

Article Overview

Cold Aisle Containment (CAC) systems isolate cold supply air from hot exhaust air, improving cooling efficiency, and can be designed with IP67-rated components for dust and water protection.

Overview of Cold Aisle Containment

Cold Aisle Containment (CAC) is a data center cooling strategy where server racks are arranged so that the fronts face each other, forming a corridor known as the cold aisle. The cold aisle is enclosed using panels, doors, or ceilings to prevent mixing of cold supply air with hot exhaust air, ensuring that servers receive consistent, cool airflow and improving overall energy efficiency and equipment reliability . Key benefits include:

- o Enhanced cooling efficiency by directing cold air precisely to server intakes .
- o Reduced energy consumption and operating costs due to optimized airflow .
- o Improved equipment lifespan by minimizing thermal stress and hotspots .
- o Flexible deployment with modular panels, sliding doors, or drop-away ceilings to fit various rack layouts .

IP67 Considerations

An IP67 rating indicates that a component is dust-tight and can withstand immersion in water up to 1 meter for 30 minutes. For CAC systems, IP67-rated materials or enclosures are particularly relevant for:

- o Overhead ducting or cable management exposed to potential water ingress.
- o Sealed doors or panels in environments where humidity or accidental water exposure is a concern.
- o Sensors and electrical components integrated into the containment system. While standard CAC panels are typically designed for airflow management, custom solutions can incorporate IP67-rated doors, gaskets, and panels to meet strict environmental protection requirements .

Deployment in Albania

Implementing a CAC system in Albania involves:

- o Assessment of existing data center layout to determine cold aisle dimensions and rack configurations .
- o Selection of containment type: rigid panels, sliding doors, or modular systems compatible with IP67-rated components .
- o Integration with cooling infrastructure: raised floors, perforated tiles, and CRAC units to optimize airflow .
- o Local sourcing: While international suppliers like EDP Europe, Legrand, and Upsite provide modular CAC solutions, local distributors or system integrators in Albania may assist with installation and customization.

Recommendations

- o Prioritize modular and flexible designs to accommodate future expansion or changes in rack density.
- o Ensure IP67-rated components for areas exposed to dust or moisture, especially in coastal or industrial regions.
- o Monitor environmental conditions with temperature and humidity sensors to maintain optimal performance .
- o Consult experienced integrators for retrofitting existing data centers to minimize downtime and ensure compliance with international standards. By combining cold aisle containment with IP67-rated components, Albanian data centers can achieve high energy efficiency, reliable cooling, and protection against environmental hazards, supporting both current and future high-density IT deployments.

Cold Aisle Containment for rack cabinets with single or double sliding doors and sliding roof frame units

Executive Summary of Aisle Containment This article examines cold aisle containment and hot aisle containment (also known as

EDP designs, manufactures and installs bespoke aisle containment systems for use in retrofit, new build and hyper-scale projects.

But there are some disadvantages to cold-aisle containment. Allowing the discharge air

Using aisle containment and airflow management solutions can significantly reduce your cooling costs. Minkels offers data center

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Last week we continued our article series on the challenges of keeping IT equipment cool in high density

Aisle Containment Solutions Why is Containment Important? Effective aisle containment is critical to maintaining peak data center

Hot & Cold Aisle Containment increases cooling efficiency and airflow management results in today's modern data center. Learn

Fearing invasion during the Cold War, Albania's leader Enver Hoxha forced his country to build tens of thousands of

Cool Shield(TM) containment offers state-of-the-art hot and cold aisle containment solutions designed to

Specify complete aisle containment systems for data centers, edge facilities and high-density compute rooms.
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Optimize data center airflow and efficiency with Armstrong hot & cold aisle containment and structural ceiling solutions

Cold Aisle Containment or CAC is a proven, relatively easy to deploy solution for effectively managing

Find out how to improve your data center infrastructure efficiency, using the cold aisle containment or hot

Hot aisle containment is made from light duty aluminum profile and thermal insulation PC board, has better heat dissipation

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