

Value of quota for optical cable laying by airflow method



Overview

This document provides procedures for laying optical fiber cable and HDPE ducting for a city gas distribution project.

Key Takeaways

Typical air-assisted optical cable installation allows continuous blowing distances of 1,000–2,100 meters per device under optimal conditions, with performance influenced by cable type, duct layout, and environmental factors. Typical Installation Distances

Air-assisted cable installation, also called blowing or jetting, uses compressed air combined with mechanical pushing to float the cable through ducts. Field trials and manufacturer data indicate:

- Single air-assisted device: 1,500–2,100 meters (5,000–7,000 feet) of optical fiber cable can be installed under good conditions .
 - Microduct cables: Continuous lengths of more than 1,000 meters are achievable depending on duct route and cable flexibility .
 - High-performance micro cables: Distances exceeding 2,000 meters in a single shot are possible with proper duct preparation and airflow management . Longer distances can be achieved by cascading devices or providing mid-assist points along the duct .
- Factors Affecting Quota

The effective installation distance or "quota" depends on several factors:

- Cable stiffness and design: Stiffer cables blow faster through undulations and avoid buckling, while flexible cables handle multiple bends better .
- Duct route shape: Bends, undulations, and elevation changes increase friction and reduce maximum blowing distance .
- Environmental conditions: Temperature and humidity affect microduct deformation and lubricant performance, impacting cable movement .
- Equipment and technique: Proper selection of blowing machines, air pressure, and cable bullets ensures optimal performance .
- Lubrication: Correct application reduces friction; over-lubrication can be counterproductive .

Standards and Testing

- IEC 60794-1-21 (Method E24) specifies testing procedures for blowing cables in microducts, providing reference values for maximum cable blowing speed and distance .
- ITU-T L.156 provides guidelines for air-assisted installation of optical fiber cables, including microcables and larger cables in ducts .

Practical Quota Guidelines

For planning purposes, network operators often use the following practical quotas:

- Standard microduct cable: 1,000–1,500 meters per blowing device.
- High-performance micro cables: 1,500–2,100 meters per device.
- Longer runs: Use mid-assist points or multiple devices to maintain installation efficiency. These values serve as reference quotas and should be adjusted based on site-specific conditions, cable type, and duct layout. Proper testing and adherence to standards ensure safe and efficient installation.

Article Content

OFC & HDPE Duct Laying Procedure | PDF | Optical Fiber | Building ...

This document provides procedures for laying optical fiber cable and HDPE ducting for a city gas distribution project. It outlines the

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

This Recommendation describes air-assisted methods for installation of optical fibre cables in ducts. These methods can be used to

Fibre Optic Cable Blowing & Splicing Guide

It discusses the purpose and scope of the work, methods for installing fibre optic cable into HDPE ducts including cable blowing

Air-blown optical cable construction quota

It reduces the laying cost of the optical cable and hoisting speed of 1502CIM_47-52
dd Once the tube cable pathway is in place, the

Installation of Optical Fiber Cable by Blowing/Jetting

ABSTRACT This application note discusses fiber optic cable installation by blowing technique, the factors effecting blowing

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

Optical Fiber Installation Methods – MapYourTech

Aerial installation methods leverage existing utility poles and transmission towers to deploy fiber optic cables above

Qualifying cable blowing performances

Blowing in is a commonly used method for installing fibre optic cables in Europe. Find out how you can increase the probability of

OFC Laying Implementation Plan | PDF | Duct (Flow) | Concrete

The document outlines an implementation plan for laying optical fiber cable as part of a BSNL-Navy project. It details 23 steps in the

Section C-3a

Fibre optic cable is required in Gbaran Phase 3B SPDC project for telecommunication, LSDS, CCTV, VHF and Instrumentation inter

OFC Cable Laying Precautions Guide | PDF | Duct (Flow)

The document outlines precautions and procedures for laying Optical Fiber Communication (OFC) cables in Indian Railways,

OSP Civil Works Guide-FOA

OSP Fiber Optics Civil Works Guide An updated version of this booklet is now available as a textbook on Amazon, is included in the

OPTICAL FIBRE CABLES INSTALLATION GUIDE

The cable laying method called “blowing” can be defined as a pneumatic laying used for ducting installations of telecommunication

Optical Fiber Communication cables

Both S&T department & Railtel execute works of OFC laying across Indian Railways for obtaining Optical fibre communication facility

Presentation

Survey of OFC cable route Before start of the work a careful route analysis to be done to assess the method of laying the OFC. It

Cable Sizing Calculation

Cable bunching, i.e. the number of cables that are bunched together Cable spacing, i.e. whether cables are installed

Installation of Optical Fiber Cable by Blowing/Jetting

Cable installation by using high speed air flow combined with additional mechanical pushing force is called as “blowing or jetting”.

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

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

