

3M™ One Pass Mini Fiber Pathway

Executive Questions

Q: What is the 3M™ One Pass Mini Fiber Pathway?

A: The 3M™ One Pass Mini Fiber Pathway is a flexible, single-fiber, surface-mount cable pathway and drop cable solution installed in just one pass in the living unit of a brownfield Multi Dwelling Unit (MDU) or Single Family Unit (SFU). It could also be used in schools, dormitories, hospitals, hotels or small businesses.

Q: Who would use the 3M One Pass Mini Fiber Pathway?

A: The 3M One Pass Mini Fiber Pathway is suitable for network operators deploying FTTP, or Fiber-to-the-Premise networks. It enables them to provide voice, data and video services to building tenants.

Q: Why would a network operator choose the 3M One Pass Mini Fiber Pathway over other available drop cable or drop cable pathway solutions?

- A: The 3M One Pass Mini Fiber Pathway offers many advantages over existing drop cable and drop cable pathway solutions:
- One Pass Mini is low profile and less obtrusive than existing drop cable solutions making it a unique cable pathway solution for high-end apartments where exposed drop cables are not acceptable to tenants. This solution increases service provider revenue opportunities.
 - One Pass Mini facilitates the use of small desktop Optical Network Terminals (ONTs) virtually eliminating the time and expense of running new wiring (electrical, RJ-11, coax) to closets where large wall-mount ONTs are typically placed.
 - One Pass Mini Duct was designed to work on concrete walls where stapling ruggedized drop cables isn't an option. Apartments with concrete walls can now be wired for FTTH services quickly and cost-effectively, again increasing potential revenue for service providers.



3M™ One Pass Mini Fiber Pathway Duct

- Use of 3M adhesive technology to install the One Pass Mini Duct enables a quiet product installation, maintains signal integrity, and eliminates marks left on ceilings and walls from staple guns. For these reasons, the One Pass Mini ensures a minimally disruptive customer installation experience and preserves apartment aesthetics while reducing potential for macrobends and high attenuation that may be caused by stapling.
- One Pass Mini has few pieces to install, making installation easy. Training technicians takes less time and is less costly than some traditional methods. Time spent loading/unloading staple guns is eliminated for those providers currently stapling ruggedized drop cables.
- One Pass Mini Fiber Pathway is compatible with the 3M™ One Pass Fiber Pathway hallway solution. When used together, final drop cable installation time is significantly reduced and customer installation time diminished.

- 3M™ One Pass Mini Fiber Pathway Duct can be cut to desired length and quickly and easily field terminated with 3M™ No Polish Connectors, limiting fiber waste and large molded plastic boxes designed to store excess cable slack. Expensive and time consuming fusion splice machines are no longer needed for terminations.

Additionally, the 3M One Pass Mini Fiber Pathway Duct is available as a kit. In this product configuration the duct is sold with one each of the two molded boxes (the 3M™ One Pass Mini Surface-Mount Wall Outlet and the 3M™ One Pass Mini Surface-Mount Point-of-Entry Wall Cover). This ensures quick installation by field technicians as each box of duct contains the system components needed to complete a single living unit install.

General Product Questions

Q: What are the components of the 3M™ One Pass Mini Fiber Pathway Duct?

A: The 3M One Pass Mini Fiber Pathway Duct consists of an extruded PVC duct populated at a 3M factory with a single, tight-buffered, ultra-bend insensitive 900 μ m fiber. A 3M tape with liner is then applied to the back of the duct for later adhering it to a wall.

Q: How large is the 3M One Pass Mini Fiber Pathway Duct?

A: The 3M One Pass Mini Fiber Pathway Duct is smaller than many drop cable and cable pathway solutions. It measures .319" across (8.10 mm) and .132" tall (3.35 mm).

Q: Is the 3M One Pass Mini Fiber Pathway Duct part of a system of parts used to connect service in a MDU or other customer premises?

A: In addition to the duct, the 3M™ One Pass Mini Fiber Pathway consists of two molded plastic boxes, hardware to ensure proper product installation and fiber bend radius control, as well as installation tooling.

Q: In what configurations is the 3M One Pass Mini Fiber Pathway Duct available?

A: The 3M One Pass Mini Fiber Pathway Duct is sold on reels and is available in 100' and 150' lengths. It can also be purchased with a SC connector factory terminated on one end. This allows for plug-and-play installation of the duct in a wall outlet near the Optical Network Terminal (ONT) placed in a customer's residence at the time service is connected.

Q: Is the 3M One Pass Mini Fiber Pathway related to the 3M™ One Pass Fiber Pathway?

A: The 3M One Pass Mini Fiber Pathway is an extension of the 3M One Pass Fiber Pathway hallway solution launched in October 2009. Its purpose is to create a cable pathway and place multiple distribution cables in just one pass around the perimeter of a MDU hallway. The new 3M One Pass Mini Fiber Pathway uses the same engineering principles to extend FTTH service from the hallway into a customer living unit. The two solutions are connected with the 3M™ No Polish Connector. These three solutions comprise the 3M Total Package for MDUs.

Wall Surface Compatibility Questions

Q: What wall surfaces is the 3M™ One Pass Mini Fiber Pathway Duct compatible with?

A: Product testing has been performed on a variety of wall surfaces. See summarized test results in the chart below.

Wall Surface Compatibility Test Results

Wall Surface Type	Pass
Painted Smooth Surfaces	
Flat Latex	Yes
Semi-gloss Latex	Yes
Glossy Latex	Yes
Semi-gloss Alkyd	Yes
Painted Textured Surfaces: Light Stucco & Cement Block	
Flat Latex	Yes
Semi-gloss Latex	Yes
Glossy Latex	Yes
Semi-gloss Alkyd	Yes
Wallpapered Surfaces	
Plain Paper	Yes
Vinyl Coated	Yes
Vinyl	Yes
Polyolefin Woven	No
Unfinished and/or Unpainted Brick, Concrete, or Block	No

Building Owner Questions

Q: In what color is the 3M One Pass Mini Fiber Pathway Duct available?

A: The 3M One Pass Mini Fiber Pathway Duct is currently available in ivory.

Q: Can the duct be painted?

A: Yes, the duct can be painted with either latex or oil-based paint.

Q: Will installation be noisy and disruptive to tenants?

A: Because the 3M One Pass Mini Fiber Pathway Duct utilizes 3M adhesive to adhere it to the wall, the use of drills, hammers and stapling guns is kept to a minimum.

System Design and Engineering Questions

Q: How permanent and reliable is the 3M adhesive used on the back of the duct?

A: The specified 3M adhesive is used in a variety of applications. Listed below are some of the most notable:

- Graphic attachment and decorative trims
- Automotive body assembly
- Architectural panels used in the construction of skyscrapers
- Aircraft exteriors

Q: Is the product flame retardant?

A: The 3M™ One Pass Mini Fiber Pathway Duct is listed to UL5C, Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits. This product is for General Purpose applications only.

Q: How do I know the duct will not discolor over time?

A: The duct is tested to indoor UV requirements of ASTM G 154.

Q: What fiber is used in the 3M One Pass Mini Fiber Pathway Duct?

A: The 3M One Pass Mini Fiber Pathway Duct uses DrakaElite™ BendBright-Elite fiber.

Q: What is the bend radius of the DrakaElite™ BendBright-Elite fiber?

A: DrakaElite™ BendBright-Elite is an ultra-bend insensitive singlemode fiber which meets the optical specifications of G.657.B3. In other words, the fiber is capable of maintaining a minimum 5 mm bend radius.

Q: If only one end of the duct is factory terminated, how is the fiber in the duct stripped for field termination at the other end?

A: Fiber is stripped by using the 3M™ One Pass Mini Duct Installation Tool, a sheath knife and snips. By simply scoring the back of the duct and using snips to cut a fringe on either side of the fiber at the same location as the score, the duct can be made weak and pulled by hand to create access to the fiber.

Q: Why field terminate the fiber with a 3M™ No Polish Connector (NPC)?

A: Terminating fibers in the field with the 3M NPC connector is quick and easy. Low cost tooling is used to complete the termination. The tooling requires no power source and terminations take less than two minutes, creating minimal tenant disruption.

Q: What are the recommended storage conditions for the 3M™ One Pass Mini Fiber Pathway?

A: The 3M One Pass Mini Fiber Pathway has a shelf life of 24 months from date of manufacture when stored at 40°F to 100°F (4°C to 38°C) and 0-95% relative humidity. The optimum product storage conditions are 72°F (22°C) and 50% relative humidity.



3M™ One Pass Mini Surface-Mount Wall Outlet and 3M™ No Polish Connector 8800-APC AS

Installation Questions

Q: What are the recommended installation conditions for the 3M™ One Pass Mini Fiber Pathway?

A: 3M recommends that the product be installed in indoor environments with temperatures that range from 61°F to +100°F (16°C to +38°C) and 30-50% relative humidity. It is also suggested that the 3M™ One Pass Mini Fiber Pathway Duct and accessories be allowed to acclimate for 24 hours at the recommended product installation temperatures prior to install.

Q: Are there desired operating temperatures for the 3M One Pass Mini Fiber Pathway?

A: Once installed 3M recommends the product be maintained in an indoor environment which ranges from 40°F to 100°F (4°C to 38°C) and 0-95% relative humidity.

Q: How is the product installed?

A: The 3M One Pass Mini Fiber Pathway Duct is installed with an installation tool which uses a reference surface such as a ceiling, crown molding, or base board to ensure it is installed straight.

Q: How close to the reference surface can the 3M One Pass Mini Fiber Pathway Duct be installed?

A: The 3M One Pass Mini Fiber Pathway Duct can be installed right up against the reference surface.

Q: What if I screw up? How much time do I have to move duct?

A: 75% of the adhesive is bonded to the wall surface within two hours of installation, 90% after 24 hours. The adhesive reaches its maximum bonding level after 72 hours. If pressure is applied to the duct during installation it may be even more difficult to reposition after a very short period of time.

Q: How do I ensure the appropriate fiber bend radius is maintained during installation?

A: Because the 3M One Pass Mini Fiber Pathway Duct uses G.657.B3 fiber, fewer hardware pieces are needed to support product installation. That said, an external corner support device is available for external corners when the installation route of the duct includes 10 or more total internal and external corners. And, while there is no internal corner support, the wheel of the 3M™ One Pass Mini Duct Installation Tool is used to ensure the product is placed in an internal corner at a 5 mm bend radius. A one-piece planar corner support is needed for all planar corner installations.

Q: What type of loss is anticipated when using the 3M One Pass Mini Fiber Pathway?

A: The solution was designed for a fiber loss budget of .5 db (this does not include connectors). With installation of the duct around each of the following corners, the following insertion loss can be expected:

- Internal Corner Loss: .05 db
- External Corner Loss (with support): .01 db
- External Corner Loss (w/out support): .05 db
- Planar Corner Loss: .005-.01 db

Q: How do I protect the duct when it is routed through a wall?

A: 3M recommends that the fiber in the duct be stripped and fed through furcation tubing (provided with each 3M™ One Pass Mini Surface-Mount Point-of-Entry Wall Cover). The furcation tubing protects the fiber and ensures the appropriate bend radius by allowing even greater flexibility outside the 3M™ One Pass Mini Fiber Pathway Duct.

Q: What if the 3M One Pass Mini Fiber Pathway Duct begins to peel from the wall?

A: The product has been tested under rigorous conditions so this should not happen. However, if it does, a 3M™ One Pass Mini Mechanical Anchor and/or mechanical fastener can be used to secure that section of the duct to the wall.

Where Can I Learn More?

Q: Who can I call at 3M for assistance or questions on product and product installation?

A: 3M employees are available to answer questions at 1-800-426-8688.



3M™ One Pass Mini Surface-Mount Point-of-Entry Wall Cover

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