

New product line of microducts



# 1. INTRODUCTION

Air Blown System(ABS) originated from ABF(Air Blown Fiber) system in 1982 at British Telecom.

ABS is a **flexible and cost-effective cabling system** for installing optical fibers in all types of metropolitan, access networks and also in backbone network.

ABS creates a future-proof network ready for tomorrow's demanding applications. It also gives a cost-efficient rollout and maintenance, which creates the opportunity for increasing broadband penetration and reaching out to new users.

This system consists of the following parts.

-Microduct



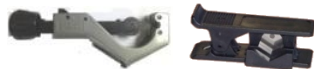
- Air blown cable ( 1- 144 fibers )



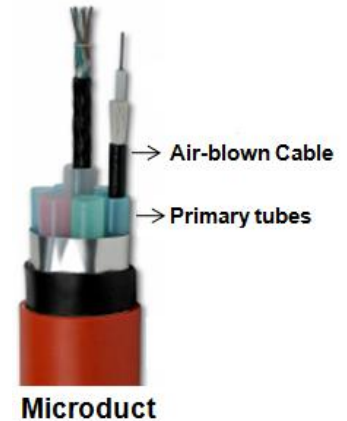
- Accessories, duct branches and duct joints



- Tools



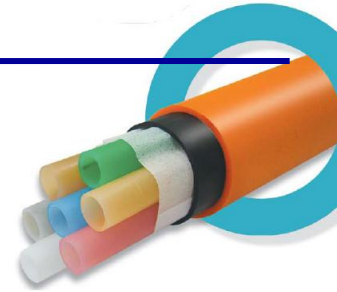
- Blowing equipment.





## 2. MICRODUCT

To choose the right Microduct when installing, the following should be considered :

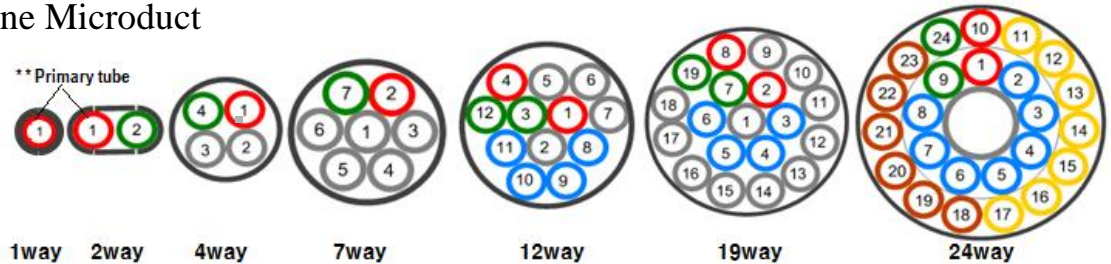


### 1. Air Blown Cable type and microduct diameter to be considered



No of fibers	1-12core	12-72core	96-144core
Air blown cable diameter	1.0-2.0mm	5.6mm	6.8 – 8.0mm
Primary duct	5/3.5mm	10/8mm	12/10mm

### 2. Number of primary duct required in one Microduct



### 3. Type of Microduct according to the installation site



### 4. Required blowing distance for the installation path



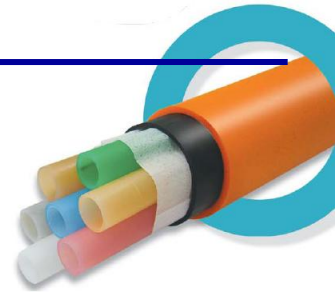
### 3. AIR-BLOWN CABLE

Air blown cables are designed with high-density polyethylene(HDPE) outer sheaths in order to minimize friction with the inner surface of microducts. The central tube micro cable design also provides the highest fiber density, yielding a relatively small cable OD. The individual fibers bundled into groups of twelve within the cable's central tube, and the bundles are easily identifiable with colored binders. Although the microduct system is designed to remain dry, the central tube of the cable contains a suitable filling compound in order to prevent water migration along the length of the cable in the event of a breached cable sheath. For optimum installation performance, we recommends that the cable-to-duct diameter fill ratio not exceed 76%.

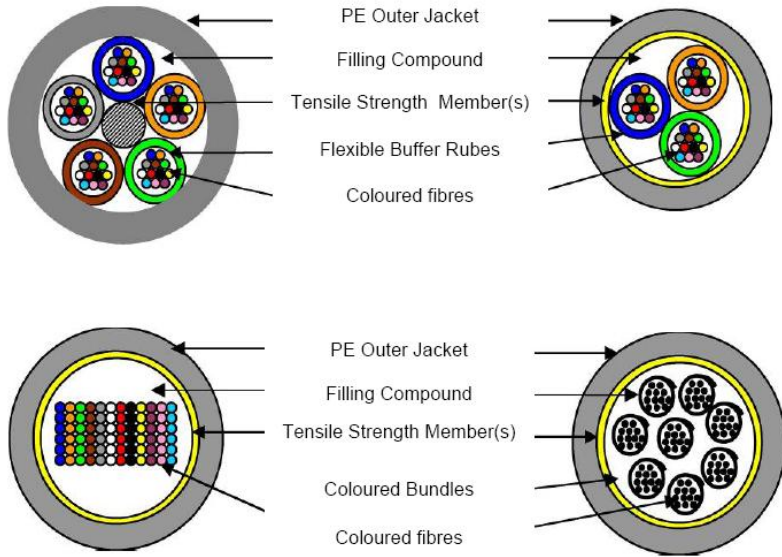


No of Fiber	Air Blown Type		Conventional Type	
	Cable Outer Diameter	Applied Microduct	Cable Outer Diameter	Applied conventional duct
1F – 12F(Fiber unit)	1.0-2.0mm	5/3.5mm	11.8mm	22mm
12F – 72F	5.6mm	10/8mm	11.8mm	22mm
96F	6.8mm	10/8mm	13.5mm	22mm
144F	8.0mm	12/10mm	18.8mm	25mm

# 3. AIR-BLOWN CABLE

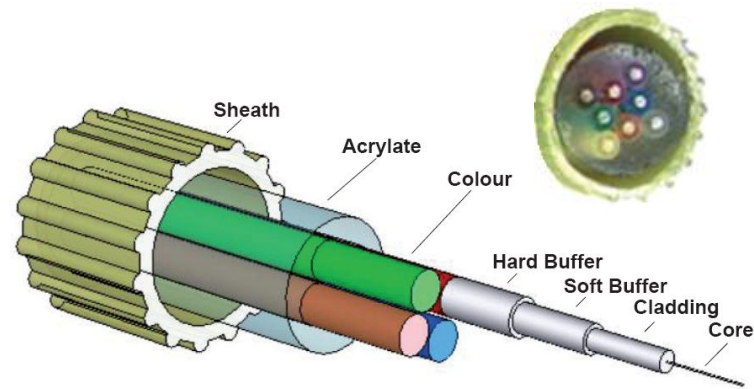


**Examples of Air Blown Cables (ABC)**



**Air Blown Cable ( not to scale)**

**Examples of Air blown Fibers(ABF)**

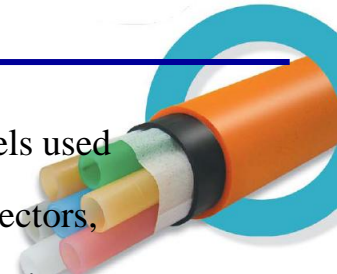


**Air Blown Fiber**

## 4. ACCESSORIES, BRANCH AND TOOLS

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Microduct distribution units, or junction boxes, are wall-mounted enclosures or rack-mounted panels used at microduct transitions or branching locations. Microducts are joined together using push-fit connectors, allowing for the easy and quick splice-free reconfiguration of your fiber pathway between multiple sites within your network. Fiber termination units are wall-mounted or rack-mounted enclosures used to terminate ABF tubes and fiber bundles. They can be used in a variety of locations, including telecommunications closets and hubs, to organize fibers for termination.

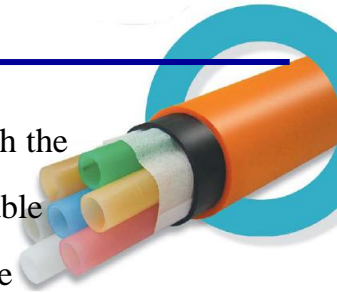
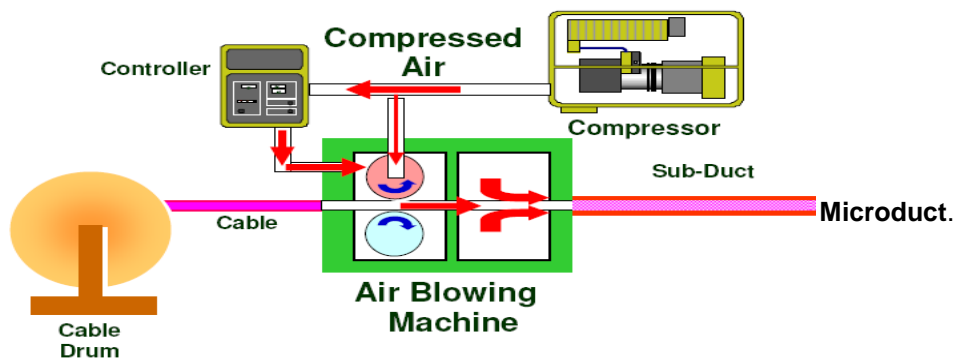


## 5. BLOWING EQUIPMENT

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Outside plant personnel are very familiar with the pulling method of installing cable. Thread a line through the duct, attach the line to the cable, and pull or tug the cable through the duct. The force needed to pull the cable usually comes from a capstan or hand -over-hand pulling of the rope. This force is needed to overcome the cable's frictional resistance to movement. **Length of installation is limited by the maximum force allowed on the cable.**

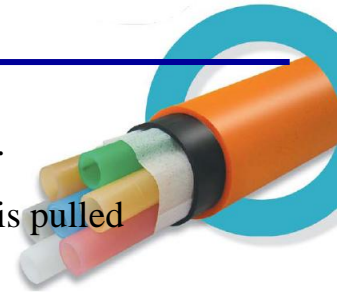
Air-assisted installation must overcome the same frictional force to move cable, but it does this in a very different way. The force in air blowing first comes from a mechanical device which pushed the cable; and second, from the force of moving air on the cable jacket, or alternatively, the force of air on a piston or carrier at the front end of the cable. **This technique allows the air blown cable to “float” inside the Microduct during installation while minimizing sidewall pressures by reducing friction between the cable and the duct wall.**



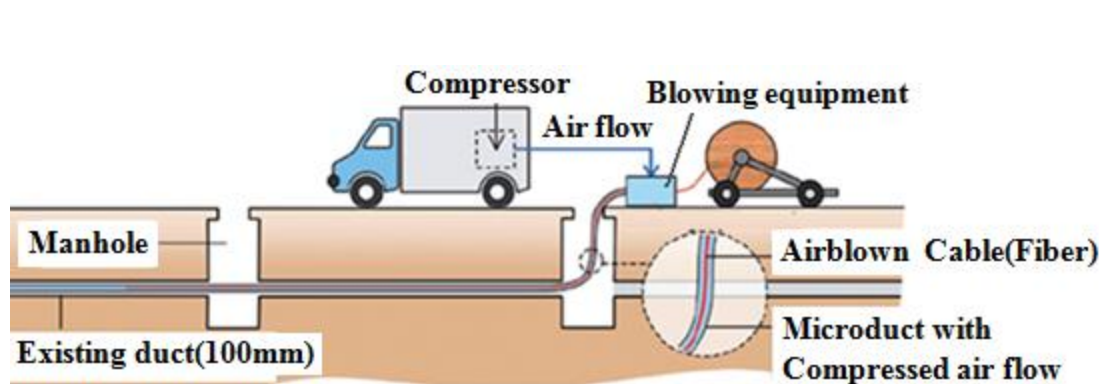
## 5. BLOWING EQUIPMENT

Blowing head is used to blow the compact fiber optic bundles through the tubes on a stream of air . Installation is completely stress-free, eliminating the damage that can occur when traditional fiber is pulled through the network.

A standard air compressor is used to supply air for the jetting. An air cooler at the discharge of the compressor is recommended in order to maintain lower air temperatures within the microduct during installation.

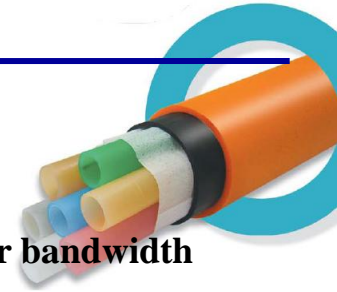


Maker	Brand name	Homepage	HQ
PLUMETTAZ	Microjet, Minijet	<a href="http://www.plumettaz.com">www.plumettaz.com</a>	Switzerland
CBS Products	Breeze, Tornado	<a href="http://www.cbsproducts.com">www.cbsproducts.com</a>	UK
Sherman and Reilly	Microjet	<a href="http://www.sherman-reilly.com">www.sherman-reilly.com</a>	USA



## 6. ADVANTAGE

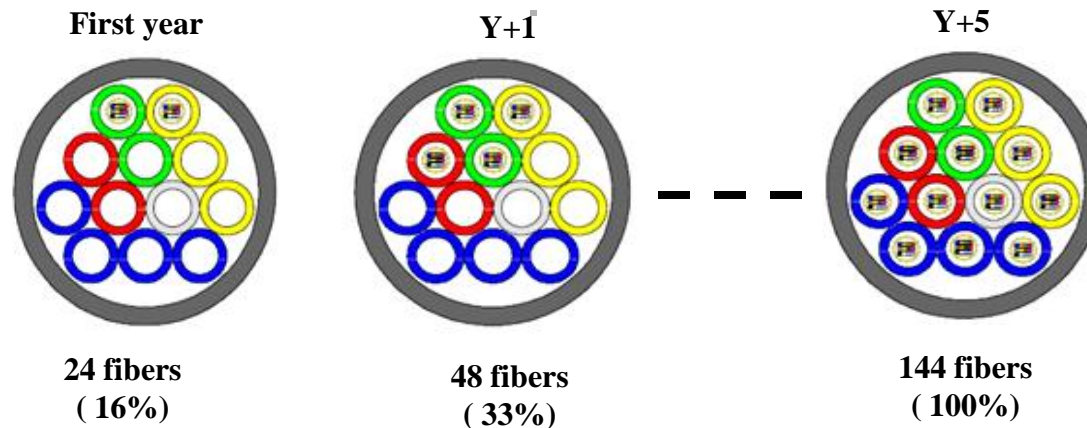
Air Blown System enables you to : **Save cost and time**



**Scale your network immediately, control network capacity, optimize conduit space, meet your bandwidth requirements in minutes, save significant labor and overall project costs, and upgrade your network at the exact pace of emerging technology.**

### 1. Differed Investment

Plan network expansions, changes, and additions without the cost or guess work of accurately forecasting future fiber requirements and the opportunity and financial costs associated with laying either too much or too little optical fiber.

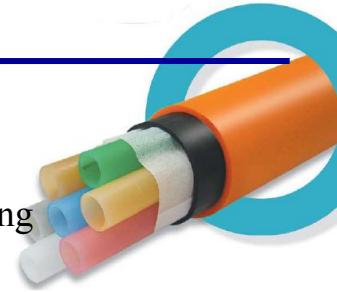


**KNET**

**Lead to Fiber Optic World**

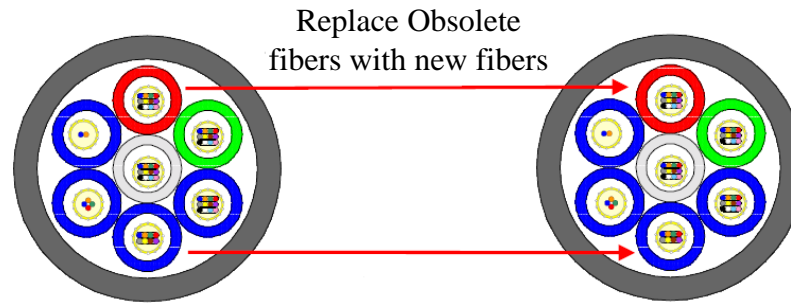
VISIT OUR WEB SITE [WWW.E-KNET.CO.KR](http://WWW.E-KNET.CO.KR)

# 6. ADVANTAGE



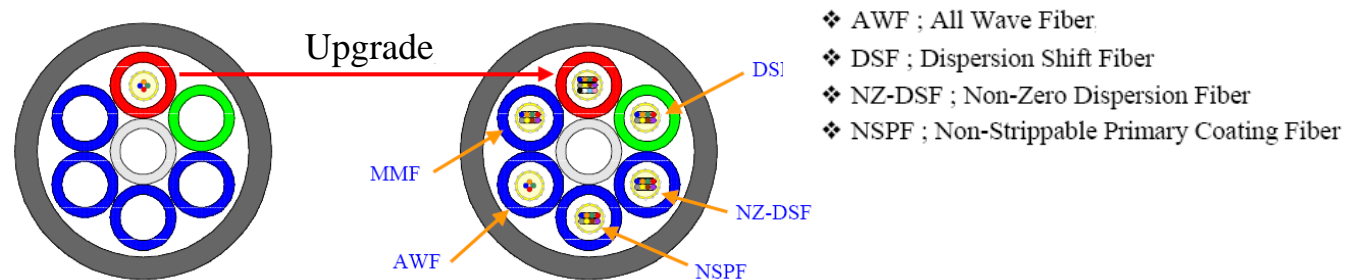
## 2. Operability

Eliminate the risk of having installed obsolete fibers that no longer meets your network's growing Requirements without disrupting critical operations or your site.



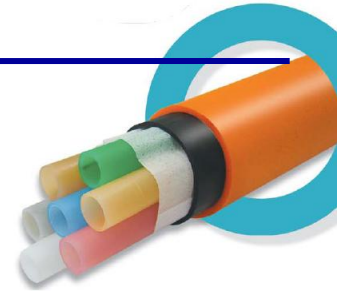
## 3. Expandability

Easily and quickly install any fiber type when and where you need it – allowing for immediate network upgrades while protecting your network against potentially rapid obsolescence.



## 6. ADVANTAGE

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### 4. Reliability

Increase the reliability of your network through Air blown fiber's splice-free, point to point Infrastructure by eliminating the risk of fiber damage that can occur when pulling conventional cable and decreasing attenuation for Max. signal integrity.

### 5. Economical Efficiency

With Air blown fiber, fiber can be blown out quickly and easily and replaced with a new fiber type in virtually minutes

- allowing you to reuse the old fibers for another application in your network.

### 6. Ease of repair

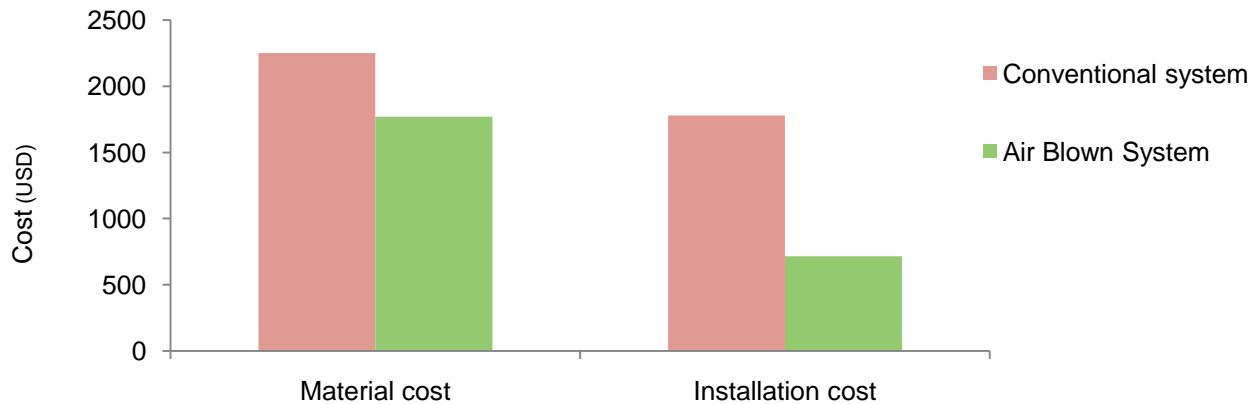
Connectors and other accessories helps to provide a simple repair solution that can be cost effective and quick when compared to conventional methods.

# 6. ADVANTAGE

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Type	Conventional system				Air Blown system			Save
	Duct : 100 x 100mm duct + 4 x 25mm sub-duct Cable : 4 x 48core conventional optical cable				Duct : Microduct 4way 10/8mm DB type Cable : 4 x 48core air-blown cable			
	Duct		Conventional optical cable	Total	Microduct	Air blown cable	Total	
	100mm duct	4x 25mm sub-duct						
Material cost	571\$	229\$	1,450\$	<b>2,250\$</b>	390\$	1,380\$	<b>1,770\$</b>	<b>480\$(21%)</b>
Installation cost	5 people		990\$	<b>1,780\$</b>	3 people	386\$	<b>716\$</b>	<b>1,064\$(60%)</b>
	475\$	315\$			330\$			
Total	1,046\$	544\$	2,440\$	<b>4,030\$</b>	720\$	1,766\$	<b>2,486\$</b>	<b>1,544\$(38%)</b>

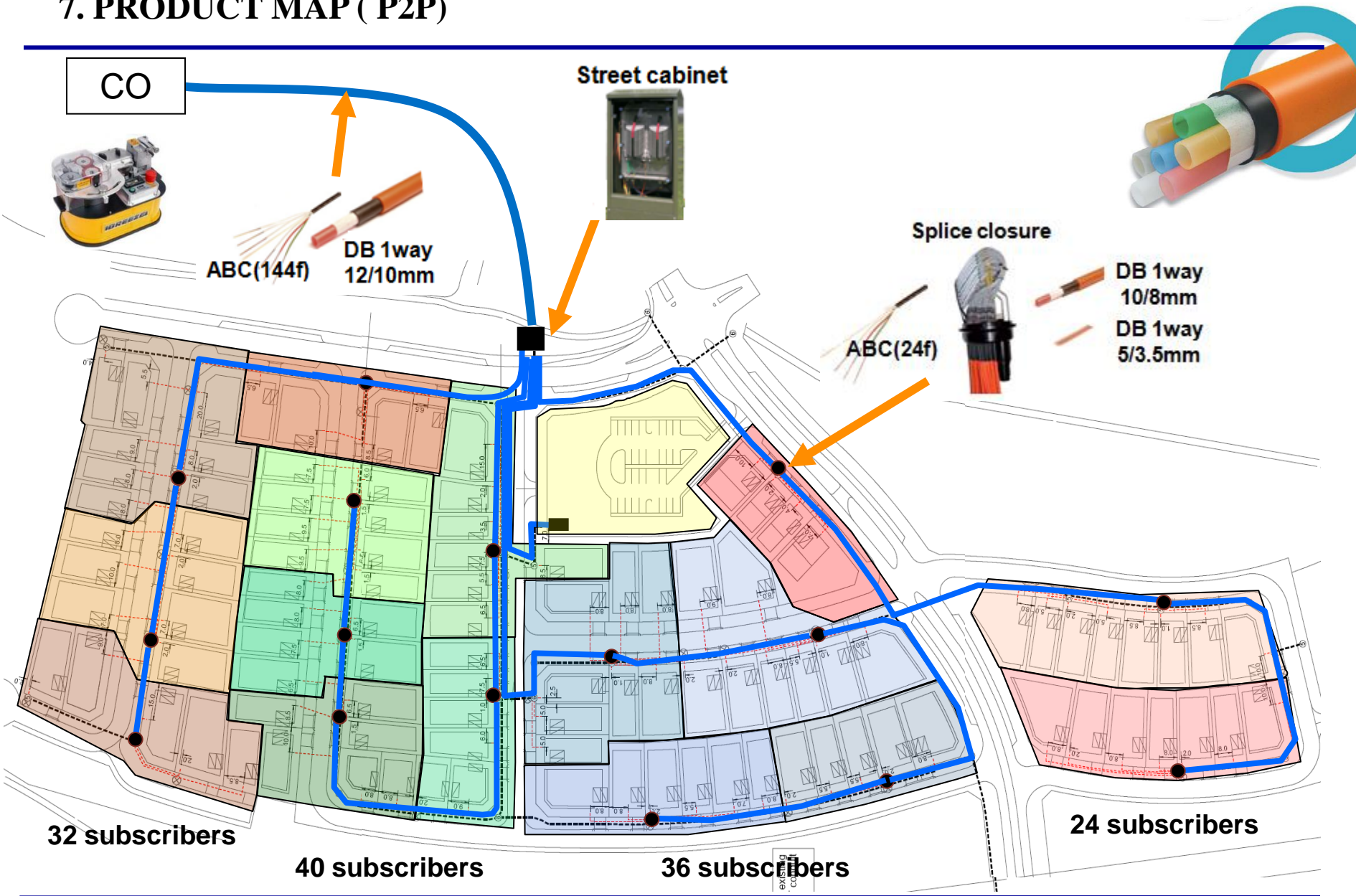


Unit: USD

Appendix:  
Length: 100m

Reference:  
The Information On Commodity Prices of South Korea-February,2010

# 7. PRODUCT MAP ( P2P )



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**Reliable,  
Future-proofing-**

**Thank You !**

