

Seismic Bracing Solutions for Data Center



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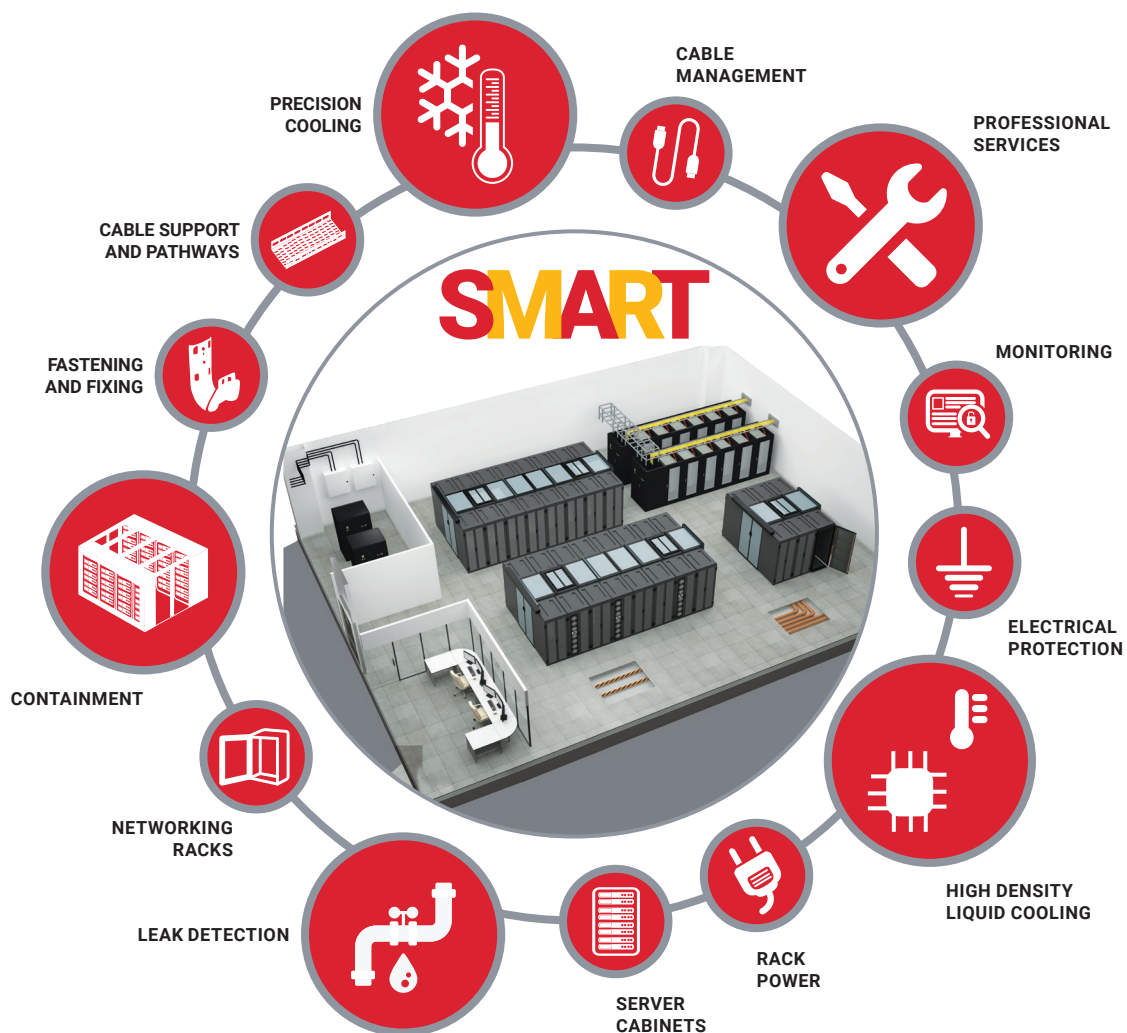
nVent Solutions for Data Centers

Introduction

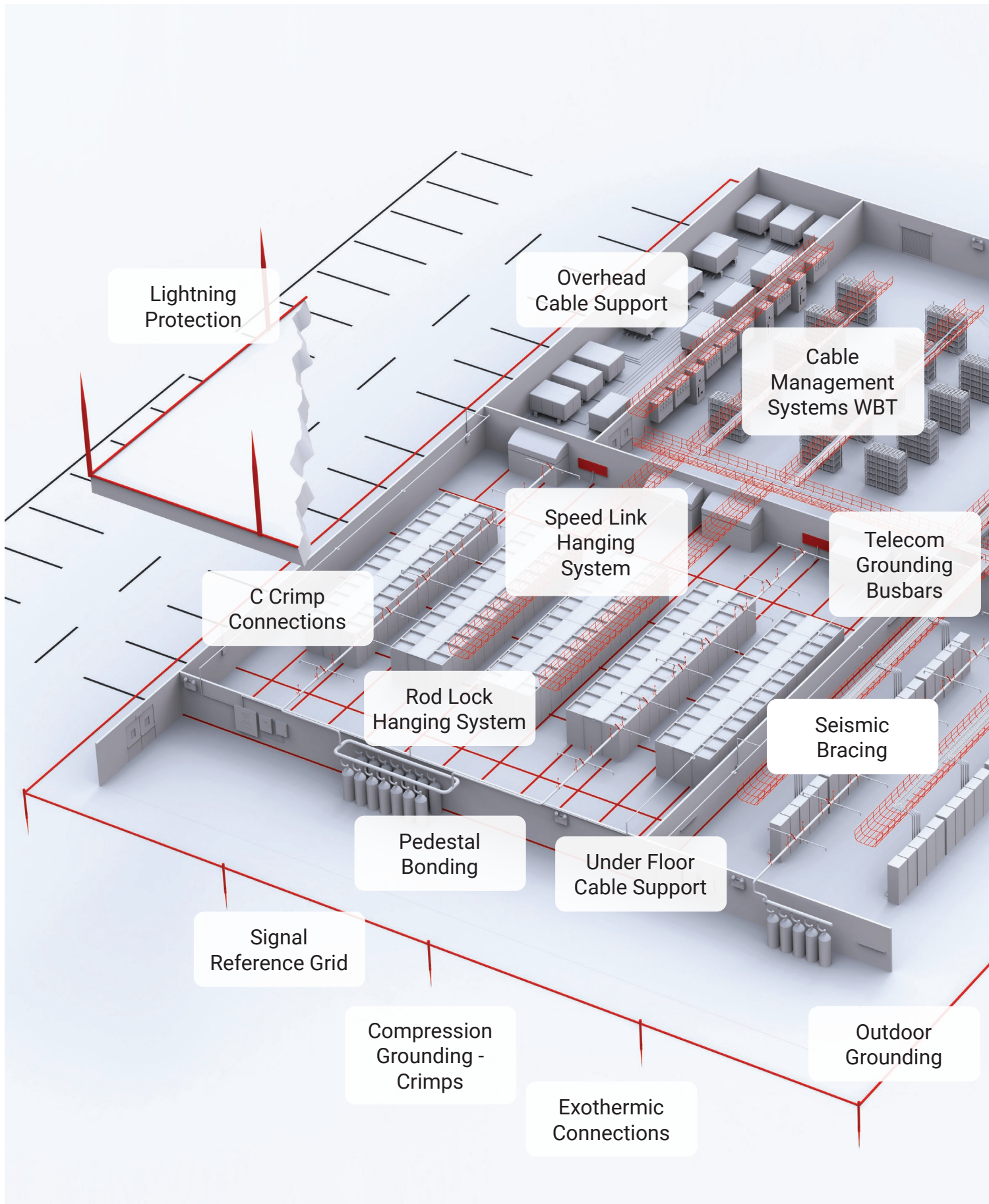
The highest amount of data storage, transmission capacity and network availability is crucial in today's connected world. Ever expanding IT and Data Center infrastructure demand a reliable communications system, along with secure and reliable data storage. The broad nVent Data & Networking product portfolio, combined with design and project support, enables you to specify and deploy your project on time to ensure data and network infrastructure availability and protection.

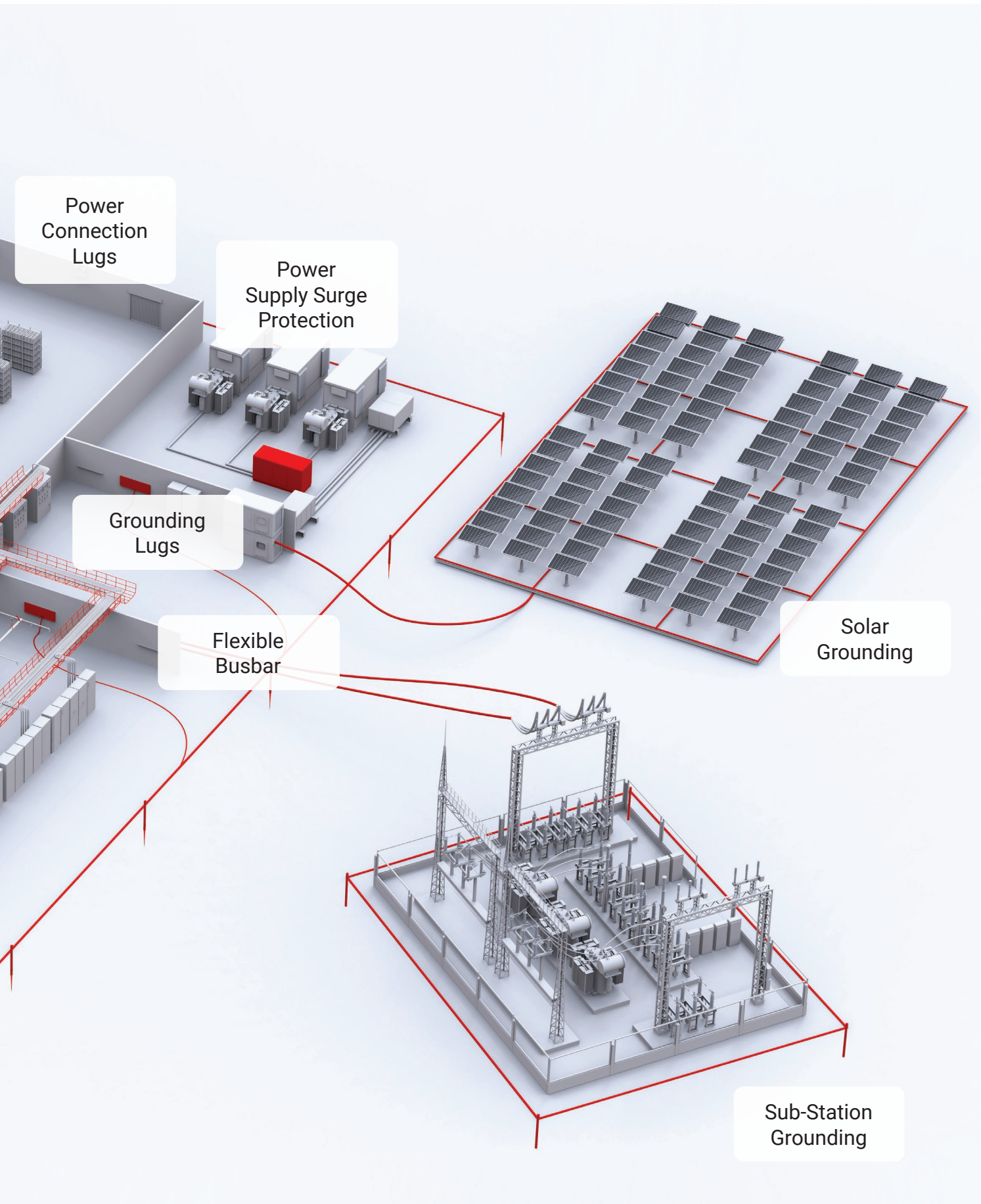
These nVent solutions provide fastening, cable management, protection and connection solutions for data centers facing issues including:

- Drastically increased data usage and growth to core and transport networks to deliver data
- Cloud based end-to-end communications and increases in cloud-based storage need
- Deployment of complex technology-based security systems for both commercials and individual use
- Large amount of data needed in automation, security and functioning of power utilities, rail networks, military and other government functions
- Large amount of data needed in future technologies that need low latency like driverless cars and remote surgery
- Increases in IoT devices, as well as online and electronic trading and warehousing



nVent Electrical & Fastening Solutions for Data Centers





Power Connection Lugs

Power Supply Surge Protection

Grounding Lugs

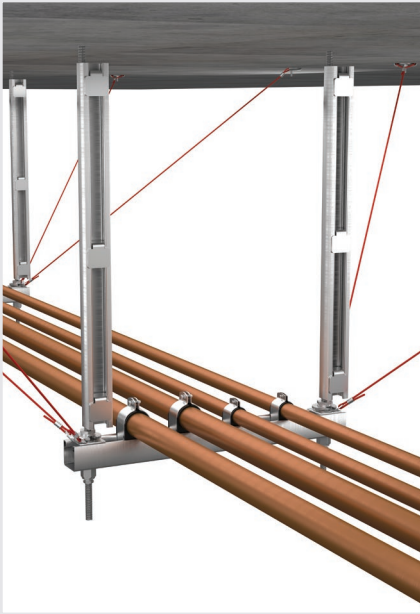
Flexible Busbar

Solar Grounding

Sub-Station Grounding

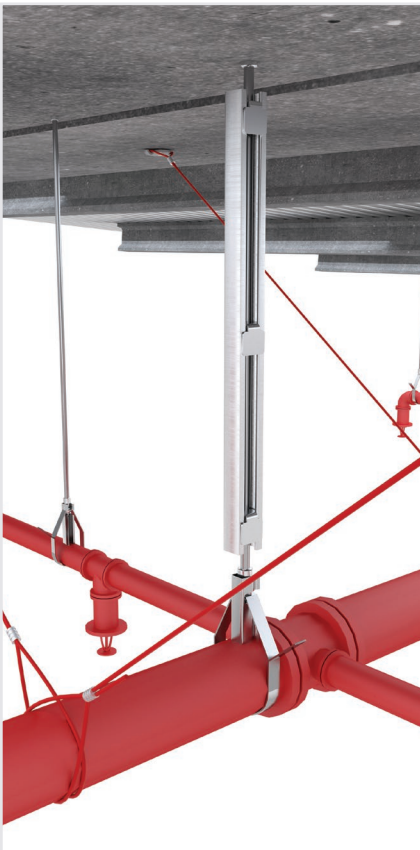
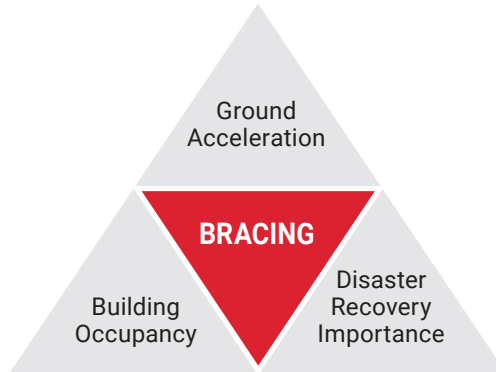
nVent CADDY Seismic Bracing Systems

Overview



DETERMINING FACTORS IN BRACING

The requirements for seismic protection depend on the risk associated with the building considered in addition to the rate of seismic activity in the zone in which the building is located. The higher the seismicity of the location and the greater the building occupancy, the more stringent the requirements. For example, a military or healthcare facility in a generally low seismic area will typically require bracing because of the building's importance to disaster recovery.



The majority of earthquakes occur beneath the earth's surface around fault lines, the places where tectonic plates meet. This causes pressure to build up shifting the plates. Subsequently, large parts of the earth including rocks crack and move, all the way to the crust of the earth. The stored energy is released in the form of seismic waves of varying strength.

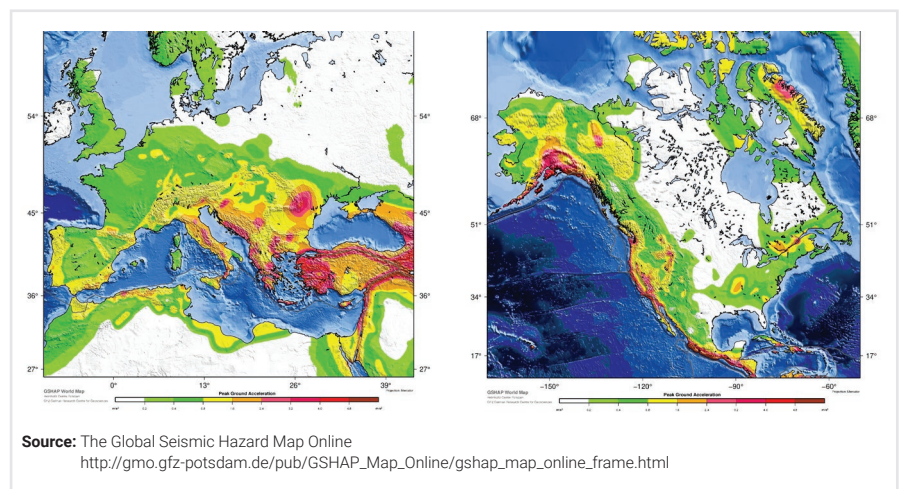
Risk Category

Category I: Low hazard to human life, e.g. barns

Category II: Most buildings, e.g. residential, individual shops

Category III: High occupancy, e.g. stadiums, buildings containing hazardous materials

Category IV: Hospitals and essential facilities, e.g. data centers, government buildings, military facilities



nVent CADDY Seismic Bracing Systems

We Make Seismic Simple



nVent CADDY Seismic Solutions protect people, property and equipment during and after a seismic event by ensuring business continuity and continued operation of critical infrastructure and services. nVent CADDY's innovative seismic bracing solutions reduce the total installed cost, and the provided installation technique training and guidance ensures seismic code and standards compliance. The nVent CADDY team makes seismic simple by:

- Working with you to design a turn-key, fully engineered, complete bracing system that meets your needs
- Identifying the appropriate products from the broad offering
- Offering compatible fixing, fastening and support products
- Explaining installation techniques and tips to meet the evolving codes and standards requirements
- Providing you with knowledge and training on relevant codes and standards, how to design and how to inspect seismic bracing

From design to construction to inspection, we keep our process transparent to ensure a full understanding of the final bracing installation, whether it requires cable or rigid bracing solutions.

SEISMIC BRACING SOLUTIONS FOR



Fire Protection



Cable Management



HVAC



Plumbing



Racks & Cabinets

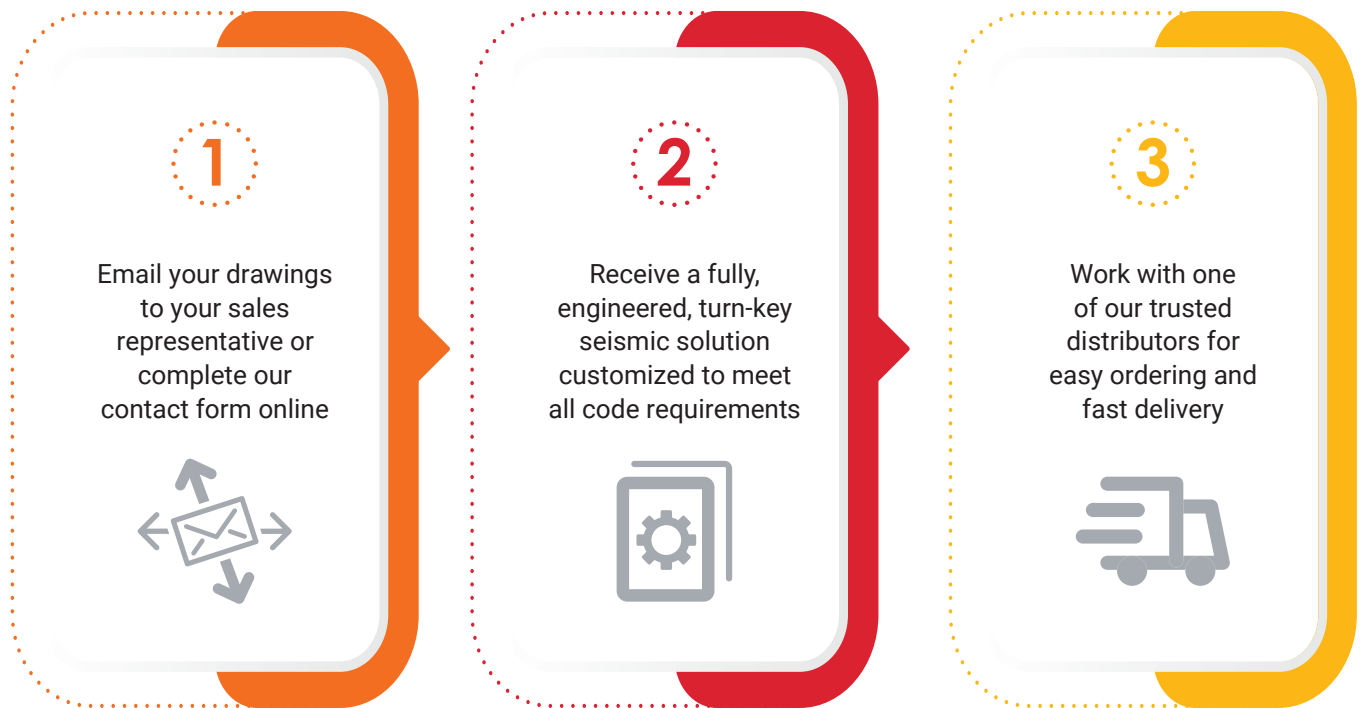


Roof Top Equipment and Piping

nVent CADDY Seismic Bracing Systems

Method 1: nVent CADDY Led Design

nVent CADDY Offers full design and field support for seismic bracing of non-structural services to comply with global and country specific codes and standards. Non-Structural services include, but are not limited to, fire protection, cable management, mechanical services and racks and cabinets. This service provides you with assurance that the design will be compliant to your standards and the components have been tested, listed or compliant to reputable standards like UL 203A, FM 1950 or ICC-ES AC413. This design service is suited for contractors and engineers working in projects either at design, estimation or construction stages. nVent CADDY Application Engineering team can provide the design, submittal documentation, typical drawings and sample specifications. Field application support and inspection services during the installation phase of the project can also be provided.



nVent CADDY Seismic Bracing Systems

Method 2: Customer Led Design & Inspection

nVent CADDY is dedicated to increase awareness and education on the design and implementation of seismic bracing systems in the marketplace where we operate. We have developed comprehensive and fully illustrated handbooks that provide all the information our valued customers need to understand compliance to codes and standards, design steps, installation and inspection steps required for the implementation of seismic bracing systems. This empowers our customers to check and verify the design and installation compliance at every stage of the project. In addition, the nVent CADDY seismic calculator can be used in conjunction with our three illustrated seismic handbooks for design, installation and inspection professionals, to produce calculations, bill of materials and submittal documents for design, installation and inspection professionals.

Training modules on the use of these handbooks and the software are provided by qualified nVent personnel. Customized training can be provided upon request to companies seeking to develop internal expertise on seismic bracing design and installation.



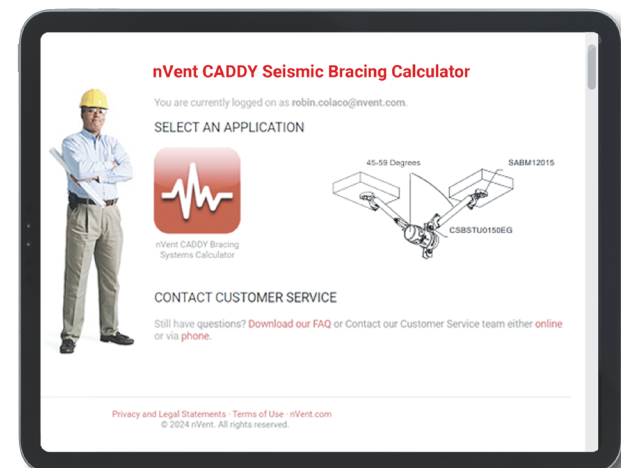
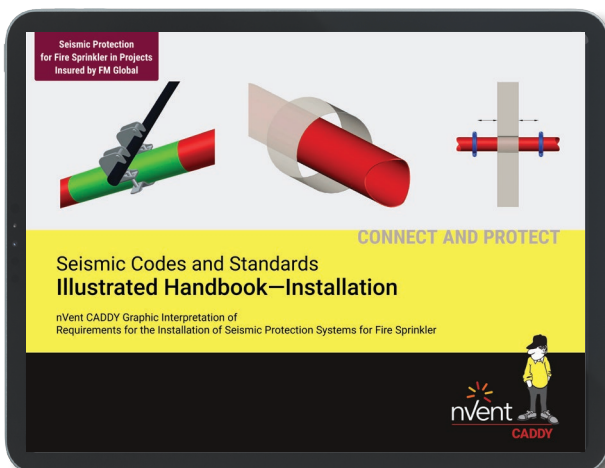
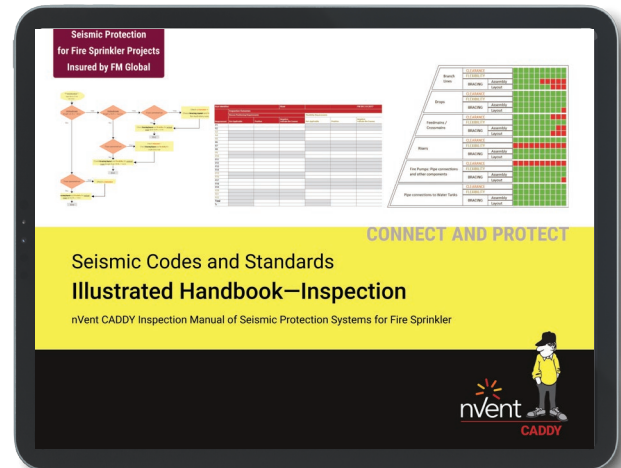
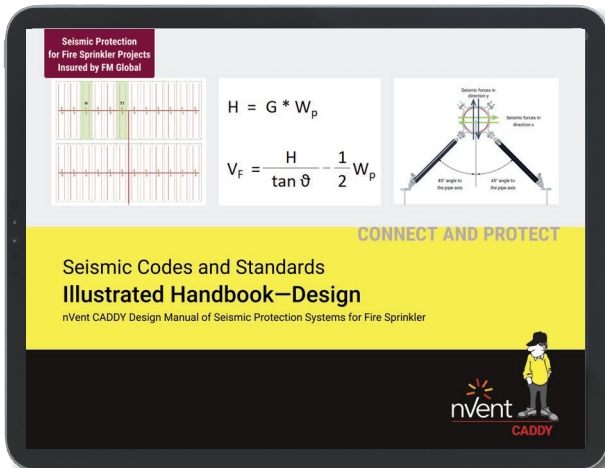
nVent CADDY
SEISMIC HANDBOOKS:

DOWNLOAD →



nVent CADDY
SEISMIC BRACING CALCULATOR:

DOWNLOAD →



nVent CADDY Seismic Bracing Systems

Support from Conception to Completion



Project Specifications



Design & Calculation



Product Selection

nVent CADDY works closely with our customers to ensure all requirements from design, planning, installation, quality and code compliance are met.

Solutions

nVent CADDY creates innovative products to enable easier installation for installers.

nVent CADDY products are designed to be:



Safe



Fast



Easy

Engineering Support

nVent CADDY creates products with user experience in mind.

With years of expertise, our engineers can assist with:

- Specification support
- Code-compliant products
- Installation plans
- Full-system solutions

nVent CADDY engineering and fabrication services can design & manufacture custom solutions for:

- Prefabricated installation
- Seismic bracing systems



& Fabrication

Testing & Installation

Training & Project Support

Quality

nVent CADDY employees take quality seriously and participate in several industry organizations including:



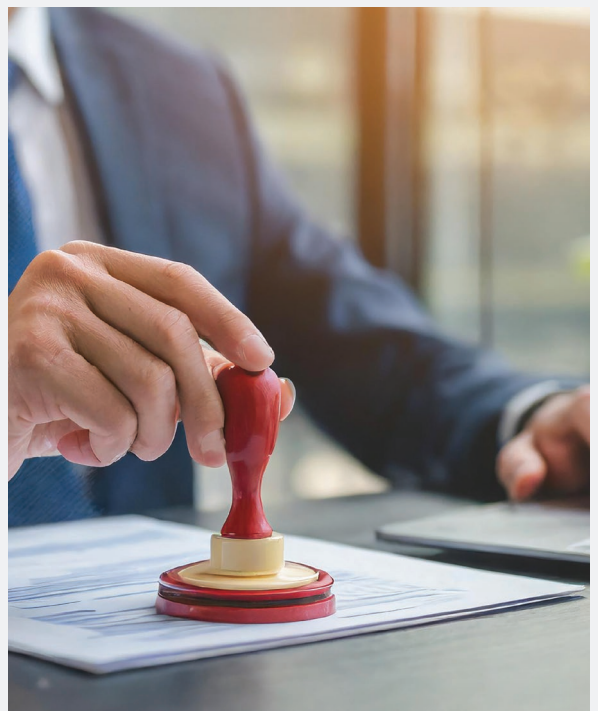
All nVent CADDY products undergo extensive development, testing and certification to adhere to codes and standards.

Our products meet and exceed performance requirements from agencies such as:

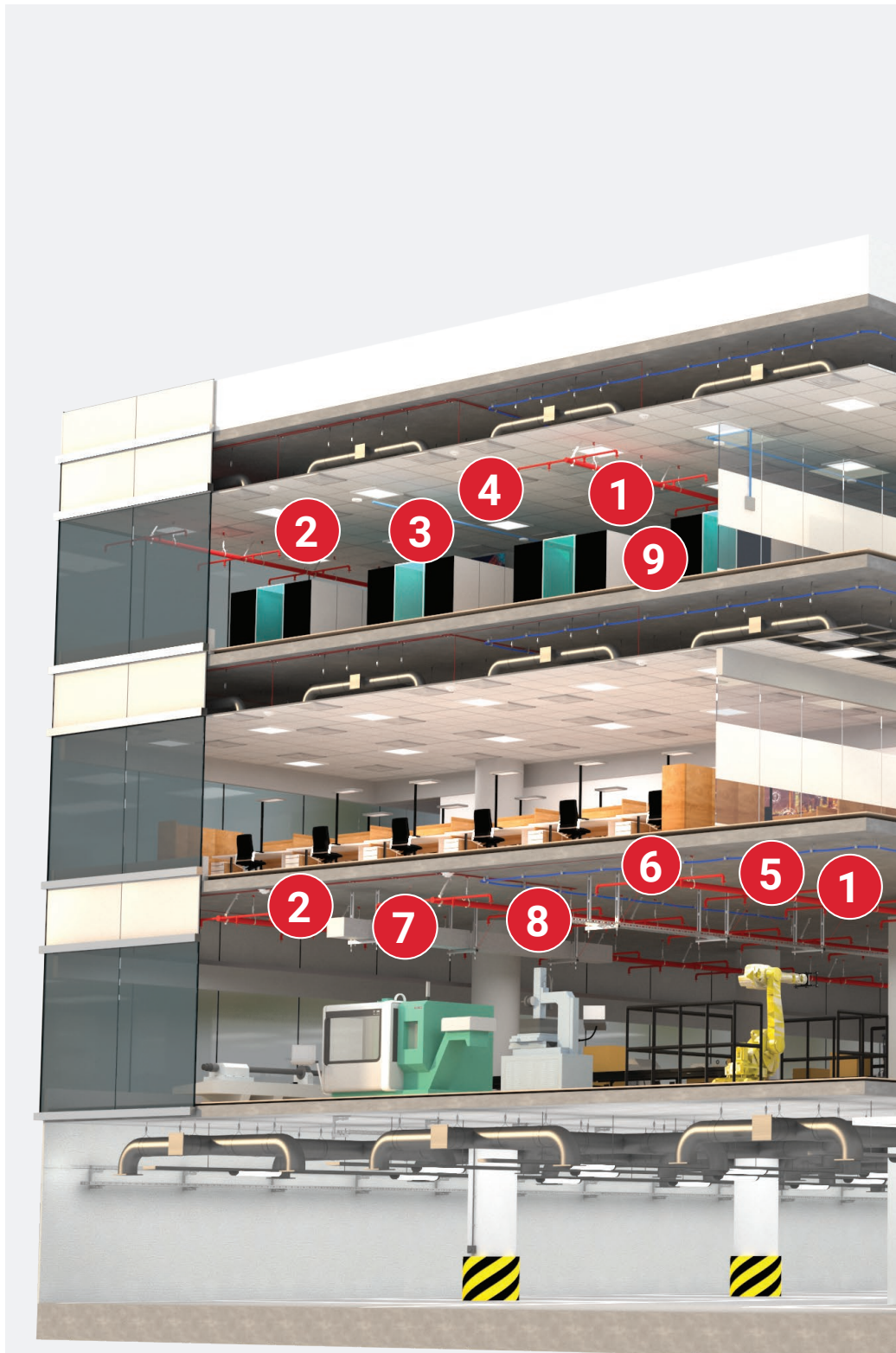
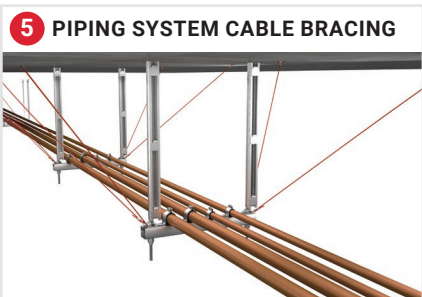
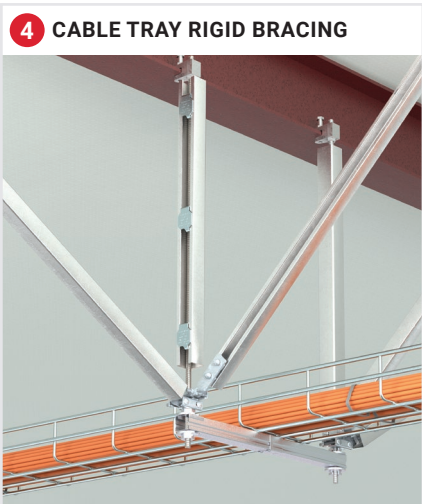
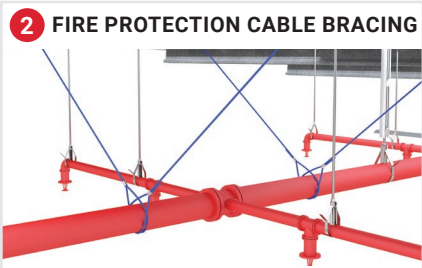


Engineers Stamp

nVent CADDY can provides engineers stamping services through qualified partners.



Seismic Bracing Applications

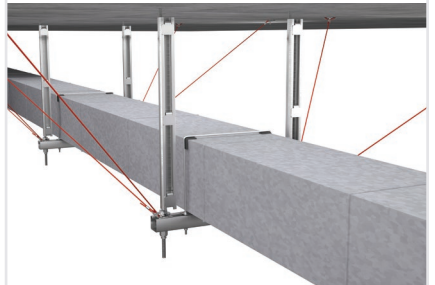




6 PIPING SYSTEM RIGID BRACING



7 MECHANICAL SERVICES CABLE BRACING



8 MECHANICAL SERVICES RIGID BRACING



9 EQUIPMENT ON RAISED FLOOR CABLE BRACING



10 ROOF TOP ANCHORING AND BRACING



1. Fire Protection Rigid Bracing



FM Approved | Premium Solution | Easy Design and Installation | UL Listed

1. STRUCTURAL ATTACHMENTS

1.1 Concrete



Universal Structural Bracket, CSBUx



Multi Attachment, CSBMAxxxxxxEG



1.2 Steel



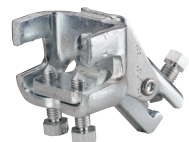
Adjustable I-Beam Adapter, CSBSx



Steel Flange Adapter, CSBSx



Steel Flange Adapter Assembly, CSBS1A



2. SWAY BRACES



Universal Sway Brace,
CSBxxxx



Quick Grip Lateral Sway Brace,
CSBQGxxxxEG



Quick Grip Jr. Lateral Sway
Brace, CSBQIKCLxxxxEG



3. LATERAL TELESCOPING BRACE ASSEMBLY, CSBTx



4. BRANCH LINE RESTRAINT

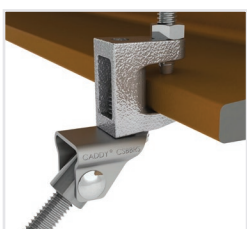
4.1 Structural Attachments



Branch Line Restraint Structure
Attachment to Steel, CSBBS1MEG



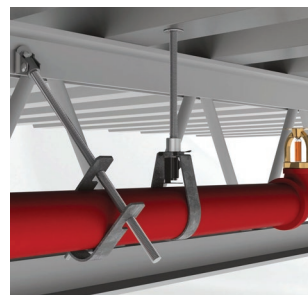
Branch Line Restraint Structure
Attachment to Wood/Concrete,
CSBBS2MEG



Branch Line Restraint Structure
Attachment to Threaded Hole,
CSBBS3MEG



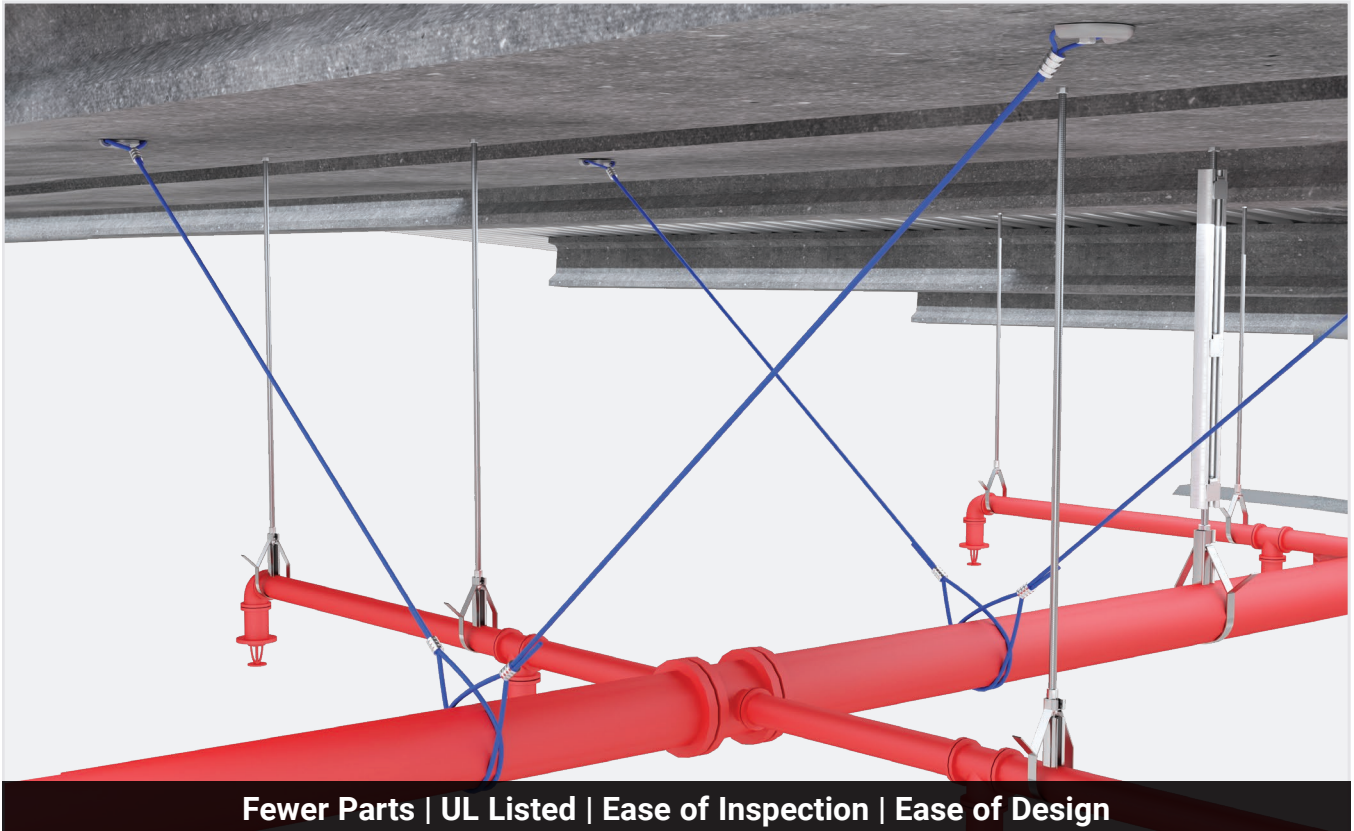
4.2 Pipe Attachments



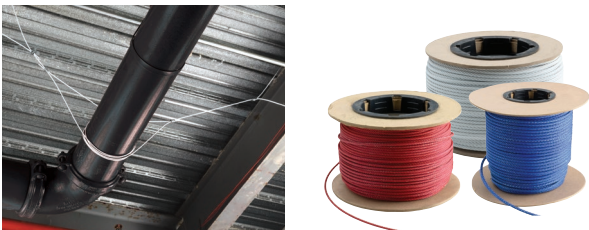
Branch Line Restraint Pipe
Attachment, CSBBRP0xxxEG



2. Fire Protection Cable Bracing



1. CABLE SPOOL, CSBxxCBL



2. UNIVERSAL RESTRAINT CLIP, CSBURCxx



3. OVAL SLEEVES, CSBxxSLVB



4. NO PRY CLIP, CSBNPCxx



5. SWAGING TOOLS

Manual Swaging Tool,
CSB12SBHS



Multi-Size Manual Swaging Tool,
CSB3346SB



Battery-Operated Swaging Tool,
CSBBS121836



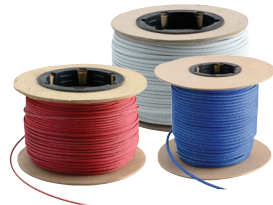
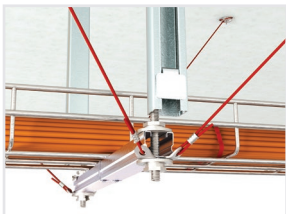
6. CUTTING TOOLS, SLWC



3. Cable Tray Cable Bracing



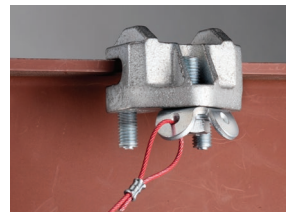
1. CABLE SPOOL, CSBxxCBL



3. OVAL SLEEVES, CSBxxSLVB



2. UNIVERSAL RESTRAINT CLIP, CSBURCxx



4. NO PRY CLIP, CSBNPCxx



5. SWAGING TOOLS

Manual Swaging Tool, CSB12SBHS



Multi-Size Manual Swaging Tool, CSB3346SB



Battery-Operated Swaging Tool, CSBBS121836



6. THREADED ROD STIFFENER

Pipe Rod Stiffener, CSBRS1



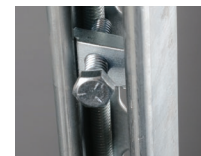
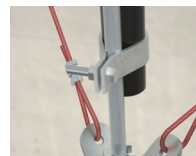
Strut Rod Stiffener, CSBRS37EG



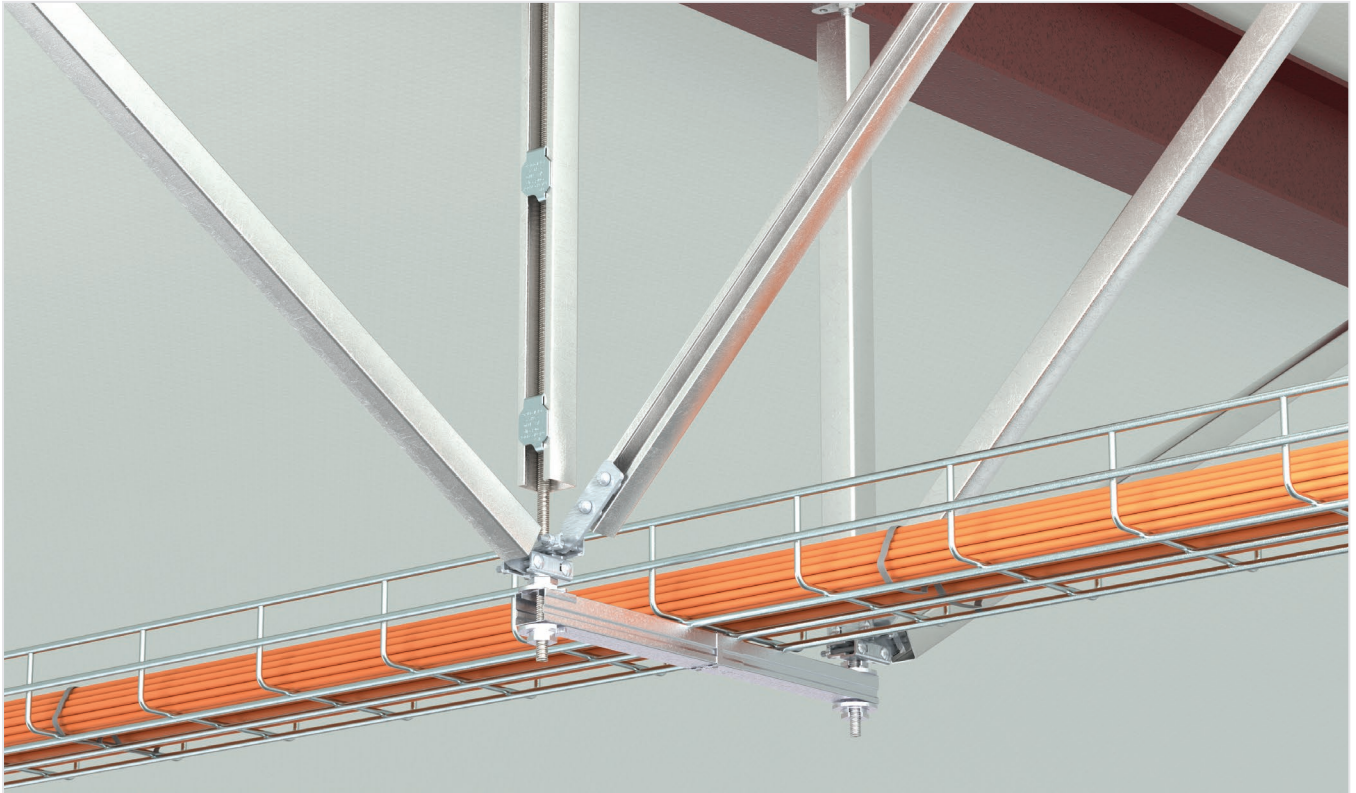
nVent CADDY Quick Clip Rod Stiffener, CSBRSx



7. CUTTING TOOLS, SLWC



4. Cable Tray Rigid Bracing



1. STRUCTURAL ATTACHMENTS

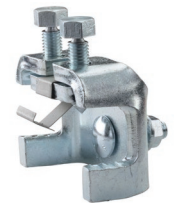
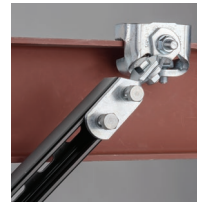
Universal Structural Bracket, Strut Brace, CSBUSx



Strut Seismic Hinge Bracket Assembly, CSBUSxPA



Steel Flange Adapter, CSBSx



2. SWAY BRACE

Trapeze Sway Brace, Strut, CSBR2



Trapeze Sway Brace, Pipe, CSBR1



Strut Seismic Hinge, CSBSH00xxxEG

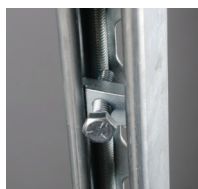


3. THREADED ROD STIFFENER

Pipe Rod Stiffener, CSBRS1



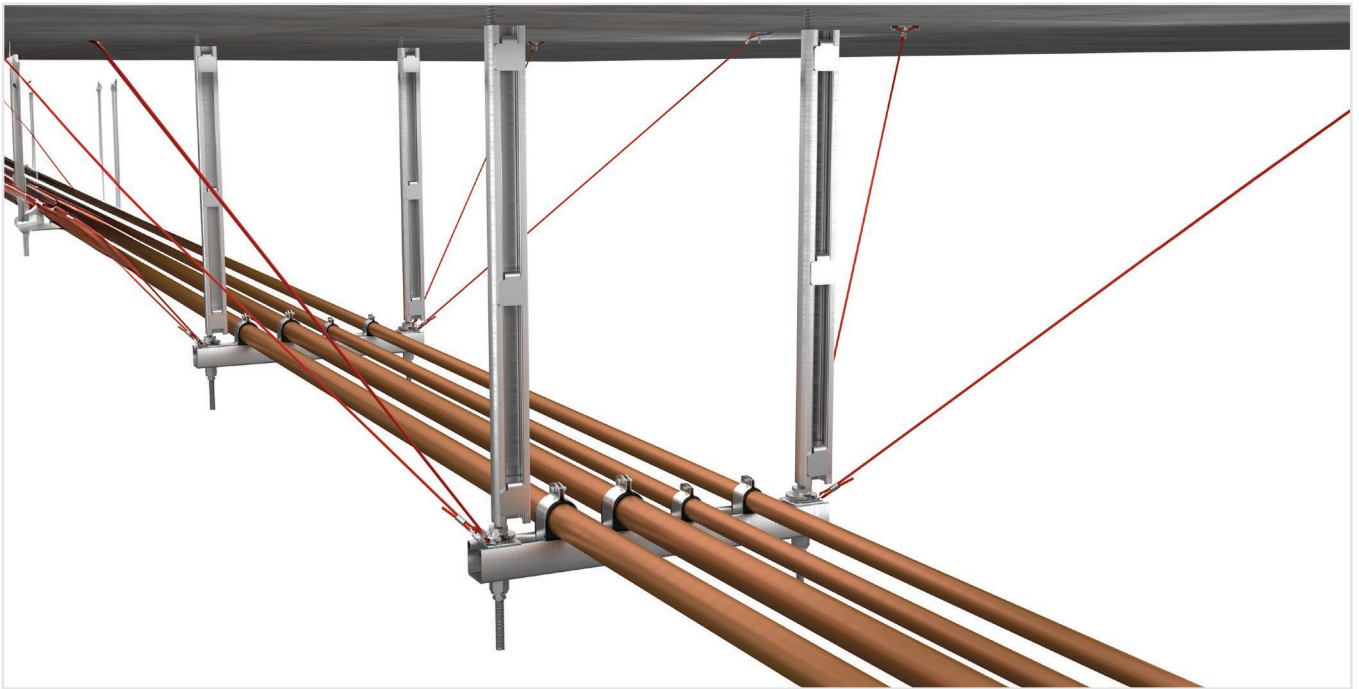
Strut Rod Stiffener, CSBRS37EG



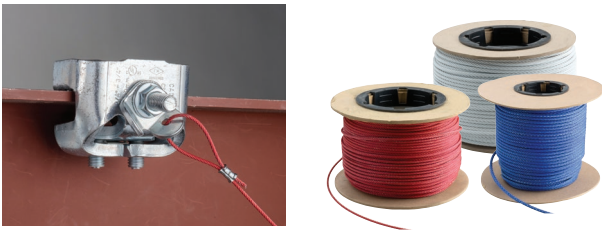
nVent CADDY Quick Clip Rod Stiffener, CSBRSx



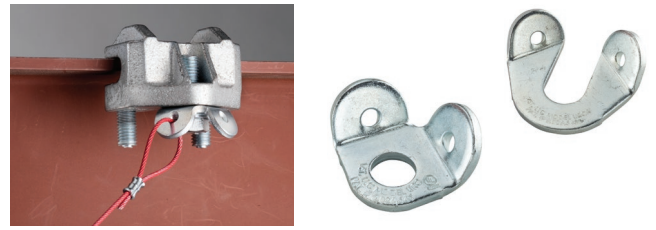
5. Piping System Cable Bracing



1. CABLE SPOOL, CSBxxCBL



2. UNIVERSAL RESTRAINT CLIP, CSBURCxx



3. OVAL SLEEVES, CSBxxSLVB



4. NO PRY CLIP, CSBNPCxx



5. SWAGING TOOLS

Manual Swaging Tool, CSB12SBHS

Multi-Size Manual Swaging Tool CSB33346SB

Battery-Operated Swaging Tool CSBBS121836



7. THREADED ROD STIFFENER

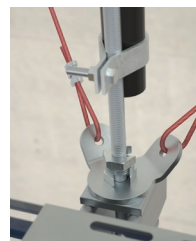
Pipe Rod Stiffener, CSBRS1

Strut Rod Stiffener, CSBRS37EG

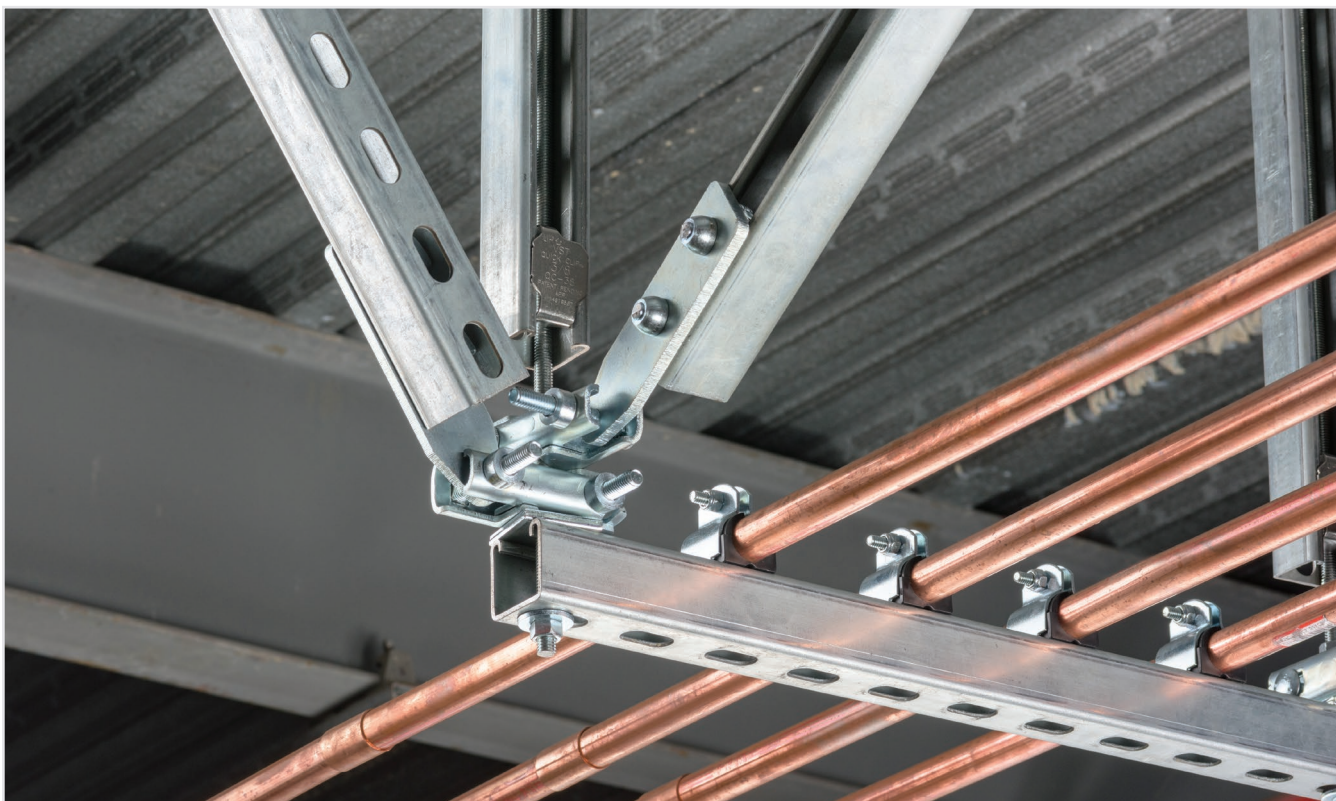
nVent CADDY Quick Clip Rod Stiffener, CSBRSx



6. CUTTING TOOLS, SLWC



6. Piping System Rigid Bracing



1. STRUCTURAL ATTACHMENTS

Universal Structural Bracket, Strut Brace, CSBUSx



Strut Seismic Hinge Bracket Assembly, CSBUSxPA



Steel Flange Adapter, CSBSx



2. SWAY BRACE

Trapeze Sway Brace, Strut, CSBR2



Trapeze Sway Brace, Pipe, CSBR1



Strut Seismic Hinge, CSBSH00xxxEG

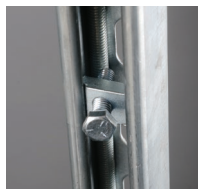


3. THREADED ROD STIFFENER

Pipe Rod Stiffener, CSBRS1



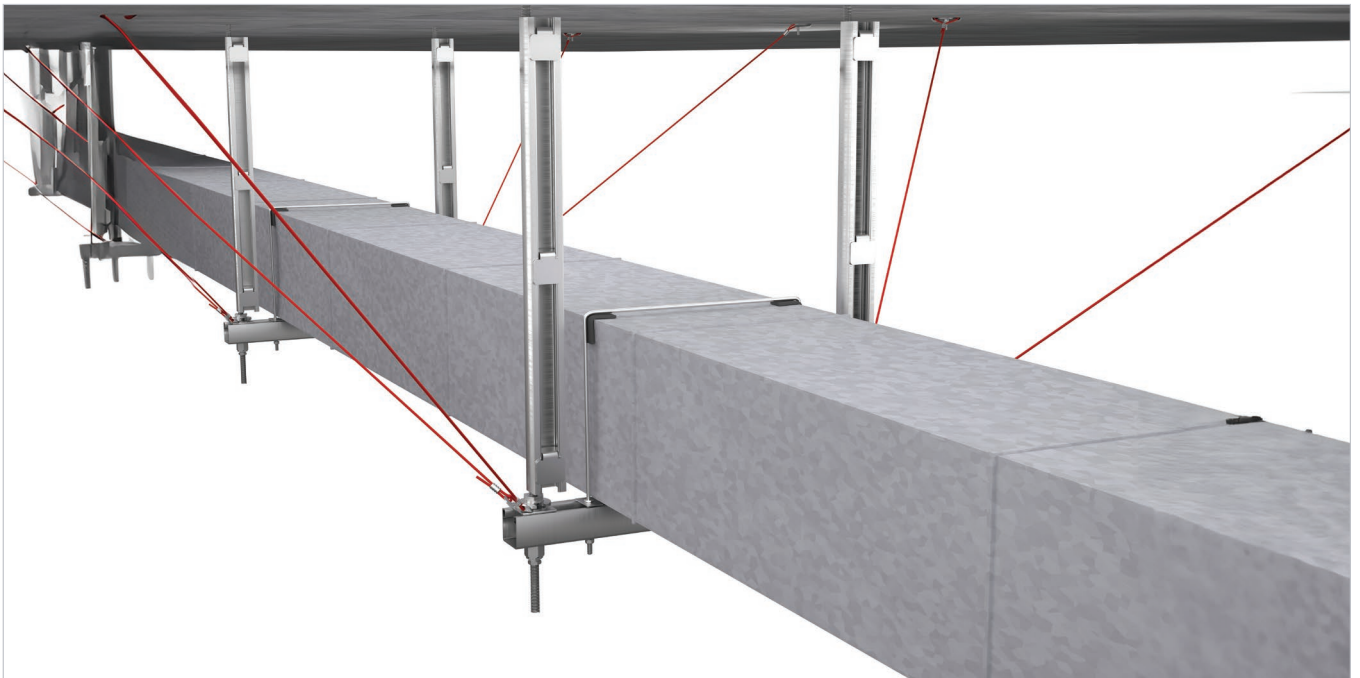
Strut Rod Stiffener, CSBRS37EG



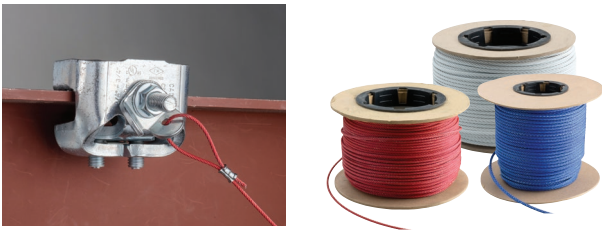
nVent CADDY Quick Clip Rod Stiffener, CSBRSx



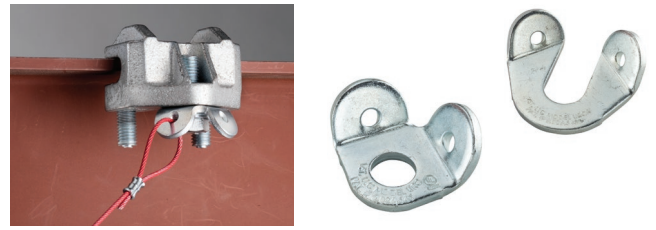
7. Mechanical Services Cable Bracing



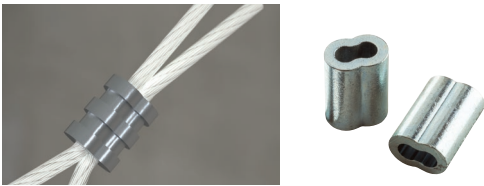
1. CABLE SPOOL, CSBxxCBL



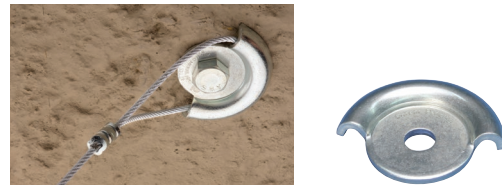
2. UNIVERSAL RESTRAINT CLIP, CSBURCxx



3. OVAL SLEEVES, CSBxxSLVB



4. NO PRY CLIP, CSBNPCxx



5. SWAGING TOOLS

Manual Swaging Tool, CSB12SBHS

Multi-Size Manual Swaging Tool CSB33346SB

Battery-Operated Swaging Tool CSBBS121836



7. THREADED ROD STIFFENER

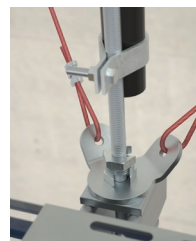
Pipe Rod Stiffener, CSBRS1

Strut Rod Stiffener, CSBRS37EG

nVent CADDY Quick Clip Rod Stiffener, CSBRSx



6. CUTTING TOOLS, SLWC



8. Mechanical Services Rigid Bracing



1. STRUCTURAL ATTACHMENTS

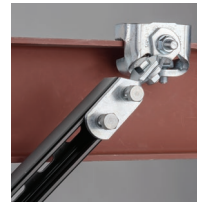
Universal Structural Bracket, Strut Brace, CSBUSx



Strut Seismic Hinge Bracket Assembly, CSBUSxPA

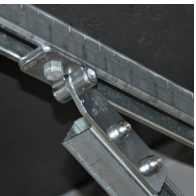


Steel Flange Adapter, CSBSx



2. SWAY BRACE

Trapeze Sway Brace, Strut, CSBR2



Trapeze Sway Brace, Pipe, CSBR1



Strut Seismic Hinge, CSBSH00xxxEG

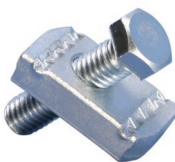


3. THREADED ROD STIFFENER

Pipe Rod Stiffener, CSBRS1



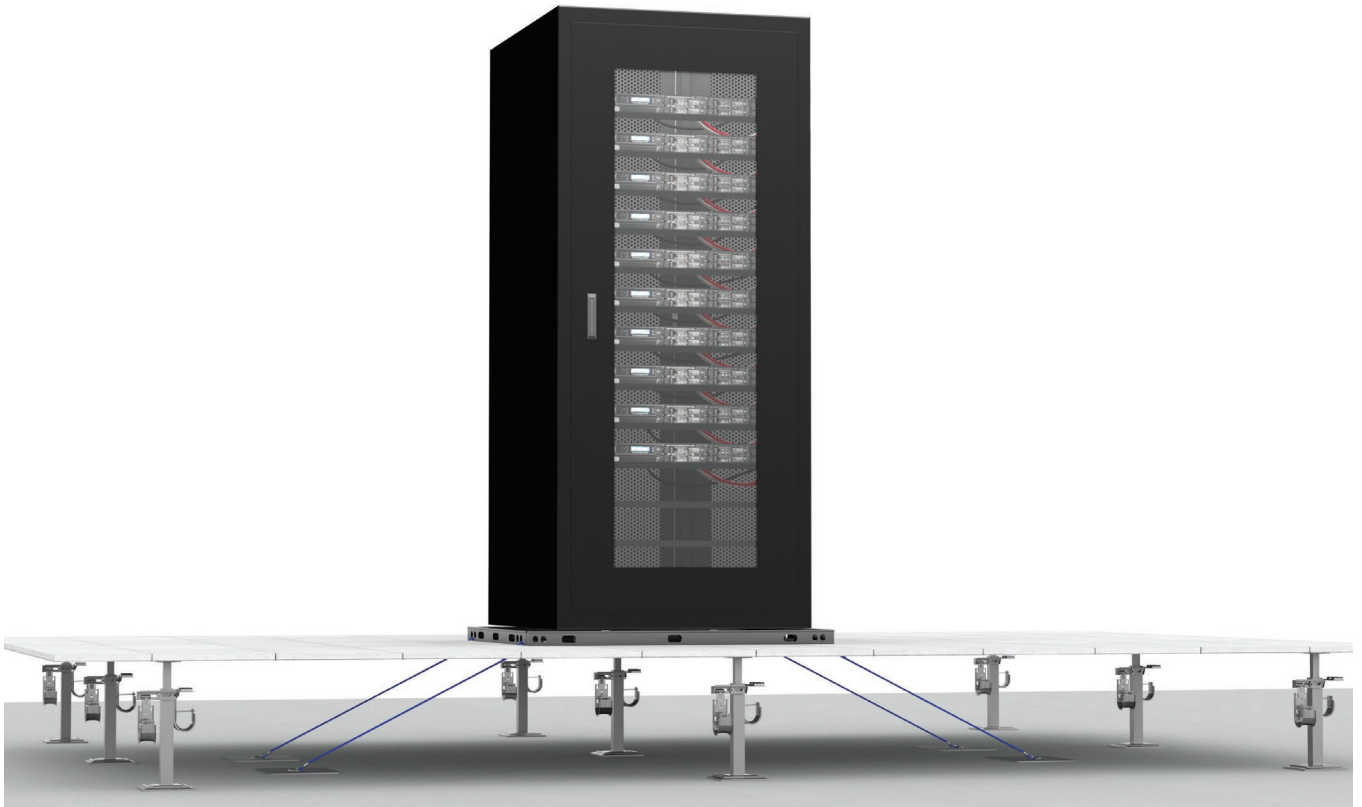
Strut Rod Stiffener, CSBRS37EG



nVent CADDY Quick Clip Rod Stiffener, CSBRSx



9. Equipment on Raised Floor Cable Bracing



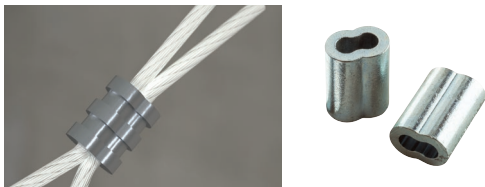
1. CABLE SPOOL, CSBxxCBL



2. UNIVERSAL RESTRAINT CLIP, CSBURCxx



3. OVAL SLEEVES, CSBxxSLVB



4. NO PRY CLIP, CSBNPCxx



5. SWAGING TOOLS

Manual Swaging Tool,
CSB12SBHS

Multi-Size Manual Swaging Tool
CSB3346SB

Battery-Operated Swaging Tool
CSBBS121836



6. CUTTING TOOLS, SLWC



10. Roof Top Anchoring and Bracing



1. CABLE SPOOL, CSBxxCBL



2. UNIVERSAL RESTRAINT CLIP, CSBURCxx



3. OVAL SLEEVES, CSBxxSLVB



4. SWAGING TOOLS

Manual Swaging Tool, CSB12SBHS

Multi-Size Manual Swaging Tool CSB3346SB

Battery-Operated Swaging Tool CSBBS121836



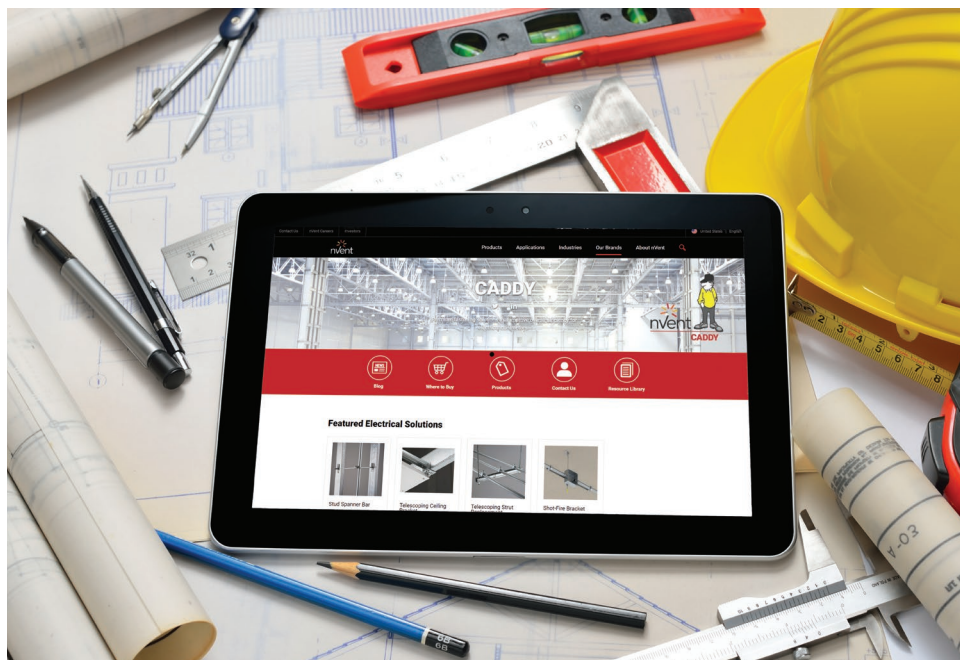
5. CUTTING TOOLS, SLWC



6. NVENT CADDY PYRAMID ROOFTOP ANCHOR, CRAUxxxxxx



nVent CADDY Online Resources



Visit our online resources to learn more about nVent CADDY solutions and products.

ONLINE RESOURCES

Resources available include:

- Product information
- BIM models
- Catalogues and brochures
- Online calculators & tools
- Installation instructions
- Videos and more

Ready to get started with nVent CADDY?

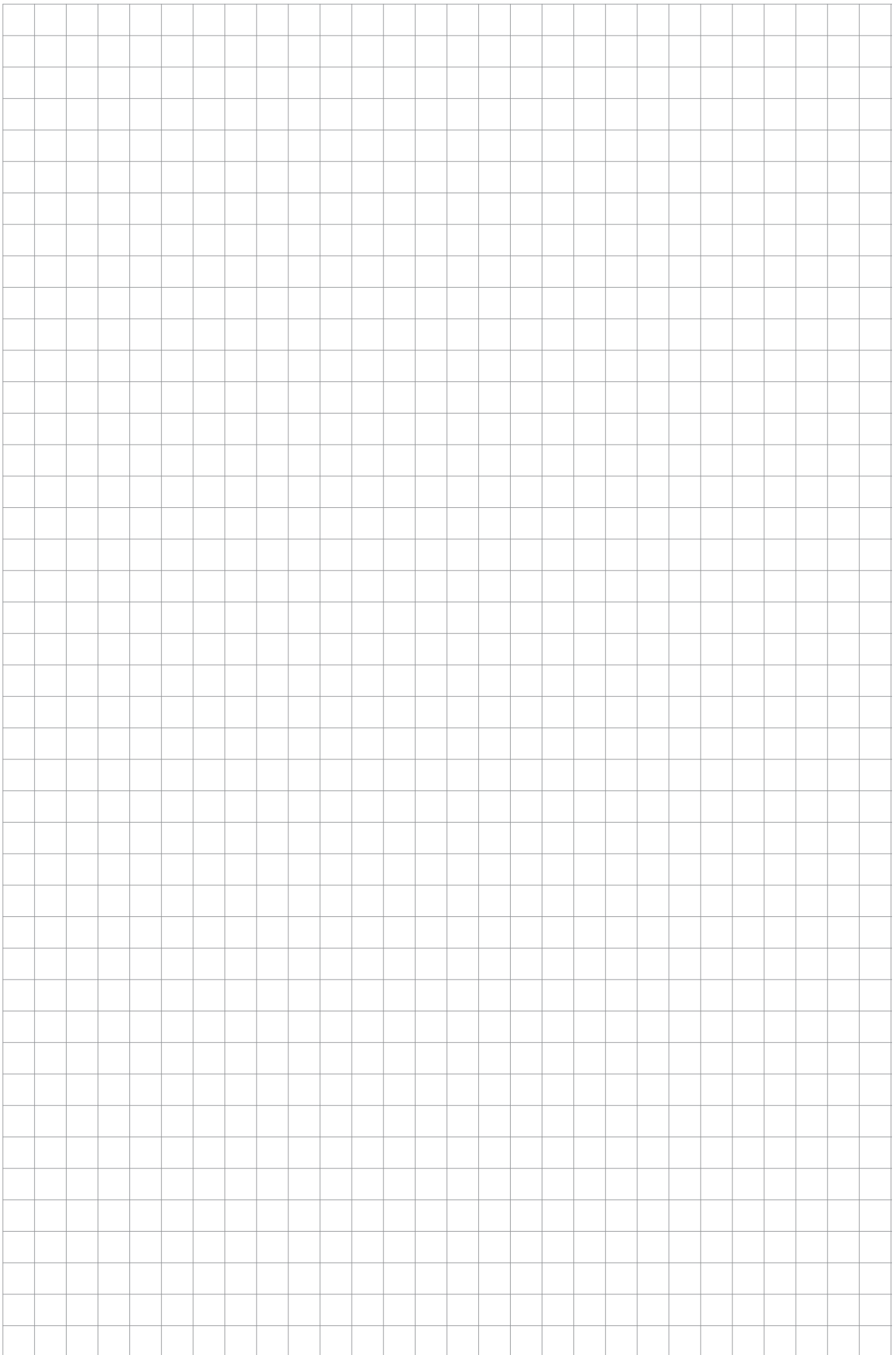


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