

RAIL  
BALTICA

Visualization of RAIL BALTICA technical solution

# CABLE PROTECTION SYSTEMS FOR RAILWAY CONSTRUCTION



**EVOPIPES** manufactures the highest quality polymer materials for cable protection piping systems for railway track construction.

**EVOPIPES** solutions are focused on the efficiency of construction works and sustainable lifetime of pipeline systems

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**CABLE  
PROTECTION PIPES**

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**CABLE  
CHAMBERS**

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**EVOTRAY CABLE DUCTS**

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**BACKBONE AND  
MICRODUCTING  
SYSTEMS**

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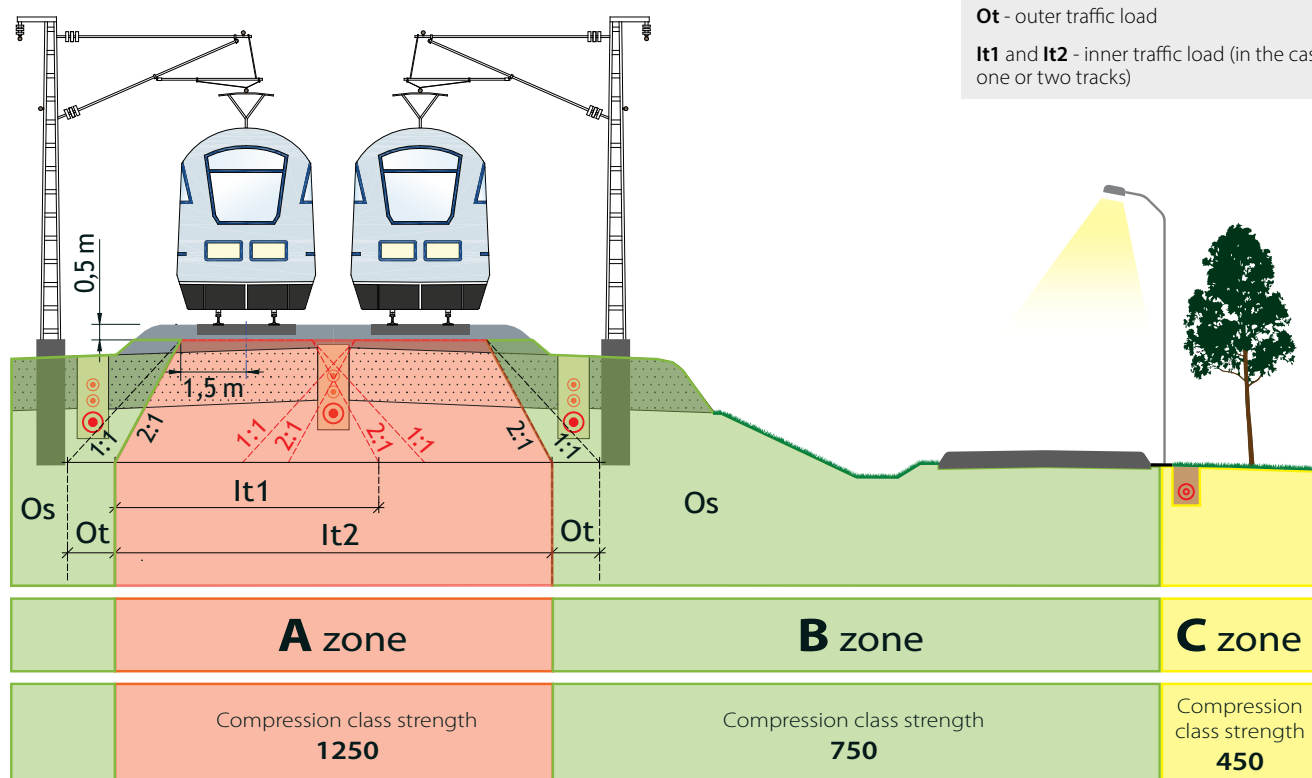




## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION

Product name	Description	Standard
EVOCAB HARD N 750	Cable protection pipe with profiled external and smooth internal surface	<ul style="list-style-type: none"> <li>• EN 61386-1</li> <li>• EN 61386-24</li> </ul>
EVOCAB SUPERHARD N 1250	Reinforced cable protection pipe with profiled external and smooth internal surface	<ul style="list-style-type: none"> <li>• EN 61386-1</li> <li>• EN 61386-24</li> </ul>
EVOCAB STING N 1250	Smooth-wall cable protection pipe for trenchless construction (horizontal drilling) purposes	<ul style="list-style-type: none"> <li>• EN 61386-1</li> <li>• EN 61386-24</li> <li>• DIN 8074/8075</li> <li>• GW 321 (by DVGW)</li> </ul>
EVODUCT N 750, N 1250	Optical fibre cable protection pipe	<ul style="list-style-type: none"> <li>• EN 61386-1</li> <li>• EN 61386-24</li> <li>• DIN 8074/8075</li> </ul>
RIGID MULTI PP N 750	Smooth-wall cable protection pipe with socket and integrated sealing ring	<ul style="list-style-type: none"> <li>• EN 61386-1</li> <li>• EN 61386-24</li> </ul>
EVOCAB SPLIT N 450, N 750, N 1250	Split pipes	<ul style="list-style-type: none"> <li>• EN 61386-24</li> </ul>

### RAILWAY CONSTRUCTION



## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



## EVOCAB HARD N 750

EVOCAB HARD type pipes are made of hard HDPE material and are designed to resist grounds and transportation loads. The outside of the pipe is corrugated, the inside is smooth, which ensures high mechanical and impact resistance parameters of the pipe. Designed for the protection of cable lines and the construction of a sustainable infrastructure system. Temperature range of the pipe is from -25 °C to +90 °C. As standard, each EVOCAB HARD pipe is equipped with a coupling. It is possible to achieve a watertight connection ( $\geq 0.5$  bar) by using a rubber sealing ring.

**Application:**

- For the construction of underground lines of cables of any type and voltage
- Pipes with strength class 750N / 20cm are ideal for construction sites till E600 class (EN 124) transport load
- For railway track construction, pipes are recommended in zones B and C (see drawing on page 3)

**Conformity** EN 61386-1, EN 61386-24

**Material:** polyethylene (HDPE)

**Compression class strength:** 450 or 750

**Impact resistance:** N

**DN/OD:** 50 - 160 mm

DN/OD, mm	50	63	75	90	110	125	160
Internal diameter, mm	40.7	51.7	62.7	76.2	94.1	106.7	137.0
Pipe length, m	6	6	6	6	6	6	6

## EVOCAB SUPERHARD N 1250

Due to the physical properties of polypropylene and the reinforced special structure of the pipes, the pipes provide high mechanical strength. The outer surface of the pipe is corrugated, and the inner surface is smooth, which ensures uninterrupted pulling of cables.

Each SUPERHARD pipe is equipped with a tightly welded solid PP coupler at one end and a rubber sealing ring at the other end. The joints are watertight ( $\geq 0.5$  bar).

**Application:**

- Especially suitable for places with heavy traffic (railways, ports, airports). Traffic load class - F900 (EN 124)
- Particularly suitable for the protection of high voltage cable lines due to the very robust pipe design
- Pipes can be used in all areas in railway track construction

**Conformity** EN 61386-1, EN 61386-24

**Material:** polypropylene (PP)

**Compression strength class:** 1250

**Impact resistance:** N

**DN/OD:** 110 - 400 mm

DN/OD, mm	110	160	200	250	315	400
Internal diameter, mm	93.8	138.9	174.6	215.9	274.1	349.8
Pipe length, m	6	6	6	6	6	6

## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



## EVOCAB STING trenchless pipes for horizontal drilling

STING pipes are specially designed for horizontally controlled drilling or towing, i.e. for trenchless construction solutions.

STING pipes are made of high-density PE100 polyethylene and are designed to withstand ground and external large pressure loads, as well as high longitudinal tensile loads. The pipes are especially suitable for creating systems with high mechanical strength - mounting under roads, railways, squares, etc. Pipe cable conduits are available in different sizes (rods) and rolls. The outer and inner surface of the pipe is smooth. The standard pipe is red with a white marking. Other colours - on request.

### Application:

- Trenchless construction methods - no dig installation - horizontally controlled drilling
- Pipes can be used in all areas in railway track construction
- Cable protection under deep water

**Conformity** EN 61386-1, EN 61386-24, DIN 8074/8075, GW 321 (by DVGW)

**Material:** polyethylene (HDPE)

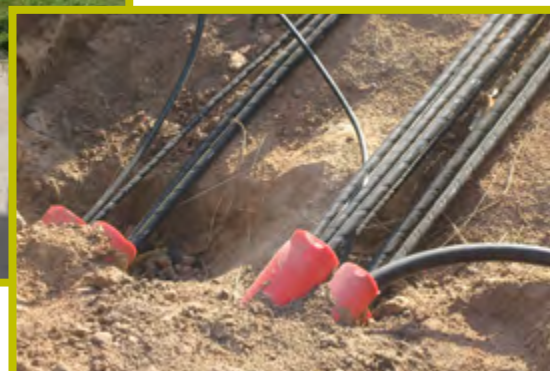
**Compression class strength:** 1250

**Impact resistance:** N

**DN/OD:** 75 - 500 mm

DN/OD, mm	75	90	110	125	160	200	250	315	400	500
Internal diameter, mm	66	79.2	96.8	110.2	141	176.4	220.4	277.6	352	440.6
Wall thickness, mm	4.5	5.4	6.6	7.4	9.5	11.8	14.8	18.7	24.0	29.7
Pipe length, m	-	12	12	12	12	12	12	12	12	12
	-	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
	-	50	50	50	-	-	-	-	-	-
	100	100	100	75	-	-	-	-	-	-

## EVOCAB STING - excellent solution for trenchless installation!



## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



## RIGID MULTI PP N 750

Smooth-wall polypropylene (PP) 3-layer protective pipes. Thanks to the multilayer extrusion technology, the pipes have excellent impact and load resistance parameters.

The pipes are intended to be used in areas where there is a risk of sharp objects pipe damage (granite gravels, no sand bedding will be used), the pipes are very durable in longitudinal bending - easy laying of cables and later laying of additional cables in the existing system.

Especially suitable for places with heavy traffic. Each pipe has an extension and a sealing ring to ensure an airtight connection ( $\geq 0.5$  bar). The extension and sealing ring ensure easy and safe pipe connection. The outer layer of RIGID MULTI is red, the inner white - for CCTV inspection.

## Application:

- protection of telecommunication, medium voltage, and high voltage cables
- Excellent for places where watertight cable protection is required
- suitable for construction without sand and backfilling

**Conformity** EN 61386-1, EN 61386-24

**Material:** polypropylene (PP)

**Compression strength class:** 750

**Impact strength:** N

**DN/OD:** 110, 160 mm

DN/OD, mm	110	160
Internal diameter, mm	101.2	147.6
Pipe length, m	6	6

## EVOCAB SPLIT N 450

Split conduit solution with integrated connection system, which ensures fast and convenient connection of pipes without tools. The pipes are intended for repair of cable lines and mechanical protection in sections where other types of pipes cannot be used. Up to 22.5° bends can be created at the interconnection points. Pipes can be built underground or above ground to protect not only cable lines but also other types of utilities. EVOCAB SPLIT pipes are reusable and 100% recyclable.

## Application:

- An excellent solution for the protection of temporary cables and pipelines on site
- Cable and pipeline repair site protection
- For construction of new cable underground lines by "cable in pipe" laying method in trenches and water, sea installation as well
- Perfect solution for pedestrian and green areas, areas A15 and B125 (EN 124)

**Conformity** EN 61386-1, EN 61386-24

**Material:** PP-EPDM (high quality recycled plastic)

**Compression strength class:** 450

**Impact resistance:** N

**Pipe length:** 1.20 m

**DN/OD:** 110, 160 mm

DN/OD, mm	110	160
Internal diameter, mm	102	150
Wall thickness, mm	4	5



## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



## EVOCAB SPLIT N 750

Split conduit solution with integrated connection system and clamps, which ensures fast and convenient connection of pipes without tools. Easy to connect to corrugated pipe systems. The range of available diameters allows the pipes to be used in all types of cable lines. Up to 15° bends can be made at interconnection points. Pipes can be built underground or above ground. EVOCAB SPLIT pipes are reusable and 100% recyclable.

**Application:**

- Ideal solution for traffic areas
- An excellent solution for the protection of temporary cables and pipelines on site
- Designed for the repair of cable underground lines and pipelines
- Suitable for places where other types of pipes cannot be built
- For construction of new cable underground lines by "cable in pipe" laying method in trenches and water, sea installation as well.

DN/OD, mm	60	110	160	220
Inside diameter, mm	50.0	99.0	144.0	200.0
Wall thickness, mm	5.0	5.5	8.0	10.0

**Conformity** EN 61386-1, EN 61386-24

**Material:** PP-EPDM (high quality recycled plastic)

**Compression strength class:** 750

**Impact resistance:** N

**Pipe length:** 1 m

**DN/OD:** 60, 110, 160, 220 mm

## EVOCAB SPLIT N 1250 PANZAR

Split pipe solution with integrated connection system and tight clamps that safely prevent accidental opening. Split smooth-wall pipes are intended for repairing cable line breaks and mechanical protection of cables in sections where other types of pipes cannot be used. This solution can be installed quickly and easily, providing protection for cables in unprotected environments such as water. For additional protection and fastening, anchoring screws can be used to securely hold the protective pipe in place. PANZAR pipes can be reusable and are 100% recyclable.

**Application:**

- Especially suitable for places with heavy traffic (railways, ports, airports)
- Designed for repair or new installation of high voltage cable lines
- For a shallow cable protection solution (up to 30 cm from the surface)
- For protection of submarine cables
- For construction of new cable underground lines by "cable in pipe" laying method in trenches and water, sea installation as well.

**Conformity** EN 61386-1, EN 61386-24

**Material:** PP-EPDM (high quality recycled plastic)

**Compression strength class:** 1250

**Impact resistance:** N

**Pipe length:** 1 m

**DN/OD:** 110, 160 mm

DN/OD, mm	110	160
Inside diameter, mm	90	140
Wall thickness, mm	10.0	10.0

## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



### EVOCAB SPLIT - ideal solution for construction works and repairs!



**Simple installation of the pipes!**

**Easy interconnection of the pipes!**



## CABLE CHAMBERS



### RADBOX

A modular chamber system consisting of connected panel elements where any chamber size can be created. RADBOX is a modern and flexible chamber system for efficient construction works and unlimited cable infrastructure design possibilities. There are 5 different panel sizes available. In situations where several panels need to be joined, connection fittings and hot-dip galvanized metal supports are used to ensure the strength of the walls. For accurate cable management cable supports are available, for safely entrance - stairs are available as well. The double wall provides excellent mechanical protection and impact resistance. No heavy equipment is required during construction. The construction of the chamber walls ensures easy and convenient creation and sealing of cable entries. The available panel heights allow you to create the required well height (*Note: It should be noted that when interconnecting the panels, their height is reduced by 30 mm*). If necessary, the RadBox can be installed with the floor. RADBOX chamber walls design allows install chambers on existing cable lines, ideal solution for future network construction expanding.

#### Application:

- Cable infrastructure systems
- Chambers provide easy access to empty perspective utility pipes, no need for excavation works in case of new consumption capacity
- Easy access to the cables infrastructure system of communication cables and easy installation of additional cables, easy replacement of damaged cables. The chamber system ensures the lowest possible system maintenance and repair costs during operation and lifetime
- For the installation and protection of controllers and signalling equipment
- For connecting cables, repairs, creating new connections, connecting new users
- Perfect for construction in places with existing cable lines
- Ideal solution for non-standard size projects

**Material:** polyethylene (HDPE)

**Length of the panel:** 450, 600, 750, 900, 1050 mm

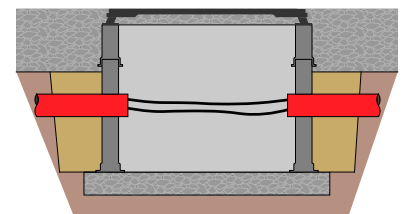
**Depth of the panel:** 150 / 500 mm

**Thickness of the panel:** 70 mm

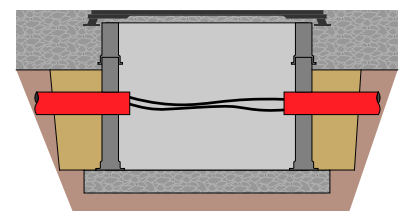
**Vertical load strength:** 40t (12,5t for 600x600 mm and smaller chambers)

#### Construction of chamber cover

##### 1<sup>st</sup> option



##### 2<sup>nd</sup> option



### RADBOX cable chamber - easy and convenient construction!

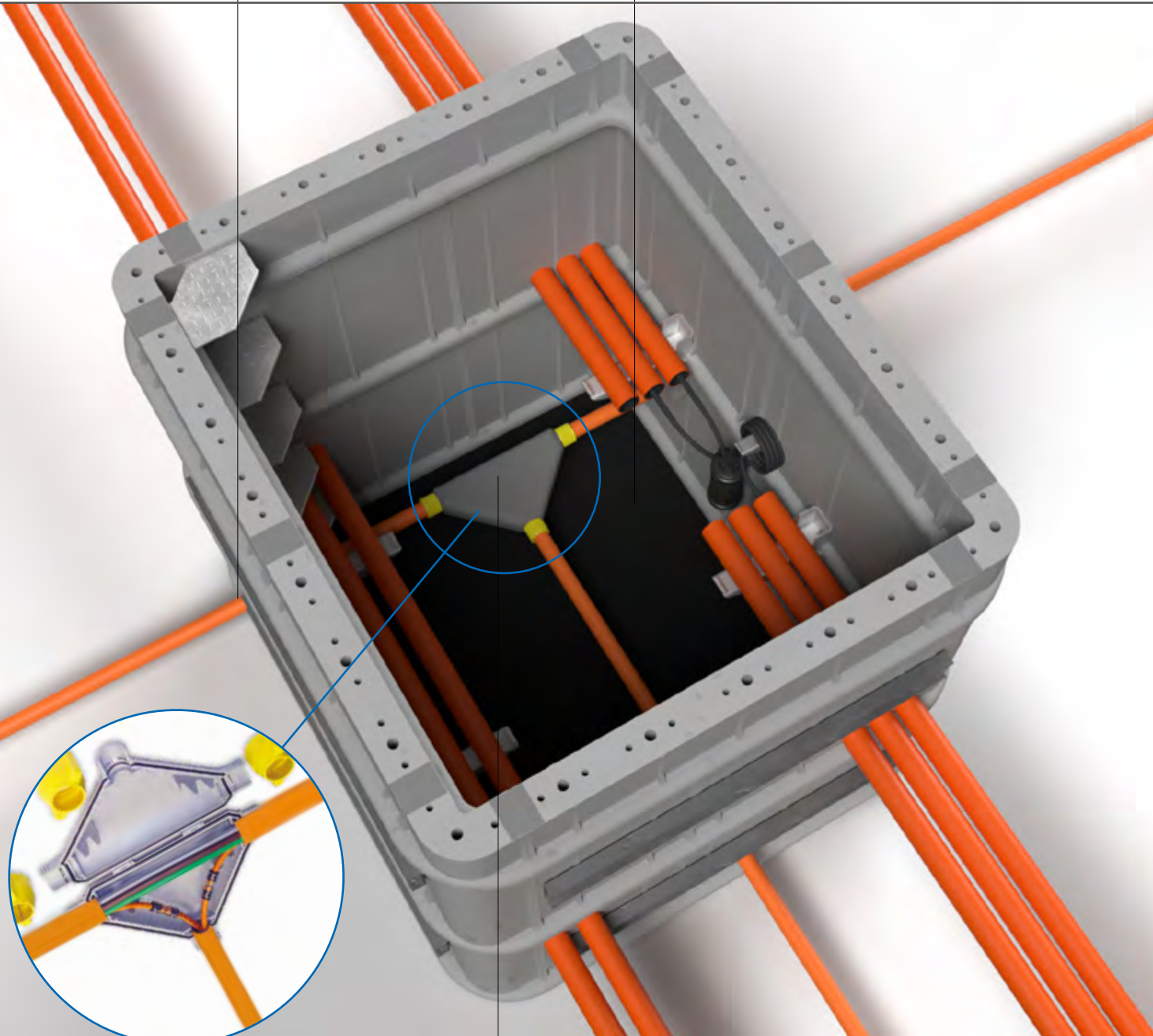




CABLE CHAMBERS



Connections	Floor
Connections are easy to install by using a hole saw	In the standard set RadBox chamber is installed with or without a floor.



Cable accessories
Microtube connections are easy to install and can be reused



## CABLE CHAMBERS



### Steps

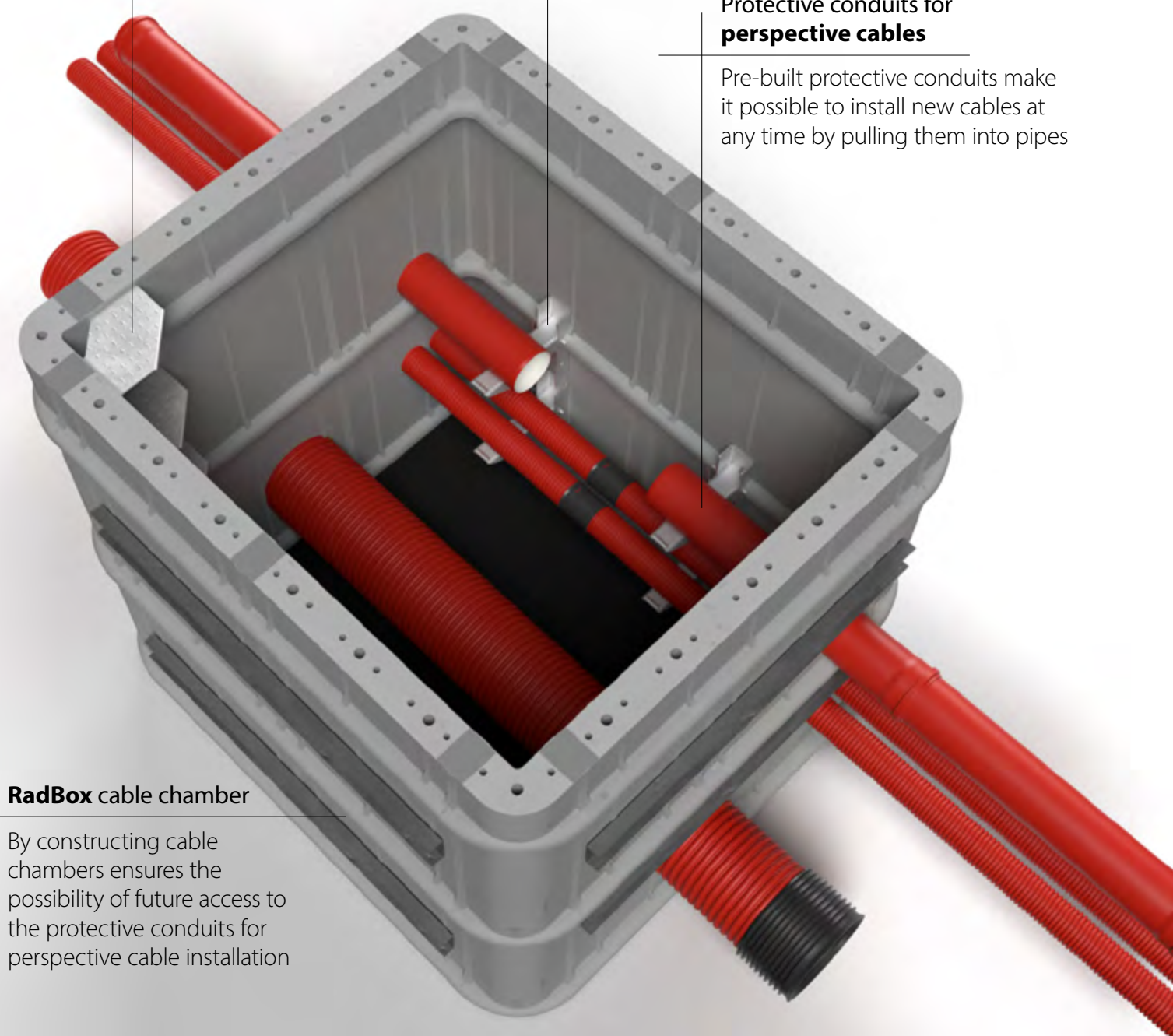
Separately installed steps ensure convenient and safe access to cables

### Cabel bearer

Cable bearer mounted on the chamber wall provide stable support for connections

### Protective conduits for perspective cables

Pre-built protective conduits make it possible to install new cables at any time by pulling them into pipes



### RadBox cable chamber

By constructing cable chambers ensures the possibility of future access to the protective conduits for perspective cable installation

## CABLE CHAMBERS



### RadBox cable chamber

#### Design Type 1

#### Chamber cover:

- material: cast iron
- height: 100 mm
- height of reinforced concrete plate: 160 mm

#### Heights of available panels:

- 500 mm
- 150 mm



#### RadBox sizes:

- wall thickness: 70 mm
- outer dimensions **A** x **B** : 1040 x 1040 mm
- inner dimensions **A** x **B** : 900 x 900 mm

**Note.** It is possible to install other chamber cover - depending on client needs.



## CABLE CHAMBERS



### RadBox cable chamber

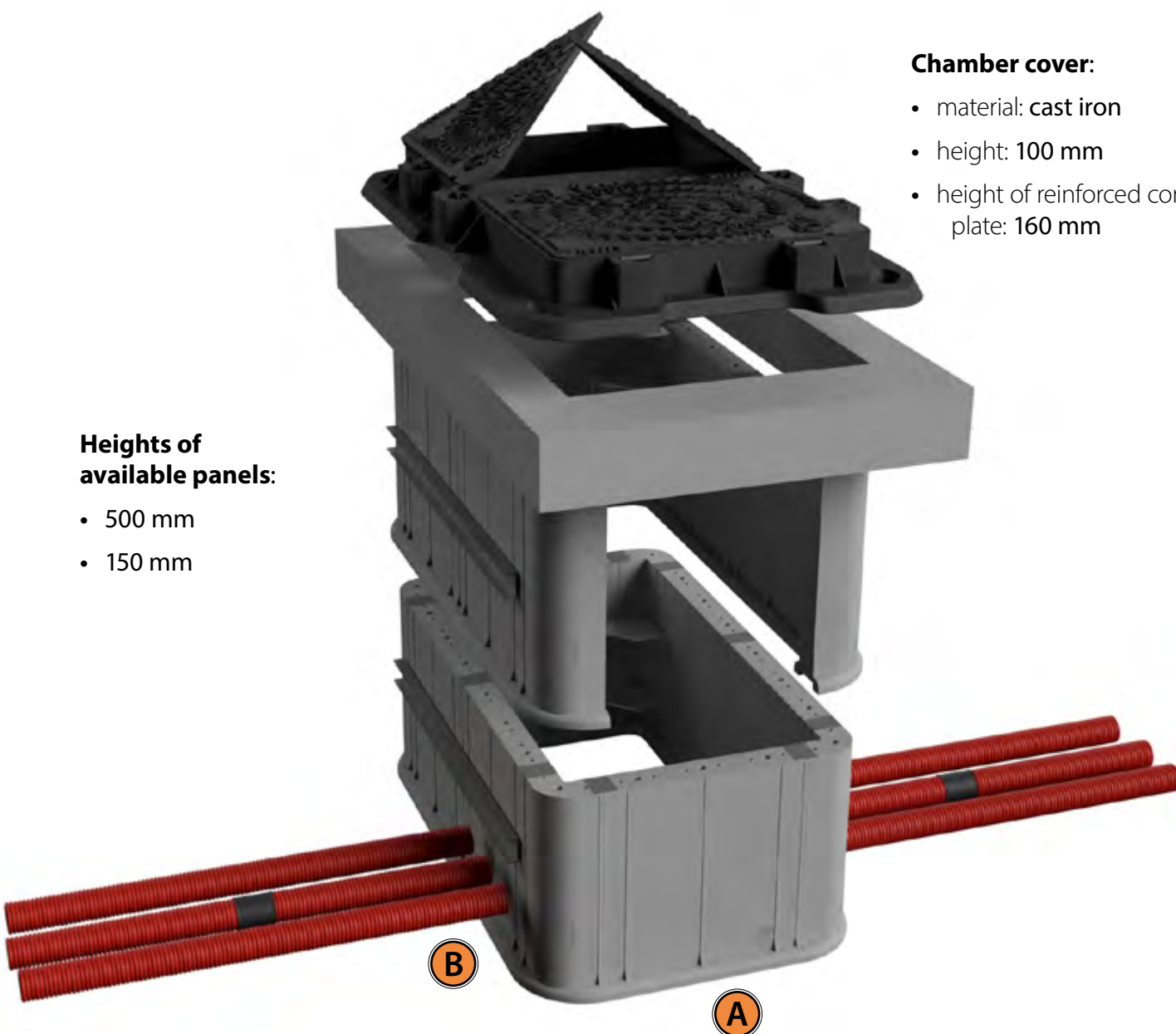
### Design Type 2

#### Chamber cover:

- material: cast iron
- height: 100 mm
- height of reinforced concrete plate: 160 mm

#### Heights of available panels:

- 500 mm
- 150 mm



#### RadBox sizes:

- wall thickness: 70 mm
- outer dimensions **A** x **B** : 1565 x 890 mm
- inner dimensions **A** x **B** : 1425 x 750 mm

**Note.** It is possible to install other chamber cover - depending on client needs.

## CABLE CHAMBERS



### RadBox cable chamber

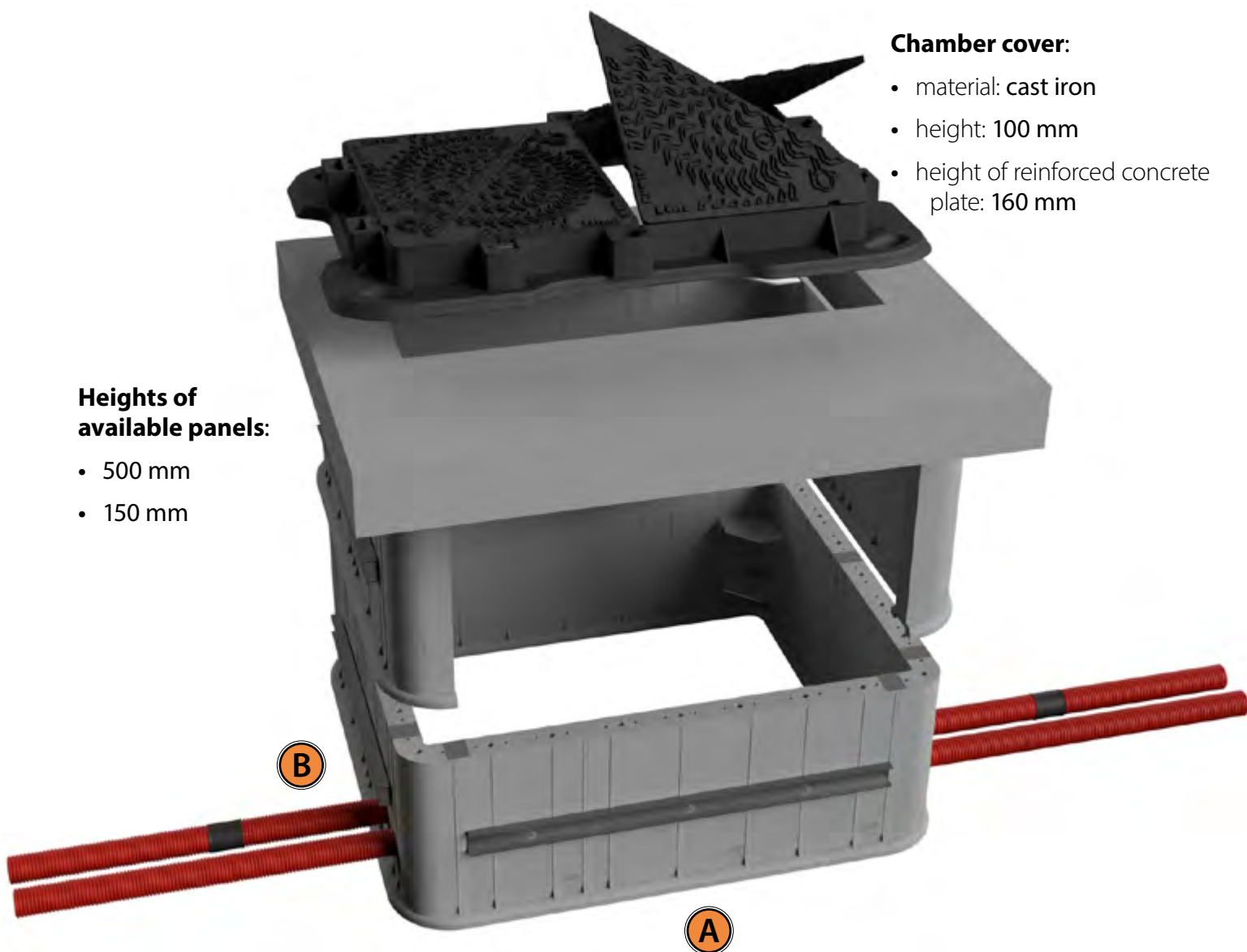
### Design Type 3

#### Heights of available panels:





- 500 mm
- 150 mm

#### Chamber cover:

- material: cast iron
- height: 100 mm
- height of reinforced concrete plate: 160 mm



#### RadBox sizes:

- wall thickness: 70 mm
- outer dimensions  x  : 1565 x 1415 mm
- inner dimensions  x  : 1425 x 1275 mm

**Note.** It is possible to install other chamber cover - depending on client needs.



## CABLE CHAMBERS

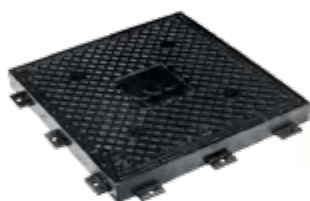
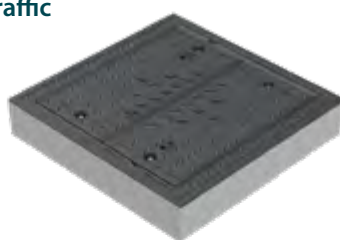


### RADBOX cable chamber 450 x 450

EVOPIPES cable chamber covers for **RadBox 450 x 450**:

#### Chamber cover for heavy traffic impact zones:

- D400 class
- EN 124-2; RAL-GZ 692
- Opening: 700 x 700 mm



#### Chamber cover for area without traffic load:

- B125 class
- EN 124
- Opening: 632 x 632 mm



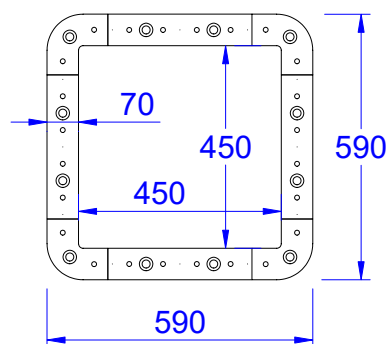
#### Chamber cover for traffic impact zones:

- D400 class
- EN 124
- Opening: 600 x 600 mm

#### RadBox 450 x 450 chamber:

- Inner dimensions: 450 x 450
- Outer dimensions: 590 x 590
- Wall thickness: 70 mm

#### Nominal size: 450 x 450



**Note.** On request it is possible to produce chamber cover with different material - concrete, fibreglass and ect.

## CABLE CHAMBERS

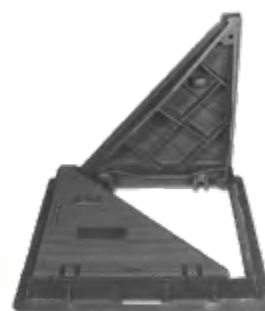
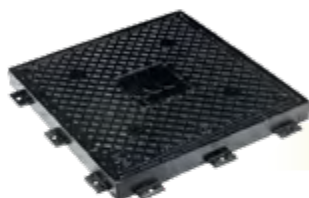


### RADBOX cable chamber 600 x 600

EVOPIPES cable chamber covers for **RadBox 600 x 600**:

#### Chamber cover for heavy traffic impact zones:

- D400 class
- EN 124
- Opening: 750 x 750 mm



#### Chamber cover for area without traffic load:

- B125 class
- EN 124
- Opening: 632 x 632 mm



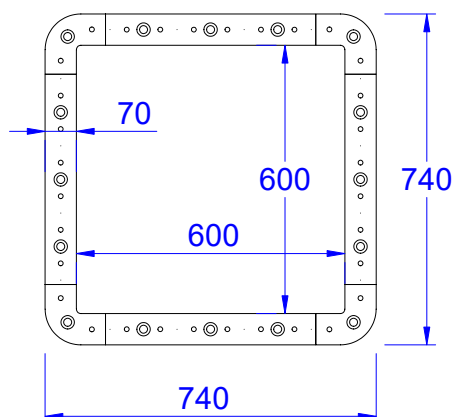
#### Chamber cover for traffic impact zones:

- D400 class
- EN 124
- Opening: 760 x 760 mm

#### RadBox 600 x 600 chamber:

- Inner dimensions: 600 x 600
- Outer dimensions: 740 x 740
- Wall thickness: 70 mm

#### Nominal size: 600 x 600



**Note.** On request it is possible to produce chamber cover with different material - concrete, fibreglass and ect.



## CABLE CHAMBERS



### RADBOX cable chamber 975 x 600

EVOPIPES cable chamber covers for **RadBox 975 x 600**:

#### Chamber cover for heavy traffic impact zones:

- D400 class
- EN 124
- Opening: 1200 x 750 mm

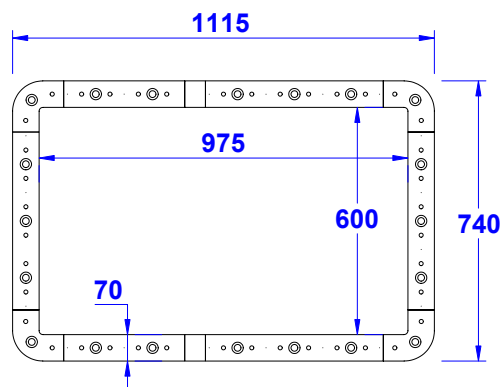
#### Chamber cover for traffic impact zones:

- D400 class
- EN 124
- Opening: 1180 x 760 mm

#### RadBox 975 x 600 chamber:

- Inner dimensions: 975 x 600
- Outer dimensions: 1115 x 740
- Wall thickness: 70 mm

#### Nominal size: 975 x 600



**Note.** On request it is possible to produce chamber cover with different material - concrete, fibreglass and ect.

## CABLE CHAMBERS



## RADBOX chambers - any size, easy and quick installation!



## Custom chamber size

Panel size, mm: 450, 600, 750, 900, 1050

Depth of the panel, mm: 500 un 150

(It should be noted that when interconnecting the panels, their height is reduced by 30 mm).



## Choice of dimensions

	450	600	750	825	900	975	1050	1125	1200	1275	1350	1425	1500	1575	1650	1725	1800	1875	1950	2025
450	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
600	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
750	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
825	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
900	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
975	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1050	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1125	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1200	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1275	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1350	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1425	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1500	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1575	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1650	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1725	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1800	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1875	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1950	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2025	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Single panel  
2-Panel Combination  
3 Panel Combination

**Notes.** 1. Dimensions are clear openings. Chambers' outer dimensions can be calculated by adding 140 mm to the chamber width/length. Example. Chamber with clear openings 825x750 mm has outer dimensions 965x890 mm.  
2. By choosing RadBox chamber with custom dimensions reinforced steel support must be installed to ensure wall stiffness.  
3. Chamber covers for custom chamber sizes are available by [contacting us](#).



## CABLE CHAMBERS



## TC 900.700.450

The TC 900 is a FO cables splicing chamber. Designed for connecting optical cables underground on long BACKBONE lines. Optical cable connection chamber with waterproof cover and rubber seal for buried underground installations.

The design of chambers horizontal and vertical ribs ensures stability in the ground and high mechanical strength. The access diameter provides a large working space inside the chamber. The weight of the chamber allows construction and relocation at the site without heavy machinery. Easy connection using hole saw and connection seals.

## Application:

- buried underground cable connection chamber
- for connecting telecommunications network cables
- for connecting optical cables

**Material:** polyethylene (HDPE)

**Chamber size:** 900x900 mm

**Height of chamber:** 450 mm

**Access hole:** 700 mm

**Weight of chamber:** 21,5 kg

**Colour:** orange

**Cover:** plastic cover with sealing ring



## TC 1000.625.D400

The weight of the chamber allows it to be easily moved to the site without machinery assistance. The design of the cable chambers makes it possible to easily make connections using a drill from the outside. Chamber are resistant to corrosion and chemicals. Due to the construction of the chamber and its mechanical properties, it is ideal for installation on public traffic zones.

## Application:

- railway signalling systems
- telecommunication networks
- optical cable lines
- electric cable lines
- street lighting
- Especially suitable for car traffic on roads and streets

**Cover:** EN 124-2, RAL GZ-692

**Reinforced concrete support ring:** EN 206, EN 1917, EN 1917/AC

**Shaft:** EN 13476-3

**Height of chamber:** 1000 mm

**Material:** polypropylene (PP)



## CABLE DUCTS

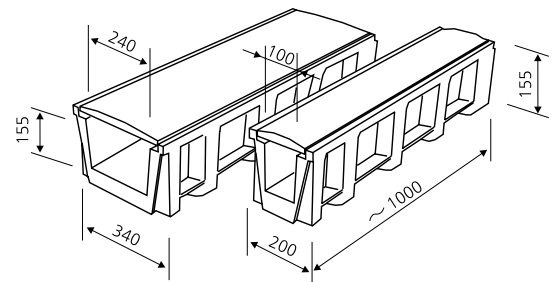


## EVOTRAY cable ducts - excellent solution for cable protection!



### EVOTRAY cable ducts

In order to ensure a stable supply of electricity and a continuous flow of information, especially in the case of railways, factory areas, airports and other areas, large quantities of special cables are usually used, which need to be protected from the external environment. EVOTRAY cable ducts are ideal for this purpose. EVOTRAY channels allow you to build cable systems quickly and cost-effectively with the possibility to replenish the amount of cables in them over time, perform repairs, maintenance, replacement of damaged cables. Ideal for expanding infrastructure construction conditions. Cable ducts are used to build power, signal and communication lines along railway tracks or maintenance roads and in industrial areas to provide effective protection against external impact. Connectable cable ducts are easy to build and they provide excellent cable protection. Cable ducts are ideal for construction sites where it is planned to expand existing cable lines or perform reconstruction works. By expanding of the infrastructure, additional cables can be quickly and easily added in EVOTRAY channels.



### Advantages

- **HIGH LOAD-BEARING CAPACITY > 12 kN**
- **DIMENSIONAL STABILITY: -30°C TILL +95°C**
- **WEIGHT OF THE PRODUCT PROVIDES SIMPLE CONSTRUCTION PROCESS**
- **MATERIAL: POLYPROPYLENE REINFORCED COMPOSITE MATERIAL, UV STABILIZED**
- **FIRE PROTECTION CLASS K1 IN ACCORDANCE WITH DIN 53438-2 (SELF-EXTINGUISHING)**



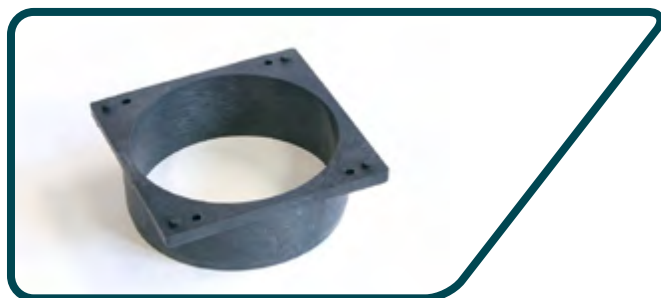
## CABLE DUCTS



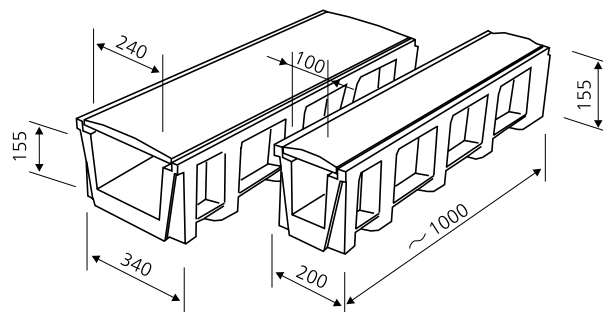
## EVOTRAY cable ducts - excellent solution for cable protection!



**DEUTSCHE BAHN APPROVED FOR  
CONSTRUCTION OF RAILWAY TRACKS**



**EASY CONSTRUCTION OF CONNECTIONS  
FOR CABLE PROTECTION PIPES**



## Technical parametres of EVOTRAY cable ducts

Parameter	Cable duct - Type 1	Cable duct - Type 2
Length	~ 1000 mm	~ 1000 mm
Width (inside/outside)	100 mm / 200 mm	240 mm / 340 mm
Height	155 mm / 230 mm	155 mm / 230 mm
Weight	~ 7 kg	~ 9 kg
Material	Polypropylene reinforced composite material, UV stabilized	
Flammability	Fire protection class K1 in accordance with DIN 53438-2 (self-extinguishing)	
Thermal stability	Stable in the temperature range from -30°C to +95°C (max. 0,5% variation (length / width / heigth))	
Mechanical data	Load capacity of $\geq 12$ kN (tested with 10x10 cm stamp) - without breakage according to DIN EN 1433	

## CABLE DUCTS



### EVOTRAY - ideal solution for construction of railway tracks!



**Tightly closed cover of EVOTRAY channel!**



**Convenient access to the cables!**



## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



### FTTx solutions

Today, in the telecommunications industry, the general installation of optical fiber for data transmission is symbolized by the term FTTx - depending on the destination of the optical fiber, it refers to the topology of all types of optical fiber from the telecommunications or cable operator to the customer's computer or other data processing device.

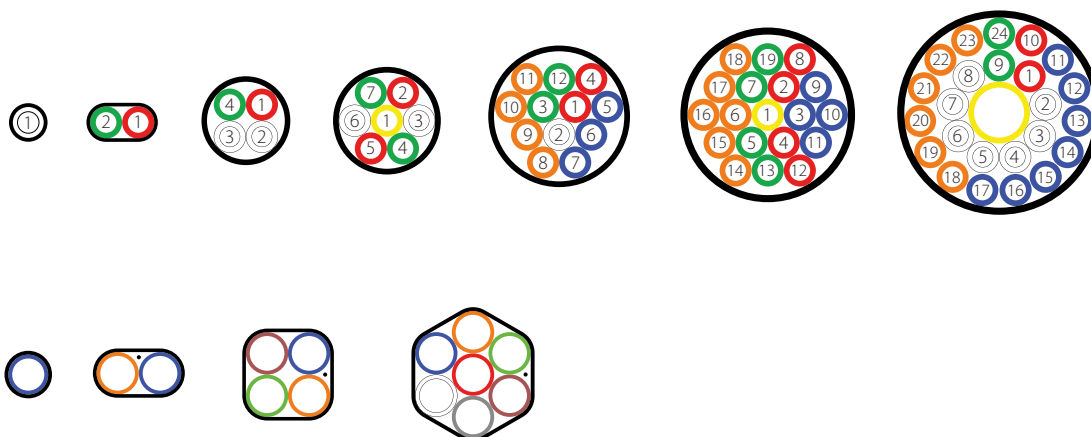


#### Advantages

- **NO DISRUPTION TO LIVE FIBRE**
- **WIDE INSTALLATION OPTIONS**
- **FLEXIBLE NETWORK EXPANSION, CONNECTION AND UPGRADE**
- **REDUCED ENGINEERING COSTS**
- **RAPID INSTALLATION AND SHORT RESPONSE TIME**
- **MID-SPAN ACCESS AT ANY LOCATION, AT ANY TIME**

### Standard pipe configuration

Our tubes can accommodate 1-24 microtubes. We offer a variety of casing options that are suitable for installation in an existing pipe, for laying in the ground, or for fire resistance, are halogen-free, and can be adapted to specific environmental conditions.



## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



### Construction of microtubes

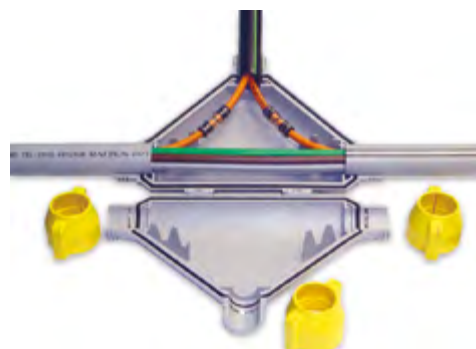
The FTTx network can be installed in several ways, but the most appropriate type will depend on where the network will be installed. We offer a solution for each type of installation.



### Microtube connections

Using the coupling, the pipes can be connected in a straight line or to the branch using plug-in connectors, and then the fibers can be blown up to the customer as required, without interference and additional assembly.

Connectors and transition systems perfectly complement the range of microtubes offered by EVOPIPES. Easy to use and available in different sizes, suitable for microtubes with an outer diameter of 3-16 mm.



### Advantages of couplings

- **WATERPROOF**
- **CAN BE USED MULTIPLE TIMES**
- **OPERATOR FRIENDLY**
- **CAN BE INSTALLED IN CABLE CHAMBER OR INTO THE TRENCH**





## CABLE PROTECTION PIPES FOR RAILWAY CONSTRUCTION



## EVODUCT

EVODUCT GROOVE and STANDARD pipes are used for laying fiber optic communications and other cables, using traditional installation methods - cable pneumatic blowing. As standard, the cable conduits are supplied with a smooth outer surface and one of the following inner surface variants:

- **STANDARD:** smooth inner surface
- **GROOVE:** longitudinal grooved inner surface

Construction methods - open trench methods, plough digging, no dig installation - horizontally controlled drilling methods (trenchless methods).

**Application:**

- Fiber optic and communication cable systems

**Conformity** EN 61386-1,  
EN 61386-24, DIN 8074/8075

**Material:** polyethylene (HDPE)

**Compression strength  
class:** 750 or 1250

**Impact resistance:** N

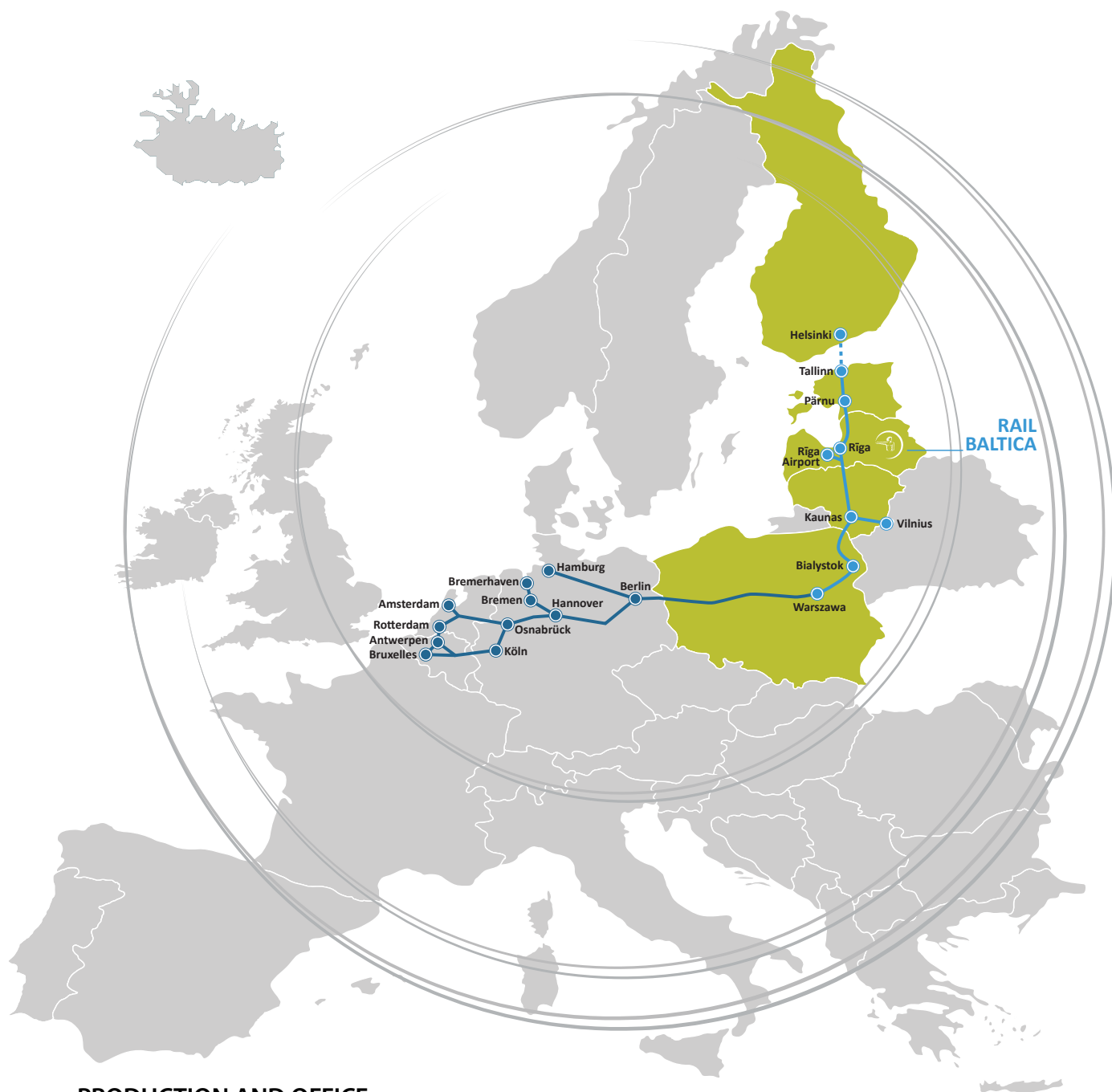
**DN/OD:** 25 - 63 mm

DN/OD, mm	25	32	32	40	40	50	50	63	63
Internal diameter, mm	20.4	27.6	26.0	34.0	32.6	44.0	40.8	55.8	51.4
Wall thickness, mm	2.3	2.2	3.0	3.0	3.7	3.0	4.6	3.6	5.8
SDR class	11	13.6	11	13.6	11	17	11	17	11
Pipe length, m	500 1000	300 -	1000 -	1000 -	1000 -	500 -	500 750	400 -	600 -

**EVODUCT - for communication cable lines!**



## Cable protection systems for railway construction



### PRODUCTION AND OFFICE

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