

E-LINE KCA-CTA GRP

Cable Management System - Glass Reinforced Polyester

EAE GROUP IN NUMBERS



Since 1973

EAE Group of Companies started its journey in the electrical sector in 1973 with the establishment of EAE Elektrik. Since its founding, EAE has grown rapidly, expanding its production and areas of operation by incorporating EAE Lighting in 1983, EAE Machinery in 1996, EAE Electrotechnics in 2004, and EAE Technology in 2009.

EAE carries out its production activities in accordance with ISO 9001 Quality Management, ISO 14001 Environmental Management, ISO 14064-1 Greenhouse Gas Management System, ISO 45001 Occupational Health and Safety Management, ISO 10002 Customer Satisfaction Management, ISO 50001 Energy Management System, and ISO 27001 Information Security Management System standards.



50+
Years Experience



8
Active Factories



370.000m²
Enclosed Space



3
R&D Centers



150+
Countries Exported To

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E-LINE KCA GRP

Introduction

Advantages of E-LINE GRP



Engineers, designers, contractors, installers and end users have many reasons to choose E-LINE GRP cable tray for their power, signal and control distribution support requirements. E-LINE GRP pultruded cable ladder system is well adapted to extremely harsh chemical environments where high-corrosion resistance is required. Glass Reinforced Polyester material as standard and exhibits below-mentioned performance characteristics.

- Self-extinguishing
- UV resistance
- Halogen-free
- No need to earth
- Without toxic fumes

High Chemical Resistance

Chemically resistance for severely corrosive environments. Life-cycle cost is dramatically reduced by the extended life expectancy of this product.



High Weather Resistance

GRP is extremely resistant to low temperatures and exhibits well performance even in harsh climates.



High Mechanical Resistance

Pultruded profiles have been classified and approved NEMA 12°C and NEMA 20°C classification. Pultruded profiles can be supported up to 6M span, which reduce both the number of supports used.

Light-Weight

High strength-to-weight ratio as compared to metallic systems. Density is around. 1,75 gr/cm³ and 40% lighter than conventional metallic systems.

Low-Maintenance Cost

Continuous maintenance and cleaning are eliminated and cost effective-long term solution is provided.

High Dielectric Strength / Insulating

Low electrical conductivity properties and high dielectric strength. Conductivity can be increased upon request by enhancing anti-static properties.



Quick & Easy Installation

E-LINE GRP cable tray is strong and lightweight, allowing durable system to be installed quickly and easily

Secure for Cables

There are no sharp edges or burrs, long runs of armored cable can be installed with less chance for cable damage. Cable bundles can be laid in the tray from either side.

Wide Range of Products

- Available heights: 100 mm, 150 mm
- Available widths: 150 mm, 200 mm, 300 mm, 400 mm, 450 mm, 500 mm, 600 mm, 750 mm, 900 mm
- Rung spacing: 300 mm
- Straight Lengths: 3 Meters / 6 Meters
- Fitting radius: R300-R450-R600
- Covers
- Joint and fixing accessories

Application Areas

- Heavy Industry
- Oil and Gas Industry
- Power Plants
- Wastewater Treatment Plants
- Mining Industry
- Chemical Plants
- Railways and Tunnels
- Bridges
- Automotive, Iron and Steel, Glass Industry
- Ships and Ports
- Factories
- Airports
- Data Centers

Reasons for Choosing Composite

- Corrosion resistance
- Extremely lightweight
- Excellent fire performance
- Outstanding load capacity
- Insulating
- Long-life span
- UV resistance
- Fast and easy installation
- Low labor costs
- Low transportation costs

Extreme Load Capacity

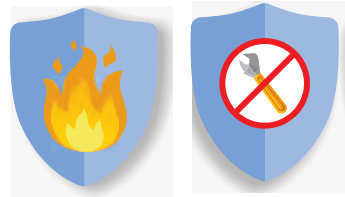
- 149 kg/m at 3,6 m single span (NEMA 12C) for H100
- 149 kg/m at 6,0 m single span (NEMA 20C) for H150

Standard Delivered Dimensions

- ↔ 150-200-3000-400-450-500-600-750-900 mm as standard
- ↑ 100 mm and 150 mm heights as standard
- 3M and 6M length as standard

Reasons for Choosing Composite

- Under fire conditions
- Non-flammable material (Class I – ASTM E84)
- Self-extinguishing (UL 94 "V0" Classified)
- No toxic fumes
- Zero halogen
- Low flame spread index
- Low smoke density



Insulating

- Extremely insulating material (>7kV/m)
- No need to earth

Maintenance Free

- No corrosion
- No electrolytic corrosion
- No need for painting and protective varnishes

EAE ELEKTRIK has carried out third party laboratory tests on all range of KCA GRP products. Details and results of the test is published and could be seen below. Please contact us for more support about test requirements.

UL 94 V-0 / (ASTM D-635) UL 94 V-0 / (ASTM D-635): Flammability Test

Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances:

That is a standard test method for measuring the rate of burning and duration of burning in plastic products. Our KCA GRP material self-extinguished within 10 seconds which means product achieved UL94 V-0 certification.

IEC 60695-2: Glow Wire Test

Glowing/hot-wire based test methods-Glow-wire flammability test method for end-products (GWEPT):

The sample is intended to simulate effects of thermal stress produced by an electrically heated source to represent a fire hazard. Our material achieved to resist a hot with 950 oC which is the highest possible value.

BS 476 Part-7: Surface Flammability

Standard Flammability Testing Equipment Surface Flame Spread Apparatus

This is a vertical flame spread test. Sample material is exposed to a high intensity flame for a predetermined amount of time. The heat source is then removed, and the test begins, after 10 minutes the flame spread, and rate is measured. Our resin system achieved the highest level possible.

ASTM E84: Surface Burning Characteristics

Standard Test Method for Surface Burning Characteristics of Building Materials:

Tests determine the rate of flame spread and smoke emission index of materials. The material is placed in a test box with a gas burner at one end and a smoke measurement device at the exhaust end. Our KCA GRP material achieved the highest level of certification in this test. Class-1.

ISO 4589-2: LIMITING OXYGEN INDEX

Determination of burning behavior by oxygen index:

specifies methods for determining the minimum volume fraction of oxygen, in admixture with nitrogen, that will support combustion of small vertical test specimens under specified test conditions. The results are defined as oxygen index (OI) values. Our KCA GRP system has achieved 23% (OI)

DIN 4102-1: Fire behavior of Building Elements

Fire behavior of building materials and elements Part 1: Classification of building materials requirements and testing

A test specimen is hung vertically in a test cabinet with a burner in it. It is subjected simultaneously to a flame for 10 minutes and a constant flow of air from below. The temperature of the smoke and the undamaged length of the specimen are measured.

IEC 60754-1: HALOGEN-FREE

Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content

Specifies the apparatus and procedure for the determination of the amount of halogen acid gas, The method specified in this standard is intended for the testing of individual components used in a cable construction. A simple test that ensures the material has zero halogen content. Halogens are a toxic group of elements that are sometimes used as flame retardants. All our products are halogen free.

ISO 527: TENSILE TEST

Tensile Strength and Elastic Modulus Testing:

The methods are used to investigate the tensile behavior of the test specimens and for determining the tensile strength, tensile modulus and other aspects of the tensile stress/strain relationship under the conditions defined. EAE KCA GRP Cable ladder has 325 MPa tensile strength.

EN 60068-2-75: IMPACT TEST

Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests

It is used to demonstrate an acceptable level of robustness when assessing the safety of a product and is primarily intended for the testing of electrotechnical items. EAE KCA GRP Cable ladder is classified 10J impact resistance.

ISO 4892-2: UV TEST

Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps

ISO 4892-2:2013 specifies methods for exposing specimens to xenon-arc light in the presence of moisture to reproduce the weathering effects (temperature, humidity and/or wetting) that occur when materials are exposed in actual end-use environments to daylight or to daylight filtered through window glass.

NEMA FG-1: Single-Span Load Test

According to single-span, single-straight product load test, EAE KCA GRP Cable Ladder straight lengths are classified 12C and 20C.

IEC 61537: Multi-span Load Test

According to multi-span, spliced two straight product load tests, load capacity vs. span is drawn and could be seen on related straight length catalog pages.

IEC 60079-0 / (ASTM D-257): Surface resistivity (Anti-static property)

Explosive atmospheres - Part 0: Equipment - General requirements

specifies the general requirements for construction, testing and marking of Ex Equipment and Ex Components intended for use in explosive atmospheres. EAE KCA GRP Cable ladder is highly insulating material that has $>10^{12}$ ohm, which can be enhanced to $<10^8$ ohm with additional carbon filler.

IEC 60243-1/ (ASTM D-149): Dielectric Strength

Electrical strength of insulating materials – Test methods Part 1: Test at power frequencies

provides test methods for the determination of short-time electric strength of solid insulating materials. EAE KCA GRP Cable ladder has 7,2 kV/mm dielectric strength with 39 kV breaking voltage which is satisfied result.

IEC 60112: Proof Tracking Index

Method for the determination of the proof and the comparative tracking indices of solid insulating materials

provides test methods for the determination of short-time electric strength of solid insulating materials. EAE KCA GRP Cable ladder has 7,2 kV/mm dielectric strength with 39 kV breaking voltage which is satisfied result.

E-LINE KCA GRP

Introduction

Material Technical Datasheet (Glass Reinforced Polyester)



E-Line KCA GRP Glass Reinforced Polyester Cable Ladder systems are manufactured from glass reinforced polyester shapes that meet ASTM E-84 / UL 723, Class 1 Flame Rating and self-extinguishing requirements of ASTM D-635/ UL 94 V0. A surface veil is applied during pultrusion to insure a resin-rich surface and ultraviolet resistance. The cable trays and accessories comply with the requirements of latest revision of following standards.

TECHNICAL DATA SHEET / POLYESTER RESIN / HALOGEN-FREE / RAL 7032

PROPERTIES	TEST METHOD	RESULT / VALUE	COUNTRY
Fire Behaviour			
Flammability	UL 94 / (ASTM D-635)	UL 94 - V0	TR
Flammability	IEC 60695-2-11 (GWT: Glow Wire test)	960 °C	TR/FR
Flammability & Smoke Index	NF F 16-101	I0 / F0 (Dm: 239 / VOF4: 30) (accord. NF X 10-702) (ITC: 2.18) (accord. NF X 70-100)	FR
Flame Spread & Smoke developed index	ASTM E-84 / UL 723	Class-1 (FSI Flame Spread Index:15) (SD: Smoke Density:250)	TR
Flammability	BS 476 Part-7	Class-1	TR
Fire Behavior	DIN 4102-1	B1	TR
Halogen Content	IEC 60754-1	Halogen-free	TR
Limiting Oxygen Index	ISO 4589-2 / (ASTM D-2863)	28% (>45% upon request)	TR/FR
Fire Behavior	EN 45545-2 Fire Behavior of Railway vehicles, Number: R6 ISO 5660-1: Parameter MARHE EN ISO 5659-2: Parameter DS (4) EN ISO 5659-2: Parameter VOF4 EN ISO 5659-2: Parameter CITG	42,97 116,48 172,91 0,79	TR
Mechanical Behaviour			
Tensile Strength	ISO 527 / (ASTM D-638)	325 Mpa	TR
Accelerated Aging Test by UV exposure	ISO 4892-2 / (ASTM G-154)	Good mechanical and chromatic behavior	TR
Impact Resistance	EN 60068-2-75	10 J	TR
Load Capacity	NEMA FG-1	12C (149 kg/m on 3,6 Meters span) 20C (149 kg/m on 6,0 Meters span)	TR
Electrical Behaviour			
Surface Resistivity		>1012Ω(<109 Ω GRP with anti-static properties)	TR
Dielectric Strength (Breaking Voltage)		7,2 kV/mm	TR
Proof Tracking Index		575V	TR
Physical Behaviour			
Density	ISO 1183 / (ASTM D-1505)	1,73gr/cm3	TR
Water Absorption	ISO 62 / (ASTM D-570)	0,28% max.	TR
Coefficient of Thermal Expansion	ISO 11359-2 / (ASTM D-696)	10 x 10-6cm/K	TR



E-LINE KCA GRP

Introduction

GRP Typical Coupon Properties



Coupon tests are performed in accordance with designed ASTM Tests.

Mechanical Properties	ASTM	UNITS	VALUE (PE)	UNITS	VALUE
Tensile Strength, LW	D-638	psi	30,000	Mpa	206
Tensile Strength, CW	D-638	psi	7,000	MPa	48
Tensile Modulus, LW	D-638	106 psi	2.5	GPa	17
Tensile Modulus, CW	D-638	106 psi	0.8	GPa	5
Compressive Strength, LW	D-695	psi	30,000	MPa	206
Compressive Strength, CW	D-695	psi	15,000	MPa	103
Compressive Modulus, LW	D-695	106 psi	2.5	GPa	17
Compressive Modulus, CW	D-695	106 psi	1.0	GPa	0.6
Flexural Strength, LW	D-790	psi	30,000	MPa	206
Flexural Strength, CW	D-790	psi	10,000	MPa	102
Flexural Modulus, LW	D-790	106 psi	1.8	GPa	11
Flexural Modulus, CW	D-790	106 psi	0.8	GPa	5
Modulus of Elasticity, E	Full Section	106 psi	2.8	Gpa	17
Shear Modulus	-----	106 psi	0.450		
Short Beam Shear	D-2344	psi	4,500		
Punch Shear	D-732	psi	10,000		
Bearing Strength, LW	D-953	psi	30,000		
Notched Izod Impact, LW	D-256	ft-lbs./in	25		
Notched Izod Impact, CW	D-256	ft-lbs./in	4		
Mechanical Properties	ASTM	UNITS	VALUE (PE)	UNITS	VALUE
Physical Properties	ASTM	UNITS	VALUE (PE)		
Barcol Hardness	D-2583	-----	45		
24 Hour Water Absorption	D-570	% max	0.45		
Density	D-792	lbs./in 3	.062-0.70		
Coefficient of Thermal Expansion, LW	D-696	10-6 in/in/°C	8		
Mechanical Properties	ASTM	UNITS	VALUE (PE)	UNITS	VALUE
Arc Resistance, LW	D-495	seconds	120		
Dielectric Strength, LW	D-149	kV/in	35		
Dielectric Strength, PF	D-149	volts/mil	200		
Dielectric Constant, PF	D-150	@60hz	5		

LW = Lengthwise
 CW = Crosswise
 PF = Perpendicular to Laminate Face

E-LINE KCA GRP

Introduction

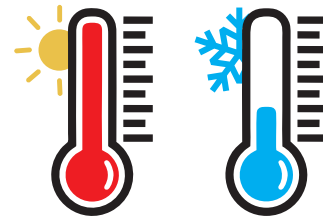
Effect Of Temperature On Strength



KCA GRP

Strength properties of GRP products are reduced when continuously exposed to elevated temperatures. Working loads shall be reduced based on the following:

Temperature		Polyester Resin % of Strength	Vinyl Ester % of Strength
(°F)	(°C)		
75	24	100 %	100 %
100	38	90 %	100 %
125	52	78 %	100 %
150	65	68 %	90 %
175	79	60 %	90 %
200	94	52 %	70 %



- At temperatures below 24 °C, the load values specified at 24 °C can be used.
- The maximum operating temperature is 94 °C.

Introduction

Thermal Expansion & Contraction

Temperature Differential		Max. distance between expansion connector For 1 in. (25mm) expansion	
(°F)	(°C)	(feet)	meters
25	14	667	203
50	28	333	101
75	42	222	67
100	56	167	50
125	70	133	40
150	83	111	33
175	97	95	28

Chemical Resistance Table

Chemical Environment	Polyester		Vinyl Ester	
	Max. Wt. %	Max. Oper. Temp. F (°C)	Max. Wt. %	Max. Oper. Temp. F (°C)
Acetic Acid	10	190 (88)	10	210 (99)
Acetic Acid	50	125 (52)	50	180 (82)
Acetone	N/R	N/R	100	75 (24)
Aluminum Chloride	SAT	170 (77)	SAT	200 (93)
Aluminum Hydroxide	SAT	160 (71)	SAT	170 (77)
Aluminum Nitrate	SAT	150 (66)	SAT	170 (77)
Aluminum Sulfate	SAT	180 (82)	SAT	200 (93)
Ammonium Chloride	SAT	170 (77)	SAT	190 (88)
Ammonium Hydroxide	1	100 (38)	10	150 (66)
Ammonium Hydroxide	28	N/R	28	100 (38)
Ammonium Carbonate	N/R	N/R	SAT	150 (66)
Ammonium Bicarbonate	15	125 (52)	SAT	130 (54)
Ammonium Nitrate	SAT	160 (71)	SAT	190 (88)
Ammonium Persulfate	SAT	N/R	SAT	150 (66)
Ammonium Sulfate	SAT	170 (77)	SAT	200 (93)
Amyl Alcohol	ALL	N/R	ALL	90 (32)
Amyl Alcohol Vapor	-	140 (60)	-	120 (49)
Benzene	N/R	N/R	100	140 (60)
Benzene Sulfonic Acid	25	110 (43)	SAT	200 (93)
Benzoic Acid	SAT	150 (66)	SAT	200 (93)
Benzoyl Alcohol	100	N/R	100	N/R
Borax	SAT	170 (77)	SAT	200 (93)
Calcium Carbonate	SAT	170 (77)	SAT	200 (93)
Calcium Chloride	SAT	170 (77)	SAT	200 (93)
Calcium Hydroxide	25	70 (21)	25	165 (74)
Calcium Nitrate	SAT	180 (82)	SAT	200 (93)
Calcium Sulfate	SAT	180 (82)	SAT	200 (93)
Carbon Disulfide	N/R	N/R	N/R	N/R
Carbonic Acid	SAT	130 (54)	SAT	180 (82)
Carbon Dioxide Gas	-	200 (93)	-	200 (93)
Carbon Monoxide Gas	-	200 (93)	-	200 (93)
Carbon Tetrachloride	N/R	N/R	100	75 (24)
Chlorine, Dry Gas	-	140 (60)	-	170 (77)
Chlorine, Wet Gas	-	N/R	-	180 (82)
Chlorine Water	SAT	80 (27)	SAT	180 (82)
Chromic Acid	5	70 (21)	10	120 (49)
Citric Acid	SAT	170 (77)	SAT	200 (93)
Copper Chloride	SAT	170 (77)	SAT	200 (93)
Copper Nitrate	SAT	170 (77)	SAT	200 (93)

Chemical Environment	Polyester		Vinyl Ester	
	Max. Wt. %	Max. Oper. Temp. F (°C)	Max. Wt. %	Max. Oper. Temp. F (°C)
Crude Oil, Sour	100	170 (77)	100	200 (93)
Cyclohexane	N/R	N/R	N/R	N/R
Cyclohexane, Vapor	ALL	100 (38)	ALL	130 (54)
Diesel Fuel	100	160 (71)	100	180 (82)
Diethyl Ether	N/R	N/R	N/R	N/R
Dimethyl Phthalate	N/R	N/R	N/R	N/R
Ethanol	50	75 (24)	50	90 (32)
Ethyl Acetate	N/R	N/R	N/R	N/R
Ethylene Chloride	N/R	N/R	N/R	N/R
Ethylene Glycol	100	90 (32)	100	200 (93)
Fatty Acids	SAT	180 (82)	SAT	200 (93)
Ferric Chloride	SAT	170 (77)	SAT	200 (93)
Ferric Nitrate	SAT	170 (77)	SAT	200 (93)
Ferric Sulfate	SAT	170 (77)	SAT	200 (93)
Ferrous Chloride	SAT	170 (77)	SAT	200 (93)
Fluoboric Acid	N/R	N/R	SAT	165 (74)
Fluosilicic Acid	N/R	N/R	SAT	70 (21)
Formaldehyde	50	75 (24)	50	100 (38)
Formic Acid	N/R	N/R	50	100 (38)
Gasoline	100	80 (27)	100	150 (66)
Glucose	100	170 (77)	100	200 (93)
Glycerine	100	150 (66)	100	200 (93)
Heptane	100	110 (43)	100	200 (93)
Hexane	100	90 (32)	100	130 (54)
Hydrobromic Acid	50	120 (49)	50	120 (49)
Hydrochloric Acid	10	150 (66)	10	200 (93)
Hydrochloric Acid	20	140 (60)	20	190 (88)
Hydrochloric Acid	37	75 (24)	37	95 (35)
Hydrochloric Acid	N/R	N/R	15	80 (27)
Hydrogen Bromide, Dry	100	190 (88)	100	200 (93)
Hydrogen Bromide, Wet	100	75 (24)	100	130 (54)
Hydrogen Chloride	-	120 (49)	-	200 (93)
Hydrogen Peroxide	5	100 (38)	30	100 (38)
Hydrogen Sulfide, Dry	100	170 (77)	100	210 (99)
Hydrogen Sulfide, Wet	100	170 (77)	100	210 (99)
Hypochlorous Acid	20	80 (27)	20	150 (66)
Isopropyl Alcohol	N/R	N/R	15	80 (27)
Kerosene	100	140 (60)	100	80 (27)
Lactic Acid	SAT	170 (77)	SAT	200 (93)

SAT : Saturated
N / R : Not Recommended

Chemical Resistance Table

Chemical Environment	Polyester		Vinyl Ester	
	Max. Wt. %	Max. Oper. Temp. F (°C)	Max. Wt. %	Max. Oper. Temp. F (°C)
Lead Acetate	SAT	170 (77)	SAT	200 (93)
Lead Chloride	SAT	140 (60)	SAT	200 (93)
Lead Nitrate	SAT	-	SAT	200 (93)
Linseed Oil	100	150 (66)	100	190 (88)
Lithium Chloride	SAT	150 (66)	SAT	190 (88)
Magnesium Carbonate	SAT	140 (60)	SAT	170 (77)
Magnesium Chloride	SAT	170 (77)	SAT	200 (93)
Magnesium Hydroxide	SAT	150 (66)	SAT	190 (88)
Magnesium Nitrate	SAT	140 (60)	SAT	180 (82)
Magnesium Sulfate	SAT	170 (77)	SAT	190 (88)
Mercuric Chloride	SAT	150 (66)	SAT	190 (88)
Mercurous Chloride	SAT	140 (60)	SAT	180 (82)
Methyl Ethyl ketone	N/R	N/R	N/R	N/R
Mineral Oils	100	170 (77)	100	200 (93)
Monochlorobenzene	N/R	N/R	N/R	N/R
Naphtha	100	140 (60)	100	170 (77)
Nickel Chloride	SAT	170 (77)	SAT	200 (93)
Nickel Nitrate	SAT	170 (77)	SAT	200 (93)
Nickel Sulfate	SAT	170 (77)	SAT	200 (93)
Nitric Acid	5	140 (60)	5	150 (66)
Nitric Acid	20	70 (21)	20	100 (38)
Oleic Acid	100	170 (77)	100	90 (32)
Oxalic Acid	ALL	75 (24)	ALL	120 (49)
Paper Mill Liquors	-	100 (38)	-	120 (49)
Perchloroethylene	100	N/R	100	N/R
Perchloric Acid	N/R	N/R	10	150 (66)
Perchloric Acid	N/R	N/R	30	80 (27)
Phosphoric Acid	10	160 (71)	10	200 (93)
Phosphoric Acid	100	120 (49)	100	200 (93)
Potassium Alum. Sulfate	SAT	170 (77)	SAT	200 (93)
Potassium Bicarbonate	50	80 (27)	50	140 (60)
Potassium Bichromate	SAT	170 (77)	SAT	200 (93)
Potassium Carbonate	10	N/R	10	120 (49)
Potassium Chloride	SAT	170 (77)	SAT	200 (93)
Potassium Hydroxide	N/R	N/R	25	150 (66)
Potassium Nitrate	SAT	170 (77)	SAT	200 (93)
Potassium Permanganate	100	80 (27)	100	210 (99)
Potassium Sulfate	SAT	170 (77)	SAT	200 (93)
Propylene Glycol	ALL	170 (77)	ALL	200 (93)

Chemical Environment	Polyester		Vinyl Ester	
	Max. Wt. %	Max. Oper. Temp. F (°C)	Max. Wt. %	Max. Oper. Temp. F (°C)
Phthalic Acid	-	-	SAT	200 (93)
Sodium Acetate	SAT	160 (71)	SAT	200 (93)
Sodium Benzoate	SAT	170 (77)	SAT	200 (93)
Sodium Bicarbonate	SAT	160 (71)	SAT	175 (79)
Sodium Bisulfate	ALL	170 (77)	ALL	200 (93)
Sodium Bromide	ALL	170 (77)	ALL	200 (93)
Sodium Carbonate	10	80 (27)	35	160 (71)
Sodium Chloride	SAT	170 (77)	SAT	200 (93)
Sodium Cyanide	SAT	170 (77)	SAT	200 (93)
Sodium Hydroxide	N/R	N/R	50	150 (66)
Sodium Hydroxide	N/R	N/R	25	80 (27)
Sodium Hypochloride	N/R	N/R	10	150 (66)
Sodium Monophosphate	SAT	170 (77)	SAT	200 (93)
Sodium Nitrate	SAT	170 (77)	SAT	200 (93)
Sodium Sulfate	SAT	170 (77)	SAT	200 (93)
Sodium Thiosulfate	ALL	100 (38)	ALL	120 (49)
Stannic Chloride	SAT	160 (71)	SAT	190 (88)
Styrene	N/R	N/R	N/R	N/R
Sulfated Detergent	0/50	170 (77)	0/50	200 (93)
Sulfur Dioxide	100	80 (27)	100	200 (93)
Sulfur Trioxide	100	80 (27)	100	200 (93)
Sulfuric Acid	93	N/R	93	N/R
Sulfuric Acid	50	N/R	50	180 (82)
Sulfuric Acid	25	75 (24)	25	190 (88)
Sulfurous Acid	SAT	80 (27)	N/R	N/R
Tartaric Acid	SAT	170 (77)	SAT	200 (93)
Tetrachloroethylene	N/R	N/R	FUM	75 (24)
Toluene	N/R	N/R	N/R	N/R
Trisodium Phosphate	N/R	N/R	SAT	175 (79)
Urea	SAT	130 (54)	SAT	140 (60)
Vinegar	100	170 (77)	100	200 (93)
Water, Distilled	100	170 (77)	100	190 (88)
Water, Tap	100	170 (77)	100	190 (88)
Water, Sea	SAT	170 (77)	SAT	190 (88)
Xylene	N/R	N/R	N/R	N/R
Zinc Chloride	SAT	170 (77)	SAT	200 (93)
Zinc Nitrate	SAT	170 (77)	SAT	200 (93)
Zinc Sulfate	SAT	170 (77)	SAT	200 (93)

SAT : Saturated
N / R : Not Recommended

E-LINE KCA GRP

Introduction

Mechanical Loading Specifications



NEMA FG-1 is a standard originating from the USA/Canada that specifies the test method for non-metallic cable trays. A single-size product is supported by two supports spaced at a distance L, and a uniformly distributed load is applied until failure occurs. The load value at the point of failure is divided by a safety factor of 1.5, and the safe load-carrying capacity is declared in kg/m for that span distance. The product class is classified using the numbers and letters specified in the tables below.

Numeric refers to span distance in Imperial units;

- 8 ft. (2,4 meters)
- 10 ft. (3,0 meters)
- 12 ft. (3,6 meters)
- 16 ft. (4,8 meters)
- 20 ft. (6,0 meters)

12°C: Safe working load of 149 kg/m with 3,6 meters support span

20°C: Safe working load of 149 kg/m with 6,0 meters support span

Alphabetic scales refer to safe working load;

- A (75kg/m)
- B (111 kg/m)
- C (149 kg/m)

NEMA FG-1 SPAN/LOAD CLAS DESIGNATION - USA					
Load kg/m (lb./ft.)	Support Span				
	2,4m (8ft.)	2,4m (8ft.)	3,6m (12ft.)	4,8m (16ft.)	6,0m (20ft.)
74 (50)	8A	10A	12A	16A	20A
112 (75)	8B	10B	12B	16B	20B
149 (100)	8C	10C	12C	16C	20C

IEC 61537 is an international testing standard of non-metallic cable trays ladders. Two runs of Cable ladder are joint and lay on at least three supports with a distance L and unsupported cantilever span 0,4L, then loaded until deflection limit L/100 reached. Loading is continued up to 1,7 safety factor. Then, the load capacity is noted as kg/m at tested support span.

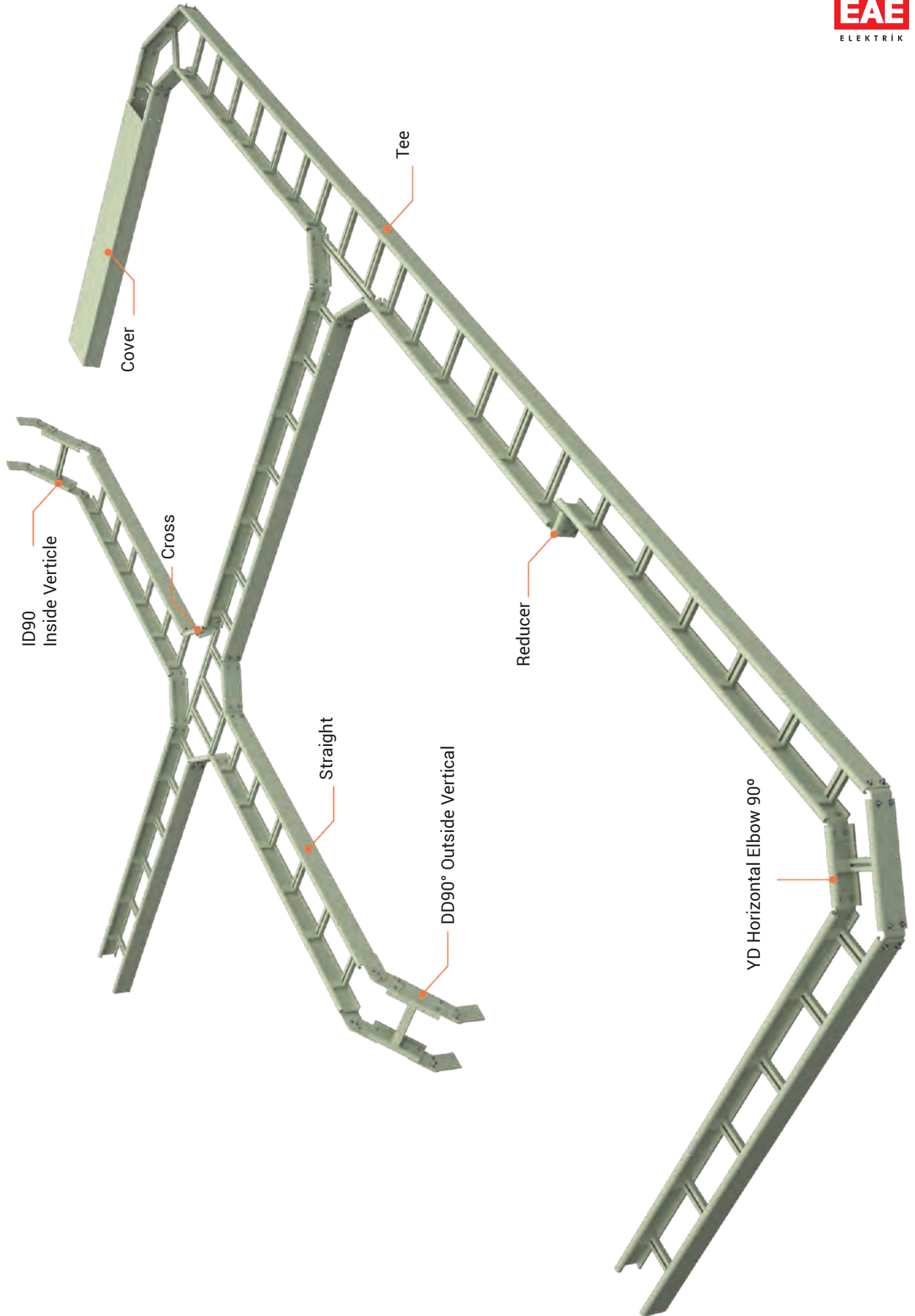
NEMA FG-1	IEC 61537
<ul style="list-style-type: none"> • A single product is tested in a single span. • No joint components are used. • A uniformly distributed load is applied. • Loading until collapse • Safety factor: 1.5 	<ul style="list-style-type: none"> • Multiple products are tested across multiple spans. • Joint components are used for connection. • A uniformly distributed load is applied. • Loading Until Deflection Limit (max. L/100). • Loading continues up to 1.7 times the limit. • Safety factor: 1.7

E-LINE KCA GRP



KCA GRP

System Components



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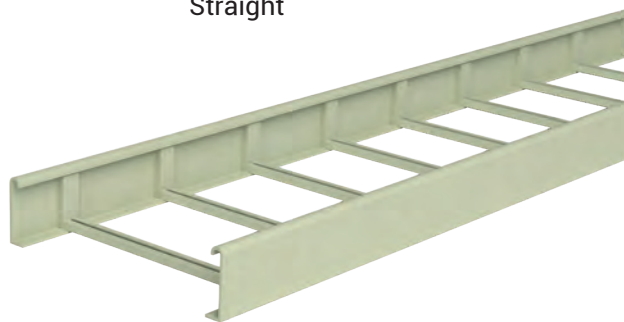
Cable Ladder



Horizontal Elbow 90°



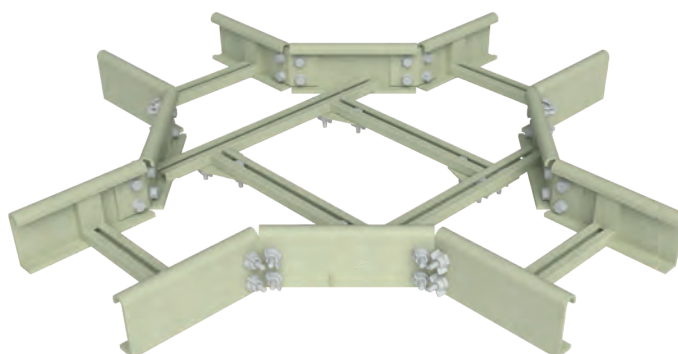
Straight



Tee



Cross



DD90° Vertical Outside Elbow



ID90° Vertical Inside Elbow



E-LINE KCA GRP

Straight

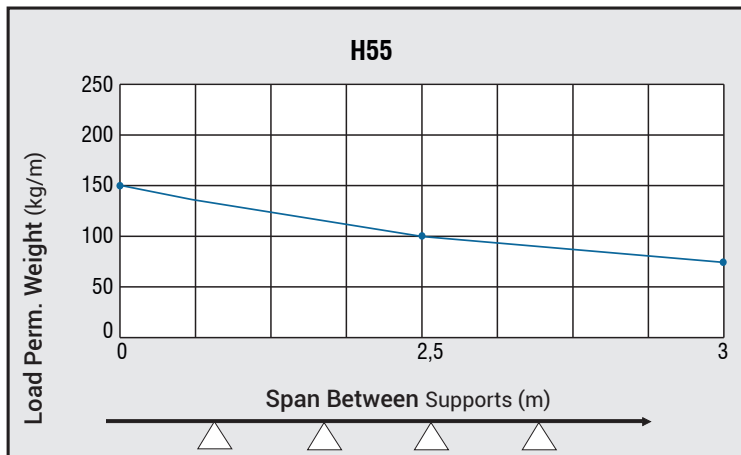
55 GRP Glass Reinforced Polyester Cable Ladder



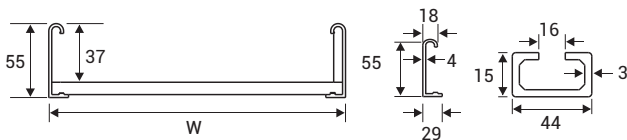
KCA GRP

Straight

- Side Rail Height (H) : 55mm
- Widths (W) : 150mm, 200mm, 300mm, 400mm, 450mm, 500mm, 600mm, 750mm, 900mm
- Standard Rung Spacing : 300mm
- Standard Lengths (L) : 3 meters/6 meters



- Safe working load values are based on continues beam test according to IEC 61537 standard.
- Please refer to Page 10 for the effect of temperature on strength.



3m Length		6m Length		Height (mm)	Width (mm)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description				
3398665	55 KCA GRP 150 / 3m	3398683	55 KCA GRP 150 / 6m	55	150	4	1,90
3398666	55 KCA GRP 200 / 3m	3398684	55 KCA GRP 200 / 6m	55	200	4	1,99
3398667	55 KCA GRP 300 / 3m	3398685	55 KCA GRP 300 / 6m	55	300	4	2,17
3398668	55 KCA GRP 400 / 3m	3398686	55 KCA GRP 400 / 6m	55	400	4	2,34
3398669	55 KCA GRP 450 / 3m	3398687	55 KCA GRP 450 / 6m	55	450	4	2,43
3398670	55 KCA GRP 500 / 3m	3398688	55 KCA GRP 500 / 6m	55	500	4	2,52
3398671	55 KCA GRP 600 / 3m	3398689	55 KCA GRP 600 / 6m	55	600	4	2,69
3398672	55 KCA GRP 750 / 3m	3398690	55 KCA GRP 750 / 6m	55	750	4	2,96
3398673	55 KCA GRP 900 / 3m	3398691	55 KCA GRP 900 / 6m	55	900	4	3,22

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Rung spacing** : 300 mm as standard. (Others available upon request) :
- **Connectors** : GRP as standard. (SS 316 grade available upon request. Page-36-37)
- **Fasteners** : 4 Set M8x25 SS316 Bolt Set

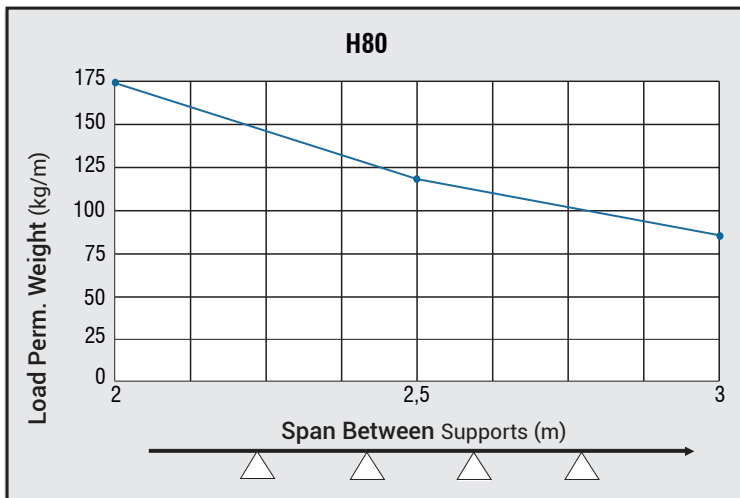
E-LINE KCA GRP

Straight

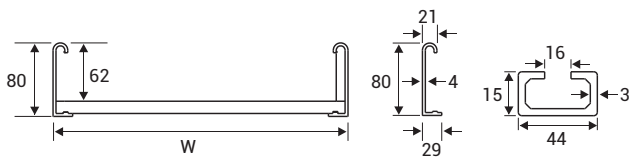
80 GRP Glass Reinforced Polyester Cable Ladder



- Side Rail Height (H) : 80mm
- Widths (W) : 150mm, 200mm, 300mm, 400mm, 450mm, 500mm, 600mm, 750mm, 900mm
- Standard Rung Spacing : 300mm
- Standard Lengths (L) : 3 meters/6 meters



- Safe working load values are based on continuous beam test according to IEC 61537 standard.
- Please refer to Page 10 for the effect of temperature on strength.



3m Length		6m Length		Height (mm)	Width (mm)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description				
3398674	80 KCA GRP 150 / 3m	3398692	80 KCA GRP 150 / 6m	80	150	4	2,55
3398675	80 KCA GRP 200 / 3m	3398693	80 KCA GRP 200 / 6m	80	200	4	2,64
3398676	80 KCA GRP 300 / 3m	3398694	80 KCA GRP 300 / 6m	80	300	4	2,71
3398677	80 KCA GRP 400 / 3m	3398695	80 KCA GRP 400 / 6m	80	400	4	2,99
3398678	80 KCA GRP 450 / 3m	3398696	80 KCA GRP 450 / 6m	80	450	4	3,08
3398679	80 KCA GRP 500 / 3m	3398697	80 KCA GRP 500 / 6m	80	500	4	3,17
3398680	80 KCA GRP 600 / 3m	3398698	80 KCA GRP 600 / 6m	80	600	4	3,34
3398681	80 KCA GRP 750 / 3m	3398699	80 KCA GRP 750 / 6m	80	750	4	3,61
3398682	80 KCA GRP 900 / 3m	3398700	80 KCA GRP 900 / 6m	80	900	4	3,88

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Rung spacing : 300 mm as standard. (Others available upon request) :
- Connectors : GRP as standard. (SS 316 grade available upon request. Page-36-37)
- Fasteners : M10x25 SS316 Bolt Set or M10x40 GRP Bolt Set Overview

E-LINE KCA GRP

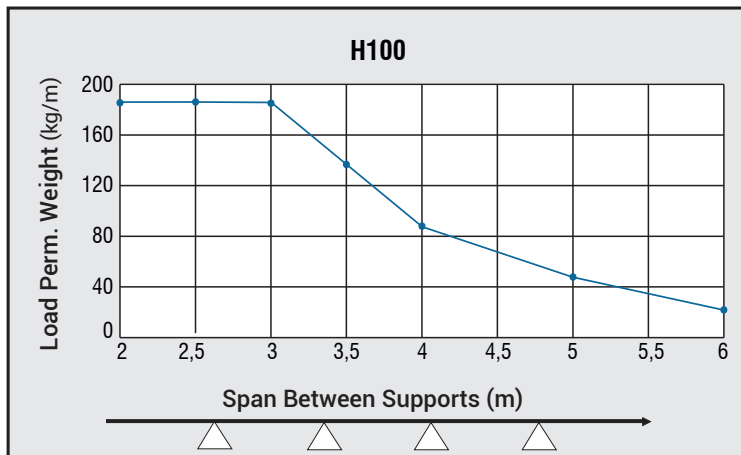
Straight

100 GRP NEMA 12C Series Glass Reinforced Polyester Cable Ladder

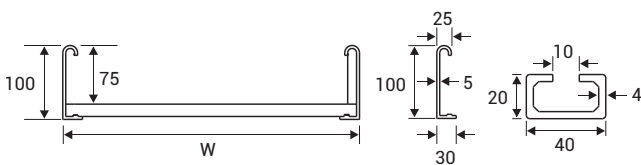


KCA GRP

- Side Rail Height (H) : 100mm
- Widths (W) : 150mm, 200mm, 300mm, 400mm, 450mm, 500mm, 600mm, 750mm, 900mm
- Standard Rung Spacing : 300mm
- Standard Lengths (L) : 3 meters/6 meters



- Safe working load values are based on continuous beam test according to IEC 61537 standard.
- Please refer to Page 10 for the effect of temperature on strength.



3m Length		6m Length		Height (mm)	Width (mm)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description				
3177379	100 KCA GRP 150 / 3m	3203076	100 KCA GRP 150 / 6m	100	150	5	3,35
3177380	100 KCA GRP 200 / 3m	3203077	100 KCA GRP 200 / 6m	100	200	5	3,43
3177381	100 KCA GRP 300 / 3m	3203078	100 KCA GRP 300 / 6m	100	300	5	3,62
3177382	100 KCA GRP 400 / 3m	3203079	100 KCA GRP 400 / 6m	100	400	5	3,80
3177383	100 KCA GRP 450 / 3m	3203080	100 KCA GRP 450 / 6m	100	450	5	3,90
3177384	100 KCA GRP 500 / 3m	3203081	100 KCA GRP 500 / 6m	100	500	5	4,00
3177385	100 KCA GRP 600 / 3m	3203082	100 KCA GRP 600 / 6m	100	600	5	4,17
3177386	100 KCA GRP 750 / 3m	3203083	100 KCA GRP 750 / 6m	100	750	5	4,46
3177387	100 KCA GRP 900 / 3m	3203084	100 KCA GRP 900 / 6m	100	900	5	4,73

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Rung spacing : 300 mm as standard. (Others available upon request) :
- Connectors : GRP as standard. (SS 316 grade available upon request. Page-36-37)
- Fasteners : M10x25 SS316 Bolt Set or M10x40 GRP Bolt Set Overview

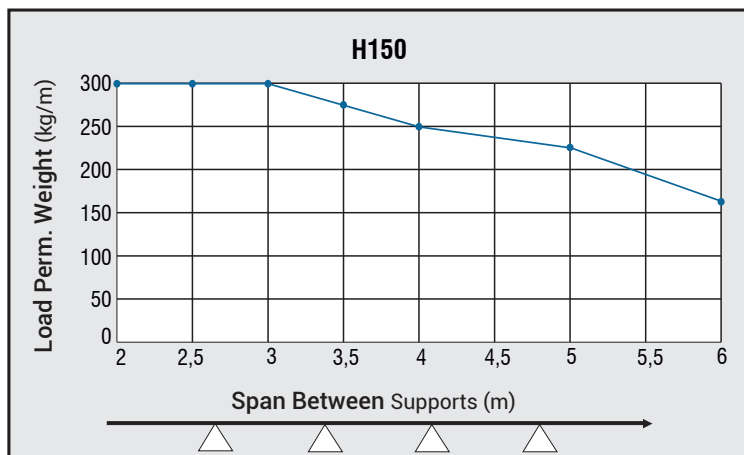
E-LINE KCA GRP

Straight

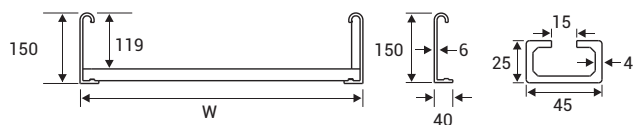
150 GRP NEMA 20C Series Glass Reinforced Polyester Cable Ladder



- Side Rail Height (H) : 150mm
- Widths (W) : 150mm, 200mm, 300mm, 400mm, 450mm, 500mm, 600mm, 750mm, 900mm
- Standard Rung Spacing : 300mm
- Standard Lengths (L) : 3 meters/6 meters



- Safe working load values are based on continues beam test according to IEC 61537 standard.
- Please refer to Page 10 for the effect of temperature on strength.



3m Length		6m Length		Height (mm)	Width (mm)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description				
3177388	150 KCA GRP 150 / 3m	3203085	150 KCA GRP 150 / 6m	150	150	6	5,70
3177389	150 KCA GRP 200 / 3m	3203086	150 KCA GRP 200 / 6m	150	200	6	5,84
3177390	150 KCA GRP 300 / 3m	3203087	150 KCA GRP 300 / 6m	150	300	6	6,11
3177391	150 KCA GRP 400 / 3m	3203088	150 KCA GRP 400 / 6m	150	400	6	6,39
3177392	150 KCA GRP 450 / 3m	3203089	150 KCA GRP 450 / 6m	150	450	6	6,54
3177393	150 KCA GRP 500 / 3m	3203090	150 KCA GRP 500 / 6m	150	500	6	6,65
3177394	150 KCA GRP 600 / 3m	3203091	150 KCA GRP 600 / 6m	150	600	6	6,95
3177395	150 KCA GRP 750 / 3m	3203092	150 KCA GRP 750 / 6m	150	750	6	7,37
3177396	150 KCA GRP 900 / 3m	3203093	150 KCA GRP 900 / 6m	150	900	6	7,79

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Rung spacing : 300 mm as standard. (Others available upon request) :
- Connectors : GRP as standard. (SS 316 grade available upon request. Page-36-37)
- Fasteners : M10x25 SS316 Bolt Set or M10x40 GRP Bolt Set Overview

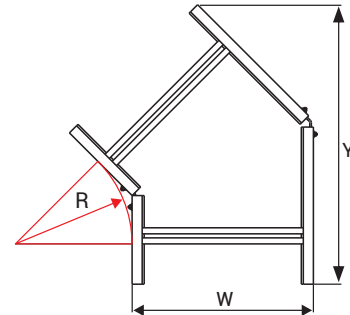
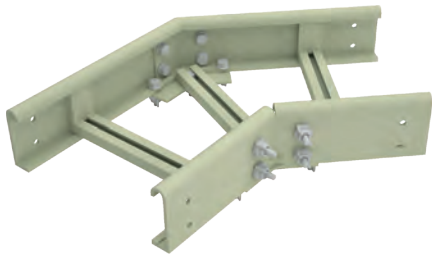
E-LINE KCA GRP

Fittings

YD45° Horizontal 45° Elbow (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)				Y (mm)
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150	
150	300	KCA GRP 150/YD45°/R300	3398702	3398738	3193237	3193264	1,23	1,71	1,98	3,45	490
	450	KCA GRP 150/YD45°/R450	3398711	3398747	3193246	3193273	1,46	2,01	2,35	4,08	601
	600	KCA GRP 150/YD45°/R600	3398720	3398756	3193255	3193282	1,88	2,53	2,99	5,19	704
	900	KCA GRP 150/YD45°/R900	3398729	3398765	3393691	3395644	2,41	3,15	4,10	6,50	917
200	300	KCA GRP 200/YD45°/R300	3398703	3398739	3193238	3193265	1,33	1,82	2,09	3,63	526
	450	KCA GRP 200/YD45°/R450	3398712	3398748	3193247	3193274	1,55	2,11	2,46	4,26	636
	600	KCA GRP 200/YD45°/R600	3398721	3398757	3193256	3193283	2,02	2,69	3,16	5,13	739
	900	KCA GRP 200/YD45°/R900	3398730	3398766	3393695	3395645	2,59	3,34	4,35	6,85	953
300	300	KCA GRP 300/YD45°/R300	3398704	3398740	3193239	3193266	1,89	2,40	2,66	4,44	596
	450	KCA GRP 300/YD45°/R450	3398713	3398749	3193248	3193275	2,12	2,69	2,03	5,03	701
	600	KCA GRP 300/YD45°/R600	3398722	3398758	3193257	3193284	2,70	3,38	3,50	5,98	810
	900	KCA GRP 300/YD45°/R900	3398731	3398767	3393696	3395646	2,91	3,68	4,83	7,44	1023
400	300	KCA GRP 400/YD45°/R300	3398705	3398741	3193240	3193267	2,13	2,40	2,95	4,85	667
	450	KCA GRP 400/YD45°/R450	3398714	3398750	3193249	3193276	2,35	2,96	3,32	5,47	778
	600	KCA GRP 400/YD45°/R600	3398723	3398759	3193258	3193285	3,05	3,76	3,85	7,00	880
	900	KCA GRP 400/YD45°/R900	3398732	3398768	3393697	3395647	3,29	4,09	5,27	8,17	1094
450	300	KCA GRP 450/YD45°/R300	3398706	3398742	3193241	3193268	2,25	2,79	3,09	5,07	702
	450	KCA GRP 450/YD45°/R450	3398715	3398751	3193250	3193277	2,47	3,09	3,46	5,70	813
	600	KCA GRP 450/YD45°/R600	3398724	3398760	3193259	3193286	3,23	3,95	4,06	7,31	916
	900	KCA GRP 450/YD45°/R900	3398733	3398769	3393698	3395648	3,42	4,22	5,51	8,38	1129
500	300	KCA GRP 500/YD45°/R300	3398707	3398743	3193242	3193269	2,37	2,92	3,25	5,32	738
	450	KCA GRP 500/YD45°/R450	3398716	3398752	3193251	3193278	2,59	3,22	3,62	5,94	849
	600	KCA GRP 500/YD45°/R600	3398725	3398761	3193260	3193287	3,40	4,13	4,66	7,64	951
	900	KCA GRP 500/YD45°/R900	3398734	3398770	3393699	3395649	3,59	4,41	5,75	8,71	1164
600	300	KCA GRP 600/YD45°/R300	3398708	3398744	3193243	3193270	2,73	3,18	3,54	5,76	808
	450	KCA GRP 600/YD45°/R450	3398717	3398753	3193252	3193279	2,84	3,48	3,91	6,38	738
	600	KCA GRP 600/YD45°/R600	3398726	3398762	3193261	3193288	3,76	4,51	5,06	8,25	1022
	900	KCA GRP 600/YD45°/R900	3398735	3398771	3393700	3395650	3,92	4,75	6,23	9,37	1235
750	300	KCA GRP 750/YD45°/R300	3398709	3398745	3193244	3193271	2,98	3,60	3,98	6,24	914
	450	KCA GRP 750/YD45°/R450	3398718	3398754	3193253	3193280	3,21	3,89	4,43	7,07	1025
	600	KCA GRP 750/YD45°/R600	3398727	3398763	3193262	3193289	4,30	5,09	5,68	9,18	1128
	900	KCA GRP 750/YD45°/R900	3398736	3398772	3393701	3395651	4,48	5,36	7,00	10,42	1341
900	300	KCA GRP 900/YD45°/R300	3398710	3398746	3193245	3193272	3,35	4,00	4,43	7,13	1020
	450	KCA GRP 900/YD45°/R450	3398719	3398755	3193254	3193281	3,58	4,29	4,80	7,76	1131
	600	KCA GRP 900/YD45°/R600	3398728	3398764	3193263	3193290	4,84	5,66	6,30	10,12	1234
	900	KCA GRP 900/YD45°/R900	3398737	3398773	3393702	3395652	4,94	5,85	7,77	11,24	1447

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

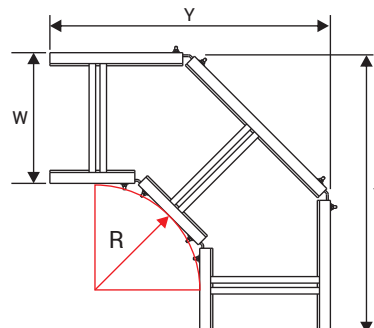
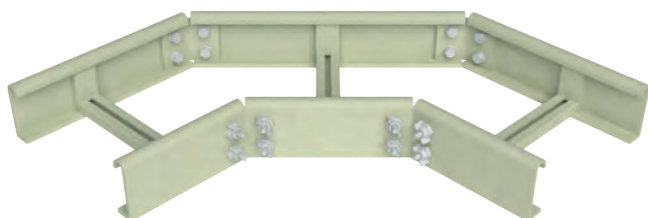
E-LINE KCA GRP

Fittings

YD90° Horizontal 90° Elbow (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)				Y (mm)
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150	
150	300	KCA GRP 150 YD90° R300	3398775	3398811	3177591	3177600	2,33	2,83	3,08	5,36	547
	450	KCA GRP 150 YD90° R450	3398784	3398820	3177397	3177406	2,56	3,13	3,45	5,99	639
	600	KCA GRP 150 YD90° R600	3398793	3398829	3177672	3177681	2,90	3,53	3,94	6,83	724
	900	KCA GRP 150 YD90° R900	3398802	3398838	3395617	3395626	4,22	5,51	6,70	11,21	1152
200	300	KCA GRP 200 YD90° R300	3398776	3398812	3177592	3177601	2,48	3,52	3,28	5,68	597
	450	KCA GRP 200 YD90° R450	3398785	3398821	3177398	3177407	2,72	3,31	3,65	6,31	689
	600	KCA GRP 200 YD90° R600	3398794	3398830	3177673	3177682	3,08	3,73	4,17	7,19	774
	900	KCA GRP 200 YD90° R900	3398803	3398839	3395618	3395627	4,47	5,79	7,23	11,73	1202
300	300	KCA GRP 300 YD90° R300	3398777	3398813	3177593	3177602	2,80	3,85	3,68	6,31	697
	450	KCA GRP 300 YD90° R450	3398786	3398822	3177399	3177408	3,49	4,12	4,74	7,77	789
	600	KCA GRP 300 YD90° R600	3398795	3398831	3177674	3177683	3,71	4,39	5,16	8,35	874
	900	KCA GRP 300 YD90° R900	3398804	3398840	3395619	3395628	5,23	6,59	8,01	13,17	1302
400	300	KCA GRP 400 YD90° R300	3398778	3398814	3177594	3177603	3,68	4,65	4,89	7,96	797
	450	KCA GRP 400 YD90° R450	3398787	3398823	3177400	3177409	3,91	4,58	5,28	8,58	889
	600	KCA GRP 400 YD90° R600	3398796	3398832	3177675	3177684	4,13	4,85	5,90	9,48	974
	900	KCA GRP 400 YD90° R900	3398805	3398841	3395620	3395629	5,80	7,21	8,67	14,27	1402
450	300	KCA GRP 450 YD90° R300	3398779	3398815	3177595	3177604	3,89	4,52	5,15	8,36	847
	450	KCA GRP 450 YD90° R450	3398788	3398824	3177401	3177410	4,12	4,81	5,52	8,99	939
	600	KCA GRP 450 YD90° R600	3398797	3398833	3177676	3177685	4,63	5,38	6,18	9,92	1024
	900	KCA GRP 450 YD90° R900	3398806	3398842	3395621	3395630	6,05	7,47	9,03	14,73	1452
500	300	KCA GRP 500 YD90° R300	3398780	3398816	3177596	3177605	4,11	5,24	5,43	8,80	897
	450	KCA GRP 500 YD90° R450	3398789	3398825	3177402	3177411	4,35	5,05	5,80	9,42	989
	600	KCA GRP 500 YD90° R600	3398798	3398834	3177677	3177686	4,89	5,64	6,49	10,56	1074
	900	KCA GRP 500 YD90° R900	3398807	3398843	3395622	3395631	6,35	7,79	9,46	15,30	1502
600	300	KCA GRP 600 YD90° R300	3398781	3398817	3177597	3177606	4,44	5,54	5,94	9,60	997
	450	KCA GRP 600 YD90° R450	3398790	3398826	3177403	3177412	4,79	5,53	6,31	10,23	1089
	600	KCA GRP 600 YD90° R600	3398799	3398835	3177678	3177687	5,38	6,18	6,73	12,42	1174
	900	KCA GRP 600 YD90° R900	3398808	3398844	3395623	3395632	6,88	8,36	10,14	16,33	1602
750	300	KCA GRP 750 YD90° R300	3398782	3398818	3177598	3177607	5,20	5,94	6,75	10,86	1147
	450	KCA GRP 750 YD90° R450	3398791	3398827	3177404	3177413	5,44	6,24	7,12	11,48	1239
	600	KCA GRP 750 YD90° R600	3398800	3398836	3177679	3177688	6,11	6,97	7,54	12,83	1324
	900	KCA GRP 750 YD90° R900	3398809	3398845	3395624	3395633	7,81	9,38	11,14	18,15	1752
900	300	KCA GRP 900 YD90° R300	3398783	3398819	3177599	3177608	5,87	6,67	7,56	12,10	1297
	450	KCA GRP 900 YD90° R450	3398792	3398828	3177405	3177414	6,11	6,96	7,93	12,72	1389
	600	KCA GRP 900 YD90° R600	3398801	3398837	3177680	3177689	6,87	7,78	8,85	14,20	1474
	900	KCA GRP 900 YD90° R900	3398810	3398846	3395625	3395634	8,64	10,27	12,19	19,71	1902

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

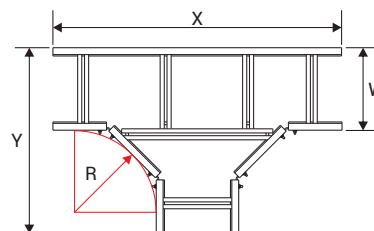
E-LINE KCA GRP

Fittings

YT Fitting (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)				Y (mm)
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150	
150	300	KCA GRP 150/YT/R300	3398847	3398884	3177609	3177618	3,05	4,19	4,78	7,53	955
	450	KCA GRP 150/YT/R450	3398856	3398893	3177433	3177442	4,58	5,46	6,24	9,96	1265
	600	KCA GRP 150/YT/R600	3398866	3398902	3177690	3177699	5,59	6,64	7,74	12,52	1555
	900	KCA GRP 150/YT/R900	3398875	3398911	3395635	3395653	6,76	8,53	11,01	17,50	2154
200	300	KCA GRP 200/YT/R300	3398848	3398885	3177610	3177619	3,69	4,04	5,11	7,91	1005
	450	KCA GRP 200/YT/R450	3398857	3398894	3177434	3177443	4,79	5,68	6,48	10,33	1315
	600	KCA GRP 200/YT/R600	3398867	3398903	3177691	3177700	5,83	6,90	8,16	12,97	1605
	900	KCA GRP 200/YT/R900	3398876	3398912	3395636	3395654	7,01	8,77	11,37	17,98	2204
300	300	KCA GRP 300/YT/R300	3398849	3398886	3177611	3177620	4,36	4,98	5,69	8,93	1105
	450	KCA GRP 300/YT/R450	3398858	3398895	3177435	3177444	5,52	6,43	7,26	11,48	1415
	600	KCA GRP 300/YT/R600	3398868	3398904	3177692	3177701	6,31	7,40	8,89	13,90	1705
	900	KCA GRP 300/YT/R900	3398877	3398913	3395637	3395655	7,83	9,62	12,59	19,47	2304
400	300	KCA GRP 400/YT/R300	3398850	3398887	3177612	3177621	4,79	5,09	6,18	9,10	1205
	450	KCA GRP 400/YT/R450	3398859	3398896	3177436	3177445	6,00	6,94	7,81	12,1	1515
	600	KCA GRP 400/YT/R600	3398869	3398905	3177693	3177702	7,49	8,61	9,70	15,31	1805
	900	KCA GRP 400/YT/R900	3398878	3398914	3395638	3395656	8,39	10,21	13,38	20,55	2404
450	300	KCA GRP 450/YT/R300	3398851	3398888	3177613	3177622	5,00	5,76	6,42	10,04	1255
	450	KCA GRP 450/YT/R450	3398861	3398897	3177437	3177446	6,24	7,19	8,10	12,74	1565
	600	KCA GRP 450/YT/R600	3398870	3398906	3177694	3177703	7,79	8,91	10,02	15,79	1855
	900	KCA GRP 450/YT/R900	3398879	3398915	3395639	3395657	8,68	10,52	13,80	21,04	2454
500	300	KCA GRP 500/YT/R300	3398852	3398889	3177614	3177623	5,22	5,94	6,66	10,41	1305
	450	KCA GRP 500/YT/R450	3398862	3398898	3177438	3177447	6,49	7,45	8,35	13,13	1615
	600	KCA GRP 500/YT/R600	3398871	3398907	3177695	3177704	8,09	9,23	10,35	16,28	1905
	900	KCA GRP 500/YT/R900	3398880	3398916	3395640	3395658	8,99	10,83	14,23	21,54	2504
600	300	KCA GRP 600/YT/R300	3398853	3398890	3177615	3177624	5,58	6,30	7,68	12,30	1405
	450	KCA GRP 600/YT/R450	3398863	3398899	3177439	3177448	7,44	8,42	9,46	14,65	1715
	600	KCA GRP 600/YT/R600	3398872	3398908	3177696	3177705	8,63	9,78	11,02	17,30	2005
	900	KCA GRP 600/YT/R900	3398881	3398917	3395641	3395659	9,66	11,53	15,24	22,65	2604
750	300	KCA GRP 750/YT/R300	3398854	3398891	3177616	3177625	6,84	7,67	8,42	13,07	1555
	450	KCA GRP 750/YT/R450	3398864	3398900	3177440	3177449	8,25	9,27	10,27	16,01	1865
	600	KCA GRP 750/YT/R600	3398873	3398909	3177697	3177706	10,14	11,33	12,54	19,58	2155
	900	KCA GRP 750/YT/R900	3398882	3398918	3395642	3395660	10,97	12,89	17,14	24,09	2754
900	300	KCA GRP 900/YT/R300	3398855	3398892	3177617	3177626	8,20	9,07	9,78	15,22	1705
	450	KCA GRP 900/YT/R450	3398865	3398901	3177441	3177450	9,70	10,76	11,76	18,21	2015
	600	KCA GRP 900/YT/R600	3398874	3398910	3177698	3177707	11,75	12,98	14,23	22,02	2300
	900	KCA GRP 900/YT/R900	3398883	3398919	3395643	3395661	11,97	13,93	18,55	26,07	2904

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

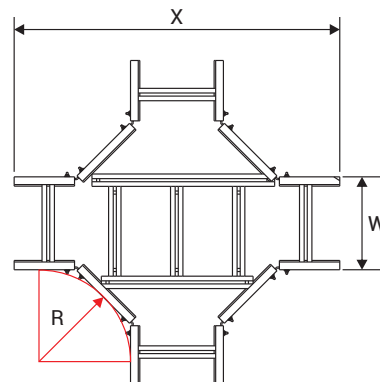
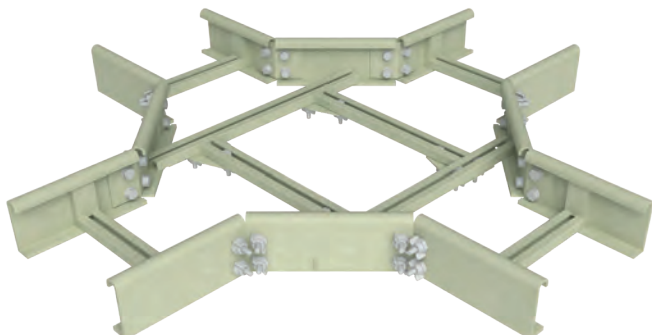
E-LINE KCA GRP

Fittings

AD Horizontal Cross (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)				Y (mm)
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150	
150	300	KCA GRP 150/AD/R300	3398920	3398956	3177627	3177636	4,90	5,85	6,44	10,95	954
	450	KCA GRP 150/AD/R450	3398929	3398965	3177451	3177460	6,37	7,55	8,32	14,04	1267
	600	KCA GRP 150/AD/R600	3398938	3398974	3177708	3177717	7,76	9,16	10,58	17,58	1557
	900	KCA GRP 150/AD/R900	3398947	3398983	3395721	3395735	9,40	11,64	14,37	22,97	2154
200	300	KCA GRP 200/AD/R300	3398921	3398957	3177628	3177637	5,10	6,04	6,59	11,24	1004
	450	KCA GRP 200/AD/R450	3398930	3398966	3177452	3177461	6,60	7,78	8,55	14,38	1317
	600	KCA GRP 200/AD/R600	3398939	3398975	3177709	3177718	8,08	9,91	10,89	18,04	1607
	900	KCA GRP 200/AD/R900	3398948	3398984	3395722	3395736	9,67	11,90	14,78	23,34	2204
300	300	KCA GRP 300/AD/R300	3398922	3398958	3177629	3177638	5,90	6,84	7,32	12,26	1104
	450	KCA GRP 300/AD/R450	3398931	3398967	3177453	3177462	7,45	8,64	9,35	15,48	1417
	600	KCA GRP 300/AD/R600	3398940	3398976	3177710	3177719	8,99	10,93	11,54	19,00	1707
	900	KCA GRP 300/AD/R900	3398949	3398985	3395723	3395737	10,73	12,97	16,09	24,91	2304
400	300	KCA GRP 400/AD/R300	3398923	3398959	3177630	3177639	6,35	7,29	7,79	12,93	1204
	450	KCA GRP 400/AD/R450	3398932	3398968	3177454	3177463	7,96	9,14	9,94	16,10	1517
	600	KCA GRP 400/AD/R600	3398941	3398977	3177711	3177720	9,55	11,60	12,57	20,45	1807
	900	KCA GRP 400/AD/R900	3398950	3398986	3395724	3395738	11,34	13,58	17,01	26,05	2404
450	300	KCA GRP 450/AD/R300	3398924	3398960	3177631	3177640	6,58	7,52	8,01	13,26	1254
	450	KCA GRP 450/AD/R450	3398933	3398969	3177455	3177464	8,21	9,39	10,16	16,65	1567
	600	KCA GRP 450/AD/R600	3398942	3398978	3177712	3177721	9,83	11,94	12,90	20,19	1857
	900	KCA GRP 450/AD/R900	3398951	3398987	3395725	3395739	11,64	13,87	17,54	26,50	2454
500	300	KCA GRP 500/AD/R300	3398925	3398961	3177632	3177641	6,80	7,74	8,26	13,60	1304
	450	KCA GRP 500/AD/R450	3398934	3398970	3177456	3177465	8,47	9,65	10,39	16,99	1617
	600	KCA GRP 500/AD/R600	3398943	3398979	3177713	3177722	10,11	12,28	13,24	21,41	1907
	900	KCA GRP 500/AD/R900	3398952	3398988	3395726	3395740	12,04	14,27	17,96	27,09	2504
600	300	KCA GRP 600/AD/R300	3398926	3398962	3177633	3177642	7,82	8,77	9,78	15,50	1404
	450	KCA GRP 600/AD/R450	3398935	3398971	3177457	3177466	9,55	10,73	11,45	18,48	1717
	600	KCA GRP 600/AD/R600	3398944	3398980	3177714	3177723	10,68	12,95	13,96	22,46	2007
	900	KCA GRP 600/AD/R900	3398953	3398989	3395727	3395741	12,78	15,02	18,79	28,10	2604
750	300	KCA GRP 750/AD/R300	3398927	3398963	3177634	3177643	8,58	9,53	10,00	16,10	1554
	450	KCA GRP 750/AD/R450	3398936	3398972	3177458	3177467	10,39	11,57	12,31	19,73	1867
	600	KCA GRP 750/AD/R600	3398945	3398981	3177715	3177724	12,18	14,62	15,12	24,77	2157
	900	KCA GRP 750/AD/R900	3398954	3398990	3395728	3395742	14,27	16,51	21,00	30,67	2754
900	300	KCA GRP 900/AD/R300	3398928	3398964	3177635	3177644	10,09	11,03	11,45	18,16	1704
	450	KCA GRP 900/AD/R450	3398937	3398973	3177459	3177468	11,98	13,16	13,85	21,93	2017
	600	KCA GRP 900/AD/R600	3398946	3398982	3177716	3177725	13,85	16,46	17,36	27,36	2307
	900	KCA GRP 900/AD/R900	3398955	3398991	3395729	3395743	15,34	17,57	22,67	32,42	2904

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

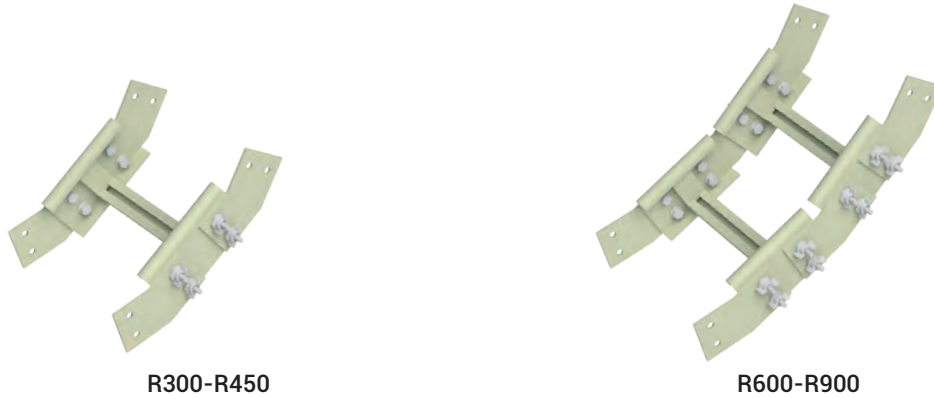
E-LINE KCA GRP

Fittings

ID45° Inside Vertical Fitting (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
150	300	KCA GRP 150/ID45/R300	3399064	3399100	3395745	3395781	0,87	0,94	1,10	1,81
	450	KCA GRP 150/ID45/R450	3399073	3399109	3395754	3395790	0,94	1,03	1,22	2,00
	600	KCA GRP 150/ID45/R600	3399082	3399118	3395763	3395799	1,58	1,72	2,22	3,35
	900	KCA GRP 150/ID45/R900	3399091	3399127	3395772	3395808	1,58	2,04	2,65	4,07
200	300	KCA GRP 200/ID45/R300	3399065	3399101	3395746	3395782	0,90	0,96	1,14	1,85
	450	KCA GRP 200/ID45/R450	3399074	3399110	3395755	3395791	0,97	1,05	1,25	2,04
	600	KCA GRP 200/ID45/R600	3399083	3399119	3395764	3395800	1,63	1,77	2,26	3,44
	900	KCA GRP 200/ID45/R900	3399092	3399128	3395773	3395809	1,64	2,09	2,69	4,16
300	300	KCA GRP 300/ID45/R300	3399066	3399102	3395747	3395783	0,95	1,02	1,21	1,93
	450	KCA GRP 300/ID45/R450	3399075	3399111	3395756	3395792	1,03	1,11	1,33	2,13
	600	KCA GRP 300/ID45/R600	3399084	3399120	3395765	3395801	1,74	1,89	2,33	3,60
	900	KCA GRP 300/ID45/R900	3399093	3399129	3395774	3395810	1,74	2,20	2,76	4,32
400	300	KCA GRP 400/ID45/R300	3399067	3399103	3395748	3395784	1,01	1,08	1,28	2,02
	450	KCA GRP 400/ID45/R450	3399076	3399112	3395757	3395793	1,08	1,17	1,40	2,21
	600	KCA GRP 400/ID45/R600	3399085	3399121	3395766	3395802	1,86	2,00	2,41	3,77
	900	KCA GRP 400/ID45/R900	3399094	3399130	3395775	3395811	1,85	2,30	2,83	4,49
450	300	KCA GRP 450/ID45/R300	3399068	3399104	3395749	3395785	1,04	1,10	1,32	2,06
	450	KCA GRP 450/ID45/R450	3399077	3399113	3395758	3395794	1,11	1,19	1,43	2,25
	600	KCA GRP 450/ID45/R600	3399086	3399122	3395767	3395803	1,91	2,06	2,44	3,85
	900	KCA GRP 450/ID45/R900	3399095	3399131	3395776	3395812	1,90	2,36	2,87	4,57
500	300	KCA GRP 500/ID45/R300	3399069	3399105	3395750	3395786	1,07	1,13	1,36	2,10
	450	KCA GRP 500/ID45/R450	3399078	3399114	3395759	3395795	1,14	1,22	1,47	2,29
	600	KCA GRP 500/ID45/R600	3399087	3399123	3395768	3395804	1,97	2,11	2,48	3,94
	900	KCA GRP 500/ID45/R900	3399096	3399132	3395777	3395813	1,96	2,41	2,91	4,66
600	300	KCA GRP 600/ID45/R300	3399070	3399106	3395751	3395787	1,12	1,19	1,43	2,18
	450	KCA GRP 600/ID45/R450	3399079	3399115	3395760	3395796	1,19	1,28	1,54	2,38
	600	KCA GRP 600/ID45/R600	3399088	3399124	3395769	3395805	2,08	2,22	2,55	4,10
	900	KCA GRP 600/ID45/R900	3399097	3399133	3395778	3395814	2,06	2,52	2,98	4,83
750	300	KCA GRP 750/ID45/R300	3399071	3399107	3395752	3395788	1,21	1,27	1,54	2,31
	450	KCA GRP 750/ID45/R450	3399080	3399116	3395761	3395797	1,28	1,36	1,65	2,50
	600	KCA GRP 750/ID45/R600	3399089	3399125	3395770	3395806	2,25	2,39	2,66	4,35
	900	KCA GRP 750/ID45/R900	3399098	3399134	3395779	3395815	2,22	2,68	3,09	5,08
900	300	KCA GRP 900/ID45/R300	3399072	3399108	3395753	3395789	1,29	1,36	1,65	2,44
	450	KCA GRP 900/ID45/R450	3399081	3399117	3395762	3395798	1,36	1,45	1,76	2,63
	600	KCA GRP 900/ID45/R600	3399090	3399126	3395771	3395807	2,42	2,56	2,77	4,61
	900	KCA GRP 900/ID45/R900	3399099	3399135	3395780	3395816	2,38	2,84	3,20	5,33

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

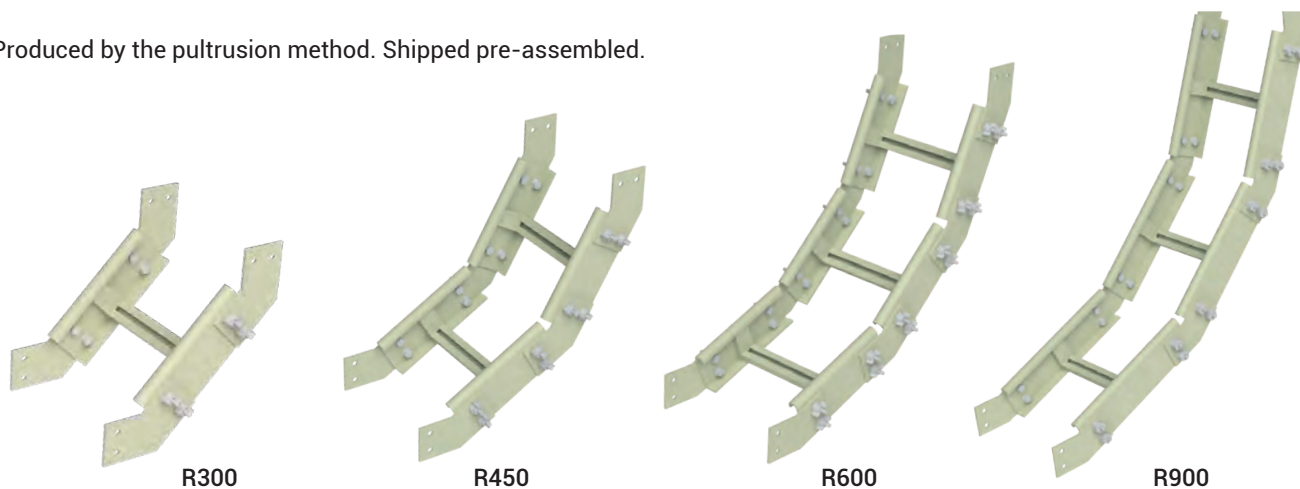
E-LINE KCA GRP

Fittings

ID90° Inside Vertical Fitting (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
150	300	KCA GRP 150/ID90/R300	3399137	3399173	3193516	3193543	1,06	1,22	1,54	2,53
	450	KCA GRP 150/ID90/R450	3399146	3399182	3193525	3193552	1,90	2,20	2,84	4,67
	600	KCA GRP 150/ID90/R600	3399155	3399191	3193534	3193561	2,73	3,19	4,13	6,79
	900	KCA GRP 150/ID90/R900	3399164	3399200	3395817	3395828	1,95	2,59	4,80	7,81
200	300	KCA GRP 200/ID90/R300	3399138	3399174	3193517	3193544	1,09	1,25	1,50	2,59
	450	KCA GRP 200/ID90/R450	3399147	3399183	3193526	3193553	1,95	2,26	2,75	4,30
	600	KCA GRP 200/ID90/R600	3399156	3399192	3193535	3193562	2,82	3,27	4,00	6,20
	900	KCA GRP 200/ID90/R900	3399165	3399201	3395818	3395829	2,00	2,64	4,91	7,93
300	300	KCA GRP 300/ID90/R300	3399139	3399175	3193518	3193545	1,15	1,30	1,68	2,55
	450	KCA GRP 300/ID90/R450	3399148	3399184	3193527	3193554	2,07	2,37	2,85	4,75
	600	KCA GRP 300/ID90/R600	3399157	3399193	3193536	3193563	2,99	3,44	3,00	7,15
	900	KCA GRP 300/ID90/R900	3399166	3399202	3395819	3395830	2,11	2,75	5,13	8,18
400	300	KCA GRP 400/ID90/R300	3399140	3399176	3193519	3193546	1,20	1,61	1,68	2,75
	450	KCA GRP 400/ID90/R450	3399149	3399185	3193528	3193555	2,18	2,48	3,11	5,07
	600	KCA GRP 400/ID90/R600	3399158	3399194	3193537	3193564	3,15	3,61	4,55	7,39
	900	KCA GRP 400/ID90/R900	3399167	3399203	3395820	3395831	2,21	2,85	5,35	8,44
450	300	KCA GRP 450/ID90/R300	3399141	3399177	3193520	3193547	1,53	1,68	2,03	3,33
	450	KCA GRP 450/ID90/R450	3399150	3399186	3193529	3193556	2,23	2,54	3,17	5,15
	600	KCA GRP 450/ID90/R600	3399159	3399195	3193538	3193565	3,24	3,70	4,63	7,51
	900	KCA GRP 450/ID90/R900	3399168	3399204	3395821	3395832	2,26	2,91	5,45	8,56
500	300	KCA GRP 500/ID90/R300	3399142	3399178	3193521	3193548	1,58	1,73	2,08	3,41
	450	KCA GRP 500/ID90/R450	3399151	3399187	3193530	3193557	2,29	2,60	3,22	5,23
	600	KCA GRP 500/ID90/R600	3399160	3399196	3193539	3193566	3,32	3,78	4,71	7,64
	900	KCA GRP 500/ID90/R900	3399169	3399205	3395822	3395833	2,32	2,96	5,56	8,69
600	300	KCA GRP 600/ID90/R300	3399143	3399179	3193522	3193549	1,64	1,85	2,19	3,57
	450	KCA GRP 600/ID90/R450	3399152	3399188	3193531	3193558	2,40	2,71	3,38	5,40
	600	KCA GRP 600/ID90/R600	3399161	3399197	3193540	3193567	3,49	3,95	4,88	7,83
	900	KCA GRP 600/ID90/R900	3399170	3399206	3395823	3395834	2,42	3,07	5,78	8,94
750	300	KCA GRP 750/ID90/R300	3399144	3399180	3193523	3193550	1,86	2,01	2,36	3,82
	450	KCA GRP 750/ID90/R450	3399153	3399189	3193532	3193559	2,57	2,88	3,50	5,64
	600	KCA GRP 750/ID90/R600	3399162	3399198	3193541	3193568	3,74	4,20	5,13	8,24
	900	KCA GRP 750/ID90/R900	3399171	3399207	3395824	3395835	2,58	3,23	6,11	9,31
900	300	KCA GRP 900/ID90/R300	3399145	3399181	3193524	3193551	2,03	2,18	2,52	4,06
	450	KCA GRP 900/ID90/R450	3399154	3399190	3193533	3193560	2,74	3,05	3,66	5,88
	600	KCA GRP 900/ID90/R600	3399163	3399199	3193542	3193569	4,00	4,45	5,38	8,61
	900	KCA GRP 900/ID90/R900	3399172	3399208	3395825	3395836	2,74	3,39	6,43	9,69

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE KCA GRP

Fittings

DD45° Outside Vertical Fitting (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



R300-R450

R600-R900

Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
150	300	KCA GRP 150/DD45/R300	3399209	3399245	3395837	3395873	0,87	0,94	1,10	1,81
	450	KCA GRP 150/DD45/R450	3399218	3399254	3395846	3395882	0,94	1,03	1,22	2,00
	600	KCA GRP 150/DD45/R600	3399227	3399263	3395855	3395891	1,58	1,72	2,22	3,35
	900	KCA GRP 150/DD45/R900	3399236	3399272	3395864	3395900	0,94	2,04	2,65	4,07
200	300	KCA GRP 200/DD45/R300	3399210	3399246	3395838	3395874	0,90	0,96	1,14	1,85
	450	KCA GRP 200/DD45/R450	3399219	3399255	3395847	3395883	0,97	1,05	1,25	2,04
	600	KCA GRP 200/DD45/R600	3399228	3399264	3395856	3395892	1,63	1,77	2,26	3,44
	900	KCA GRP 200/DD45/R900	3399237	3399273	3395865	3395901	1,64	2,09	2,69	4,16
300	300	KCA GRP 300/DD45/R300	3399211	3399247	3395839	3395875	0,95	1,02	1,21	1,93
	450	KCA GRP 300/DD45/R450	3399220	3399256	3395848	3395884	1,03	1,11	1,33	2,13
	600	KCA GRP 300/DD45/R600	3399229	3399265	3395857	3395893	1,74	1,89	2,33	3,60
	900	KCA GRP 300/DD45/R900	3399238	3399274	3395866	3395902	1,74	2,20	2,76	4,32
400	300	KCA GRP 400/DD45/R300	3399212	3399248	3395840	3395876	1,01	1,08	1,28	2,02
	450	KCA GRP 400/DD45/R450	3399221	3399257	3395849	3395885	1,08	1,17	1,40	2,21
	600	KCA GRP 400/DD45/R600	3399230	3399266	3395858	3395894	1,86	2,00	2,41	3,77
	900	KCA GRP 400/DD45/R900	3399239	3399275	3395867	3395903	1,85	2,30	2,83	4,49
450	300	KCA GRP 450/DD45/R300	3399213	3399249	3395841	3395877	1,04	1,10	1,32	2,06
	450	KCA GRP 450/DD45/R450	3399222	3399258	3395850	3395886	1,11	1,19	1,43	2,25
	600	KCA GRP 450/DD45/R600	3399231	3399267	3395859	3395895	1,91	2,06	2,44	3,85
	900	KCA GRP 450/DD45/R900	3399240	3399276	3395868	3395904	1,90	2,36	2,87	4,57
500	300	KCA GRP 500/DD45/R300	3399214	3399250	3395842	3395878	1,07	1,13	1,36	2,10
	450	KCA GRP 500/DD45/R450	3399223	3399259	3395851	3395887	1,14	1,22	1,47	2,29
	600	KCA GRP 500/DD45/R600	3399232	3399268	3395860	3395896	1,97	2,11	2,48	3,94
	900	KCA GRP 500/DD45/R900	3399241	3399277	3395869	3395905	1,96	2,41	2,91	4,66
600	300	KCA GRP 600/DD45/R300	3399215	3399251	3395843	3395879	1,12	1,19	1,43	2,18
	450	KCA GRP 600/DD45/R450	3399224	3399260	3395852	3395888	1,19	1,28	1,54	2,38
	600	KCA GRP 600/DD45/R600	3399233	3399269	3395861	3395897	2,08	2,22	2,55	4,10
	900	KCA GRP 600/DD45/R900	3399242	3399278	3395870	3395906	2,06	2,52	2,98	4,83
750	300	KCA GRP 750/DD45/R300	3399216	3399252	3395844	3395880	1,21	1,27	1,54	2,31
	450	KCA GRP 750/DD45/R450	3399225	3399261	3395853	3395889	1,28	1,36	1,65	2,50
	600	KCA GRP 750/DD45/R600	3399234	3399270	3395862	3395898	2,25	2,39	2,66	4,35
	900	KCA GRP 750/DD45/R900	3399243	3399279	3395871	3395907	2,22	2,68	3,09	5,08
900	300	KCA GRP 900/DD45/R300	3399217	3399253	3395845	3395881	1,29	1,36	1,65	2,44
	450	KCA GRP 900/DD45/R450	3399226	3399262	3395854	3395890	1,36	1,45	1,76	2,63
	600	KCA GRP 900/DD45/R600	3399235	3399271	3395863	3395899	2,42	2,56	2,77	4,61
	900	KCA GRP 900/DD45/R900	3399244	3399280	3395872	3395908	2,38	2,84	3,20	5,33

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

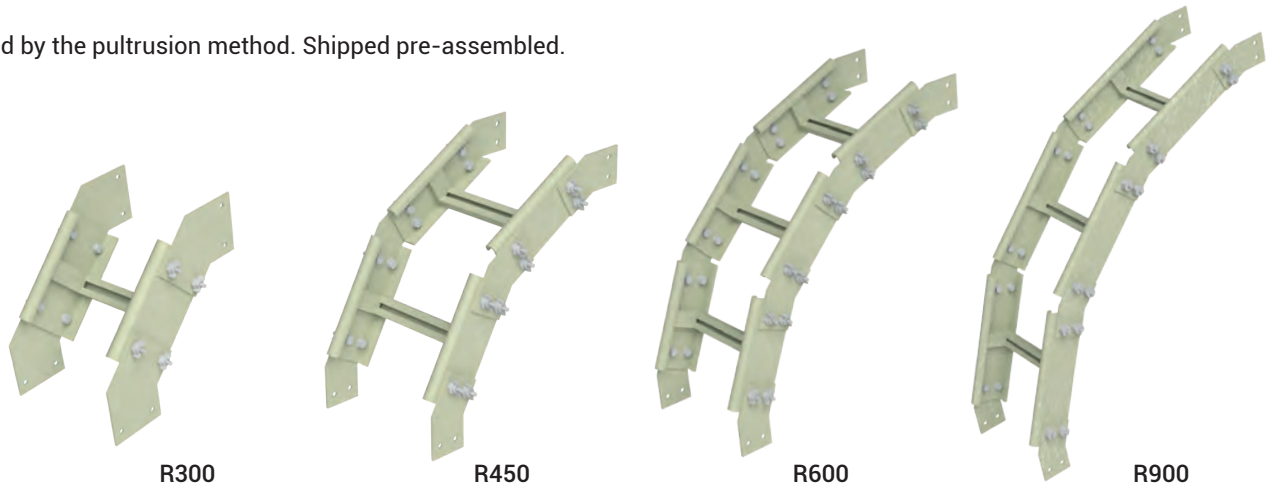
E-LINE KCA GRP

Fittings

DD90° Outside Vertical Fitting (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Width (mm)	Radius	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
150	300	KCA GRP 150/DD90/R300	3399281	3399317	3193570	3193597	1,06	1,22	1,54	2,55
	450	KCA GRP 150/DD90/R450	3399290	3399326	3193579	3193606	1,90	2,20	2,59	4,67
	600	KCA GRP 150/DD90/R600	3399299	3399335	3193588	3193615	2,73	3,19	3,65	6,79
	900	KCA GRP 150/DD90/R900	3399308	3399344	3395914	3395923	1,95	2,59	4,80	7,81
200	300	KCA GRP 200/DD90/R300	3399282	3399318	3193571	3193598	1,09	1,25	1,57	2,59
	450	KCA GRP 200/DD90/R450	3399291	3399327	3193580	3193607	1,95	2,26	2,65	4,75
	600	KCA GRP 200/DD90/R600	3399300	3399336	3193589	3193616	2,82	3,27	3,73	6,92
	900	KCA GRP 200/DD90/R900	3399309	3399345	3395915	3395924	2,00	2,64	4,91	7,93
300	300	KCA GRP 300/DD90/R300	3399283	3399319	3193572	3193599	1,15	1,30	1,62	2,67
	450	KCA GRP 300/DD90/R450	3399292	3399328	3193581	3193608	2,07	2,37	2,76	4,91
	600	KCA GRP 300/DD90/R600	3399301	3399337	3193590	3193617	2,99	3,44	3,89	7,15
	900	KCA GRP 300/DD90/R900	3399310	3399346	3395916	3395925	2,11	2,75	5,13	8,18
400	300	KCA GRP 400/DD90/R300	3399284	3399320	3193573	3193600	1,20	1,61	1,68	2,75
	450	KCA GRP 400/DD90/R450	3399293	3399329	3193582	3193609	2,18	2,48	2,87	5,07
	600	KCA GRP 400/DD90/R600	3399302	3399338	3193591	3193618	3,15	3,61	4,06	7,39
	900	KCA GRP 400/DD90/R900	3399311	3399347	3395917	3395926	2,21	2,85	5,35	8,44
450	300	KCA GRP 450/DD90/R300	3399285	3399321	3193574	3193601	1,53	1,68	2,03	3,33
	450	KCA GRP 450/DD90/R450	3399294	3399330	3193583	3193610	2,23	2,54	2,92	5,15
	600	KCA GRP 450/DD90/R600	3399303	3399339	3193592	3193619	3,24	3,70	4,14	7,51
	900	KCA GRP 450/DD90/R900	3399312	3399348	3395918	3395927	2,26	2,91	5,45	8,56
500	300	KCA GRP 500/DD90/R300	3399286	3399322	3193575	3193602	1,58	1,73	2,08	3,41
	450	KCA GRP 500/DD90/R450	3399295	3399331	3193584	3193611	2,29	2,60	2,98	5,23
	600	KCA GRP 500/DD90/R600	3399304	3399340	3193593	3193620	3,32	3,78	4,23	7,64
	900	KCA GRP 500/DD90/R900	3399313	3399349	3395919	3395928	2,32	2,96	5,56	8,69
600	300	KCA GRP 600/DD90/R300	3399287	3399323	3193576	3193603	1,64	1,85	2,19	3,57
	450	KCA GRP 600/DD90/R450	3399296	3399332	3193585	3193612	2,40	2,71	3,09	5,40
	600	KCA GRP 600/DD90/R600	3399305	3399341	3193594	3193621	3,49	3,95	4,39	7,88
	900	KCA GRP 600/DD90/R900	3399314	3399350	3395920	3395929	2,42	3,07	5,78	8,94
750	300	KCA GRP 750/DD90/R300	3399288	3399324	3193577	3193604	1,86	2,01	2,36	3,82
	450	KCA GRP 750/DD90/R450	3399297	3399333	3193586	3193613	2,57	2,88	3,26	5,64
	600	KCA GRP 750/DD90/R600	3399306	3399342	3193595	3193622	3,74	4,20	4,64	8,24
	900	KCA GRP 750/DD90/R900	3399315	3399351	3395921	3395930	2,58	3,23	6,11	9,31
900	300	KCA GRP 900/DD90/R300	3399289	3399325	3193578	3193605	2,03	2,18	2,52	4,06
	450	KCA GRP 900/DD90/R450	3399298	3399334	3193587	3193614	2,74	3,05	3,42	5,88
	600	KCA GRP 900/DD90/R600	3399307	3399343	3193596	3193623	4,00	4,45	4,89	8,61
	900	KCA GRP 900/DD90/R900	3399316	3399352	3395922	3395931	2,74	3,39	6,43	9,69

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE KCA GRP

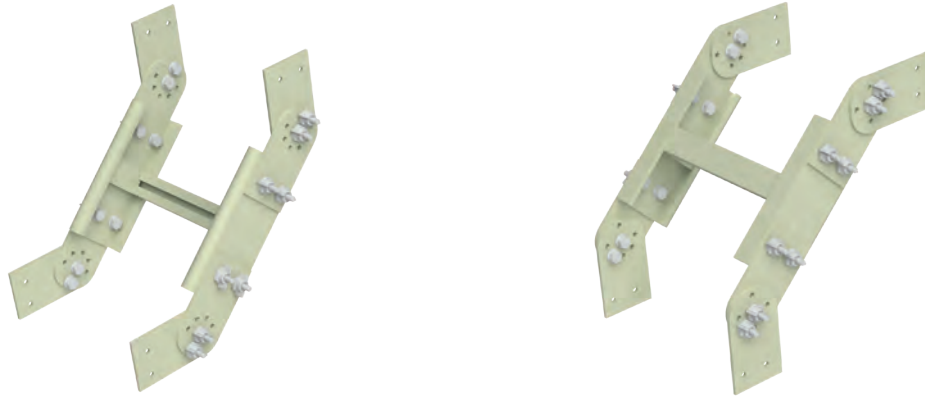
Fittings

SDM Vertical Adjustable Fitting



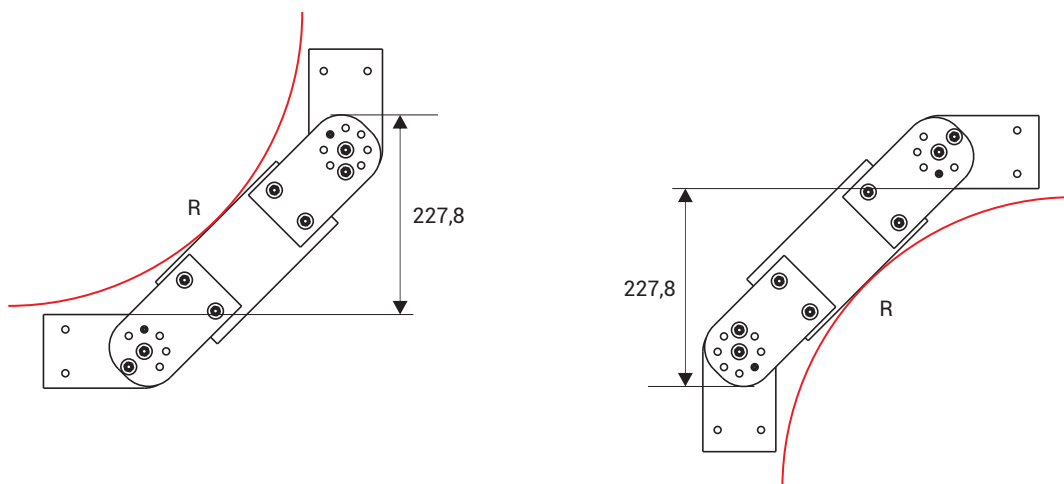
KCA GRP

Produced by the pultrusion method. Shipped pre-assembled.



Fittings

Description	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
KCA GRP 150 SDM	150	5	3399578	3399587	3177415	3177424	1,37	1,75	1,89	3,40
KCA GRP 200 SDM	200	5	3399579	3399588	3177416	3177425	1,40	1,77	1,92	3,44
KCA GRP 300 SDM	300	5	3399580	3399589	3177417	3177426	1,45	1,83	1,98	3,52
KCA GRP 400 SDM	400	5	3399581	3399590	3177418	3177427	1,51	1,89	2,03	3,61
KCA GRP 450 SDM	450	5	3399582	3399591	3177419	3177428	1,54	1,92	2,38	4,17
KCA GRP 500 SDM	500	5	3399583	3399592	3177420	3177429	1,56	1,94	2,44	4,25
KCA GRP 600 SDM	600	5	3399584	3399593	3177421	3177430	1,62	2,00	2,55	4,42
KCA GRP 750 SDM	750	5	3399585	3399594	3177422	3177431	1,70	2,09	2,73	4,67
KCA GRP 900 SDM	900	5	3399586	3399595	3177423	3177432	1,79	2,14	2,90	4,92



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

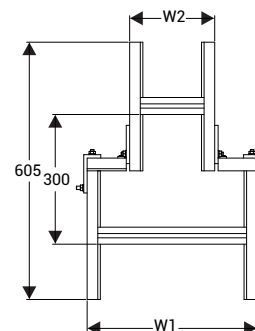
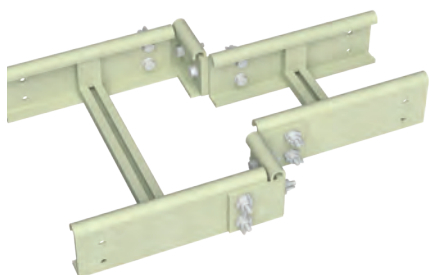
E-LINE KCA GRP

Fittings

MR Middle Reduction



Produced by the pultrusion method. Shipped pre-assembled.



W1 (mm)	W2 (mm)	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
300	150	KCA GRP 300/150/ MR	3399379	3399412	3193291	3193324	2,15	2,47	2,91	4,95
400		KCA GRP 400/150/ MR	3399380	3399413	3193292	3193325	2,30	2,64	3,10	5,27
450		KCA GRP 450/150/ MR	3399381	3399414	3193293	3193326	2,37	2,72	3,20	5,43
500		KCA GRP 500/150/ MR	3399382	3399415	3193294	3193327	2,45	2,81	3,30	5,59
600		KCA GRP 600/150/ MR	3399383	3399416	3193295	3193328	2,59	2,98	3,49	5,91
750		KCA GRP 750/150/ MR	3399384	3399417	3193296	3193329	2,81	3,23	3,79	6,39
900		KCA GRP 900/150/ MR	3399385	3399418	3193297	3193330	3,03	3,49	4,08	6,86
300		200	KCA GRP 300/200/ MR	3399386	3399419	3193298	3193331	2,14	2,44	2,87
400	KCA GRP 400/200/ MR		3399387	3399420	3193299	3193332	2,28	2,61	3,06	5,19
450	KCA GRP 450/200/ MR		3399388	3399421	3193300	3193333	2,36	2,69	3,16	5,35
500	KCA GRP 500/200/ MR		3399389	3399422	3193301	3193334	2,43	2,78	3,26	5,51
600	KCA GRP 600/200/ MR		3399390	3399423	3193302	3193335	2,58	2,95	3,45	5,83
750	KCA GRP 750/200/ MR		3399391	3399424	3193303	3193336	2,80	3,20	3,74	6,31
900	KCA GRP 900/200/ MR		3399392	3399425	3193304	3193337	3,02	3,46	4,04	6,79
400	300		KCA GRP 400/300/ MR	3399393	3399426	3193305	3193338	2,25	2,55	2,98
450		KCA GRP 450/300/ MR	3399394	3399427	3193306	3193339	2,32	2,64	3,08	5,20
500		KCA GRP 500/300/ MR	3399395	3399428	3193307	3193340	2,39	2,72	3,17	5,35
600		KCA GRP 600/300/ MR	3399396	3399429	3193308	3193341	2,54	2,89	3,37	5,67
750		KCA GRP 750/300/ MR	3399397	3399430	3193309	3193342	2,76	3,15	3,66	6,15
900		KCA GRP 900/300/ MR	3399398	3399431	3193310	3193343	2,98	3,40	3,95	6,63
500	400	KCA GRP 500/400/ MR	3399399	3399432	3193311	3193344	2,36	2,67	3,09	5,20
600		KCA GRP 600/400/ MR	3399400	3399433	3193312	3193345	2,51	2,83	3,28	5,52
750		KCA GRP 750/400/ MR	3399401	3399434	3193313	3193346	2,73	3,09	3,58	5,99
900		KCA GRP 900/400/ MR	3399402	3399435	3193314	3193347	2,95	3,34	3,87	6,47
600	450	KCA GRP 600/450/ MR	3399403	3399436	3193315	3193348	2,49	2,80	3,24	5,44
750		KCA GRP 750/450/ MR	3399404	3399437	3193316	3193349	2,71	3,06	3,53	5,92
900		KCA GRP 900/450/ MR	3399405	3399438	3193317	3193350	2,93	3,31	3,83	6,39
600	500	KCA GRP 600/500/ MR	3399406	3399439	3193318	3193351	2,47	2,78	3,20	5,36
750		KCA GRP 750/500/ MR	3399407	3399440	3193319	3193352	2,69	3,03	3,49	5,84
900		KCA GRP 900/500/ MR	3399408	3399441	3193320	3193353	2,91	3,29	3,78	6,32
750	600	KCA GRP 750/600/ MR	3399409	3399442	3193321	3193354	2,66	2,97	3,41	5,68
900		KCA GRP 900/600/ MR	3399410	3399443	3193322	3193355	2,88	3,23	3,70	6,16
900	750	KCA GRP 900/750/ MR	3399411	3399444	3193323	3193356	2,83	3,14	3,57	5,92

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

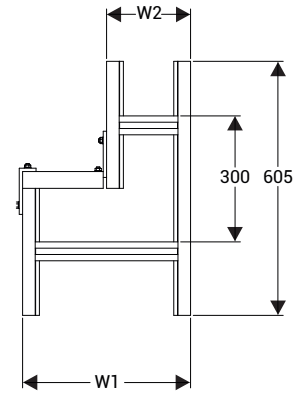
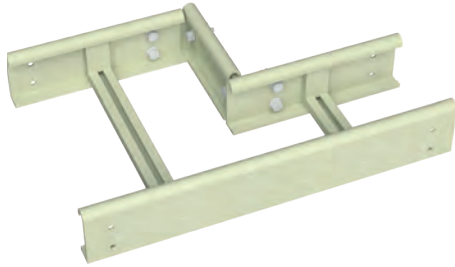
E-LINE KCA GRP

Fittings

RR Right Reduction



Produced by the pultrusion method. Shipped pre-assembled.



W1 (mm)	W2 (mm)	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
300	150	KCA GRP 300/150/ RR	3399445	3399478	3193357	3193390	1,86	2,17	2,59	4,44
400		KCA GRP 400/150/ RR	3399446	3399479	3193358	3193391	2,00	2,34	2,79	4,76
450		KCA GRP 450/150/ RR	3399447	3399480	3193359	3193392	2,08	2,42	2,89	4,92
500		KCA GRP 500/150/ RR	3399448	3399481	3193360	3193393	2,15	2,51	2,98	5,08
600		KCA GRP 600/150/ RR	3399449	3399482	3193361	3193394	2,30	2,68	3,18	5,39
750		KCA GRP 750/150/ RR	3399450	3399483	3193362	3193395	2,52	2,93	3,47	5,87
900		KCA GRP 900/150/ RR	3399451	3399484	3193363	3193396	2,74	3,19	3,76	6,35
300	200	KCA GRP 300/200/ RR	3399452	3399485	3193364	3193397	1,84	2,14	2,55	4,36
400		KCA GRP 400/200/ RR	3399453	3399486	3193365	3193398	1,98	2,31	2,75	4,68
450		KCA GRP 450/200/ RR	3399454	3399487	3193366	3193399	2,06	2,48	2,84	4,84
500		KCA GRP 500/200/ RR	3399455	3399488	3193367	3193400	2,13	2,48	2,94	5,00
600		KCA GRP 600/200/ RR	3399456	3399489	3193368	3193401	2,28	2,65	3,13	5,32
750		KCA GRP 750/200/ RR	3399457	3399490	3193369	3193402	2,50	2,91	3,43	5,79
900		KCA GRP 900/200/ RR	3399458	3399491	3193370	3193403	2,72	3,16	3,72	6,27
400	300	KCA GRP 400/300/ RR	3399459	3399492	3193371	3193404	1,95	2,25	2,66	4,52
450		KCA GRP 450/300/ RR	3399460	3399493	3193372	3193405	2,02	2,34	2,76	4,68
500		KCA GRP 500/300/ RR	3399461	3399494	3193373	3193406	2,10	2,42	2,86	4,84
600		KCA GRP 600/300/ RR	3399462	3399495	3193374	3193407	2,24	2,59	3,05	5,16
750		KCA GRP 750/300/ RR	3399463	3399496	3193375	3193408	2,46	2,85	3,34	5,64
900		KCA GRP 900/300/ RR	3399464	3399497	3193376	3193409	2,68	3,10	3,63	6,11
500	400	KCA GRP 500/400/ RR	3399465	3399498	3193377	3193410	2,06	2,37	2,77	4,68
600		KCA GRP 600/400/ RR	3399466	3399499	3193378	3193411	2,21	2,54	2,97	5,00
750		KCA GRP 750/400/ RR	3399467	3399500	3193379	3193412	2,43	2,79	3,26	5,48
900		KCA GRP 900/400/ RR	3399468	3399501	3193380	3193413	2,65	3,05	3,55	5,96
600	450	KCA GRP 600/450/ RR	3399469	3399502	3193381	3193414	2,19	2,51	2,93	4,92
750		KCA GRP 750/450/ RR	3399470	3399503	3193382	3193415	2,41	2,76	3,22	5,40
900		KCA GRP 900/450/ RR	3399471	3399504	3193383	3193416	2,63	3,02	3,51	5,88
600	500	KCA GRP 600/500/ RR	3399472	3399505	3193384	3193417	2,18	2,73	2,88	4,84
750		KCA GRP 750/500/ RR	3399473	3399507	3193385	3193418	2,40	2,73	3,17	5,32
900		KCA GRP 900/500/ RR	3399474	3399508	3193386	3193419	2,62	2,99	3,47	5,80
750	600	KCA GRP 750/600/ RR	3399475	3399509	3193387	3193420	2,36	2,68	3,09	5,17
900		KCA GRP 900/600/ RR	3399476	3399510	3193388	3193421	2,58	2,93	3,38	5,64
900	750	KCA GRP 900/750/ RR	3399477	3399511	3193389	3193422	2,53	2,84	3,26	5,41

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

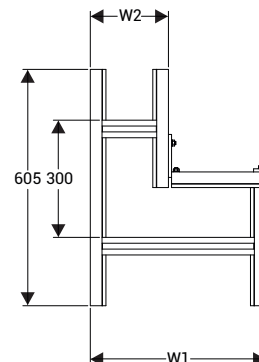
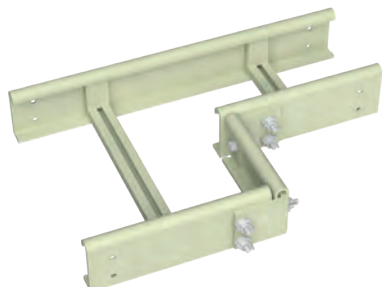
E-LINE KCA GRP

Fittings

LR Left Reduction



Produced by the pultrusion method. Shipped pre-assembled.



W1 (mm)	W2 (mm)	Description	Order Code				Weight (kg/pcs)			
			↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
300	150	KCA GRP 300/150/ LR	3399512	3399545	3193423	3193456	1,86	2,17	2,59	4,44
400		KCA GRP 400/150/ LR	3399513	3399546	3193424	3193457	2,00	2,34	2,79	4,76
450		KCA GRP 450/150/ LR	3399514	3399547	3193425	3193458	2,08	2,42	2,89	4,92
500		KCA GRP 500/150/ LR	3399515	3399548	3193426	3193459	2,15	2,51	2,98	5,08
600		KCA GRP 600/150/ LR	3399516	3399549	3193427	3193460	2,30	2,68	3,18	5,39
750		KCA GRP 750/150/ LR	3399517	3399550	3193428	3193461	2,52	2,93	3,47	5,87
900		KCA GRP 900/150/ LR	3399518	3399551	3193429	3193462	2,74	3,19	3,76	6,35
300		200	KCA GRP 300/200/ LR	3399519	3399552	3193430	3193463	1,84	2,14	2,55
400	KCA GRP 400/200/ LR		3399520	3399553	3193431	3193464	1,98	2,31	2,75	4,68
450	KCA GRP 450/200/ LR		3399521	3399554	3193432	3193465	2,06	2,48	2,84	4,84
500	KCA GRP 500/200/ LR		3399522	3399555	3193433	3193466	2,13	2,48	2,94	5,00
600	KCA GRP 600/200/ LR		3399523	3399556	3193434	3193467	2,28	2,65	3,13	5,32
750	KCA GRP 750/200/ LR		3399524	3399557	3193435	3193468	2,50	2,91	3,43	5,79
900	KCA GRP 900/200/ LR		3399525	3399558	3193436	3193469	2,72	3,16	3,72	6,27
400	300		KCA GRP 400/300/ LR	3399526	3399559	3193437	3193470	1,95	2,25	2,66
450		KCA GRP 450/300/ LR	3399527	3399560	3193438	3193471	2,02	2,34	2,76	4,68
500		KCA GRP 500/300/ LR	3399528	3399561	3193439	3193472	2,10	2,42	2,86	4,84
600		KCA GRP 600/300/ LR	3399529	3399562	3193440	3193473	2,24	2,59	3,05	5,16
750		KCA GRP 750/300/ LR	3399530	3399563	3193441	3193474	2,46	2,85	3,34	5,64
900		KCA GRP 900/300/ LR	3399531	3399564	3193442	3193475	2,68	3,10	3,63	6,11
500	400	KCA GRP 500/400/ LR	3399532	3399565	3193443	3193476	2,06	2,37	2,77	4,68
600		KCA GRP 600/400/ LR	3399533	3399566	3193444	3193477	2,21	2,54	2,97	5,00
750		KCA GRP 750/400/ LR	3399534	3399567	3193445	3193478	2,43	2,79	3,26	5,48
900		KCA GRP 900/400/ LR	3399535	3399568	3193446	3193479	2,65	3,05	3,55	5,96
600	450	KCA GRP 600/450/ LR	3399536	3399569	3193447	3193480	2,19	2,51	2,93	4,92
750		KCA GRP 750/450/ LR	3399537	3399570	3193448	3193481	2,41	2,76	3,22	5,40
900		KCA GRP 900/450/ LR	3399538	3399571	3193449	3193482	2,63	3,02	3,51	5,88
600	500	KCA GRP 600/500/ LR	3399539	3399572	3193450	3193483	2,18	2,73	2,88	4,84
750		KCA GRP 750/500/ LR	3399540	3399573	3193451	3193484	2,40	2,73	3,17	5,32
900		KCA GRP 900/500/ LR	3399541	3399574	3193452	3193485	2,62	2,99	3,47	5,80
750	600	KCA GRP 750/600/ LR	3399542	3399575	3193453	3193486	2,36	2,68	3,09	5,17
900		KCA GRP 900/600/ LR	3399543	3399576	3193454	3193487	2,58	2,93	3,38	5,64
900	750	KCA GRP 900/750/ LR	3399544	3399577	3193455	3193488	2,53	2,84	3,26	5,41

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE KCA GRP

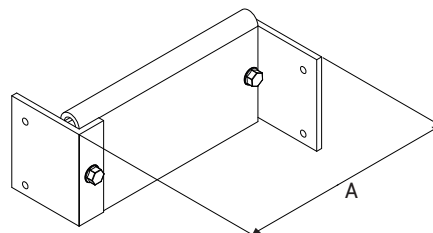
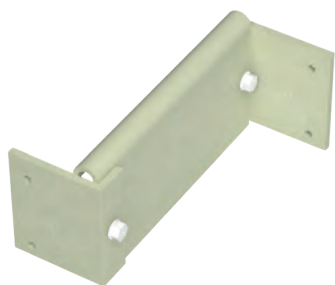
Fittings

Reduction Connector



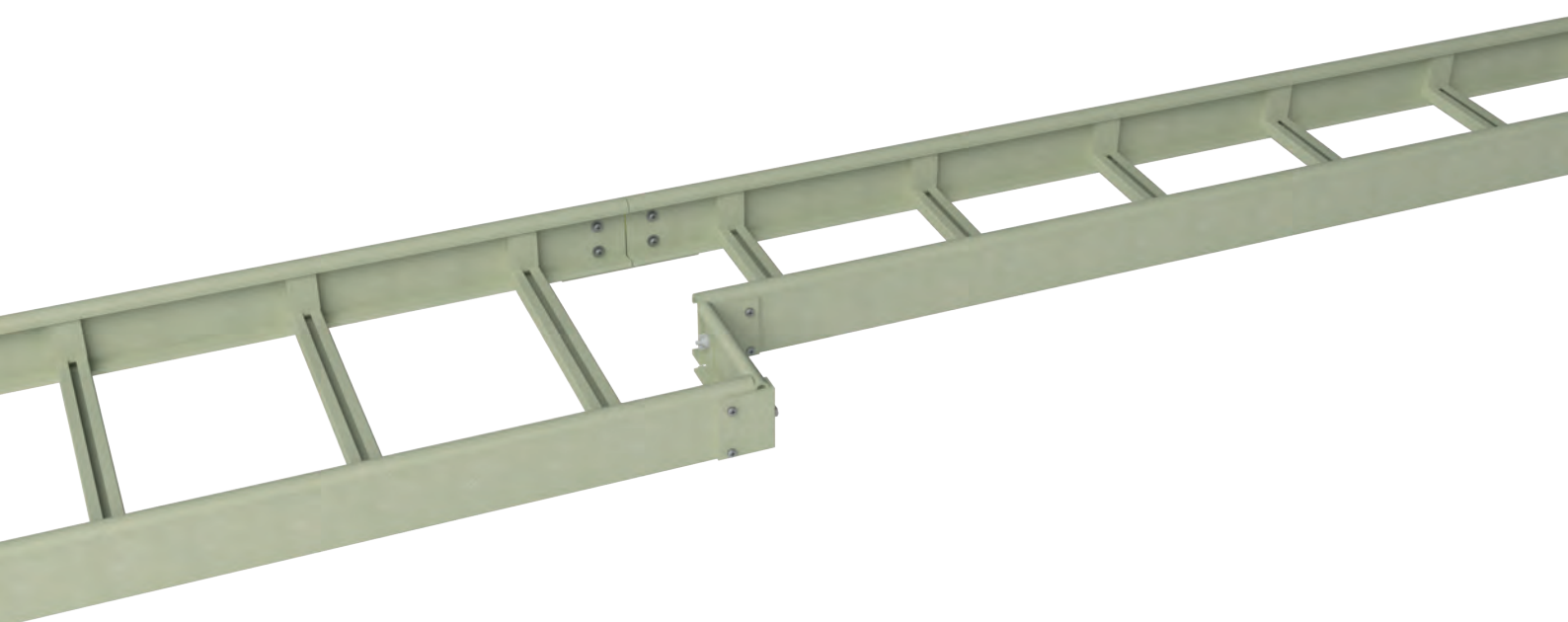
KCA GRP

Manufactured using the pultrusion method. All parts are produced as GRP. GRP bolt kits are used.
(Shipped pre-assembled.)



Description	A (mm)	Order Code				Weight (kg/pcs)			
		↑55	↑80	↑100	↑150	↑55	↑80	↑100	↑150
KCA GRP Reducer Connector 050	50	3399354	3399366	3193624	3193629	0,24	0,29	0,39	0,65
KCA GRP Reducer Connector 100	100	3399355	3399367	3177469	3177476	0,29	0,35	0,46	0,77
KCA GRP Reducer Connector 150	150	3399356	3399368	3177470	3177477	0,33	0,40	0,53	0,89
KCA GRP Reducer Connector 200	200	3399357	3399369	3177471	3177478	0,38	0,46	0,60	1,01
KCA GRP Reducer Connector 250	250	3399358	3399370	3193625	3193630	0,42	0,52	0,67	1,13
KCA GRP Reducer Connector 300	300	3399359	3399371	3177472	3177479	0,47	0,57	0,74	1,25
KCA GRP Reducer Connector 350	350	3399360	3399372	3193626	3193631	0,51	0,63	0,81	1,36
KCA GRP Reducer Connector 400	400	3399361	3399373	3177473	3177480	0,56	0,69	0,88	1,48
KCA GRP Reducer Connector 450	450	3399362	3399374	3193627	3193632	0,61	0,75	0,95	1,60
KCA GRP Reducer Connector 500	500	3399363	3399375	3177474	3177481	0,65	0,80	1,02	1,72
KCA GRP Reducer Connector 600	600	3399364	3399376	3177475	3177482	0,74	0,92	1,16	1,96
KCA GRP Reducer Connector 750	750	3399365	3399377	3193628	3193633	0,88	1,09	1,37	2,32

Fittings



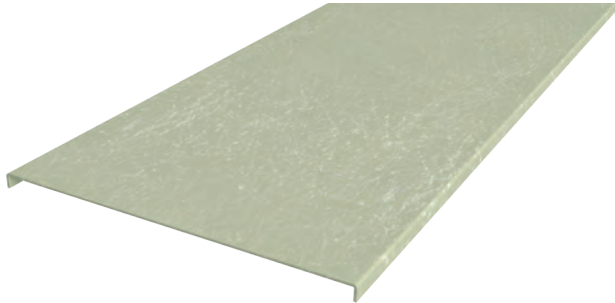
- For the reducer piece, the main body and bent end parts are produced as GRP.
- For the reducer connection piece, 4 sets of SS316 M10x25 bolt kits must be ordered

E-LINE KCA GRP

Covers

Straight Cover

Manufactured using the pultrusion method



Description	Height (mm)	Width (mm)	Length (m)	Thickness (mm)	Weight (kg/m)	Order Code
KCA/CTA GRP K 050 / L=3m	15	50	3	3	0,43	3191138
KCA GRP K 100 / L=3m	15	100	3	3	0,71	3191139
KCA GRP K 150 / L=3m	15	150	3	3	0,99	3177489
KCA GRP K 200 / L=3m	15	200	3	3	1,26	3177490
KCA GRP K 300 / L=3m	15	300	3	3	1,82	3177491
KCA GRP K 400 / L=3m	15	400	3	3	2,38	3177492
KCA GRP K 450 / L=3m	15	450	3	3	2,65	3177493
KCA GRP K 500 / L=3m	15	500	3	3	2,93	3177494
KCA GRP K 600 / L=3m	15	600	3	3	3,49	3177495
KCA GRP K 750 / L=3m	15	750	3	4	6,32	3177496
KCA GRP K 900 / L=3m	15	900	3	5	7,99	3177497

Recommended number of cover clamps

Required Quantity of Cover Clamps			
Products	Heavy Duty Cover Clamp		
Straight Lengths (3 Meters)	3 Pieces (1 Piece per Meter)		
YD45° Horizontal Fitting	2 pcs		
YD90° Horizontal Fitting	3 pcs		
YT Tee	3 pcs		
AD Cross	4 pcs		
ID Inside Vertical Elbow Fitting / DD Outside Vertical Elbow Fitting	R300	R450	R600
	1 pcs	2 pcs	3 pcs

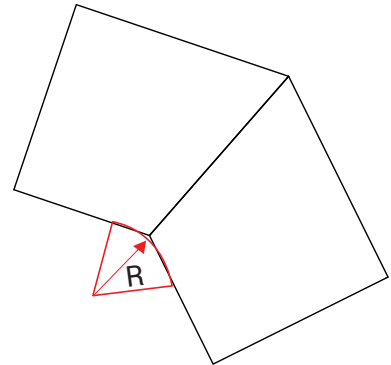
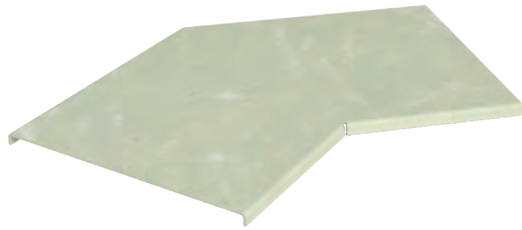
Note: For 750mm and 900mm widths, clutch cover clamps made of 316-grade stainless steel, produced by the pultrusion method, with connection rods and tightening nuts, will be used.

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : For installation, "Heavy Duty Cover Clamp" should be ordered in the quantities recommended above. (Page 41)

E-LINE KCA GRP

Covers

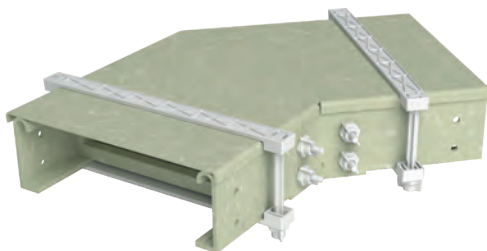
YD45° Fitting Cover (R300, R450, R600, R900)



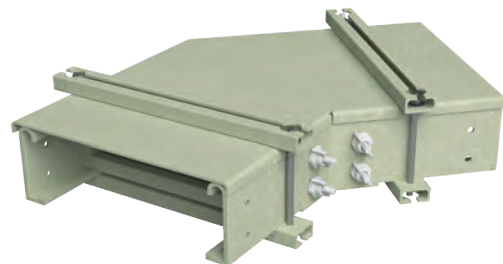
Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
KCA GRP K 150 YD45°	15	150	3	3193634	3193643	3193652	3395932	0,49	0,62	0,74	1,02
KCA GRP K 200 YD45°	15	200	3	3193635	3193644	3193653	3395933	0,66	0,83	0,98	1,33
KCA GRP K 300 YD45°	15	300	3	3193636	3193645	3193654	3395934	1,03	1,27	1,49	1,98
KCA GRP K 400 YD45°	15	400	3	3193637	3193646	3193655	3395935	1,45	1,76	2,04	2,67
KCA GRP K 450 YD45°	15	450	3	3193638	3193647	3193656	3395936	1,67	2,02	2,34	3,04
KCA GRP K 500 YD45°	15	500	3	3193639	3193648	3193657	3395937	1,91	2,29	2,64	3,42
KCA GRP K 600 YD45°	15	600	3	3193640	3193649	3193658	3395938	2,43	2,87	3,29	4,20
KCA GRP K 750 YD45°	15	750	4	3193641	3193650	3193659	3395939	4,36	5,11	5,80	7,30
KCA GRP K 900 YD45°	15	900	5	3193642	3193651	3193660	3395940	5,63	6,53	7,35	11,42

Installation

For 50mm - 600mm widths



For 750mm - 900mm widths

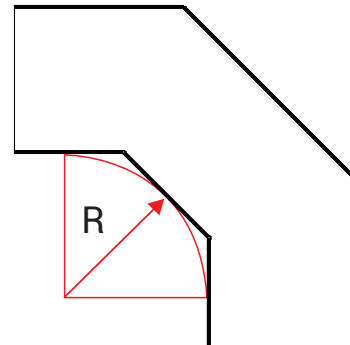
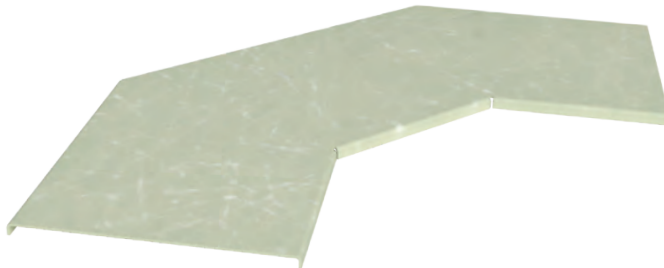


- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

Covers

YD90° Fitting Cover (R300, R450, R600, R900)



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
KCA GRP K 150 YD90°	15	150	3	3177645	3177498	3177726	3395941	0,80	0,93	1,05	1,78
KCA GRP K 200 YD90°	15	200	3	3177646	3177499	3177727	3395942	1,08	1,25	1,40	2,33
KCA GRP K 300 YD90°	15	300	3	3177647	3177500	3177728	3395943	1,72	1,95	2,17	3,52
KCA GRP K 400 YD90°	15	400	3	3177648	3177501	3177729	3395944	2,44	2,75	3,03	4,79
KCA GRP K 450 YD90°	15	450	3	3177649	3177502	3177730	3395945	2,84	3,18	3,50	5,46
KCA GRP K 500 YD90°	15	500	3	3177650	3177503	3177731	3395946	3,26	3,64	3,99	6,16
KCA GRP K 600 YD90°	15	600	3	3177651	3177504	3177732	3395947	4,16	4,62	5,04	7,62
KCA GRP K 750 YD90°	15	750	4	3177652	3177505	3177733	3395948	5,70	6,26	6,78	13,28
KCA GRP K 900 YD90°	15	900	5	3177653	3177506	3177734	3395949	7,44	8,11	8,73	20,84

Installation

For 50mm - 600mm widths

For 750mm - 900mm widths



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

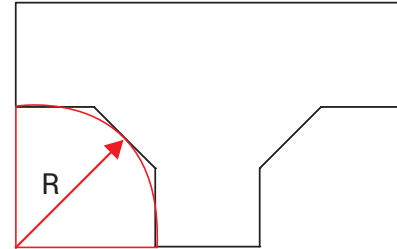
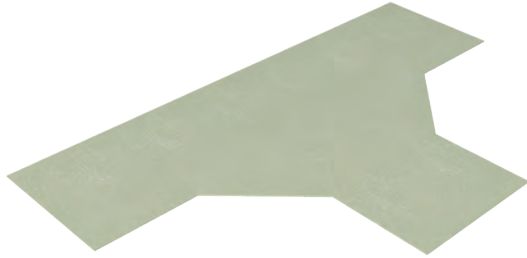
Covers

YT Fitting Cover (R300, R450, R600, R900)



KCA GRP

Covers

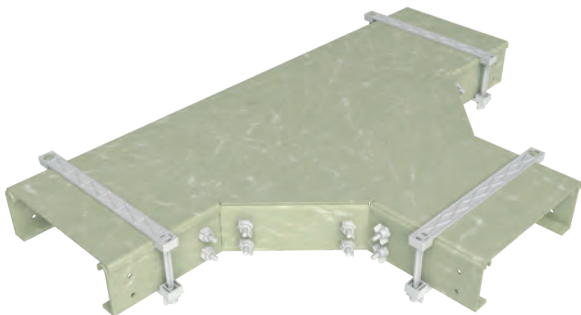


Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
KCA GRP K 150 YT	15	150	3	3177654	3177516	3177735	3395950	1,44	2,11	2,81	4,39
KCA GRP K 200 YT	15	200	3	3177655	3177517	3177736	3395951	1,88	2,68	3,50	5,33
KCA GRP K 300 YT	15	300	3	3177656	3177518	3177737	3395952	2,84	3,90	4,96	7,28
KCA GRP K 400 YT	15	400	3	3177657	3177519	3177738	3395953	3,91	5,23	6,53	9,34
KCA GRP K 450 YT	15	450	3	3177658	3177520	3177739	3395954	4,48	5,93	7,36	10,41
KCA GRP K 500 YT	15	500	3	3177659	3177521	3177740	3395955	5,09	6,67	8,21	11,51
KCA GRP K 600 YT	15	600	3	3177660	3177522	3177741	3395956	6,38	8,22	10,01	13,80
KCA GRP K 750 YT	15	750	4	3177661	3177523	3177742	3395957	11,36	14,35	17,21	23,18
KCA GRP K 900 YT	15	900	5	3177662	3177524	3177743	3395958	14,56	18,06	21,41	35,38

Installation

For 50mm - 600mm widths

For 750mm - 900mm widths

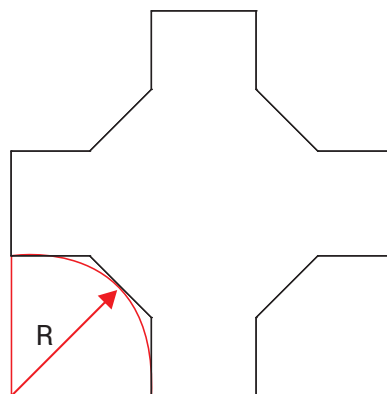
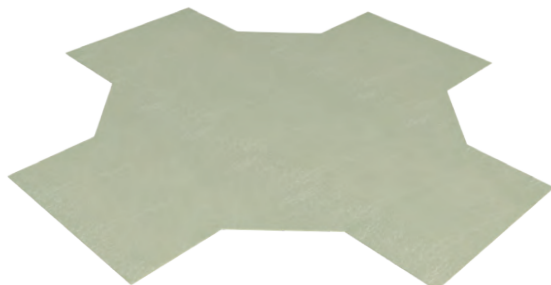


- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

Covers

AD Fitting Cover (R300, R450, R600, R900)

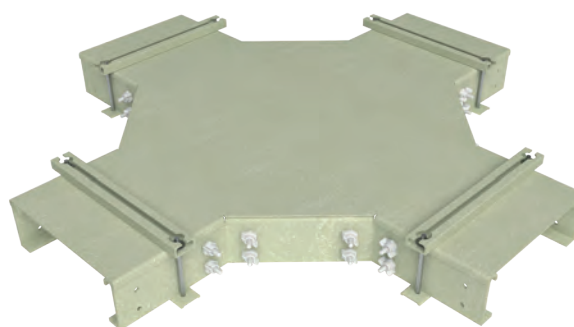
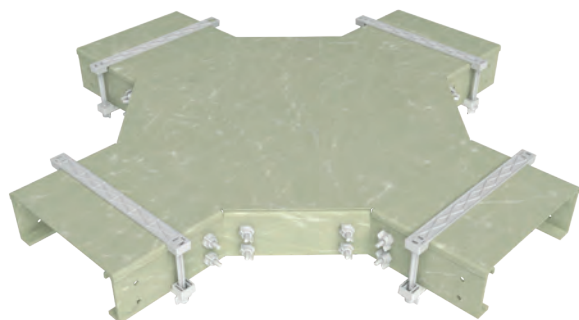


Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
KCA GRP K 150 AD	15	150	3	3177663	3177525	3177744	3395959	1,95	2,97	3,21	6,54
KCA GRP K 200 AD	15	200	3	3177664	3177526	3177745	3395960	2,49	3,69	4,96	7,75
KCA GRP K 300 AD	15	300	3	3177665	3177527	3177746	3395961	3,67	5,21	6,80	10,25
KCA GRP K 400 AD	15	400	3	3177666	3177528	3177747	3395962	4,95	6,85	8,76	12,86
KCA GRP K 450 AD	15	450	3	3177667	3177529	3177748	3395963	5,63	7,70	9,78	14,21
KCA GRP K 500 AD	15	500	3	3177668	3177530	3177749	3395964	6,35	8,59	10,83	15,59
KCA GRP K 600 AD	15	600	3	3177669	3177531	3177750	3395965	7,85	10,44	13,00	18,42
KCA GRP K 750 AD	15	750	4	3177670	3177532	3177751	3395966	13,76	17,92	21,98	30,51
KCA GRP K 900 AD	15	900	5	3177671	3177533	3177752	3395967	17,39	22,24	26,94	45,99

Installation

For 50mm - 600mm widths

For 750mm - 900mm widths



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

Covers

Fitting Cover ID45 Inside Vertical / DD45 Outside Vertical (R300, R450, R600, R900)



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
KCA GRP K 150 ID45/DD45	15	150	3	3395968	3395977	3395986	3395995	0,15	0,19	0,33	0,46
KCA GRP K 200 ID45/DD45	15	200	3	3395969	3395978	3395987	3395996	0,19	0,24	0,43	0,59
KCA GRP K 300 ID45/DD45	15	300	3	3395970	3395979	3395988	3395997	0,27	0,35	0,61	0,85
KCA GRP K 400 ID45/DD45	15	400	3	3395971	3395980	3395989	3395998	0,35	0,45	0,80	1,11
KCA GRP K 450 ID45/DD45	15	450	3	3395972	3395981	3395990	3395999	0,39	0,50	0,90	1,24
KCA GRP K 500 ID45/DD45	15	500	3	3395973	3395982	3395991	3396000	0,43	0,56	0,99	1,37
KCA GRP K 600 ID45/DD45	15	600	3	3395974	3395983	3395992	3396001	0,52	0,66	1,18	1,63
KCA GRP K 750 ID45/DD45	15	750	4	3395975	3395984	3395993	3396002	0,85	1,09	1,95	2,70
KCA GRP K 900 ID45/DD45	15	900	5	3395976	3395985	3395994	3396003	1,27	1,63	2,90	4,02

Quantities to be ordered:

- 1 Piece for R300
- 2 Pieces for R450
- 3 Pieces for R600
- 3 Pieces for R900

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

Covers

Fitting Cover ID90 Inside Vertical / DD90 Outside Vertical (R300, R450, R600, R900)



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
KCA GRP K 150 ID90/DD90	15	150	3	3193661	3193670	3193679	3396010	0,24	0,49	0,74	1,06
KCA GRP K 200 ID90/DD90	15	200	3	3193662	3193671	3193680	3396011	0,31	0,63	0,95	1,35
KCA GRP K 300 ID90/DD90	15	300	3	3193663	3193672	3193681	3396012	0,45	0,91	1,36	1,95
KCA GRP K 400 ID90/DD90	15	400	3	3193664	3193673	3193682	3396013	0,59	1,19	1,78	2,55
KCA GRP K 450 ID90/DD90	15	450	3	3193665	3193674	3193683	3396014	0,66	1,33	1,99	2,85
KCA GRP K 500 ID90/DD90	15	500	3	3193666	3193675	3193684	3396015	0,73	1,46	2,20	3,15
KCA GRP K 600 ID90/DD90	15	600	3	3193667	3193676	3193685	3396016	0,87	1,74	2,61	3,75
KCA GRP K 750 ID90/DD90	15	750	3	3193668	3193677	3193686	3396017	1,58	3,16	4,74	6,19
KCA GRP K 900 ID90/DD90	15	900	3	3193669	3193678	3193687	3396018	1,99	3,99	5,99	9,23

Quantities to be ordered:

- 1 Piece for R300
- 2 Pieces for R450
- 3 Pieces for R600
- 3 Pieces for R900

Fitting Cover SDM Verticle Adjustable

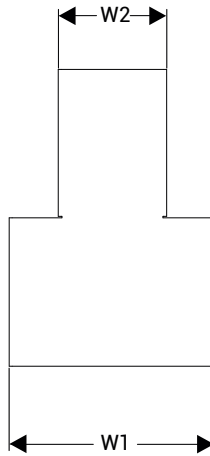
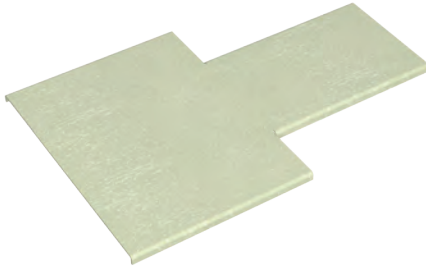
Description	Height (mm)	Width (mm)	Thickness (mm)	Orde Code	Weight (kg/pcs)
KCA GRP 150 SDM	15	150	3	3193661	0,24
KCA GRP 200 SDM	15	200	3	3193662	0,31
KCA GRP 300 SDM	15	300	3	3193663	0,45
KCA GRP 400 SDM	15	400	3	3193664	0,59
KCA GRP 450 SDM	15	450	3	3193665	0,66
KCA GRP 500 SDM	15	500	3	3193666	0,73
KCA GRP 600 SDM	15	600	3	3193667	0,87
KCA GRP 750 SDM	15	750	3	3193668	1,58
KCA GRP 900 SDM	15	900	3	3193669	1,99

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- Color : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- Cover Clamp : Check page 41 for order.

E-LINE KCA GRP

Covers

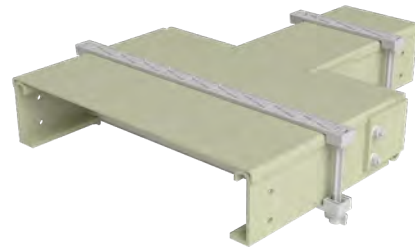
MR Middle Reduction Cover



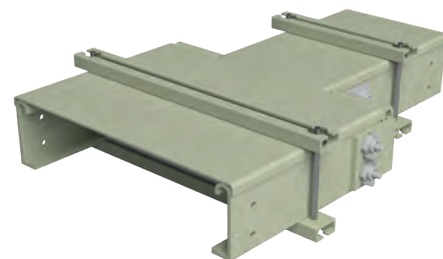
W1 (mm)	W2 (mm)	Description	Order Code	Weight (kg/pcs)
300	150	KCA GRP K 300/150/ MR	3193688	0,85
400		KCA GRP K 400/150/ MR	3193689	1,02
450		KCA GRP K 450/150/ MR	3193690	1,11
500		KCA GRP K 500/150/ MR	3193691	1,19
600		KCA GRP K 600/150/ MR	3193692	1,36
750		KCA GRP K 750/150/ MR	3193693	2,22
900		KCA GRP K 900/150/ MR	3193694	2,72
300		200	KCA GRP K 300/200/ MR	3193695
400	KCA GRP K 400/200/ MR		3193696	1,11
450	KCA GRP K 450/200/ MR		3193697	1,19
500	KCA GRP K 500/200/ MR		3193698	1,27
600	KCA GRP K 600/200/ MR		3193699	1,44
750	KCA GRP K 750/200/ MR		3193700	1,70
900	KCA GRP K 900/200/ MR		3193701	2,30
400	300		KCA GRP K 400/300/ MR	3193702
450		KCA GRP K 450/300/ MR	3193703	1,36
500		KCA GRP K 500/300/ MR	3193704	1,44
600		KCA GRP K 600/300/ MR	3193705	1,61
750		KCA GRP K 750/300/ MR	3193706	2,47
900		KCA GRP K 900/300/ MR	3193707	2,97
500	400	KCA GRP K 500/400/ MR	3193708	1,60
600		KCA GRP K 600/400/ MR	3193709	1,78
750		KCA GRP K 750/400/ MR	3193710	2,64
900		KCA GRP K 900/400/ MR	3193711	3,14
600	450	KCA GRP K 600/450/ MR	3193712	1,86
750		KCA GRP K 750/450/ MR	3193713	2,72
900		KCA GRP K 900/450/ MR	3193714	3,23
600	500	KCA GRP K 600/500/ MR	3193715	1,95
750		KCA GRP K 750/500/ MR	3193716	2,81
900		KCA GRP K 900/500/ MR	3193717	3,31
750	600	KCA GRP K 750/600/ MR	3193718	2,97
900		KCA GRP K 900/600/ MR	3193719	3,48
900	750	KCA GRP K 900/750/ MR	3193720	4,34

Installation

For 50mm - 600mm widths



For 750mm - 900mm widths

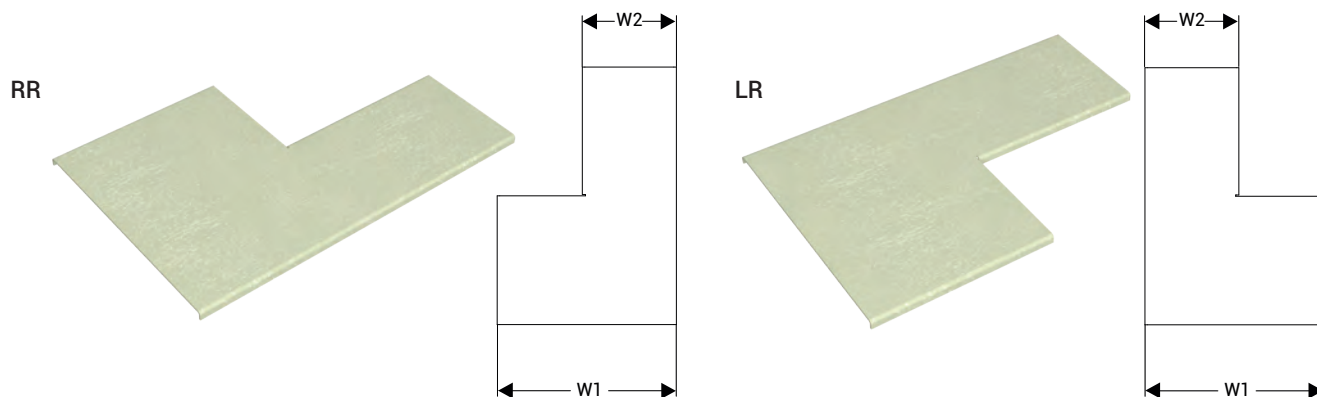


- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

Covers

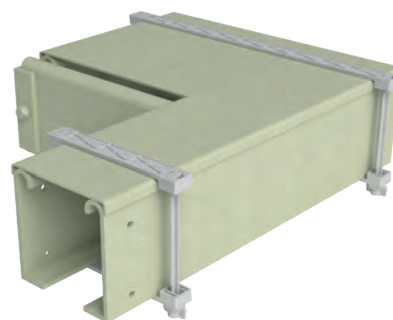
LR Left / RR Right Reduction Cover



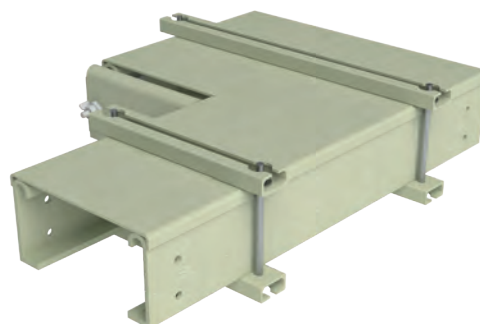
W1 (mm)	W2 (mm)	Description	Order Code	Weight (kg/pcs)
300	150	KCA GRP K 300/150/ RR/LR	3193721	0,85
400		KCA GRP K 400/150/ RR/LR	3193722	1,02
450		KCA GRP K 450/150/ RR/LR	3193723	1,11
500		KCA GRP K 500/150/ RR/LR	3193724	1,19
600		KCA GRP K 600/150/ RR/LR	3193725	1,36
750		KCA GRP K 750/150/ RR/LR	3193726	2,22
900		KCA GRP K 900/150/ RR/LR	3193727	2,72
300	200	KCA GRP K 300/200/ RR/LR	3193728	0,94
400		KCA GRP K 400/200/ RR/LR	3193729	1,11
450		KCA GRP K 450/200/ RR/LR	3193730	1,19
500		KCA GRP K 500/200/ RR/LR	3193731	1,27
600		KCA GRP K 600/200/ RR/LR	3193732	1,44
750		KCA GRP K 750/200/ RR/LR	3193733	2,30
900		KCA GRP K 900/200/ RR/LR	3193734	2,81
400	300	KCA GRP K 400/300/ RR/LR	3193735	1,27
450		KCA GRP K 450/300/ RR/LR	3193736	1,36
500		KCA GRP K 500/300/ RR/LR	3193737	1,44
600		KCA GRP K 600/300/ RR/LR	3193738	1,61
750		KCA GRP K 750/300/ RR/LR	3193739	2,47
900		KCA GRP K 900/300/ RR/LR	3193740	2,97
500	400	KCA GRP K 500/400/ RR/LR	3193741	1,61
600		KCA GRP K 600/400/ RR/LR	3193742	1,78
750		KCA GRP K 750/400/ RR/LR	3193743	2,64
900		KCA GRP K 900/400/ RR/LR	3193744	3,14
600	450	KCA GRP K 600/450/ RR/LR	3193745	1,86
750		KCA GRP K 750/450/ RR/LR	3193746	2,72
900		KCA GRP K 900/450/ RR/LR	3193747	3,23
600	500	KCA GRP K 600/500/ RR/LR	3193748	1,95
750		KCA GRP K 750/500/ RR/LR	3193749	2,81
900		KCA GRP K 900/500/ RR/LR	3193750	3,31
750	600	KCA GRP K 750/600/ RR/LR	3193751	2,97
900		KCA GRP K 900/600/ RR/LR	3193752	3,48
900	750	KCA GRP K 900/750/ RR/LR	3193753	4,34

Installation

For 50mm - 600mm widths



For 750mm - 900mm widths



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Cover Clamp** : Check page 41 for order.

E-LINE KCA GRP

Accessories

Separator

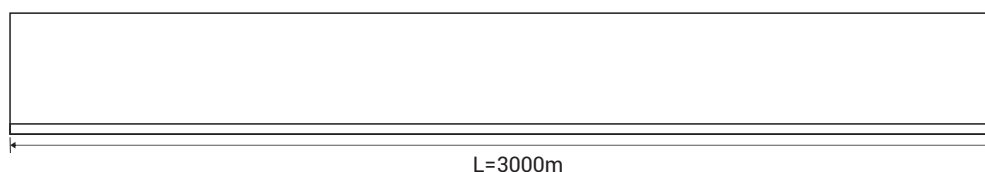
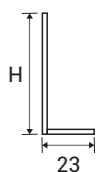


KCA GRP

Accessories



Description	Height (mm)	Thickness (mm)	Weight (kg/m)	Order Code
55 KCA GRP Separator L3	36	3	0,312	3177485
80 KCA GRP Separator L3	62	3	0,457	3349165
100 KCA GRP Separator L3	75	3	0,529	3355579
150 KCA GRP Separator L3	119	3	0,774	3375368



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Fasteners** : 1 set of M8×40 SS316 (A4) bolt set per 1 meter.

E-LINE KCA GRP

Accessories

Joint Element, Material: GRP



Produced using the SMC method. Delivered with pre-drilled holes.



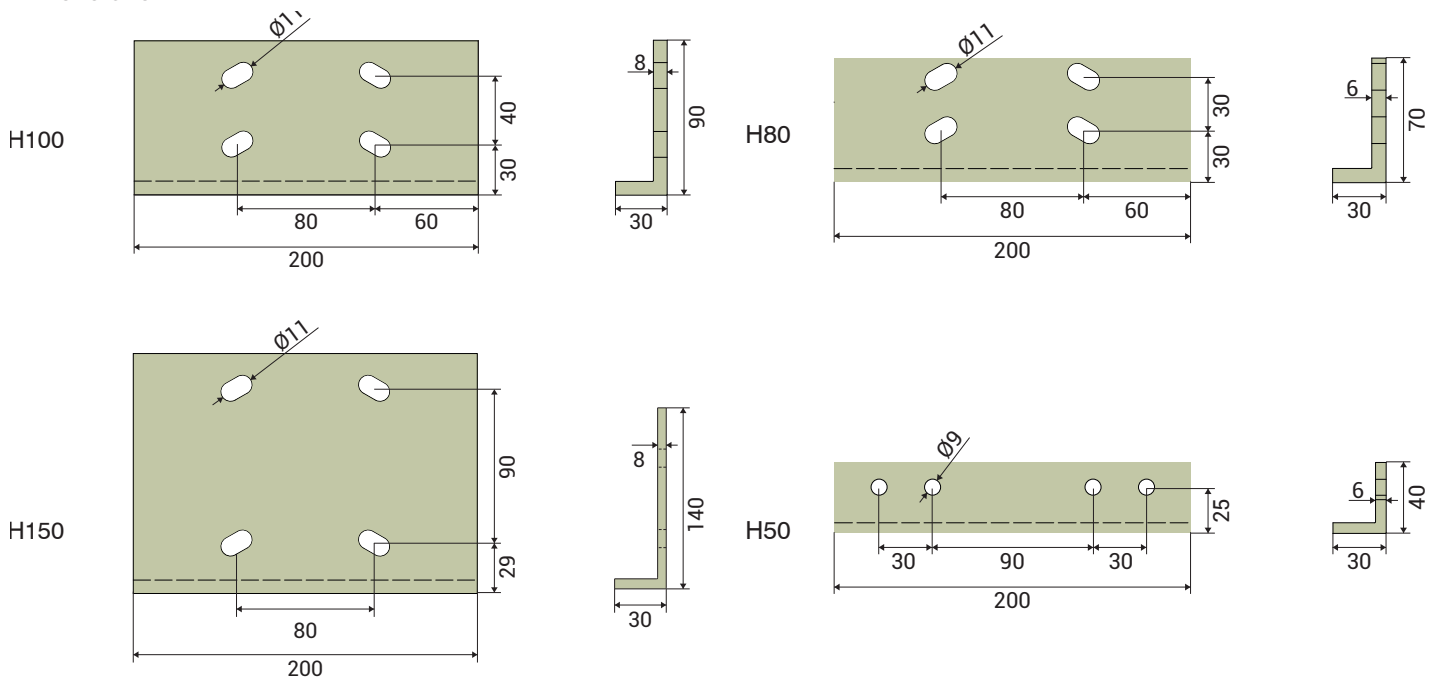
KCA GRP

Accessories

Description	Height (mm)	Length (mm)	Thickness (mm)	Required Fixing Set	Weight (kg/pcs)	Order Code
50 KCA/CTA GRP Joint Element	40	200	6,0	4 sets of M8x25 SS316	0,13	3191263
80 KCA/CTA GRP Joint Element	70	200	6,0	4 sets of M10x25 SS316 or 4 sets of M10x40 GRP	0,20	3191264
100 KCA/CTA GRP Joint Element	90	200	8,0	4 sets of M10x25 SS316 or 4 sets of M10x40 GRP	0,31	3177483
150 KCA/CTA GRP Joint Element	140	200	8,0	4 sets of M10x25 SS316 or 4 sets of M10x40 GRP	0,45	3177484

Note: H50mm additional components are compatible with H55mm cable ladders.

Dimensions :

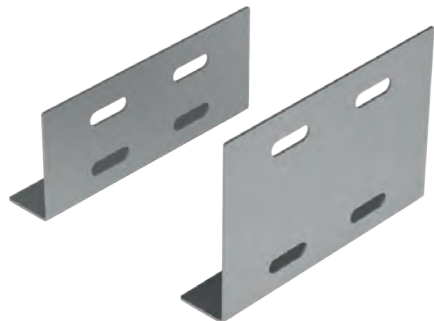


- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Fasteners** : For H50mm: 4 sets of M8×25 SS316 (Page 67) (To be ordered separately).
For H80mm,H100mm and H150mm : 4 sets of M10×25 SS316 or M10X40 Composite Bolt Set (Page 67) (To be ordered separately).

E-LINE KCA GRP

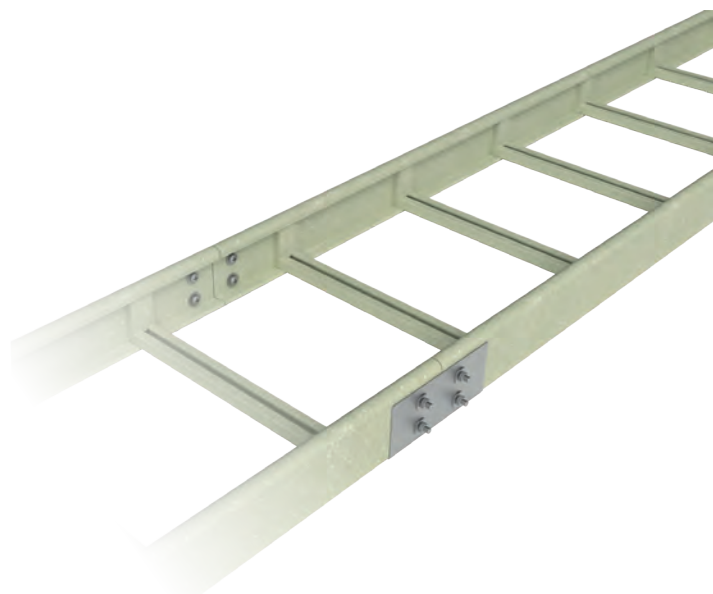
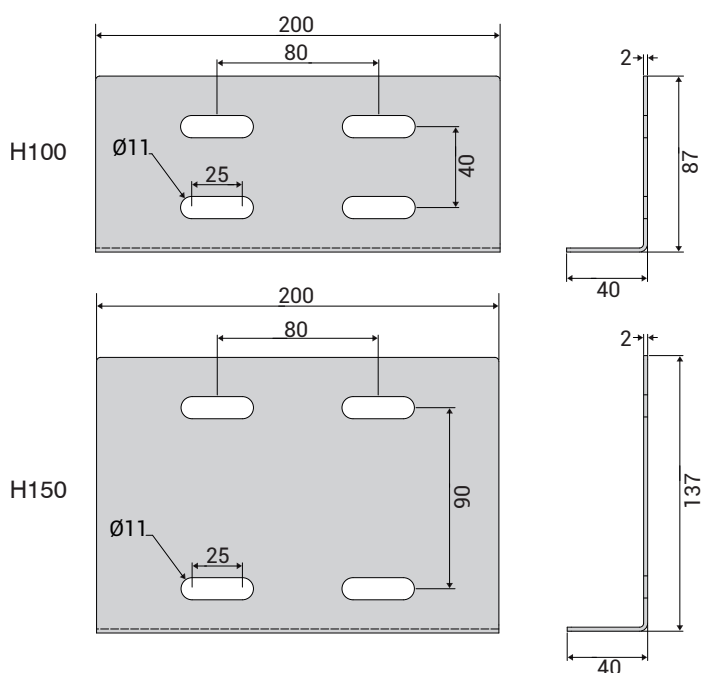
Accessories

Dilatation, Material: 316 Stainless Steel



Description	Height (mm)	Length (mm)	Thickness (mm)	Required Fixing Set (SS316)	Weight (kg/pcs)	Order Code
100 KCA/CTA GRP Dilatation SS316	87	200	2	4 set M10x25 SS316	0,37	3415122
150 KCA/CTA GRP Dilatation SS316	137	200	2	4 set M10x25 SS316	0,53	3415123

Dimensions :



- Material : 316 Quality Stainless Steel
- Color : Standard 316 Quality Stainless Steel Color
- Fasteners : M10x25 SS316 Bolt Set

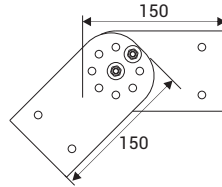
E-LINE KCA GRP

Accessories

SDE Vertical Adjustable Fitting



Delivered with pre-drilled holes.



Description	Height (mm)	Thickness (mm)	Weight (kg/set)	Order Code
100 KCA GRP SDE	100	5	0,25	3177487
150 KCA GRP SDE	150	5	0,42	3177488

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and antistatic products are manufactured upon special request.)
- **Color** : RAL 7032 Pebble Grey. (Color can be produced upon request. Minimal color tone variation may be observed.)
- **Fasteners** : M10x25 SS316 Bolt Set or M10x40 GRP Bolt Set

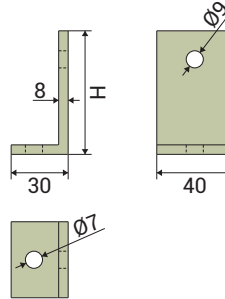
E-LINE KCA GRP

Accessories

L- Fixing Clamp



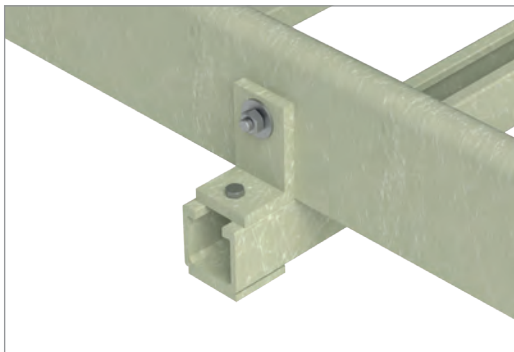
Delivered with pre-drilled holes.



Description	Material	Height (mm)	Weight (kg/set)	Order Code
H55 L-Fixing Clamp (GRP)	GRP	35	0,036	1027015
H80 L-Fixing Clamp (GRP)	GRP	55	0,046	1027016
H100 L-Fixing Clamp (GRP)	GRP	65	0,052	1027017
H150 L-Fixing Clamp (GRP)	GRP	100	0,070	1027286

Installation:

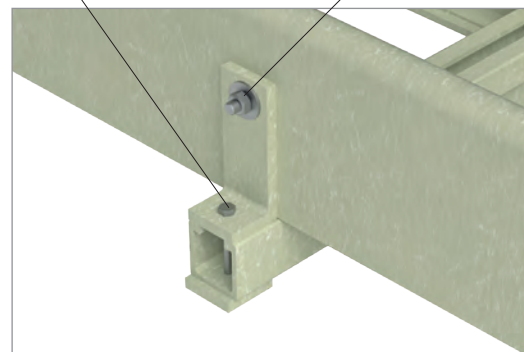
H100



M6X70 Bolt Set

H150

M8X25 Bolt Set



Note :For the L-Fixing Element (GRP) to be mounted to the GRP Ladder, it must be drilled with a drill bit at the mounting location. GRP Ladders will be shipped with holes only at the end sections for the mounting of joint elements.

Fasteners - STK Bracket

Description	Material	Order Code	Weight (kg/pcs)
STK Bracket SS316	Stainless Steel	2095531	0,070



Fasteners (Stainless Steel 316)

Bolt Sets

Description	Material	Order Code	Weight (kg/set)
M8x25 Fixing Set (SS316)	SS316 (A4)	1027109	0,028
M10x25 Fixing Set (SS316)	SS316 (A4)	1074621	0,049
M6x70 Fixing Set (SS316+GRP)	SS316 (A4)+GRP	3419764	0,037
M8x40 Fixing Set (SS316)	SS316 (A4)	3422005	0,030



Bolts (DIN 7985)

Description	Material	Order Code	Weight (kg/pcs)
M8x25 Bolt Set (DIN 7985) (SS316)	SS316 (A4)	1025647	0,019
M10x25 Bolt Set (DIN 7985) (SS316)	SS316 (A4)	1075074	0,028
M8x40 Bolt Set (DIN 7985) (SS316)	SS316 (A4)	1077338	0,021



Nuts (DIN 934)

Description	Material	Order Code	Weight (kg/pcs)
M8 Hex Nut (DIN 934) (SS316)	SS316 (A4)	1025649	0,005
M10 Hex Nut (DIN 934) (SS316)	SS316 (A4)	1063408	0,01



Flat Washers (DIN 9021)

Description	Material	Order Code	Weight (kg/pcs)
M8 Plain Washer (DIN 9021) (SS316)	SS316 (A4)	1025648	0,006
M10 Plain Washer (DIN 9021) (SS316)	SS316 (A4)	1075075	0,011



Description	Material	Order Code	Weight (kg/set)
M10X40 Composite Bolt + M10 Wing Nut	GRP	1071357	0,015



Note: Maximum Tightening Torque: 4 Nm

E-LINE KCA GRP

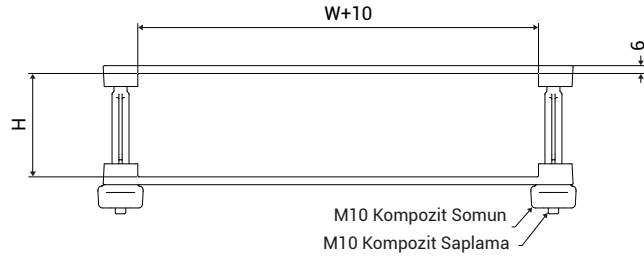
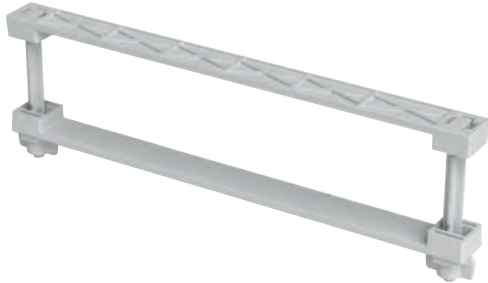
Cover Clamp

Heavy Duty Cover Clamp



KCA GRP

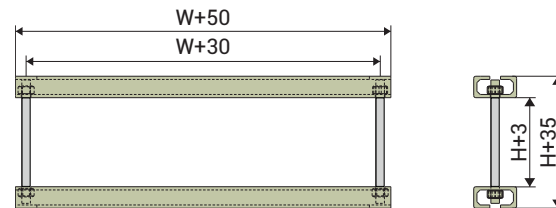
Manufactured using the SMC method.



For 50mm - 600mm widths

Description	Height (mm)	Width (mm)	Weight (kg/set)	Order Code
100 KCA GRP 150 Heavy Duty Cover Clamp	100	150	0,144	3407281
100 KCA GRP 200 Heavy Duty Cover Clamp	100	200	0,163	3407282
100 KCA GRP 300 Heavy Duty Cover Clamp	100	300	0,209	3407284
100 KCA GRP 400 Heavy Duty Cover Clamp	100	400	0,22	3407285
100 KCA GRP 450 Heavy Duty Cover Clamp	100	450	0,241	3407286
100 KCA GRP 500 Heavy Duty Cover Clamp	100	500	0,261	3407287
100 KCA GRP 600 Heavy Duty Cover Clamp	100	600	0,291	3407288
150 KCA GRP 150 Heavy Duty Cover Clamp	150	150	0,153	3407289
150 KCA GRP 200 Heavy Duty Cover Clamp	150	200	0,163	3407290
150 KCA GRP 300 Heavy Duty Cover Clamp	150	300	0,218	3407291
150 KCA GRP 400 Heavy Duty Cover Clamp	150	400	0,23	3407293
150 KCA GRP 450 Heavy Duty Cover Clamp	150	450	0,25	3407294
150 KCA GRP 500 Heavy Duty Cover Clamp	150	500	0,261	3407295
150 KCA GRP 600 Heavy Duty Cover Clamp	150	600	0,3	3407296

Cover Clamp



For 750mm - 900mm widths

Material & Quantity:

- Profiles: GRP (2 pieces)
- Threaded Rod: M8, SS316 (2 pieces)
- Nut: M8, SS316 (4 pieces)
- Flat Washer: M8, SS316 (4 pieces)

Description	Height (mm)	Width (mm)	Weight (kg/set)	Order Code
100 CT-KM GRP 750 Heavy Duty Cover Clamp	100	750	1,128	3210406
100 CT-KM GRP 900 Heavy Duty Cover Clamp	100	900	1,316	3210407
150 CT-KM GRP 750 Heavy Duty Cover Clamp	150	750	1,154	3210416
150 CT-KM GRP 900 Heavy Duty Cover Clamp	150	900	1,342	3210417

E-LINE KCA GRP

KCA GRP Specification

Glass Reinforced Polyester



Part 1 – Scope

This specification covers the minimum requirements for the design, manufacture, testing, and supply of Glass Reinforced Polyester (KCA GRP) cable ladders, necessary hardware, accessories, and fittings suitable for indoor/outdoor installations required for cable laying.

- KCA GRP cable ladders shall be designed and manufactured meeting the requirements of NEMA FG-1 and ASTM E-84.
- All cable ladders and accessories shall be corrosion/chemical resistant, weather resistant, easy to drill and cut, lightweight, high strength, and flame retardant (Class 1 Rating) in accordance with ASTM E-84. All composite materials shall have UV light inhibiting chemical additives to resist degradation from ultra violet light. All composite materials shall have halogen-free properties.
- KCA GRP Cable Ladders and accessories can be manufactured with anti-static properties upon request.

Design & Deflection

- E-Line KCA GRP Glass Reinforced Polyester cable ladder sections are designed and manufactured to achieve the loading requirements of the NEMA VE-1 and IEC 61537, and are available in various load and span performances up to 6 meters span
- All reported results are based on uniformly distributed static loads, single-span configuration for NEMA VE-1 load testing and multispan configuration for IEC 61537 load testing.
- 100 mm height KCA GRP ladders are NEMA 12C classified and 150 mm height KCA GRP ladders are NEMA 20C classified.
- All load results detailed in this section have been derived from testing 900mm wide sections of KCA GRP cable ladders in the various configurations.
- The KCA GRP Cable Ladder must have connection holes drilled at both ends.
- The rungs must be secured to the side walls with locking clips.
- The exterior color of the product will be standard RAL 7032 beige. It should be possible to produce it in a different RAL code color upon request. Minimal variations in the color tone of the product may be observed.

Part 2 - Products

Specifications For EAE Cable Ladder E-Line KCA GRP/GRP Series Cable Ladder

1. Cable Ladder Design

- Cable ladder shall be designed and manufactured by EAE ELEKTRİK A.S.
- They shall be complete with installation and mounting accessories of KCA GRP such as bends, tees, crosses, reducers, splices, tray covers and other necessary hardware, fastener etc. defined in the latest NEMA FG-1 standard (U.S.A/Canada) and latest IEC 61537 standard (International standard).
- Specially designed and manufactured cable ladder allows easy installation of cables which shall be free from burrs, projections, sharp edges inside where cables can be damaged.
- Special designed Pultruded C-shape Side Rails, Pultruded C-shape Rungs, and Pultruded Splice Plates shall be increased the strength of the cable ladder and allow support spacings up to 6 meters.

2. Manufacture and Dimensions

- KCA GRP Cable Ladders shall consist of two longitudinal side rails, rungs, and locking elements used for the connection of the rungs to the side rails.
- KCA GRP Cable Ladders shall be manufactured in metric SI units.
- Straight Lengths shall be manufactured in 3 meters and 6 meters.
- Heights shall be 100 mm and 150 mm (corresponding loading depths shall be 75 mm and 125 mm, respectively).
- Widths shall be 150 mm, 200 mm, 300 mm, 400 mm, 450 mm, 500 mm, 600 mm, 750 mm, and 900 mm.
- Rung spacing shall be manufactured as standard at 300 mm. Alternative rung spacings shall be available upon request.
- Various types of fittings shall be available for changing the cable routing in both horizontal and vertical directions. Connection elements shall be as follows:
 - Horizontal fittings: YD 45° Horizontal Elbow, YD 90° Horizontal Elbow, YT Horizontal Tee, AD Straight Fitting, and Reduction,
 - Vertical fittings: ID 90° Inside Vertical Elbow, DD 90° Outside Vertical Elbow, and Angle Adjustable Elbow,
 - Standard radius: R300, R450, and R600,
 - Standard angles for horizontal and vertical modules: 45° and 90° (other angles can be manufactured upon request).

E-LINE KCA GRP

KCA GRP Specification

Glass Reinforced Polyester



KCA GRP

Specification

3. Material Properties

KCA GRP Cable Ladders must be manufactured from "Glass Reinforced Polyester" material. The manufactured products must have the following properties and these properties must be declared and proven by type test reports obtained from an internationally accredited laboratory.

- Standard products are manufactured in accordance with UL94; V0 flame retardancy within 10 seconds.
- Products with F0 and M1 flame resistance, as specified in the NF F 16-101 standard, can be manufactured upon request.
- According to BS 476 part-7; they must be Class-1. (Flame spread length test)
- Must be Class-1 according to ASTM E-84. (Flame spread and smoke production test)
- According to ISO 4589-2, the "Limiting Oxygen Index" must be 28%. Can be produced at 45% upon request.
- DIN 4102-1 and be B1 class. (Dripping, smoke, and smoke temperature test when exposed to flame)
- Must be tested according to EN 60754 and be halogen-free. (The measurement of halogen formed when exposed to flame must be no more than 5 mg/g.)
- Must be tested according to EN 60695 and be resistant to the 950 °C glowing wire test.
- Must be tested according to ISO 4892-2 standard for UV resistance. (Tested for 60 days between -40°C and +85°C, no color change or material deterioration should be observed. This test simulates 10 years of UV exposure.)
- It must be tested and certified according to the EN 60068-2-1 standard (-75°C for 72 hours, with no physical changes observed at the end).
- It must be tested according to the ISO 62 standard (water absorption test).
- It must be tested and approved for ozone aging according to the ISO 1431-1 standard.
- Electrical conductivity must be measured according to the EN 60079-0 standard. (Standard products have insulating properties; anti-static products can be produced upon request.)
- Transport values must be tested and certified according to the IEC 61537 standard.
- Must be subjected to a minimum of 1500 hours of salt testing according to the ISO 9227 standard.
- Must be tested and approved according to the ASTM D 4385 standard (Visual defects).
- Must be tested and approved according to the TS EN 60243-1 standard (Dielectric test).
- Transport values must be tested and certified according to the UL 568 standard.

4. Covers

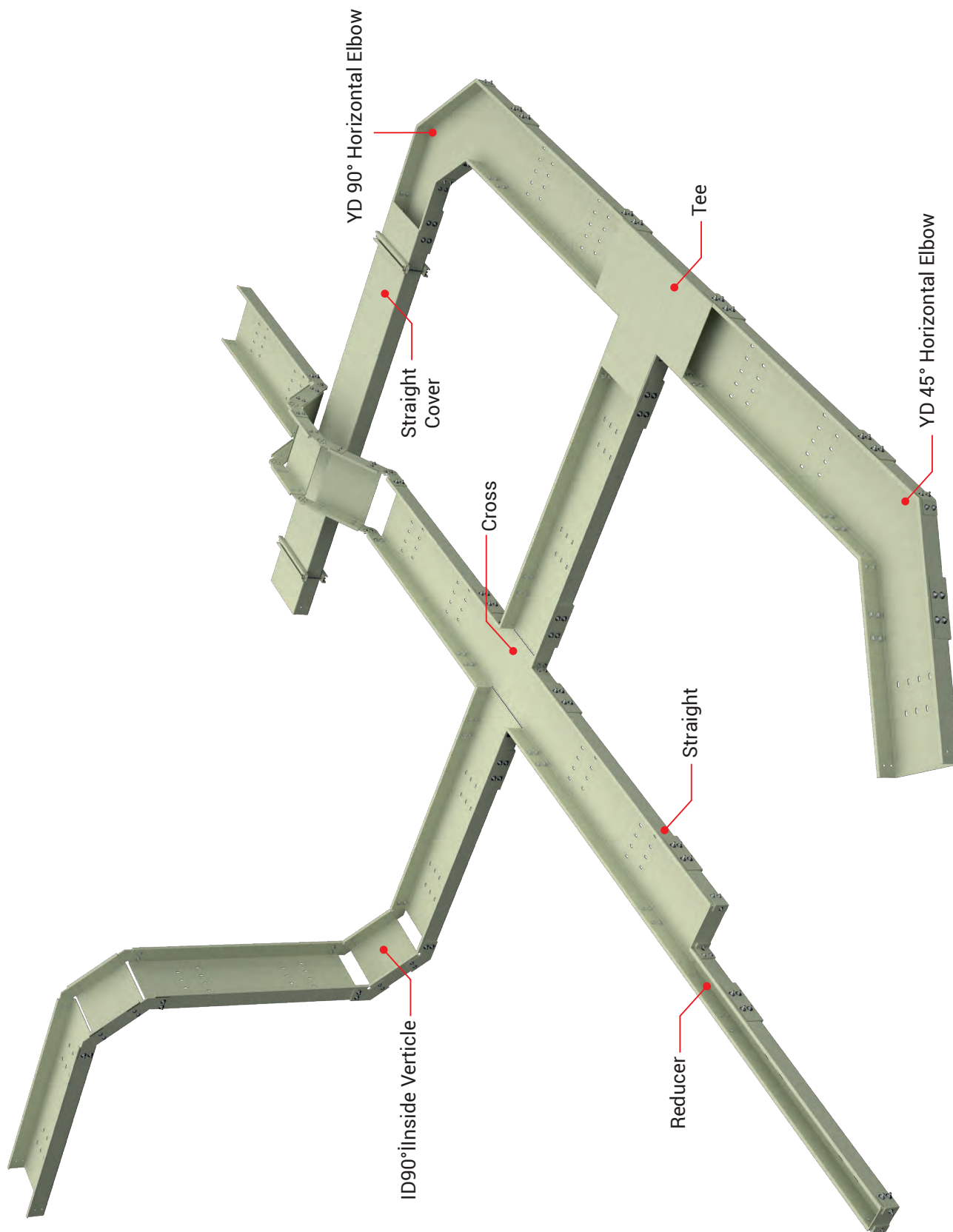
- Covers shall be constructed with a minimum thickness 3mm.
- All range of manufactured straight lengths and fittings shall be supplied with their covers upon request.
- Covers will be manufactured up to 600mm in width.
- Heavy duty omega type cover clamps shall be used for outdoor applications.

5. Accessories

- Accessories shall be furnished as required to protect, support and install the cable ladder system.
- Splice plates, expansion splice plates, horizontal and vertical adjustable couplers, vertical adjustable fitting, dividers, junction box plates as well as fixing fasteners are standard manufactured and supplied accessories by EAE.

6. Splice Plates

- Splice plates shall be fastened to the outside of the cable ladder side-rails.
- Bolts, nuts and washers shall be supplied with splice plates. Stainless Steel 316 as standard.
- Additional components should be manufactured from Glass Reinforced Polyester material or 316 (A4) grade stainless steel material.



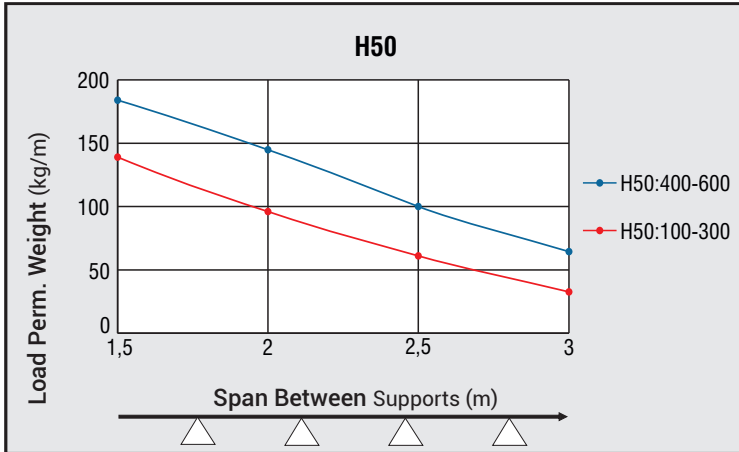
E-LINE CTA GRP

Straight Length

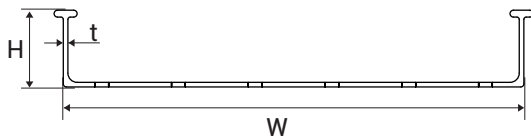
50 CTA GRP Glass Reinforced Polyester Cable Tray



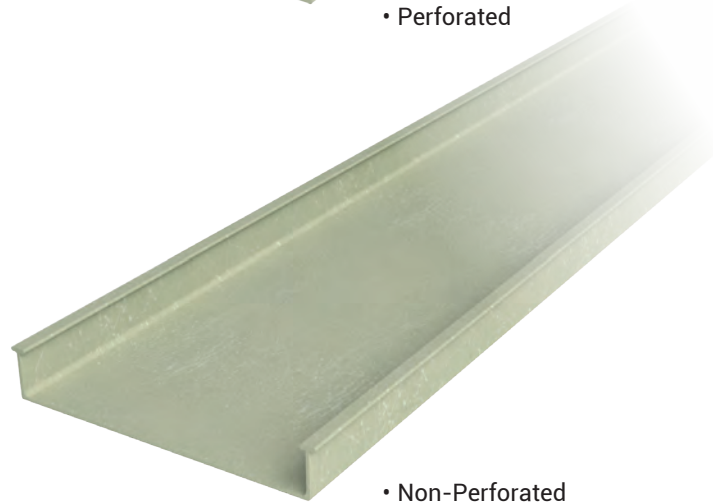
- Side Rail Height (H) : 50mm
- Widths (W) : 100mm, 150mm, 200mm, 250mm, 300mm, 400mm, 450mm, 500mm, 600mm
- Standard Lengths (L) : 3 meters



- Safe working load values are based on continuous beam test according to IEC 61537 standard.
- Please check Page-10 for effect of temperature on strength.



• Perforated



• Non-Perforated

Perforated		Non-Perforated		Height (mm)	Width (mm)	Length (m)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description					
3304626	50 CTA GRP 050	3304684	50 CTA-D GRP 050	50	50	3m	3,0	0,76
3304638	50 CTA GRP 100	3304686	50 CTA-D GRP 100	50	100	3m	3,0	1,35
3304650	50 CTA GRP 150	3304690	50 CTA-D GRP 150	50	150	3m	3,0	1,55
3304663	50 CTA GRP 200	3304693	50 CTA-D GRP 200	50	200	3m	3,0	1,89
3304671	50 CTA GRP 250	3304694	50 CTA-D GRP 250	50	250	3m	3,0	2,10
3304677	50 CTA GRP 300	3304695	50 CTA-D GRP 300	50	300	3m	3,0	2,42
3304680	50 CTA GRP 400	3304696	50 CTA-D GRP 400	50	400	3m	4,5	4,23
3304681	50 CTA GRP 450	3304697	50 CTA-D GRP 450	50	450	3m	4,5	4,62
3304682	50 CTA GRP 500	3304699	50 CTA-D GRP 500	50	500	3m	4,5	5,03
3304683	50 CTA GRP 600	3304700	50 CTA-D GRP 600	50	600	3m	4,5	5,85

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Connectors : Glass Reinforced Polyester (GRP); SS316 stainless steel available upon request. (Page 63)
- Fasteners : 4 sets of SS316 M8x25 bolt sets (Page 67)

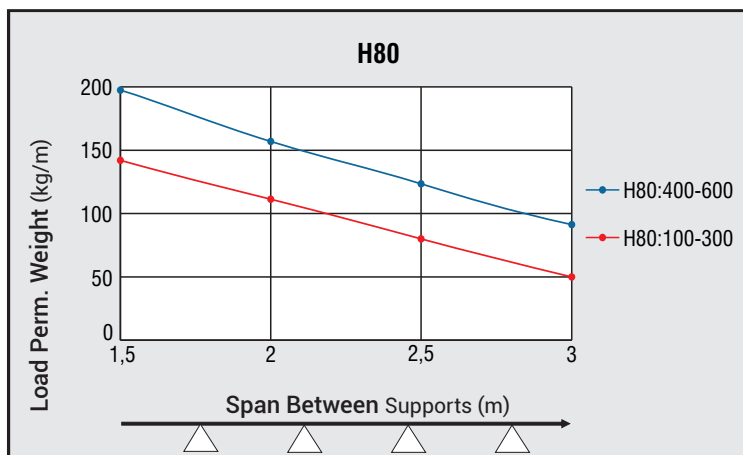
E-LINE CTA GRP

Straight Length

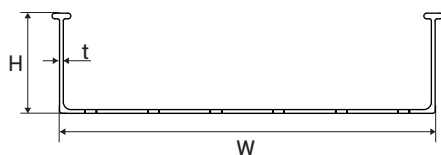
80 CTA GRP Glass Reinforced Polyester Cable Tray



- Side Rail Height (H) : 80mm
- Widths (W) : 100mm, 150mm, 200mm, 250mm, 300mm, 400mm, 450mm, 500mm, 600mm
- Standard Lengths (L) : 3 meters



- Safe working load values are based on continues beam test according to IEC 61537 standard.
- Please check Page-10 for effect of temperature on strength.



• Perforated



• Non-Perforated

Perforated		Non-Perforated		Height (mm)	Width (mm)	Length (m)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description					
3304701	80 CTA GRP 100	3304710	80 CTA-D GRP 100	80	100	3m	3,0	1,62
3306235	80 CTA GRP 150	3304711	80 CTA-D GRP 150	80	150	3m	3,0	1,89
3304703	80 CTA GRP 200	3304712	80 CTA-D GRP 200	80	200	3m	3,0	2,16
3304704	80 CTA GRP 250	3304713	80 CTA-D GRP 250	80	250	3m	3,0	2,43
3304705	80 CTA GRP 300	3304714	80 CTA-D GRP 300	80	300	3m	3,0	2,71
3304706	80 CTA GRP 400	3304715	80 CTA-D GRP 400	80	400	3m	4,5	4,72
3304707	80 CTA GRP 450	3304717	80 CTA-D GRP 450	80	450	3m	4,5	5,13
3304708	80 CTA GRP 500	3304719	80 CTA-D GRP 500	80	500	3m	4,5	5,54
3304709	80 CTA GRP 600	3304720	80 CTA-D GRP 600	80	600	3m	4,5	6,36

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Connectors : Glass Reinforced Polyester (GRP); SS316 stainless steel available upon request. (Page 63)
- Fasteners : 4 sets of SS316 M10x25 bolt sets or 4 sets of M10x40 bolt sets (Page 67)

Straight Length

CTA GRP

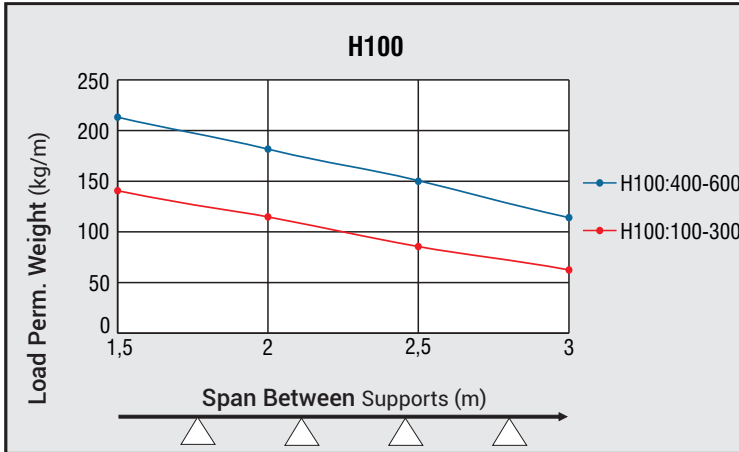
E-LINE CTA GRP

Straight Length

100 CTA GRP Glass Reinforced Polyester Cable Tray



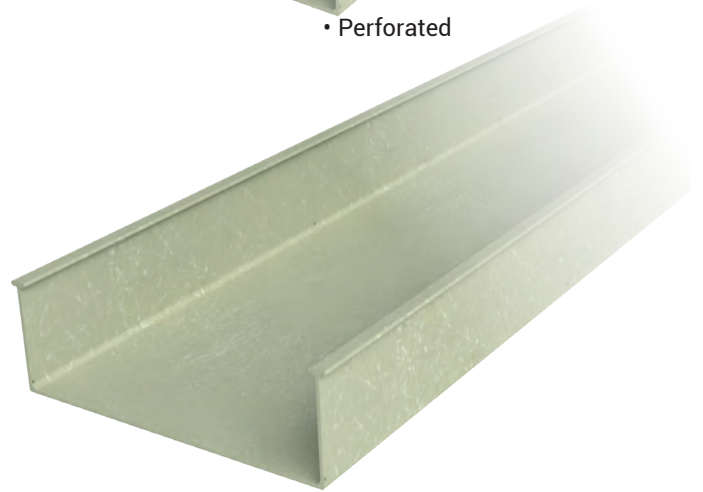
- Side Rail Height (H) : 100mm
- Widths (W) : 100mm, 150mm, 200mm, 250mm, 300mm, 400mm, 450mm, 500mm, 600mm
- Standard Lengths (L) : 3 meters



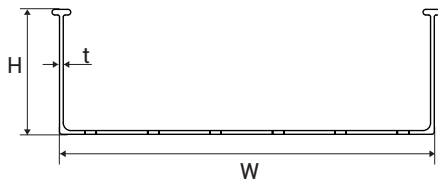
- Safe working load values are based on continues beam test according to IEC 61537 standard.
- Please check Page-10 for effect of temperature on strength.



• Perforated



• Non-Perforated



Perforated		Non-Perforated		Height (mm)	Width (mm)	Uzunluk (m)	Thickness (mm)	Weight (kg/m)
Order Code	Description	Order Code	Description					
3304721	100 CTA GRP 100	3304730	100 CTA-D GRP 100	100	100	3m	3,0	1,84
3304722	100 CTA GRP 150	3304731	100 CTA-D GRP 150	100	150	3m	3,0	2,11
3304723	100 CTA GRP 200	3304732	100 CTA-D GRP 200	100	200	3m	3,0	2,38
3304724	100 CTA GRP 250	3304733	100 CTA-D GRP 250	100	250	3m	3,0	2,66
3304725	100 CTA GRP 300	3304735	100 CTA-D GRP 300	100	300	3m	3,0	2,93
3304726	100 CTA GRP 400	3304736	100 CTA-D GRP 400	100	400	3m	4,5	5,05
3304727	100 CTA GRP 450	3304738	100 CTA-D GRP 450	100	450	3m	4,5	5,54
3304728	100 CTA GRP 500	3304739	100 CTA-D GRP 500	100	500	3m	4,5	5,87
3304729	100 CTA GRP 600	3304740	100 CTA-D GRP 600	100	600	3m	4,5	6,69

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Connectors : Glass Reinforced Polyester (GRP); SS316 stainless steel available upon request. (Page 63)
- Fasteners : 4 sets of SS316 M10x25 bolt sets or 4 sets of M10x40 bolt sets (Page 67)

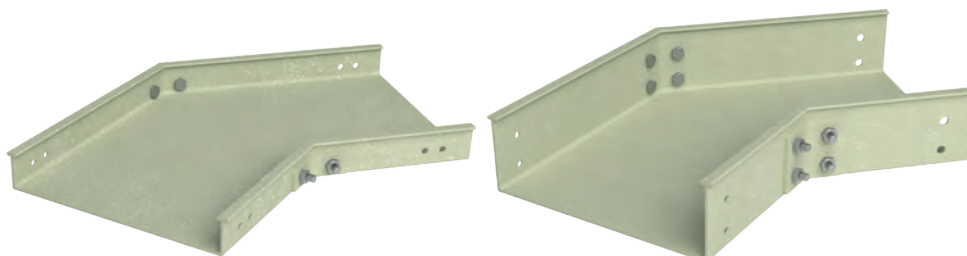
E-LINE CTA GRP

Fittings

YD 45° Horizontal Elbow (R300, R450, R600, R900)

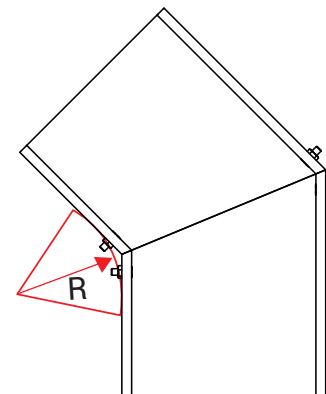


Produced by the pultrusion method. Shipped pre-assembled.



H50

H80
H100



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
50 CTA GRP 050 YD45°	50	50	3,0	3304741	3304774	3304807	3396019	0,67	0,80	0,94	0,95
50 CTA GRP 100 YD45°	50	100	3,0	3304742	3304775	3304808	3396020	0,83	1,00	1,15	1,42
50 CTA GRP 150 YD45°	50	150	3,0	3304743	3304776	3304809	3396021	0,93	1,20	1,38	1,73
50 CTA GRP 200 YD45°	50	200	3,0	3304744	3304777	3304810	3396022	1,19	1,41	1,63	2,04
50 CTA GRP 250 YD45°	50	250	3,0	3304745	3304778	3304811	3396023	1,37	1,63	1,89	2,36
50 CTA GRP 300 YD45°	50	300	3,0	3304746	3304779	3304812	3396024	1,57	1,86	2,18	2,72
50 CTA GRP 400 YD45°	50	400	4,5	3304747	3304780	3304813	3396025	2,82	3,37	3,84	4,90
50 CTA GRP 450 YD45°	50	450	4,5	3304748	3304781	3304814	3396026	3,16	3,77	4,38	5,45
50 CTA GRP 500 YD45°	50	500	4,5	3304750	3304782	3304815	3396027	3,52	4,19	4,85	6,02
50 CTA GRP 600 YD45°	50	600	4,5	3304751	3304783	3304816	3396028	4,35	5,13	5,45	7,20
80 CTA GRP 100 YD45°	80	100	3,0	3304753	3304784	3304817	3396029	1,20	1,41	1,60	1,97
80 CTA GRP 150 YD45°	80	150	3,0	3304754	3304785	3304818	3396030	1,29	1,61	1,84	2,28
80 CTA GRP 200 YD45°	80	200	3,0	3304755	3304786	3304819	3396031	1,57	1,83	2,10	2,60
80 CTA GRP 250 YD45°	80	250	3,0	3304756	3304787	3304822	3396032	1,77	2,06	2,36	2,94
80 CTA GRP 300 YD45°	80	300	3,0	3304757	3304788	3304823	3396033	1,97	2,30	2,63	3,30
80 CTA GRP 400 YD45°	80	400	4,5	3304758	3304790	3304824	3396034	3,33	3,95	4,48	5,68
80 CTA GRP 450 YD45°	80	450	4,5	3304759	3304791	3304826	3396035	3,68	4,36	5,04	6,24
80 CTA GRP 500 YD45°	80	500	4,5	3304760	3304792	3304827	3396036	4,05	4,79	5,52	6,82
80 CTA GRP 600 YD45°	80	600	4,5	3304762	3304794	3304828	3396037	4,91	5,75	6,52	8,02
100 CTA GRP 100 YD45°	100	100	3,0	3304763	3304795	3304829	3396038	1,33	1,57	1,80	2,26
100 CTA GRP 150 YD45°	100	150	3,0	3304764	3304797	3304830	3396039	1,53	1,79	2,04	2,57
100 CTA GRP 200 YD45°	100	200	3,0	3304766	3304798	3304831	3396040	1,72	2,01	2,30	2,90
100 CTA GRP 250 YD45°	100	250	3,0	3304767	3304799	3304832	3396041	1,92	2,24	2,56	3,23
100 CTA GRP 300 YD45°	100	300	3,0	3304768	3304801	3304833	3396042	2,13	2,49	2,84	3,61
100 CTA GRP 400 YD45°	100	400	4,5	3304769	3304803	3304834	3396043	3,56	4,23	4,79	6,11
100 CTA GRP 450 YD45°	100	450	4,5	3304771	3304804	3304835	3396044	3,92	4,64	5,36	6,68
100 CTA GRP 500 YD45°	100	500	4,5	3304772	3304805	3304836	3396045	4,30	5,08	5,85	7,26
100 CTA GRP 600 YD45°	100	600	4,5	3304773	3304806	3304837	3396046	5,17	6,06	6,87	8,48

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

YD 90° Horizontal Elbow (R300, R450, R600, R900)



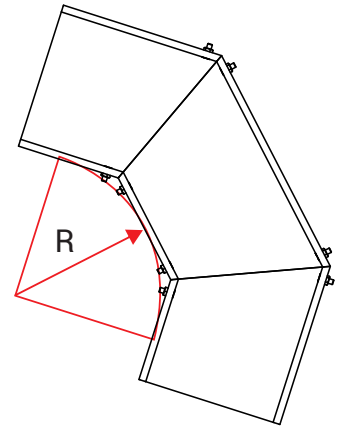
Produced by the pultrusion method. Shipped pre-assembled.



H50



H80
H100



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
50 CTA GRP 050 YD90°	50	50	3,0	3304838	3304867	3304897	3396047	1,16	1,40	1,65	1,74
50 CTA GRP 100 YD90°	50	100	3,0	3304839	3304868	3304898	3396048	1,41	1,74	2,05	2,60
50 CTA GRP 150 YD90°	50	150	3,0	3304840	3304869	3304899	3396049	1,71	2,10	2,40	3,16
50 CTA GRP 200 YD90°	50	200	3,0	3304841	3304870	3304900	3396050	1,99	2,47	2,92	3,73
50 CTA GRP 250 YD90°	50	250	3,0	3304842	3304871	3304901	3396051	2,31	2,84	3,39	4,33
50 CTA GRP 300 YD90°	50	300	3,0	3304843	3304873	3304903	3396052	2,68	3,21	3,89	4,97
50 CTA GRP 400 YD90°	50	400	4,5	3304844	3304874	3304905	3396053	4,78	5,85	6,92	8,95
50 CTA GRP 450 YD90°	50	400	4,5	3304845	3304875	3304906	3396054	5,43	6,57	7,74	10,01
50 CTA GRP 500 YD90°	50	500	4,5	3304846	3304876	3304907	3396055	6,08	7,31	8,64	11,07
50 CTA GRP 600 YD90°	50	600	4,5	3304847	3304877	3304908	3396056	7,46	8,95	10,44	13,28
80 CTA GRP 100 YD90°	80	100	3,0	3304848	3304878	3304909	3396057	2,08	2,50	2,89	3,65
80 CTA GRP 150 YD90°	80	150	3,0	3304849	3304880	3304910	3396058	2,40	2,88	3,35	4,21
80 CTA GRP 200 YD90°	80	200	3,0	3304850	3304881	3304911	3396059	2,69	3,26	3,79	4,80
80 CTA GRP 250 YD90°	80	200	3,0	3304851	3304882	3304912	3396060	3,02	3,64	4,28	5,41
80 CTA GRP 300 YD90°	80	300	3,0	3304852	3304883	3304913	3396061	3,41	4,01	4,79	6,07
80 CTA GRP 400 YD90°	80	400	4,5	3304853	3304884	3304914	3396062	5,71	6,91	8,10	10,40
80 CTA GRP 450 YD90°	80	400	4,5	3304854	3304885	3304915	3396063	6,39	7,64	8,94	11,50
80 CTA GRP 500 YD90°	80	500	4,5	3304855	3304886	3304916	3396064	7,05	8,40	9,86	12,57
80 CTA GRP 600 YD90°	80	600	4,5	3304856	3304887	3304917	3396065	8,47	10,09	11,7	14,83
100 CTA GRP 100 YD90°	100	100	3,0	3304857	3304888	3304918	3396066	2,31	2,79	3,23	4,17
100 CTA GRP 150 YD90°	100	150	3,0	3304858	3304889	3304919	3396067	2,64	3,18	3,71	4,74
100 CTA GRP 200 YD90°	100	200	3,0	3304859	3304890	3304920	3396068	2,94	3,57	4,16	5,34
100 CTA GRP 250 YD90°	100	250	3,0	3304860	3304891	3304921	3396069	3,28	3,61	4,65	5,96
100 CTA GRP 300 YD90°	100	300	3,0	3304861	3304892	3304922	3396070	3,68	4,33	5,17	6,63
100 CTA GRP 400 YD90°	100	400	4,5	3304862	3304893	3304924	3396071	6,11	7,39	8,67	11,21
100 CTA GRP 450 YD90°	100	450	4,5	3304863	3304894	3304925	3396072	6,80	8,13	9,52	12,32
100 CTA GRP 500 YD90°	100	500	4,5	3304864	3304895	3304926	3396073	7,48	8,91	10,46	13,41
100 CTA GRP 600 YD90°	100	600	4,5	3304865	3304896	3304927	3396074	8,93	10,63	12,32	15,68

Fittings

CTA GRP

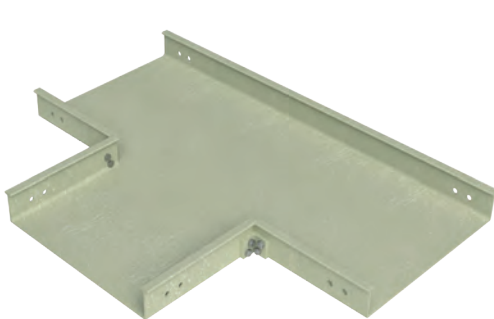
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

YT Tee

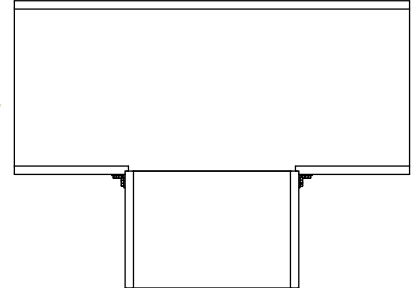
Produced by the pultrusion method. Shipped pre-assembled.



H50



H80-H100



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
50 CTA GRP 050 YT	50	50	3,0	3304928	0,83
50 CTA GRP 100 YT	50	100	3,0	3304929	1,06
50 CTA GRP 150 YT	50	150	3,0	3304930	1,32
50 CTA GRP 200 YT	50	200	3,0	3304932	1,61
50 CTA GRP 250 YT	50	200	3,0	3304934	1,93
50 CTA GRP 300 YT	50	300	3,0	3304935	2,27
50 CTA GRP 400 YT	50	400	4,5	3304936	4,33
50 CTA GRP 450 YT	50	400	4,5	3304938	4,96
50 CTA GRP 500 YT	50	500	4,5	3304939	5,64
50 CTA GRP 600 YT	50	600	4,5	3304940	7,12
80 CTA GRP 100 YT	80	100	3,0	3304942	1,39
80 CTA GRP 150 YT	80	150	3,0	3304943	1,66
80 CTA GRP 200 YT	80	200	3,0	3304944	1,96
80 CTA GRP 250 YT	80	200	3,0	3304945	2,28
80 CTA GRP 300 YT	80	300	3,0	3304946	2,63
80 CTA GRP 400 YT	80	400	4,5	3304947	4,85
80 CTA GRP 450 YT	80	400	4,5	3304948	5,49
80 CTA GRP 500 YT	80	500	4,5	3304949	6,18
80 CTA GRP 600 YT	80	600	4,5	3304950	7,68
100 CTA GRP 100 YT	100	100	3,0	3304951	1,61
100 CTA GRP 150 YT	100	150	3,0	3304952	1,89
100 CTA GRP 200 YT	100	200	3,0	3304953	2,19
100 CTA GRP 250 YT	100	200	3,0	3304954	2,52
100 CTA GRP 300 YT	100	300	3,0	3304955	2,88
100 CTA GRP 400 YT	100	400	4,5	3304956	5,19
100 CTA GRP 450 YT	100	400	4,5	3304957	5,85
100 CTA GRP 500 YT	100	500	4,5	3304958	6,54
100 CTA GRP 600 YT	100	600	4,5	3304959	8,06

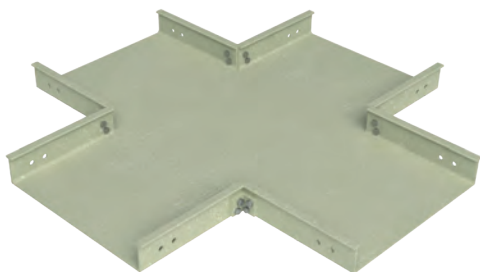
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

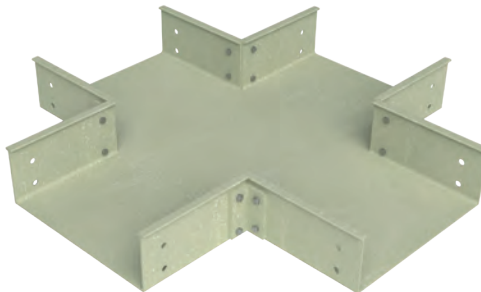
Fittings

AD Horizontal Cross Fitting

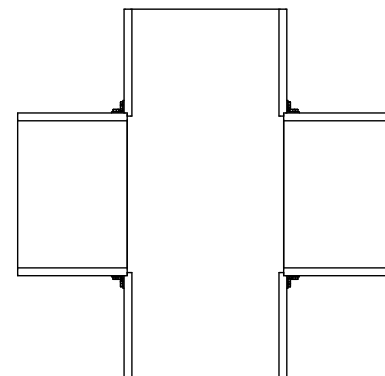
Produced by the pultrusion method. Shipped pre-assembled.



H50



H80-H100



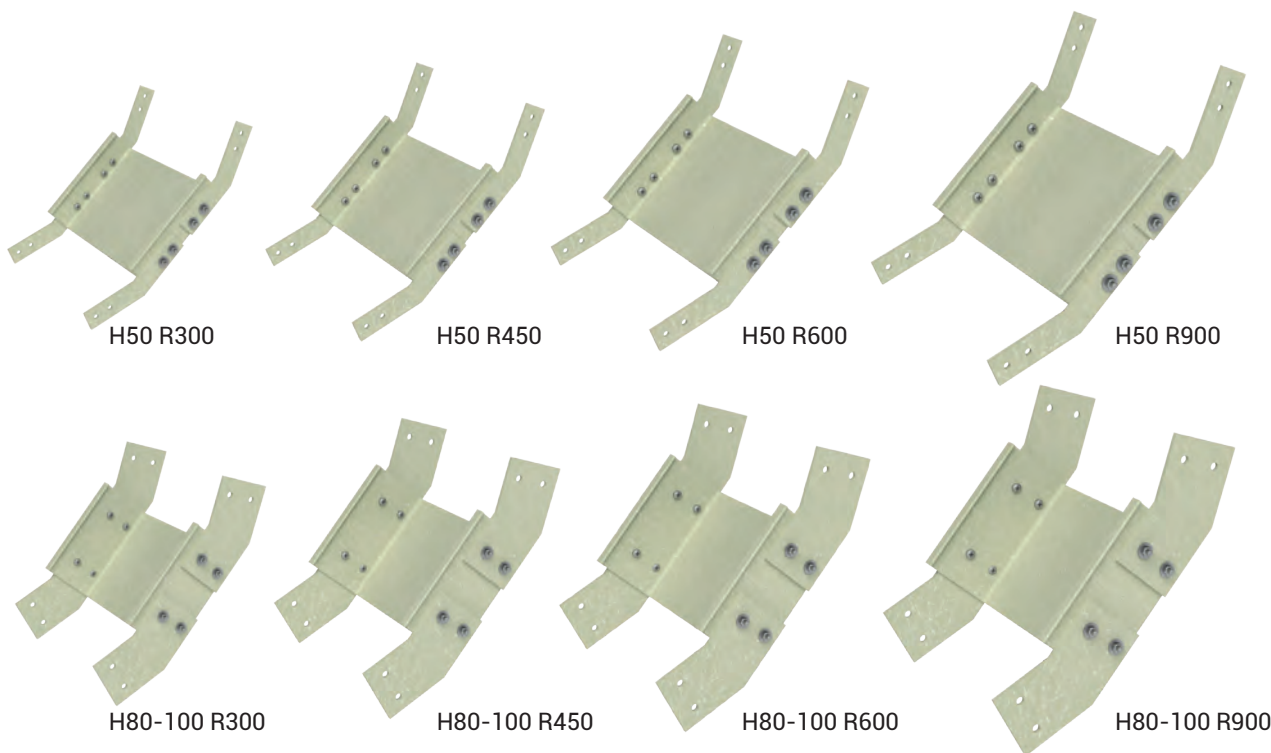
Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
50 CTA GRP 050 AD	50	50	3,0	3304960	1,20
50 CTA GRP 100 AD	50	100	3,0	3304961	1,47
50 CTA GRP 150 AD	50	150	3,0	3304962	1,71
50 CTA GRP 200 AD	50	200	3,0	3304963	2,10
50 CTA GRP 250 AD	50	200	3,0	3304964	2,40
50 CTA GRP 300 AD	50	300	3,0	3304966	2,84
50 CTA GRP 400 AD	50	400	4,5	3304967	5,20
50 CTA GRP 450 AD	50	400	4,5	3304968	5,81
50 CTA GRP 500 AD	50	500	4,5	3304969	6,64
50 CTA GRP 600 AD	50	600	4,5	3304970	8,24
80 CTA GRP 100 AD	80	100	3,0	3304972	1,96
80 CTA GRP 150 AD	80	150	3,0	3304973	2,20
80 CTA GRP 200 AD	80	200	3,0	3304974	2,59
80 CTA GRP 250 AD	80	200	3,0	3304975	2,89
80 CTA GRP 300 AD	80	300	3,0	3304977	3,33
80 CTA GRP 400 AD	80	400	4,5	3304978	5,83
80 CTA GRP 450 AD	80	400	4,5	3304979	6,44
80 CTA GRP 500 AD	80	500	4,5	3304980	7,27
80 CTA GRP 600 AD	80	600	4,5	3304981	8,87
100 CTA GRP 100 AD	100	100	3,0	3304982	2,29
100 CTA GRP 150 AD	100	150	3,0	3304983	2,53
100 CTA GRP 200 AD	100	200	3,0	3304984	2,92
100 CTA GRP 250 AD	100	200	3,0	3304986	3,22
100 CTA GRP 300 AD	100	300	3,0	3304987	3,66
100 CTA GRP 400 AD	100	400	4,5	3304988	6,26
100 CTA GRP 450 AD	100	400	4,5	3304989	6,86
100 CTA GRP 500 AD	100	500	4,5	3304990	7,69
100 CTA GRP 600 AD	100	600	4,5	3304991	9,29

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

ID45° Inside Vertical Elbow (R300, R450, R600, R900)



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
50 CTA GRP 050 ID45/R	50	50	3,0	3396075	3396085	3396095	3396105	0,47	0,47	0,52	0,62
50 CTA GRP 100 ID45/R	50	100	3,0	3396076	3396086	3396096	3396106	0,49	0,56	0,64	0,79
50 CTA GRP 150 ID45/R	50	150	3,0	3396077	3396087	3396097	3396107	0,52	0,61	0,70	0,89
50 CTA GRP 200 ID45/R	50	200	3,0	3396078	3396088	3396098	3396108	0,56	0,66	0,77	0,99
50 CTA GRP 250 ID45/R	50	250	3,0	3396079	3396089	3396099	3396109	0,59	0,71	0,84	1,09
50 CTA GRP 300 ID45/R	50	300	3,0	3396080	3396090	3396100	3396110	0,62	0,76	0,90	1,19
50 CTA GRP 400 ID45/R	50	400	4,5	3396081	3396091	3396101	3396111	0,85	1,10	1,35	1,86
50 CTA GRP 450 ID45/R	50	450	4,5	3396082	3396092	3396102	3396112	0,90	1,17	1,45	2,01
50 CTA GRP 500 ID45/R	50	500	4,5	3396083	3396093	3396103	3396113	0,95	1,25	1,55	2,16
50 CTA GRP 600 ID45/R	50	600	4,5	3396084	3396094	3396104	3396114	1,05	1,40	1,75	2,46
80 CTA GRP 100 ID45/R	80	100	3,0	3396115	3396124	3396133	3396142	0,69	0,80	0,93	1,13
80 CTA GRP 150 ID45/R	80	150	3,0	3396116	3396125	3396134	3396143	0,72	0,89	1,00	1,23
80 CTA GRP 200 ID45/R	80	200	3,0	3396117	3396126	3396135	3396144	0,76	0,94	1,07	1,33
80 CTA GRP 250 ID45/R	80	250	3,0	3396118	3396127	3396136	3396145	0,79	0,99	1,13	1,43
80 CTA GRP 300 ID45/R	80	300	3,0	3396119	3396128	3396137	3396146	0,82	1,04	1,20	1,53
80 CTA GRP 400 ID45/R	80	400	4,5	3396120	3396129	3396138	3396147	1,07	1,40	1,69	2,26
80 CTA GRP 450 ID45/R	80	450	4,5	3396121	3396130	3396139	3396148	1,12	1,48	1,79	2,41
80 CTA GRP 500 ID45/R	80	500	4,5	3396122	3396131	3396140	3396149	1,17	1,55	1,89	2,56
80 CTA GRP 600 ID45/R	80	600	4,5	3396123	3396132	3396141	3396150	1,27	1,70	2,09	2,86
100 CTA GRP 100 ID45/R	100	100	3,0	3396151	3396160	3396169	3396178	0,84	1,01	1,12	1,34
100 CTA GRP 150 ID45/R	100	150	3,0	3396152	3396161	3396170	3396179	0,87	1,06	1,19	1,44
100 CTA GRP 200 ID45/R	100	200	3,0	3396153	3396162	3396171	3396180	0,90	1,11	1,25	1,54
100 CTA GRP 250 ID45/R	100	250	3,0	3396154	3396163	3396172	3396181	0,94	1,16	1,32	1,64
100 CTA GRP 300 ID45/R	100	300	3,0	3396155	3396164	3396173	3396182	0,97	1,21	1,39	1,74
100 CTA GRP 400 ID45/R	100	400	4,5	3396156	3396165	3396174	3396183	1,23	1,60	1,90	2,51
100 CTA GRP 450 ID45/R	100	450	4,5	3396157	3396166	3396175	3396184	1,28	1,67	2,00	2,66
100 CTA GRP 500 ID45/R	100	500	4,5	3396158	3396167	3396176	3396185	1,33	1,75	2,10	2,81
100 CTA GRP 600 ID45/R	100	600	4,5	3396159	3396168	3396177	3396186	1,43	1,90	2,30	3,11

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

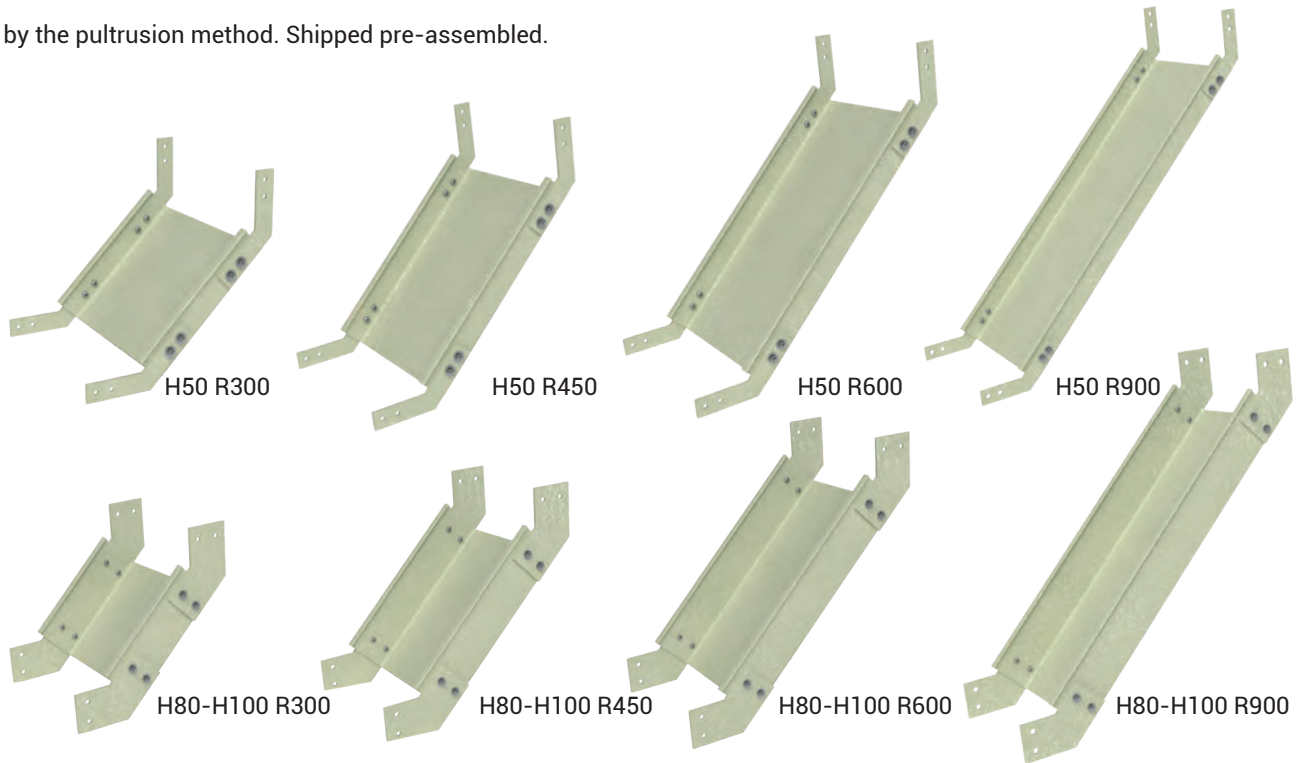
E-LINE CTA GRP

Fittings

ID90° Inside Vertical Elbow (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



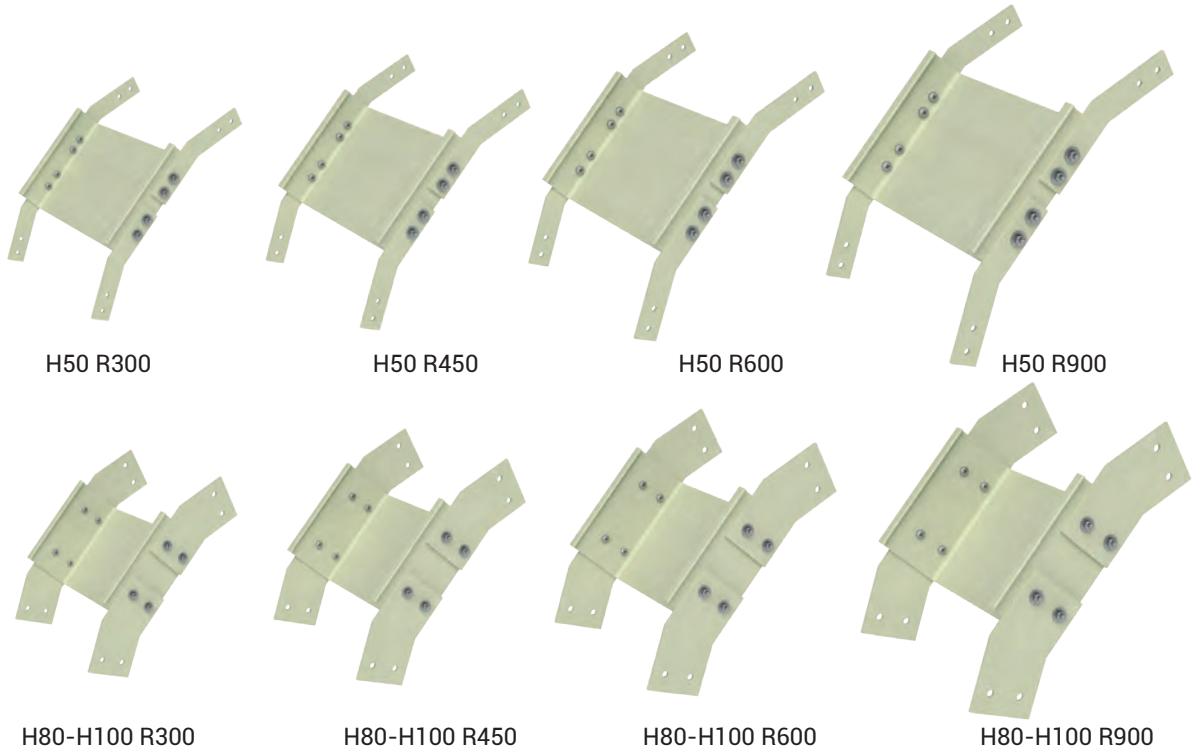
Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
50 CTA GRP 050 ID90/R	50	50	3,0	3304992	3305024	3305059	3396187	0,57	0,67	0,77	0,95
50 CTA GRP 100 ID90/R	50	100	3,0	3304993	3305025	3305060	3396188	0,63	0,79	0,96	1,29
50 CTA GRP 150 ID90/R	50	150	3,0	3304994	3305027	3305062	3396189	0,70	0,90	1,09	1,50
50 CTA GRP 200 ID90/R	50	200	3,0	3304995	3305028	3305063	3396190	0,77	1,00	1,23	1,71
50 CTA GRP 250 ID90/R	50	250	3,0	3304996	3305029	3305064	3396191	0,84	1,11	1,37	1,92
50 CTA GRP 300 ID90/R	50	300	3,0	3304998	3305031	3305065	3396192	0,91	1,21	1,51	2,13
50 CTA GRP 400 ID90/R	50	400	4,5	3304999	3305032	3305067	3396193	1,38	1,92	2,45	3,53
50 CTA GRP 450 ID90/R	50	450	4,5	3305000	3305033	3305068	3396194	1,48	2,07	2,66	3,84
50 CTA GRP 500 ID90/R	50	500	4,5	3305001	3305035	3305069	3396195	1,59	2,23	2,87	4,16
50 CTA GRP 600 ID90/R	50	600	4,5	3305002	3305036	3305071	3396196	1,80	2,54	3,29	4,78
80 CTA GRP 100 ID90/R	80	100	3,0	3305003	3305038	3305072	3396197	0,89	1,09	1,29	1,82
80 CTA GRP 150 ID90/R	80	150	3,0	3305004	3305039	3305073	3396198	0,96	1,19	1,43	2,03
80 CTA GRP 200 ID90/R	80	200	3,0	3305005	3305040	3305074	3396199	1,03	1,30	1,57	2,24
80 CTA GRP 250 ID90/R	80	250	3,0	3305006	3305041	3305075	3396200	1,09	1,40	1,71	2,45
80 CTA GRP 300 ID90/R	80	300	3,0	3305007	3305042	3305076	3396201	1,16	1,51	1,85	2,66
80 CTA GRP 400 ID90/R	80	400	4,5	3305009	3305043	3305077	3396202	1,68	2,27	2,87	4,19
80 CTA GRP 450 ID90/R	80	450	4,5	3305010	3305045	3305078	3396203	1,78	2,43	3,08	4,50
80 CTA GRP 500 ID90/R	80	500	4,5	3305011	3305046	3305079	3396204	1,88	2,59	3,29	4,81
80 CTA GRP 600 ID90/R	80	600	4,5	3305012	3305048	3305081	3396205	2,09	2,90	3,71	5,44
100 CTA GRP 100 ID90/R	100	100	3,0	3305013	3305049	3305082	3396206	1,10	1,33	1,56	2,10
100 CTA GRP 150 ID90/R	100	150	3,0	3305014	3305050	3305083	3396207	1,17	1,43	1,6	2,31
100 CTA GRP 200 ID90/R	100	200	3,0	3305016	3305052	3305084	3396208	1,24	1,54	1,70	2,52
100 CTA GRP 250 ID90/R	100	250	3,0	3305017	3305053	3305089	3396209	1,31	1,64	1,98	2,73
100 CTA GRP 300 ID90/R	100	300	3,0	3305018	3305054	3305091	3396210	1,37	1,74	2,12	2,93
100 CTA GRP 400 ID90/R	100	400	4,5	3305019	3305055	3305092	3396211	1,91	2,55	3,19	4,55
100 CTA GRP 450 ID90/R	100	450	4,5	3305020	3305056	3305093	3396212	2,02	2,71	3,40	4,86
100 CTA GRP 500 ID90/R	100	500	4,5	3305021	3305057	3305094	3396213	2,12	2,87	3,61	5,17
100 CTA GRP 600 ID90/R	100	600	4,5	3305022	3305058	3305095	3396214	2,33	3,18	4,03	5,80

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

DD45° Outside Vertical Elbow (R300, R450, R600, R900)



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
50 CTA GRP 050 DD45/R	50	50	3,0	3396215	3396225	3396235	3396245	0,47	0,47	0,77	0,62
50 CTA GRP 100 DD45/R	50	100	3,0	3396216	3396226	3396236	3396246	0,49	0,56	0,96	0,79
50 CTA GRP 150 DD45/R	50	150	3,0	3396217	3396227	3396237	3396247	0,52	0,61	1,09	0,89
50 CTA GRP 200 DD45/R	50	200	3,0	3396218	3396228	3396238	3396248	0,56	0,66	1,23	0,99
50 CTA GRP 250 DD45/R	50	250	3,0	3396219	3396229	3396239	3396249	0,59	0,71	1,37	1,09
50 CTA GRP 300 DD45/R	50	300	3,0	3396220	3396230	3396240	3396250	0,62	0,76	1,51	1,19
50 CTA GRP 400 DD45/R	50	400	4,5	3396221	3396231	3396241	3396251	0,85	1,10	2,45	1,86
50 CTA GRP 450 DD45/R	50	450	4,5	3396222	3396232	3396242	3396252	0,90	1,17	2,66	2,01
50 CTA GRP 500 DD45/R	50	500	4,5	3396223	3396233	3396243	3396253	0,95	1,25	2,87	2,16
50 CTA GRP 600 DD45/R	50	600	4,5	3396224	3396234	3396244	3396254	1,05	1,40	3,29	2,46
80 CTA GRP 100 DD45/R	80	100	3,0	3396255	3396264	3396273	3396282	0,69	0,80	1,29	1,13
80 CTA GRP 150 DD45/R	80	150	3,0	3396256	3396265	3396274	3396283	0,72	0,89	1,43	1,23
80 CTA GRP 200 DD45/R	80	200	3,0	3396257	3396266	3396275	3396284	0,76	0,94	1,57	1,33
80 CTA GRP 250 DD45/R	80	250	3,0	3396258	3396267	3396276	3396285	0,79	0,99	1,71	1,43
80 CTA GRP 300 DD45/R	80	300	3,0	3396259	3396268	3396277	3396286	0,82	1,04	1,85	1,53
80 CTA GRP 400 DD45/R	80	400	4,5	3396260	3396269	3396278	3396287	1,07	1,40	2,87	2,26
80 CTA GRP 450 DD45/R	80	450	4,5	3396261	3396270	3396279	3396288	1,12	1,48	3,08	2,41
80 CTA GRP 500 DD45/R	80	500	4,5	3396262	3396271	3396280	3396289	1,17	1,55	3,29	2,56
80 CTA GRP 600 DD45/R	80	600	4,5	3396263	3396272	3396281	3396290	1,27	1,70	3,71	2,86
100 CTA GRP 100 DD45/R	100	100	3,0	3396291	3396300	3396309	3396318	0,84	1,01	1,56	1,34
100 CTA GRP 150 DD45/R	100	150	3,0	3396292	3396301	3396310	3396319	0,87	1,06	1,6	1,44
100 CTA GRP 200 DD45/R	100	200	3,0	3396293	3396302	3396311	3396320	0,90	1,11	1,70	1,54
100 CTA GRP 250 DD45/R	100	250	3,0	3396294	3396303	3396312	3396321	0,94	1,16	1,98	1,64
100 CTA GRP 300 DD45/R	100	300	3,0	3396295	3396304	3396313	3396322	0,97	1,21	2,12	1,74
100 CTA GRP 400 DD45/R	100	400	4,5	3396296	3396305	3396314	3396323	1,23	1,60	3,19	2,51
100 CTA GRP 450 DD45/R	100	450	4,5	3396297	3396306	3396315	3396324	1,28	1,67	3,40	2,66
100 CTA GRP 500 DD45/R	100	500	4,5	3396298	3396307	3396316	3396325	1,33	1,75	3,61	2,81
100 CTA GRP 600 DD45/R	100	600	4,5	3396299	3396308	3396317	3396326	1,43	1,90	4,03	3,11

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

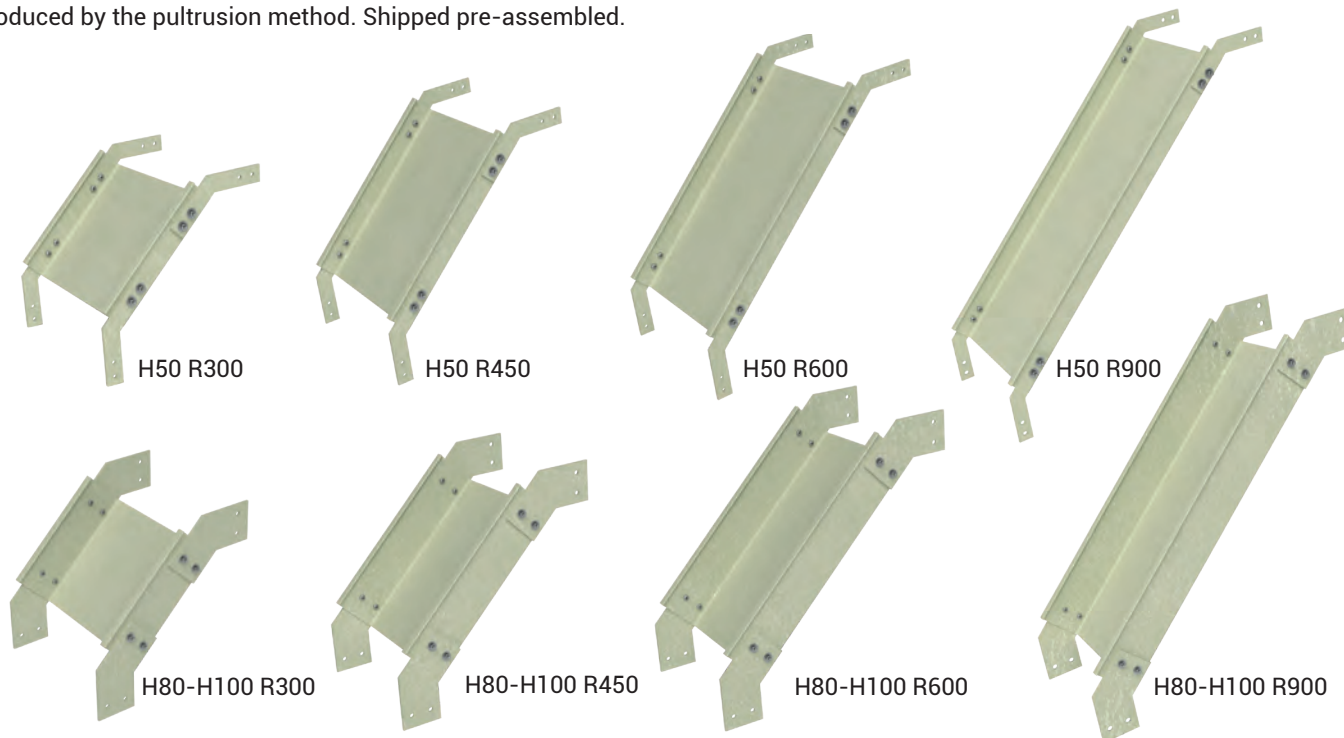
E-LINE CTA GRP

Fittings

DD90° Outside Vertical Elbow (R300, R450, R600, R900)



Produced by the pultrusion method. Shipped pre-assembled.



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
50 CTA GRP 050 DD90/R	50	50	3,0	3305096	3305127	3305162	3396327	0,57	0,67	0,77	0,95
50 CTA GRP 100 DD90/R	50	100	3,0	3305097	3305128	3305163	3396328	0,63	0,79	0,96	1,29
50 CTA GRP 150 DD90/R	50	150	3,0	3305098	3305129	3305164	3396329	0,70	0,90	1,09	1,50
50 CTA GRP 200 DD90/R	50	200	3,0	3305099	3305130	3305165	3396330	0,77	1,00	1,23	1,71
50 CTA GRP 250 DD90/R	50	250	3,0	3305100	3305132	3305167	3396331	0,84	1,11	1,37	1,92
50 CTA GRP 300 DD90/R	50	300	3,0	3305101	3305134	3305168	3396332	0,91	1,21	1,51	2,13
50 CTA GRP 400 DD90/R	50	400	4,5	3305102	3305135	3305169	3396333	1,38	1,92	2,45	3,53
50 CTA GRP 450 DD90/R	50	450	4,5	3305103	3305136	3305170	3396334	1,48	2,07	2,66	3,84
50 CTA GRP 500 DD90/R	50	500	4,5	3305105	3305137	3305171	3396335	1,59	2,23	2,87	4,16
50 CTA GRP 600 DD90/R	50	600	4,5	3305106	3305138	3305173	3396336	1,80	2,54	3,29	4,78
80 CTA GRP 100 DD90/R	80	100	3,0	3305107	3305139	3305174	3396338	0,89	1,09	1,29	1,82
80 CTA GRP 150 DD90/R	80	150	3,0	3305109	3305140	3305176	3396339	0,96	1,19	1,43	2,03
80 CTA GRP 200 DD90/R	80	200	3,0	3305110	3305141	3305177	3396340	1,03	1,30	1,57	2,24
80 CTA GRP 250 DD90/R	80	250	3,0	3305111	3305142	3305178	3396341	1,09	1,30	1,71	2,45
80 CTA GRP 300 DD90/R	80	300	3,0	3305112	3305143	3305179	3396342	1,16	1,40	1,85	2,66
80 CTA GRP 400 DD90/R	80	400	4,5	3305113	3305147	3305180	3396343	1,68	2,27	2,87	4,19
80 CTA GRP 450 DD90/R	80	450	4,5	3305114	3305149	3305181	3396344	1,78	2,43	3,08	4,50
80 CTA GRP 500 DD90/R	80	500	4,5	3305115	3305150	3305183	3396345	1,88	2,59	3,29	4,81
80 CTA GRP 600 DD90/R	80	600	4,5	3305116	3305151	3305184	3396346	2,09	2,90	3,71	5,44
100 CTA GRP 100 DD90/R	100	100	3,0	3305117	3305152	3305185	3396347	1,10	1,33	3,71	2,10
100 CTA GRP 150 DD90/R	100	150	3,0	3305118	3305154	3305186	3396348	1,17	1,43	1,70	2,31
100 CTA GRP 200 DD90/R	100	200	3,0	3305120	3305155	3305188	3396349	1,24	1,54	1,84	2,52
100 CTA GRP 250 DD90/R	100	250	3,0	3305121	3305156	3305189	3396350	1,31	1,64	1,98	2,73
100 CTA GRP 300 DD90/R	100	300	3,0	3305122	3305157	3305191	3396351	1,37	1,74	2,12	2,93
100 CTA GRP 400 DD90/R	100	400	4,5	3305123	3305158	3305193	3396352	1,91	2,55	3,19	4,55
100 CTA GRP 450 DD90/R	100	450	4,5	3305124	3305159	3305194	3396353	2,02	2,71	3,40	4,86
100 CTA GRP 500 DD90/R	100	500	4,5	3305125	3305160	3305195	3396354	2,12	2,87	3,61	5,17
100 CTA GRP 600 DD90/R	100	600	4,5	3305126	3305161	3305196	3396355	2,33	3,18	4,03	5,80

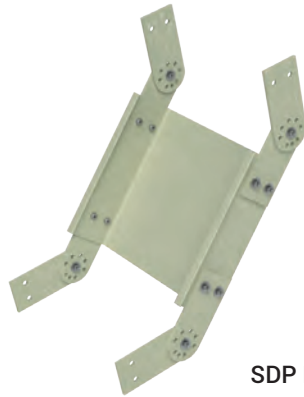
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

SDP Single Vertical Adjustable Fitting

Produced by the pultrusion method. Shipped pre-assembled.



SDP ID



SDP DD

Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
50 CTA GRP 050 SDP	50	50	3,0	3305689	0,69
50 CTA GRP 100 SDP	50	100	3,0	3305690	0,76
50 CTA GRP 150 SDP	50	150	3,0	3305691	0,83
50 CTA GRP 200 SDP	50	200	3,0	3305692	0,90
50 CTA GRP 250 SDP	50	200	3,0	3305693	0,97
50 CTA GRP 300 SDP	50	300	3,0	3305694	1,04
50 CTA GRP 400 SDP	50	400	4,5	3305695	1,51
50 CTA GRP 450 SDP	50	400	4,5	3305697	1,61
50 CTA GRP 500 SDP	50	500	4,5	3305698	1,72
50 CTA GRP 600 SDP	50	600	4,5	3305699	1,93
80 CTA GRP 100 SDP	80	100	3,0	3305701	1,14
80 CTA GRP 150 SDP	80	150	3,0	3305702	1,21
80 CTA GRP 200 SDP	80	200	3,0	3305703	1,28
80 CTA GRP 250 SDP	80	200	3,0	3305704	1,35
80 CTA GRP 300 SDP	80	300	3,0	3305705	1,42
80 CTA GRP 400 SDP	80	400	4,5	3305706	1,93
80 CTA GRP 450 SDP	80	400	4,5	3305707	2,03
80 CTA GRP 500 SDP	80	500	4,5	3305708	2,14
80 CTA GRP 600 SDP	80	600	4,5	3305709	2,35
100 CTA GRP 100 SDP	100	100	3,0	3305710	1,54
100 CTA GRP 150 SDP	100	150	3,0	3305711	1,61
100 CTA GRP 200 SDP	100	200	3,0	3305712	1,68
100 CTA GRP 250 SDP	100	200	3,0	3305713	1,75
100 CTA GRP 300 SDP	100	300	3,0	3305714	1,82
100 CTA GRP 400 SDP	100	400	4,5	3305715	2,36
100 CTA GRP 450 SDP	100	400	4,5	3305716	2,46
100 CTA GRP 500 SDP	100	500	4,5	3305717	2,56
100 CTA GRP 600 SDP	100	600	4,5	3305718	2,77

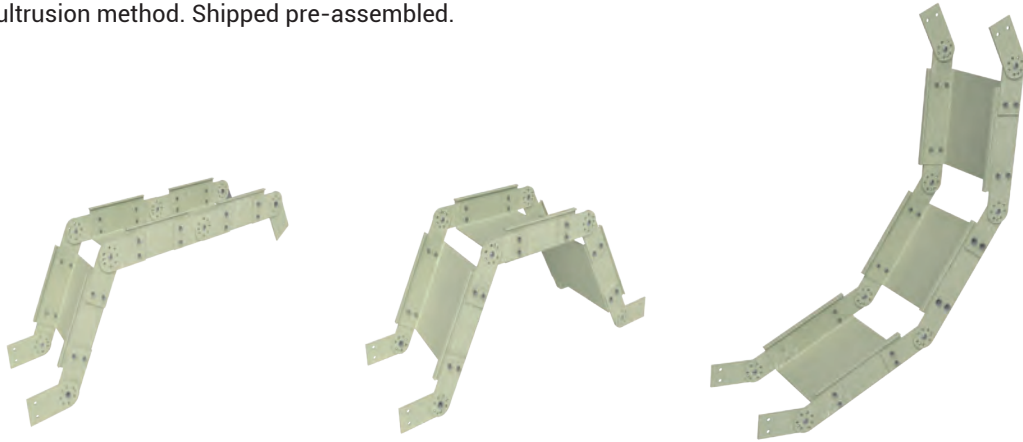
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

SDM Multiple Vertical Adjustable Fitting

Produced by the pultrusion method. Shipped pre-assembled.



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
50 CTA GRP 050 SDM	50	50	3,0	3305719	1,68
50 CTA GRP 100 SDM	50	100	3,0	3305720	1,90
50 CTA GRP 150 SDM	50	150	3,0	3305721	2,11
50 CTA GRP 200 SDM	50	200	3,0	3305722	2,32
50 CTA GRP 250 SDM	50	200	3,0	3305723	2,53
50 CTA GRP 300 SDM	50	300	3,0	3305725	2,74
50 CTA GRP 400 SDM	50	400	4,5	3305726	4,15
50 CTA GRP 450 SDM	50	400	4,5	3305727	4,46
50 CTA GRP 500 SDM	50	500	4,5	3305729	4,77
50 CTA GRP 600 SDM	50	600	4,5	3305730	5,40
80 CTA GRP 100 SDM	80	100	3,0	3305731	2,74
80 CTA GRP 150 SDM	80	150	3,0	3305732	2,95
80 CTA GRP 200 SDM	80	200	3,0	3305733	3,16
80 CTA GRP 250 SDM	80	200	3,0	3305734	3,37
80 CTA GRP 300 SDM	80	300	3,0	3305735	3,58
80 CTA GRP 400 SDM	80	400	4,5	3305736	5,11
80 CTA GRP 450 SDM	80	400	4,5	3305737	5,42
80 CTA GRP 500 SDM	80	500	4,5	3305738	5,74
80 CTA GRP 600 SDM	80	600	4,5	3305739	6,36
100 CTA GRP 100 SDM	100	100	3,0	3305740	3,57
100 CTA GRP 150 SDM	100	150	3,0	3305741	3,77
100 CTA GRP 200 SDM	100	200	3,0	3305742	3,98
100 CTA GRP 250 SDM	100	200	3,0	3305743	4,19
100 CTA GRP 300 SDM	100	300	3,0	3305744	4,40
100 CTA GRP 400 SDM	100	400	4,5	3305747	6,02
100 CTA GRP 450 SDM	100	400	4,5	3305748	6,33
100 CTA GRP 500 SDM	100	500	4,5	3305749	6,64
100 CTA GRP 600 SDM	100	600	4,5	3305750	7,27

Fittings

CTA GRP

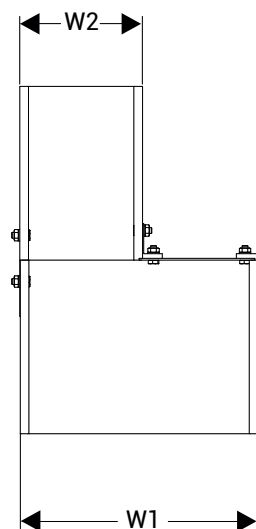
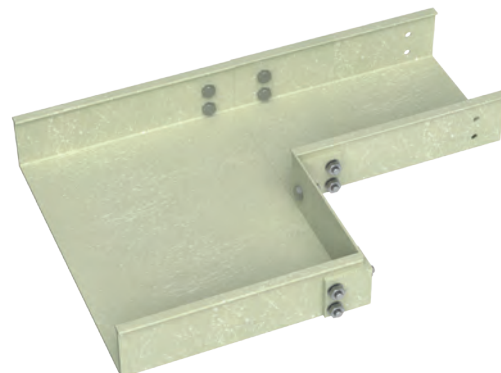
- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

LR Left Reduction

W1 (mm)	W2 (mm)	Description	Order Code			Weight (kg/pcs)		
			↑50	↑80	↑100	↑50	↑80	↑100
100	50	CTA GRP 100/050 LR	3305198	-	-	0,84	-	-
150		CTA GRP 150/050 LR	3305200	-	-	0,93	-	-
200		CTA GRP 200/050 LR	3305203	-	-	1,03	-	-
250		CTA GRP 250/050 LR	3305209	-	-	1,12	-	-
300		CTA GRP 300/050 LR	3305215	-	-	1,22	-	-
400		CTA GRP 400/050 LR	3305222	-	-	1,80	-	-
450		CTA GRP 450/050 LR	3305230	-	-	1,94	-	-
500		CTA GRP 500/050 LR	3305239	-	-	2,07	-	-
600		CTA GRP 600/050 LR	3305251	-	-	2,34	-	-
150	100	CTA GRP 150/100 LR	3305199	3305253	3305297	1,00	1,31	1,50
200		CTA GRP 200/100 LR	3305201	3305254	3305298	1,09	1,41	1,61
250		CTA GRP 250/100 LR	3305204	3305259	3305300	1,19	1,52	1,71
300		CTA GRP 300/100 LR	3305210	3305263	3305304	1,28	1,62	1,82
400		CTA GRP 400/100 LR	3305216	3305267	3305308	1,87	2,27	2,52
450		CTA GRP 450/100 LR	3305224	3305272	3305314	2,01	2,42	2,67
500		CTA GRP 500/100 LR	3305231	3305279	3305322	2,14	2,56	2,82
600	CTA GRP 600/100 LR	3305240	3305288	3305331	2,41	2,85	3,11	
200	150	CTA GRP 200/150 LR	3305202	3305256	3305299	1,16	1,47	1,66
250		CTA GRP 250/150 LR	3305205	3305260	3305301	1,26	1,58	1,77
300		CTA GRP 300/150 LR	3305211	3305264	3305305	1,35	1,68	1,88
400		CTA GRP 400/150 LR	3305217	3305268	3305309	1,94	2,33	2,57
450		CTA GRP 450/150 LR	3305225	3305273	3305315	2,07	2,47	2,72
500		CTA GRP 500/150 LR	3305232	3305281	3305323	2,21	2,62	2,87
600	CTA GRP 600/150 LR	3305241	3305289	3305332	2,48	2,90	3,17	
250	200	CTA GRP 250/200 LR	3305207	3305262	3305303	1,32	1,63	1,82
300		CTA GRP 300/200 LR	3305212	3305265	3305306	1,42	1,74	1,93
400		CTA GRP 400/200 LR	3305218	3305269	3305310	2,00	2,39	2,62
450		CTA GRP 450/200 LR	3305226	3305274	3305317	2,14	2,53	2,77
500		CTA GRP 500/200 LR	3305233	3305283	3305324	2,27	2,68	2,92
600	CTA GRP 600/200 LR	3305242	3305290	3305334	2,54	2,96	3,22	
300	250	CTA GRP 300/250 LR	3305213	3305266	3305307	1,48	1,80	1,98
400		CTA GRP 400/250 LR	3305219	3305270	3305311	2,07	2,45	2,68
450		CTA GRP 450/250 LR	3305227	3305275	3305318	2,21	2,59	2,82
500		CTA GRP 500/250 LR	3305234	3305284	3305326	2,34	2,73	2,97
600	CTA GRP 600/250 LR	3305243	3305291	3305335	2,61	3,02	3,27	
400	300	CTA GRP 400/300 LR	3305220	3305271	3305313	2,14	2,51	2,73
450		CTA GRP 450/300 LR	3305228	3305277	3305319	2,27	2,65	2,88
500		CTA GRP 500/300 LR	3305235	3305285	3305327	2,41	2,79	3,02
600	CTA GRP 600/300 LR	3305245	3305292	3305336	2,68	3,08	3,32	
450	400	CTA GRP 450/400 LR	3305229	3305278	3305320	2,81	3,21	3,46
500		CTA GRP 500/400 LR	3305236	3305286	3305328	2,94	3,36	3,61
600	CTA GRP 600/400 LR	3305246	3305293	3305337	3,21	3,64	3,91	
500	450	CTA GRP 500/450 LR	3305237	3305287	3305330	3,05	3,46	3,71
600		CTA GRP 600/450 LR	3305250	3305294	3305339	3,32	3,74	3,71
600	500	CTA GRP 600/500 LR	3305252	3305295	3305340	3,42	3,84	4,10



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

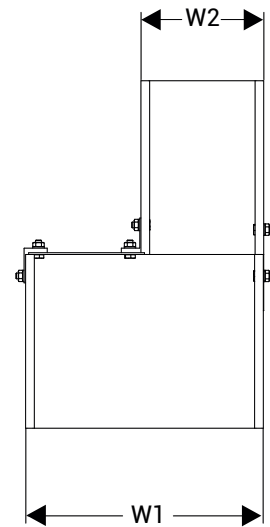
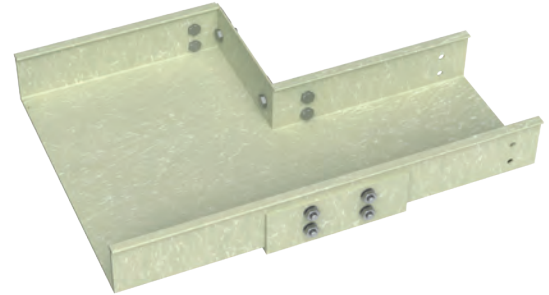
E-LINE CTA GRP

Fittings

RR Right Reduction



W1 (mm)	W2 (mm)	Description	Order Code			Weight (kg/pcs)		
			↑50	↑80	↑100	↑50	↑80	↑100
100	50	CTA GRP 100/050 RR	3305341	-	-	0,84	-	-
150		CTA GRP 150/050 RR	3305343	-	-	0,93	-	-
200		CTA GRP 200/050 RR	3305346	-	-	1,03	-	-
250		CTA GRP 250/050 RR	3305443	-	-	1,12	-	-
300		CTA GRP 300/050 RR	3305448	-	-	1,22	-	-
400		CTA GRP 400/050 RR	3305457	-	-	1,80	-	-
450		CTA GRP 450/050 RR	3305464	-	-	1,94	-	-
500		CTA GRP 500/050 RR	3305472	-	-	2,07	-	-
600		CTA GRP 600/050 RR	3305502	-	-	2,34	-	-
150	100	CTA GRP 150/100 RR	3305342	3305504	3305540	1,00	1,31	1,50
200		CTA GRP 200/100 RR	3305344	3305505	3305542	1,09	1,41	1,61
250		CTA GRP 250/100 RR	3305347	3305507	3305544	1,19	1,52	1,71
300		CTA GRP 300/100 RR	3305444	3305510	3305549	1,28	1,62	1,82
400		CTA GRP 400/100 RR	3305451	3305514	3305553	1,87	2,27	2,52
450		CTA GRP 450/100 RR	3305458	3305519	3305558	2,01	2,42	2,67
500		CTA GRP 500/100 RR	3305465	3305525	3305564	2,14	2,56	2,82
600		CTA GRP 600/100 RR	3305473	3305532	3305571	2,41	2,85	3,11
200	150	CTA GRP 200/150 RR	3305345	3305506	3305543	1,16	1,47	1,66
250		CTA GRP 250/150 RR	3305348	3305508	3305545	1,26	1,58	1,77
300		CTA GRP 300/150 RR	3305445	3305511	3305550	1,35	1,68	1,88
400		CTA GRP 400/150 RR	3305452	3305515	3305554	1,94	2,33	2,57
450		CTA GRP 450/150 RR	3305459	3305520	3305559	2,07	2,47	2,72
500		CTA GRP 500/150 RR	3305466	3305526	3305565	2,21	2,62	2,87
600		CTA GRP 600/150 RR	3305474	3305533	3305572	2,48	2,90	3,17
250	200	CTA GRP 250/200 RR	3305442	3305509	3305547	1,32	1,63	1,82
300		CTA GRP 300/200 RR	3305446	3305512	3305551	1,42	1,74	1,93
400		CTA GRP 400/200 RR	3305454	3305516	3305555	2,00	2,39	2,62
450		CTA GRP 450/200 RR	3305460	3305521	3305560	2,14	2,53	2,77
500		CTA GRP 500/200 RR	3305467	3305527	3305566	2,27	2,68	2,92
600		CTA GRP 600/200 RR	3305475	3305534	3305573	2,54	2,96	3,22
300	250	CTA GRP 300/250 RR	3305447	3305513	3305552	1,48	1,80	1,98
400		CTA GRP 400/250 RR	3305455	3305517	3305556	2,07	2,45	2,68
450		CTA GRP 450/250 RR	3305461	3305522	3305561	2,21	2,59	2,82
500		CTA GRP 500/250 RR	3305468	3305528	3305567	2,34	2,73	2,97
600		CTA GRP 600/250 RR	3305476	3305535	3305575	2,61	3,02	3,27
400	300	CTA GRP 400/300 RR	3305456	3305518	3305557	2,14	2,51	2,73
450		CTA GRP 450/300 RR	3305462	3305523	3305562	2,27	2,65	2,88
500		CTA GRP 500/300 RR	3305469	3305529	3305568	2,41	2,79	3,02
600		CTA GRP 600/300 RR	3305477	3305536	3305576	2,68	3,08	3,32
450	400	CTA GRP 450/400 RR	3305463	3305524	3305563	2,81	3,21	3,46
500		CTA GRP 500/400 RR	3305470	3305530	3305569	2,94	3,36	3,61
600		CTA GRP 600/400 RR	3305478	3305537	3305577	3,21	3,64	3,91
500	450	CTA GRP 500/450 RR	3305471	3305531	3305570	3,05	3,46	3,71
600		CTA GRP 600/450 RR	3305479	3305538	3305578	3,32	3,74	3,71
600	500	CTA GRP 600/500 RR	3305503	3305539	3305579	3,42	3,84	4,10



Fittings

CTA GRP

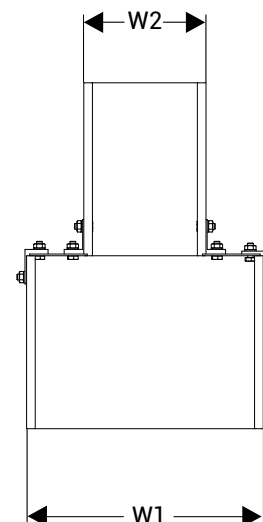
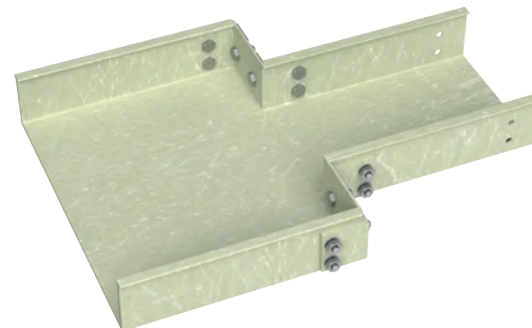
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Fittings

MR Middle Reduction

W1 (mm)	W2 (mm)	Description	Order Code			Weight (kg/pcs)		
			↑50	↑80	↑100	↑50	↑80	↑100
150	50	CTA GRP 150/050 MR	3305580	-	-	0,90	-	-
200		CTA GRP 200/050 MR	3305583	-	-	0,99	-	-
250		CTA GRP 250/050 MR	3305586	-	-	1,09	-	-
300		CTA GRP 300/050 MR	3305590	-	-	1,18	-	-
400		CTA GRP 400/050 MR	3305596	-	-	1,77	-	-
450		CTA GRP 450/050 MR	3305603	-	-	1,91	-	-
500		CTA GRP 500/050 MR	3305611	-	-	2,04	-	-
600		CTA GRP 600/050 MR	3305620	-	-	2,31	-	-
200	100	CTA GRP 200/100 MR	3305582	3305622	3305656	1,06	1,38	1,55
250		CTA GRP 250/100 MR	3305584	3305623	3305657	1,16	1,49	1,66
300		CTA GRP 300/100 MR	3305587	3305626	3305659	1,25	1,59	1,77
400		CTA GRP 400/100 MR	3305591	3305631	3305662	1,84	2,24	2,46
450		CTA GRP 450/100 MR	3305597	3305637	3305667	1,97	2,38	2,61
500		CTA GRP 500/100 MR	3305605	3305642	3305675	2,11	2,53	2,75
600		CTA GRP 600/100 MR	3305612	3305648	3305681	2,38	2,81	3,06
250		150	CTA GRP 250/150 MR	3305585	3305625	3305658	1,22	1,54
300	CTA GRP 300/150 MR		3305588	3305628	3305660	1,32	1,65	1,82
400	CTA GRP 400/150 MR		3305592	3305633	3305663	1,91	2,30	2,52
450	CTA GRP 450/150 MR		3305598	3305638	3305668	2,04	2,44	2,67
500	CTA GRP 500/150 MR		3305606	3305643	3305676	2,17	2,59	2,81
600	CTA GRP 600/150 MR		3305614	3305649	3305682	2,44	2,87	3,11
300	200	CTA GRP 300/200 MR	3305589	3305629	3305661	1,38	1,70	1,87
400		CTA GRP 400/200 MR	3305593	3305634	3305664	1,97	2,36	2,57
450		CTA GRP 450/200 MR	3305599	3305639	3305669	2,11	2,50	2,72
500		CTA GRP 500/200 MR	3305607	3305644	3305677	2,24	2,64	2,87
600	CTA GRP 600/200 MR	3305615	3305650	3305683	2,51	2,93	3,15	
400	250	CTA GRP 400/250 MR	3305594	3305635	3305665	2,04	2,42	2,62
450		CTA GRP 450/250 MR	3305600	3305640	3305670	2,17	2,56	2,77
500		CTA GRP 500/250 MR	3305608	3305645	3305678	2,31	2,70	2,92
600		CTA GRP 600/250 MR	3305616	3305651	3305684	2,58	2,99	3,22
400	300	CTA GRP 400/300 MR	3305595	3305636	3305666	2,11	2,47	2,67
450		CTA GRP 450/300 MR	3305602	3305641	3305671	2,24	2,62	2,82
500		CTA GRP 500/300 MR	3305609	3305646	3305679	2,37	2,76	2,97
600		CTA GRP 600/300 MR	3305617	3305652	3305685	2,64	3,05	3,27
500	400	CTA GRP 500/400 MR	3305610	3305647	3305680	2,91	3,32	3,56
600		CTA GRP 600/400 MR	3305618	3305653	3305686	3,18	3,61	3,85
600	450	CTA GRP 600/450 MR	3305619	3305654	3305687	3,28	3,71	3,95
600	500	CTA GRP 600/500 MR	3305621	3305655	3305688	3,39	3,81	4,04



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Covers

Straight Cover



Produced by the pultrusion method.

Description	Height (mm)	Width (mm)	Uzunluk (m)	Thickness (mm)	Order Code	Ağırlık (kg/m)
KCA/CTA GRP K 050 / L=3m	15	50	3	3	3191138	0,43
CTA GRP K 100 / L=3m	15	100	3	3	3349333	0,79
CTA GRP K 150 / L=3m	15	150	3	3	3349366	1,07
CTA GRP K 200 / L=3m	15	200	3	3	3379782	1,35
CTA GRP K 250 / L=3m	15	200	3	3	3379784	1,64
CTA GRP K 300 / L=3m	15	300	3	3	3379785	1,92
CTA GRP K 400 / L=3m	15	400	3	3	3379786	2,47
CTA GRP K 450 / L=3m	15	400	3	3	3379787	2,75
CTA GRP K 500 / L=3m	15	500	3	3	3379789	3,04
CTA GRP K 600 / L=3m	15	600	3	3	3379790	3,60
CTA GRP K 750 / L=3m	15	100	3	4	3379793	6,50
CTA GRP K 900 / L=3m	15	150	3	5	3379794	8,00



Recommended Number of Cover Clamps

Required Quantity of Standard Cover Clamps						
Products	Standard Cover Clamp			Heavy Duty Cover Clamp		
Straight Lengths (3 meters)	6 pcs			3 pcs		
YD45° Horizontal Elbow	4 pcs			2 pcs		
YD90° Horizontal Elbow	6 pcs			3 pcs		
YT Tee	6 pcs			3 pcs		
AD Horizontal Cross Fitting	8 pcs			4 pcs		
ID Inside Vertical Elbow	R300	R450	R600	R300	R450	R600
DD Outside Vertical Elbow	2 pcs	4 pcs	6 pcs	1 pcs	2 pcs	3 pcs

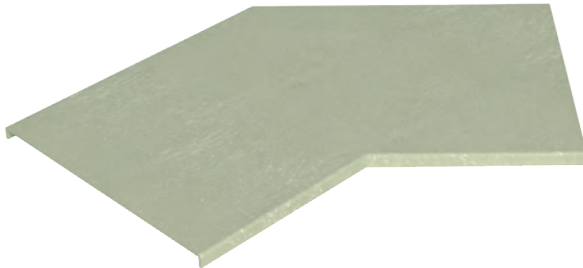
- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Cover Clamp** : For a 3-meter straight cover: 6 pieces of Standard Cover Clamps (Page 68) or 3 pieces of Heavy Duty Cover Clamps (Page 69)

E-LINE CTA GRP

Covers

YD45° Horizontal Elbow Cover (R300, R450, R600, R900)

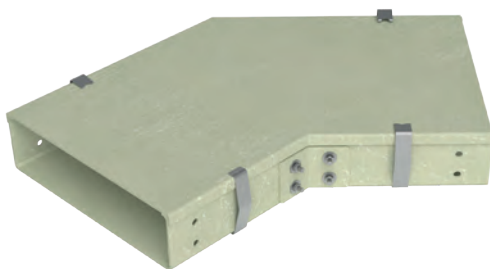
Produced by the pultrusion method.



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
CTA GRP K 050 YD45°	15	50	3,0	3191150	3191160	3191170	3396356	0,20	0,26	0,31	0,42
CTA GRP K 100 YD45°	15	100	3,0	3191151	3191161	3191171	3396357	0,37	0,48	0,57	0,77
CTA GRP K 150 YD45°	15	150	3,0	3191152	3191162	3191172	3396358	0,54	0,67	0,90	1,06
CTA GRP K 200 YD45°	15	200	3,0	3191153	3191163	3191173	3396359	0,71	0,87	1,03	1,37
CTA GRP K 250 YD45°	15	250	3,0	3191154	3191164	3191174	3396360	0,89	1,08	1,28	1,68
CTA GRP K 300 YD45°	15	300	3,0	3191155	3191165	3191175	3396361	1,08	1,32	1,55	2,03
CTA GRP K 400 YD45°	15	400	3,0	3191156	3191166	3191176	3396362	1,49	1,80	2,07	2,71
CTA GRP K 450 YD45°	15	450	3,0	3191157	3191167	3191177	3396363	1,71	2,06	2,42	3,07
CTA GRP K 500 YD45°	15	500	3,0	3191158	3191168	3191178	3396364	1,94	2,33	2,72	3,44
CTA GRP K 600 YD45°	15	600	3,0	3191159	3191169	3191179	3396365	2,48	2,94	3,37	4,21

Installation

- Standard Cover Clamp



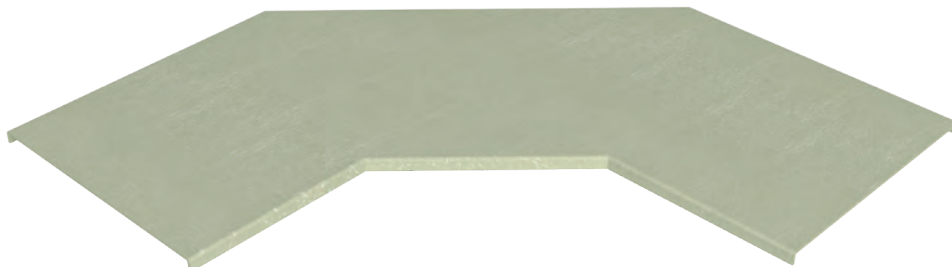
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Cover Clamps : 4 pcs Standart Cover Clamp(Page-68) or 2 pcs Heavy Duty Cover Clamp (Page-69)

E-LINE CTA GRP

Covers

YD 90° Horizontal Elbow Cover (R300, R450, R600, R900)

Produced by the pultrusion method.



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
CTA GRP K 050 YD90°	15	50	3,0	3191180	3191190	3191200	3396366	0,32	0,42	0,53	0,76
CTA GRP K 100 YD90°	15	100	3,0	3191181	3191191	3191201	3396367	0,60	0,80	0,99	1,39
CTA GRP K 150 YD90°	15	150	3,0	3191182	3191192	3191202	3396368	0,87	1,14	1,51	1,92
CTA GRP K 200 YD90°	15	200	3,0	3191183	3191193	3191203	3396369	1,14	1,49	1,82	2,48
CTA GRP K 250 YD90°	15	250	3,0	3191184	3191194	3191204	3396370	1,44	1,85	2,26	3,05
CTA GRP K 300 YD90°	15	300	3,0	3191185	3191195	3191205	3396371	1,78	2,20	2,74	3,67
CTA GRP K 400 YD90°	15	400	3,0	3191186	3191196	3191206	3396372	2,49	3,10	3,71	4,92
CTA GRP K 450 YD90°	15	450	3,0	3191187	3191197	3191207	3396373	2,90	3,56	4,24	5,62
CTA GRP K 500 YD90°	15	500	3,0	3191188	3191198	3191208	3396374	3,32	4,04	4,82	6,30
CTA GRP K 600 YD90°	15	600	3,0	3191189	3191199	3191209	3396375	4,21	5,10	5,99	7,75

Installation

- Standard Cover Clamp



- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Cover Clamps** : 6 pcs Standart Cover Clamp(Page-68) or 3 pcs Heavy Duty Cover Clamp (Page-69)

E-LINE CTA GRP

Covers

YT Horizontal Tee Cover

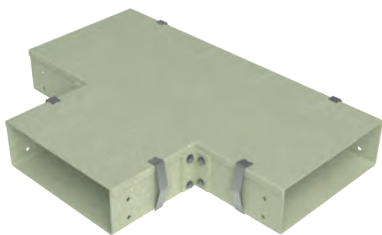
Produced by the pultrusion method.



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
CTA GRP K 050 YT	15	50	3	3191210	0,31
CTA GRP K 100 YT	15	100	3	3191211	0,57
CTA GRP K 150 YT	15	150	3	3191212	0,82
CTA GRP K 200 YT	15	200	3	3191213	1,11
CTA GRP K 250 YT	15	200	3	3191214	1,42
CTA GRP K 300 YT	15	300	3	3191215	1,76
CTA GRP K 400 YT	15	400	3	3191216	2,52
CTA GRP K 450 YT	15	400	3	3191217	2,95
CTA GRP K 500 YT	15	100	3	3191218	3,40
CTA GRP K 600 YT	15	150	3	3191219	4,39

Installation

- Standard Cover Clamp



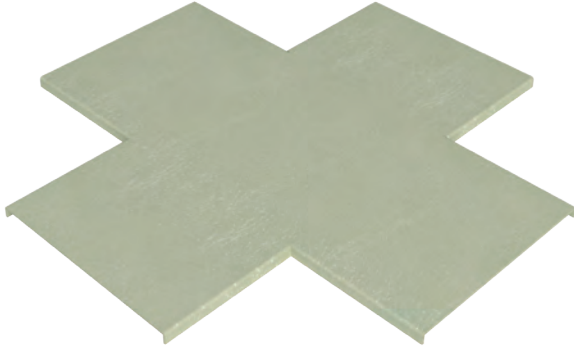
- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Cover Clamps** : 6 pcs Standart Cover Clamp(Page-68) or 3 pcs Heavy Duty Cover Clamp (Page-69)

E-LINE CTA GRP

Covers

AD Horizontal Cross Cover

Produced by the pultrusion method.

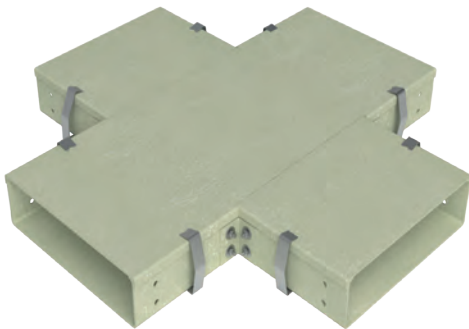


Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
CTA GRP K 050 AD	15	50	3	3191220	0,40
CTA GRP K 100 AD	15	100	3	3191221	0,73
CTA GRP K 150 AD	15	150	3	3191222	1,05
CTA GRP K 200 AD	15	200	3	3191223	1,39
CTA GRP K 250 AD	15	200	3	3191224	1,77
CTA GRP K 300 AD	15	300	3	3191225	2,17
CTA GRP K 400 AD	15	400	3	3191226	3,04
CTA GRP K 450 AD	15	400	3	3191227	3,53
CTA GRP K 500 AD	15	100	3	3191228	4,04
CTA GRP K 600 AD	15	150	3	3191229	5,15

Straight Cover

Installation

- Standard Cover Clamp



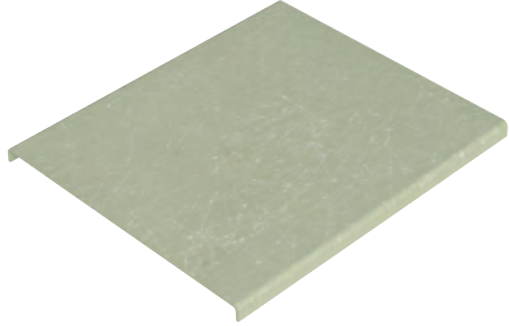
CTA GRP

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Cover Clamps** : 8 pcs Standard Cover Clamp (Sayfa-68) veya 4 pcs Heavy Duty Cover Clamp (Sayfa-69)

E-LINE CTA GRP

Covers

ID45° Inside Vertical Elbow and DD 45° Outside Vertical Elbow Cover



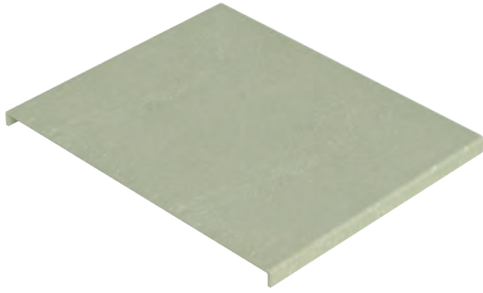
Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
CTA GRP K 050 ID45/DD45/R	15	50	3,0	3396376	3396386	3396396	3396406	0,06	0,09	0,12	0,18
CTA GRP K 100 ID45/DD45/R	15	100	3,0	3396377	3396387	3396397	3396407	0,09	0,14	0,19	0,28
CTA GRP K 150 ID45/DD45/R	15	150	3,0	3396378	3396388	3396398	3396408	0,13	0,19	0,25	0,38
CTA GRP K 200 ID45/DD45/R	15	200	3,0	3396379	3396389	3396399	3396409	0,16	0,24	0,32	0,48
CTA GRP K 250 ID45/DD45/R	15	250	3,0	3396380	3396390	3396400	3396410	0,19	0,29	0,39	0,58
CTA GRP K 300 ID45/DD45/R	15	300	3,0	3396381	3396391	3396401	3396411	0,23	0,34	0,46	0,68
CTA GRP K 400 ID45/DD45/R	15	400	3,0	3396382	3396392	3396402	3396412	0,29	0,44	0,59	0,88
CTA GRP K 450 ID45/DD45/R	15	450	3,0	3396383	3396393	3396403	3396413	0,33	0,49	0,65	0,98
CTA GRP K 500 ID45/DD45/R	15	500	3,0	3396384	3396394	3396404	3396414	0,36	0,54	0,72	1,08
CTA GRP K 600 ID45/DD45/R	15	600	3,0	3396385	3396395	3396405	3396415	0,43	0,64	0,85	1,28

- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Cover Clamps : 4 pcs Standard Cover Clamp (Sayfa-68) veya 3 pcs Heavy Duty Cover Clamp (Sayfa-69)

E-LINE CTA GRP

Covers

ID90° Inside Vertical Elbow and DD 90° Outside Vertical Elbow Cover



Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code				Weight (kg/pcs)			
				R300	R450	R600	R900	R300	R450	R600	R900
CTA GRP K 050 ID90/DD90/R	15	50	3,0	3191230	3191240	3191250	3396416	0,10	0,17	0,23	2,66
CTA GRP K 100 ID90/DD90/R	15	100	3,0	3191231	3191241	3191251	3396417	0,17	0,29	0,39	2,25
CTA GRP K 150 ID90/DD90/R	15	150	3,0	3191232	3191242	3191252	3396418	0,24	0,40	0,53	2,04
CTA GRP K 200 ID90/DD90/R	15	200	3,0	3191233	3191243	3191253	3396419	0,30	0,50	0,67	1,83
CTA GRP K 250 ID90/DD90/R	15	250	3,0	3191234	3191244	3191254	3396420	0,36	0,61	0,82	1,42
CTA GRP K 300 ID90/DD90/R	15	300	3,0	3191235	3191245	3191255	3396421	0,43	0,72	0,96	1,21
CTA GRP K 400 ID90/DD90/R	15	400	3,0	3191236	3191246	3191256	3396422	0,55	0,92	1,23	1,00
CTA GRP K 450 ID90/DD90/R	15	450	3,0	3191237	3191247	3191257	3396423	0,62	1,03	1,37	0,79
CTA GRP K 500 ID90/DD90/R	15	500	3,0	3191238	3191248	3191258	3396424	0,68	1,14	1,52	0,59
CTA GRP K 600 ID90/DD90/R	15	600	3,0	3191239	3191249	3191259	3396425	0,81	1,35	1,80	0,38

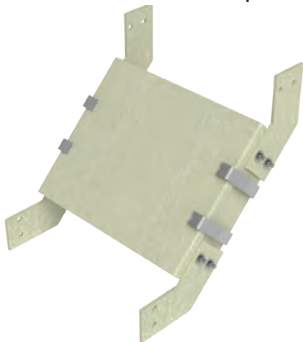
SDM Vertical Adjustable Mounting Cover

Description	Height (mm)	Width (mm)	Thickness (mm)	Order Code	Weight (kg/pcs)
CTA GRP 050 SDM	15	50	3	3191230	0,1
CTA GRP 100 SDM	15	100	3	3191231	0,17
CTA GRP 150 SDM	15	150	3	3191232	0,24
CTA GRP 200 SDM	15	200	3	3191233	0,3
CTA GRP 250 SDM	15	250	3	3191234	0,36
CTA GRP 300 SDM	15	300	3	3191235	0,43
CTA GRP 400 SDM	15	400	3	3191236	0,55
CTA GRP 450 SDM	15	450	3	3191237	0,62
CTA GRP 500 SDM	15	500	3	3191238	0,68
CTA GRP 600 SDM	15	600	3	3191239	0,81

Installation :

ID90° Inside Vertical Elbow

- Standard Cover Clamp

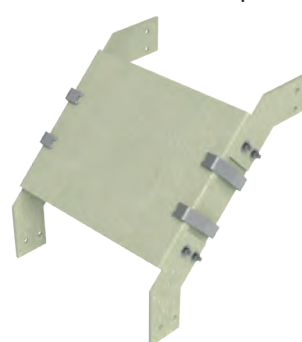


- Heavy Duty Cover Clamp



DD90° Outside Vertical Elbow

- Standard Cover Clamp



- Heavy Duty Cover Clamp



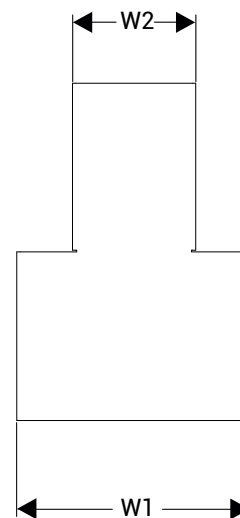
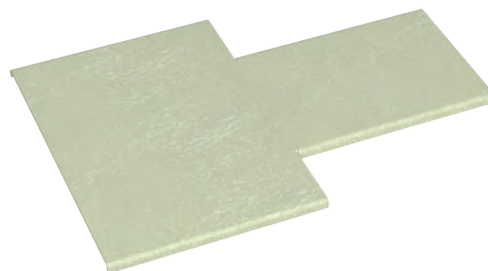
- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Cover Clamps : 4 pcs Standart Cover Clamp(Page-68) or 1 pcs Heavy Duty Cover Clamp (Page-69)

E-LINE CTA GRP

Covers

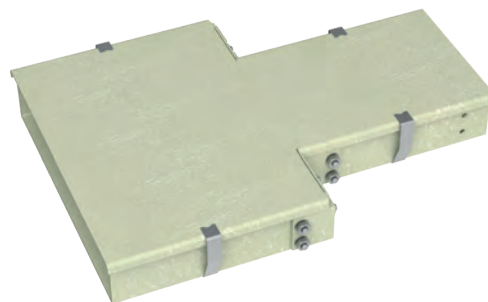
MR Middle Reduction Cover

W1 (mm)	W2 (mm)	Description	Order Code	Weight (kg/pcs)
150	50	CTA GRP K 150/050/MR (3mm)	3379924	0,46
200		CTA GRP K 200/050/MR (3mm)	3379926	0,55
250		CTA GRP K 250/050/MR (3mm)	3379965	0,63
300		CTA GRP K 300/050/MR (3mm)	3379968	0,72
400		CTA GRP K 400/050/MR (3mm)	3379973	0,88
450		CTA GRP K 450/050/MR (3mm)	3380035	0,97
500		CTA GRP K 500/050/MR (3mm)	3380042	1,05
600		CTA GRP K 600/050/MR (3mm)	3380048	1,22
200	100	CTA GRP K 200/100/MR (3mm)	3379925	1,32
250		CTA GRP K 250/100/MR (3mm)	3379927	0,73
300		CTA GRP K 300/100/MR (3mm)	3379967	0,82
400		CTA GRP K 400/100/MR (3mm)	3379970	0,98
450		CTA GRP K 450/100/MR (3mm)	3380030	1,07
500		CTA GRP K 500/100/MR (3mm)	3380037	1,15
600		CTA GRP K 600/100/MR (3mm)	3380044	1,32
250		150	CTA GRP K 250/150/MR (3mm)	3379963
300	CTA GRP K 300/150/MR (3mm)		3379896	0,90
400	CTA GRP K 400/150/MR (3mm)		3379895	1,07
450	CTA GRP K 450/150/MR (3mm)		3379894	1,15
500	CTA GRP K 500/150/MR (3mm)		3379893	1,24
600	CTA GRP K 600/150/MR (3mm)		3379892	1,40
300	200	CTA GRP K 300/200/MR (3mm)	3379889	0,98
400		CTA GRP K 400/200/MR (3mm)	3379888	1,15
450		CTA GRP K 450/200/MR (3mm)	3379887	1,24
500		CTA GRP K 500/200/MR (3mm)	3349418	1,32
600		CTA GRP K 600/200/MR (3mm)	3379886	1,49
400	250	CTA GRP K 400/250/MR (3mm)	3379971	1,24
450		CTA GRP K 450/250/MR (3mm)	3380032	1,32
500		CTA GRP K 500/250/MR (3mm)	3380039	1,40
600		CTA GRP K 600/250/MR (3mm)	3380046	1,57
400	300	CTA GRP K 400/300/MR (3mm)	3379883	1,32
450		CTA GRP K 450/300/MR (3mm)	3379882	1,41
500		CTA GRP K 500/300/MR (3mm)	3379881	1,49
600		CTA GRP K 600/300/MR (3mm)	3379880	1,66
500	400	CTA GRP K 500/400/MR (3mm)	3379877	1,66
600		CTA GRP K 600/400/MR (3mm)	3379876	1,82
600	450	CTA GRP K 600/450/MR (3mm)	3379873	1,91
600	500	CTA GRP K 600/500/MR (3mm)	3379870	1,99



Installation

- Standard Cover Clamp



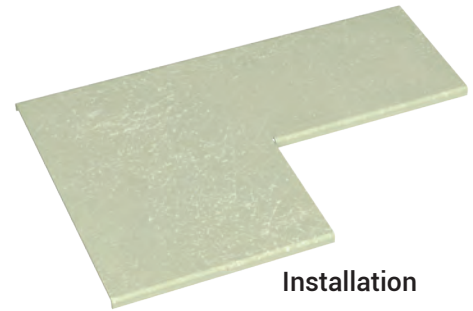
E-LINE CTA GRP

Covers

LR Left / RR Right Reduction Cover

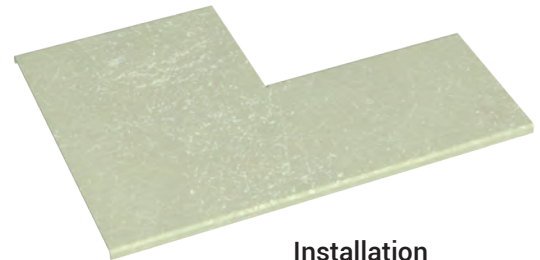
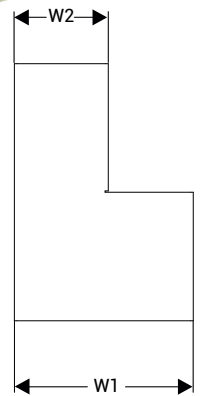
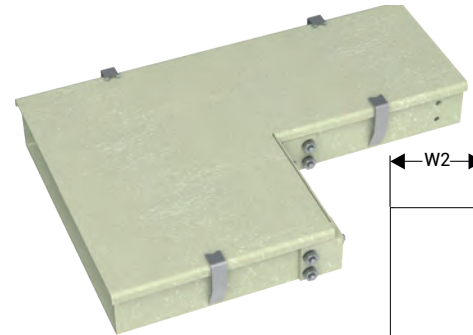


W1 (mm)	W2 (mm)	Description	Order Code	Weight (kg/pcs)
100	50	CTA GRP K 100/050/RR/LR (3MM)	3379897	0,38
150		CTA GRP K 150/050/RR/LR (3MM)	3379899	0,46
200		CTA GRP K 200/050/RR/LR (3MM)	3379902	0,55
250		CTA GRP K 250/050/RR/LR (3MM)	3379906	0,63
300		CTA GRP K 300/050/RR/LR (3MM)	3379909	0,72
400		CTA GRP K 400/050/RR/LR (3MM)	3379912	0,88
450		CTA GRP K 450/050/RR/LR (3MM)	3379916	0,97
500		CTA GRP K 500/050/RR/LR (3MM)	3379920	1,05
600		CTA GRP K 600/050/RR/LR (3MM)	3379923	1,22
150	100	CTA GRP K 150/100/RR/LR (3MM)	3379898	0,56
200		CTA GRP K 200/100/RR/LR (3MM)	3379900	0,65
250		CTA GRP K 250/100/RR/LR (3MM)	3379903	0,73
300		CTA GRP K 300/100/RR/LR (3MM)	3379907	0,82
400		CTA GRP K 400/100/RR/LR (3MM)	3379910	0,98
450		CTA GRP K 450/100/RR/LR (3MM)	3379913	1,07
500		CTA GRP K 500/100/RR/LR (3MM)	3379917	1,15
600		CTA GRP K 600/100/RR/LR (3MM)	3379921	1,32
200	150	CTA GRP K 200/150/RR/LR (3MM)	3379901	0,73
250		CTA GRP K 250/150/RR/LR (3MM)	3379904	0,82
300		CTA GRP K 300/150/RR/LR (3MM)	3379865	0,90
400		CTA GRP K 400/150/RR/LR (3MM)	3379864	1,07
450		CTA GRP K 450/150/RR/LR (3MM)	3379863	1,15
500		CTA GRP K 500/150/RR/LR (3MM)	3379862	1,24
600	CTA GRP K 600/150/RR/LR (3MM)	3379861	1,40	
250	200	CTA GRP K 250/200/RR/LR (3MM)	3379905	0,90
300		CTA GRP K 300/200/RR/LR (3MM)	3379858	0,98
400		CTA GRP K 400/200/RR/LR (3MM)	3379857	1,15
450		CTA GRP K 450/200/RR/LR (3MM)	3379856	1,24
500		CTA GRP K 500/200/RR/LR (3MM)	3379855	1,32
600	CTA GRP K 600/200/RR/LR (3MM)	3379854	1,49	
300	250	CTA GRP K 300/250/RR/LR (3MM)	3379908	1,07
400		CTA GRP K 400/250/RR/LR (3MM)	3379911	1,24
450		CTA GRP K 450/250/RR/LR (3MM)	3379914	1,32
500		CTA GRP K 500/250/RR/LR (3MM)	3379918	1,40
600	CTA GRP K 600/250/RR/LR (3MM)	3379922	1,57	
400	300	CTA GRP K 400/300/RR/LR (3MM)	3379851	1,32
450		CTA GRP K 450/300/RR/LR (3MM)	3379850	1,41
500		CTA GRP K 500/300/RR/LR (3MM)	3379849	1,49
600		CTA GRP K 600/300/RR/LR (3MM)	3379848	1,66
450	400	CTA GRP K 450/400/RR/LR (3MM)	3379915	1,57
500		CTA GRP K 500/400/RR/LR (3MM)	3379845	1,66
600		CTA GRP K 600/400/RR/LR (3MM)	3379844	1,82
500	450	CTA GRP K 500/450/RR/LR (3MM)	3379919	1,74
600		CTA GRP K 600/450/RR/LR (3MM)	3379841	1,91
600	500	CTA GRP K 600/500/RR/LR (3MM)	3379838	1,99



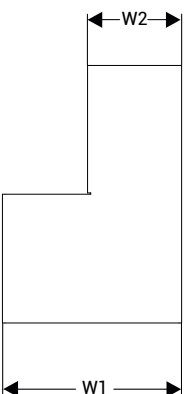
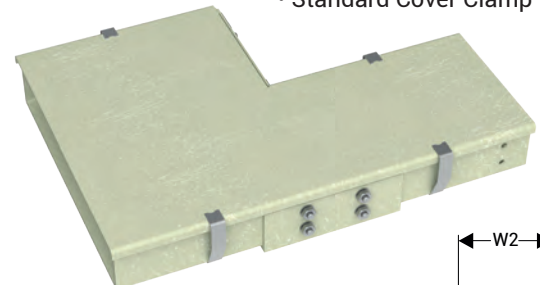
Installation

- Standard Cover Clamp



Installation

- Standard Cover Clamp



Straight Cover

CTA GRP

E-LINE CTA GRP

Accessories

Separator

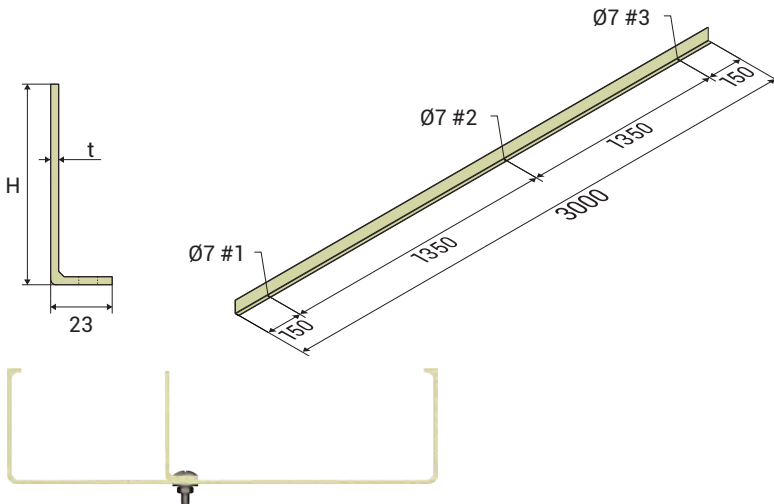


Produced by the pultrusion method. Delivered with pre-drilled holes.

Description	Height (mm)	Thickness (mm)	Order Code	Ağırlık (kg/m)
50 CTA GRP Separator L3	45	3	3191260	0,57
80 CTA GRP Separator L3	75	3	3191261	0,86
100 CTA GRP Separator L3	95	3	3191262	0,92



Hole Positions:



- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- Fasteners : A 3-meter separator includes 3 sets of M8x25 SS316 bolts

E-LINE CTA GRP

Accessories

Accessories, Material: GRP

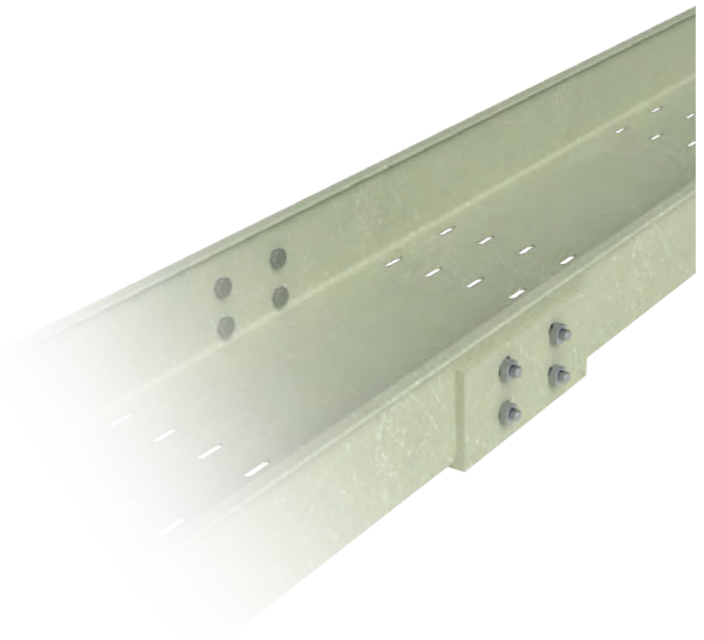
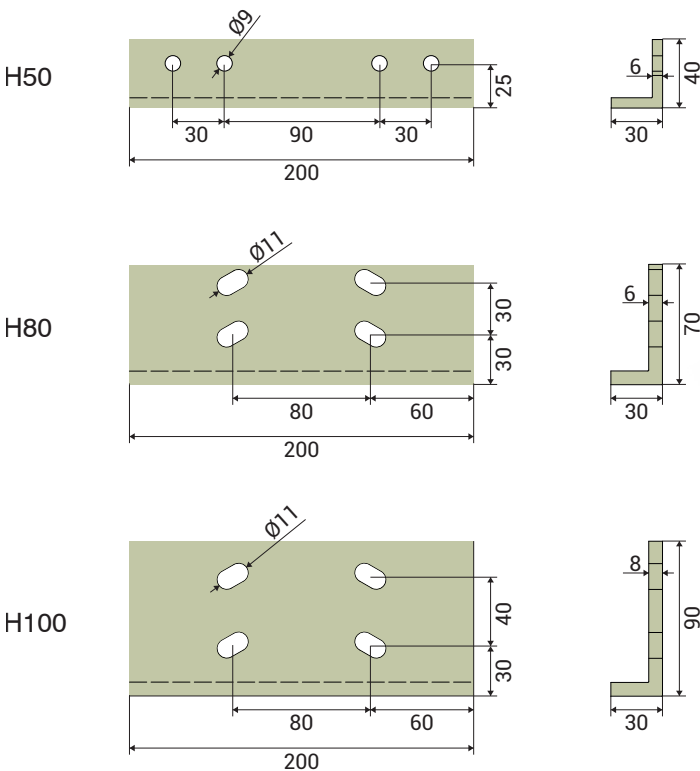


Delivered with pre-drilled holes.



Description	Height (mm)	Length (mm)	Thickness (mm)	Required Fixing Set (SS316)	Weight (kg/pcs)	Order Code
50 KCA/CTA GRP Joint Element	40	200	6	4 set M8X25 SS316	0,13	3191263
80 KCA/CTA GRP Joint Element	70	200	6	4 set M10x25 SS316 or 4 set M10X40 GRP	0,20	3191264
100 KCA/CTA GRP Joint Element	90	200	8	4 set M10x25 SS316 or 4 set M10X40 GRP	0,31	3177483

Dimensions:

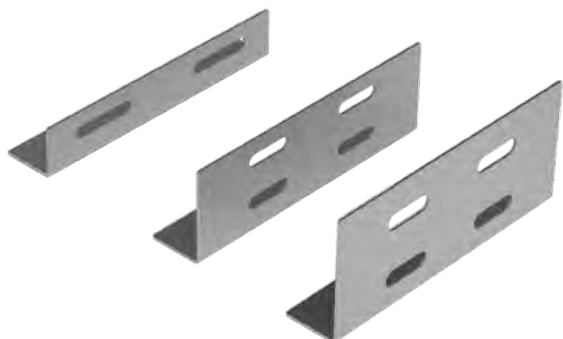


- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Fasteners** : For H50mm: 4 sets of M8×25 SS316 (Page 67) (To be ordered separately).
For H80mm and H100mm: 4 sets of M10×25 SS316 (Page 67) (To be ordered separately).

E-LINE CTA GRP

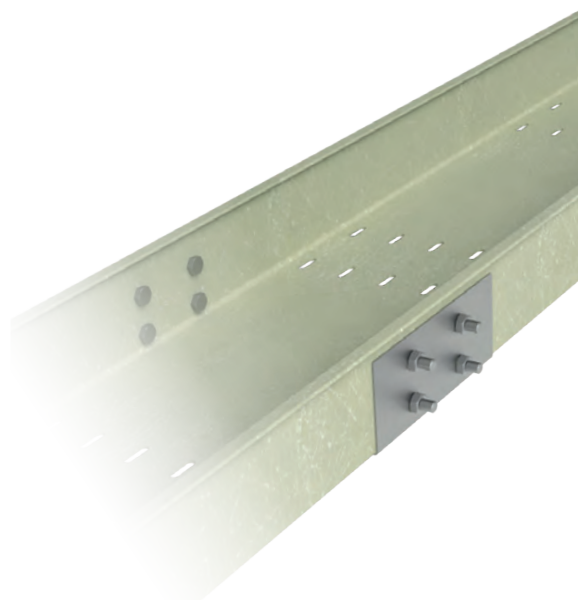
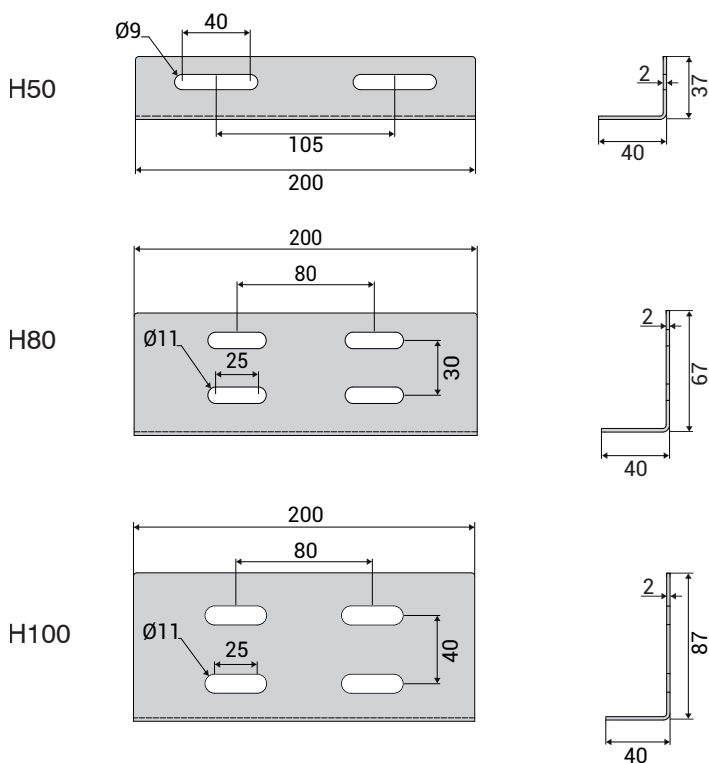
Accessories

Expansion Joint, Material: 316 Stainless Steel



Description	Height (mm)	Length (mm)	Thickness (mm)	Required Fixing Set (SS316)	Weight (kg/pcs)	Order Code
050 KCA/CTA GRP Dilatation SS316	37	200	2	4 set M8x25 SS316	0,22	3415120
080 KCA/CTA GRP Dilatation SS316	67	200	2	4 set M10x25 SS316	0,31	3415121
100 KCA/CTA GRP Dilatation SS316	87	200	2	4 set M10x25 SS316	0,37	3415122

Dimensions:



- Material : 316 Grade stainless steel.
- Fasteners : For H50mm: 4 sets of M8x25 SS316 (Page 67) (To be ordered separately).
For H80mm and H100mm: 4 sets of M10x25 SS316 (Page 67) (To be ordered separately)

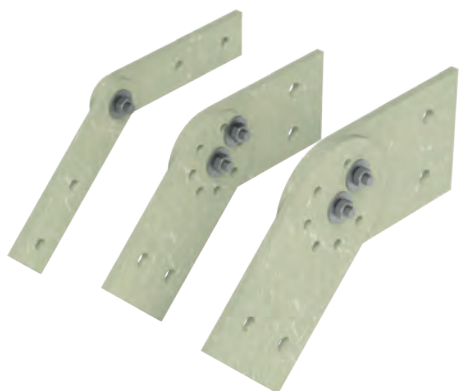
E-LINE CTA GRP

Accessories

SDE Vertical Adjustable Fitting



Produced by the pultrusion method. Shipped with pre-drilled holes and preassembled.



Description	Height (mm)	Thickness (mm)	Weight (kg/pcs)	Weight (kg/set)	Order Code
50 KCA/CTA GRP SDE-GRP	30	5	0,035	0,09	3191269
80 KCA/CTA GRP SDE-GRP	60	5	0,060	0,16	3191270
100 KCA/CTA GRP SDE-GRP	80	5	0,100	0,25	3177487

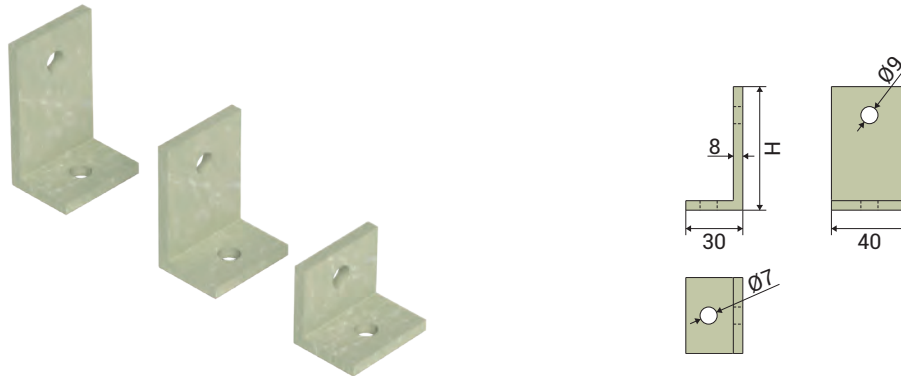


- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)
- **Fasteners** : For mounting the H50mm SDE part to the ladder or tray: 4 sets of M8x25 SS316 (Page 67)
For mounting the H80mm and H100mm SDE parts to the ladder or tray: 4 sets of M10x25 SS316 (Page 67).

E-LINE CTA GRP

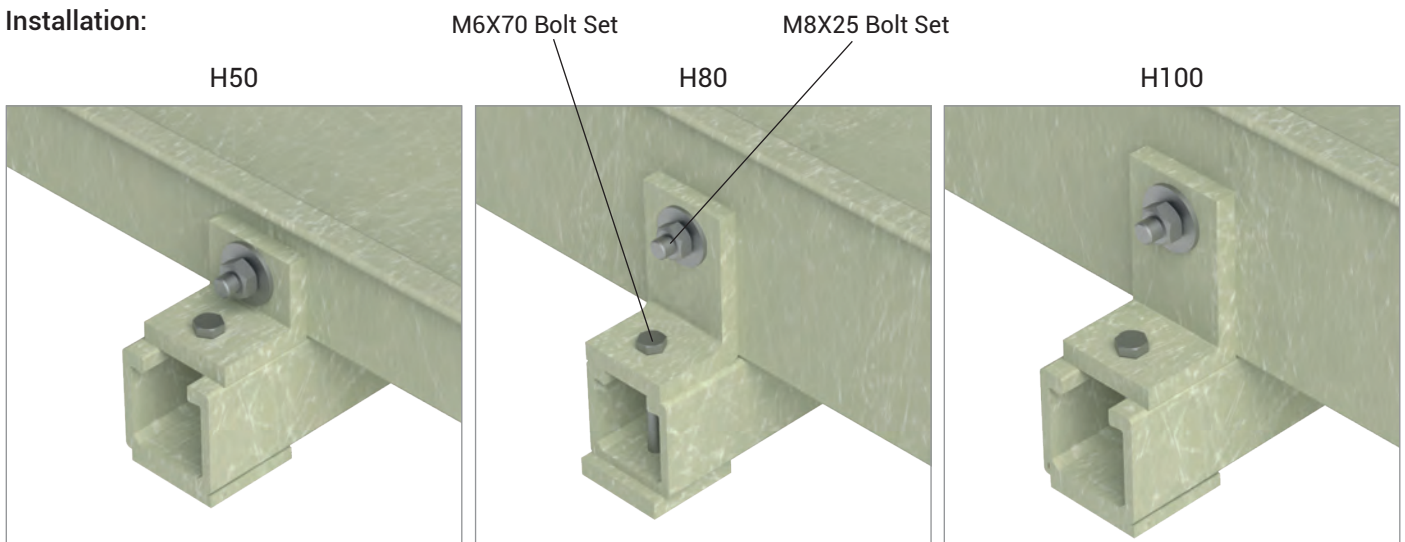
Accessories

L-Fixing Clamp



Description	Malzeme	Height (mm)	Weight (kg/pcs)	Order Code
H50 L-Fixing Clamp (GRP)	GRP	35	0,036	1027015
H80 L-Fixing Clamp (GRP)	GRP	55	0,046	1027016
H100 L-Fixing Clamp (GRP)	GRP	65	0,052	1027017

Installation:



Note: The L-Fixing Clamp (GRP) must be drilled at the installation points with a drill bit in order to be mounted on the GRP tray. GRP trays will be supplied with holes only at the ends for the installation of accessory components

- **Material** : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- **Color** : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

Accessories

Fasteners



Fasteners (Stainless Steel 316)

Bolt Sets

Description	Material	Order Code	Weight (kg/set)
M8x25 Fixing Set (SS316)	SS316 (A4)	1027109	0,028
M10x25 Fixing Set (SS316)	SS316 (A4)	1074621	0,049
M6x70 Fixing Set (SS316+GRP)	SS316 (A4)+GRP	3419764	0,037
M8x40 Fixing Set (SS316)	SS316 (A4)	3422005	0,030



Bolts (DIN 7985)

Description	Material	Order Code	Weight (kg/pcs)
M8x25 Bolt Set (DIN 7985) (SS316)	SS316 (A4)	1025647	0,019
M10x25 Bolt Set (DIN 7985) (SS316)	SS316 (A4)	1075074	0,028
M8x40 Bolt Set (DIN 7985) (SS316)	SS316 (A4)	1077338	0,021



Nuts (DIN 934)

Description	Material	Order Code	Weight (kg/pcs)
M8 Hex Nut (DIN 934) (SS316)	SS316 (A4)	1025649	0,005
M10 Hex Nut (DIN 934) (SS316)	SS316 (A4)	1063408	0,01



Flat Washers (DIN 9021)

Description	Material	Order Code	Weight (kg/pcs)
M8 Plain Washer (DIN 9021) (SS316)	SS316 (A4)	1025648	0,006
M10 Plain Washer (DIN 9021) (SS316)	SS316 (A4)	1075075	0,011



Description	Material	Order Code	Weight (kg/set)
M10X40 Composite Bolt + M10 Wing Nut	GRP	1071357	0,015

Note: Maximum Tightening Torque: 4 Nm

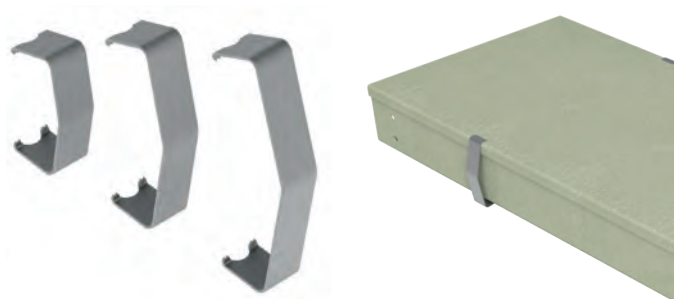


E-LINE CTA GRP

Cover Clamps

Standard Cover Clamp (Stainless Steel)

Description	Weight (kg/pcs)	Order Code
50 KCA/CTA GRP Cover Clamp SS	0,020	1027009
80 KCA/CTA GRP Cover Clamp SS	0,025	1027010
100 KCA/CTA GRP Cover Clamp SS	0,030	1025642
150 KCA/CTA GRP Cover Clamp SS	0,040	1025643



- Material : Stainless Steel

End Fitting

Description	Height (mm)	Width (mm)	Weight (kg/set)	Order Code
050 CT-KM GRP 050 End Fitting	50	50	0,09	3266371
050 CT-KM GRP 100 End Fitting	50	100	0,10	3266372
050 CT-KM GRP 150 End Fitting	50	150	0,12	3266373
050 CT-KM GRP 200 End Fitting	50	200	0,13	3266374
050 CT-KM GRP 250 End Fitting	50	250	0,15	3266375
050 CT-KM GRP 300 End Fitting	50	300	0,16	3266376
050 CT-KM GRP 400 End Fitting	50	400	0,19	3266377
050 CT-KM GRP 450 End Fitting	50	450	0,20	3266378
050 CT-KM GRP 500 End Fitting	50	500	0,22	3266379
050 CT-KM GRP 600 End Fitting	50	600	0,24	3266380
080 CT-KM GRP 100 End Fitting	80	100	0,16	3266381
080 CT-KM GRP 150 End Fitting	80	150	0,18	3266382
080 CT-KM GRP 200 End Fitting	80	200	0,20	3266383
080 CT-KM GRP 250 End Fitting	80	250	0,22	3266384
080 CT-KM GRP 300 End Fitting	80	300	0,25	3266385
080 CT-KM GRP 400 End Fitting	80	400	0,29	3266386
080 CT-KM GRP 450 End Fitting	80	450	0,31	3266387
080 CT-KM GRP 500 End Fitting	80	500	0,33	3266388
080 CT-KM GRP 600 End Fitting	80	600	0,38	3266389
100 CT-KM GRP 100 End Fitting	100	100	0,25	3266390
100 CT-KM GRP 150 End Fitting	100	150	0,28	3266391
100 CT-KM GRP 200 End Fitting	100	200	0,30	3266392
100 CT-KM GRP 250 End Fitting	100	250	0,33	3266393
100 CT-KM GRP 300 End Fitting	100	300	0,36	3266394
100 CT-KM GRP 400 End Fitting	100	400	0,42	3266395
100 CT-KM GRP 450 End Fitting	100	450	0,44	3266396
100 CT-KM GRP 500 End Fitting	100	500	0,47	3266397
100 CT-KM GRP 600 End Fitting	100	600	0,53	3266398
150 CT-KM GRP 150 End Fitting	150	150	0,42	3266399
150 CT-KM GRP 200 End Fitting	150	200	0,46	3266400
150 CT-KM GRP 300 End Fitting	150	300	0,54	3266401
150 CT-KM GRP 400 End Fitting	150	400	0,63	3266402
150 CT-KM GRP 450 End Fitting	150	450	0,67	3266403
150 CT-KM GRP 500 End Fitting	150	500	0,71	3266404
150 CT-KM GRP 600 End Fitting	150	600	0,79	3266405



- Material : Glass Reinforced Polyester (GRP) (Vinyl ester and anti-static products available upon special request.)
- Color : RAL 7032 Pebble Grey (Custom colors available upon request; minimal color tone variation may be observed.)

E-LINE CTA GRP

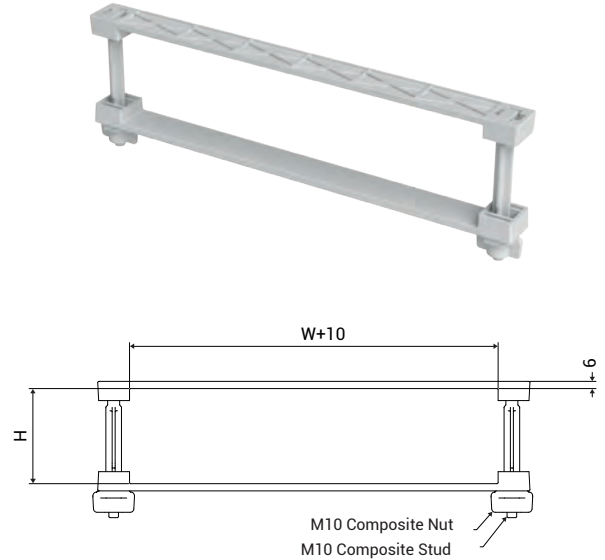
Cover Clamps

Heavy Duty Cover Clamp



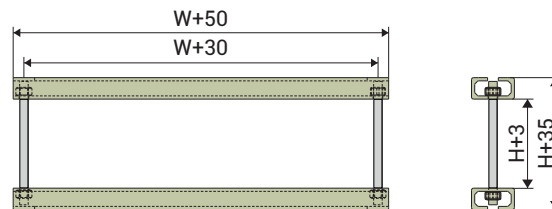
Produced using the SMC method.

Description	Height (mm)	Width (mm)	Weight (kg/set)	Order Code
050 CTA GRP 050 Heavy Duty Cover Clamp	50	50	0,095	3407253
050 CTA GRP 100 Heavy Duty Cover Clamp	50	100	0,122	3407254
050 CTA GRP 150 Heavy Duty Cover Clamp	50	150	0,137	3407255
050 CTA GRP 200 Heavy Duty Cover Clamp	50	200	0,152	3407256
050 CTA GRP 250 Heavy Duty Cover Clamp	50	250	0,167	3407257
050 CTA GRP 300 Heavy Duty Cover Clamp	50	300	0,186	3407258
050 CTA GRP 400 Heavy Duty Cover Clamp	50	400	0,222	3407259
050 CTA GRP 450 Heavy Duty Cover Clamp	50	450	0,237	3407260
050 CTA GRP 500 Heavy Duty Cover Clamp	50	500	0,262	3407261
050 CTA GRP 600 Heavy Duty Cover Clamp	50	600	0,302	3407262
080 CTA GRP 100 Heavy Duty Cover Clamp	80	100	0,127	3407263
080 CTA GRP 150 Heavy Duty Cover Clamp	80	150	0,142	3407264
080 CTA GRP 200 Heavy Duty Cover Clamp	80	200	0,157	3407265
080 CTA GRP 250 Heavy Duty Cover Clamp	80	250	0,172	3407266
080 CTA GRP 300 Heavy Duty Cover Clamp	80	300	0,191	3407267
080 CTA GRP 400 Heavy Duty Cover Clamp	80	400	0,227	3407268
080 CTA GRP 450 Heavy Duty Cover Clamp	80	450	0,242	3407269
080 CTA GRP 500 Heavy Duty Cover Clamp	80	500	0,267	3407270
080 CTA GRP 600 Heavy Duty Cover Clamp	80	600	0,307	3407271
100 CTA GRP 100 Heavy Duty Cover Clamp	100	100	0,131	3407272
100 CTA GRP 150 Heavy Duty Cover Clamp	100	150	0,146	3407273
100 CTA GRP 200 Heavy Duty Cover Clamp	100	200	0,161	3407274
100 CTA GRP 250 Heavy Duty Cover Clamp	100	250	0,176	3407275
100 CTA GRP 300 Heavy Duty Cover Clamp	100	300	0,195	3407276
100 CTA GRP 400 Heavy Duty Cover Clamp	100	400	0,231	3407277
100 CTA GRP 450 Heavy Duty Cover Clamp	100	450	0,246	3407278
100 CTA GRP 500 Heavy Duty Cover Clamp	100	500	0,271	3407279
100 CTA GRP 600 Heavy Duty Cover Clamp	100	600	0,311	3407280



For 50mm - 600mm widths

Produced by the pultrusion method.



For 750mm - 900mm widths

Material & Quantity:

- Profiles: GRP (2 pieces)
- Threaded Rod (Stud): M8, SS316 (2 pieces)
- Nut: M8, SS316 (4 pieces)
- Flat Washer: M8, SS316 (4 pieces)

Description	Height (mm)	Width (mm)	Weight (kg/set)	Order Code
100 CT-KM GRP 750 Heavy Duty Cover Clamp	100	750	1,128	3210406
100 CT-KM GRP 900 Heavy Duty Cover Clamp	100	900	1,316	3210407

E-LINE CTA GRP

CTA GRP Specification

Glass Reinforced Polyester



Part 1 – Scope

This specification covers the minimum requirements for the design, manufacture, testing, and supply of Glass Reinforced Polyester (CTA GRP) cable trays, necessary hardware, accessories, and fittings suitable for indoor/outdoor installations required for cable laying.

- CTA GRP Cable trays shall be designed and manufactured to meet the requirements of IEC 61537.
- All cable connections and accessories shall be corrosion/chemical resistant, weather resistant, easy to drill and cut, lightweight, high strength, and flame retardant (Class 1 Rating) in accordance with ISO 9227. All CTA GRP Cable trays materials shall contain UV-resistant chemical additives to resist degradation caused by ultraviolet light. All CTA GRP Cable trays materials will contain UV-resistant chemical additives to resist degradation caused by ultraviolet light.
- All composite materials shall have halogen-free properties
- CTA GRP Cable Trays and accessories can be manufactured with anti-static properties upon request.

Design & Deflection

- CTA GRP Glass Glass Reinforced Polyester Cable tray sections are designed and manufactured to meet the loading requirements of IEC 61537 and are available in various load and span performances up to 3 meters.
- All reported results are based on uniformly distributed static loads and a multi-span configuration for the IEC 61537 load test.
- All load results detailed in this section have been derived from testing 600mm wide sections of KCA CTA cable ladders in the various configurations.
- The CTA GRP Cable Ladder must have connection holes drilled at both ends.
- The rungs must be secured to the side walls with locking clips.
- The exterior color of the product will be standard RAL 7032 beige. It should be possible to produce it in a different RAL code color upon request. Minimal variations in the color tone of the product may be observed.

Part 2 - Products

Specifications For EAE Cable Tray E-Line CTA GRP Series Cable Tray

1. Cable Tray Design

- Cable tray shall be designed and manufactured by EAE ELEKTRİK A.S.
- They shall be complete with installation and mounting accessories of CTA GRP such as bends, tees, crosses, reducers, splices, tray covers and other necessary hardware, fastener etc. defined in the latest IEC 61537 standard (International standard).
- Specially designed and manufactured cable tray allows easy installation of cables which shall be free from burrs, projections, sharp edges inside where cables can be damaged.

2. Manufacture and Dimensions

- CTA GRP cable trays are manufactured in metric SI units.
- Length. Straight lengths shall be manufactured in 3-meters.
- Height. Overall heights shall be 50mm, 80mm, and 100mm.
- Overall widths shall be 150mm, 200mm, 250mm, 300mm, 400mm, 450mm, 500mm and 600mm.
- Thickness shall be 3 mm for 50-300mm widths and 4,5mm for 400-600mm widths.
- Various types of fittings are available for supporting horizontal and vertical directional cable route/size changes:
 - Horizontal fittings: elbows, tee, cross, middle-left-right reducers,
 - Vertical fittings: inside vertical elbow, outside vertical elbow, vertical adjustable fitting,
 - Standard Radius: R300, R450 and R600 (300, 450 and 600mm, respectively),
 - Standard angle for horizontal and vertical elbows: 45° and 90° (Other angles are possible upon request.).

3. Material Properties

CTA GRP Cable Ladders must be manufactured from "Glass Reinforced Polyester" material. The manufactured products must have the following properties and these properties must be declared and proven by type test reports obtained from an internationally accredited laboratory.

- Standard products are manufactured in accordance with UL94; V0 flame retardancy within 10 seconds.
- Products with F0 and M1 flame resistance, as specified in the NF F 16-101 standard, can be manufactured upon request.
- Must be Class-1 according to ASTM E-84. (Flame spread and smoke production test)
- Must be tested according to DIN 4102-1 and be B1 class. (Dripping, smoke, and smoke temperature test when exposed to flame)
- Must be tested according to EN 60754 and be halogen-free. (The measurement of halogen formed when exposed to flame must be no more than 5 mg/g.)
- Must be tested according to ISO 4892-2 standard for UV resistance. (Tested for 60 days between -40°C and +85°C, no color change or material deterioration should be observed. This test simulates 10 years of UV exposure.)
- It must be tested and certified according to the EN 60068-2-1 standard (-75°C for 72 hours, with no physical changes observed at the end).
- Electrical conductivity must be measured according to the EN 60079-0 standard. (Standard products have insulating properties; anti-static products can be produced upon request.)
- It must be tested according to the ISO 62 standard (water absorption test).
- It must be tested and approved for ozone aging according to the ISO 1431-1 standard.
- Transport values must be tested and certified according to the IEC 61537 standard.
- Must be subjected to a minimum of 1500 hours of salt testing according to the ISO 9227 standard.
- Must be tested and approved according to the ASTM D 4385 standard (Visual defects).
- Must be tested and approved according to the TS EN 60243-1 standard (Dielectric test).

4. Covers

- Covers shall be constructed with a minimum thickness 3mm.
- All range of manufactured straight lengths and fittings shall be supplied with their covers upon request.
- Covers will be manufactured up to 600mm in width.
- Heavy duty omega type cover clamps shall be used for outdoor applications.

5. Accessories

- Accessories shall be furnished as required to protect, support and install the cable ladder system.
- Splice plates, expansion splice plates, horizontal and vertical adjustable couplers, vertical adjustable fitting, dividers, junction box plates as well as fixing fasteners are standard manufactured and supplied accessories by EAE.

6. Splice Plates

- Splice plates shall be fastened to the outside of the cable ladder side-rails.
- Bolts, nuts and washers shall be supplied with splice plates. Stainless Steel 316 as standard.
- Additional components should be manufactured from Glass Reinforced Polyester material or 316 (A4) grade stainless steel material.

E-LINE GRP A-A

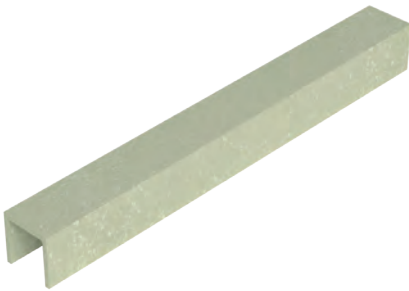
GRP Support Systems



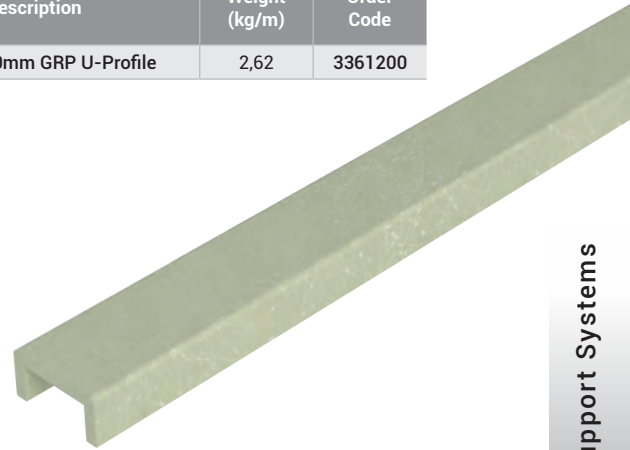
Description	Weight (kg/m)	Order Code
43x43x 4mm GRP Binrak	1,06	3234649



Description	Weight (kg/m)	Order Code
58x58 x 7mm GRP U-Profile	2,08	3234650



Description	Weight (kg/m)	Order Code
40x80 x 10mm GRP U-Profile	2,62	3361200



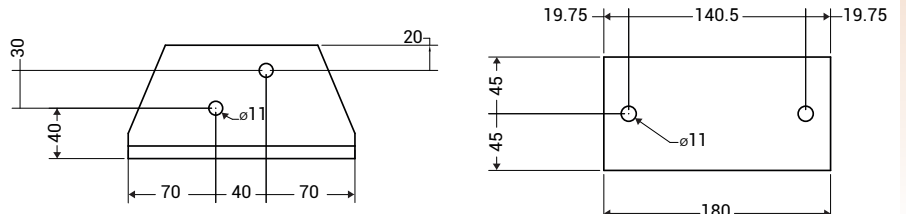
Description	T (mm)	Weight (kg/pcs)	Order Code
BR 1-1 GRP Square nut	8	0,019	3234651



Description	T (mm)	Weight (kg/pcs)	Order Code
GRP TMP Ceiling Mounting Fitting	10	0,9	3358556



Note: Compatible with 40×80 × 10 mm GRP U-profile

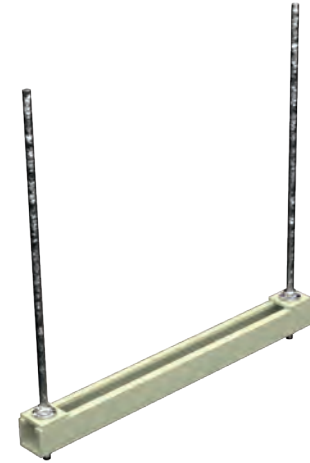


E-LINE GRP A-A

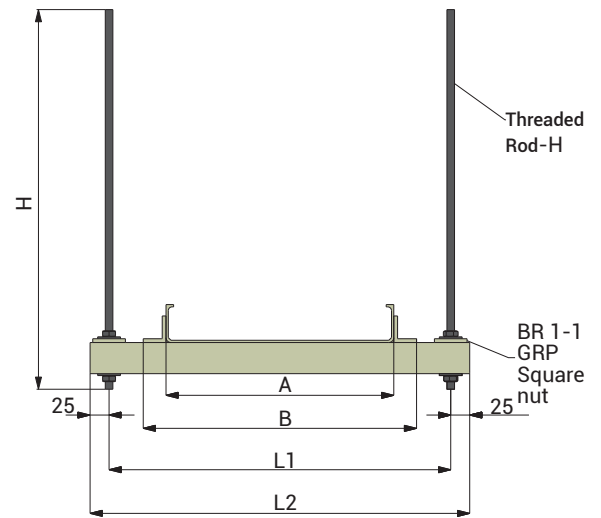
Ceiling Rod Hanger



Description	Dimension	Material	Weight (kg/pcs)	Order Code
Threaded Rod	M8x500	SS316	0,20	5000832
	M8x1000	SS316	0,40	5000833
	M8x1500	SS316	0,60	5000834
	M8x2000	SS316	0,80	5000835
	M8x3000	SS316	1,20	5000836
	M10x500	SS316	0,32	5000838
	M10x1000	SS316	0,64	5000839
	M10x1500	SS316	0,96	5000840
	M10x2000	SS316	1,28	5000841
	M10x3000	SS316	1,92	5000842
Nut (DIN 934)	M8	SS316	0,005	1025649
	M10	SS316	0,012	1011109
Flat Washer (DIN 9021) (DIN 9021)	M8	SS316	0,006	1025648
	M10	SS316	0,013	1027285
BR 1-1 GRP Square Nut		GRP	0,019	3234651
43x43x 4mm GRP Binrak		GRP	1,06 (kg/m)	3234649

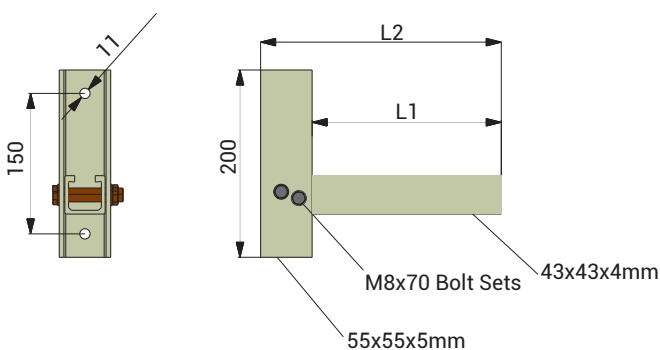


Tray Width	Dimensions (mm)				
	A	B	L1	L2	H
50	110	200	250	H	
100	160	250	300	H	
150	210	300	350	H	
200	260	350	400	H	
250	310	400	450	H	
300	360	450	500	H	
400	460	550	600	H	
450	510	600	650	H	
500	560	650	700	H	
600	660	750	800	H	



Cantilever Arm – Without Bracing

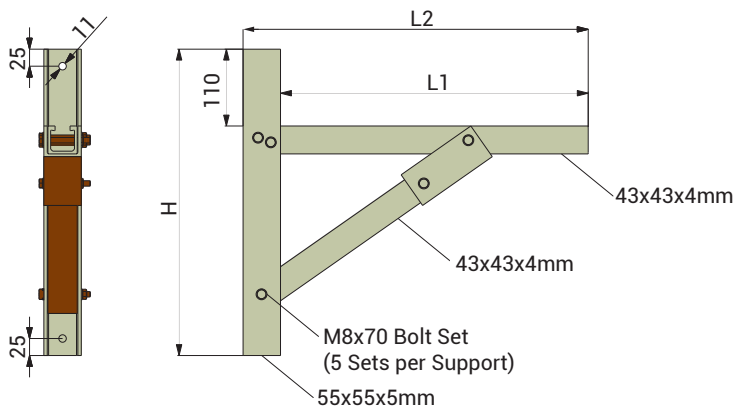
Description	L1 (mm)	L2 (mm)	Load Capacity (kg)	Weight (kg/set)	Order Code
GRP Cantilever Arm – Without Bracing-050	100	155	125	0,70	3234658
GRP Cantilever Arm – Without Bracing-050	150	205	125	0,75	3234659
GRP Cantilever Arm – Without Bracing-050	200	255	125	0,80	3234660
GRP Cantilever Arm – Without Bracing-050	250	305	125	0,86	3234661
GRP Cantilever Arm – Without Bracing-050	300	355	125	0,91	3234662
GRP Cantilever Arm – Without Bracing-050	350	405	125	0,97	3234663



E-LINE GRP A-A

Cantilever Arm – With Angle Bracing

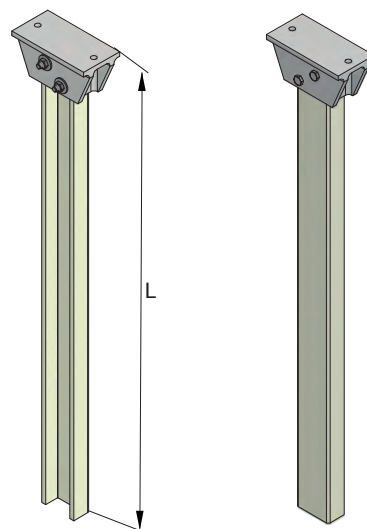
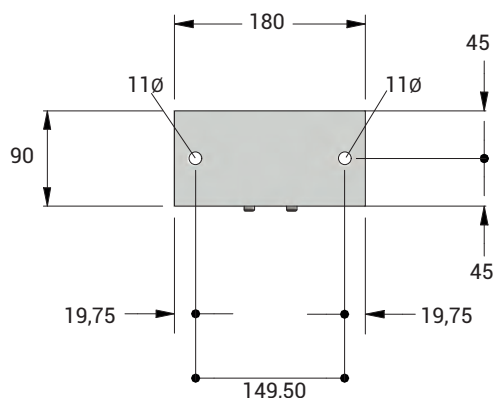
Description	L1 (mm)	L2 (mm)	H (mm)	Load Capacity (kg)	Weight (kg/set)	Order Code
GRP Cantilever Arm – With Angle Bracing-400	450	505	450	125	1,94	3234669
GRP Cantilever Arm – With Angle Bracing-450	500	555	500	125	2,15	3234670
GRP Cantilever Arm – With Angle Bracing-500	550	605	550	125	2,29	3234671
GRP Cantilever Arm – With Angle Bracing-600	650	705	550	125	2,41	3234672



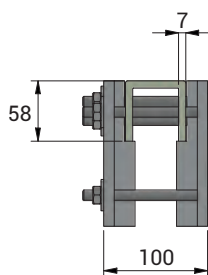
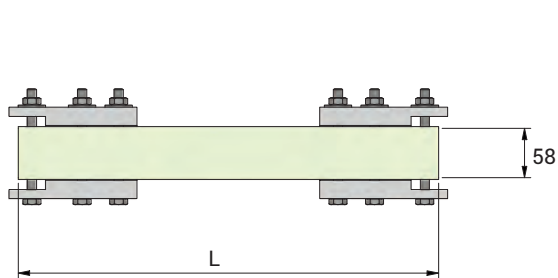
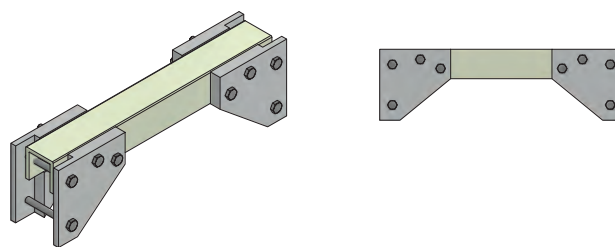
E-LINE GRP A-A

U Heavy Duty Supports

Description	L (mm)	Weight (kg/set)	Order Code
GRP-UPD-500	500	2,355	3405522
GRP-UPD-1000	1000	3,640	3405523
GRP-UPD-1500	1500	4,925	3405524
GRP-UPD-2000	2000	6,211	3405525
GRP-UPD-2500	2500	7,495	3405526
GRP-UPD-3000	3000	8,781	3405527



Description	L (mm)	Weight (kg/set)	Order Code
GRP-UPYB-100	200	3,613	3405512
GRP-UPYB-200	300	3,821	3405513
GRP-UPYB-300	400	4,027	3405514
GRP-UPYB-400	500	4,234	3405515
GRP-UPYB-500	600	4,441	3405517
GRP-UPYB-600	700	4,648	3405518
GRP-UPYB-700	800	4,854	3405519
GRP-UPYB-800	900	5,062	3405520
GRP-UPYB-900	1000	5,269	3405521

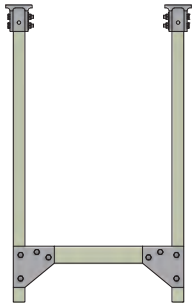


E-LINE GRP A-A

U Heavy Duty Supports

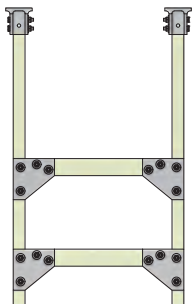


1 Row Application



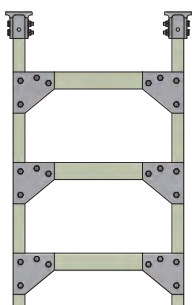
UPD - UPYB H-TYPE HANGER SAFE LOAD VALUES			
Vertical Hanger: UPD	Horizontal Supports: UDYB Max. Load Allowed (kg)		
L (mm)	A 100-200-300mm	A 400-500-600mm	A 700-800-900mm
500	1450	1300	1200
1000	1450	1300	1200
1500	1450	1300	1200
2000	1450	1300	1200
2500	1450	1300	1200
3000	1450	1300	1200

2 Row Application

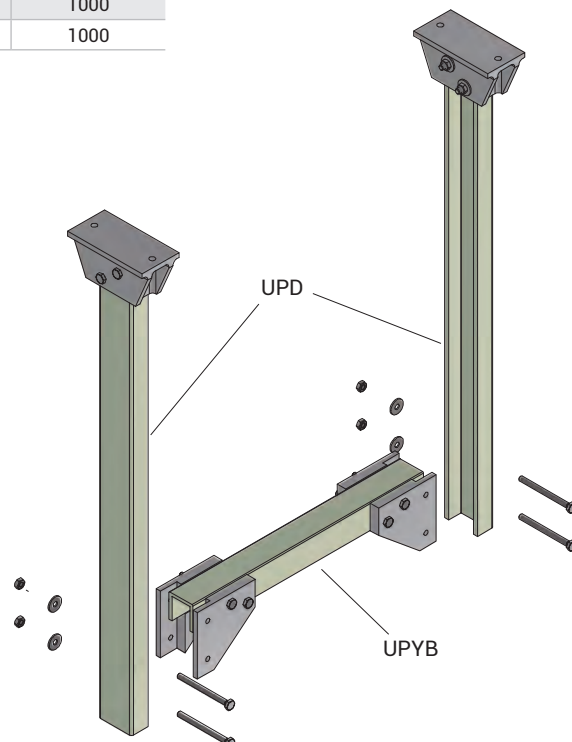


UPD - UPYB H-TYPE HANGER SAFE LOAD VALUES			
Vertical Hanger: UPD	Horizontal Supports: UDYB Max. Load Allowed (kg)		
L (mm)	A 100-200-300mm	A 400-500-600mm	A 700-800-900mm
500	1350	1200	1100
1000	1350	1200	1100
1500	1350	1200	1100
2000	1350	1200	1100
2500	1350	1200	1100
3000	1350	1200	1100

3 Row Application



UPD - UPYB H-TYPE HANGER SAFE LOAD VALUES			
Vertical Hanger: UPD	Horizontal Supports: UDYB Max. Load Allowed (kg)		
L (mm)	A 100-200-300mm	A 400-500-600mm	A 700-800-900mm
500	1200	1100	1000
1000	1200	1100	1000
1500	1200	1100	1000
2000	1200	1100	1000
2500	1200	1100	1000
3000	1200	1100	1000



PE

Polyester Resin
(ex: seaside, offshore platforms)

Most commonly used resin system. It offers good chemical resistance and weathering properties

- Environment: Strong atmospheric type corrosion (ex: seaside)
- Advantages: Optimal cost, good behaviour to fire
- Our recommendation: Self-extinguishing polyester, 0% halogen

PE-A

Polyester Anti-static Resin
(ex: mine, gas groups I)

Anti-static property is given to Polyester resin by adding carbon-powder, which increases the conductivity of the material where grounding is required.

- Environment: Highly exploding atmospheres
- Advantages: Anti-static properties
- Our recommendation: 0% halogen

AC

Acrylic Resin
(ex: tunnel)

It is ideal to use in enclosed areas, mass transit and tunnels. This resin has low smoke and toxicity properties while maintains good fire properties.

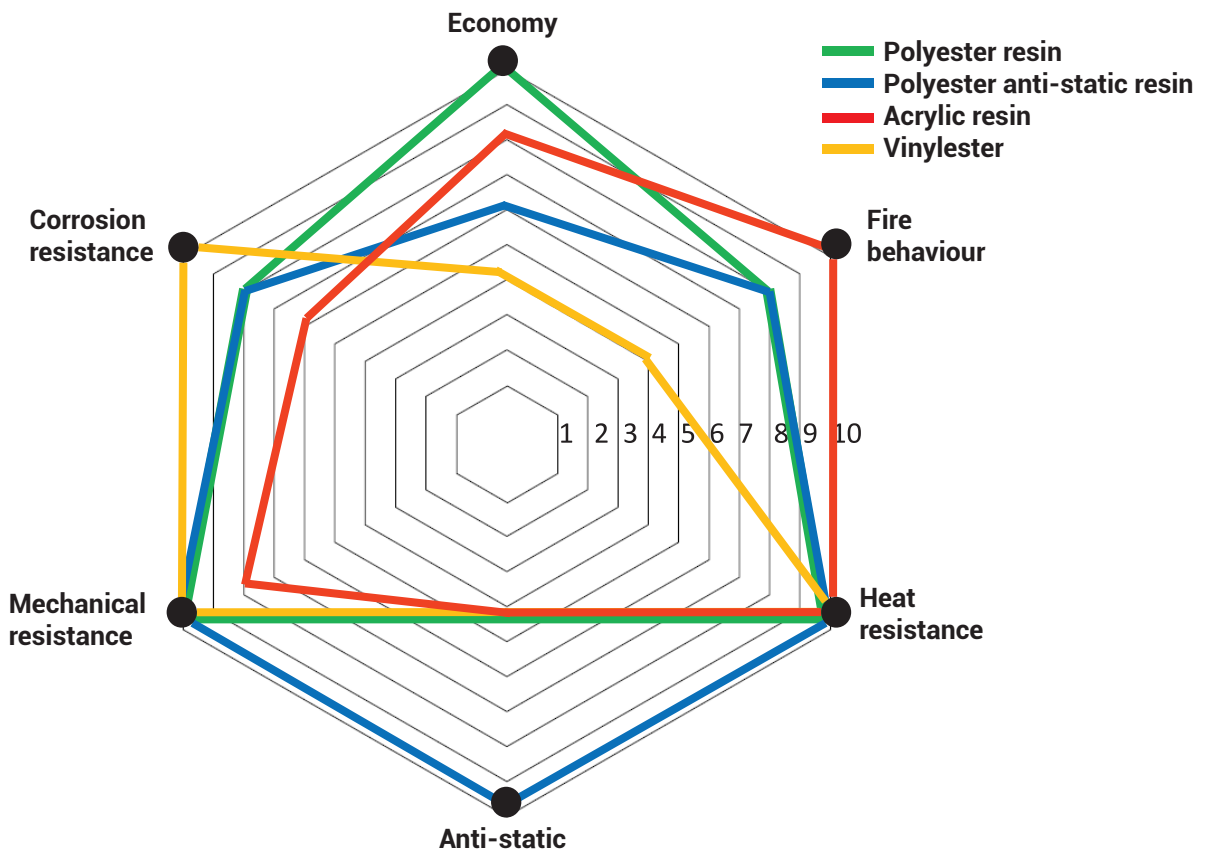
- Environment: Risk of fire in enclosed and corrosive environment (ex: seaside)
- Advantages: Excellent resistance to fire with max. security
- Our recommendation: Self-extinguishing acrylic, 0% halogen

VE

Vinyl Resin
(ex: H2SO4, HCl, corrosive chemical agents)

If offers resistance to aggressive chemicals such as H2SO4, HCl etc.

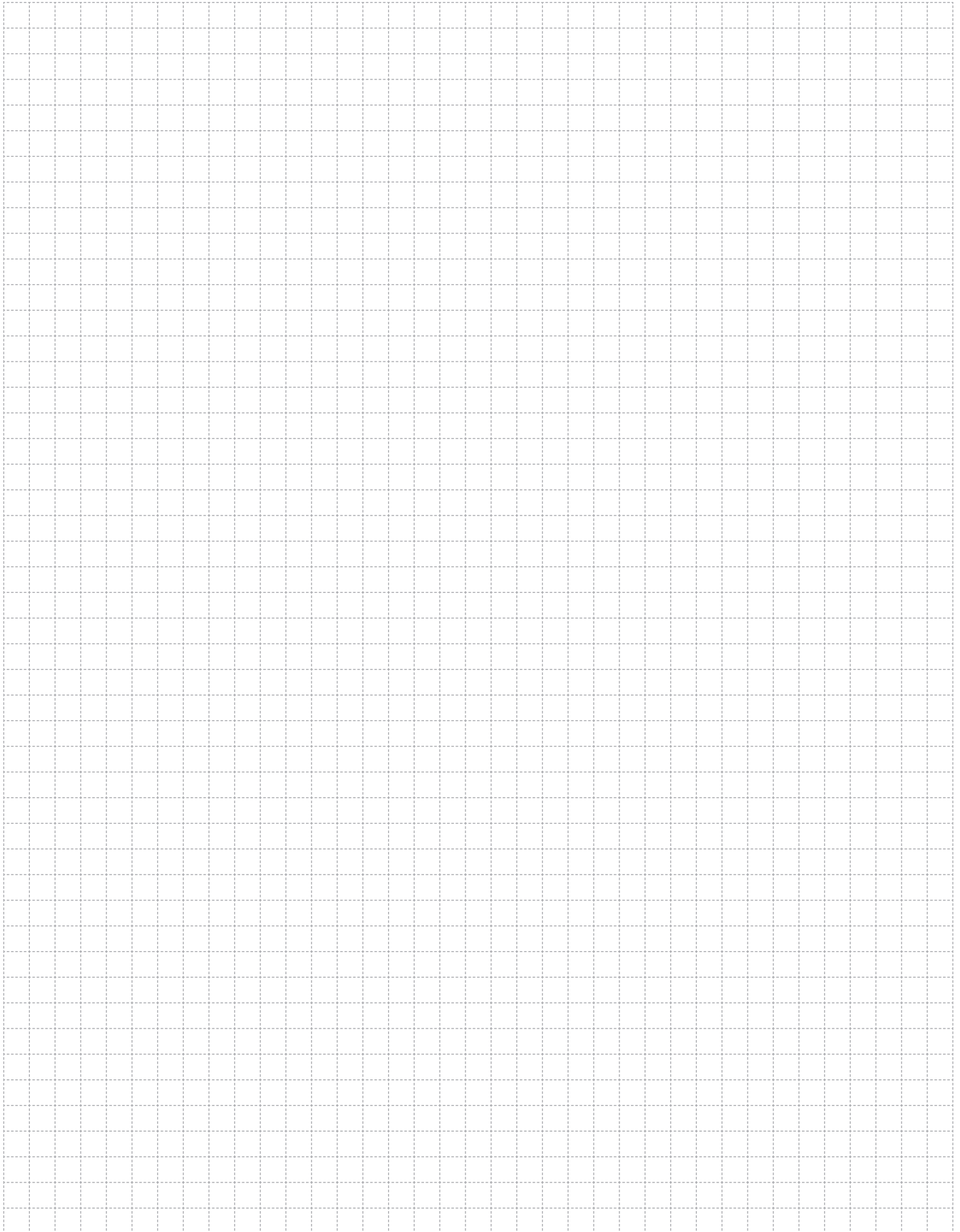
- Environment: Heavy chemical and caustic materials
- Advantages: High chemical corrosion resistance and heat resistance
- Our recommendation: 0% halogen



E-LINE KCA-CTA GRP

Notes

A large, empty grid area for taking notes, consisting of a fine, dotted grid pattern.

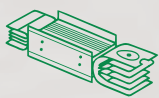


SUSTAINABLE FUTURE

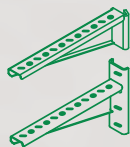
Sustainability Management at EAE Elektrik



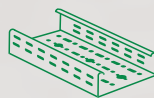
As part of our goal to support sustainable development and green transformation, measuring, evaluating, and managing all economic, environmental, and social impacts resulting from our sustainability practices is a key governance priority for EAE Elektrik. We act with great care in analyzing, monitoring, and managing the economic, environmental, and social impacts and risks that arise throughout our value chain in both our national and global operations.



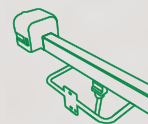
Busbar Systems



Support Systems



Cable Tray Systems



Trolley Busbar Systems



Fit-Out Solutions

"We are working together with all our stakeholders to develop the electrical technologies that will build the future."

You can visit our sustainability website at sustainability.eaeelectric.com



#FutureTogether

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