ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Subsystem of Structured Cabling System



Overview

In telecommunications, Structured cabling is the design and installation of a complete, standards-compliant telecommunications cabling infrastructure for building, platform, factory or campus cabling infrastructure. It is a systematic and organized approach that involves using a set of standardized, smaller elements (hence structured) called subsystems.

Key Takeaways

A structured cabling system is composed of six standardized subsystems that collectively provide a scalable, flexible, and reliable network infrastructure.

Structured cabling is a systematic approach to designing and installing telecommunications cabling that supports multiple hardware uses and future expansion, governed by standards such as ANSI/TIA-568, EN 50173, and ISO/IEC 11801 . The system is divided into six subsystems, each serving a specific function within the network:

1. Entrance Facility (EF)

The Entrance Facility is the point where external network services enter the building or campus. It includes cables, network demarcation points, connecting hardware, and protection devices that link the service provider or private network to the internal cabling infrastructure . This subsystem ensures a secure and organized transition from outside plant cabling to the internal network.

2. Equipment Room (ER)

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The Equipment Room is a centralized, environmentally controlled space that houses telecommunications equipment such as main cross-connects (MC) and intermediate cross-connects (IC). It serves as a hub for backbone cabling and may also contain horizontal cross-connects (HCs) for connecting different portions of the network . This room supports scalability and centralized management of network resources.

3. Backbone Cabling

Backbone cabling interconnects the Entrance Facility, Equipment Rooms, and Telecommunications Rooms across floors or buildings. It provides the main pathways for data, voice, and video signals, ensuring high-speed and reliable connectivity between different areas of the network . Backbone cabling can include fiber optic or copper cabling depending on performance requirements.

4. Telecommunications Room (TR) / Telecommunications Enclosure (TE)

Telecommunications Rooms or Enclosures house the terminations of horizontal and backbone cabling. They serve as junction points for connecting hardware, patch panels, and jumpers, facilitating the distribution of network signals to individual work areas . These rooms are essential for organized cable management and network troubleshooting.

5. Horizontal Cabling

Horizontal cabling extends from the Telecommunications Room to individual work areas. It includes twisted-pair copper cables, fiber optic cables, patch cords, and mechanical terminations. The maximum horizontal cable length is typically 90 meters, ensuring reliable connectivity to end-user devices . This subsystem supports flexibility in workstation placement and network expansion.

6. Work Area (WA)

The Work Area subsystem encompasses the end-user devices and telecommunications outlets. It includes connections from the horizontal cabling to computers, phones, and other networked equipment. A minimum of two outlets per work area is recommended to support redundancy and future growth . This subsystem represents the interface between the structured cabling system and the end-user.

Summary

Together, these six subsystems—Entrance Facility, Equipment Room, Backbone Cabling, Telecommunications Room/Enclosure, Horizontal Cabling, and Work Area—form a hierarchical, standards-based network infrastructure. They provide scalability, flexibility, and predictable performance, allowing organizations to support current and future networking needs while simplifying maintenance, upgrades, and troubleshooting .

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Learn about the six components of structured cabling, how they interconnect and the benefits of standards-based

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A structured cabling system is a vast network of cables, hardware, and connectivity devices designed to

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The cable systems carrying high-speed data and voice signals have become part of the new infrastructure.

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Six Components of Structured Cabling: A Comprehensive Guide

A well-designed structured cabling system is essential for any modern organization. By understanding the six key

6 Key Components Of Structured Cabling & Why They

Discover the 6 key components of structured cabling and how they ensure reliable network

Understanding the Basics of a Structured Cabling System

A structured cabling system refers to a standardized infrastructure of cabling and connectivity products that enable the

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Summary: Structured cabling forms the basis of any modern business network, with reliable connectivity for data,

Structured Cabling System: Subsystems, Standards and Uses

A structured cabling system consists of six subsystems (components). These subsystems work together as a single

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Welcome back to the ultimate guide to structured cabling from IES Communications. In Part 1, we defined structured

SCS (Structured Cabling System)

Structured cabling typically consists of several subsystems, including entrance facilities, equipment room, backbone

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Know the 6 subsystems of a structured cabling system

6. Work Area Work area (WA) components extend from the telecommunications outlet/connector end of the horizontal

Six Subsystems Of A Structured Cabling System

Structured cabling is a sort of infrastructure installed inside a building to support an organization''s cabling system or

7 Components of Structured Cabling

The 7 Components of Structured Cabling: A Technical Guide Structured cabling is the standardized approach to network

What are the Six Subsystems of Structured Cabling Installations?

The Structured cabling system is easy to maintain and upgrade as it consists of smaller units called the ''subsystems''.

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How many components make up a structured cabling system? The ANSI/TIA-568 standard defines six subsystems

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