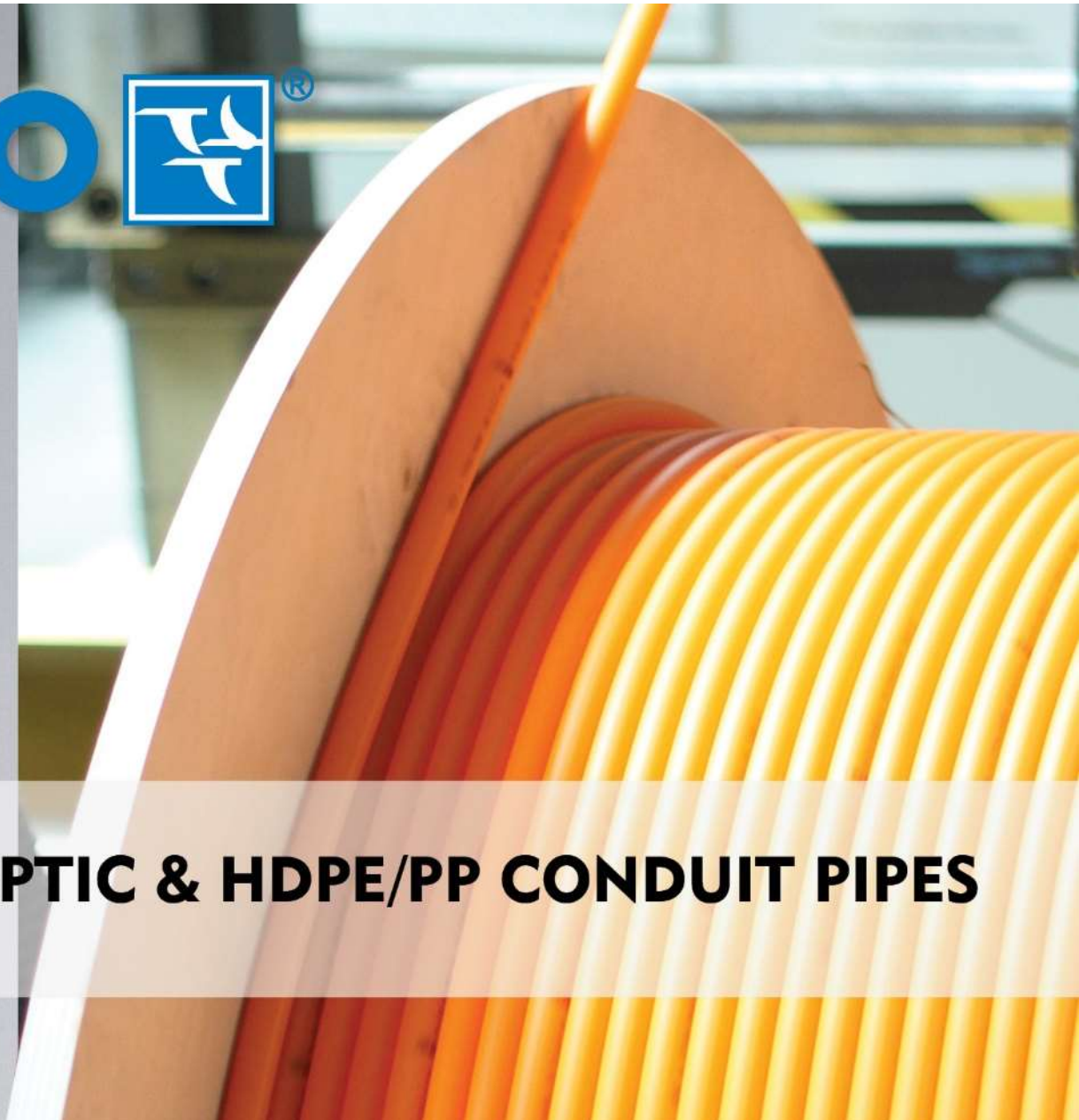


SPYRA PRIMO



MICRODUCT FOR FIBRE OPTIC & HDPE/PP CONDUIT PIPES





Our products

Microducts, multiducts and microcables for constructing optical fibre microconduit system

SPYRA PRIMO offers a whole range of equipment for constructing optical fibre microconduit systems and microcable networks, FTTH networks in particular, including:

- PRIMODUCT microduct: direct buried, duct-installed and indoor,
 - PRIMODUCT tight multiduct: direct buried and indoor,
 - PRIMODUCT loose multiduct: based on optical fibre ducts with a 32, 40 and 50 mm diameter, containing a desired number (agreed with the customer) of pre-installed microducts,
-
- accessories for making optical fibre microconduit systems and microcable networks,
 - know-how within designing and constructing optical fibre microconduit systems and microcable networks using the aforementioned products and other products available on the market.

The products conform to the requirements of the valid norms, particularly:

- **PN-EN 61386-1**
Conduit systems for cable management. Part 1 - General requirements.
- **PN-EN 61386-24**
Conduit systems for cable management. Part 2-4.
- **ZN-30/2008**
PRIMODUCT micropipes and multipipes for constructing optical fibre microconduit systems. Requirements and tests.

<http://www.spyraprimo.pl>



SPYRA PRIMO Poland Sp. z o.o. ensures high quality products and services, guaranteed by the ISO 9001 system.

Main applications

Lower costs of fibre optical network construction and operation

- Multiplication of selected sections of the existing conduit systems and construction of new conduit systems using PRIMODUCT microducts and multiducts.
- Construction of indoor optical fibre microconduit systems and microcable networks.
- Construction of optical fibre microconduit systems and microcable networks /distributive and connected/ using microduct and multiduct pipes of PRIMODUCT system and mOTK microcables:
 - in an existing housing estate:
 - composed of blocks of flats with an existing conduit system,
 - composed of detached houses:
 - with an existing conduit system,
 - without an existing conduit system,
 - in a newly built housing estate:
 - composed of blocks of flats:
 - with an existing conduit system,
 - without an existing conduit system,
 - composed of detached houses without an existing conduit system.
- Construction of optical fibre microconduit systems and microcable networks of spatially wide buildings and facilities, including:
 - state and local administration buildings,
 - office blocks,
 - hotels,
 - hospitals,
 - shopping and entertainment centres,
 - schools,
 - high school campuses,
 - economic zones,
 - large industrial plants,
 - army facilities,
 - airports,
 - large railway junctions, etc
- Construction of intercity (long distance) optical fibre cable microconduit lines and microcable lines.

Main advantages

The optical cable conduit miniaturisation

Advantages for the systems, networks and lines investor:

- easy gradual development of cable networks, which are the main part of the cost due to easy blowing-in and blowing-out the optical fibre microcables,
- lower material and installation cost (microducts, multiducts, microcables and their accessories) and therefore lower total cost of 1 km cable conduit,
- much longer installation sections (between joints), fewer joints, cable manholes and storage bins,
- lower cost of space occupied by the microconduit lines, e.g. a 7x10 multiduct can hold cables with the same number of optic fibres as 7 pipes with a 40 mm diameter, and takes up 7 times less space; it is particularly noticeable at passages under obstacles in the ground,
- possibility to create access networks without optic fibre joints, on long and winding routes from the access centres to the user's building or even a flat,
- easy replacement of old optical fibre types to new ones.

Advantages for the line and network installer:

- much smaller volume and weight of the materials (microducts, multiducts and microcables) and equipment (blowing-in machines, compressors),
- and hence easier and cheaper:
 - storage, loading, transport and unloading of the materials and equipment,
 - execution of the works due to the easier handling of materials and equipment at the building site.

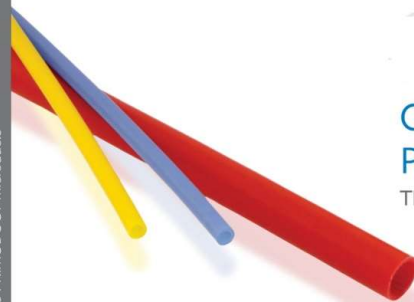
Advantages for the network operator:

- easy blowing-in of the optical fibre microcables, according to the user's order as well as blowing the microcables out to replace them with new ones, remove the line or remove a fault,
- lower, comparing to traditional system cost of maintaining a reserve capacity of the microconduit system with the possibility of renting it out to other users,
- easy to branch out the lines.

Advantages for the product manufacturer:

- lower material consumption,
- longer fabrication sections,
- smaller packaging units (drums),
- lower cost of transport and storage in the warehouse,
- lower cost of loading, transporting and unloading.





Optical fibre PRIMODUCT microducts

The optical cable conduit miniaturisation



TDB
Microduct, **direct buried** : a microduct with a increased wall thickness, installed directly in the ground.



TDI
Microduct, **duct-installed**: a microduct installed in optical fibre ducts.



TFR
Microduct, **indoor**: flame spreading preventing microduct, halogen free and low smoke emission designed for indoor systems.

Specification

- Microducts diameter of 5 - 20mm
- Pneumatic strength while blowing-in microcables TDI 1,6MPa, TDB 2,4 MPa.
- Installation temperature: -10 to +50°C
- Temperature range during transport and storage: -40 + 70°C
- Compressive strength: TDB ~750N, TDI ~250N
- Material: polyolefin
- Plug connections
- Possible color variants, compatible with the color table (transparent, full color or with colored stripes)

Main applications

- For protective telecommunication cables (copper and fiber optic)
- Used in networks supplied directly to the building or local network node
- Microducts designed for fiber optic cables (fiber bundles, mini and microcables)

Target group

- Telecommunications network operators
- Power network operators
- Construction companies

Color

- The basic color variants for microducts

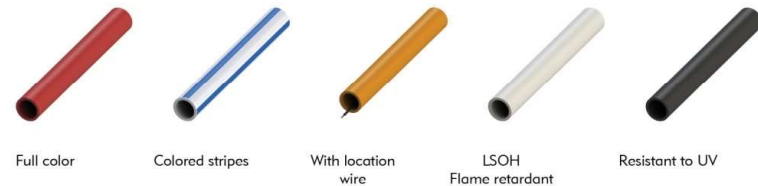
Full color of microduct

Full color with white stripes

Transparent with colored stripes

Red Blue Green Yellow Orange Brown Gray Purple Black

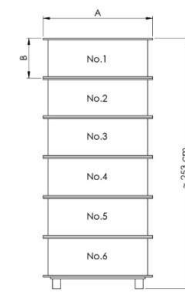
Options



Full color Colored stripes With location wire LSOH Flame retardant Resistant to UV

Package

Reel size (mm)	
A	Ø1100
B	400
Length (m)	
Ø5 - Ø8	4000
Ø10	2500
Ø12	2000
Ø14	1500
Ø16	1000
Ø20	650

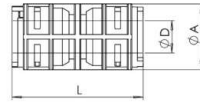


collective packaging



Microduct accessories

Straight connector



Product	D (mm)	A (mm)	L (mm)	Working pressure	Working temperature
MS-7 Gas and watertight	7	19	39	PN16	-20 do +50 °C
MS-10 Gas and watertight	12	22	34	PN16	-20 do +50 °C
MS-12 Gas and watertight	12	25	49	PN16	-20 do +50 °C
MS-14 Gas and watertight	14	27	50	PN16	-20 do +50 °C
MS-16 Gas and watertight	14	30	52	PN16	-20 do +50 °C

We have a full range for microducts with a diameter of 5 - 20mm

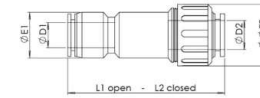
End-Cap



Product	D (mm)	A (mm)	L (mm)	Working pressure	Working temperature
ME-7 Gas and watertight	12	19	22	PN16	-20 do + 50 °C
ME-10 Gas and watertight	14	22	24	PN16	-20 do + 50 °C
ME-12 Gas and watertight	12	25	26	PN16	-20 do + 50 °C
ME-14 Gas and watertight	14	27	27	PN16	-20 do + 50 °C
ME-16 Gas and watertight	14	30	29	PN16	-20 do + 50 °C

We have a full range for microducts with a diameter of 5 - 20mm

Gas Block Double Push-in System



Product	D1 (mm)	D2 (mm)	E1 (mm)	E2 (mm)	L1 (mm)	L2 (mm)	Fibre cable size range	Color
MEC-7 Gas and watertight	7	7	14	22	67	64	0,5 - 3,0	Blue
MEC-12 Gas and watertight	12	12	22	30	79	75	5,5 - 8,0	Yellow
MEC-14 Gas and watertight	14	14	23	32	82	77	5,5 - 8,0	Yellow
	14	14	23	32	82	77	8,0 - 9,2	Green

We have a full range for microducts with a diameter of 5 - 20mm

Working pressure	Burst pressure	Working temperature
PN16	> 35 bar	- 20 do + 50 °C

Divisible seal cup



Product	Microduct external diameter (mm)	Fibre cable size range (mm)
MECD-12 Gas and watertight	12	5,0 - 8,0
MECD-14 Gas and watertight	14	5,0 - 8,0

We have a full range for microducts with a diameter of 5 - 20mm



Optical fibre PRIMODUCT multiducts

The optical cable conduit miniaturisation



MTDB

Microtube bundle: microtube bundle for buried directly in the ground, does not additional hardware beyond connectors.



MTDB

Tight multiduct, direct buried: a multiduct intended for being buried directly in the ground, used for making optical fibre microduct systems and trunk microconduits.

Specification

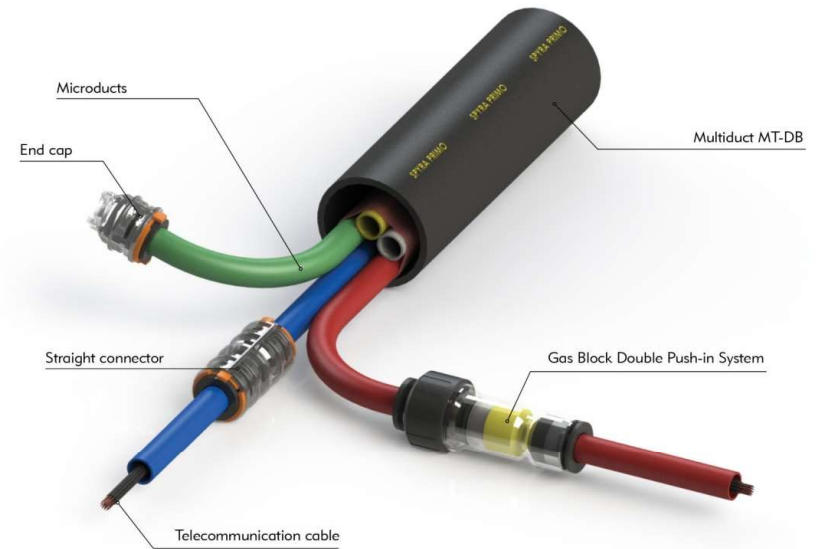
- Standard design with a flexible outer coat in black or orange color
- Bundle in rigid protective tube, dimensions from 32-50mm
- The variety of micro-pipe bundles on customer's request, the maximum number of 24 microducts.
- Microtube bundle for buried directly in the ground with compressive strength ~750N and maximum pull force 6000N
- Microtube bundle for installation NO-DIG type with compressive strength~450N and maximum pull force 3500N
- Installation temperature: -10 to +50°C
- Temperature range during transport and storage: -40 + 70°C
- Material: polyolefin
- Plug connections
- Possible color variants, compatible with the color table.

Main applications

- For protective telecommunication cables (copper and fiber optic)
- For the construction of a sewage system / existing sewage teletechnical
- For the construction of cable micro-circuits as well as for the creation of main microchannel strings in large buildings (multiducts indoor).

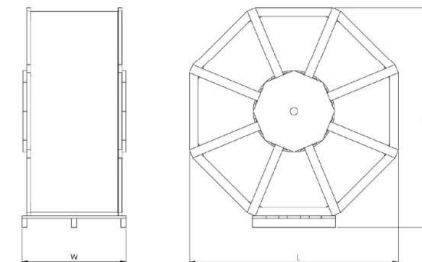
Target group

- Telecommunications network operators
- Power network operators
- Construction companies



Package

Reel dimension (W x L x H)	
TYPE "A"	1,2 x 2,55 x 2,4 m
TYPE "B"	1,0 x 2,55 x 2,4 m
TYPE "C"	1,0 m 2,2 m x 2,05 m
TYPE "D"	1,1 x 1,8 x 1,65 m



Options



MT-DB

Microtube bundle for buried directly in the ground with flexible outer coat



Multiduct
24 core



Multiduct
12 core



Multiduct
7 core



Multiduct
4 core



MT-DB

Microtube bundle for buried directly in the ground with central tube



Multiduct
10 +1 core



Multiduct
6 +2 core



Multiduct
6 +1 core



Multiduct
10 +1 core
in rigid protective
tube



MT-DB

Microtube bundle for buried directly in the ground type FLAT and FENDER



Multiduct FLAT
2 core with
location wire



Multiduct FLAT
4 core



Multiduct FLAT
8 core



Multiduct FENDER
7 core



MT-DB

Microtube bundle with protective flexible coat for installation NO-DIG type



Multiduct with double
flexible coat



Multiduct with
double-layer rigid
protective tube

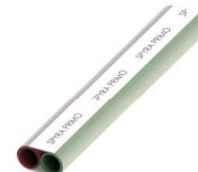


Multiduct in rigid
protective tube



MT-DI

Multiduct TDI for multiplication of existing teletechnical ducting



Multiduct
2 core



Multiduct
3 core

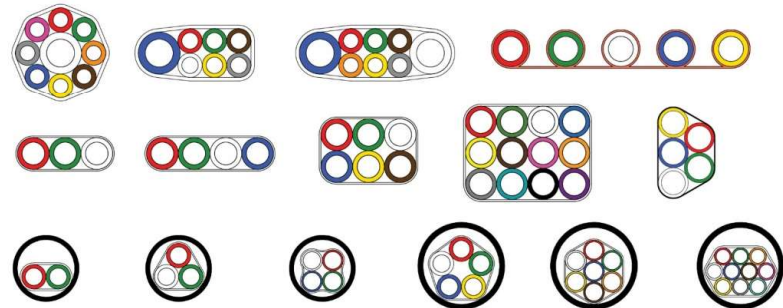


Multiduct
5 core



MT-DB / MT-DI

Other options



Multiduct accessories

Fibre optical enclosures are used to create straight connection of PRIMODUCT multiducts and to branch with large capacity multiducts into smaller capacity multiducts or microducts bundles. Inside the enclosure microducts should be connected by using MS or MSR connectors.

Enclosures are made of plastic materials, by injection method, providing long term usage.

Straight MCS and MCST enclosures allow making straight connection of multiducts (direct buried and duct installed).

MCYT enclosures are designed to make branch connections of direct buried and duct installed multiducts and to branch out microduct bundles (direct buried and duct installed).

Enclosures of OZ system has following features:

- completeness of sets,
- waterproofness,
- tension resistance corresponding to a class of connected multiducts,
- ease of installation.

Branch for multiducts

Type:

T



In / Out:
Dimension: 25mm, 40mm, 50mm
350 / 210 mm

Y



25mm, 40mm, 50mm, 60mm
260 / 200 mm

H



32mm, 40mm, 50mm
350 / 170 mm

Universal socket 4- i 6-port for multiduct connection, output microducts

4-port



Dimension: 463x268x101 mm
Weight: 3 kg
Port number: 4
Protection class: IP68
Diameter holes: Ø9 - Ø45

6-port



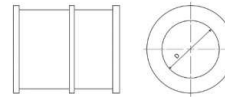
Dimension: 316x220x70 mm
Weight: 2 kg
Port number: 6
Protection class: IP68
Diameter holes: Ø9 - Ø45

Gasket

Used for sealing multiducts in MCS-40/2 and MCS 50/1

Available diameter D (mm):

- 32 mm
- 37,4 mm
- 40 mm
- 50 mm

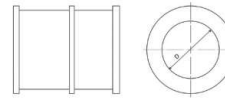


Symbol (type)

ZCST-40/50

End plug

Used for plugging unused port in MCS-40/2 enclosure

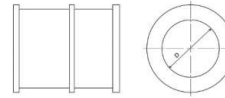


Symbol (type)

ZCS-40/2

End plug

Used for plugging unused port in MCS-50/1 enclosure

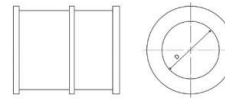


Symbol (type)

ZCS-50/1

End plug

Used for plugging unused port in MCST-44 enclosure and MCYT-44 branch



Symbol (type)

ZCST-44

ZZ is the diameter of the pipe for which the gasket is intended

Cable tray

- Designed for storing and protecting from mechanical damage,
- For stocks of fiber optic cables,
- The possibility of pulling cables in the case of small radius curves,
- In underground installations as well as cable wells, basements.

Symbol (type)

ZKSP 2/4 big
ZKSP 2/4 small



Production programme

Our offer

SPYRA PRIMO Poland Sp. z o.o. production programme covers a wide range of plastic pipes and accessories..

Smooth conduit cable pipe for ground installation

Material	HDPE
Diameter	(OD) 75-400mm
SDR	7,4 to 33
Length:	6 - 12m
Connections:	Welding, connector
Type:	Black or 2 - layers
Compliance with the norm PE-EN 61386-24	



Package

Coil: 25m / 50m / or other
Pack: 6 - 12 m



Halfpipe for protect existing cables

Material:	HDPE
Option:	HDPE + UV / HDPE + UV-t
Diameter:	(ID) 50-140mm
Length:	3m
Mark:	black / blue to 1kV / red upper 1kV
Type:	black or 2 - layer
Compliance with the norm PE-EN 61386-24	



Package

Pack: 3m



Smooth conduit pipe for fibre optic cable

Material	HDPE
Iner layer:	Sliding with grooves
Diameter:	(OD) 25-50mm
SDR:	11 - 17,6
Working pressure:	to 12 bar
Length:	250m / 1000m / or other
Connections:	straight connector
Type:	black / 2-layer / black with stripes
Option:	HDPE flame retardant HDPE Resistant to UV
Compliance with the norm PE-EN 61386-24	



Package

Coil: 250m / 1000m / or other



Special smooth conduit pipe

Material	HDPE + other
Diameter:	(OD) 75-400mm
SDR:	7,4 - 33
Length:	6 - 12m
Connections:	Welding, connector
Type:	2- / 3- / 4-layer
Compliance with the norm PE-EN 61386-24	



Package

Pack: 6 - 12m

