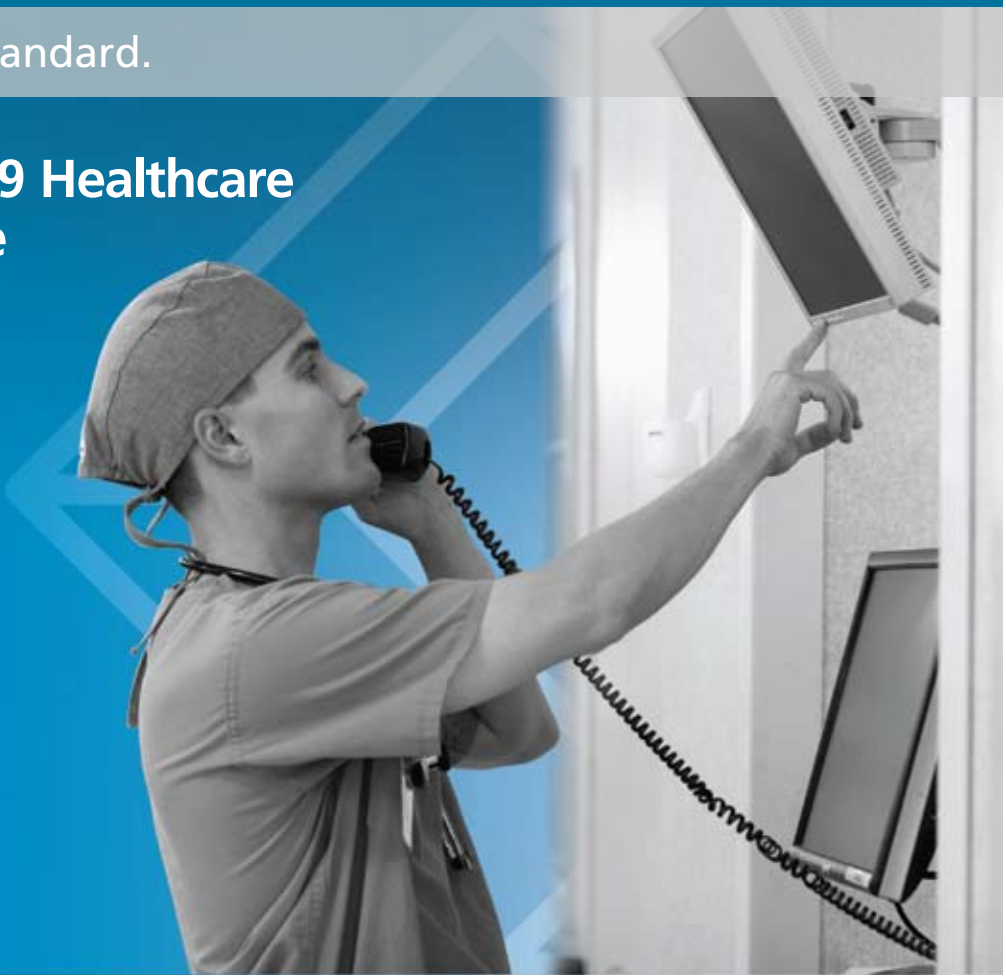
BLACK BOX NETWORK SERVICES

What's in this standard.

ANSI/TIA 1179 Healthcare Infrastructure Standard



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ANSI/TIA-1179 Healthcare Infrastructure Standard.

Today's healthcare industry is a growing, challenging, competitive environment reliant on the latest technology to provide the best patient care in the most operationally efficient manner. Driven by the need to deploy advanced clinical and non-clinical applications, IT professionals in healthcare demand much more of the cabling infrastructure and face many more regulations and challenges than their counterparts in traditional commercial buildings.

The Health Insurance Portability and Accountability Act (HIPAA), enacted in 1996, initiated the drive towards the electronic capture and storage of medical records. This was reinforced as part of the American Recovery and Reinvestment Act of 2009. Congress passed the Health Information Technology for Economic and Clinical Health (HITECH) Act, which provided incentives and money to encourage Electronic Health Records systems (EHRs) with the goal of complete electronic records by 2014.

To address the unique connectivity needs of healthcare facilities, the ANSI/TIA-1179 Healthcare Infrastructure standard was ratified in 2010. The standard was actually initiated by a group of healthcare facility end-users who suggested that while the then current TIA-568-B standard was good, it did not address particular design, installation, and construction considerations of healthcare facilities. The new standard specifies the infrastructure requirements, including cabling, topology, pathways, work areas, and more for a wide range of healthcare facilities.

What's Included in 1179?

Cabling pathways

TIA 1179 specifies a minimum of two diverse pathways from each entrance facility or equipment room to each telecommunications room or telecommunications enclosure for critical care areas. In hospital environments, this redundance is crucial as the network could be the difference between life and death for patients. This also enables the network designer to separate traditional data and voice applications from critical healthcare applications, such as imaging and diagnostic communications.

Equipment room size

TIA 1179 recommends larger equipment and telecommunications rooms allowing for 100% growth. This is to prevent significant disruption of rooms, hallways, and other areas when expansion is needed. The standard specifies rooms of 12 meters square or larger.

Security and segregation

The standard recommends segregated networks to ensure adequate support of life and safety protocols. The standard also recommends using color-coded cables, colored jacks, and keyed connectors. It does not specify certain colors for particular services or applications.

Infection control

Infection Control Requirements (ICR) have an impact on how much or little access cabling techs have to cabling pathways. The standard first recommends labeling spaces subject to ICR measures. It also advises using enclosed pathways, especially in air-handling spaces. In contrast to traditional commercial spaces, with healthcare space, system designers will very often find that they can't use open plenum spaces for routing cable. The standard also suggests that telecommunications enclosures might be better for ICR areas and should be of a suitable material when installed in surgical and other sterile environments. In addition, ICR procedures could involve restricting the number of ceiling tiles that can be removed, how long they are removed, etc.

The work area

The work area receives the most attention and is subject to the most changes in TIA 1179. Unlike traditional work areas in commercial buildings, which consist of a computer, phone, printer, etc., there are 11 definitions for work areas in a healthcare facility. They are: Patient Services, Surgery/Procedure/Operation Rooms, Emergency, Ambulatory Care, Women's Health, Diagnostic and Treatment, Caregiver, Service/Support, Facilities, Operations, and Critical Care.

The standard goes on to recommend work area outlet densities based on the function at each location. The standard breaks each classification into one of three subgroups: a low-, medium-, or high-density work area. It then specifies the number of outlets for each, depending on the function: Low-density: 2–6 outlets; medium-density: 6–12 outlets, high-density: 14+ outlets. For example, in Patient Services, patient rooms and nurse's stations are high-density work areas, whereas the family lounge and waiting room are low-density work areas.

In addition, TIA 1179 does not require outlets to be located together. The location of the outlet can also vary depending on the use. While commercial building outlets are 18" above the floor, outlets in healthcare facilities may be at bed height to accommodate temporary and permanent equipment connections, such as nurse call systems, patient monitors, test equipment, etc.

Transmission media

To accommodate high-speed transmission, the standard recommends using CAT6A cable capable of supporting 10-GbE for new healthcare installations and a minimum of CAT6 for existing installations. CAT5e is recognized, but not recommended. The standard recommends using a minimum of CAT6 cabling for horizontal runs, and fiber (multimode or single-mode) for backbones, which should be redundant. For high-bandwidth transmissions, such as CT scans and MRIs, 50-micron multimode fiber is recommended.

MUTOAs

Although the standard does not recommend the use of multiuser telecommunications outlet assemblies (MUTOAs) in new construction, it does allow for the addition of up to 24 additional outlets to a work area in an existing facility.

Environmental considerations

The standard also recognizes that some areas in healthcare facilities may be subject to different environmental factors, such as high EMI, atmospheric contamination, high temperatures, chemicals, etc. These considerations may affect your choice in cabling and how it is installed. Solutions and installation should be compatible with the surrounding environment. The standard does not specifically address what components to use in harsh environments.

Transmission and topology

The standard specifies the same star topology and cabling lengths as specified for commercial buildings.

About Black Box

Black Box Network Services is a leading provider of copper and fiber cabling infrastructure products, serving 175,000 clients in 150 countries with 200 offices throughout the world. The *Black Box® Catalog* and Web site offer an extensive range of products including CAT7, CAT 6A, CAT6, and CAT5e cable; fiber optics; video cabling, connecting hardware; cable management solutions; power protection; and testers and tools.

Black Box also offers an extensive line of cabling and connectivity products for healthcare, including custom nurse call cables, adapters, wallplates, and more.

Find what you need to build and expand your structured cabling system at blackbox.com. From our most popular cables to industrial cabinets and everything in between, Black Box has all the components of a communications infrastructure.

Black Box is also known as the world’s largest independent technical services company dedicated to designing, building, and maintaining today’s complicated data and voice infrastructure systems.