

ANSI/TIA 568-C.3

Optical Fiber Cabling Components Standard

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Where are we in the process

- At the Palm Springs, CA meeting held on the week of September 24, 2007
 - Last draft was approved for publication
 - Document will be published as
 - ANSI/TIA-568-C.3
 - Will be available shortly from www.ihs.com

Purpose

- Specify component transmission performance
 - cable, connectivity and patch cords
- Intended to be used by manufacturers, users, designers and installers
- To be used with TIA TR-42 premises cabling standards

Documents Included in New Standard

- ANSI/TIA/EIA-568-B.3, Optical Fiber Cabling Component Standard
- ANSI/TIA/EIA-568-B.3-1, Additional Transmission Performance Specifications for 50/125 m Optical Fiber Cables
- Parts of ANSI/TIA-568-B.1-7, Guidelines for Maintaining Polarity Using Array Connectors
- And “up to date” changes

New Nomenclature

- Cabling Subsystems 1, 2 and 3
- Distributors A, B and C, and Equipment Outlet (EO)
- Array connector (multi-fiber connector)
- Array path cords (Type A, B and C)

Cables

- Transmission performance parameters (Table 1)
- Harmonization with ISO nomenclature
 - OM1, 2 and 3
 - OS1 and 2
- Optical fiber cables shall contain one or multiple fiber types from Table 1
 - see following slide

Optical fiber and cable type ²	Wavelength (nm)	Maximum attenuation (dB/km)	Minimum overfilled modal bandwidth-length product (MHz-km) ¹	Minimum effective modal bandwidth-length product (MHz-km) ¹
62.5/125 µm Multimode TIA 492AAAA (OM1)	850 1300	3.5 1.5	200 500	Not Required Not Required
50/125 µm Multimode TIA 492AAAB (OM2)	850 1300	3.5 1.5	500 500	Not Required Not Required
850 nm Laser-Optimized 50/125 µm Multimode TIA 492AAAC (OM3)	850 1300	3.5 1.5	1500 500	2000 Not Required
Single-mode indoor-outdoor TIA 492CAAA (OS1) TIA 492CAAB (OS2)³	1310 1550	0.5 0.5	N/A N/A	N/A N/A
Single-mode inside plant TIA 492CAAA (OS1) TIA 492CAAB (OS2)³	1310 1550	1.0 1.0	N/A N/A	N/A N/A
Single-mode outside plant TIA 492CAAA (OS1) TIA 492CAAB (OS2)³	1310 1550	0.5 0.5	N/A N/A	N/A N/A

NOTE 1 - The bandwidth-length product, as measured by the fiber manufacturer, can be used to demonstrate compliance with this requirement.

NOTE 2 - The fiber designation (OM1, OM2, OM3, OS1 and OS2) corresponds to the designation of ISO/IEC 11801 or ISO/IEC 24702.

NOTE 3 - OS2 is commonly referred to as "low water peak" single-mode fiber and is characterized by having a low attenuation coefficient in the vicinity of 1383 nm.

Physical Requirements

- Physical requirements are provided in the Standard for the following cable types:
 - Inside plant cable
 - Indoor/outdoor cable
 - Outside plant cable
 - Drop cable

Connectors and Adapters

- Duplex Connectors
 - Shall meet the requirements of the corresponding TIA Fiber Optic Connector Intermateability Standard (FOCIS)
- Array Connectors
 - Shall meet the requirements of the corresponding TIA Fiber Optic Connector Intermateability Standard (FOCIS)
- Keying and fiber positions

Connectors and Adapters Identification

- Unless color coding is used for some other purpose, the connector strain relief and adapter housing **should** be identifiable by the following colors:
 - 850nm laser-optimized 50/125 μ m fiber – aqua
 - 50/125 μ m fiber – black
 - 62.5/125 μ m fiber – beige
 - Single-mode fiber – blue
 - Angled contact ferrule single-mode connectors – green

Connectors and Adapters Identification

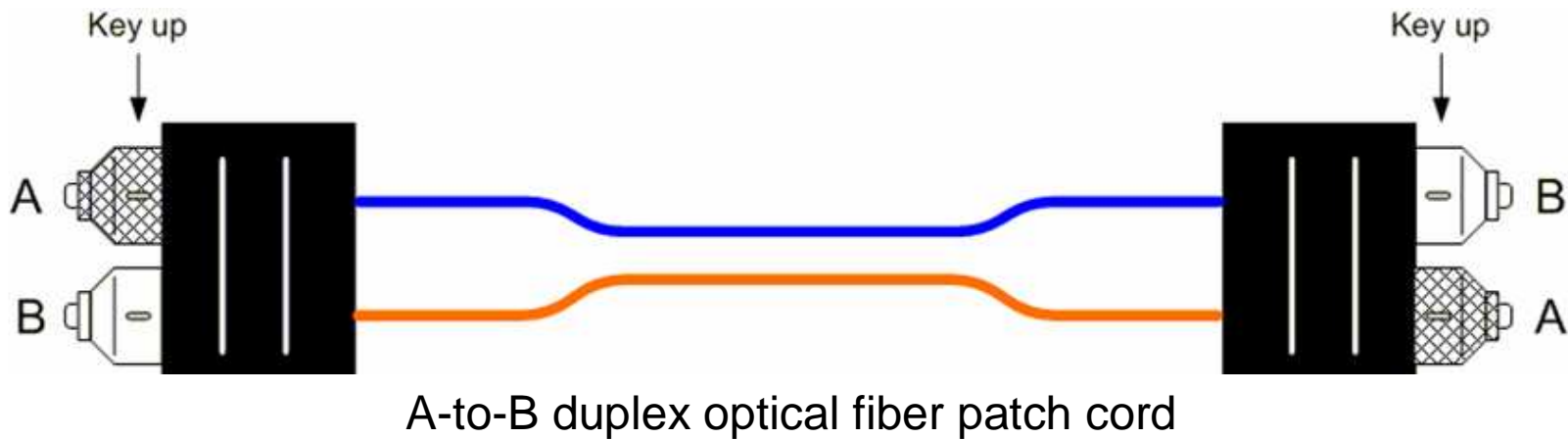
- In addition, unless color coding is used for some other purpose, the connector plug body **should** be generically identified by the following colors, where possible:
 - Multimode – beige, black or aqua
 - Single-mode – blue
 - Angled contact ferrule single-mode connectors – green

Connections Hardware

- Used to join cables in a cabling design
- At the Equipment Outlet (EO)
 - Minimum capacity of two terminated fibers.
 - Bend radius not less than 25 mm
- Patch Panel
 - High-density and ease of management
- Centralized hardware
 - Should allow for migration

Optical Fiber Patch Cords

- Simplex
- Duplex

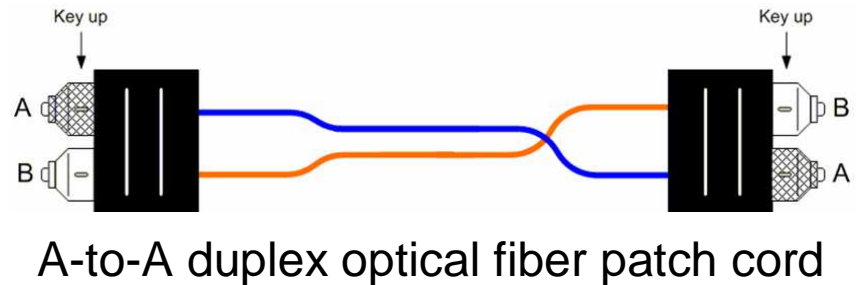
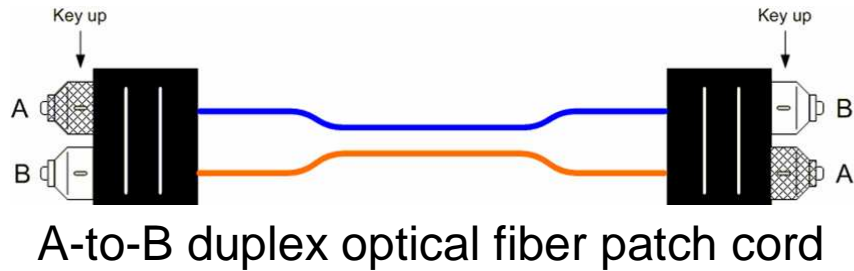


Optical Fiber Patch Cord

- Array
 - three array system connectivity methods are illustrated in ANSI/TIA-568-C.0
 - requires a specific combination of components (array patch cables, transitions, duplex patch cords) to maintain polarity
 - Duplex Patch Cords
 - Type A, B and C Patch Cords
 - Optical Fiber Transition

Optical Fiber Patch Cords

- Duplex



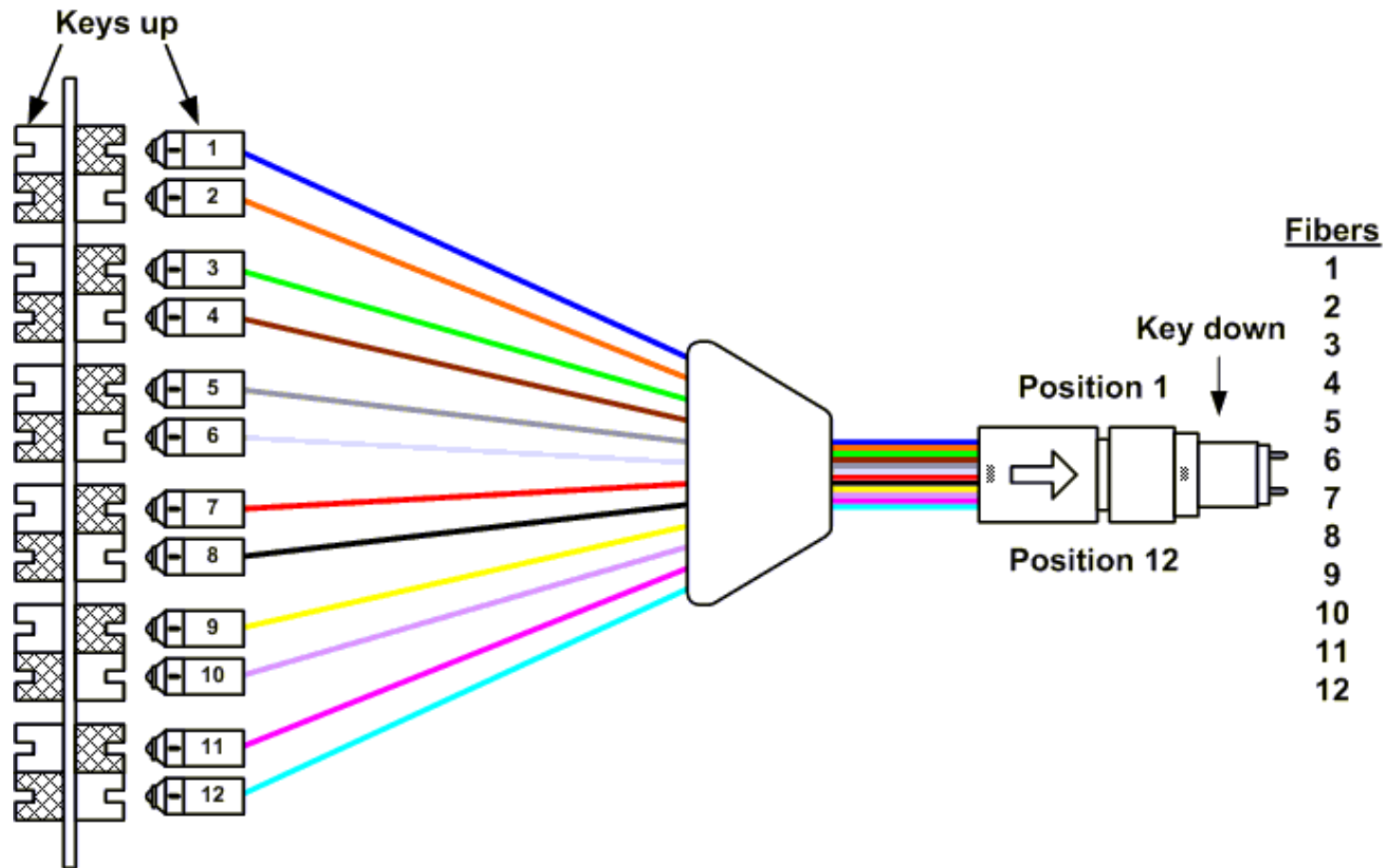
Optical Fiber Patch Cords

- Type A, B and C Patch Cords



Example of Type-A array patch cord (key-up to key-down)

Optical Fiber Transition



Annex A

- Normative
- Optical fiber connector performance specifications
 - test samples
 - performance requirements

For additional questions or comments:

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