

**WIRTHWEIN**

Forming Innovation.



# CABLE DUCT I & II

english

SOLUTION FOR A WIDE RANGE OF APPLICATIONS:

# THE CABLE DUCT SYSTEM MADE BY WIRTHWEIN



## Low weight

Transport in large quantities possible and uncomplicated laying by hand, no need for using lifting devices.



## Quick installation

An integrated connection plug-in system ensures simple and rapid assembly and disassembly.



## Reusability

Reuse is possible for different structural conditions.



## High load capacity

pursuant to class A15 according to DIN EN 124-1/ DIN EN 1433.



## Flexibility

90° curves possible without additional effort, with a maximum laying radius after 45 meters (radius  $\geq 30$  m).



## Easy handling

Predetermined breaking points in the bottom and side walls facilitate additional insertion and removal of cables.



## High economic efficiency

Wirthwein cable ducts can be transported in large quantities and are maintenance-free.



## Safety

Flame retardancy is defined according to DIN 53438 part 2 in fire protection class K1.



## Maintenance

Easy control of cable harnesses by individual opening of covers.



OVER

# 1,5 MIO

METERS OF  
CABLE DUCTS  
INSTALLED  
SINCE 1995

## New cable duct with innovative features

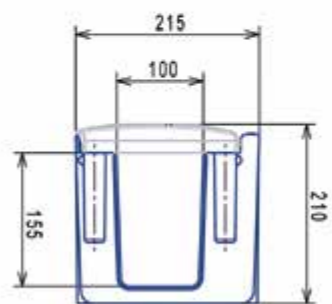
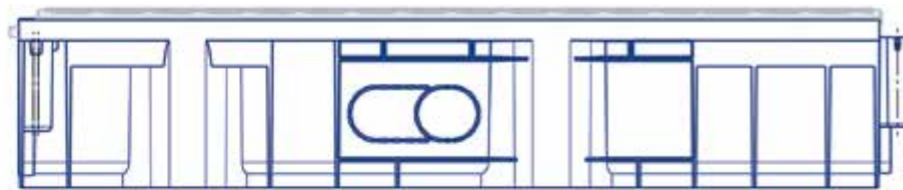
Plastic cable ducts made by Wirthwein offer an optimal solution for the installation of power and data cables. More than 1,500,000 meters of these cable ducts have already been installed for Deutsche Bahn AG and for many other operators worldwide. The wide range of possible applications allows the cable duct to be used in solar parks, wind power plants and other industrial places of application.

Our experience and the wide range of applications of our cable ducts offer numerous solutions for the most diverse structural requirements. Our customers benefit from fast, flexible and safe installation of their signal and communication technology in our cable duct systems.

## The cover innovation:

- high load capacity of class A15 according to DIN EN 124-1/ DIN EN 1433
- efficient cover locking system with clever hinge design to protect against levering out
- each cover can be opened separately
- non-slip surface profile
- cover overlap to prevent contamination and to compensate for linear expansion
- additional cover securing with optional special screw

SAFE, FLEXIBLE  
AND RELIABLE



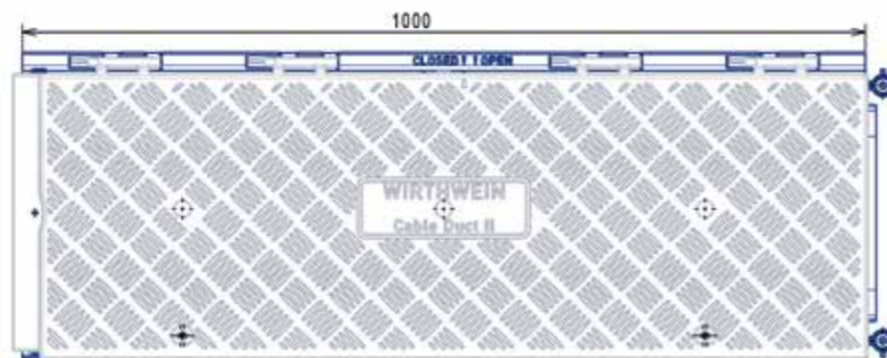
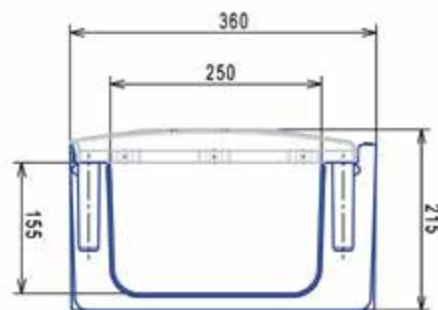
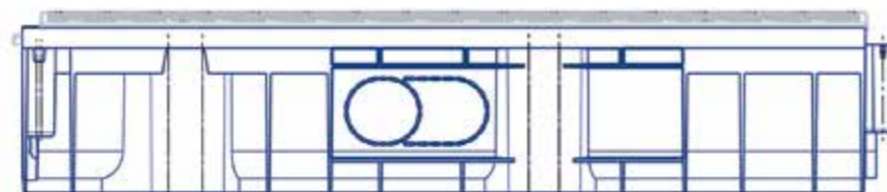
## TECHNICAL DATA

### Cable Duct I

Length	1.000 mm
Width (inside/outside)	100 mm / 215 mm
Height (inside/outside)	155 mm / 210 mm
Weight	4.9 kg
Material	PP copolymer (UV-stable)
Fire protection class	K1 according to DIN 53438 part 2
Dimensional stability	-30°C to + 80°C
Load capacity class	A15 (9 kN) according to DIN EN 124-1/ DIN EN 1433
Electrical properties	Surface resistance approx. 1015 $\Omega$ x cm Dielectric strength Ed approx. 0.6 / 0.8 at 100 kV / mm according to DIN VDE 303-ICE 243



LIGHT, STRONG  
AND FUNCTIONAL



## TECHNICAL DATA

### Cable Duct II

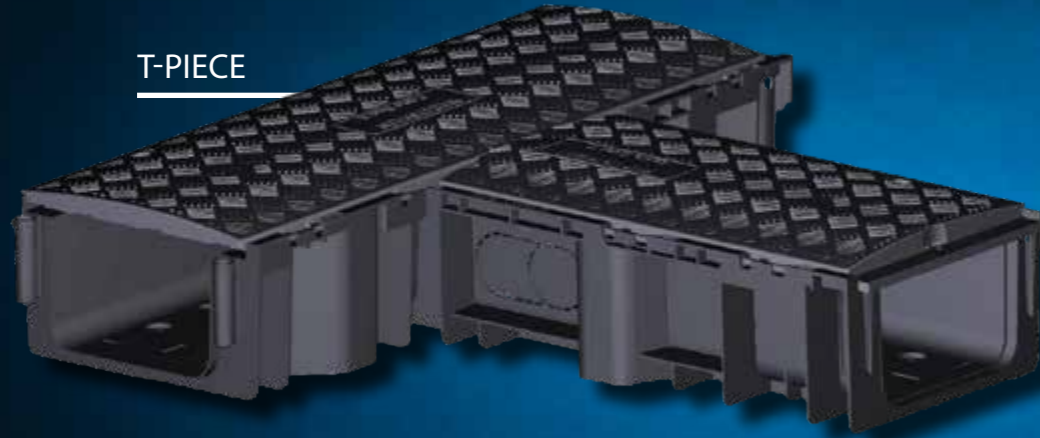
Length	1.000 mm
Width (inside/outside)	250 mm / 360 mm
Height (inside/outside)	155 mm / 215 mm
Weight	7.3 kg
Material	PP copolymer (UV-stable)
Fire protection class	K1 according to DIN 53438 part 2
Dimensional stability	-30°C to + 80°C
Load capacity class	A15 (15 kN) according to DIN EN 124-1/ DIN EN 1433
Electrical properties	Surface resistance approx. 1015 Ω x cm Dielectric strength Ed approx. 0.6 / 0.8 at 100 kV / mm according to DIN VDE 303-ICE 243

# TAILOR-MADE TO CUSTOMER REQUIREMENTS

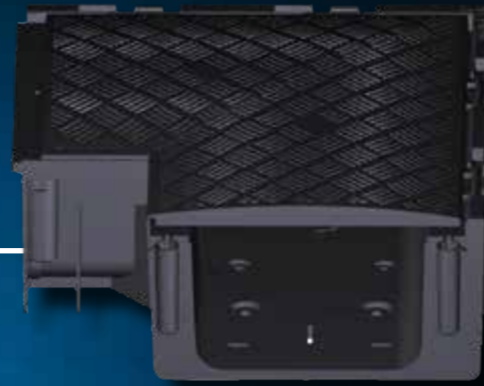
30° LOWERING



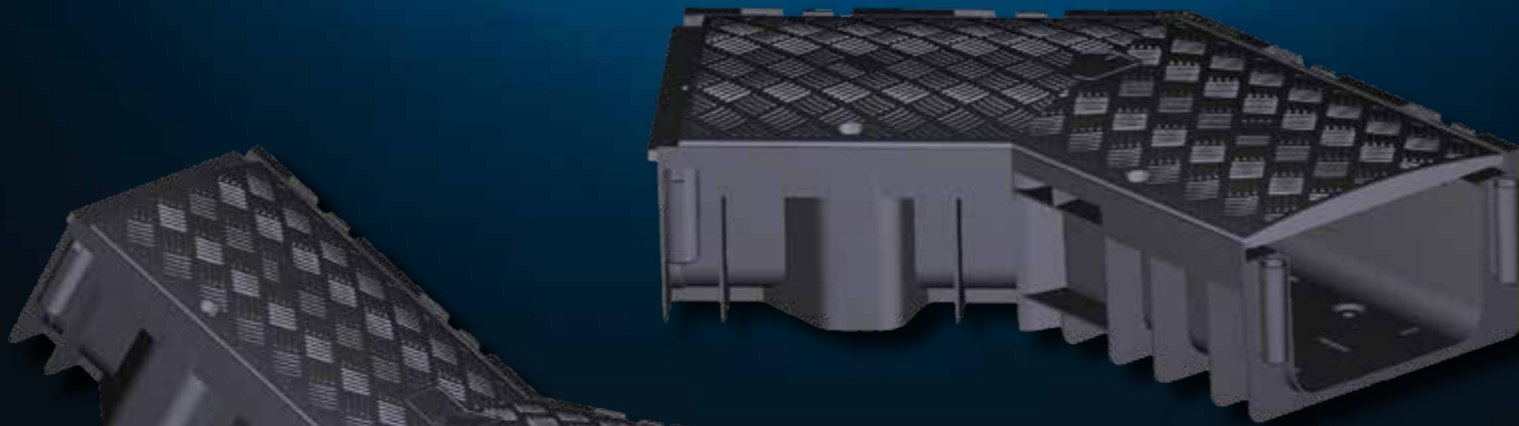
T-PIECE



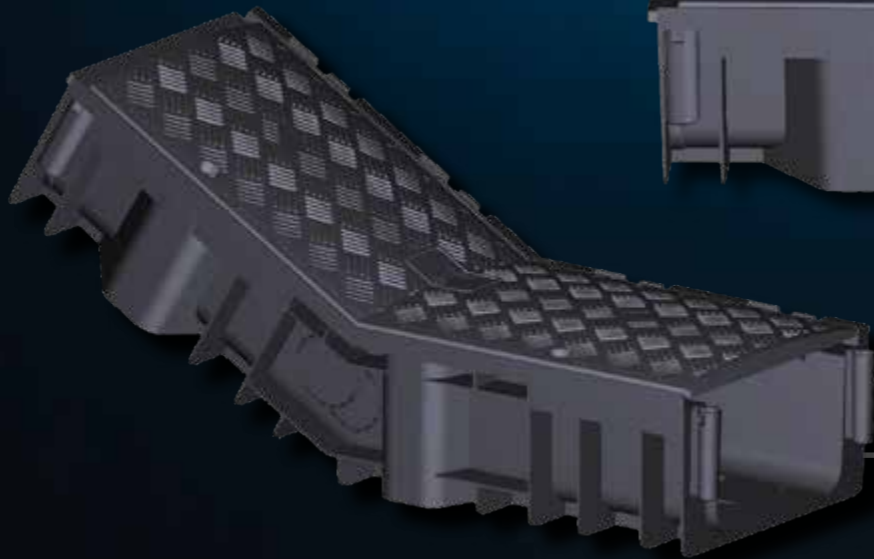
90° ANGULAR PIECE



45° ANGULAR PIECE

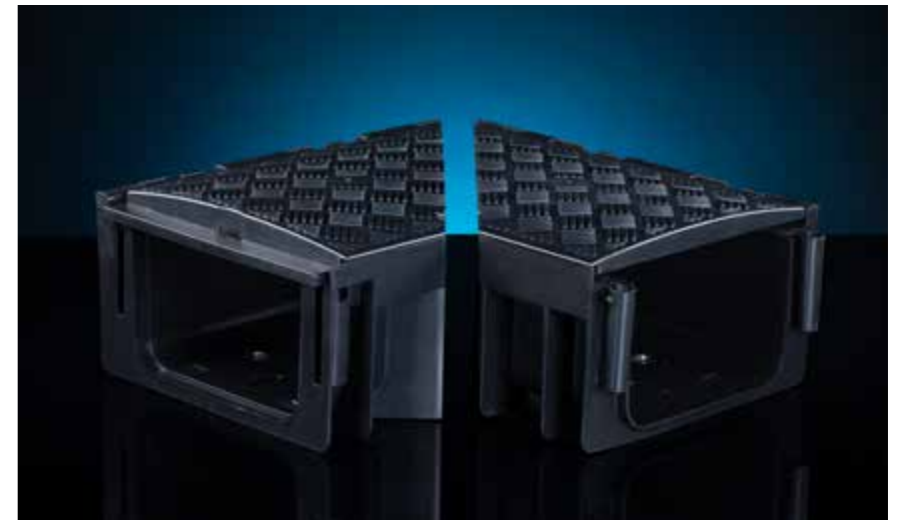
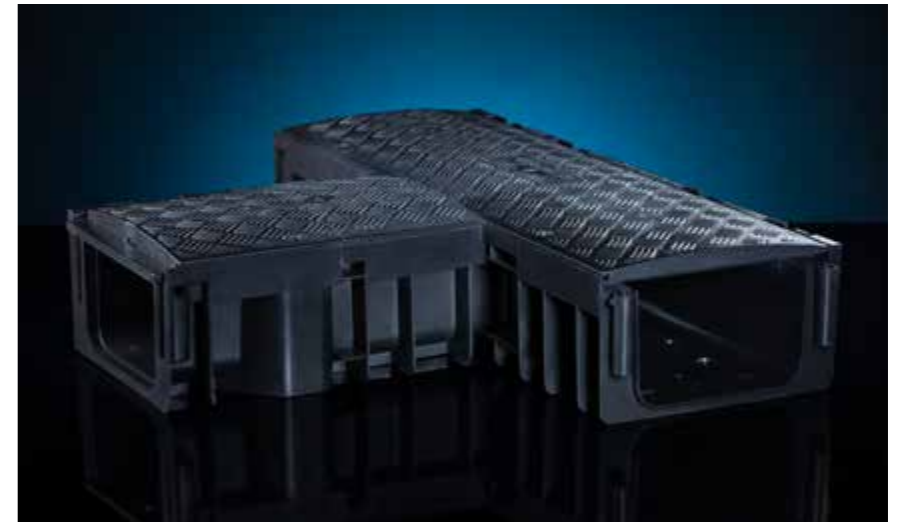


30° RAISING



## FOR EVERY ANGLE THE RIGHT ELEMENT

We manufacture precision-fit angular elements, lowering elements and T-pieces tailored to individual customer requirements. The different angular elements allow to bypass obstacles in the course of the cable duct line, without additional accessories. The cable ducts are designed so that 45° and 90° angle elements can also be cut to size on the construction site itself.



# 25 YEARS

OF EXPERIENCE WITH TECHNICAL ACCESSORIES

## ACCESSORIES FOR ADDITIONAL EQUIPMENT

Separators can be inserted in the cable ducts to separate and isolate cables. We also offer suitable end plates for mounting at the ends of the tracks. Ground screws can be used to fix Wirthwein cable ducts in place when they are laid above ground or in very loose soil. Special screws are used for additional securing of the cable duct covers and provide increased protection.

- + separators
- + end plates
- + ground screws
- + special screws
- + key for opening and closing



# ECOLOGICAL. LOW EMISSION.

## OUR PLASTIC SOLUTIONS MAKE AN IMPORTANT CONTRIBUTION TO ENVIRONMENTAL PROTECTION

To protect the environment sustainably, it requires special design, production and material know-how. The Wirthwein cable duct comprises quality, economy and environmental friendliness. Especially compared to conventional concrete cable ducts, it reduces emissions and costs by:

- + Low weight
- + Resource-saving production
- + Reusability at different application sites
- + Easy installation without lifting equipment
- + An integrated connection system for quick assembly and disassembly
- + Durability
- + No need for maintenance



# SOLUTIONS FOR THE RAILWAY INDUSTRY

## EASY INSTALLATION THANKS TO LOW WEIGHT

The safe laying of power and data lines is always a top priority. On railroad lines, safe power supply and data transmission is a prerequisite for smoothly functioning infrastructures. We developed our cable ducts specifically for this purpose. The cable duct system is applicable in almost all railroad areas.

Thanks to the low weight of our cable ducts, they can be laid by hand without lifting gear or heavy equipment, and radii are also possible. The plug-in system ensures a stable, frictional and positive connection, and also compensates for expansion and shrinkage forces.

Holes in the bottom of the trough allow additional fixing by means of ground screws for above-ground installation and in challenging terrain.



# SOLUTIONS FOR THE ELECTROMOBILITY

## RESOURCE-SAVING IN-HOUSE DEVELOPMENT

We are driving the mobility revolution with our cable ducts. To achieve the climate protection targets that have been set, an efficient infrastructure for electrically powered vehicles is needed. Plastic solutions from Wirthwein are being used in the expansion of the charging station network.

In the future, every parking space of residential buildings and every fifth parking space of other buildings is to be equipped with tube systems or cable ducts when new buildings are constructed or renovated. Our uncomplicated and resource-saving component makes it possible to set up charging points particularly quickly.

The Wirthwein cable duct is characterized by fast, flexible and cost-effective installation as well as simple implementation for subsequent cable laying, extensions and redesigns. In addition, problems with the positioning of buried cables can be avoided. It can be walked on, is fire-proof, reusable and maintenance-free.

# SOLUTIONS FOR SOLAR PARKS

## EASY MAINTENANCE THANKS TO INNOVATIVE COVER SYSTEM

We support the production of green electricity from renewable sources - among other things, in solar parks where the sun's energy is converted into electricity.

Our cable ducts enable the safe and secure connection of photovoltaic systems - from the individual modules to the generator or inverter.

The cable duct system is versatile and allows both horizontal and vertical bends. The simple yet secure cover system allows for permanent maintenance or re-laying. Furthermore, the laying of cables is possible in places where the laying of underground cables is not permitted for reasons of protection of the soil and nature.

# SOLUTIONS FOR OTHER APPLICATION AREAS

## PERFECTLY COORDINATED SYSTEM WITH VERSATILE ADVANTAGES

Cables of all types can be laid in our laying systems. Wirthwein cable ducts are also used in the internal cable network on company premises. On and in commercial buildings, our solutions ensure the safe and cost-efficient laying of energy and building technology. Wirthwein's cable ducts are also perfectly suited for the protection of control and signal technology, for example at locks and weirs.





Fig. 1: Connecting of the cable ducts



Fig. 2: Cover assembly



Fig. 3: Locking of the covers

## EASY ASSEMBLY AND REUSABILITY



For more information and detailed assembly instructions, please visit

[www.wirthwein.de/en/downloads](http://www.wirthwein.de/en/downloads)

### Preparation

For optimal cable duct installation it is necessary to dig a trench. The upper edge of the trough should be level with the ground surface. Fill the trough with an installation layer at least 3 cm thick and leveled. Either chippings, gravel, sand or fine-grained excavated material can be used as filling material.

### Assembly of the cable ducts

**Important:** Prior to installation, define the future opening direction of the covers.

1. Place the cable duct into the prepared trench and press it straight into the installation layer, so that the ribbed bottom is immersed and rests on the entire surface.
2. Connect the cable ducts to each other using the integrated plug-in system (Fig. 1).
3. To increase stability with regard to direction and position, screws can be driven into the ground through the existing holes.

**Before mounting the cover, please make sure that the hinge area and the contact surfaces are free of dirt!**

4. With the cover in the open position, insert it vertically into the hinge area (Fig. 2) and push it in the direction which the hinge pins point to.
5. The cover can now be moved down and closed.
6. For final locking of the covers, use the rotary key (Fig. 3). Insert it into the recess of the adjacent cover and turn it to the left.

# YOUR PROJECT WITH WIRTHWEIN

You have an inquiry, require technical advice or would like us to call you back? Then please get in touch with our Railway team: use the contact form on our homepage, write us an e-mail or just call us.

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For more than 50 years, the Wirthwein brand has stood for innovative processing of plastic parts

- Thermoplastic injection molding of complex technical plastic parts with shot weights from 0,007g to 10kg
- Processing of all common thermoplastics
- Machines with clamping forces from 250 kN to 17,000 kN
- Capacity: more than 450 injection molding machines and 15 blow mold machines

(Status: September 2022)

## Licenses, certifications and audits

Wirthwein guarantees an excellent quality standard, which is also demonstrated by numerous certifications. We produce according to the corresponding rules and regulations of Deutsche Bahn AG. Licenses, certificates and audits certify our high production quality standard.

Please find an overview of our licenses and certifications according to the most different rules and regulations at [www.wirthwein.de/en/downloads](http://www.wirthwein.de/en/downloads)

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