



borougenajd PE SILICONE CORE MICRO DUCTS

ABOUT US

Borouge Najd is a leading Saudi Arabian plastic pipe manufacturer since our establishment in 2020 we have constantly evolved to meet the requirements of our most demanding customers. Our aim is to provide sophisticated and diverse pipe solutions for hot and cold water applications, telecommunication networks, sewage and drainage systems together with water and gas infrastructure.

We are a certified to ISO Quality Management Systems organization and all our products comply with the appropriate World International (ISO) Standards.

Our products are tested extensively in our state-of-the-art laboratory, to ensure that the quality and performance are continuously maintained.

Our success is the result of the company's persistent commitment to continuous innovation and investment in technology, in the relentless pursuit of providing quality products and services. Today, we are pleased to offer a wide range of plastic products, divided into four categories:

// WE DESIGN, DEVELOP, MANUFACTURE
AND PROVIDE INNOVATIVE PIPE
SOLUTIONS THAT BEST MEET THE
NEEDS OF OUR CUSTOMERS //

CHARACTERISTICS OF borougenajd PE SILICONE CORE MICRO DUCTS SYSTEMS

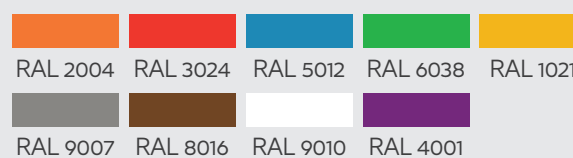
Installation

- **DIRECT BURIED (DB):** In applications where the micro ducts will be directly buried or bundled into different configurations.
- **DIRECT INSTALL (DI):** In applications where the micro ducts or bundle configuration will be placed inside an existing conduit, like an Over-Ride or populating an existing conduit.

Area of applications

- Telecommunication (voice and data)
- CATV (television cables)
- Commercial and institutional buildings (C&I)
- Energy cables

Colors



RAL 2004 RAL 3024 RAL 5012 RAL 6038 RAL 1021

RAL 9007 RAL 8016 RAL 9010 RAL 4001

Custom colours for micro ducts and corrugated sheaths are available on request

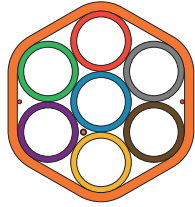
Micro ducts technology

- Silicon core micro ducts system comprises of an outer sheath and multiple micro ducts.
micro ducts are made from High Density Polyethylene (HDPE), whilst the inner surface of the micro ducts is made from permanent silicon material having a very low coefficient of friction
outer sheath is made of HDPE
- Factory bundles in 2-way, 3-way, 4-way, 7-way, 10-way, 14-way and 24-way configurations

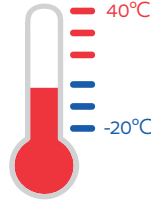
Optional

- **Silicone core** is co-extruded with the tough HDPE wall creating a permanent, super slippery interior lining. It has the lowest co-efficient of friction compared to other options, no performance loss in all temperature conditions and functions without additional wet lubricants.
- **Insulated copper** wire for quick and easy localization. For single micro-duct tracing wire is placed outside and over-sheathed together with duct. Within bundles, tracing wire is placed in the free space among the micro-ducts.
- **Rip cords** for easy and quick opening of the polyethylene sheath.
- **Thicker over sheath** for demanding projects and installation.
- **Footage markings** such sequential or meter marking available on customer request.

ADVANTAGES OF borougenajd PE MICRO SILICONE CORE DUCTS SYSTEMS



Multiple configurations and colors



Operation, storage and installation at temperatures ranging from -20°C to +40°C



Fast and easy installation of any fiber optic cable due to silicone core



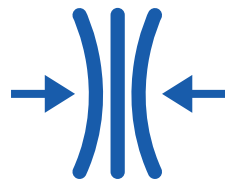
Resistant to ground movement due to flexibility of micro ducts



Pull out resistance during installation



Blow-ability
Pressure resistance during optical fiber blow-in process



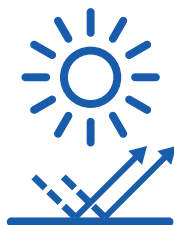
Excellent flexibility and shape recovery



Low electrical and thermal conductivity



Water infiltration resistance during storage, installation and operation



UV resistance during storage and installation



Corrosion free system operation



100% recyclable and sustainable systems

PRODUCT RANGE

Single silicone core micro-ducts and conduit silicone core micro-ducts

Borougenajd offers a wide product range of silicone core micro-ducts for both DB and DI, as shown in the following table:

application DB/DI	microduct size OD/ID (mm)	wall thickness (mm)	OD (mm)	Tolerance (mm)	minimum bending radius 20°C (mm)	max blowing pressure (bar)	burst pressure (bar)
DI	4/3	0.5	4	±0.05	80	10	> 30
DI	5/3.5	0.75	5	±0.05	100	10	> 30
DB	7/4	1.5	7	±0.15	140	16	> 50
DI	7/5.5	0.75	7	±0.15	140	10	> 30
DB	8/3.5	2.25	8	±0.15	200	16	> 50
DB	10/6	2	10	±0.15	240	16	> 50
DI	10/8	1	10	±0.15	200	10	> 30
DB	12/8	2	12	±0.15	280	16	> 50
DI	12/10	1	12	±0.15	240	10	> 30
DB	14/10	2	14	±0.15	280	16	> 50
DI	14/11.5	1.25	14	±0.15	280	10	> 30
DB	16/10	3	16	±0.15	320	16	> 50
DI	16/12	2	16	±0.15	320	10	> 30
DB	18/12	3	18	±0.30	360	16	> 50
DI	18/14	2	18	±0.30	360	10	> 30

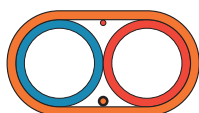
Borougenajd silicone core conduit micro-ducts product range is provided in the following table:

Part No.	ID (mm)	Coil length (m)
21 901	16	40
21 902	23	40

Additional sizes up to 63 mm outer diameter (OD) are available on request.

Silicon Core 2-Way Micro-Duct Bundle

Borougenajd offers a wide product range of silicone core 2-Way micro-ducts for both DB and DI, as shown in the following table:

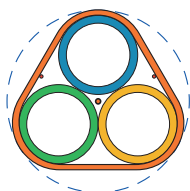


application DB/DI	microduct size OD/ID (mm)	protective sheath thickness (mm)	OD (mm)	minimum bending radius 20°C (mm)	Insulated Cooper Wire (mm)*
DI	4/3	1	10/6	200	0.6
DI	5/3.5	1	12/7	240	0.6
DI	7/5.5	1	16/9	320	0.6
DI	10/8	1	22/12	440	0.6
DI	12/10	1	26/14	520	0.6
DI	14/11.5	1	30/16	600	0.6
DB	14/10	1.2	30/16	600	0.6
DB	16/12	1.2	32/18	640	0.6
DB	18/14	1.2	38/20	760	0.6

*insulated copper wire can be added upon request

Silicon Core 3-Way Micro-Duct Bundle

Borougenajd offers a wide product range of silicone core 3-Way micro-ducts for both DB and DI, as shown in the following table:

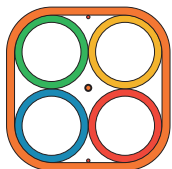


application DB/DI	microduct size OD/ID (mm)	protective sheath thickness (mm)	OD (mm)	minimum bending radius 20°C (mm)	Insulated Cooper Wire (mm)*
DI	4/3	1	10/10	200	0.6
DI	5/3.5	1	12/12	240	0.6
DI	7/5.5	1	16/16	320	0.6
DI	10/8	1	22/22	440	0.6
DI	12/10	1	26/26	520	0.6
DI	14/11.5	1	30/30	600	0.6
DB	14/10	1.2	30/30	600	0.6
DB	16/12	1.2	32/32	640	0.6
DB	18/14	1.2	38/38	760	0.6

*insulated copper wire can be added upon request

Silicon Core 4-Way Micro-Duct Bundle

Borougenajd offers a wide product range of silicone core 4-Way micro-ducts for both DB and DI, as shown in the following table:

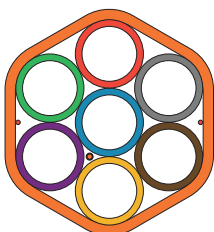


application DB/DI	microduct size OD/ID (mm)	protective sheath thickness (mm)	OD (mm)	minimum bending radius 20°C (mm)	Insulated Cooper Wire (mm)*
DI	4/3	1	10/10	200	0.6
DI	5/3.5	1	12/12	240	0.6
DI	7/5.5	1	16/16	320	0.6
DI	10/8	1	22/22	440	0.6
DI	12/10	1	26/26	520	0.6
DI	14/11.5	1	30/30	600	0.6
DB	14/10	1.2	30/30	600	0.6
DB	16/12	1.2	32/32	640	0.6
DB	18/14	1.2	38/38	760	0.6

*insulated copper wire can be added upon request

Silicon Core 7-Way Micro-Duct Bundle

Borougenajd offers a wide product range of silicone core 7-Way micro-ducts for both DB and DI, as shown in the following table:



application DB/DI	microduct size OD/ID (mm)	protective sheath thickness (mm)	OD (mm)	minimum bending radius 20°C (mm)	Insulated Cooper Wire (mm)*
DI	4/3	1	14/14	420	0.6
DI	5/3.5	1	17/17	510	0.6
DI	7/5.5	1	23/23	690	0.6
DI	10/8	1	32/32	960	0.6
DI	12/10	1	38/38	1,140	0.6
DI	14/11.5	1	44/44	1,320	0.6
DB	14/10	1.2	44.4/44.4	1,320	0.6
DB	16/12	1.2	50.4/50.4	1,500	0.6

*insulated copper wire can be added upon request

Accessories for borougenajd silicone core micro-ducts

Borougenajd offers a new generation innovative accessories for silicon core and conduit micro-ducts such as connectors, reducers, locking clips, stripping tools, peeling equipment and bundle cutters.

Connectors

Metal free connectors avoid corrosion problems in DB and DI applications. High quality materials and a transparent body assure easy and quick installation. DB connectors shall be protected with rubber protection caps for proper DB functionality. DI connectors are designed to fit with thin-walled silicone core micro-ducts and are for any applications that are not directly buried, including inside buildings and manholes or branching boxes.

Reducing connectors allow interconnection between two silicone core micro-ducts with different outer diameter. Typically, this is the case at the transition point from DB to DI micro-duct at the point where it enters a building.

The end caps are metal free and have a transparent body. The pre-installed safety clips provide for quick and easy installation whilst keeping the micro-ducts clean and dry. All open silicone core micro-duct ends should be closed to keep the network free of contamination. Special rubber covers are recommended for direct burial (DB) applications to secure easy and smooth push-fit functionality of the connectors.

Main features and characteristics of borougenajd DB and DI connectors, reducers and end caps are summarized below:

- No metal parts
- Inner diameter leveled with micro-ducts
- Push-fit system
- Safety clips pre-installed
- Body material: polyamide
- Working Pressure: max. 20 bars
- Lifespan: 25 years
- Standards: EN 50411-2-8



Connector for direct buried (DB) and direct install (DI) applications



Reducer Connector



End caps



Locking Clips



Compression Connector

Compression connectors offer solutions for connecting HDPE ducts. The connector is designed to withstand working pressures of up to 16 bar. These compression connectors are manufactured in diameters ranging between 16 mm and 160 mm.

Main features and characteristics of borougenajd compression connectors are summarized below:

- No metal parts
- Manufactured from polypropylene material
- High quality
- Maximum operation pressure is 16 Bars

Stripping Tools

Borougenajd provides a new generation innovative stripping tools, peeling equipment and bundle cutters for easy installation of silicone core micro-ducts systems



**Cable stripping
knife**



**Micro-duct
cutter**



**Stripping
knife**



**Peeling
equipment**



**Bundle
cutter**



Saudi made

صنع بالسعودية



High quality

جودة عالية

بروج نجد
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