DATWYLER TABLES

STANDARDS COMPARISON

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1 INTERNATIONAL STANDARDS STRUCTURE

ISO
International Standards Organisazion

CENELEC	IEC	TIA	CSA
European Committee for Electrotechnical Standardization	International Electrotechnical Commission	Telecommunications Industry Association	Canadian Standards Association

2 TIA vs IEC

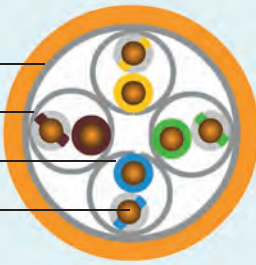| CATEGORY	TIA	IEC	FREQ. (MHz)	SPEED (bps)	LENGTH (m)	
					Permanent Link	Channel
Cat.6	✓	✓	250	1G	90	100
Cat.6$_A$	✓	✓	500	10G	90	100
Cat.7	X	✓	600	10G	90	100
Cat.7$_A$	X	✓	1000	10G	90	100
Cat.8.1	Cat.8	✓	2000	40G	24	30
Cat.8.2	X	✓	2000	40G	24	30

3 SHIELDED vs UNSHIELDED

Foil shield
Foil shield
Twisted pair
Conductor
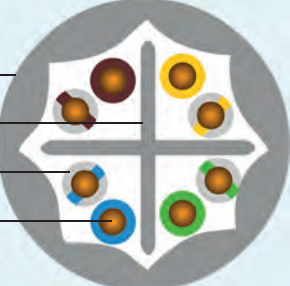
Outer sheath
Cross filler
Twisted pair
Conductor

PARAMETERS	CAT.6$_A$ F/FTP	CAT.6$_A$ U/UTP
Diameter	7 mm	8 mm +/-10%
Copper content	20 kg/km	24.4 kg/km
Weight	48.5 kg/km	66.2 kg/km
Electromagnetic compatibility	applicable	not applicable

4 FIBRE OPTIC CABLE

PARAMETERS	SINGLE-MODE	vs	MULTIMODE
Light source	Laser		LED / VCSEL
Distance	Access, medium/long haul network (>200 km)		Local networks (<2 km)
Attenuation	lower		higher
Bandwidth	infinite		limited
Wavelengths	1260 to 1650 nm		850 to 1300 nm
Cost	lower		higher

5 FIBRE OPTIC SINGLE-MODE CABLE

STANDARD	APPLICATION	ATTENUATION/km (1550 nm)	BEND RADIUS
G652.D	OSP / Drop cable	0.3	30 mm
G657.A1	Drop cable	0.3	10 mm
G652.D BLO	Drop cable	0.3	10 mm
G655	Links over 100 km	0.35	NA

6 FIBRE OPTIC MULTIMODE CABLE

TYPE	DIA	1 G	10 G	40 G
OM 1	62.5 / 125	275 m	33 m	NA
OM 2	50 / 125	550 m	86 m	NA
OM 3	50 / 125	900 m	300 m	100 m
OM 4	50 / 125	1,100 m	550 m	150 m

7 — P2MP GPON vs P2P

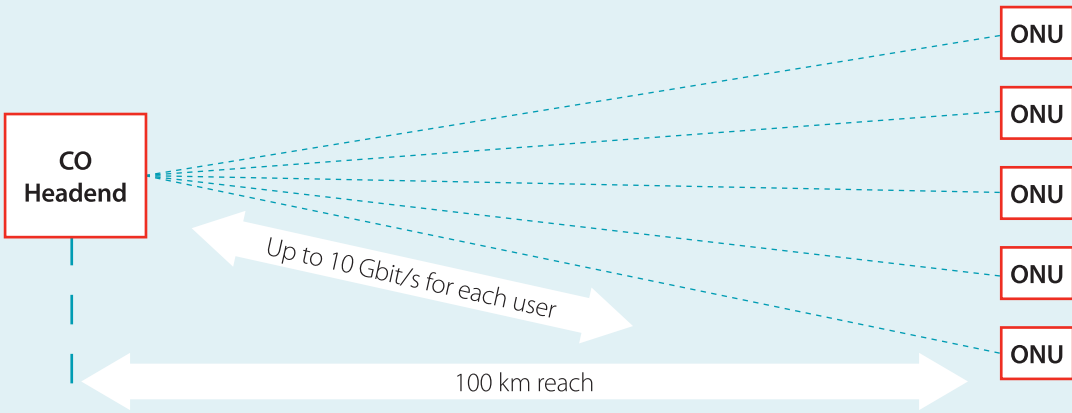| PARAMETERS	P2MP GPON	P2P
Feature	P2MP (Point to Multi Point)	P2P (Point to Point)
Speed	2.5 to 10 Gbit/s	100 Mbit/s to 10 Gbit/s
Bandwidth sharing	Shared bandwidth	Dedicated bandwidth
Security	Secured by encryption	Highly secure through private links
Configuration	complex	simple
Coverage distance	20 km	100 km
Implementation time	shorter	longer
Cost per subscriber	lower	higher

8 — P2MP GPON SCHEMATIC

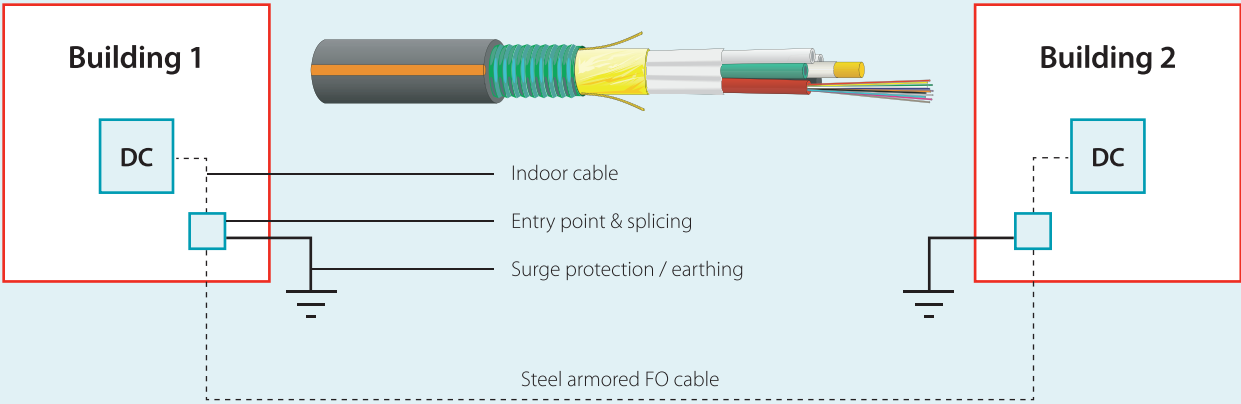**Gigabit Passive Optical Networks (GPON) are defined in the G.984 family of recommendations from ITU-T**

Various split ratios:
- 2 x 2
- 2 x 4
- 2 x 8
- 2 x 16
- 2 x 32
- 2 x 64
- 2 x 128

CO Headend (OLT)

Splitter

ONU (×8)

Download 2.5 Gbit/s
Upload 1.25 Gbit/s
OLT to ONU: up to 20 km without active equipment

9 — P2P SCHEMATIC

CO Headend

ONU (×5)

Up to 10 Gbit/s for each user
100 km reach
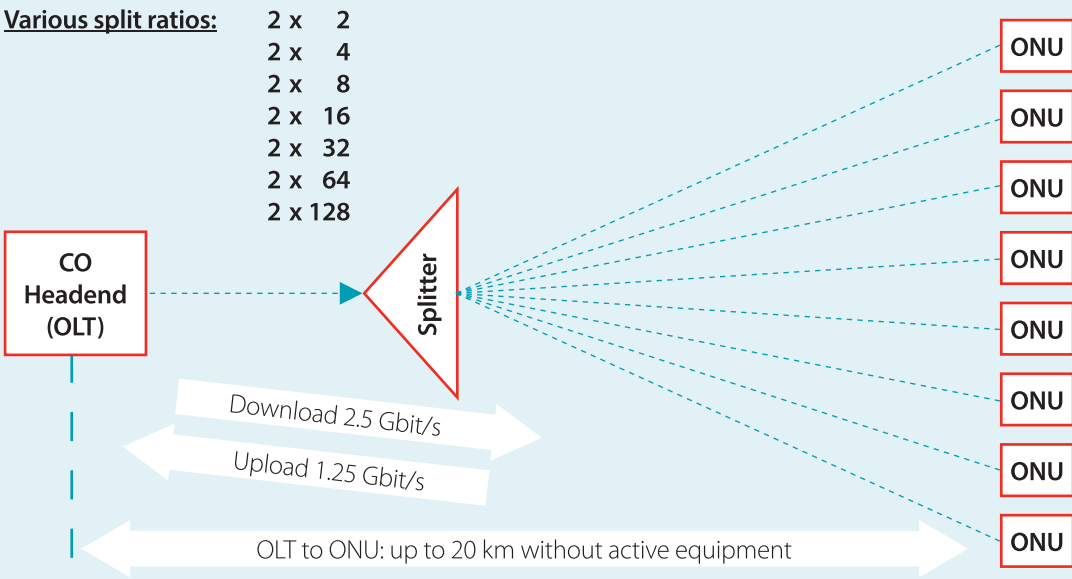
10 — STEEL vs GLASS ARMOURED

PARAMETERS	STEEL ARMOURED	GLASS ARMOURED
Pulling tensile	2500 N	9000 N
Crush resistance	4000 N	5000 N
Earthing	required	not required
Rodent rating	++	+

11 — STEEL ARMOURED FIBRE OPTIC CABLE

Building 1
DC

Building 2
DC

Indoor cable
Entry point & splicing
Surge protection / earthing

Steel armored FO cable

12 — GLASS ARMOURED FIBRE OPTIC CABLE

Building 1
DC

Building 2
DC

Glass armored FO cable

OUR VALUES

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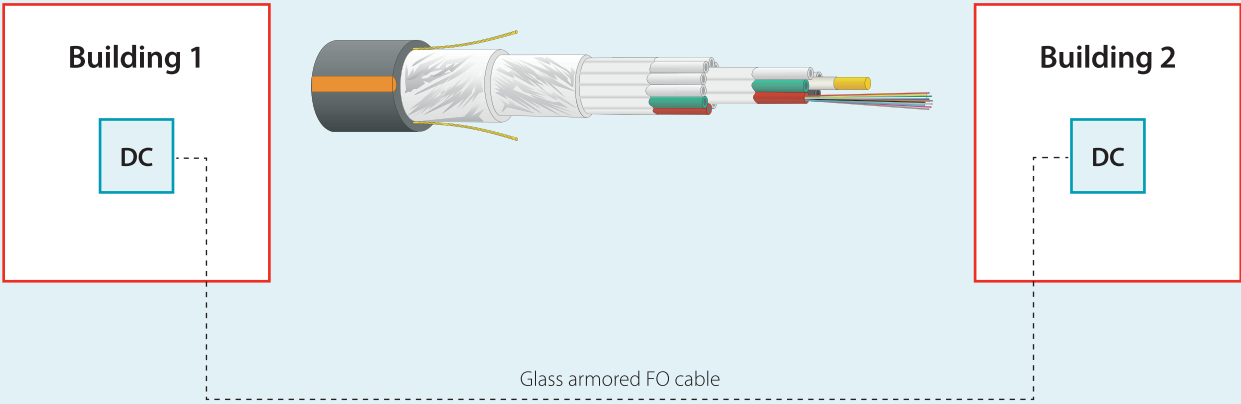
WE ARE
**ENTRE-
PRENEURS**

WE BRING
VALUE TO OUR
CUSTOMERS

WE **EXCEL**
IN WHAT
WE DO

WE HAVE
RESPECT
FOR OTHERS

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