic is a formula that meets or exceeds the most stringent low flame, smoke and toxicity standards in the market today. Typical applications such as tunnels, mass transit, enclosed areas or needs where low flame, smoke and toxicity levels are critical.

Vinylester (VE)

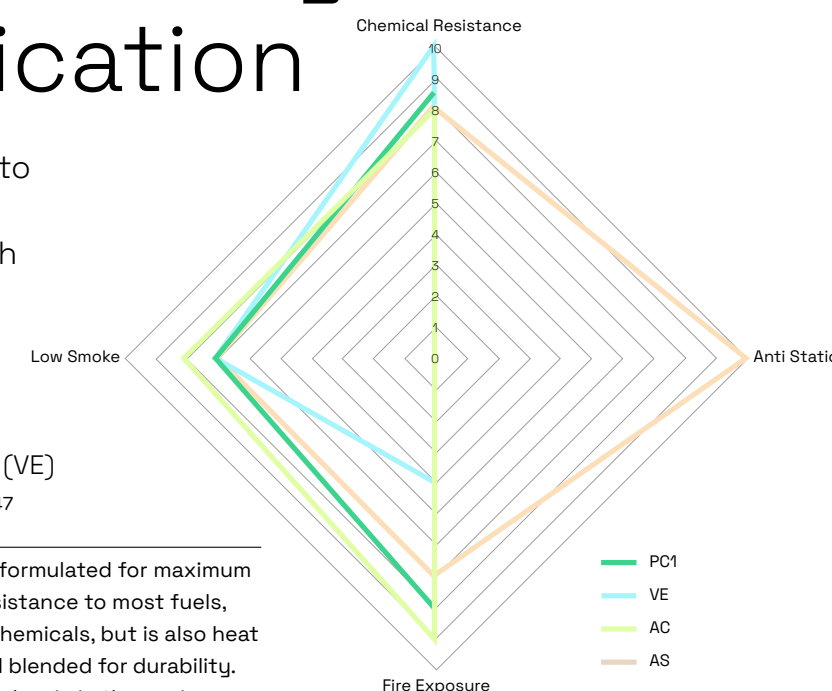
Colour RAL7047

Vinylester is formulated for maximum corrosion resistance to most fuels, vapors and chemicals, but is also heat resistant and blended for durability. It's a preferred resin in the marine industry due to its excellent corrosion resistance and ability to withstand water absorption.

Polyester with anti-static properties (AS)

Colour RAL9004

Polyester resin can be given anti-static properties to meet specific project requirements. Anti-static resins contain carbon powder, which increases the conductivity of the material and as a result this material requires grounding.



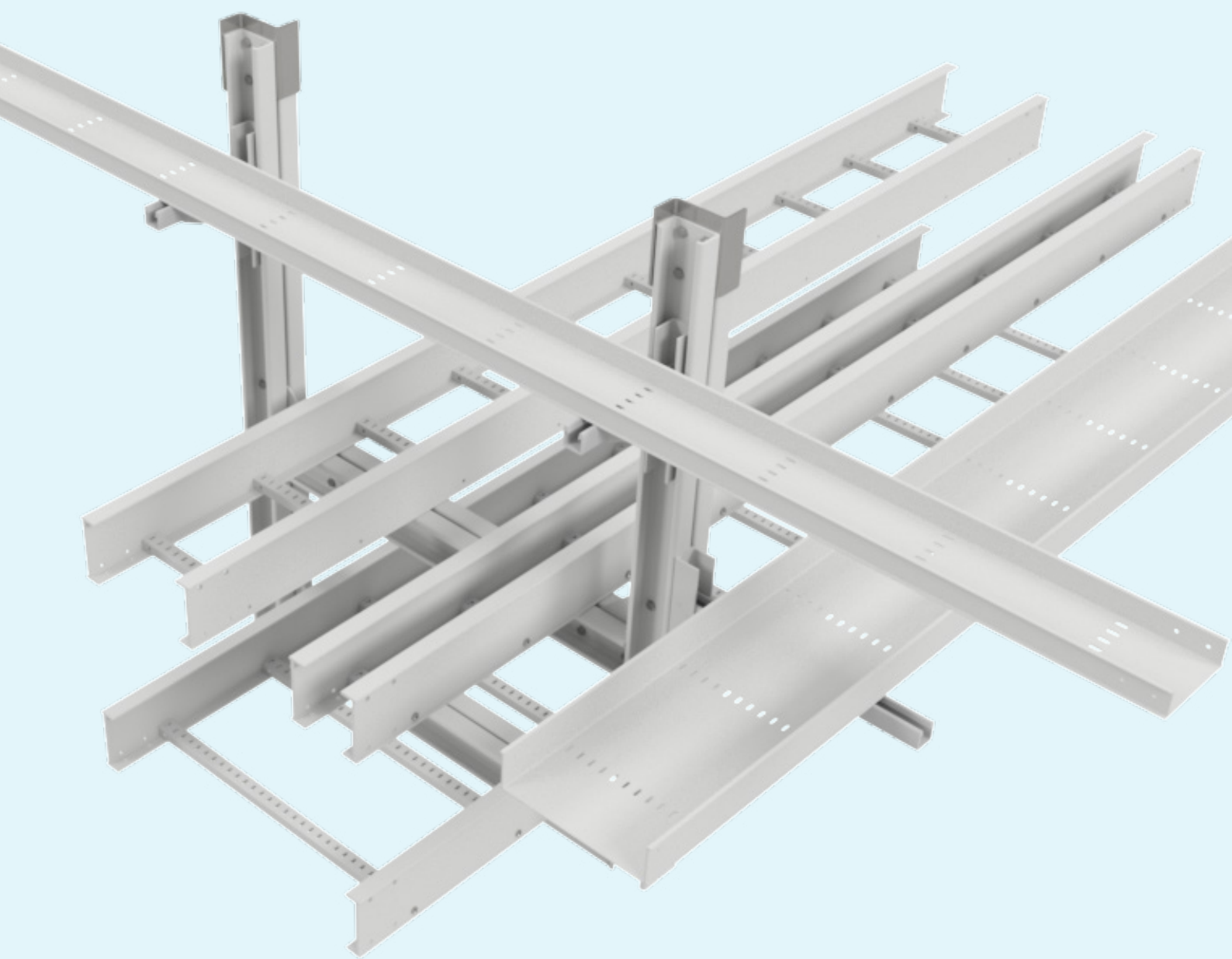
All FRP/GRP materials are standard available in Polyester Class 1 - article numbers with suffix PC1. To obtain article numbers for materials in other available resins, Polyester Antistatic (AS), Vinyl Ester (VE) and Acrylic (AC), simply replace the "PC1" suffix at the end of the article number with "AS", "VE" and "AC" respectively.

For example, cable ladder LM100 CL-150-3000;

MLM1142PC1 for material in PC1
 MLM1142AS for material in AS
 MLM1142PVE for material in VE
 MLM1142PAC for material in AC

MultiFlex Support System

Introducing a flexible support system designed to meet the demands of professional installations in harsh environments.



Channel Support Profile

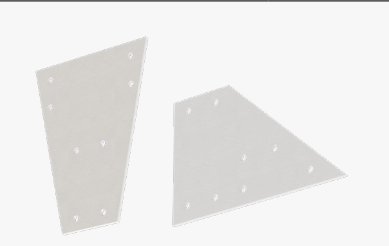
Support Channels for a robust yet flexible framework.



| Product | Ref No | Kg |
|---------------------------------------|-----------|----|
| Channel Sup profile SC100-50/6 3m PC1 | MS4101PC1 | |
| Channel Sup profile SC100-50/6 6m PC1 | MS4129PC1 | |
| Channel Sup profile SC53-40 6m PC1 | MS4130PC1 | |

Gusset Plate

Are used to strengthen central joints or corners that could need more bracing because of increasing loading.



| Product | Ref No | Kg |
|--------------------------|-----------|----|
| Gusset Plate T CH100 6mm | MS4103PC1 | |
| Gusset Plate L CH100 6mm | MS4102PC1 | |

Angle Bracket PC1

When combined with channel sleeve, allows sliding adjustability with a fixed angle inside the support channels. Fasteners needed M4825SS M10 x 35 and coach head bolts



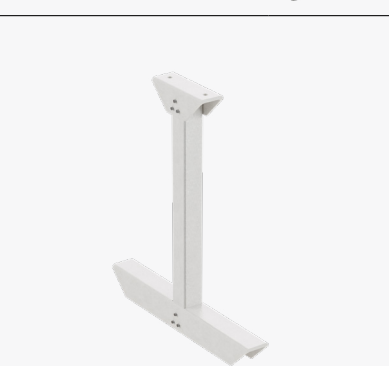
| Product | Ref No | Kg |
|-------------------|-----------|----|
| Angle Bracket PC1 | MS4184PC1 | |

L-bracket



| Product | Height | Ref No | Kg |
|---------------------------|--------|-----------|-----|
| L Support Bracket 200PC1 | 0,6m | MS4165PC1 | 3,3 |
| L Support Bracket 300 PC1 | 0,6m | MS4166PC1 | 3,5 |
| L Support Bracket 400 PC1 | 0,6m | MS4167PC1 | 3,7 |
| L Support Bracket 600 PC1 | 0,6m | MS4169PC1 | 4,2 |

Central support



| Product | Height | Ref No | Kg |
|-------------------------|--------|-------------|-----|
| Central Support 200 PC1 | 0.5m | MS41655PC1 | 1.2 |
| Central Support 200 PC1 | 1.0m | MS416510PC1 | 1.8 |
| Central Support 300 PC1 | 0.5m | MS41605PC1 | 1.3 |
| Central Support 300 PC1 | 1.0m | MS416010PC1 | 1.9 |
| Central Support 400 PC1 | 0.5m | MS41615PC1 | 1.4 |
| Central Support 400 PC1 | 1.0m | MS416110PC1 | 2 |
| Central Support 600 PC1 | 0.5m | MS41635PC1 | 1.8 |
| Central Support 600 PC1 | 1.0m | MS416310PC1 | 2.3 |

LW Cantilever Arm



| Product | Ref No | Kg |
|---------------------------|-----------|-----|
| LW Cantilever Arm 50 PC1 | MS4197PC1 | 0,5 |
| LW Cantilever Arm 100 PC1 | MS4198PC1 | 0,5 |
| LW Cantilever Arm 150 PC1 | MS4199PC1 | 0,6 |
| LW Cantilever Arm 200 PC1 | MS4200PC1 | 0,6 |

HD Cantilever Arm



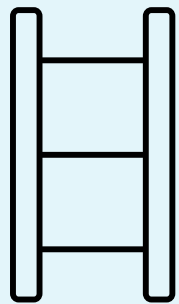
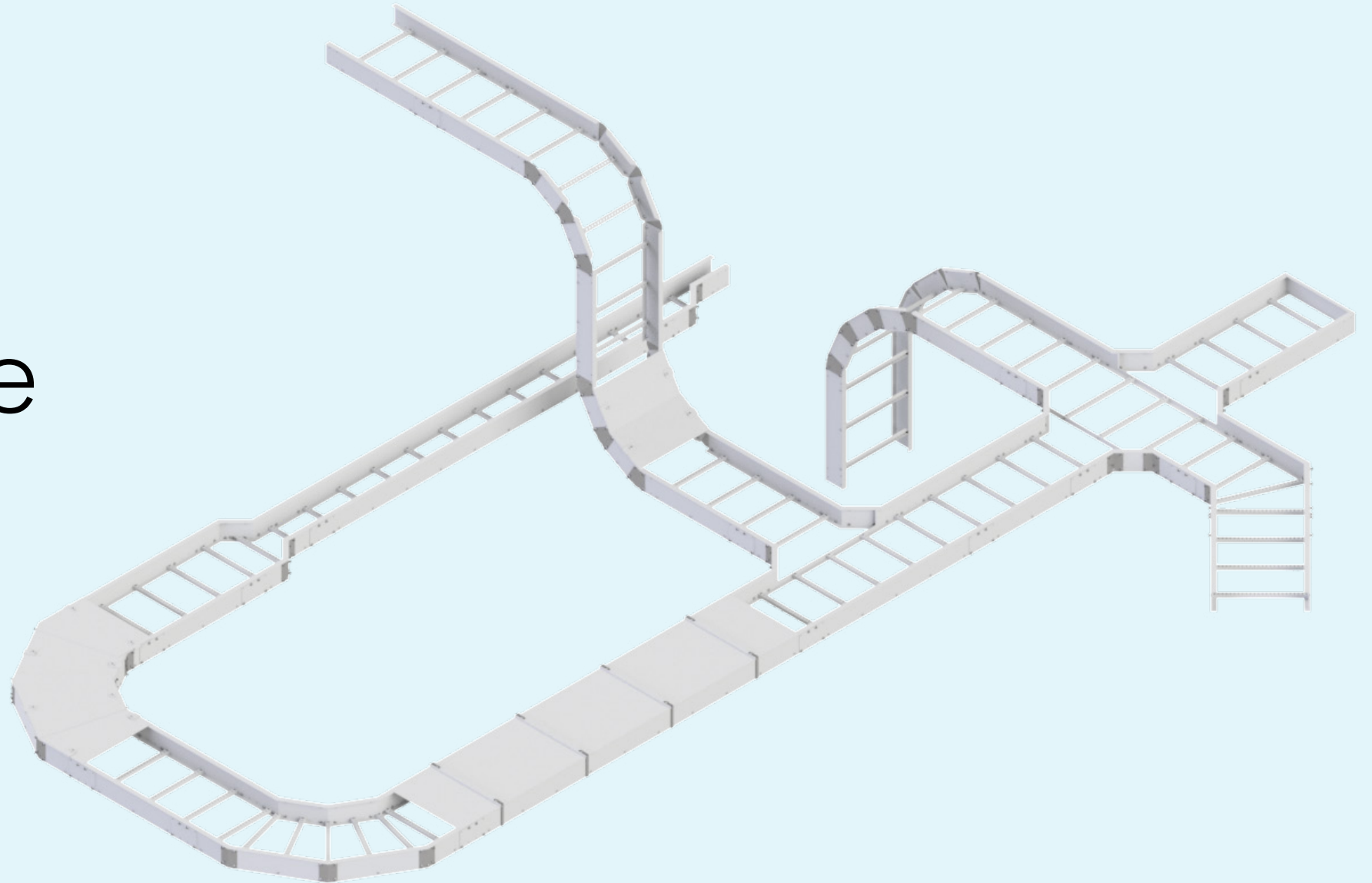
| Product | Ref No | Kg |
|---------------------------|------------|-----|
| HD Cantilever Arm 200 PC1 | MCS4121PC1 | 1,2 |
| HD Cantilever Arm 300 PC1 | MCS4122PC1 | 1,6 |
| HD Cantilever Arm 400ZPC1 | MCS4125PC1 | |
| HD Cantilever Arm 600 PC1 | MCS4124PC1 | 2,2 |

Channel Spring Nut M10 PC1

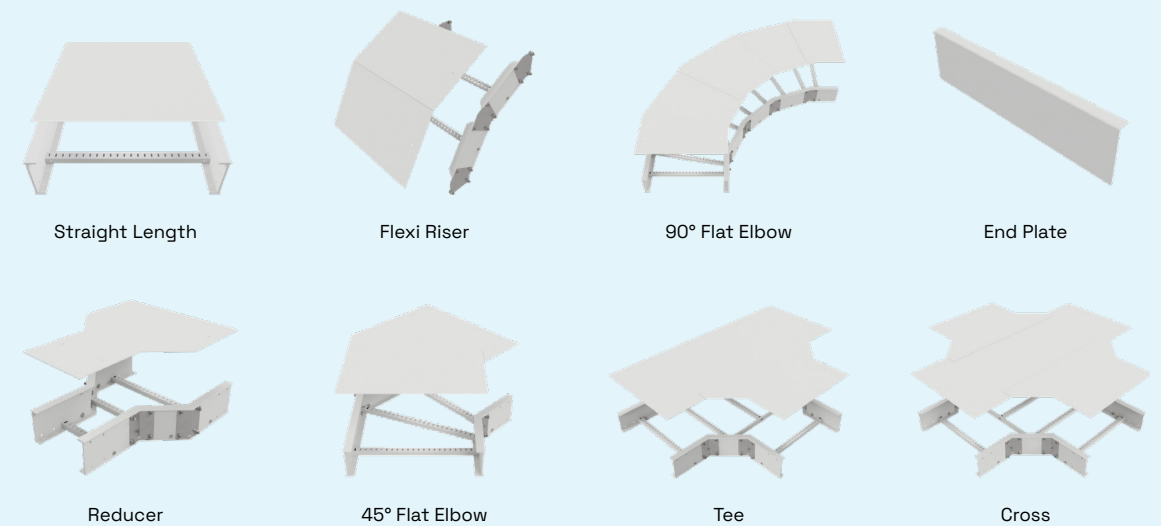


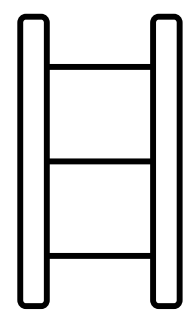
| Product | Ref No | Kg |
|----------------------------|----------|----|
| Channel Spring Nut M10 PC1 | M4829PC1 | |

A complete range of composite Cable Ladders with fittings & accessories



Available in three series, LM100, LMP150 and LH150, the FRP/GRP cable ladders are light, yet strong and corrosion resistant. They are designed to deliver high performance, maximum load capacity with reduced weight and improved handling, allowing easy and quick installation. The cable ladders are available in a variety of resin types.





Cable Ladders and fitting selection

Cable Ladder
LM100

Cable ladder with system height 100mm, used for medium duty applications.

71mm

Working Depth

Width from 150mm to 900mm

| Product | Ref No | Kg |
|-------------|------------|------|
| CL-200-3000 | MLM1148PC1 | 9,5 |
| CL-300-3000 | MLM1143PC1 | 10 |
| CL-400-3000 | MLM1155PC1 | 10,6 |
| CL-600-3000 | MLM1145PC1 | 11,7 |

Composite Cable Ladder range for supporting cables.

→ Tested to IEC & NEMA Standards for SWL

→ Material: FRP Polyester Class 1 (Other Resins are available)

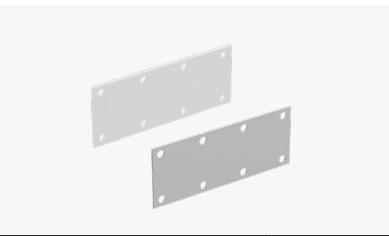
| Cable Ladder Type | Resin Selection | Rail Height (mm) | Working Depth | Rung Fixation | SWL 3m(kg/m) | Length (m) | Nema FG1 / UL568 |
|-------------------|--|------------------|---------------|---------------|--------------|------------|------------------|
| LM100 | PC1 – Polyester Class 1 AS – Polyester Antistatic VE – Vinyl ester AC – Acrylic | 100 | 70 | SS bolts | 200 | 3 * | 12C |

SWL according to IEC 61537, Test Type 3 with reduced end span 3/4 | For NEMA F61 Load rating. Technical Department to be contacted.

* Alternative lengths available on request

CL Splice Connector

Fasteners not included. For splice plates in SS use M10x20 mm bolt set. For splice plates in GRP use M10x25 mm bolt set.



| LM100 | | |
|----------------------|------------|-----|
| Product | Ref No | Kg |
| CL splice plates PC1 | MLM2326PC1 | 0,2 |
| CL splice plates SS | MLM2328SS | 0,2 |

CL Horizontal Angle Bracket 90°

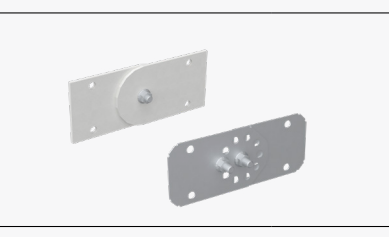
Fasteners not included. For splice plates in SS use M10x20 mm bolt set. For splice plates in GRP use M10x25 mm bolt set.



| LM100 | | |
|-----------------------------|------------|----|
| Product | Ref No | Kg |
| CL hor angle bracket 90 PC1 | MLM2253PC1 | |
| CL hor angle bracket 90 SS | MLM2222SS | |

CL Vertical Hinge

Fasteners not included. For splice plates in SS use M10x20 mm bolt set. For splice plates in GRP use M10x25 mm bolt set.



| LM100 | | |
|--------------------------|------------|----|
| Product | Ref No | Kg |
| CL vertical hinge PC1 | MLM2254PC1 | |
| CL vertical hinge adj SS | MLM2223SS | |

CL/CT Fixing Clamp

Fasteners not included.

Use M10 for CL/CT Flange Fixing Clamp.

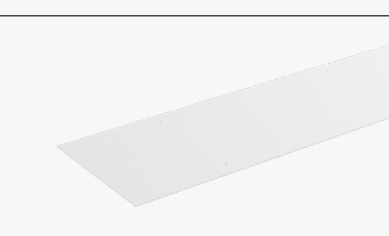
For Fixing Clamp use M10 for cable ladder and M6 for cable trays.



| Product | Ref No | Kg |
|------------------------------|------------|----|
| CL/CT Flange Fixing clamp SS | MCT2125SS | |
| CL/CT Fixing clamp SS | MCT2123SS | |
| CL/CT Fixing clamp PC1 | MCT2124PC1 | |

CL Cover

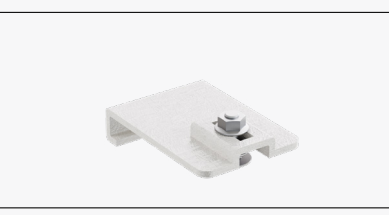
Material GRP, Length 3000mm



| Product | Ref No | Kg |
|--------------|------------|------|
| CL Cover-200 | MLC1158PC1 | |
| CL Cover-300 | MLC1659PC1 | 5,5 |
| CL Cover-400 | MLC1159PC1 | |
| CL Cover-600 | MLC1661PC1 | 10,6 |

CL Cover Fixing Clamp

Fastners included.



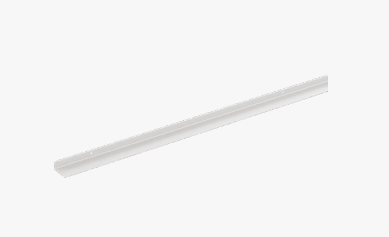
| Product | Ref No | Kg |
|---------------------------|------------|----|
| CL Cover Fixing clamp PC1 | MCC2331PC1 | |

CL Cover Clamp HD



| LM100 | | |
|--------------------|------------|-----|
| Product | Ref No | Kg |
| CL cover clamp-200 | MCL3241PC1 | 0,3 |
| CL cover clamp-300 | MCL3242PC1 | 0,3 |
| CL cover clamp-400 | MCL3243PC1 | 0,4 |
| CL cover clamp-600 | MCL2373PC1 | 0,5 |

CL Divider



| LM100 | | |
|------------|------------|-----|
| Product | Ref No | Kg |
| CL Divider | MLM2272PC1 | 1,7 |

CL Flat Elbow
45° R3

Prefabricated standard flat elbow.
Approx radius 400mm
Ladder Height 100 & 150
Material: FRP Polyester Class 1 (Other Resins are available)
Angle plates and fasteners SS316L as Standard
(GRP Angle Plates also available)



| LM100 | | |
|-------------------|------------|-----|
| Product | Ref No | Kg |
| CL Flat Elbow-200 | MLF1152PC1 | 2,4 |
| CL Flat Elbow-300 | MLF1440PC1 | 2,6 |
| CL Flat Elbow-400 | MLF1153PC1 | 2,8 |
| CL Flat Elbow-600 | MLF1442PC1 | 3,7 |

CL Flat Elbow
90° R3

Prefabricated standard flat elbow,
Available in Radius R300, R600 & R900
Ladder Height 100 & 150
Material: GRP Polyester Class 1 (Other Resins are available)
Angle plates and fasteners SS316L as Standard
(GRP Angle Plates also available)



| LM100 | | |
|-------------------|------------|-----|
| Product | Ref No | Kg |
| CL Flat Elbow-200 | MLF1150PC1 | 4 |
| CL Flat Elbow-300 | MLF1426PC1 | 4,4 |
| CL Flat Elbow-400 | MLF1151PC1 | 4,8 |
| CL Flat Elbow-600 | MLF1428PC1 | 6,4 |

CL Equal Tee R3

Prefabricated standard horizontal tee,
Standard Radius R300, R600 & R900 -
Other Radius available Ladder Height
100 & 150
Material: FRP Polyester Class 1 (Other Resins are available)
Angle plates and fasteners SS316L as Standard
(GRP Angle Plates also available)



| LM100 | | |
|------------------|------------|-----|
| Product | Ref No | Kg |
| CL Equal Tee-200 | MLF1154PC1 | 5,8 |
| CL Equal Tee-300 | MLF1454PC1 | 6,2 |
| CL Equal Tee-400 | MLF1155PC1 | 6,7 |
| CL Equal Tee-600 | MLF1456PC1 | 8 |

CL Flexi Riser
Internal 90° R4

Fasteners not included.



| LM100 | | |
|--------------------|------------|-----|
| Product | Ref No | Kg |
| CL Flexi Riser-200 | MLF1156PC1 | 2,1 |
| CL Flexi Riser-300 | MLF1489PC1 | 2,2 |
| CL Flexi Riser-400 | MLF1157PC1 | 2,2 |
| CL Flexi Riser-600 | MLF1491PC1 | 2,3 |

CL Z Reducer

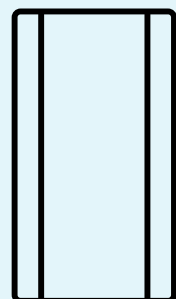
Prefabricated standard Reducer,
Available Central/Straight, Left or
Right Hand
Height 100 & 150
Material: GRP Polyester Class 1
(Other Resins are available)
Angle plates and fasteners SS316L
are included.
(GRP Angle Plates also available)



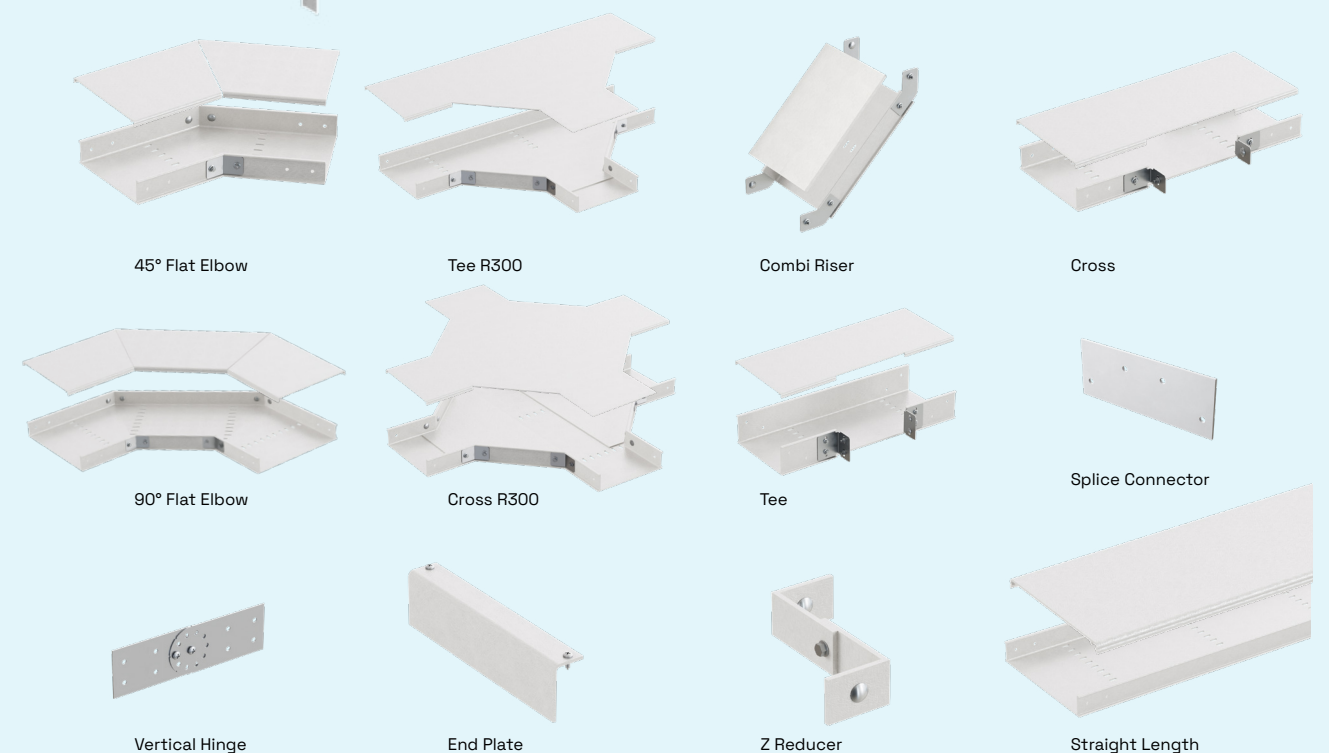
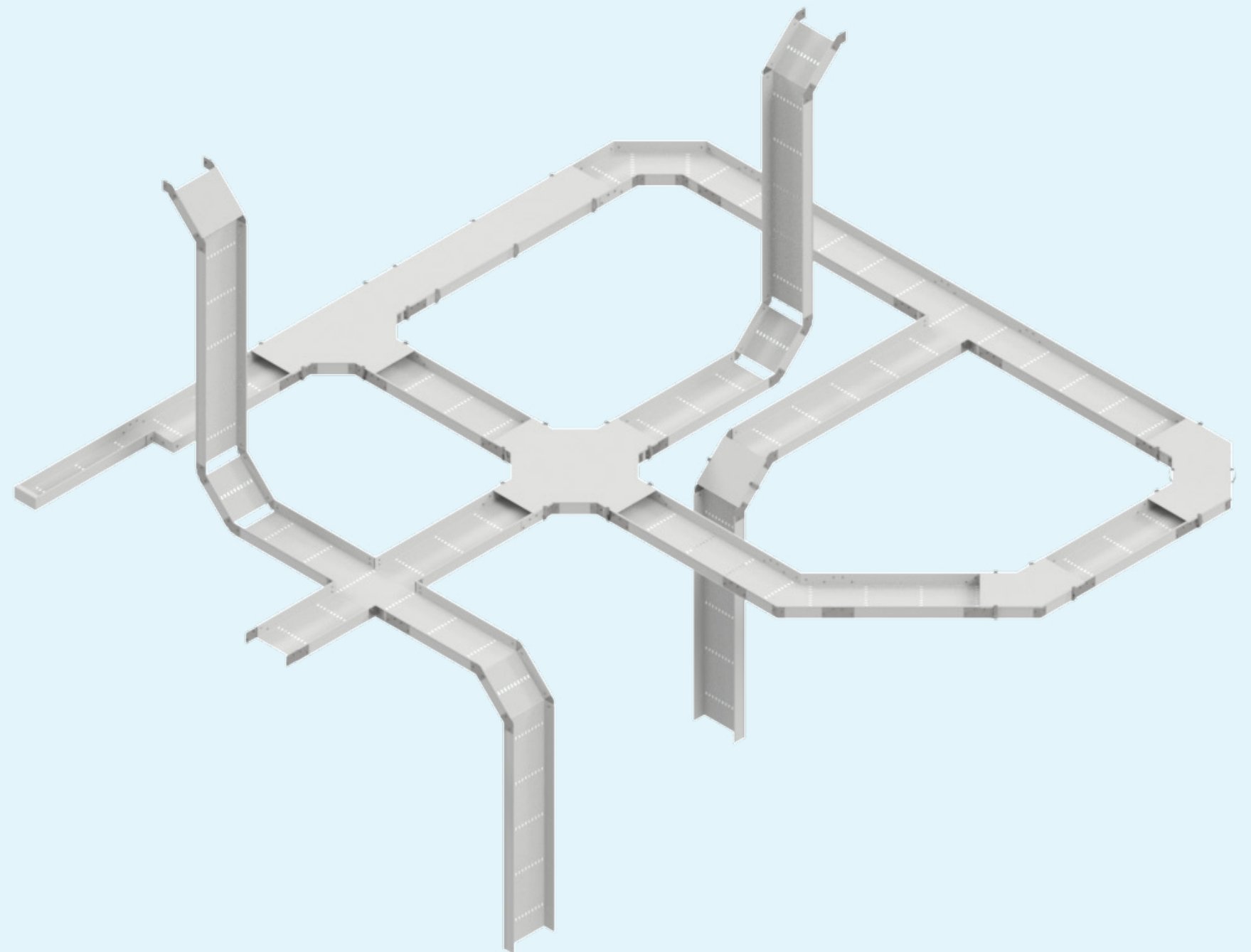
| LM100 | | |
|------------------|------------|-----|
| Product | Ref No | Kg |
| CL Z Reducer-200 | MLM2227PC1 | 0,9 |
| CL Z Reducer-300 | MLM2260PC1 | 1 |

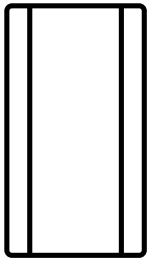


A complete range of composite perforated Cable Trays with fittings & accessories



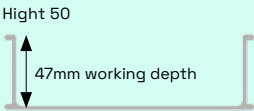
Available in two series, CT50 and CT80, the FRP/GRP cable trays are light, yet strong and corrosion resistant. They are designed to deliver high performance, maximum load capacity with reduced weight and improved handling, allowing easy and quick installation. The cable trays are available in a variety of resin types.





Cable Trays and fitting selection

Cable Tray CT50



| Product | Ref No | Kg |
|---------------|------------|-----|
| CT50-50-3000 | MCT3105PC1 | 2,9 |
| CT50-100-3000 | MCT3106PC1 | 3,7 |
| CT50-150-3000 | MCT3107PC1 | 4,5 |
| CT50-200-3000 | MCT3108PC1 | 5,5 |
| CT50-300-3000 | MCT3109PC1 | 7,8 |

Return Flange type profile design for added strength.

→ For Electrical & Instrumentation Applications.

→ Length 3000mm

| Cable Tray Type | Resin Selection | Rail Height (mm) | Working Depth | SWL 1,5m(kg/m) | Length (m) |
|-----------------|--|------------------|---------------|----------------|------------|
| CT50 | PC1 – Polyester Class 1 AS – Polyester Antistatic VE – Vinyl ester AC – Acrylic | 50 | 47 | 70 | 3 * |

SWL according to IEC61537, test type 3.

* Alternative lengths available on request

CT Splice Plates

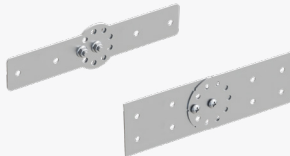
Fasteners not included.
Use M6 x 16 for Splice plate GRP.
Use M6 x 12 SS for Splice plate SS.



| CT50 | | |
|------------------|------------|----|
| Product | Ref No | Kg |
| Splice plate PC1 | MCT3102PC1 | |
| Splice plate SS | MCT3101SS | |

CT Vertical Hinge

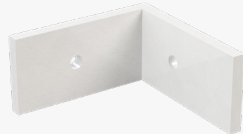
Fasteners not included.
Use M6 x 16 for Splice plate GRP.
Use M6 x 12 SS for Splice plate SS.



| CT50 | | |
|-----------------------|------------|----|
| Product | Ref No | Kg |
| CT Vertical Hinge PC1 | MCT3143PC1 | |

CT Horizontal Splice Angle Bracket 90°

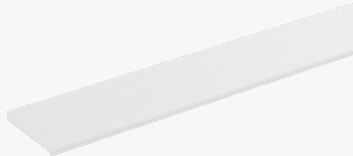
Fasteners not included.
Use M6 x 16 for Splice plate GRP.
Use M6 x 12 SS for Splice plate SS.



| CT50 | | |
|------------------------------------|------------|----|
| Product | Ref No | Kg |
| CT Horizontal Splice Angle 90° PC1 | MCT3144PC1 | |

CT Cover

Snap-Fit Covers provide an easy to install and positive fixing with additional clips available for most applications or Heavy duty cover clamps for harsh conditions
Length 3000mm



| CT50 | | |
|-----------------------|------------|-----|
| Product | Ref No | Kg |
| CT Cover-50-3000 PC1 | MCT3206PC1 | 1,5 |
| CT Cover-100-3000 PC1 | MCT3207PC1 | 2,2 |
| CT Cover-150-3000 PC1 | MCT3208PC1 | 3 |
| CT Cover-200-3000 PC1 | MCT3209PC1 | 3,8 |
| CT Cover-300-3000 PC1 | MCT3210PC1 | 5,3 |

CT Grip Clip

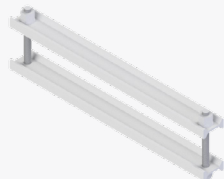
The SS316L Grip Clip provides an easy to install solution to secure the tray cover
Tray heights 50mm & 80mm



| CT50 | | |
|-----------------|-----------|------|
| Product | Ref No | Kg |
| CT grip clip SS | MCT3236SS | 0,01 |

CT HD Clamp

Heavy Duty cover clamp for securing snap fit covers in exposed wind areas.
Tray heights 50mm & 80mm
Full GRP Construction



| CT50 | | |
|-----------------------|------------|----|
| Product | Ref No | Kg |
| CT HD cover clamp-50 | MCT2379PC1 | |
| CT HD cover clamp-100 | MCT2380PC1 | |
| CT HD cover clamp-150 | MCT2381PC1 | |
| CT HD cover clamp-200 | MCT2382PC1 | |
| CT HD cover clamp-300 | MCT2383PC1 | |

CT Divider

Divider for separation of different cable types.
Tray heights 50mm & 80mm



| CT50 | | |
|------------|------------|-----|
| Product | Ref No | Kg |
| CT Divider | MCT3755PC1 | 1,2 |

CT Flat Elbow
45° R3

Prefabricated standard flat elbow,
Tray heights 50mm & 80mm
Angle plates and fasteners SS316L
as Standard (GRP Angle Plates also
available)



| CT50 | | |
|-------------------|------------|-----|
| Product | Ref No | Kg |
| CT Flat Elbow-50 | MCT3117PC1 | 0,5 |
| CT Flat Elbow-100 | MCT3118PC1 | 0,7 |
| CT Flat Elbow-150 | MCT3119PC1 | 0,8 |
| CT Flat Elbow-200 | MCT3120PC1 | 1 |
| CT Flat Elbow-300 | MCT3121PC1 | 1,5 |

CT Flat Elbow
90° R3

Prefabricated standard flat elbow,
(Other Radius available)
Tray heights 50mm & 80mm
Angle plates and fasteners SS316L
as Standard (GRP Angle Plates also
available)



| CT50 | | |
|-------------------|------------|-----|
| Product | Ref No | Kg |
| CT Flat Elbow-50 | MCT3111PC1 | 0,9 |
| CT Flat Elbow-100 | MCT3112PC1 | 1,1 |
| CT Flat Elbow-150 | MCT3113PC1 | 1,4 |
| CT Flat Elbow-200 | MCT3114PC1 | 1,7 |
| CT Flat Elbow-300 | MCT3115PC1 | 2,6 |

CT Equal Tee
R3

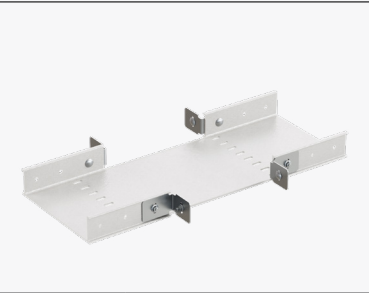
Prefabricated standard Equal Tee,
available also as Radius 300mm
Tray heights 50mm & 80mm
Angle plates and fasteners SS316L
as Standard (GRP Angle Plates also
available)



| CT50 | | |
|------------------|--------------|-----|
| Product | Ref No | Kg |
| CT Equal Tee-50 | MCT3174R3PC1 | 1,4 |
| CT Equal Tee-100 | MCT3175R3PC1 | 1,8 |
| CT Equal Tee-150 | MCT3176R3PC1 | 2,3 |
| CT Equal Tee-200 | MCT3177R3PC1 | 2,8 |
| CT Equal Tee-300 | MCT3178R3PC1 | 4,0 |

CT Cross Piece

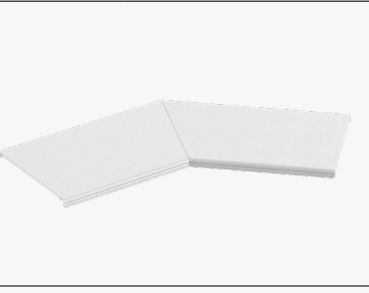
Prefabricated standard Cross Piece,
available also as Radius 300mm
Tray heights 50mm & 80mm
Angle plates and fasteners SS316L
as Standard (GRP Angle Plates also
available). Fasteners not included.



| CT50 | | |
|--------------------|------------|-----|
| Product | Ref No | Kg |
| CT Cross Piece-50 | MCT3129PC1 | 0,4 |
| CT Cross Piece-100 | MCT3130PC1 | 0,6 |
| CT Cross Piece-150 | MCT3131PC1 | 0,7 |
| CT Cross Piece-200 | MCT3132PC1 | 0,9 |
| CT Cross Piece-300 | MCT3133PC1 | 1,5 |

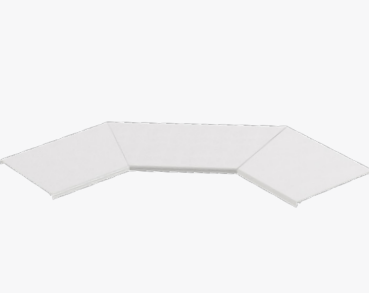
CT Flat Elbow Cover
45° R3

Prefabricated Snap-Fit Covers

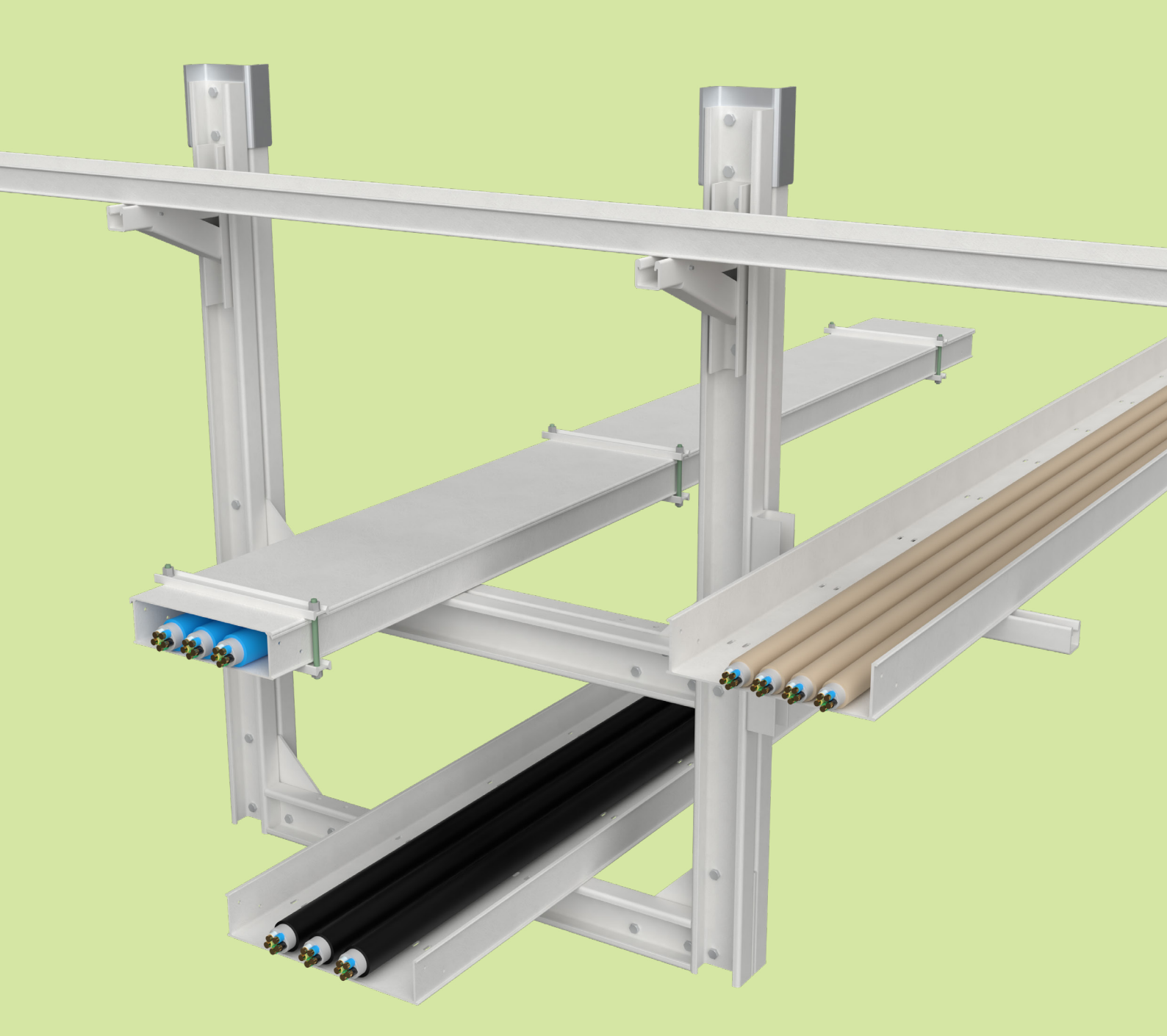


| CT50 | | |
|-------------------------|------------|-----|
| Product | Ref No | Kg |
| CT Flat Elbow Cover-50 | MCT3218PC1 | 0,2 |
| CT Flat Elbow Cover-100 | MCT3219PC1 | 0,3 |
| CT Flat Elbow Cover-150 | MCT3220PC1 | 1,3 |
| CT Flat Elbow Cover-200 | MCT3221PC1 | 0,6 |
| CT Flat Elbow Cover-300 | MCT3222PC1 | 0,9 |

CT Flat Elbow Cover
90° R3



| CT50 | | |
|-------------------------|------------|-----|
| Product | Ref No | Kg |
| CT Flat Elbow Cover-50 | MCT3212PC1 | 0,3 |
| CT Flat Elbow Cover-100 | MCT3213PC1 | 0,5 |
| CT Flat Elbow Cover-150 | MCT3214PC1 | 0,8 |
| CT Flat Elbow Cover-200 | MCT3215PC1 | 1 |
| CT Flat Elbow Cover-300 | MCT3216PC1 | 1,6 |



CT Combi Riser

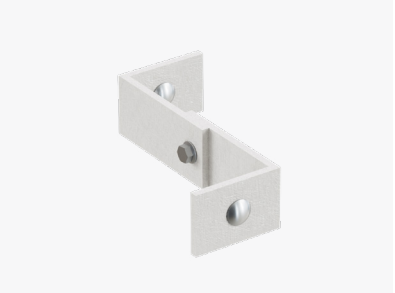
Can be used as both inside or
outside riser. Fasteners not
included.



| CT50 | | |
|--------------------|------------|-----|
| Product | Ref No | Kg |
| CT Combi Riser-50 | MCT3135PC1 | 0,6 |
| CT Combi Riser-100 | MCT3136PC1 | 0,6 |
| CT Combi Riser-150 | MCT3137PC1 | 0,7 |
| CT Combi Riser-200 | MCT3138PC1 | 0,8 |
| CT Combi Riser-300 | MCT3139PC1 | 1,1 |

CT Reducer

Prefabricated reducer part, for
joining two trays of different width
Tray heights 50mm & 80mm
Fasteners SS316L are included.



| CT50 | | |
|----------------|------------|-----|
| Product | Ref No | Kg |
| CT Reducer-50 | MCT3350PC1 | 0,1 |
| CT Reducer-100 | MCT3351PC1 | 0,2 |
| CT Reducer-150 | MCT3352PC1 | 0,2 |
| CT Reducer-200 | MCT3353PC1 | 0,2 |

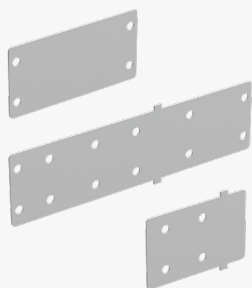
Accessories

Bolted Starter Bracket



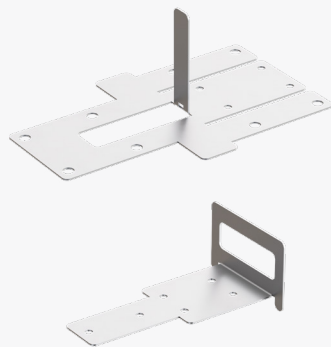
| CT50 | | |
|----------------------------|----------|----|
| Product | Ref No | Kg |
| Bolted Starter Bracket HDG | MS4155S | |
| Bolted Starter Bracket SS | MS4157SS | |

Channel Support Drill Template

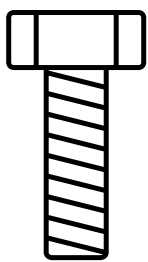


| CT50 | | |
|--------------------------------------|----------|----|
| Product | Ref No | Kg |
| Channel Sup Drill Template -1 SS | MD2247SS | |
| Channel Sup Drill Template -2 SS | MD2248SS | |
| Channel Support Drill Template -3 SS | MD2249SS | |

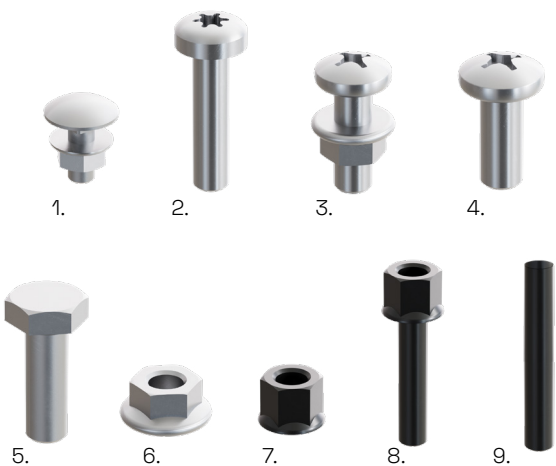
Cable Ladder / Cable tray Drill Template



| CT50 | | |
|------------------------------|----------|----|
| Product | Ref No | Kg |
| CL 100/150 Drill Template SS | MD2251SS | |
| CT 50/80 Drill Template SS | MD2252SS | |



Bolts & Bolt sets



| Product | Ref No | Kg |
|------------------------------------|----------|-------|
| 1. Bolt Set M6 x 12 SS | M4820SS | 0,01 |
| 1. Bolt Set Square Neck M6 x 16 SS | M4824SS | 0.011 |
| 2. Bolt M8 x 25 Pan SS | M4813SS | 0.021 |
| 3. Bolt Set M10 x 25 A4 SS | M4804SS | 0.043 |
| 3. Bolt Set M10 x 30 A4 SS | M4808SS | 0.046 |
| 4. Bolt M10 x 25 SS | M4811SS | 0.03 |
| 5. Hex Bolt M10 x 30 SS | M4809SS | 0.03 |
| 6. Flange Nut M10 SS | M4810SS | 0.015 |
| 7. Long Thread Hex Nut M10 PC1 | M4816PC1 | 0.005 |
| 8. Bolt Stud M10 x 50 PC1 | M4115PC1 | 0.01 |
| 9. Threaded Rod M10 3m PC1 | M4817PC1 | 0,55 |

MultiFlex support system bolt recommendation:

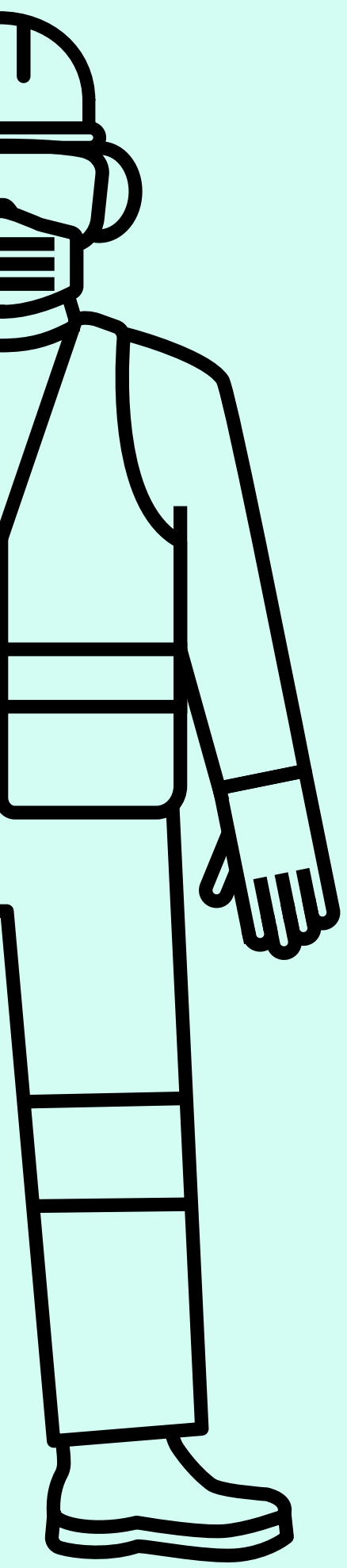
- When bolting Mita flex support system standard bolt size is 10 mm.
- For connections back to back use M10x25 boltset
- For use with gusset plates use M10x30 boltset

Cable ladder system:

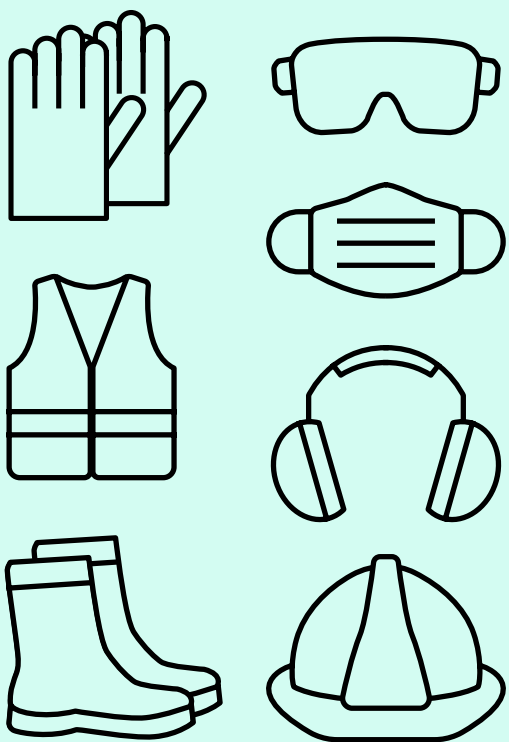
→ All bolts M10
When using stainless steel accessories (splice plates, hinges etc) standard bolt set is M10x20 mm, when using GRP accessories standard bolt set is M10x25mm

Cable tray system:

→ All bolts M6
When using stainless steel accessories (splice plates, hinges etc) use M6 x 12mm bolt set, for GRP accessories use M6 x 16mm bolt set



safety first



Tool selection

On-site cutting is easily done with the use of portable circular power saws and drilling equipment. For best results a diamond or carbide edged saw blade and carbide tip drill bits are the best solution.

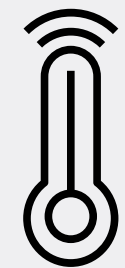
Cutting and drilling

When cutting, grinding or sanding FRP products it is important to wear suitable protective equipment. Safety glasses, dust mask rated at N94 or above is recommended and gloves are necessary.

We also recommend wearing long-sleeved shirt or overalls when working with FRP. In some cases non-toxic dust is created if you are not in a well ventilated environment and this can cause some small irritations so make sure you wear the right gear at all times.

| Mechanical Properties | ASTM | Units | Value | Units | Value |
|--------------------------------------|--------------|-------------|---------------|-------------|-------------|
| Tensile Stress, LW | D-638 | psi | 30,000 | MPa | 206.8 |
| Tensile Stress, CW | D-638 | psi | 7,000 | MPa | 48.2 |
| Tensile Modulus, LW | D-638 | 106 psi | 2.5 | GPa | 17.2 |
| Tensile Modulus, CW | D-638 | 106 psi | 0.8 | GPa | 5.5 |
| Compressive Stress, LW | D-695 | psi | 30,000 | MPa | 206.8 |
| Compressive Stress, CW | D-695 | psi | 15,000 | MPa | 103.4 |
| Compressive Modulus, LW | D-695 | 106 psi | 2.5 | GPa | 17.2 |
| Compressive Modulus, CW | D-695 | 106 psi | 1.0 | GPa | 6.9 |
| Flexural Stress, LW | D-790 | psi | 30,000 | MPa | 206.8 |
| Flexural Stress, CW | D-790 | psi | 10,000 | MPa | 68.9 |
| Flexural Modulus, LW | D-790 | 106 psi | 1.8 | GPa | 12.4 |
| Flexural Modulus, CW | D-790 | 106 psi | 0.8 | GPa | 5.5 |
| Modulus of Elasticity | Full Section | 106 psi | 2.8 | GPa | 19.3 |
| Shear Modulus | ---- | 106 psi | 0.45 | GPa | 3.1 |
| Short Beam Shear | D-2344 | psi | 4,500 | MPa | 31.0 |
| Punch Shear | D-732 | psi | 10,000 | MPa | 68.9 |
| Notched Izod Impact, LW | D-256 | ft - lbs/in | 25 | J/mm | 1.33 |
| Notched Izod Impact, CW | D-256 | ft - lbs/in | 4 | J/mm | 0.21 |
| Bearing Strength | D-953 | psi | 30,000 | MPa | 206.8 |
| Physical Properties | ASTM | Units | Value | Units | Value |
| Bar Hardness | D-2583 | ---- | 45 | ---- | 45 |
| 24 Hour Water Absorption | D-570 | % Max | 0.45 | % Max | 0.45 |
| Density | D-792 | lbs/in3 | 0.062 - 0.070 | g/cm3 | 1.72 - 1.94 |
| Coefficient of Thermal Expansion, LW | D-696 | 106in/in°F | 7 | 10-6cm/cm°C | 12 |
| Electrical Properties | ASTM | Units | Value | Units | Value |
| Arc Resistance, LW | D-495 | seconds | 120 | seconds | 120 |
| Dielectric Strength, LW | D-149 | kv/in | 35 | kv/mm | 1.37 |
| Dielectric Strength, PF | D-149 | volts/mil | 200 | volts/mil | 200 |
| Dielectric Constant, PF | D-150 | @60hz | 5 | @60hz | 5 |
| Flammability Properties | ASTM | | Units | Value | |
| Tunnel Test | E-84 | | Flame Spread | 25 max | |
| Flammability | D-635 | | ---- | Non-Burning | |
| NBS Smoke Chamber | E-662 | | Smoke Density | 600 - 700 | |

Effect on strength with temperature



The strength properties of reinforced plastics are reduced when the material is continually exposed to high temperatures. Loading shall be reduced based on the below table. Percentages shown are approximates.

When high temperatures are present please consult the manufacturer for application advice. Freezing temperatures do not effect the load rating of cable ladders and the cable management system as the FRP material does not be-come fragile. Special consideration is required when service temperatures are over 200° Fahrenheit/ 94° Celsius. Please contact us for expert consultation for special requirements.

| Temperature | Polyester Resin % of Strength | Vinyl Ester % of Strength |
|--------------|----------------------------------|------------------------------|
| 75°F (24°C) | 100% | 100% |
| 100°F (38°C) | 90% | 100% |
| 125°F (52°C) | 78% | 100% |
| 150°F (66°C) | 68% | 90% |
| 175°F (79°C) | 60% | 90% |
| 200°F (93°C) | 52% | 75% |

The test values in this chart are obtained from laboratory testing

Thermal Contraction and Expansion

The table to the below compares the thermal contraction and expansion based on various temperature differentials for fiberglass, steel and aluminium cable trays. The values shown represent the length of cable tray that will produce a 16 mm (5-B*) movement between expansion connectors for the indicated temperature differential. Fiberglass has the least movement and requires least expansion joints. This simplifies the design and installation and minimizes expansion dynamic forces on the structure.

| Temperature Differential | FRP Ft.(m) | Steel Ft. (m) | Aluminium Ft. (m) |
|--------------------------|------------|---------------|-------------------|
| 25°F (14°C) | 417 (126) | 320 (97) | 162 (49) |
| 50°F (28°C) | 208 (63) | 160 (48) | 81 (25) |
| (42°C) | 138 (42) | 106 (48) | 54 (16) |
| 100°F (56°C) | 104 (32) | 80 (24) | 40 (12) |
| 125°F (69°C) | 83 (25) | 63 (19) | 32 (10) |
| 150°F (83°C) | 69 (21) | 53 (16) | 26 (8) |
| 175°F (83°C) | 59 (17) | 45 (13) | 23 (6) |

Material & Product Standards and Certifications

Fire performance

BS 476 PART 7: CLASS 1
This is a vertical flame spread test and its one of the most requested certificates.

BS 476 P6
Specifies a method of test, the result is expressed as a fire propagation index.

ASTM E84 (from UL 0568)
Tests the rate of flame spread and smoke emissions of materials.

ASTM D635
Standard test method for measuring the rate of burning and duration of burning in plastic products. / Class HB

ISO 5659-2
Specifies a method of measuring smoke production from the exposed surface of specimens of materials or composites.

ISO 4589-2
Determination of burning behavior by oxygen index

ANSI/UL94
Plastics flammability standard for horizontal and vertical class.

IEC 61537:
Non-flame propagating system component class - Contribution to fire test IEC60695-2-11 (GWT) / Spread of fire 1kW test IEC60695-11-2

ISO 6721-11
Methods for determining a value of the glass transition temperature from the dynamic mechanical properties

EN14582-2016
This standard specifies a combustion method for the determination of halogen and sulfur contents in waste materials by combustion.

IEC 60754-series
Halogen contents determination only on materials for cables.

IEC 63355:2022
"New" Standard to determine the Halogen content specially for "Cable Management Systems."

Weathering / Chemical corrosion

ASTM G154-16
Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials. (Color DeltaE measurement)

ISO 4892-2
Plastics- Methods of exposure to laboratory light sources - Part2- xenon-arc lamps (preferred test for "Cable Management Systems.")

ASTM D 4329 (from UL 0568)
Ultraviolet light exposure or ASTM G 155 Arc xenon light exposure (evaluating mechanical acc. to ASTM D 790)

ISO 4582
Methods to determine changes in colour and other appearance properties, and variations in mechanical or other properties

ASTM B-117
Tests a materials ability to resist the corrosive effect of salt water.

ASTM D570
Determine the rate of absorption of water by immersing the specimen in water for a specific period of time.

ASTM C581
Determining Chemical Resistance of Thermosetting Resins Used in Glass-Fiber-Reinforced Structures

Isolation / Electrical properties

Electrically non-conductive system component -resistivity values of 100 MΩ or greater.

ASTM D257-14
This test measures the volume and surface resistivity of a material.

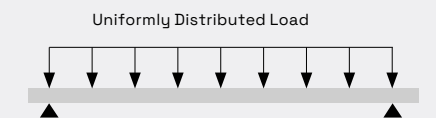
ASTM D149 (from UL 0568)
Dielectric Strength

IEC60079-0
General requirements for construction, testing and marking of Ex Equipment and Ex Com-ponents (for Antistatic resin)

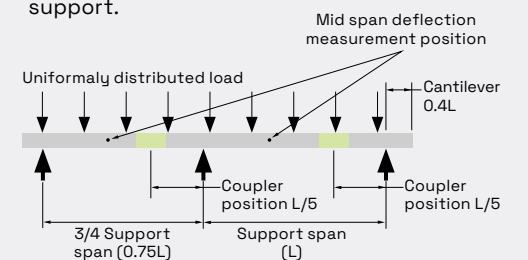
Mechanical performance

UL 0568
Nonmetallic Cable Tray Systems

Nema FG-1
Standard that defines the construction and testing standards for nonmetallic cable tray systems



IEC 61537
International Standard specifies requirements and tests for cable tray systems and cable ladder systems intended for the Cable support.



IEC 61914 (Short Circuit test)
Cable cleats for electrical installations_ 9.5 Test for resistance to electromechanical force.

FRP Cable ladders, trays and accessories have been designed to withstand 25 years or more service life. Nevertheless, this cannot be achieved by product alone, Actual service of 25 years can only be achieved if cable ladders, trays and accessories are:

- NOT subjected to any abnormal mechanical loads or mechanical impacts that would have long term effect on the performance of the product.
- NOT subjected to abnormal corrosive atmosphere or subjected to direct contact with corrosive substance.
- NOT subjected to any major alteration to the structure of the product or cut away areas or drill holes outside of the recommended installation guidelines.

Chemical Exposure Guide

| CHEMICAL | Polyester Class 1 resin | | Vinyl Ester Resin | |
|----------------------|-------------------------|-------------------|-------------------|-------------------|
| ENVIRONMENT | %Concentration | Max Op, Temp. F/C | % Concentration | Max Op, Temp. F/C |
| Acetic Acid | 50 | 125/52 | 50 | 180/82 |
| Aluminum Hydroxide | 100 | 160/71 | 100 | 180/82 |
| Ammonium Chloride | All | 170/77 | All | 210/99 |
| Ammonium Hydroxide | 28 | N/R | 28 | 100/38 |
| Ammonium Bicarbonate | 15 | 125/52 | 15 | 160/70 |
| Ammonium Sulfate | ALL | 170/77 | ALL | 210/99 |
| Benzene | N/R | N/R | N/R | N/R |
| Benzoic Acid | SAT | 150/66 | SAT | 210/99 |
| Borax | SAT | 170/77 | SAT | 210/99 |
| Callum Carbonate | ALL | 170/77 | ALL | 180/82 |
| Calcium Nitrate | ALL | 180/82 | ALL | 210/99 |
| Carbon Tetrachloride | N/R | N/R | N/R | 150/65 |
| Chlorine, Dry Gas | – | 140/60 | – | 210/99 |
| Chlorine Water | SAT | 80/27 | SAT | 200/93 |
| Chromic Acid | 5 | 70/21 | 5 | 150/65 |
| Citric Acid | ALL | 170/77 | ALL | 210/99 |
| Copper Chloride | ALL | 170/77 | ALL | 210/99 |
| Copper Cyanide | ALL | 170/77 | ALL | 210/99 |
| Copper Nitrate | ALL | 170/77 | ALL | 210/99 |
| Ethanol | 50 | 75/24 | 50 | 100/38 |
| Ethylene Glycol | 100 | 90/32 | 100 | 200/93 |
| Ferric Chloride | ALL | 170/77 | ALL | 210/99 |

| | | | | |
|----------------------|-----|--------|-----|--------|
| Ferrous Chloride | ALL | 170/77 | ALL | 210/99 |
| Formaldehyde | 50 | 75/24 | 50 | 150/65 |
| Gasoline | 100 | 80/27 | 100 | 180/82 |
| Glucose | 100 | 170/77 | 100 | 210/99 |
| Glycerine | 100 | 150/66 | 100 | 210/99 |
| Hydrobromic Acid | 50 | 120/49 | 50 | 150/65 |
| Hydrochloric Acid | 37 | 75/24 | 37 | 150/65 |
| Hydrogen Peroxide | 5 | 100/38 | 5 | 150/65 |
| Lactic Acid | ALL | 170/77 | ALL | 210/99 |
| Lithium Chloride | SAT | 150/66 | SAT | 210/99 |
| Magnesium Chloride | ALL | 170/77 | ALL | 210/99 |
| Magnesium Nitrate | ALL | 140/60 | ALL | 210/99 |
| Magnesium Sulfate | ALL | 170/77 | ALL | 210/99 |
| Mercuric Chloride | 100 | 150/66 | 100 | 210/99 |
| Mercurous Chloride | ALL | 140/60 | ALL | 210/99 |
| Nickel Chloride | ALL | 170/77 | ALL | 210/99 |
| Nickel Sulfate | ALL | 170/77 | ALL | 210/99 |
| Nitrate Acid | 20 | 70/21 | 20 | 120/49 |
| Oxalic Acid | ALL | 75/24 | ALL | 210/99 |
| Perchloric Acid | N/R | N/R | N/R | 100/38 |
| Phosphoric Acid | 100 | 120/49 | 100 | 210/99 |
| Potassium Chloride | ALL | 170/77 | ALL | 210/99 |
| Potassium Dichromate | ALL | 170/77 | ALL | 210/99 |
| Potassium Nitrate | ALL | 170/77 | ALL | 210/99 |
| Potassium Sulfate | ALL | 170/77 | ALL | 210/99 |
| Propylene Glycol | ALL | 170/77 | ALL | 210/99 |
| Sodium Acetate | ALL | 160/71 | ALL | 210/99 |
| Sodium Bisulfate | ALL | 170/77 | ALL | 210/99 |
| Sodium Bromide | ALL | 170/77 | ALL | 210/99 |
| Sodium Cyanide | ALL | 170/77 | ALL | 210/99 |
| Sodium Hydroxide | N/R | N/R | N/R | 180/82 |
| Sodium Nitrate | ALL | 170/77 | ALL | 210/99 |
| Sodium Sulfate | ALL | 170/77 | ALL | 210/99 |
| Stannic Chloride | ALL | 160/71 | ALL | 210/99 |
| Sulfuric Acid | 25 | 75/24 | 25 | 100/38 |
| Tartaric Acid | ALL | 170/77 | ALL | 210/99 |
| Vinegar | 100 | 170/77 | 100 | 210/99 |
| Water, Distilled | 100 | 170/77 | 100 | 180/82 |
| Zinc Nitrate | ALL | 170/77 | ALL | 210/99 |
| Zinc Sulfate | ALL | 170/77 | ALL | 210/99 |

SILVER | Top 15%

ecovadis

Sustainability Rating

FEB 2024

Responsible business



Wibe Group is a multinational company with operations in different parts of the world. We want to run a responsible business, by understanding and managing all effects in the value chain. We see it not only as a responsibility but also an opportunity to influence and drive sustainable development for our business and communities.

Our ambition is to take the lead in our industry. With a clear vision and long term commitment, we will get there.

In 2024, we received a Silver Sustainability Rating from EcoVadis, placing us in the top 15% of all companies in the world, and top 3% of our industry segment. Join us on our journey to create sustainable solutions for generations to come!

Read more about our sustainability work on wibe-group.com

