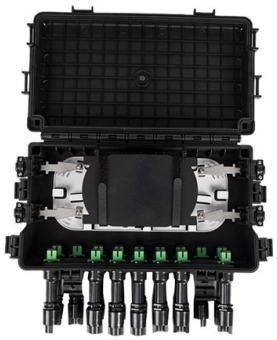
Airflow method for laying optical cables



Overview

Air-Assisted Installation Considerations Placing optical fiber cables in duct systems using air-assisted installation techniques presents different install.

Key Takeaways

Air-assisted installation uses high-speed airflow to float and advance optical fiber cables through ducts, reducing friction and mechanical stress compared to traditional pulling methods.

Overview of Air-

Assisted InstallationAir-assisted installation, also called blowing or jetting, is a method for placing optical fiber cables into pre-installed ducts using compressed air combined with mechanical pushing. The airflow helps the cable "float" inside the duct, minimizing sidewall friction and reducing tensile stress on the cable, which allows for longer installation distances and faster deployment compared to manual pulling or winch-based methods.

Key Techniques

Blowing: Compressed air is injected at the duct inlet, creating a high-speed airflow along the cable. The cable is initially pushed a few hundred meters using a tractor or traction rollers, after which the airflow maintains the cable in a floating state. The pulling force is distributed along the cable length due to fluid drag, eliminating the need for a reaction head.

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

Jetting: A reaction head or "parachute" is attached to the cable's front end. Differential air pressure across the head generates a pulling force that moves the cable forward. Jetting is particularly useful for longer runs and can be cascaded with mid-assist devices to extend installation distances.

Variants: Air-assisted installation can be performed with a piston at the cable front, a leaking piston, or without a piston. Piston-based methods provide a concentrated pulling force at the front, while pistonless methods rely on distributed airflow along the cable.

Advantages

Reduced mechanical stress: Tensile loads are significantly lower than traditional pulling, minimizing the risk of cable damage. Longer installation distances: Continuous lengths exceeding 1–2 km are achievable, depending on duct conditions and cable stiffness. Improved efficiency: Air-assisted methods reduce labor and installation time, especially in ducts with multiple bends or undulations.

Cable relaxation: Cables are installed with minimal stress, leaving them effectively relaxed in the duct, which enhances long-term reliability.

Practical Considerations

Cable type: Standard optical fiber cables, microduct cables, uni-tube, multi-tube, armored, and unarmored cables can be installed using air-assisted methods. Duct quality: Continuous, sealed innerducts are required for effective airflow. Joints and duct integrity must be pressure-tested to prevent leaks.

Cable stiffness: Stiffer cables perform better in straight runs, while more flexible cables navigate complex routes with multiple bends. Crash testing: Before full installation, a short test run is performed to determine the maximum pushing force without damaging the cable jacket or causing buckling.

Equipment

Air compressor: Provides high-speed airflow. Blowing device: Combines mechanical pushing with airflow. Tractor or traction rollers: Push the cable initially into the duct.

Reaction head or piston: Optional, depending on the installation variant. SummaryAir-assisted installation is a modern, efficient method for deploying optical fiber cables in ducts. By using airflow to reduce friction and distribute forces along the cable, it allows for longer, safer, and faster installations than traditional pulling methods.

Proper selection of cable type, duct quality, and equipment ensures optimal performance and long-term reliability of the optical network.

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

Article Content

Air-Assisted Installation Considerations

Placing optical fiber cables in duct systems using air-assisted installation techniques presents different installation requirements than traditional pulling. In return, these techniques enable installation of

OFC Application Note

Cable blowing is the process of installation of optical fiber cable into a pre-installed duct. Compressed air is injected in the duct inlet after few hundred meters of cable is pushed into the duct.

ITU-T Rec. L.156 (03/2018) Air-assisted installation of optical fibre ...

Introduction Air-assisted installation is based on forcing a continuous high-speed airflow along the cable with an air source. The force of the moving air pushes the cable and makes it advance forward at a

Installation of Optical Fiber Cable by Blowing/Jetting

Cable blowing is the process of installation of optical fiber cable into a pre-installed duct. Compressed air is injected in the duct inlet after few hundred meters of cable is pushed into the duct.

Microduct Cable Air-Assisted Installation Considerations

Both methods require pushing the cable with a tractor mechanism while blowing compressed air into a pre-installed duct around the cable being installed. Both rely on airflow to help “float” the cable inside

Duct Installation of Fiber Optic Cable

As a rule of thumb, air blowing method for fiber optic cable installation is more favored than pulling method due to improved installation efficiency, particularly in longer ducts with multiple

Blown Fiber Installation: Essential Guide & Expert Tips

Blown fiber involves inserting fiber optic cables into pre-installed micro ducts using compressed air. This method is highly efficient for covering long distances within buildings or across

Fiber Blowing Technology Explained

Discover how air blown fiber installation works and why it''s revolutionizing fiber optic network deployments. Learn the step-by-step process, technical tips, and advantages of this efficient

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

Air-Assisted Cable Installation Techniques

Jetting and blowing are two common air-assisted cable installation techniques. Both methods require pushing the cable with a tractor mechanism while blowing compressed air into a pre-installed duct

Blowing Method for Air Blown Fiber

Cable blowing is the process of installation of optical ber cable into a pre-installed duct. Compressed air is injected into the duct inlet after few hundred meters of cable is pushed into the duct.

OPTICAL FIBRE CABLES INSTALLATION GUIDE

The objective of this document is to be an optical fibre cable installation and laying guide, addressed to new installers, also being useful as a reminder to experienced installers. We should always consider

Pulling and blowing a cable in a duct

The installation of optical fibre cable in duct is becoming the most popular installation method in the FTTH networks; from pulling to air jetting the network builder has the choice but the trend to reduce

eABF Fiber Optic Cable and MicroDuct Installation Manual

Safety Good safety practices should always be considered when placing eABF conduit and fiber optic cable. The safety issues inherent in any inside or outside plant construction project should be

OFC Application Note

Standard optical fiber cables (like uni-tube, multi-tube, unarmored & armored), microduct cables, and micro-ducts can be installed by using this method. It is possible to install microduct cable using

OFC Blowing Procedure and Specifications | PDF | Optical Fiber

The document provides specifications for laying optical fiber cable and HDPE duct. It describes the specifications for permanently lubricated HDPE conduit, including a minimum pressure rating of 6

Everything You Want to Know about Air Blown Fiber

The air blown fiber system is to pre-lay special fiber-blown micro-tubes and accessories in the early stage of integrated wiring. When the optical fiber

Fibre Optic Cable Blowing – SFPcables Blog | SFP

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved

That is cable blowing. It''s more gentle to laying cables compared the ways applied before. NKF company from Netherlands invented a new execution methods for

Air Blowing Micro fiber Optic Cable

The Laying methods of Air Blowing cable compare with other Fiber Optical cable, the tension of the Air Blowing Cable during the laying process is relatively uniform and much smaller.

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Contact Us

Continue your research online:

Website: https://cgweb.co.za
Technical inquiry: https://cgweb.co.za/project-enquiry.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 CGWEB NETWORK INFRASTRUCTURE - All rights reserved