

# AKSH



**Vision**  
To become a global leader  
in enabling simple  
innovative smart living.

**Mission:**  
Strive to be most efficient  
OF and OFC producer  
through innovation

## AKSH OPTIFIBRE LIMITED

*We smarten up your life.®*

## Introduction

Envisaged in 1986 with a sole purpose of providing cutting edge in-house technology solutions in the domain of Optical Fibre, AKSH OPTIFIBRE LIMITED, has emerged as a leading global player and the world's only integrated manufacturer of Optical Fibre, Optical Fibre Cables and Fibre / Aramid Reinforced Plastic (FRP / ARP) rods.

Aksh, specializes in manufacture of various Optical Fibre Cables like aerial, duct, armoured / unarmoured, special application cables, indoor / outdoor FTTH, drop cables etc in compliance with International ITU-T standards. Aksh's unique capability, adopted via backward integration, has helped on cost effectivity vide in-house manufacture of two critical raw materials i.e, Optical Fibre and FRP / ARP rods which alone constitutes 70% cost of Optical Fibre Cables.

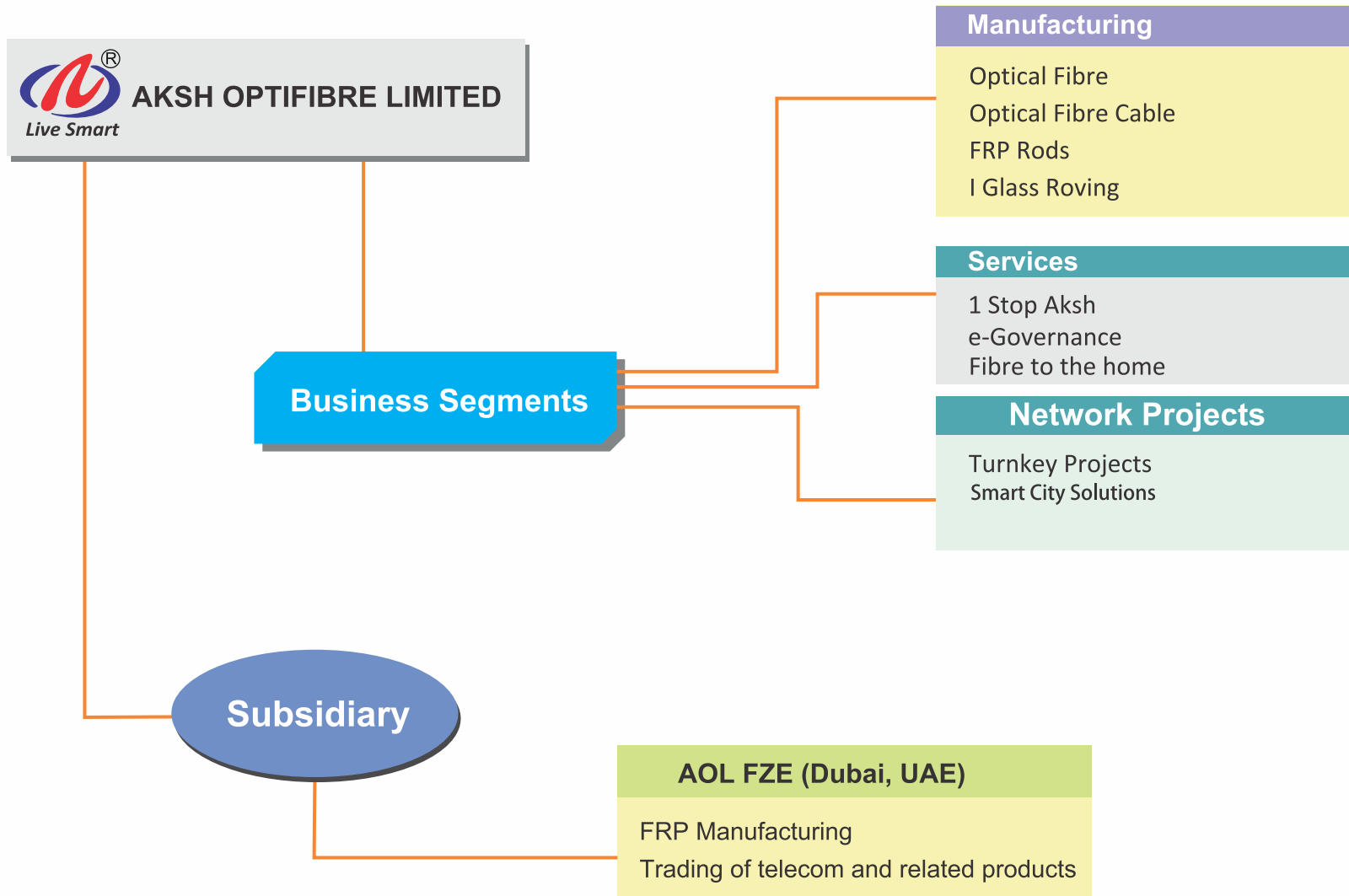
Existing facilities are being modernized and expanded for doubling the capacities of all three product lines viz., Optical Fibre, Optical Fibre Cables and FRP / ARP rods. The Services vertical, in addition to providing turnkey solutions, also supports e-Governance & limited Banking activities via "1StopAksh" ( Kiosks) to enable smarter living Aksh has ventured into new products namely, Ophthalmic Lenses and LEDs. The Ophthalmic Lenses would be a green field project that shall be commercialized by early 2017 whereas, Aksh has commenced supply LED Blub and Tubelight for both domestic and industrial use.



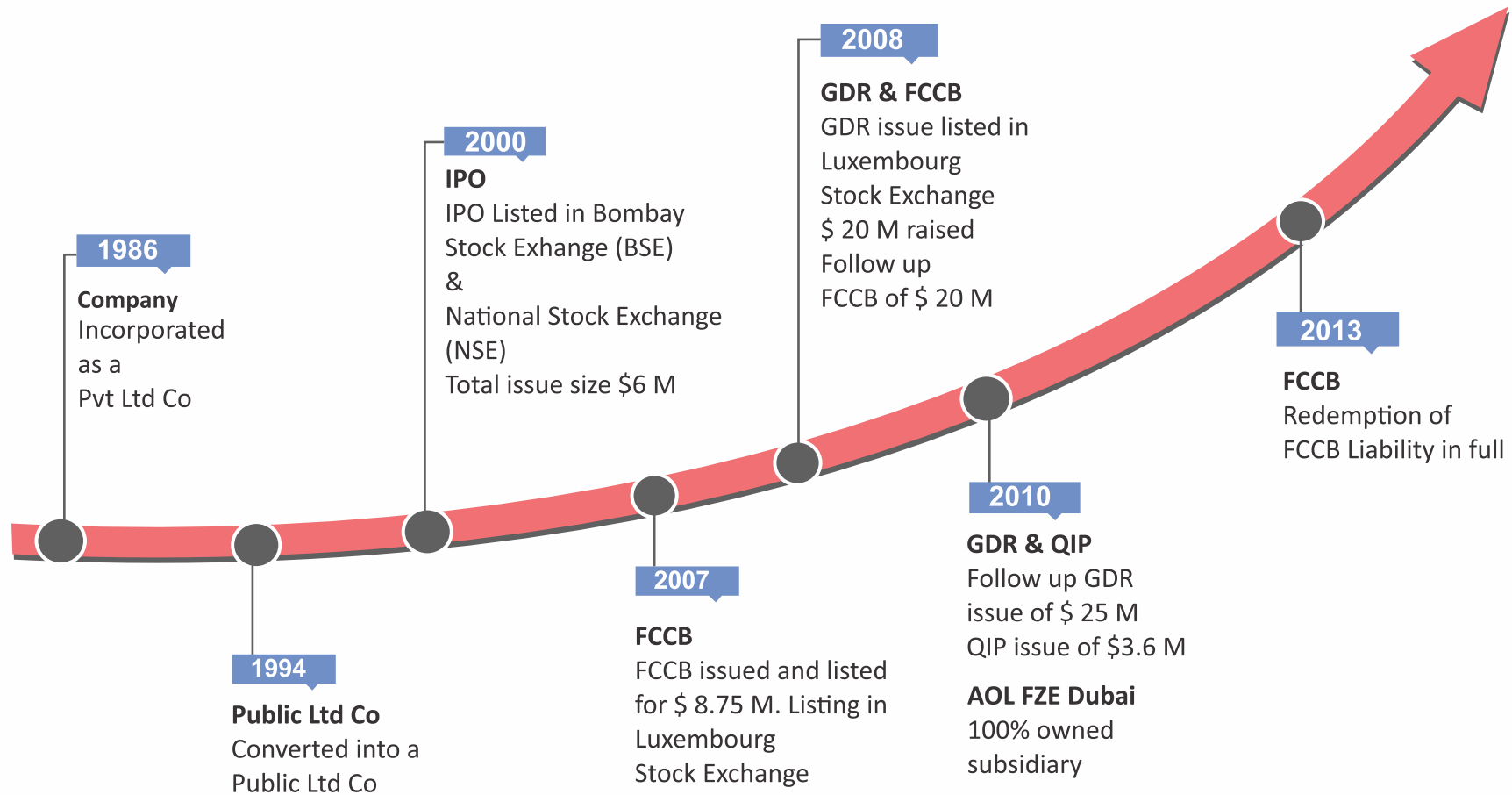
Aksh has been a leading provider of connectivity, communication and data transmission solutions across multiple segments for over the last three decades. Aksh values its customers as business partners and considers their success and long-term association as a prerequisite for success. Aksh is blessed with a number of esteemed clients cutting across boundary lines, inducing value chain supremacy in over 60 countries across 6 continents.

Aksh has a strong human resource centre with more than 600 employees. With the ever changing needs of the customers and ever-growing volumes, Aksh has maintained and upheld the concepts of Value Engineering and Product Enhancement.

## Businesses and Subsidiaries

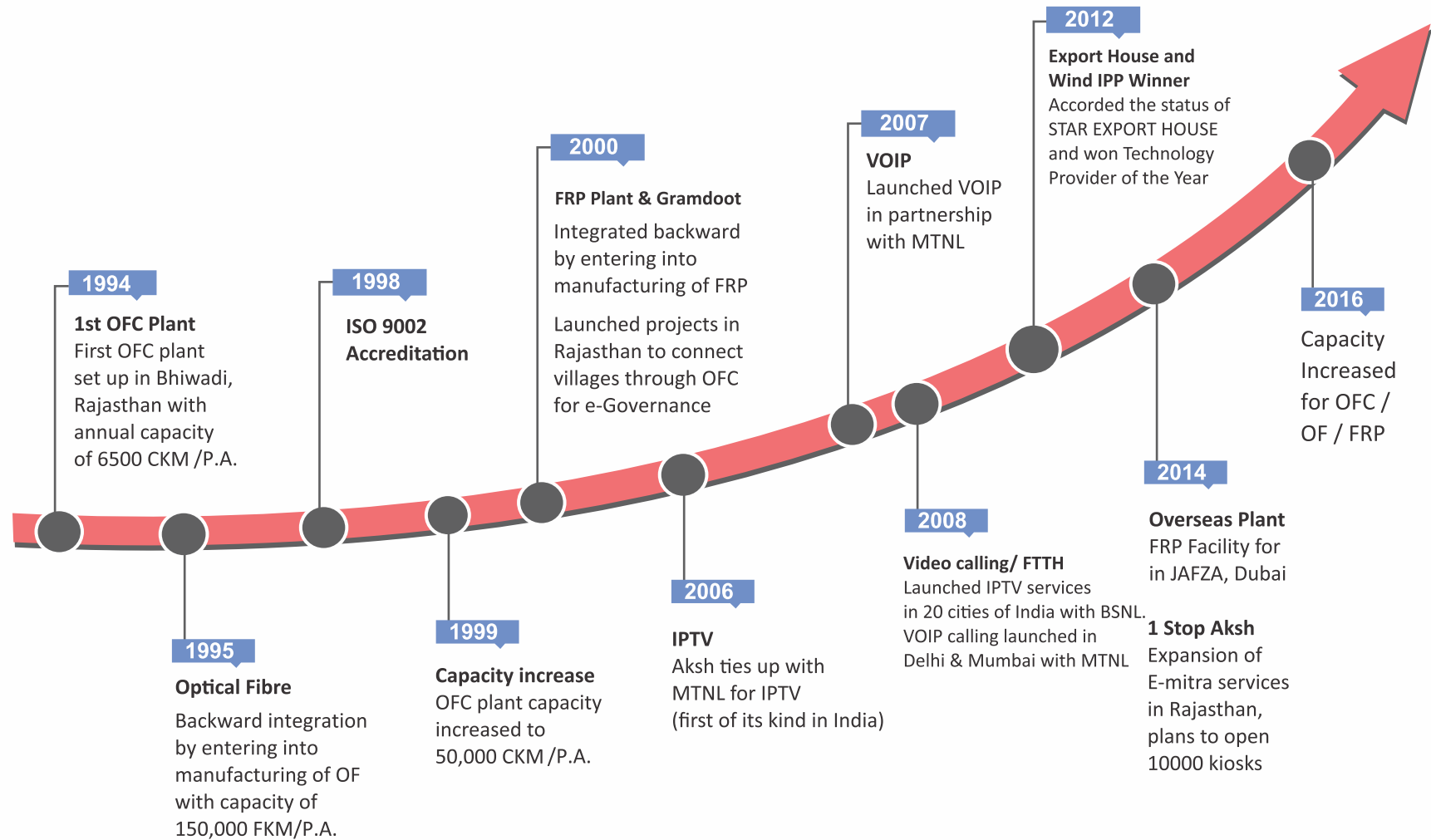


## Major Financial Milestones





# Major Operational Milestones



# Value Chain Supremacy

Aksh has expertise not only in design, manufacture, installation, testing & commissioning of OF, OFC & FRP / ARP but also extending beyond by creating support for e-Governance solutions across geographies

With close to over three decades of experience taken in conjunction with unmatched expertise, Aksh has earned recognition in providing turnkey solutions of ADSS & Duct Cable, end to end FTTH solution with IPTV

Besides India, Aksh has won acclaim for its successful completion of turnkey projects in Mauritius, Bhutan and Nepal making it a front runner for cost effective cutting edge technology solutions across the value chain

## BHUTAN



Aksh Executed turnkey live line Installation of 2600 Km (Phase I – 1200 Km, Phase II – 1400 Km) of All Dielectric Self Supporting (ADSS) optical fibre cable by Bhutan Power Corporation Limited (BPCL). for connecting all District headquarters & 205 Gewogs (Group of Villages) under National Broadband Master Plan to achieve 100% connectivity of the country. The entire project has been successfully commissioned

## MAURITIUS PROJECT



Aksh has received contract from Bharat Telecom Limited Mauritius to supply and install FTTH triple play equipments that required installation of 800 Km of optical fibre cables and integrating the same with FTTH services to support customer base of 10,000.

- Bharat Telecom limited has License to run triple play on FTTH in Mauritius.
- Delivering complete FTTH technical know how with Fibre optic cables, GEAPON OLT, ONU & accessories.
- Services started in July 2013.

## E-MITRA



e-Mitra is an ambitious e-Governance pioneered by Government of Rajasthan, that is being implemented in all 33 districts of the state using PublicPrivate Partnership (PPP) model for convenience to citizens in availing various services of the Government and Private Sector under a single roof at their door step using an e- platform. This has been made possible by Aksh vide its numerous Kiosks installed across Rajasthan wherein it has provided access to remotest parts of the state. It's aptly named as "1StopAksh". This model is being replicated by Aksh in other states too keeping in line with Government of India's initiative of providing access to all for availing of services

- E-Mitra services are delivered via Common Service Center kiosks in Urban & Rural Areas.
- Kiosks provide an access to integrated services of various departments

## Facilities of Excellence

- ◆ Presently, Aksh owns 3 State of Art manufacturing facilities, 2 located in the picturesque state of Rajasthan, India and 1 at ZAFZA, Dubai.
- ◆ The manufacturing facility located at Bhiwadi, Rajasthan specialise in manufacture of Optical Fibre & Optical Fibre Cables.
- ◆ The facility located at Reengus, Rajasthan specialises in production of FRP / ARP rods.
- ◆ To meet the increasing demand of FRP Rods, a wholly owned subsidiary has been established at Dubai, UAE
- ◆ The manufacturing facilities are supported by an array of testing facilities that are designed to meet global test standards ITU-T, Bellcore, IEC & BS.

These laboratories have testing facilities for all kinds of optical, geometrical, fibre reliability and environmental testing

- ◆ Quality control and assurance is an integral part of Aksh's manufacturing process and every raw material is subjected to physical & chemical tests.
- ◆ Maintaining utmost quality standards and continual efforts to adapt to newer technologies has always been the prime driver of Aksh. In recognition of attaining the highest standards both in quality and manufacturing processes, the facilities in Bhiwadi and Reengus along with the plant at Dubai have been certified by ISO from Underwriters Laboratories, USA.
- ◆ Aksh has emerged as the global leader for supply of FRP / ARP rods. AKSH has also won accreditation from international agencies viz., UL & CE in 2011. In order to cater to the growing demand for its FRP portfolio, it has recently set up a facility at Jebel Ali, Dubai with commercial production having commenced from 2015.

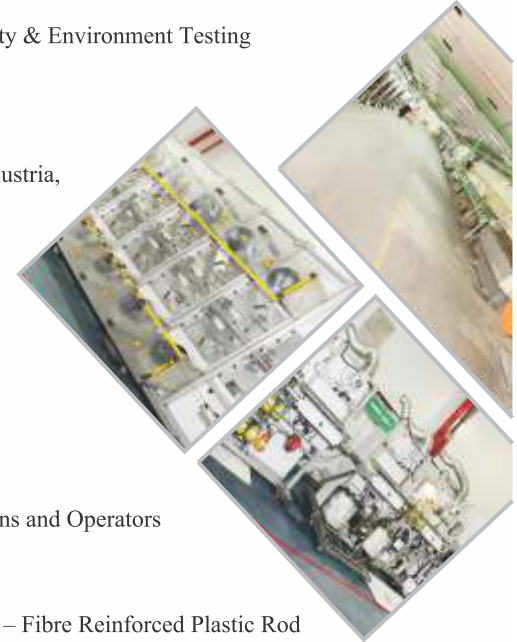


*We smarten up your life.®*

# Plant and Machinery

Aksh has well equipped design & development department with cutting edge capabilities for Optical, Geometrical, Mechanical, Reliability & Environment Testing (for reliability & life test)

- ◆ World class infrastructure with five fibre draw towers from Nextrom, SG Controls, Optec and Nokia.
- ◆ State of the art machinery from Rosendahl-Austria, AFA-USA, CAB Machine-Switzerland, Gauder-Belgium, Medek and Schorner-Austria, Royle-USA, Nokia-Finland for Optical Fibre Cables.
- ◆ State of Art Latest Machine to manufacture 12F Ribbon with Online Fibre Colouring as well as Ribbonising in single process
- ◆ Well equipped R&D and Quality department
- ◆ Stringent quality control on each and every stage
- ◆ Testing and Quality assurance equipment from Photon Kinetics, PE Fibreoptics, UK and Anritsu Corporation, Japan.
- ◆ Testing facilities as per global test standards ITU-T, Bellcore, CCITT, IEC & BS
- ◆ Strong human resource centre with more than 600 employees including Engineers, Management Professionals and Trained Technicians and Operators
- ◆ The overall capacity for our products :
  - ◆ 3 Million Fibre Kilometer – Optical Fibre Cable
  - ◆ 4.8 Million Fibre Kilometer – Optical Fibre
  - ◆ 3 Million rod Kilometer – Fibre Reinforced Plastic Rod



## Dispatch and Packaging

- ◆ Pre inspected goods with all technical reports
- ◆ Export worthy packaging
- ◆ Available in different lengths on drums
- ◆ Palletisation as per customer requirement
- ◆ Pre fumigated containers
- ◆ Maximum utilisation of container space





# Smart Core Duct Cable

ALL DIELECTRIC METAL FREE CABLES



## FEATURES / APPLICATIONS

- ♦ Suitable for blowing in ducts / PVC pipes
- ♦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 International standards

OUTER SHEATH (PE)

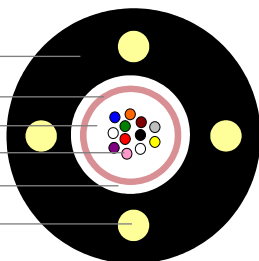
LOOSE TUBE WITH FIBRES

FILLING JELLY

OPTICAL FIBRE

GLASS YARN REINFORCEMENT

FR.P. ROD



## VARIANTS AVAILABLE

- ♦ Fibre Options : SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ♦ Nylon / LSZH / FRPE / PE as outer jacketing material
- ♦ Dry Core construction (non jelly) is optional
- ♦ Rip Cord for easy removal of sheath
- ♦ Composite design with various types of fibres (SM & MM)
- ♦ Metallic strength member option
- ♦ Suitable customization
- ♦ High Fibre count upto 1152F cables with ring marking / ribbon options
- ♦ UV & fire resistant sheath material option



## (A) UNITUBE DESIGN

Loose tube containing optical fibres and jelly is centrally located. Non metallic strength members (FRP Rods) are embedded in the outer sheath for protection and strength

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 12	7.5	46	1000	500	2000	75	150
14 to 24	9.0	68	1000	500	2000	90	180



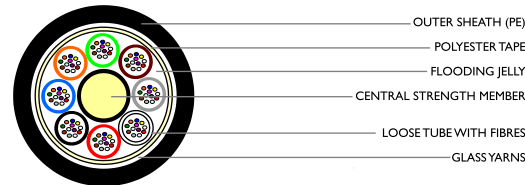
# Smart Core Duct Cable

ALL DIELECTRIC METAL FREE CABLES



## (B) MULTITUBE DESIGN

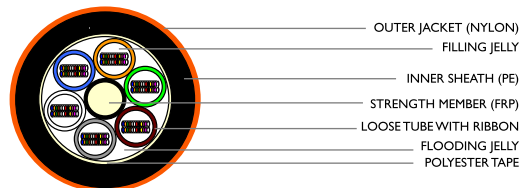
Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. The cable core is wrapped with water swellable tape & yarns for prevention of water-ingress. The cable is sheathed with polymer (HDPE / LSZH / FRPE) and Impregnated glass yarn are provided for additional strength and longevity in the field.



FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 72	11.5	110	2000	1000	2000	115	230
74 to 96	13.0	145	3000	1500	2000	130	260
98 to 678	16.5	200	4000	2000	3000	165	330

## (C) RIBBON FIBRE DESIGN

Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. The cable core is wrapped with water swellable tape & yarns for prevention of water-ingress. Impregnated glass yarns are provided for additional strength and longevity in the field. The Ribbon cable is suitable for high fibre count and reduces splicing time.



FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 96	19.0	285	6000	3000	2000	190	380
98 to 144	20.5	350	6000	3500	2000	205	410
196 to 288	25.0	520	8000	4000	2000	250	500
290 And Above	30.0	700	12000	6000	2000	300	600



We smarten up your life.®

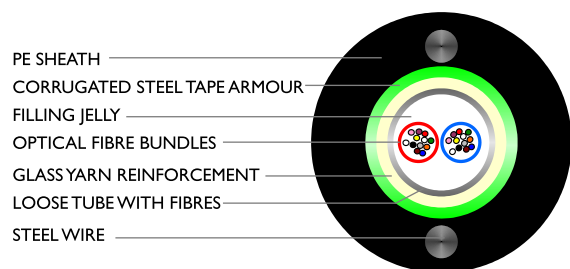
# Smart Core Armoured Cable

DIRECT BURIAL INSTALLATION



## FEATURES / APPLICATIONS

- ♦ Suitable for underground installation due to robust construction
- ♦ ECCS tape armouring provides excellent rodent protection
- ♦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards



## VARIANTS AVAILABLE

- ♦ Fibre Options : SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ♦ Nylon / LSZH / FRPE / PE options as outer jacketing option
- ♦ Dry Core construction (non jelly) is optional
- ♦ Rip Cord for easy removal of sheath
- ♦ Composite design with various types of fibres (SM & MM)
- ♦ Metallic strength member option
- ♦ High fibre count (up to 1728F) with ring mark / ribbon option
- ♦ Customized designs are available on request
- ♦ Steel Tube & Helical Tube armoured cable option
- ♦ The cable is 100% rodent proof
- ♦ UV Resistant, Anti Termite options

## (A) UNITUBE DESIGN

Loose tube containing optical fibres and jelly is centrally located. Additional glass reinforcements are applied to provide high tensile strength and cushion loose tube. Armouring of corrugated steel tape enable high crush resistance and tensile strength capabilities. Non metallic strength members (FRP Rods) / Steel wires are embedded in the outer sheath for extra protection and strength

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 12	9.0	85	2000	1000	4000	90	180
14 to 24	10.0	100	2000	1000	4000	100	200



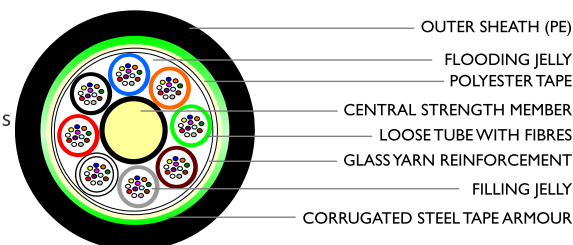
# Smart Core Armoured Cable

DIRECT BURIAL INSTALLATION



## (B) MULTITUBE DESIGN – SINGLE SHEATH

Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. The cable core is wrapped with water swellable tape & yarns for prevention of water-ingress. Cable sheathing with polymers (HDPE / LSZH / FRPE) and Impregnated glass yarn along with corrugated steel tape are provided for additional strength and longevity in field.



FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 72	13.0	155	4000	2000	4000	130	260
74 and Above	15.0	215	5000	2700	4000	150	300

## (C) MULTITUBE DESIGN – DOUBLE SHEATH

Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. The cable core is wrapped with water swellable tape & yarns for prevention of water-ingress. Cable sheathing with polymer (HDPE / LSZH / FRPE) and over it Impregnated glass yarn along with corrugated steel tape are provided for additional strength and longevity in the field. UV Resistant outer sheath is provided for outdoor application.

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 72	15.0	215	4000	2000	4000	150	300
74 and Above	18.0	300	6000	3000	4000	180	360



We smarten up your life.®



# Smart Core ADSS Cable

ALL DIELECTRIC SELF SUPPORTING METAL FREE CABLE



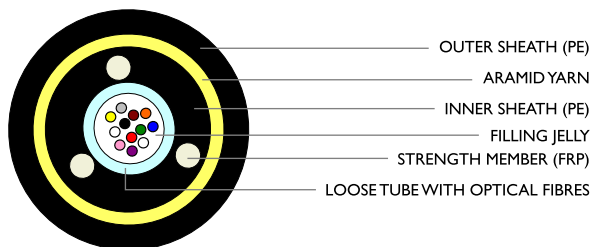
## FEATURES / APPLICATIONS

- ✦ light weight cable designed for aerial installation with span up to 1000m & above
- ✦ Suitable for hilly & mountainous terrains for use in close proximity to high voltage line & provide lightening immunity
- ✦ Ideal for ice loading & heavy wind areas
- ✦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards

## (A) UNITUBE DESIGN

Loose tube containing optical fibres and jelly is centrally located. A layer of non metallic strength member (aramid yarn) between inner and outer sheath provides extra tensile strength required for aerial installation. Non metallic strength members (FRP Rods) are embedded in the outer sheath for extra protection and strength

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 12	11.0	100	4000	2000	2000	110	220
14 to 24	12.0	120	4000	2000	2000	120	240



# Smart Core ADSS Cable

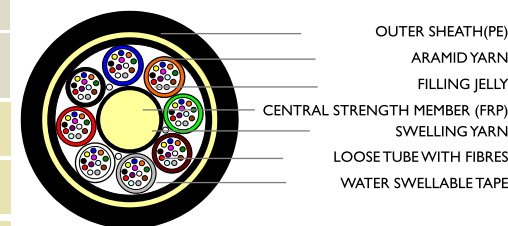
ALL DIELECTRIC SELF SUPPORTING METAL FREE CABLE



## (B) MULTITUBE DESIGN – SINGLE SHEATH

Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. The cable core is wrapped with water swellable tape & yarns for prevention of water-ingress. UV stabilized PE as outer sheathing material is used. Aramid reinforced yarns are provided for additional tensile strength and longevity in the field.

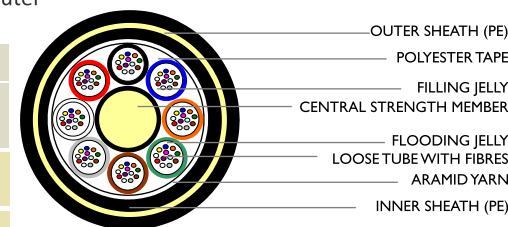
FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Upto 72	11.5	105	3000	1500	2000	115	230
Upto 96	14.5	160	4000	2000	2000	145	290
Upto 144	16.5	185	4000	2000	2000	165	330



## (C) MULTITUBE DESIGN – DOUBLE SHEATH

Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. The cable core is wrapped with water swellable tape & yarns for prevention of water-ingress. Aramid reinforced yarns between inner & outer sheaths are provided for additional tensile strength and longevity in the field. UV stabilized PE material is used for inner & outer sheath

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
UP to 72	13.5	140	4000	2000	2000	135	270
Upto 96	15.5	200	4000	2000	3000	155	310
UP to 144	18.0	250	6000	3000	3000	180	360



# Smart Core ADSS Cable

ALL DIELECTRIC SELF SUPPORTING METAL FREE CABLE - FIGURE-8 CONSTRUCTION



## FEATURES / APPLICATIONS

- ♦ Offers exceptional strength and corrosion resistance for lashed aerial applications
- ♦ Suitable for heavy load conditions
- ♦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards

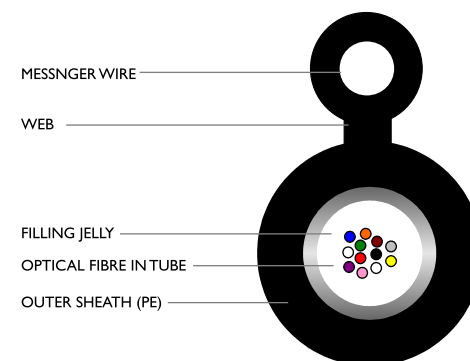
## VARIANTS AVAILABLE

- ♦ Fibre Options : SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ♦ Nylon / LSZH / FRPE / PE options as outer sheathing
- ♦ Wet Core construction (flooded core) is optional
- ♦ Rip Cord for easy removal of sheath available
- ♦ Composite design with various types of fibres (SM & MM)
- ♦ High fibre count (up to 768F) in ring mark / ribbon option
- ♦ Steel tape can be used for rodent protection
- ♦ Anti-Tracking, Anti Rodent, Anti Termite options available
- ♦ Customized designs are available on request

## (D) FIGURE-8 - UNITUBE DESIGN

Loose tube containing optical fibres and jelly are centrally located. A single / bunch of FRP rods (single / bunch steel wires) are sheathed with core to make the figure-8 construction ideal for aerial installation. UV stabilized PE material is used for outer sheath. Peripheral strength member can be aramid yarn / glass yarn.

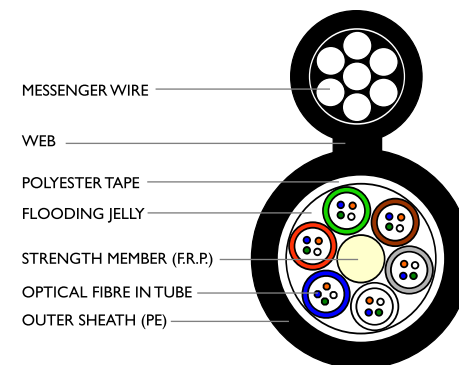
FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Upto 12	6.5 x 10.5	55	1500	800	2000	70	130
Upto 24	7.5 x 11.5	65	1500	800	2000	80	150



## (E) FIGURE-8 - MULTITUBE DESIGN

Loose tube containing optical fibres and jelly are S-Z stranded around a dielectric anti-buckling FRP rod, central strength member. A bunch of FRP rods (stranded steel wires) are sheathed with core to make the figure-8 construction ideal for aerial installation. UV stabilized PE material is used for outer sheath. Peripheral strength member can be aramid yarn / glass yarn

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Upto 72	9.5x17.5	125	5000	2500	2000	175	350
Upto 96	11.0x19.5	180	5000	2500	2000	195	390
Upto 144	13.5x22.5	220	6000	3000	2000	225	440



# Smart Core FTTH Cable

## FEATURES / APPLICATIONS

- Designed for air blown and micro-duct application
- Small, cost effective, lightweight cables containing maximized fibre capacity
- Low friction jacket design
- Used in FTTX applications (Access networks, Fibre to the Cabinet, Fibre to the Premises, Fibre to the Home, Fibre to the Networks, LAN, MAN, WAN)
- Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards

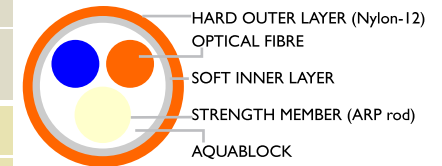
## VARIANTS AVAILABLE

- Fibre Options : SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- Nylon / LSZH / PE / PVC options as outer jacketing available
- Non-Metallic strength member options
- High fibre count (up to 288F) option available in ring / ribbon construction
- Customized designs are available on request

## (A) AIR BLOWN MICRO FIBRE CABLE

The cable is used for blowing into micro ducts. The loose tube contains fibres, aqua block and strength member (ARP Rod)

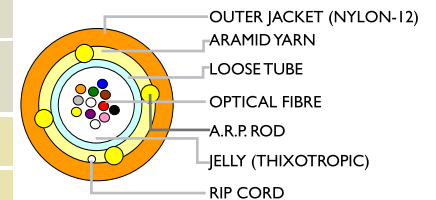
FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
2F	1.7	2.3	40	20	100	40	60
4F	1.9	2.7	40	20	100	40	60



## (B) AIR BLOWN MICRO – UNITUBE DESIGN

Strength members (ARP rods) are placed around loose tube to give added rigidity and tensile strength

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 12	3.8	11	800	400	1000	38	76
Up to 24	5.6	24	1000	500	1000	56	112

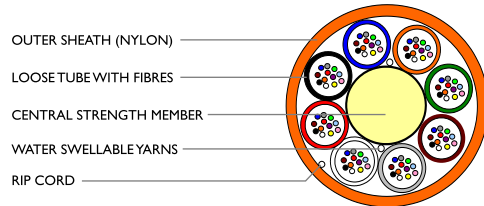


# Smart Core FTTH Cable

## (C) AIR BLOWN MICRO – MULTITUBE DESIGN

Loose tube containing fibres and water blocking jelly are S-Z stranded around a central strength member and jacketed with Nylon-12 material for ease of blowing

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 72	5.7	28	800	400	1000	57	114
Up to 96	6.9	45	1000	500	1000	69	138
Up to 144	8.9	70	1500	750	1000	89	178



# Smart Core Droplite Cable

## FEATURES / APPLICATIONS

- ✦ Small diameter and Light weight of cable which is easy to install
- ✦ Mainly used for in-building / aerial solutions
- ✦ Easier installation & usage
- ✦ Used for TPS (Triple play services)
- ✦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards

## VARIANTS AVAILABLE

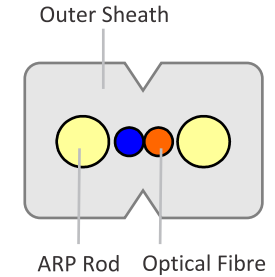
- ✦ Fibre Options : SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ✦ Composite design with various types of fibres (SM & MM)
- ✦ Metallic strength member option available
- ✦ High Fibre Count designs available on request
- ✦ Customized designs are available on request

# Smart Core Droplite Cable

## (A) DROPLITE DESIGN

Bare Fibres are embedded in LSZH sheath between 2 ARP Rods which can be taken out easily from the cable sheath

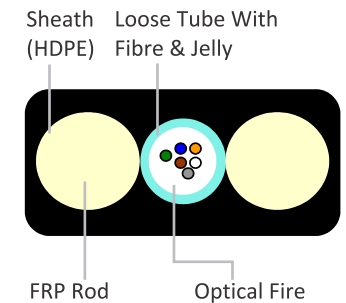
FIBRE COUNT	DIAMETER (mm) NOMINAL		WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
	Width	Height		Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
2	2.0	3.1	10	200	100	500	30	60



## (B) DROPLITE FLAT DESIGN

The loose tube containing fibres and jelly is protected by two FRP Rods and sheathed with UV resistant HDPE

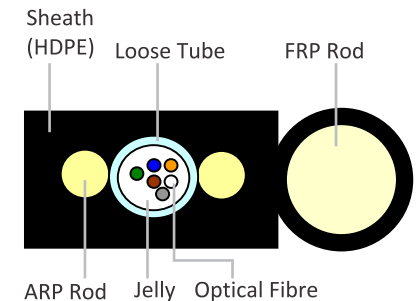
FIBRE COUNT	DIAMETER (mm) NOMINAL		WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
	Width	Height		Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 12	7.2	3.5	32	1200	600	2000	100	200



## (C) DROPLITE FLAT DESIGN-JP

The loose tube containing fibres and jelly is placed between two ARP/FRP rods. One FRP / Steel Wire rod provides extra tensile strength for aerial installation. This is used for indoor / outdoor last mile application.

FIBRE COUNT	DIAMETER (mm) NOMINAL		WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
	Width	Height		Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 6	6.8	3.0	23	1200	600	1000	60	120
Up to 12	7.0	3.0	25	1200	600	1000	60	120





# Smart Core Indoor Cable

## FEATURES / APPLICATIONS

- ✦ Small diameter and Light weight cables, easier to install
- ✦ Used for TPS (Triple play services) used for computer data or TV links, home automation system, terminal link and internal connections
- ✦ For installation in duct or conduit or can be placed on a ceiling wall
- ✦ Easy to strip and terminate
- ✦ Aramid yarn reinforcement for ruggedized protection
- ✦ Flame retardant
- ✦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards

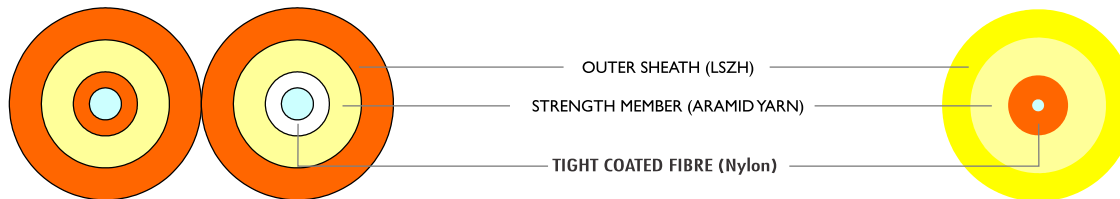
## VARIANTS AVAILABLE

- ✦ Fibre Options : SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ✦ LSZH / PVC / PE / PU as outer jacketing options
- ✦ Composite design with various types of fibres (SM & MM)
- ✦ Tight buffered coating material : Nylon / PVC / LSZH
- ✦ Glass / aramid yarns suitable for peripheral strength members
- ✦ Customized designs are available on request

## (A) SIMPLEX & DUPLEX DESIGN

The tight buffered cables are designed for indoor inter-equipment connections. High strength and good bending performance, easy to operate and splice. With tight structure, light weight, small dimensions and high tensile strength it facilitates flexible installation

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
SIMPLEX	3.0	8	300	150	500	30	60
DUPLEX MAXIZIP	6.0	16	600	300	500	30	60
SIMPLEX	2.0	4	200	100	500	30	60
DUPLEX MINIZIP	4.0	8	400	200	500	30	60



# Smart Core Indoor Cable

## (B) FLAT TWIN DESIGN

The tight buffered cables are designed for indoor inter-equipment connections. High strength and good bending performance, easy to operate and splice. With tight structure, light weight, small dimensions and high tensile strength it facilitates flexible installation

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
2	5.0	18	400	200	600	50	100
2	7.0	35	600	300	600	70	140

## (C) BREAK OUT DESIGN

The tight buffered cables are designed for indoor inter-equipment connections. High strength and good bending performance, easy to operate and splice. With tight structure, light weight, small dimensions and high tensile strength it facilitates flexible installation

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 4	7.5	55	600	300	500	75	150
Up to 6	8.5	72	600	300	500	85	160

## (D) TIGHT BUFFERED DESIGN

Tight buffers with Nylon upto 900 microns, strength member Aramid Yarns and overall jacket with LSZH. High strength and good bending performance, easy to operate and splice. With tight structure, light weight, small dimensions and high tensile strength it facilitates flexible installation

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 4	5.0	26	1000	500	500	50	100
8	5.8	32	1000	500	500	58	116
12	6.2	36	1000	500	500	62	124
16	7.5	52	1200	600	500	75	150
24	8.0	60	1200	600	500	80	160

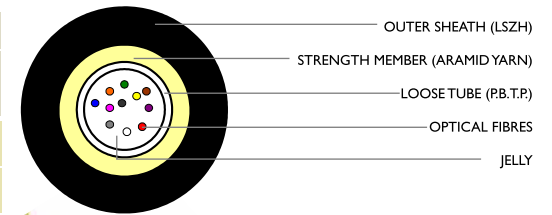


## Smart Core Indoor Cable

### (E) LOOSE TUBE DESIGN

Loose tube containing fibre filled with jelly surrounded by strength member aramid yarn and overall jacket of LSZH is provided. With tight structure, light weight, small dimensions and high tensile strength it facilitates flexible installation

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 12	5.8	33	1000	500	500	58	116
Up to 24	7.0	50	1000	500	500	70	140



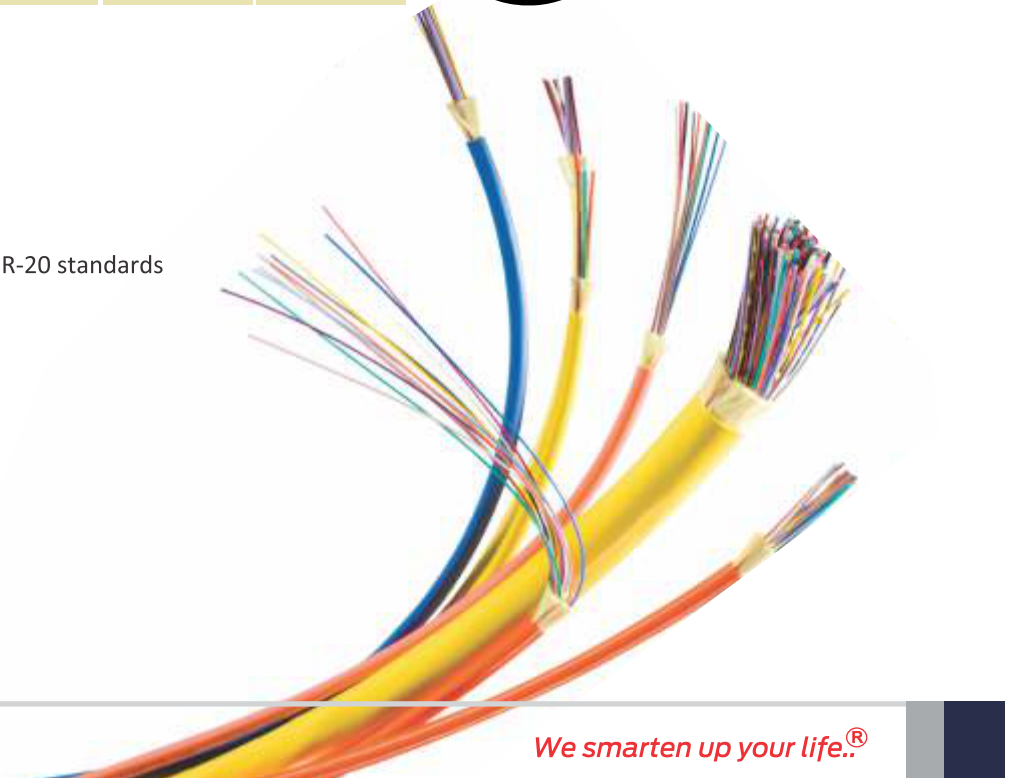
## Smart Core Hybrid Cable

### FEATURES / APPLICATIONS

- ♦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards
- ♦ Heat Resistant
- ♦ For communication, signaling & powering up instruments

### VARIANTS AVAILABLE

- ♦ Fibre Options: SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ♦ Copper conductors available as per specification
- ♦ Nylon / LSZH / PVC as outer jacketing options
- ♦ Glass yarns / aramid yarn as peripheral strength members
- ♦ Customized designs are available on request

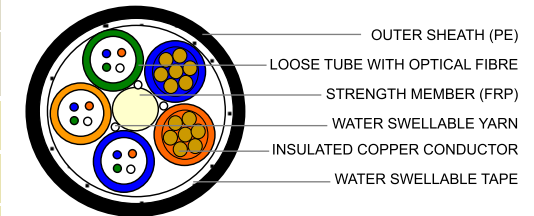


# Smart Core Hybrid Cable

## (A) HYBRID DESIGN

High performance optical fibres are placed in gel filled buffer tubes which are stranded around a dielectric central member. Water blocking tape is added to eliminate water ingress & migration. Peripheral strength members are included to provide appropriate pulling tension performance. An insulated pair of copper conductor is used as one of the stranding elements for power transmissions to energies line component

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Upto 12F & 2 copper conductor	12.0	140	2700	1000	2000	130	240
14 to 36F and 2 copper conductor	12.0	145	2700	1000	2000	120	240
48F and above and 2 copper conductor	13.0	160	4000	2000	2000	120	260



# Smart Core Special Application Cable

## FEATURES / APPLICATIONS

- ♦ Meets IEC 60794, EIA / TIA, ITU-T, EN 187000, RUS 1755.900 & Telecordia GR-20 standards
- ♦ Light weight suitable for aerial installations
- ♦ Rodent proof application
- ♦ Suitable for high load conditions



## VARIANTS AVAILABLE

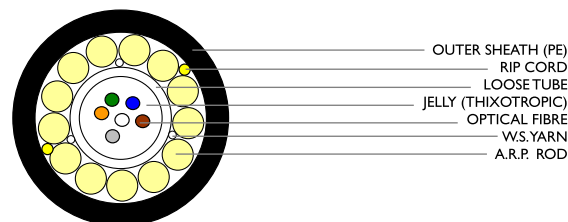
- ♦ Fibre Options: SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ♦ Copper conductors available as per specification
- ♦ Nylon / LSZH / PVC as outer jacketing options
- ♦ Glass yarns / aramid yarn as peripheral strength members
- ♦ Customized designs are available on request

# Smart Core Special Application Cable

## (A) ALL PURPOSE (13 ARP ARMoured) DESIGN

The loose tube containing fibres and jelly is protected by strength members aramid reinforced plastic rods. The ARP Rods make cable very flexible and provides good tensile strength and crush resistance. The cable can be installed on electric poles or directly buried or blown in ducts. The light weight and flexibility makes it ideal for FTTH applications

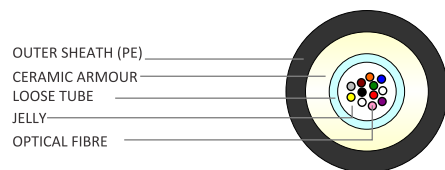
FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 12	6.0	25	800	400	2000	60	120



## (B) CERAMIC / PORCELAIN ARMoured DESIGN

The loose tube containing fibres and jelly is protected by dielectric rigid ceramic armour and sheathed with HDPE. The cable is non metallic, rodent proof, moisture resistant with very high tensile and crush resistance. The cable can be used for aerial, direct burial and duct installation

FIBRE COUNT	DIAMETER (mm) NOMINAL	WEIGHT (kg / km) NOMINAL	TENSILE STRENGTH (N)		CRUSH RESISTANCE (N / 10cm)	BENDING RADIUS (mm)	
			Installation (Short Term)	Operating (Long Term)		Temporary (10xD of Cable) Dynamic	Permanent (20xD of Cable) Static
Up to 12	8.0	60	1500	750	6000	240	320
Up to 12	6.0	38	1500	750	6000	180	240



# Tactical OFC

Tactical OFC provides good protection against contamination and damage in challenging environment. This cable is used for Military's tactical communication system.

Aksh is offering 2 smart solutions:

- **Tactical Armoured OFC**
- **Tactical Unarmoured OFC**

## Variants Available

- ♦ Fibre Options: SM (G652D, G655, G657 All variants), MM (OM1, OM2, OM3, OM4 All variants)
- ♦ Multiple Jacket Colors

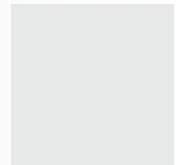
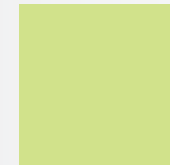
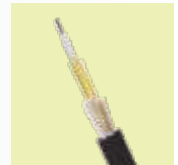
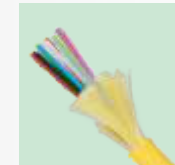
## Tactical Armoured OFC

### Features

- ▶ Perfect for live remote application
- ▶ Cut resistance, flame retardant polyurethane outer jacket
- ▶ High impact and crush resistance
- ▶ Durable in high traffic areas
- ▶ Highly flexible and light weight construction allows for multiple deployments
- ▶ All Kevlar strength members
- ▶ Performance in wide temperature range
- ▶ Field deployment in adverse conditions

### Application

- ▶ Remote Video Production & Broadcasting
- ▶ Temporary installation of critical communication lines where quick retrieval and re-use is necessary
- ▶ High Traffic Areas
- ▶ Security and Sensing applications



## Tactical Unarmoured OFC

### Features

- ▶ To be used in tough environmental conditions
- ▶ High impact and crush resistance
- ▶ Highly flexible and light weight construction allows for multiple deployments and easy installation
- ▶ All Kevlar strength members and PU outer sheath
- ▶ Performance in wide temperature range
- ▶ All purpose OFC – easy to install without any constraint of the topology (direct burial / on poles / duct)

### Application

- ▶ Runs smoothly in extreme environment with extreme temperature, dust, humidity, chemicals, fungus etc
- ▶ Field deployment in abusive conditions
- ▶ Multiple installations and reinstallations without any impact on the performance
- ▶ High Traffic areas
- ▶ Security and Sensing applications



# Spiral Armoured Cable (Anti Monkey Bite OFC)

## Features

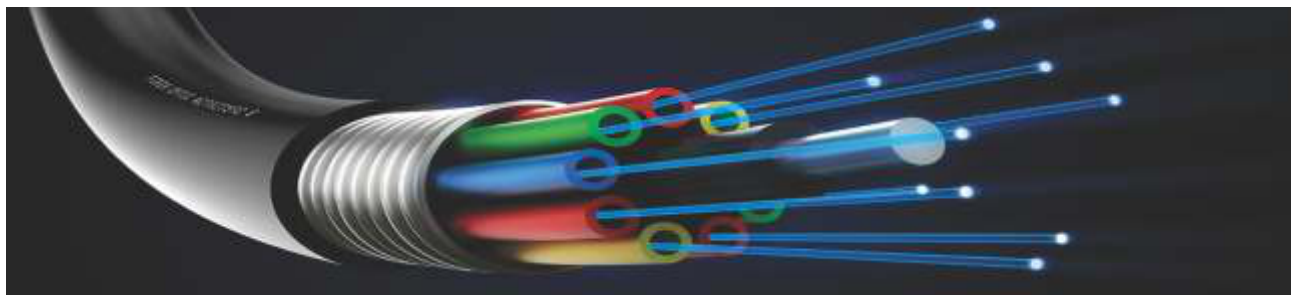
Spiral Armoured steel tape for extreme rodent protection (like squirrel, monkey etc)

Pressure resistance

Fully water-blocked and moisture blocking loose tubes

Easy installation having extremely high flexibility

Easy Operation, reliable and cost-effective



## Applications

FTTA & FTTH

Base station, BTS installation, BBU to RRU

Indoor/outdoor building cabling

Harsh environments application

Long haul networking

Direct burial and aerial lashing










## Enhanced Bandwidth

With leading Indian market share, Aksh boasts of strong customer base comprising state owned companies in India like BSNL, VSNL, MTNL, Railways, Defence etc. AKSH exports to a host of diversified destinations in USA, South America, Europe, CIS, Africa, and Middle East & Asia. Aksh has won two major international tenders.

Along with many international approvals, Aksh is also member of the FTTH council.

A deep sales and distribution network, both locally and globally, reaches satisfied customers in over 60 countries. In exports, Aksh has product dominance in multiple sectors including.

-  Military /Aerospace
-  Mining
-  Oil and gas
-  Telecommunications
-  Transportation
-  Utilities
-  Others (infrastructure, IT, and healthcare)

## Certifications and Approvals



For Aksh customer expectations are cornerstones of all our activity, providing a benchmark for our products, achievements and technical excellence. We measure success in terms of:

- ☒ Customer Satisfaction
- ☒ Quality of Processes
- ☒ Quality of Product
- ☒ On-time delivery
- ☒ Quality of Service

As an organisation, we believe that quality has no limits and consider quality improvement as a perpetual process, setting measurable goals and improving consistently. Our commitment to quality is made by all employees and is included as an integral part of their responsibility.

We operate our factories and plants according to internationally recognised quality assurance standards. Aksh conducts its business in compliance with applicable quality regulations, codes and standards and we confirm to following certifications & standards:

- ISO 9001-2008 & zISO 14001-2008
- CE Approval for optical fibre cables in Europe
- CACT Approvals of Optical Fibre as per ITU-T G652D, G655 & G657A
- CACT Approvals for FRP Rods & Impregnated Glass Yarns.
- TSEC Approvals of Self Supporting Metal Free Aerial OF Cable
- Metal Free Duct Cable, Metal Free Ribbon OF Cable (288F)
- BVQI certification of Bellcore GR 20 Telcordia specification
- Globe Telecom Approval in Philippines with D&B Accreditation
- ETISALAT-UAE: Approval for drop cables
- SIRIM Approval for supply of OFC in Malaysia

# Corporate Citizenship

Exporting to 60 Countries Across 6 Continents...



For Aksh, Corporate Social Responsibility is being catalyst for desired change. Through education, environment and other philanthropic efforts, we carry out a pledge towards building better future. While business dominates our economic agenda, we follow a socially positive agenda and work consistently to contribute to environment sustainability. We endeavour through various activities including environment and cleanliness awareness campaigns, cleaning and plantation drives.

**"MUSKAAN"** is an initiative taken by Aksh under CSR with Project Ekta for promoting girls education and primary education for weaker sections of the society.

**"Shiksha Hamara Swabhimaan"** is a campaign for upper primary education taking place at Parampara, Reengus.

**"Upvan"** Clean and Green Bhiwadi is the initiative taken by Aksh for improving environment sustainability in Bhiwadi.



***Our commitment and effort towards CSR has also been recognised and Aksh is a proud recipient of BMA Paryavaran Shree Awards.***

## Awards and Recognitions

- ▶ Frost and Sullivan – Best OFC Supplier
- ▶ Wind Insider – Network Technology Leader
- ▶ Government of Rajasthan – Technology Know How Facilitator
- ▶ CII – 5S Excellence Enabler
- ▶ DGFT - India – Star Export House Status
- ▶ Manufacturing Association – CSR Excellence
- ▶ Bhamashah Award - CSR Contribution



*We smarten up your life.®*

## AKSH OPTIFIBRE LIMITED

### Corporate Office

A-32, 2nd Floor,  
Mohan Co-operative Industrial Estate  
Mathura Road  
New Delhi- 110044.  
Telephone: +91-11-49991700/49991777  
FAX: +91-11-49991800

### Regd Office

F-1080, RIICO Industrial Area, Phase-III  
Bhiwadi - 301019  
Rajasthan India.  
Telephone: +91-1493-221333/220763  
FAX: +91-1493-221329



**E-mail:** [aksh@akshoptifibre.com](mailto:aksh@akshoptifibre.com)

**Website:** [www.akshoptifibre.com](http://www.akshoptifibre.com)

Manufacturing Facilities: Bhiwadi, Reengus and Dubai

*We smarten up your life.®*