

Xfinity Communities

Fiber-To-The-Unit Specifications & Requirements

Wiring Specifications

Fiber-Optical Cable

All fiber-optical cables within the property, including the drop cables from the unit to the common distribution room, shall meet or exceed the following requirements:

- All fiber-optic cable for vertical and horizontal drop applications must be riser-rated, tight-buffered, bend-insensitive 250-micron or 900-micron fiber-optic glass, type ITU-T G.657A1 or G.657A2 fiber, with reduced bending radii of 10 mm or 7.5 mm, respectively, and low power loss of less than 0.75 dB per 360° turn.
- For non-conduit installations requiring protection against crushing and kinking, riser-rated, bend-insensitive 3 mm or 5 mm jacketed fiber, type ITU-T G.657A1 or G.657A2, weather-hardened for interior and exterior use, is required.
- Drop cable distance shall not exceed 500m (1,600'). Each unit will have its own fiber drop from the nearest intermediate/main distribution frame terminal/cabinet to the unit with no additional splices/splitters between the unit and the intermediate/main distribution frame fiber terminal/cabinet.
- Fiber-optical drop cables will be terminated with Subscriber Connector/Angle Polished Connectors (SC/APC).

Internal Unit Wiring

Each unit will have multimedia jack plates with 1 coaxial cable, 1-2 CAT5e/6/6e/6a subscriber interfaces. Leave 24" coaxial and CAT5x/6x tails behind plate. Wiring must adhere to TIA-570B wiring/labeling standards. One single gang blank plate with fiber tail behind plate for future optical gateway/ONT is recommended.

Media panels, where required, must be placed in a central/accessible location in unit. Enclosure material composition must accommodate wireless access when housing network/customer equipment, and is needed for subscribed wireless services. Each multimedia jack outlet in the unit must be wired to the panel enclosure.

The media panel must have the following:

- Recessed minimum 14.35"w x 30"-48"h vs. mounted panel 24"w x 36"h, heated per ambient temperature not to fall below 0° Celsius.
- Sized to terminate 9-16+ media — coaxial, CAT5x/6x and fiber-optical cable — and accommodate associated network equipment (fiber termination, optical network terminal (ONT)/optical network unit (ONU), power supplies, battery backup systems, UPS, gateways, routers, switches, access points, RF splitters, etc.).

- One non-switched, duplex 15-A receptacle inside recessed panel, or within 5' of mounted panel.
- 50% of the usable space within the panel must be available for Comcast's use to ensure that necessary equipment can be fully placed within a unit distribution panel. Such space must be contiguous.

Wire must not be pulled through any holes that contain other wiring or plumbing facilities.

Do not kink, form tight 90° angles, pierce the outer jacket, damage or mishandle the media cable in any way. Use approved media cable fasteners only.

Under no circumstances should Romex or similar staples be used to secure media cable. Keep media wires at least 6" from electrical wires. Use separate holes to run electrical and media wires.

Wood studs require a nail plate protector. Care should be taken to prevent drywall screws from damaging media cables. Metal studs require plastic bushings.

Media cables must be run straight vertically and horizontally, not diagonally.

Wall plates, recommended in every bedroom and one or more in the living room, should be at the same height as the electrical outlets. When possible, the wall plate should be near an electrical outlet, but not in the same bay or on the same stud.

The Comcast Project Coordinator (CPC) must be notified within 10 days to inspect all media wiring prior to the installation of wallboard/drywall.

Conduit and Space Requirements

- Comcast requires a secure, safe, accessible environment for personnel and network distribution elements.
- The minimum depth of distribution rooms should be 4' to accommodate unobstructed operations and routine maintenance, as well as opening and closing of panel doors. Unless otherwise indicated by the CPC, the distribution room must have a minimum of a 4' x 8' plywood backing installed for Comcast's use for network equipment. Plywood backing requirements may vary due to property size, scope of network equipment, dimensions, etc.
- Conduits are typically 2"-4" in diameter depending on the design. Contact the CPC for the sizing recommendation. Sweeps: 36" - 90° sweeps. Drop conduit sized for fiber media, typically 1" EMT or PVC, to wall box or media panels. Micro-conduit not required, but may be used to establish a reusable path, should drop cable need to be replaced in the future.
- Conduit shall be installed in exterior areas where cables could be damaged, such as a parking garage. There should be no more than two sweeps on any single run. Conduit must have pull lines installed and be capped at either end.
- One 4" diameter sleeve is required between vertical risers, floor to floor. If the rise is more than one floor, conduit may be required. Contact your CPC for sleeve recommendation based on design plan. Sleeves need to be 6"l x 10"w with curb of 1"h or conduit of 4" diameter with a curb of 1"-3"h. All fiber rise media shall be installed and aggregated inside riser/pathway or duct through floor.

- One 4" schedule 40 conduit shall be installed from building terminal to the property line at a minimum depth of 24" for Comcast's use for all underground. Sweeps: 36" - 90° sweeps. The conduit location will be provided by the CPC. Duct banks in roadways or driveways require concrete encasement.
- Intermediate distribution frame fiber terminals (collector terminals) may be distributed throughout floors to avoid multiple bundles to main distribution frame cabinet/splitter terminal. The quantity and placement will be dependent upon duct/riser access, units served, etc.
- No additional power/ventilation is required in main distribution frame, unless specified otherwise by CPC.
- A property site plan must be submitted to the CPC within a minimum of 30 days' advance notice prior to the commencement of trench back-filling, showing trench/utility routing, associated box housing locations and distance between them.
- All equipment and installation must comply with federal, state, local fire and safety codes (OSHA, NEC, GO95, NESC, ANSI/TIA, etc.).
- All physical-layer fiber designs must comply with Comcast Corporate Engineering approved/certified design. Owner/builder is required to work with Comcast construction, engineering and account team, along with CPC and other Comcast resources, throughout the fiber build. Workflow milestones for FTTHU comply with mutually agreed to timelines.
- The CPC must be contacted immediately in the event of any of the minimum requirements in this document not being met for any reason.

Find out more about the Advanced Communities Network and other ways Xfinity Communities can help make your property stand out.

Visit xfinity.com/xfinitycommunities.



Advanced specifications adopted/approved by Comcast may subsequently supersede those stated above. Content subject to change without notice. Please consult with local Comcast construction, engineering, and account teams for latest guidance. Version 110115 ONS177023