CONTAIN-IT™ FLEX
AISLE CONTAINMENT

DESIGNED
TO MAXIMIZE
EFFICIENCY &
RELIABILITY

designed to be better.™

legrand®

CONNECTED INFRASTRUCTURE

Legrand® solutions, backed by industry leading customer advocacy, design and support teams, are the foundation for Connected Infrastructure, a comprehensive approach to your network. Through Connected Infrastructure, Legrand delivers maximum performance, time savings, space optimization, superior customer experience and sustainability by design, to address your challenges, today and tomorrow.

MAXIMUM PERFORMANCE

The performance of the Contain-IT™ FLEX system was tested at positive and negative pressures far exceeding a typical application. The system maintained airflow integrity with minimal leakage in both horizontal and vertical applications. Testing was conducted on aisles that were twenty-four feet long, test criteria and results are provided on page 3.

TIME SAVING

Contain-IT FLEX is light weight, requiring fewer threaded rods for support. The system has the ability to be supported from Cablofil tray eliminating the need for threaded rods. The near tool-less lightweight solution snaps together reducing overall installation time. The components are in stock (except doors) and are customizable on site eliminating manufacturing lead time, the need for custom components or site visits from field engineers.

SPACE AVAILABILITY

Once deployed Contain-IT FLEX provides a predictable and reliable operating environment for your IT equipment allowing the end user to maximize the density per cabinet which provides the lowest OpEx per port. Density can be further increased by following airflow integrity best practices such as deploying the cabinets with blanking panels, seal kits, air dams and angled airflow baffles.

CUSTOMER EXPERIENCE

The modular design was created to seamlessly integrate with Brownfield or Greenfield installations. System components are available individually allowing for moves, adds and changes without custom engineering, custom components or manufacturing lead times. The flexibility of the system allows the end user to lengthen or shorten rows in a live environment without disruption.

SUSTAINABILITY

Deploying Contain-IT FLEX will reduce your PUE while maximizing network availability and density per square foot. Energy savings can be realized by slowing variable fan drives on CRAC units or even turning CRAC units off. The solution allows the end user to comply with California's Title 24 law. The solution reduces the data center's carbon footprint and many public utility companies have incentive programs that provide rebates for a reduction in energy consumption in data centers.

CONTAIN-IT™ FLEX
AISLE CONTAINMENT

All data centers require proper airflow management for maximum efficiency and reliability, but each data center has a unique set of parameters. Legrand's Contain-IT FLEX containment adapts to meet your parameters whether it's a Greenfield or Brownfield installation.

Contain-IT FLEX containment was designed to maximize efficiency while creating a predictable operating environment that would ensure maximum reliability of the equipment. With airflow integrity greater than 97.5% the solution eliminates bypass airflow and recirculation and helps mitigate over temperature alarms or equipment shut downs due to thermal over-load. Deploying containment reduces operating cost and the carbon footprint of the data center.

THE SOLUTION OFFERS:

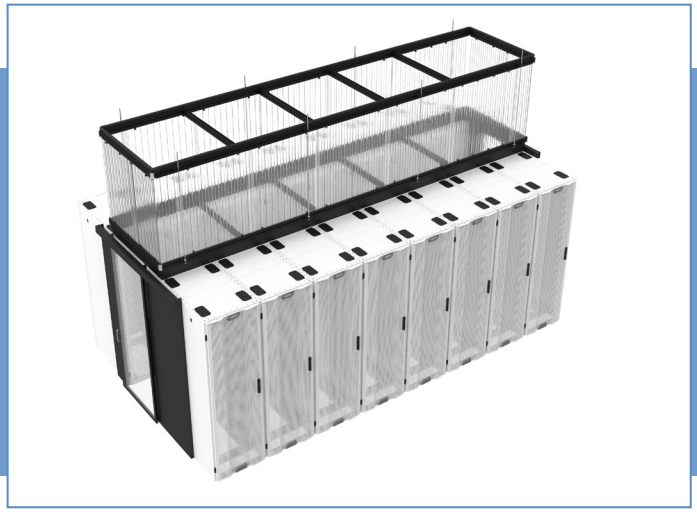
- Horizontal and vertical solutions
- Ideal for hot aisle, cold aisle or stratification applications
- Ceiling supported (threaded rod), cabinet supported or attached to Cablofil basket tray
- Modular solution for maximum adaptability
- Pre-configured aisle sizes
- Configure to order for non-uniform aisles
- Snap-to-fit for ease of installation
- Minimal installation time
- Cost effective
- Ability to support 8 pounds per linear foot of auxiliary equipment
- The ability to overcome obstacles including:
  - Building columns
  - City-scape aisles
  - Gaps in rows
  - Overhead cable management
  - Overhead trades
  - In row cooling

CONTAIN-IT FLEX BENEFITS:

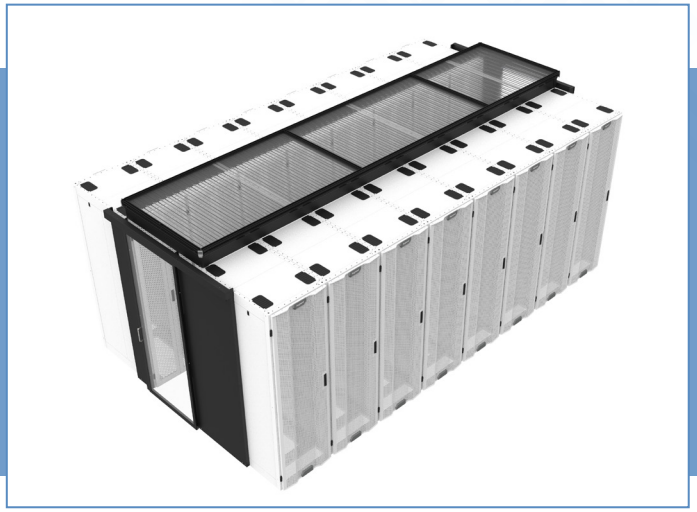
- Installed by a single person
- Near tool-less installation
- Minimal installation time
- Low cost installation
- Lightweight
- Increased energy efficiency
- Increased reliability
- Components are in stock
- Ability to customize on site
- No custom components needed
- Maximizing the CRAC unit set point

Qualify for up to 13 LEED points.
For more information visit:

http://www.legrand.us/aboutus/sustainability.aspx



Vertical Containment



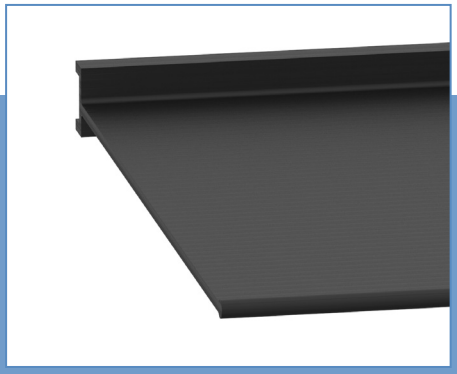
Horizontal Containment

NEAR TOOL-LESS INSTALL

- The components snap together during installation.
- Beams are spliced together, the splice snaps in and seals the joint.
- The outside corner allows the beams to form a 90 degree angle and seal the joint.
- The inside corner snaps into place and adds strength to the joint.
- The multi-wall panel can be installed after the frame is in place, simply lift into place and drop in.
- The multi wall panels are held in place with a tool-less retention clip.
- A cabinet seal is installed with a tool-less retention feature in the rail splice.
- The hanger bracket tool-lessly snaps on to the beam or Cablofil tray.
- A seal to the ceiling is accomplished using a bulb seal.

THE CONTAIN-IT™ FLEX ADVANTAGE

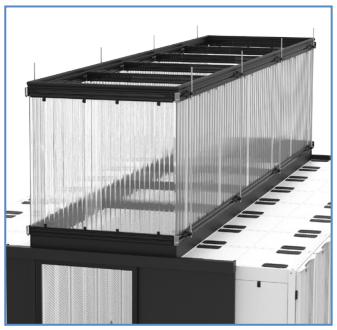
- Pieces snap together for an air tight fit allowing the system to maintain integrity with nominal pressures or vacuums from within the aisle.
- The ability for the pieces to snap together to provide ease of install and a labor savings.
- The modular system allows the end user to order components that can be customized on site without deploying a field engineer first to take measurements or create a custom product.
- Near tool-less install
- Product is in stock (except doors), eliminating manufacturing lead time.
- The system is light weight and requires fewer threaded rods for support.
- The system can be mounted to Cablofil® wire mesh tray, eliminating the need for threaded rods.
- Ability to choose from horizontal, vertical or a mix as needed.
- No need to scrap product after use, re-use product for new application.



Cabinet Seal

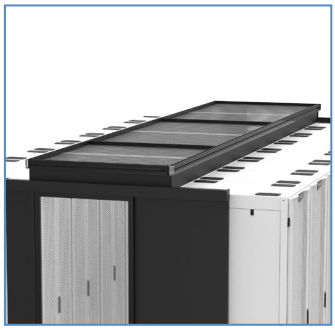
Cabinet Seals provide a soft touch to the cabinet and acts as a slip joint to prevent collision in snow load zones or removal of cabinets.

APPLICATIONS



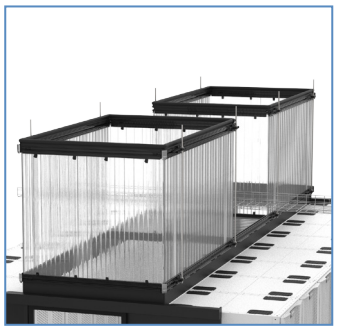
VERTICAL CONTAINMENT:

Vertical containment can be suspended from the roof, cabinet supported or attached to Cablofil wire tray. The solution can be used in conjunction with a return plenum or in a stratification application. Designed to work in new or retrofit installations with any cabinet, the solution is easily modified to conform to the length of the aisle. Custom panels are easily made on site to fill open space if cabinets need to be removed.



HORIZONTAL CONTAINMENT:

Horizontal containment can be suspended from the roof, cabinet supported or attached to Cablofil wire tray. Horizontal containment will adapt to a Greenfield or Brownfield install regardless of the cabinet manufacturer. The solution is easily modified to conform to the length of the aisle. Custom filler panels are easily made on site to fill open space if cabinets need to be removed.



HORIZONTAL AND VERTICAL CONTAINMENT:

Contain-IT™ FLEX can transform from horizontal to vertical within the same aisle using standard components. This allows the end user to contain around large obstructions, such as ductwork, while maintaining airflow integrity of the system. The flexibility of the system provides a pathway for future moves, adds and changes in a live environment without disruption to data center operations.

END OF ROW DOORS:

Sliding end of row doors are available for cabinets up to 52U high and are available for three to six foot wide aisles. The cabinet at the end of the row is generally the hottest in the aisle due to recirculation from the hot aisle to the cold aisle making the end of row doors a critical component in the containment solution. Windows are clear or Multi-wall.

EXCEPTIONAL PERFORMANCE

VERTICAL CONTAINMENT:

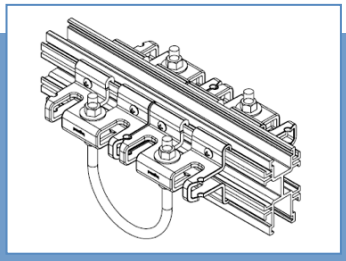
Integrity: Contained 97.7% of the volumetric flow at 0.03 inches of water at 2000 CFM per cabinet for a 4' tall, 4' wide aisle, 24' long aisle, inclusive of two 92" tall end of row doors.

System Weight: 4' tall, 4' wide (not including doors)
Plastic beam: weighs less than 10 lbs per aisle foot
Aluminum beam: weighs less than 15 lbs per aisle foot.

HORIZONTAL CONTAINMENT

Integrity: Contained 98.7% of the volumetric flow at 0.03 inches at 2000 CFM per cabinet for a 4' wide, 24' long aisle, inclusive of two 92" tall end of row doors.

System Weight: 4' wide (not including doors)
Plastic beam: weighs less than 7 lbs per aisle foot
Aluminum beam: weighs less than 12 lbs per aisle foot



LOAD CARRYING CAPACITY:

- Plastic beam: capable of carrying 7.5 lbs per aisle foot, 30 lbs maximum per cross member
- Aluminum beam: capable of carrying 10 lbs per aisle foot, 40 lbs maximum per cross member

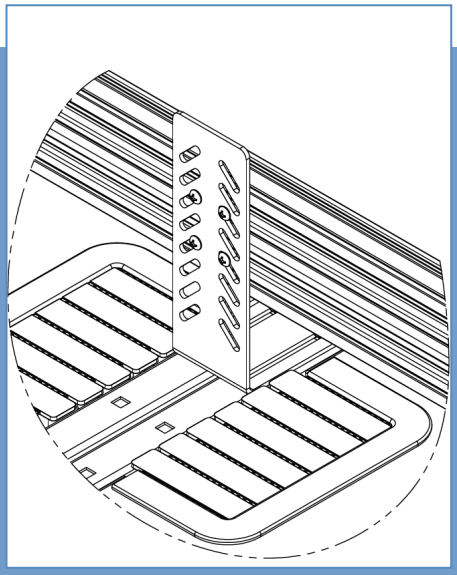
UNLIMITED VERSATILITY

The extruded beam is available in plastic and aluminum. The extruded beam profile contains four areas where it can accept containment panels. Unique features of the beam are:

- Beams are field modifiable to any length and are joined with standard components that snap together allowing custom fits without custom parts
- Install beam in the same orientation for use in horizontal or vertical containment
- Seamlessly transition from vertical to horizontal
- Beam profile allows multiple install methods and allows build as you go or construct frame and install panels last
- Panels install tool-lessly and held in place via a spring clip allowing for easy removal for service access
- Components are easily disassembled and can be re-configured for a different install

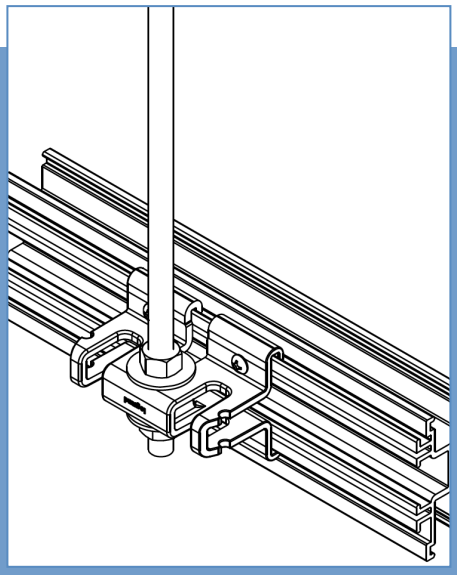
Aluminum or Plastic Beam

MOUNTING OPTIONS



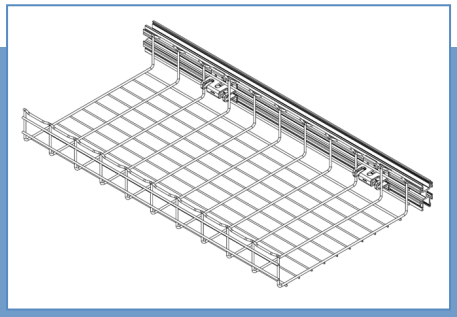
CABINET SUPPORTED

Horizontal or vertical containment can be adapted to any cabinet.



ROOF SUPPORTED

Horizontal or vertical containment can be supported from building infrastructure.



CABLOFIL SUPPORTED

Both horizontal and vertical containment can be supported from Cablofil Tray. Simply snap the hanger bracket into the tray and build the solution.

- Eliminates the need for additional thread rods
- Lowers cost of install from reducing labor and materials needed
- Allows cabinets to be refreshed without disassembling containment

SIMPLIFIED ORDERING

Ordering Contain-IT™ FLEX is easy with pre-configured kits that are available for horizontal and vertical containment in 15, 20, 30 and 40 foot aisle lengths.

- Pre-configured aisle kits
- Horizontal kits fit up to a 4'W aisle
- Vertical kits fit from 8" to 8'H
- Kits are field modifiable to adapt to sizes within the range

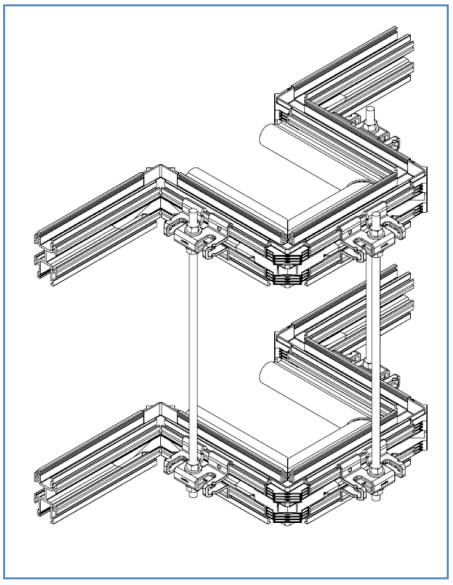
Field engineers are available to create solutions using standard components for non-uniform aisles.

FLEXIBLE BY DESIGN

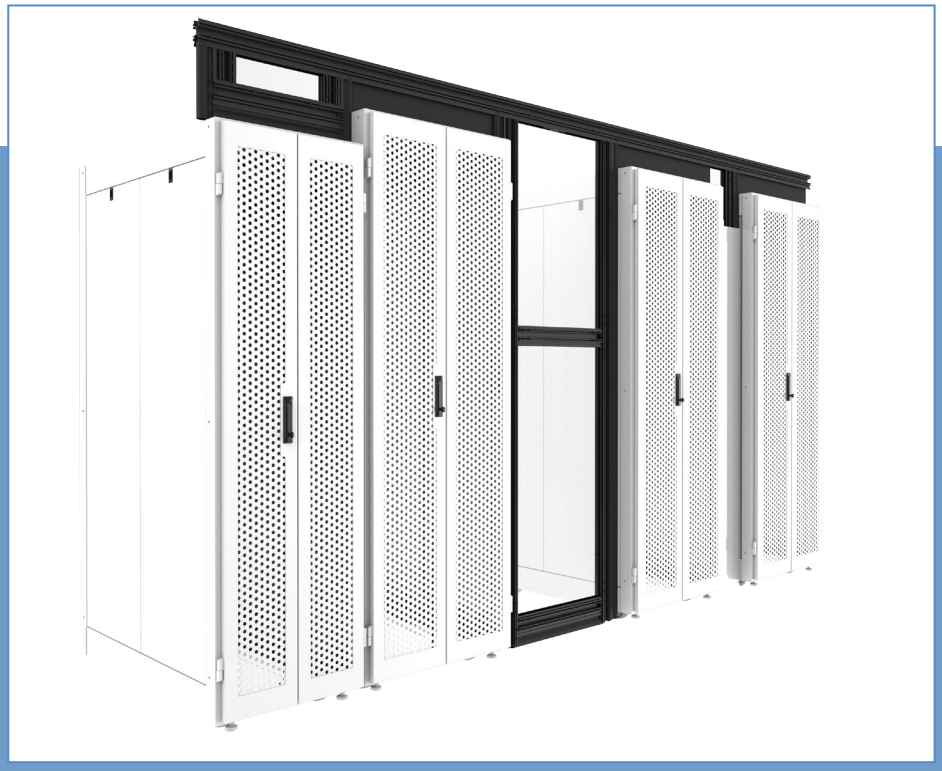
The modular solution easily overcomes obstructions. Please see the Contain-IT FLEX application guide for a list of components and instructions on how to overcome any obstacle including how to:

- Fill gaps in the aisle created by missing cabinets
- Contain around building support columns
- Create barriers for cable ladder or wire mesh basket that penetrate the containment panels
- Create panels that adapt to rows of cabinets that are not planar
- Ability to contain under overhead obstacles by transitioning from vertical to horizontal
- Create filler panels to adapt to city-scape aisles or in row coolers

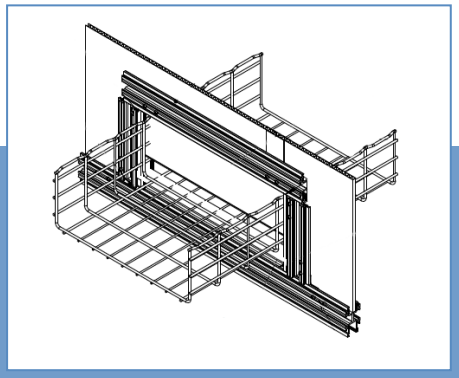
To learn more view the application guide at **www.legrand.us/contain-it-flex**



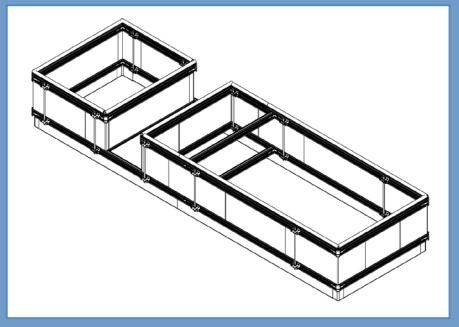
Vertical Column Solution



Gap panels and components to accommodate deviations in aisles

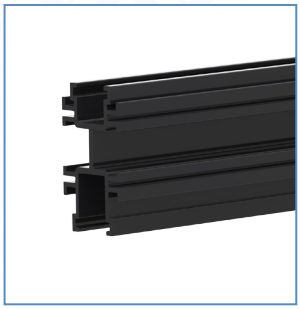


Cablofil Pass Through



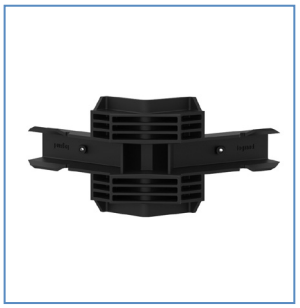
Vertical to Horizontal

Aluminum Beam

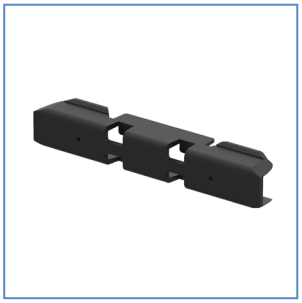


Plastic Beam

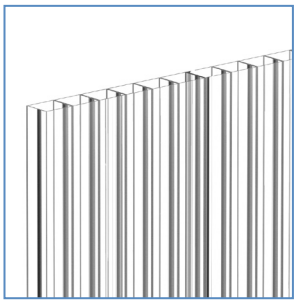
Inside Corner



Outside Corner



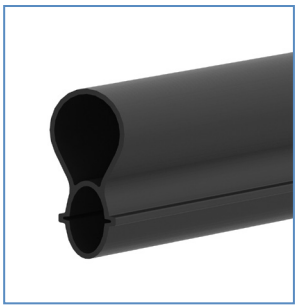
Splice



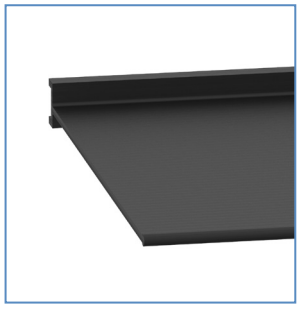
Multi-wall Panel

Panel Retention Clip

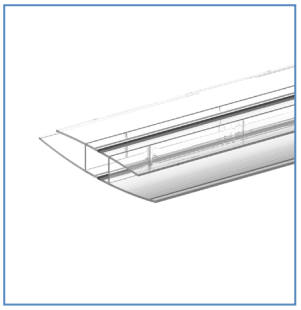
Hanger Bracket



Bulb Seal



Cabinet Seal



Panel Splice

SNAP TOGETHER FEATURE SET

The lightweight containment system is comprised of components that snap together providing a savings in time and labor. The snap together features are:

- The inside and outside corners snap into the beam geometry forming an airtight corner while providing a time and labor savings.
- The beams are spliced together with a snap in joint splice allowing for modularity in length or height of the containment system.
- The panel retention clip is open ended for ease of install and to maintain a consistent pressure allowing for a tool-less install of containment panels.
- The hanger bracket snaps onto the beam over the threaded rod allowing for the trades to install the threaded before containment installation.
- The ability of the hanger bracket to be placed anywhere along the beam also allows for the threaded rod to be deployed before installation.
- Seals are provided to provide a soft touch to the cabinet and ceiling
- All joints are covered eliminating leakage points.

A complete set of installation instructions and an application guide can be found at **www.legrand.us/contain-it-flex**

PRE-CONFIGURED KITS OR BUILD TO ORDER:

The components above can assembled on site to create horizontal or vertical containment. They are available for sale as kits for certain aisle sizes and are sold as individual pieces so that assemblies can be created on site to overcome obstacles and adapt to obstructions.

Readily available - All components are in stock (except doors). The common components are used in horizontal and vertical applications.

DROP AWAY PANELS

Drop away panels are a cost effective method of allowing fire suppression to enter a contained aisle. The panels soften, distort and fall when exposed to fire, allowing fire suppression to enter the aisle. This eliminates the requirement of installing fire suppression within the aisle.

The solution is ideal for Brownfield installations where modifying the fire suppression system is costly and requires an inspection from the authority having jurisdiction.

THE DROP AWAY PANELS ARE:

- Available in 2'X4' sections
- Easily nest in the Contain-IT™ FLEX beam
- The beams allow for custom grids to be created as needed
- Panels are clear allowing for light to enter the aisle.
- Some parts of the grid can be installed to allow access to areas above the panels
- Meets NFPA 13 requirements, see section 8:15:15

Always consult the authority having jurisdiction with the proposed containment design before ordering. Fire and building code will vary based on local code.

Drop Away Panel

MATERIALS

The beam is made of rigid plastic and is also available in Aluminum. The components are made of PC-ABS Plastic. Please refer to the applications guide for material properties including flame and smoke ratings, tensile strengths and other physical properties. **www.legrand.us/contain-it-flex**

TITLE 24 COMPLIANCE

Contain-IT FLEX containment allows users to comply with California's' Title 24 regulations in the sections referred to as "computer rooms". The legislation defines a computer room as:

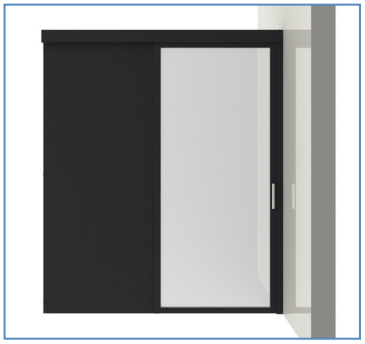
"A room whose primary function is to house electronic equipment and that has a design equipment power density exceeding 20watts/ft² (215 watts/m²)of conditioned floor space."

COMPLIANCE FOR TITLE 24 IS REQUIRED IN:

- All new construction computer room loads over 5 tons of cooling (17.5 kW IT load)
- Any new computer room in an existing building that adds more than a total of 20 tons of cooling (70 kW IT load) above 2013 baseline
- Any addition to an existing room that adds more than a total of 50 tons of cooling (175 kW IT load) above 2013 baseline

Containment is required when rooms reach above a 175 kW total design IT load. The method of containment can be selected by the end user as long as hot/cold-air mixing is substantially prohibited. Expansion of an existing computer room is exempt if IT racks have a design load under 1 kW and equivalent energy performance based on engineering analysis. The flexibility of Contain-IT FLEX is ideal to meet Title 24 regardless of the computer room layout.

Dual Sliding Door



Cabinet-to-Wall
Left Sliding Door

END OF ROW DOORS:

Sliding end of row doors are available for cabinets up to 52U high and are available for three to six foot wide aisles. The cabinet at the end of the row is generally the hottest in the aisle due to recirculation from the hot aisle to the cold aisle making the end of row doors a critical component in the containment solution. Windows are clear or multi-wall.

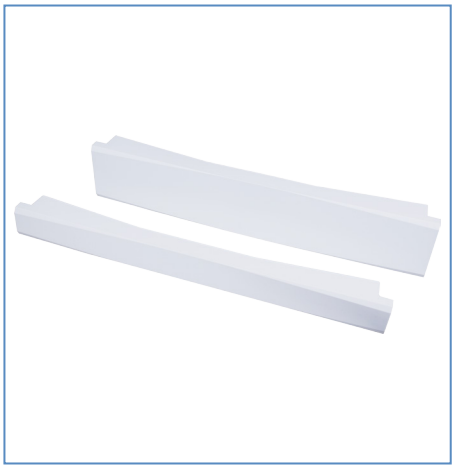
GX CABINET "U" HEIGHT	END OF ROW DOOR HEIGHT FOR GX MIN/MAX
42	78.5"- 82"
45	82.1"-85.5"
48	89.1"-92.5"

LX CABINET "U" HEIGHT	NOMINAL END OF ROW DOOR HEIGHT FOR LX MIN/MAX
42	78.5"- 82"
45	85.6"-89"
47	89.1"-92.5"
52	96.6"-99"

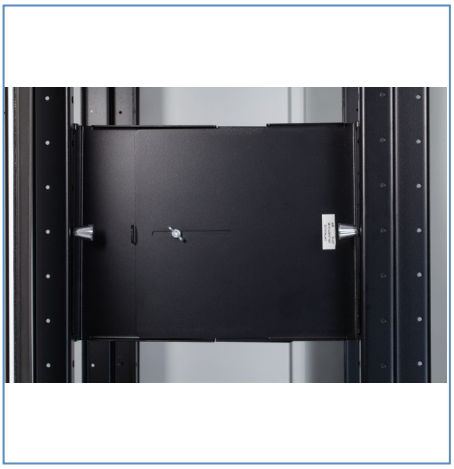
See applications guide for part numbers at **www.legrand.us/contain-it-flex.**

AIRFLOW INTEGRITY BEST PRACTICES

To maximize the performance of the containment solution, airflow management best practices should be followed. The cabinet should be deployed with air dams and blanking panels at a minimum. Additional components should also be used when deploying containment, such as bottom panels, floor seals, seal kits/angled airflow baffles, front to rear blanking panels and top panel grommets. Deploying these accessories ensures maximum efficiency by eliminating bypass airflow and recirculation. The accessories also ensure that all of the cold air is going through the equipment and a uniform intake temperature is achieved from the bottom to the top of the cabinet. The uniform temperature creates a predicable environment for the equipment to operate in, helping to prevent over temperature alarms or equipment shut downs for maximum reliability and uptime. These best practices help maximize the CRAC unit set point. All components required to follow best practices are available on the Legrand LX cabinet system.



Blanking panels



Front to rear blanking panels

Angled airflow baffles

Bottom Panels

Air Dam Kits

Floor Seal Brackets

Seal Kits

designed to be better.™

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