CTI

DIVISIÓN CPD'S

SPECIALISTS IN THE MANUFACTURING,SUPPLY, AND INSTALLATION OF HOT AND COLD AISLE CONTAINMENT SYSTEMS FOR DATA CENTERS.

SINCE 2002

CTI ELECTRONICS specializes in the manufacturing, supply, and installation of **hot and cold aisle containment systems (HAC type) and room dividers for data centers, since 2002.**

We have extensive experience working on aisle containment solutions for both existing and newly built data centers.

In existing data centers, we are able to adapt to the current conditions of the aisles—no matter how challenging—to provide the most optimal containment installation solution.

For new data center installations, our flexibility and wide range of accessories and materials allow for a fully customized setup.

We also install solid or mesh-type room dividers, enabling you to make the most of your data center space.

TYPES OF CONTAINMENT SYSTEMS AND THEIR ADVANTAGES
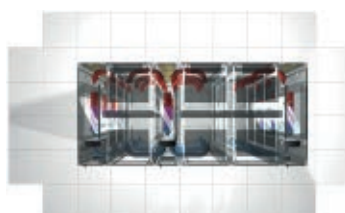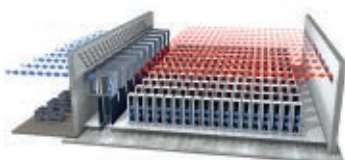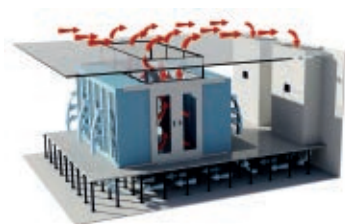
Depending on the client's needs, containment systems can be:

COLD AISLE CONTAINMENT SYSTEMS

HOT AISLE CONTAINMENT SYSTEMS (HAC TYPE)

Based on the type of installation, we can offer different ceiling options:

STANDARD TRANSLUCENT CEILING OR GLASS-EFFECT FINISH

AUTOMATIC DROP-DOWN CEILING ACTIVATED BY FIRE ALARM

CEILING WITH THERMAL FUSE

CEILING MADE OF WATER-SOLUBLE PLASTIC MATERIAL

CEILING THAT BURSTS OPEN AT 68–74°C

VERTICAL CEILINGS FOR HAC-TYPE HOT AISLE CONTAINMENT SYSTEMS

**THE ADVANTAGES OF INSTALLING
A CONTAINMENT SYSTEM
FOR DATA CENTERS INCLUDE:**

- **INCREASED COOLING** CAPACITY

- **SEPARATION** OF HOT AND COLD AIR

- **ENERGY SAVINGS** OF AROUND **30%**

- **PRECISE TEMPERATURE CONTROL** WITHIN THE AISLE

- **UP TO 25%** INCREASE IN COOLING **EFFICIENCY**

- **EXTENDED LIFESPAN** OF COOLING EQUIPMENT

- CONTAINMENT **PAYBACK PERIOD OF LESS THAN ONE YEAR**

ROOM DIVISION SYSTEMS

Another one of our specialties since 2002 is the manufacturing and installation of room dividers for data centers. We adapt to the client's needs in terms of size, dimensions, and specifications. Our dividers are fully customizable.

The types of room dividers we manufacture include:

OPAQUE SOLID PANELS: These create a complete visual barrier, preventing visibility into the adjacent room.

MESH-TYPE PANELS: These restrict access to the room while allowing visibility of its contents from the outside. They can be made from perforated sheet metal, flat or crimped mesh, with the pattern, size, and thickness specified by the client.

MIXED PANELS: The lower section is made from opaque panels or perforated sheet metal, and the upper section from mesh to allow better air circulation. Ideal for rooms with ceilings over 4 meters high.

UNDER RAISED FLOOR DIVIDERS: Designed to restrict access by extending below the raised floor. Access is only possible by lifting the floor tiles (Slab to slab configuration).
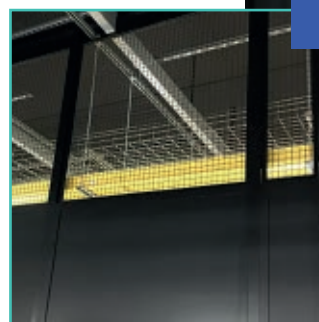
CEILING SOLUTIONS FOR DATA CENTERS

STANDARD POLYCARBONATE CEILING:

Lightweight and easily accessible

High impact resistance

Easy to clean

74% light transmission rate

Fire performance rating: B-s1, d0 (EN 13501 standard)

Excellent thermal insulation
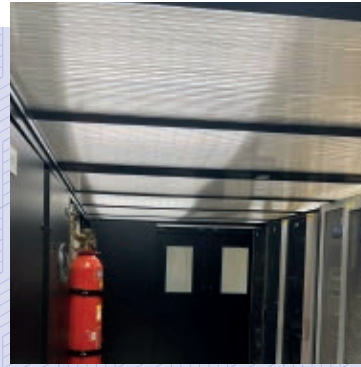
CRYSTAL-EFFECT POLYCARBONATE CEILING:

Glass-like appearance

Lightweight and easily accessible

High impact resistance

Fire performance rating: B-s1, d0 (EN 13501 standard)

Light transmission rate over 84%

AUTOMATIC OPENING CEILING WITH ALARM SIGNAL:

Opens automatically upon fire alarm signal

Designed for data centers with water mist or sprinkler fire suppression systems

Consists of 1.20 x 0.60 m panels, creating a 1.19 x 0.47 m opening when triggered

Made from high-strength tempered glass
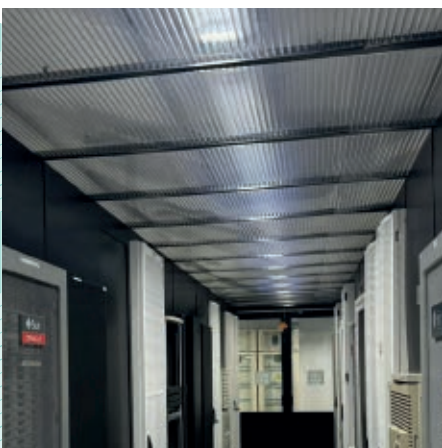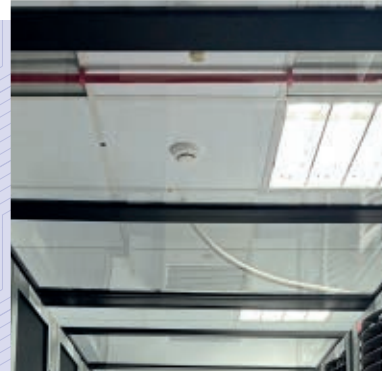
HEAT-SHRINKABLE PLASTIC CEILING (DROP-AWAY TYPE):

Contracts at a specific temperature for use in data centers with water sprinklers

Made from 0.013" thick rigid vinyl, FM Approvals Listed 4651 Cleanroom Material, UL listed

87.67% light transmission

Option to include additional LED lighting inside the enclosure

Fire behavior: B-s2, d0 (Euroclass), UL94-V0 rated

Not recommended for ceiling areas reaching temperatures above 48°C

WATER-SOLUBLE PLASTIC CEILING:

Designed for data centers with water mist or sprinkler fire suppression systems

Dissolves on contact with water, allowing mist or spray to reach the aisle interior

Enhanced visual appearance due to its more rigid material

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THERMAL FUSE CEILING:

Suitable for data centers with water sprinklers, offering a more economical solution than automatic opening systems

Thermal fuse (ANSI/UL 33 compliant) breaks at 57°C, dropping the lightweight polycarbonate panels and allowing sprinkler water to reach the aisle interior.

Available fuse breaking points: 57°C, 68°C, and 74°C

VERTICAL CEILING FOR HOT AISLES:

Typically used in hot aisles, but can also be installed in cold aisles

Can be manufactured in standard polycarbonate or crystal-effect, depending on client requirements
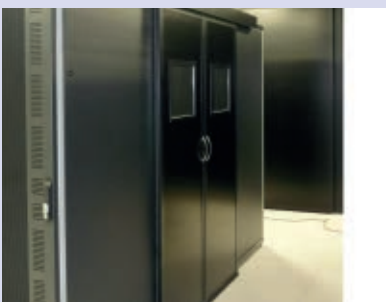
DOOR CONFIGURATIONS

MANUAL SYNCHRONIC SLIDING DOOR:

Constructed with a 40 x 40 mm aluminum profile, oven-coated with black RAL 9005 EPOXY paint. Other colors available upon request.

For double doors, the opening and closing system is manually synchronized (pulling one door will automatically close and open the other). Equipped with side brushes to prevent air leakage.

The door passage is clear of obstacles.

Includes a 350 x 350 mm glass or plastic window. Custom-made windows can be produced based on requirements.

SEMI-AUTOMATIC MANUAL SLIDING DOOR:

Made with a 40 x 40 mm aluminum profile, oven-coated with black RAL 9005 EPOXY paint. Other colors available upon request.

For double doors, the opening system is manual, while the door closure is automatic. Equipped with side brushes to prevent air leakage. The door passage is free from obstacles.

HIGH-SECURITY TEMPERED GLASS DOOR:

Made from 4, 6, or 8 mm high-security tempered glass to prevent cracking from daily activities in the data center.

When the door is not paired with an automatic opening system, the tempered glass is mounted on a 4 cm thick frame.

The door passage is free of obstacles, as with all other doors.
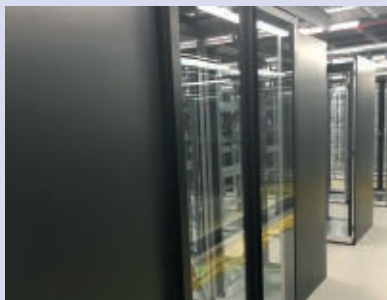
AUTOMATIC SLIDING DOOR:

Made with a 40 x 40 mm aluminum profile, oven-coated with black RAL 9005 EPOXY paint. Other colors available upon request.

Automatic doors can be single or double leaf depending on the configuration of the cold aisle. Equipped with side brushes to prevent air leakage. The door passage is clear of obstacles.

The automatic opening and closing system can be configured in terms of opening/closing times and includes push buttons installed on both the exterior and interior of the aisle. It also allows connection to the central fire alarm system.

PVC LOUVERED DOOR:

Made from 2mm thick PVC louvers with a 200mm wide louver.

Transparent color.

Fire resistance: Grp4 / B2. Self-extinguishing material in case of fire. Other louver options with enhanced fire resistance are available.

A cost-effective solution with lower containment efficiency.

HINGED DOOR:

Single or double leaf hinged doors provide a highly practical solution for accessing the hot zone in aisles with complex access points.

LED LIGHTING WITH MOTION SENSOR inside the aisle, providing additional illumination.

FIRE ALARM AND DOOR RELEASE BUTTONS located inside the aisle.

VISUAL AND AUDIBLE SIGNAL to indicate fire alarm activation.

RUBBER SKIRTING FOR RACK BASES to improve aisle sealing and thermal efficiency. Adaptable to any rack base type.

TEMPERATURE AND HUMIDITY DISPLAY for monitoring aisle interior conditions.

ACCESS CONTROL SYSTEM for the aisle via fingerprint scanner, card reader, or access code.

INTEGRATED ELECTROMAGNETIC LOCK, concealed within the door profile. Includes status monitoring and can be paired with the aisle's access control system.

CUSTOM PRINTING ON DOORS AND REAR BLANK PANELS with the client's logo.

ENCLOSURE COLOR AVAILABLE in any RAL code specified by the client.
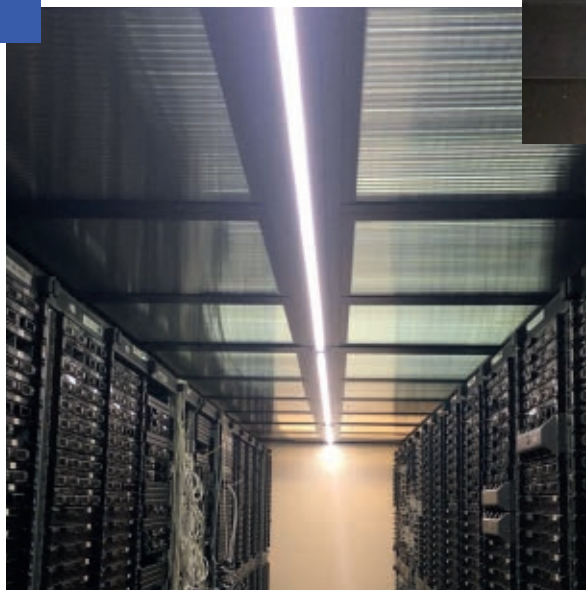
Implementing cold aisle containment enclosures is a fast and cost-effective way to improve the energy efficiency of a data center.

The goal is to separate cold and hot aisles, preventing the mixing of airflows.

These enclosures help maintain a uniform temperature along the full height of server racks.

They also eliminate temperature variations of up to 10°C between the bottom and top of the racks, ensuring that the temperature throughout the length of the cold aisles remains as consistent as possible.

When combined with underfloor cold air distribution systems, these enclosures can achieve energy savings of up to 30%.

Airflow Comparison

Conventional Containment

CTI Containment

Air Temperature

- 32,2°C
- 26,7°C
- 21,1°C
- 15,6°C
- 10°C
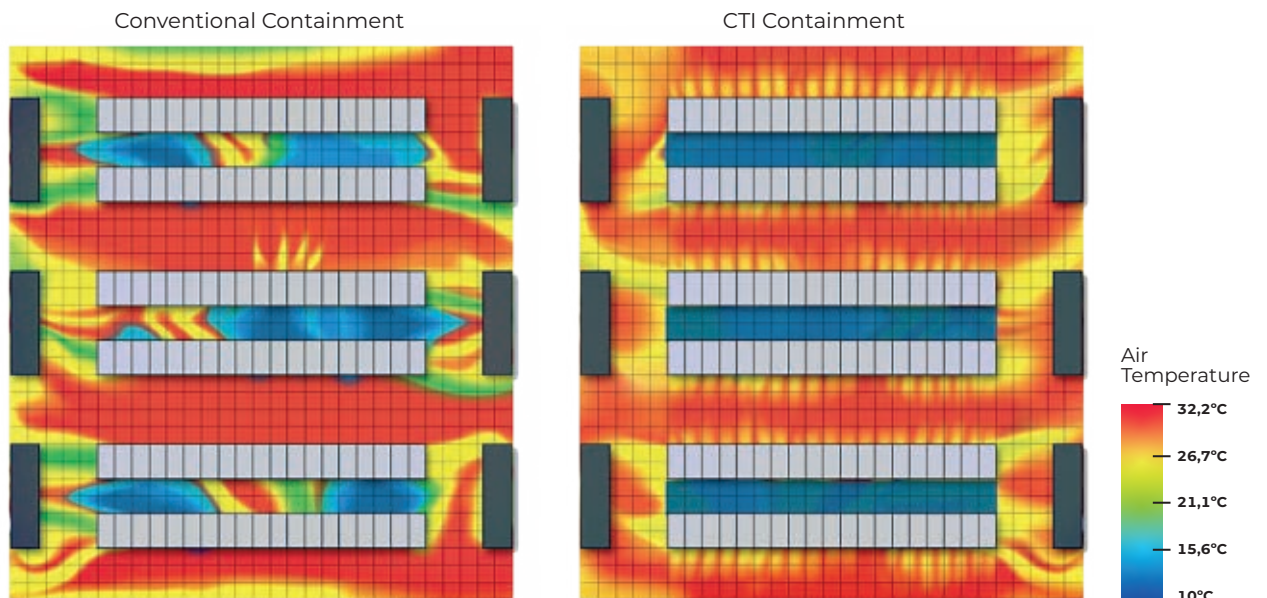
COMPLETED INSTALLATIONS

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