

Article Overview

Pipe jacking is a trenchless method for installing underground ducts or pipes, allowing fiber optic cables to be laid with minimal surface disruption.

What is Pipe Jacking?

Pipe jacking involves boring a tunnel from a launch shaft to a reception shaft using a tunneling shield, which is incrementally pushed forward by hydraulic jacks. As the shield advances, jacking pipes are inserted behind it one by one, forming a continuous underground conduit. Once the shield reaches the reception shaft, it is removed, leaving a completed pipe system ready for cable installation . This method is particularly suitable for urban areas where surface disruption must be minimized.

Application for Fiber Optic Cables

Fiber optic cables are typically pulled or pushed through the jacked pipes after the tunnel is completed. Pipe jacking allows for precise placement of ducts for dark fiber, broadband, or telecom networks, including last-mile and middle-mile connections . The method is compatible with various cable types, including high-capacity DWDM networks, and supports installation under roads, sidewalks, and other obstacles without extensive excavation .

Advantages

- o Minimal surface disruption: Ideal for urban or sensitive areas where open trenching is impractical .
- o Safety and efficiency: Reduces risks associated with open trenches and traffic interference.
- o Precision: The jacking process ensures accurate alignment of ducts for fiber installation.
- o Protection: Cables are housed in durable pipes, reducing exposure to environmental damage .

Cable Handling Considerations

Proper handling of fiber optic cables during installation is critical:

- o Inspect and test cables before installation to ensure no damage occurred during transport .
- o Use swivel pulling eyes and avoid twisting or excessive tension to prevent fiber stress .
- o Complete the installation in a single pull if possible to minimize splices and potential signal loss .
- o Ensure personnel are trained in fiber handling and follow manufacturer guidelines .

Comparison with Other Methods

Pipe jacking for fiber optic cable laying

- o Directional boring: Similar trenchless method, often used for point-to-point fiber installation, allowing bypass of obstacles like roads and landscaping .
- o Open trenching: More disruptive and costly in urban areas, but simpler for short, accessible runs .
- o Above-ground installation: Uses existing poles or masts, faster and cheaper in rural areas, but exposed to weather and vandalism .

Conclusion

Pipe jacking is a reliable, trenchless solution for underground fiber optic cable installation, offering precision, safety, and minimal surface disruption. When combined with proper cable handling and testing, it ensures long-term network performance and protection, making it a preferred method for urban and high-density deployments .

General Guidelines For Installing Fiber Optic Cable Fiber optic cable may be installed indoors or outdoors

All fiber optic applications are not the same. At the FOA, we're mainly concerned with communications fiber optics - telco, CATV,

Installation is similar to installing a messenger wire except it also includes a fiber optic cable that requires careful handling like any

The pipe jacking guidance system based on a fiber optic gyroscope (FOG) has gained extensive attention due to its

Explore the process and benefits of underground fiber optic cable installation. Learn how this infrastructure

Below is given the fiber optic cable installation method statement for performing the installation of optical fiber cabling

A new OFS technical guide covers comprehensive steps for installation of fiber-optic cable in underground plant.

The normal recommendation for fiber optic cable bend radius is the minimum bend radius under tension during pulling is 20 times the

There are methods using robots to install fiber optic cable in storm sewers or other underground pipes. They have been used in

This document provides guidelines for laying optical fibre cables, including detailed surveying the cable route,

Pipe jacking for fiber optic cable laying

soil

In many cases the use of pipe jacking techniques instead of open trenching will contribute positively towards workplace safety, the

This beginner-friendly guide will walk you through the step-by-step process of fiber optic

1.0 GENERAL 1.01 This procedure provides general information for the installation of Prysmian fiber optic cables in direct buried

1.0 GENERAL 1.01 The methods described in this document for placing cable in ducts are intended for use only as guidelines. It is

The objective of this document is to be an optical fibre cable installation and laying guide, addressed to new installers, also being

Pipes and fittings shall be examined for damage and the joint surfaces and components

Web: <https://in-au.co.za>

