

Smart Cities



Smart Highways



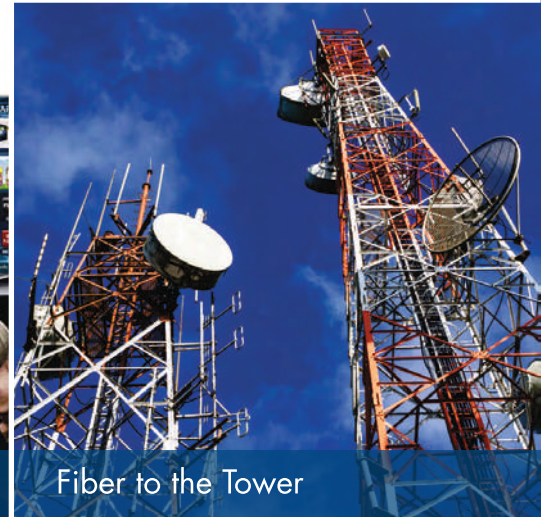
Smart Transportation



Smart Poles



Smart Homes



Fiber to the Tower

Ducting Solutions for a
SMART WORLD

ABOUT US

Digitelle is the Smart World Business of Parixit Irrigation Ltd (formerly Emtelle India Ltd). We are an internationally reputed organization with over three decades of experience and manufacturing facilities across the country. Our facilities are ISO 9001, 14001 & 18001 certified, manufacturing diversified range of high performance pipe/ducting systems to serve mission critical needs of Datacom & Power for Digital world, Fluid Pipes for large infrastructure and advanced micro irrigation systems for irrigation sector.

PIL is a niche, quality focused and customer centric player in the field of Extrusion & Moulding of different Polymers like PE, PVC & PP. PIL has modern & state of the art manufacturing facility at sanand, vijayvada & bhopal for processing of above different Polymers including facility for Moulding & Fittings. PIL is also credited with having executed complex turnkey projects involving large diameter HDPE pipes, using its in-house Engineering & Technical skills. PIL possesses a unique combination of Diversified Manufacturing Competency and High Engineering & Technical skills to offer versatile, innovative & competitive Plastic Piping Systems (PE, PVC, PP, LDPE) & Solutions for its discerning clients & partners serving their needs in following critical application areas:

- Smart Duct Systems & Solutions for Datacom & Power Cables Network
- Fluid Pipe Systems & Solutions for Water, Waste Water, Industrial Piping, Gas distribution & Effluent/Waste disposal
- Complete MIS (Micro Irrigation System) for Drip Irrigation
- Piping Systems & Solutions for Sprinkler Irrigation & Lift Irrigation

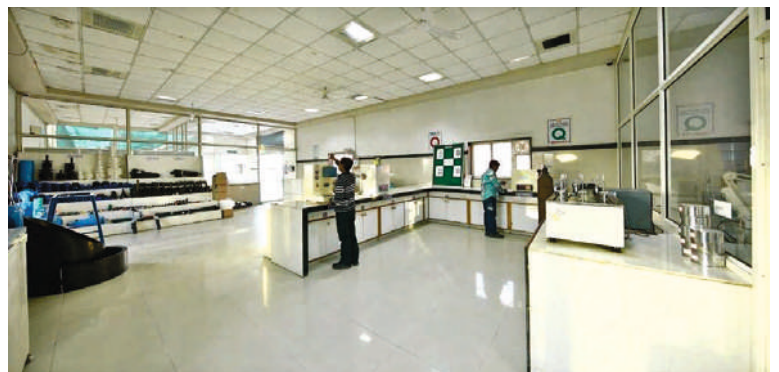


QUALITY COMMITMENT

PIL's Quality & Environmental Management systems are ISO 9001, 14001 & 18001 certified with top focus on world class Quality, Health & Safety across the organization. PIL's state of the art QA Lab & ISO certified business processes mandate desired Quality checks at every stage covering complete supply chain & manufacturing to deliver defect free products & services which adhere to highest & most consistent quality standards.

Quality is the prime business principle at PIL aimed at :

- Clear understanding of customer needs & meeting them to their delight
- Complying & exceeding specifications laid down in various national and international standards
- On time delivery of products & solutions backed up by desired After Market services
- Continuously innovate to offer future proof solutions with high value proposition
- Follow global standards and best practices of manufacturing and customer engagement



SMART DUCT SYSTEMS & SOLUTIONS FOR DATACOM & POWER CABLES NETWORK

Leveraging technology transfer and global strength of its erstwhile shareholders Emtelle U.K., PIL manufactures world-class inner Permanently Solid Lubricated (PLB) HDPE Ducts & Micro Duct systems which offer unsurpassable value to its Clients in creating future proof, scalable, durable smart fibre network architecture for Intercity & intracity, back haul, Access, towers and FTTx.

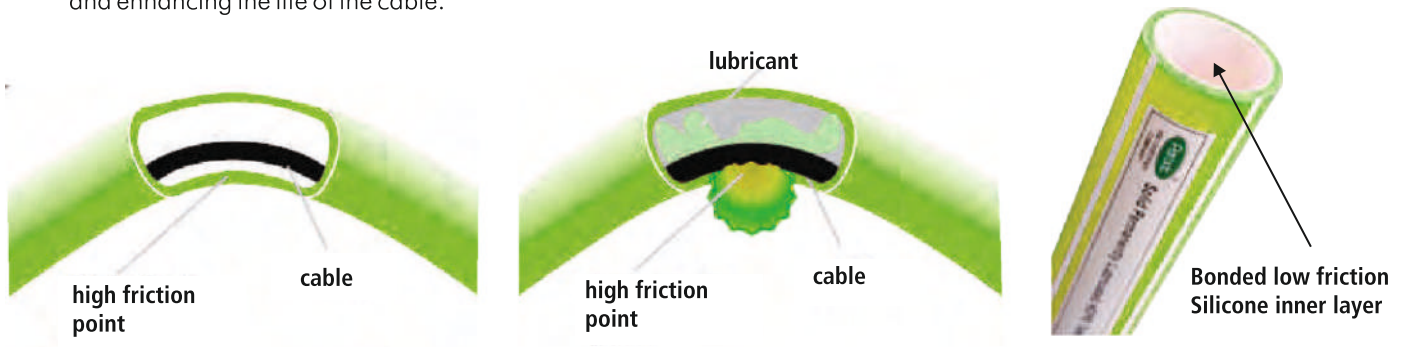
SmartFlo

Smart Duct for Fiber Networks

SmartDuct crafted in a multi-layer formation with the outer most layer of premium HDPE with in-built Ultraviolet protection and Inner layer co-extruded with permanent silicon solid lubricant. SmartFlow is manufactured with "Smooth" Inner layer geometry and can be customized as per your requirements.

Key Benefits:

- High performance duct to meet on the site challenges with highest standards of Tensile Strength, Elongation & Crush resistance.
- Designed to handle extra pull force demand in Horizontal directional drilling (HDD)
- High-grade PE material make these ducts resistant to high level of impact during the entire life span.
- Consistent wall thickness throughout ensures ducts are perfectly round and ready to get coupled effectively without any leakage.
- High quality inner lubricant layer significantly reduces coefficient of friction thereby ensuring longer blowing distance and enhancing the life of the cable.



Cable Blowing



PACKAGING



In Coil



On Reel



SmartCruise

Speed up your network rollout

Smart duct with inner ribbed design offer superior cable installation and enhanced blowing distance by minimising friction between the cable and the duct through reduced area of contact. Inner Ribs also improve cable Installation efficiency by creating an enhanced non laminar air cushion around the cable. This feature is particularly useful in network buildouts with multiple bends & undulations



Straight Ribs



Spiral Ribs

Key Benefits:

- It works well in hilly terrains & difficult deployment scenarios with a lot of undulations and can sustain unforeseen challenges on the ground.
- Helps achieve rapid network roll out with high, consistent cable blowing speed which saves cost.
- Longer cable drum lengths mean less splices and improvement in link budgets specially when ducts are deployed for intercity back haul networks.
- Enhanced blowing distance leads to fewer Manholes and big savings in network costs and time to rollout.

SmartTrack

Track your underground assets

Smart ducts with inbuilt tracking capabilities for asset traceability even years after deployment. The co-extruded tracer copper wire along its entire length offers sustainable Traceability & Depth measurement solutions. With congesting underground city/metro space & ever-changing landscapes making network location difficult by the day, SmartTrack provides an intelligent underground network solution offering tremendous advantage.



Key Benefits:

- SmartTrack duct can be offered with smooth wall or ribbed type inner wall construction therefore combining the best of SmartCruise and SmartFlo with trackability.
- The as-built drawings can be rapidly created and validated to ensure that your underground assets can be identified easily during O&M operations thus minimising MTTR.

Smart Ducts : Main Characteristics

Size Range	Popular sizes (32/26mm, 40/33mm, 40/34.2mm, 40/32 mm, 38.8/33 mm, 36.5/30 mm, & 50/42 mm) Other sizes upto 125 mm O.D available on request
Colours	Customer specific Colours & Marking
Standard Coil Length	1000 meters, 500 meters & 250 meters, Customized supply length available
Expected Life Span	50 Years +
Operating Temperature range	-15°C to + 60°C
Raw Material Grade	PE 63, PE 63 UV , PE 80, PE 100
Key Performance Parameters	Highest standards of Tensile Strength, Elongation & Crush Resistance
Standards	Latest TEC GR, ASTM F2160, DIN 8074, EN12201, ISO 4427 and others
Optional Features	Co-extruded Tracer Wire, Inner Ribs (Straight/Spiral), Factory-Installed Pull Rope
Installation Application	Open Trench, HDD, Ploughing, Saw Cut

FireSafe

Fire Retardant Duct

These ducts are manufactured with special formulation of Fire Retardant material to provide differently designed levels of fire retardancy complying to V0, V1 or V2 ratings as per UL94 specifications. These ducts are typically suitable for installation in areas where fire could be a hazard & can be offered in all the 3 inside construction, viz. smooth wall, straight ribbed, spiral ribbed.

Typical application areas: in Riser, Plenum, Metro Rails, Tunnels, Refineries, Data Centres etc.



Range	20mm to 110mm O.D.
Colours	Standards/Spec specific
Coil Length	1000 meters, 500 meters & 250 meters
Expected Life Span	50 Years +
Suited Temperature range	-15°C to + 60°C
Raw Material Grade	PE 63 UV, PE 80 + UV & FR Grade material
Standards	UL 94 (V0, V1, V2 rated), IEC

MultiPath

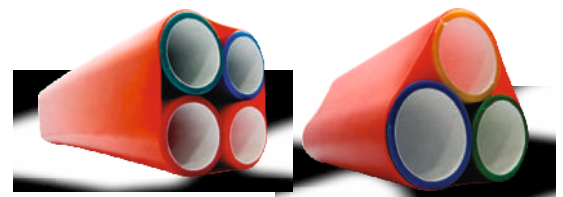
Future Proof Bundled Smart Ducts

These are standard PLB HDPE Ducts, bundled together with PE-over sheath from factory in various configurations; suitable for Direct Burial underground.

- Bundles of PLB HDPE Ducts size range 20mm to 50mm O.D.
- Options of Tracer wire, Inner ribs, Pre-installed pull rope at factory
- Ideal for multi path ways in Cities with ease of placement
- Reduces Trench size, Manhole consumption; offering Big Cost savings
- Ideal replacement of Main Duct/Sub-Duct design
- Suitable for Installation through HDD, Open Cut, Plough, Mechanised trenching



Range & Configuration	PLB Duct size 20mm to 50mm O.D. Multi-pathways 2way, 3way, 4way, 5way & 7 way
Colours	Customer specific Outer Sheath & Duct Colours
Coil Length	100 meters to 1000 mtrs, depending on bundle size/configuration
Expected Life Span	50 Years +
Suited Temperature range	-15°C to + 60°C
Raw Material Grade	PE 63 UV, PE80, PE100 UV
Standards for PLB Ducts	ASTMF2160, DIN 8074, EN12201, TSEC
Optimal Features	Tracer wire, Inner Ribs, Anti-termite Outer Sheath



POWER CABLES DUCTING SOLUTIONS

PowerGuard

Smart Ducts protecting Power Cables

HDPE conduits with option of inner silicone layer are designed to encase and protect critical Power Cable from tough environmental conditions. These conduits are tough, durable with life expectancy beyond power cables itself thereby enhancing the life of the network.

- High crush resistance & impact strength; protection to cable
- Replace or repair cable lines without digging or trenching
- Chemical and corrosion resistance
- Easy installation through HDD, Plowing, Open trenching, Mechanical trenching etc
- UV protected with high degree of flexibility & ductility
- Easy to fit, Industry standard Electrofusion couplers for life long durable joints



Easy Fit
Electrofusion
Couplers

PVC Conduits for Power Cables Ducting

U-PVC conduits provide an efficient, reliable & easy to place pathways for making power cables network future-proof

- Available in 2# options of jointing; Elastomeric Ring fit design (IP57 protection) & easy to place Solvent cement socket design.
- Manufactured from virgin PVC-U polymer = 100% reliable performance.
- Capable of being back-filled with "As Dug" materials where appropriate and not affected by sharp stone impingement.
- Smooth bore ensuring easier and safer installation of sub-ducts and Power cables owing to lower internal friction.
- Range of wall thickness choices to meet variety of compression strength specified.
- Standard Interference Fit / Push fit socket systems & Elastomeric Ring fit socket socket system

Range	20mm to 315 mm O.D. Other sizes available on request
Colours	Black , Blue, Grey, Red & others colours per standards / choice
Supply Length	Straight Lengths 6 /12 mtrs & Coils for HDPE sizes upto 110 mm O.D.
Expected Life Span	50 Years +
Suited Temperature range	-15°C to + 60°C
Raw Material Grade	PE 63UV, PE80, PE100, as per specifications
Standards	IS 4984 (HDPE), ASTM F2160, NEMA TC7, IS 4985 (PVC), BSEN 61386, UL 651B etc.



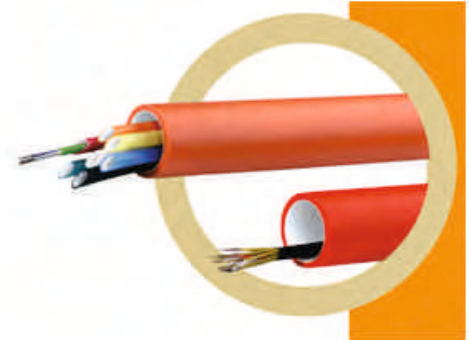
INNOVATIVE MICRO DUCTING SOLUTIONS FOR FTTx



Under technology transfer from its erstwhile partners Emtelle U.K., Parixit offers innovative & versatile Micro ducting systems & solutions for FTTx. Easier, quicker, more efficient and extremely flexible, Micro technology calls for Blowing / Jetting / Pulling of Micro O.F. Cables in small size PLB lubricated microducts offering deeper fiber penetration, scalability & cost-effectiveness. Microducts are most ideal for enhancing capacity in existing routes & maximizing U/G space utilization.

Typical Applications:

- Fibre-to-the-Home, Multiple Dwelling Units (MDU), In-Building, Fibre to the cabinet
- Smart Cities, City/Metro Networks, Long Distance Networks, Campus/ Business Park
- Mobile Mast Connections, Telemetry and Intelligent Transport systems
- Rail, Motorway, 5G & Wifi antennas
- Wind farms, Solar Farms, Cable TV, I.P. Security etc.



Microducts provide versatility, flexibility & scalability to cater to ever increasing Bandwidth demand, maximizing ROI by aligning Network expansion to demand increase. Made from 100% virgin PE with inner layer of super slick silicone lining (ribbed or smooth), Microducts provide multiple pathways to pull / blow micro O.F. cables (6 to 288 fiber) creating or ramping up desired capacity.

- Compliance to International / National standards like ASTM F 2160, IEC, TSEC etc.
- LSZH or Riser Rated for Inside Buildings as per IEC, UL & similar specifications
- Option of factory installed pull-string for IBS & Drop fiber applications

Microducts generally are 2 types

- **Direct Buried (DB)** : Thick walled suitable for direct burial for connectivity to buildings, homes, street cabinets etc from the Main Fiber ring deployed through slit / micro trench underground.
- **Direct Install (DI)** : Thin walled for installation through existing ducts/conduits (Empty or with resident cable), used for upgradation of fiber network capacity or fiber reticulation inside buildings



TYPICAL MICRO DUCT SIZES & FIBER FILL RATIOS						
Direct Buried (DB) OD/ID (mm)	16/12	14/10	12/8	10/6	8/5	7/4
Direct Install (DI) OD/ID (mm)	14/11.5	12/10	10/8	8/6	7/5.5	5/3.5
Fiber Count (# of Fibers)	Up to 288	Up to 144	Up to 96	Up to 72	Up to 48	Up to 12
Fiber Cable OD (mm)	6.5 -10	4.8-7.5	4.0-5.5	2.5-4.0	2.5-3.0	1.6-2.0

MICRODUCTS - APPLICATIONS

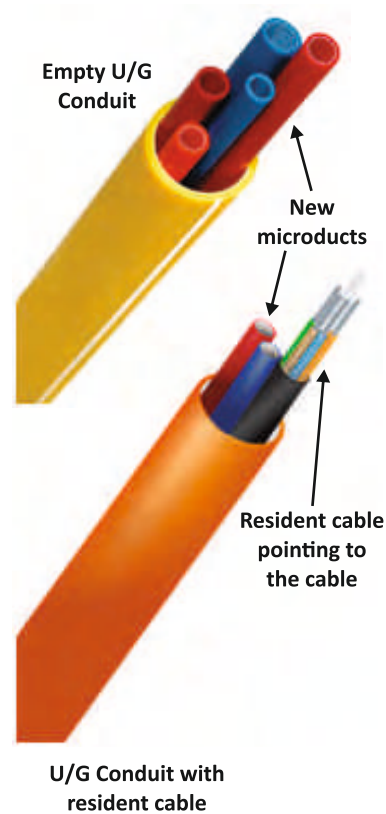
Underground city networks are choked & fresh digging is prohibitively costly & time consuming. It is also not easy to obtain ROW permissions due to presence of underground utilities. Limited space availability in spare conduits, if there, is often short lived due to continued demand of new fiber. Microducts offer a sustainable, quick and low cost solution to these challenges being faced by network builders and are very useful in low cost capacity expansion through following 2# well proven applications :

Maximizing Capacity in Spare Conduits/Ducts

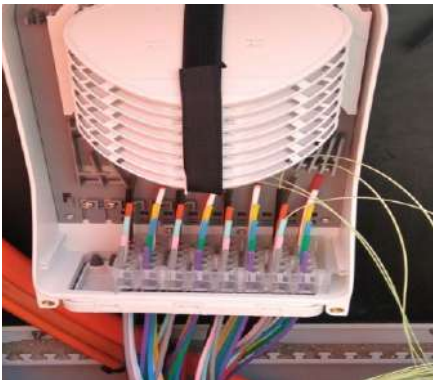
- Populating existing spare conduits with multiple microducts, multiplying conventional capacity manifold through this new-age technology
- Micro ducts of various sizes (depending on fiber count needed) can be easily pulled through or Bundle Jetted (blowing) from one manhole to the other creating multiple pathways
- Micro Cables of latest technology are pulled/blown through microducts giving desired capacity
- Capacity ramp up is atuned to demand growth and is in sync with latest fiber technology
- Microducts create underground real estate value ,by catering to future growth demand of Wireline networks

Ramping up existing Fiber capacity in Conduits with Cables

- Utilizing space around existing O.F. Cable in U/G ducts, multiple microducts can be installed creating pathways for additional capacity
- Microducts are installed (Pulling/Blowing) through existing manholes obviating any need of fresh costly digging
- Significantly reduce construction costs & time
- Micro O.F. Cables are blown/pulled through these new microducts ramping up capacity of underground choked routes



Existing Duct Type	Instalation Distance	Approx No of Micro ducts through existing U/G Ducts		
		12/10 mm	10/8 mm	7/5.5 mm
40 mm (Spare Empty Duct)	Cities (300-500 Mtrs) Backbone (1000 Mtrs)	4	7	10
40 mm (with 12 mm Resident cable)			4	6
40 mm(with 15 mm Resident cable)			3	5



SmartPath

Micro Duct pathways for FTTx

SmartPath are bundled microducts in sizes ranging from 5mm to 16mm O.D., bundled with PE over sheath at factory in multi pathways (2 way to 25way).

SmartPath is available in several types, **Direct Buried, Direct Install & LSZH** making them ideal for diverse applications like Backbone, City, Campus & FTTH networks. They can also be customized to meet specific environmental requirements like **anti-termite, anti-rodent, Traceability** etc.



Thick walled Direct Buried SmartPath (DB)

- Thick walled Microducts are bundled under thin protective PE outer-sheath
- Best for building Scalable & Future-Proof FTTx
- Deployment through HDD, Ploughing, Micro-trenching, Open cut etc
- High crush resistance & impact strength
- Continuous supply lengths of 250-1000 mtrs
- Options of Traceability feature & rip cord
- Significant savings compared to traditional design (> 30%)
- Best suited for multi-operator/user environment based on leasing model where IP1 players / Neutral hosts enjoy quick ROI



Thin walled Direct Install SmartPath (DI)

- Thin walled microducts bundled for installation inside existing conduit space/riser shaft etc.
- Protection is offered by outer main duct, Optimized design due to thin wall saves costs
- Inside Building / MDU applications on riser rated, LSZH spec complying to IEC, UL standards
- Ideal for Last mile & drop cables through existing conduits in OSP environment & Indoor installations making buildings Fiber-Ready



Benefits of SmartPath Micro Technology

- Branch-outs anytime anywhere without splice joints (Microducts are spliced & not the cables)
- Link loss budget under control
- Scalable future-proof network
- Build as you grow; quick blowing of cables through spare microducts
- New Cables; in sync with latest fiber technology
- More Bandwidth per \$ / Rs spent



TYPICAL SCHEMATICS SMARTPATH (DB & DI)



1 Way



3 Way



4 Way



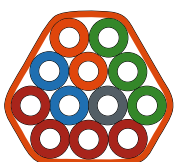
5 Way



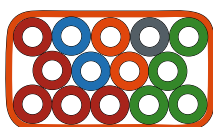
6 Way



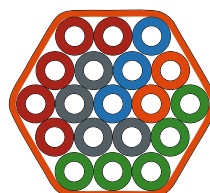
7 Way



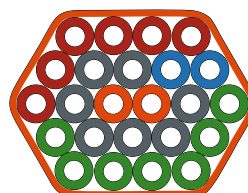
12 Way



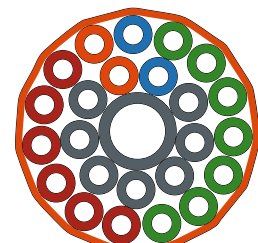
14 Way



19 Way



24 Way



24+1 Way

Bundle Type / Application	SmartPath (Popular Range)							
	2 way	3 way	4 way	7 way	12 way	19 way	24 way	25 way
	Typical MicroDuct sizes							
Direct Buried (DB)	7/3.5mm, 7/4mm, 10/6mm, 12/8mm, 14/10mm, 16/12mm							
Direct Install (DI)	5/3.5mm, 7/5.5mm, 8/6mm, 10/8mm, 12/10mm, 14/11.5mm							
Form of Supply	On Steel reels, Wooden drums or in Coils. Supply length of 1000-2000 mtrs with options of customized lengths							
Expected Life Span	> 50 years							
Suited temperature range	- 20°C to + 65°C							
Standards	Latest TSEC GR , ASTM F2160, DIN 8074, EN12201, IEC, BSEN							
Special Application Features	LSZH, Anti - Termite, Anti-Rodent, Riser Rated							
Colours/Marking/Options	Colours & Marking customized and optional features of tracer wire, Rip Cord							

SmartPath : The End to End FTTx solution

SMART CUSTOMISED PRE – LOADED MICRO DUCT SOLUTIONS

Smart Pre – loaded Micro cable in a Micro duct

Key Highlights

- Micro cable - Fiber Capacity - 2f/6f /12f / 24f with upto 4.8mm outer diameter of micro cable
- Smart Pre Loaded Air Blown Fibre
- Fiber Type - G652D / G657 A2
- Supplied length - As per Site Requirements
- Specialized smart product for Last Mile Connectivity which works well in congested spaces.
- Facilitates Ultra Faster Roll out of network with less manpower
- Less prone to fiber losses which usually are incurred during cable pulling into pipes.
- Cable Network Easily upgradeable with out disturbing other Networks
- Cable Inventory management & Operation of cable installation at site is completely eliminated
- Cost effective solution as compared to conventional use of Standard cable and
- PVC pipes/ HDPE ducts.
- Fire Retardant and Rodent resistant variable also available .
- Suitable for application like Fiber connectivity to Wind turbines & Fiber Optic Perimeter Intrusion detection System & Fiber to Tower connectivity



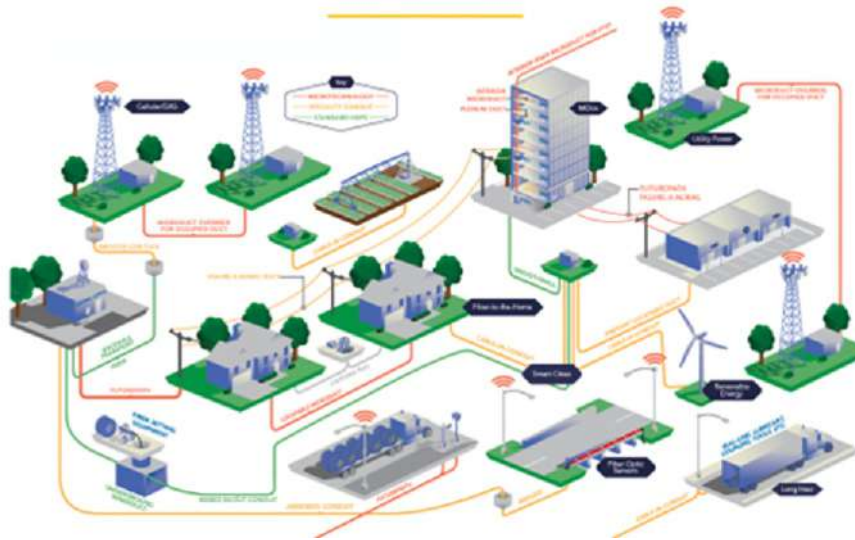
Smart Pre – loaded Air Blown Fiber / Fibres in a Micro duct

Key Highlights

- Air Blown Fiber with 2f/4f/6f/12f capacity
- Preloaded as single strand or multi strands in a micro duct.
- This Smart Solution engineered to increase network design flexibility, enhance longevity, and actually reduce the maintenance costs of network in the long term
- Epitomizes the Concept of Spice less Drop Network
- Less Splice Points significantly improves robustness of Network
- Using the spare capacity of fiber as and when desired without disturbing the live network.
- Fire retardant and rodent resistant
- Best Suited for Home fiber connectivity in High Rise residential complex and Dense fiber network deployments.



SmartPath-The optimal FTTx solution



ACCESSORIES & TOOLS - PLB HDPE DUCTS



ACCESSORIES & TOOLS - MICRO TECHNOLOGY





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