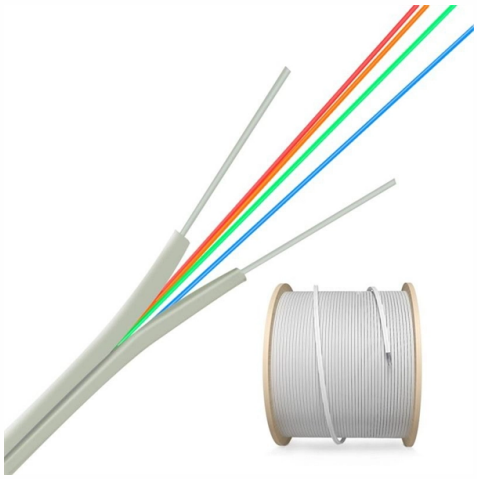
Installation of Automatic Doors in Cold Aisles of Computer Room



Overview

Double Sliding Aisle Containment Door Sliding doors in aisle containment refer to a type of door system AisleLok Sliding Doors for Aisle Containment AisleL.

Key Takeaways

Automatic or sliding doors in cold aisle containment improve airflow management, energy efficiency, and safety while allowing easy access for personnel.

Purpose and Benefits

Installing automatic doors in the cold aisle of a computer room is primarily aimed at isolating cold air from hot exhaust air, ensuring that cold air is delivered directly to server intakes. This improves cooling efficiency, reduces energy consumption, and prevents hotspots in the data center. Automatic doors also enhance safety and accessibility, allowing personnel to enter and exit quickly while maintaining the integrity of the containment system.

Door Types and Design Considerations

Sliding Doors: These are commonly used for cold aisle containment. They feature modular construction, smooth sliding mechanisms, and can include transparent panels for visibility into the aisle. Sliding doors can be synchronised double doors to allow full-width access while maintaining the seal.

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Hinged Doors: Single or dual hinged doors are suitable for aisle ends. Pre-assembled aluminum frames with lift-off hinges allow quick installation and can be customized for aisle width and height. Strip Doors: Overlapping vinyl strip doors are a cost-effective option for partial containment, improving air sealing and minimizing leakage.

Installation Best Practices

Modular and Pre-Assembled Components: Use pre-assembled frames and panels to simplify installation and reduce downtime.

No-

Threshold Design: Eliminates tripping hazards and ensures unobstructed access for personnel and equipment. Integration with Fire Safety: Some systems include automatic fire-safe mechanisms that open ceiling panels or doors in case of fire, allowing suppression gases to enter the aisle safely. Emergency Access: Doors should allow quick exit from inside the aisle in emergencies, either via one-way locking or safe-slide mechanisms.

Compatibility with Containment Systems: Ensure doors integrate with rack-mounted or ceiling-mounted containment structures, supporting varying aisle widths, rack heights, and depths.

Additional Features

Viewing Panels: Clear or polycarbonate panels allow monitoring of equipment without opening the door. Automated Controls: Doors can be integrated with access control systems or environmental monitoring to optimize airflow and security. Scalability: Modular designs allow for future expansion or reconfiguration of the cold aisle containment.

Summary

For effective cold aisle containment, automatic or sliding doors should be modular, pre-assembled, and integrated with safety and monitoring systems. Proper installation ensures efficient cooling, energy savings, and safe access, while maintaining the separation of hot and cold air streams in the data center.

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Article Content

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AisleLok Modular Containment is the industry''s first modular out-of-the-box aisle containment solution that can be easily installed and altered as the computer room evolves. The Sliding Doors provide an

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With five global manufacturing and processing locations, and our own installation teams, EDP ensures a quick turnaround on hot or cold aisle containment

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Cool Shield offers several varieties of aisle containment door options to effectively seal the entries to hot or cold aisles. Double, single, hinged and sliding configurations make configuring your data center easy.

Optimizing Data Center Cooling for Energy Efficiency

Typically, this involves installing doors at the ends of the aisles and a roof or panels above them, creating a sealed environment for the incoming cool

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Advantages of Cold Aisle Containment Cold aisle containment offers several distinct benefits for datacenter operations. First, it''s typically easier and less expensive to implement than hot

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Numerical and experimental study of air containment systems in

With increasing awareness of data center cooling and its energy cost impact, hot-aisle containment (HAC) and cold-aisle containment (CAC) systems are considered the most prominent

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This method employs plastic tubes that are deployed around key areas of the data center, principally the computer room, and follow the main air flows. This would

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An aisle containment system is a simple way to improve cooling efficiency in hot aisle/cold aisle rack configurations. Essentially creating a room within the aisle,

Hot and Cold Aisle | Effective Aisle Containment

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The most popular technologies include liquid cooling, fan installation, hot aisle and cold aisle management, etc. The latter is recognized to be one of the most effective ones.

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