

# Fiber optic installation process



## AI Overview

Fiber optic installation involves planning, cable deployment, ONT setup, and testing to deliver high-speed internet from the provider's network to your home or business.

**Planning and Preparation**The process begins with a site survey and network planning. Technicians assess the area, map out the most efficient cable routes, and determine whether the installation will be aerial (on poles) or underground (in conduits) based on existing infrastructure and building layout . For new constructions, careful planning ensures the fiber integrates seamlessly with the property's design. Technicians also consider the minimum bend radius and pulling tension of fiber cables to prevent damage during installation .

**Fiber Cable Deployment**Once planning is complete, the fiber optic cable is installed using one of two main methods: blowing or pulling. In blowing, compressed air pushes the fiber through a duct, while in pulling, the cable is manually drawn through conduits . For aerial installations, cables are mounted on utility poles, and for underground installations, trenches and conduits are prepared before laying the fiber . The fiber is then routed to a network interface device (NID) on the exterior of the building, where it is coiled and connected to the internal network.

**Optical Network Terminal (ONT) Setup**Inside or just outside the home, an Optical Network Terminal (ONT) is installed. The ONT converts light signals from the fiber into electrical signals that can be used by your router or gateway . The ONT is connected to a power source and linked to the router via a high-speed Ethernet cable, typically CAT6 or better, to ensure stable data transfer . In some setups, a combined ONT/router unit may be used, and for larger homes, mesh Wi-Fi devices can be added to extend coverage .

**Testing and Activation**After installation, technicians perform comprehensive testing to ensure signal quality and network performance. This includes checking insertion loss, return loss, and using an OTDR (Optical Time-Domain Reflectometer) to verify the integrity of the fiber . Onc...

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