Qty. Unit	Unit price	Total price
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## 1. Cable Trough Route

## 1.1 Cable Duct Installation

#### 1.1.2 Plastic cable duct delivery and placement Size 1

Delivery, transport to construction site and placement next to or between tracks in accordance with specifications of construction site supervision of plastic cable duct, model "Vario Tec+<sup>®</sup>". Size 1, of Invatec or similar design, EBA (Federal Railway Office) homologation, DB-Telematik approval, fire protection tested acc. to DIN 53438 / Part 2, classified in acc. with K 1, manufactured of recyclable, UV-stabilized and impact-resistant plastic material, incl. folding & locking lid; trough length 1,000 mm, inside clearance 100 mm; ground fixation by means of ground anchors. Closing and locking of lid after cable placement. Digging away of gravel and soil approx. 40 cm wide and approx. 25 cm deep and separate storage, base equalization, compacting and introduction of a sand layer of approx. 5 cm as formation for the ducts. The duct shall be aligned and leveled. If required, 0/32 pebbles are to be filled in laterally, incl. material delivery. Excessive soil is to be disposed of by the building contractor according to good professional practice. Track bed soiled as a result of earthwork shall be cleaned.

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# 1.1.3 Plastic cable duct delivery and placement Size 2

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Delivery, transport to construction site and placement next to or between tracks in accordance with specifications of construction site supervision of plastic cable duct, model "Vario Tec+<sup>®</sup>". Size 2, of Invatec or similar design, EBA (Federal Railway Office) homologation, DB-Telematik approval, fire protection tested acc. to DIN 53438 / Part 2, classified in acc. with K 1, manufactured of recyclable, UV-stabilized and impact-resistant plastic material, incl. folding & locking lid; trough length 1,000 mm, inside clearance 250 mm; ground fixation by means of ground anchors. Closing and locking of lid after cable placement. Digging away of gravel and soil approx. 60 cm wide and approx. 25 cm deep and separate storage, base equalization and compacting and introduction of a sand layer of approx. 5 cm as formation for the ducts. The duct shall be aligned and leveled. If required, 0/32 pebbles are to be filled in laterally, incl. material delivery. Excessive soil is to be disposed of by the building contractor according to good professional practice. Track bed soiled as a result of earthwork shall be cleaned.

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Amount carried over €.....

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	Qty. Unit	Unit price	Total price
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## 1.1.4 Pillar-mounted GRP cable duct delivery and placement Size 1

Delivery, transport to construction site and placement next to or between tracks in accordance with specifications of construction site supervision of pillar-mounted GRP cable duct, model "Vario Top<sup>®</sup>". Size 1, of Invatec or similar design, EBA (Federal Railway Office) homologation, DB-Telematik approval, fire protection tested acc. to DIN 53438 / Part 2, classified in acc. with K 1, manufactured of recyclable, UV-stabilized GRP material, incl. locking lid; trough and lid length 6,000 mm, inside clearance WxH, 100 x 150 mm, incl. hot-dip galvanized steel pillars 1.5 m and mounting plates. The clamping depth of the steel pillars depends on the static conditions. If required, longer pillars will have to be used. The duct is installed on mounting plates, which shall be adjustable laterally and vertically. The duct shall be aligned and leveled for a maximum working field length of 6 m each. Closing and locking of lid after cable placement.

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#### 1.1.5 Pillar-mounted GRP cable duct delivery and placement Size 1a

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Delivery, transport to construction site and placement next to or between tracks in accordance with specifications of construction site supervision of pillar-mounted GRP cable duct, model "Vario Top<sup>®</sup>" Size 1a, of Invatec or similar design, EBA (Federal Railway Office) homologation, DB-Telematik approval, fire protection tested acc. to DIN 53438 / Part 2, classified in acc. with K 1, manufactured of recyclable, UV-stabilized GRP material, incl. locking lid; trough and lid length 6,000 mm, inside clearance WxH, 150 x 150 mm, incl. hot-dip galvanized steel pillars 1.5 m and mounting plates. The clamping depth of the steel pillars depends on the static conditions in accordance with the EBA (Federal Railway Office) homologation and the local conditions. If required, longer pillars will have to be used. The duct is installed on mounting plates, which shall be adjustable laterally and vertically. The duct shall be aligned and leveled for a maximum working field length of 6 m each. Closing and locking of lid after cable placement.

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Amount carried over €.....

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Qty. Unit	Unit price

## 1.1.6 Pillar-mounted GRP cable duct delivery and placement Size 2

Delivery, transport to construction site and placement next to or between tracks in accordance with specifications of construction site supervision of pillar-mounted GRP cable duct, model "Vario Top<sup>®</sup>" Size 2, of Invatec or similar design, EBA (Federal Railway Office) homologation, DB-Telematik approval, fire protection tested acc. to DIN 53438 / Part 2, classified in acc. with K 1, manufactured of recyclable, UV-stabilized GRP material, incl. locking lid; trough and lid length 6,000 mm, inside clearance WxH, 250 x 250 mm, incl. hot-dip galvanized steel pillars 1.5 m and mounting plates. The clamping depth of the steel pillars depends on the static conditions in accordance with the EBA (Federal Railway Office) homologation and the local conditions. If required, longer pillars will have to be used. The duct is installed on mounting plates, which shall be adjustable laterally and vertically. The duct shall be aligned and leveled for a maximum working field length of 6 m each. Closing and locking of lid after cable placement.

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# **1.1.7 Lowering of the pillar-mounted GRP cable duct Size 1, 1a or 2** Delivery and installation of the lowering kit, performance of miter cut on existing GRP trough to allow for connection to ground-mounted cable troughs, incl. all extra work required.

**1.1.8 Perform miter cut at pillar-mounted GRP cable duct Size 1, 1a or 2** Performance of miter cut on existing GRP cable troughs for horizontal rerouting, incl. all extra work required.

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Amount carried over

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Unit price

1.1.9 Delivery of connecting branch incl. stainless steel cable protection tube for GRP cable duct Size 1, 1a or 2

Delivery of connecting branch and installation in bottom of cable trough, incl. all extra work required.

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 1.1.10 Optional item (if required):
Delivery and placement of separating strip for cable duct Size 2 Separating strip of 1 m length, fire protection category K1, UV-stabilized for optical and mechanical cable separation.

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