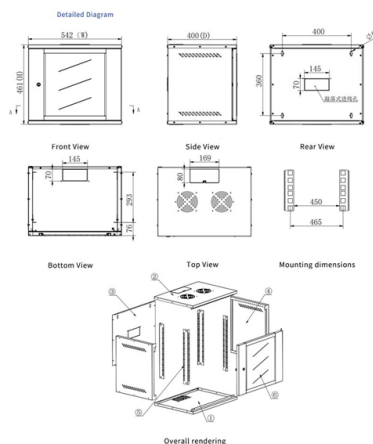


## Construction of seismic bracing for cable trays in Thailand



### Overview

How Cable Trays and Seismic Bracing Systems Mitigate Earthquake As manufacturers of cable trays, seismic brackets, and light steel keels, we recognize that.

### Key Takeaways

Seismic bracing for cable trays in Thailand involves using cable or rigid bracing systems to secure trays against lateral and vertical earthquake forces, following international standards and local seismic considerations.

#### Key Design Considerations

- **Seismic Risk Assessment:** Thailand is in a moderate seismic zone, so cable tray systems must be designed to resist lateral and vertical forces generated during earthquakes. The design should consider maximum anticipated cable weight, tray length, and drop height from structural supports .
- **Compliance with Standards:** Use guidelines from the International Building Code (IBC), ASCE 7, and NFPA 13 for seismic bracing of non-structural components. For telecommunications or critical facilities, additional criteria like Bellcore GR-1275-CORE may apply .



- **Load Calculations:** Determine the weight of cables and trays, including future expansion. Bracing must support the maximum load without relying solely on building walls or roof attachments .

#### Types of Seismic Bracing

- **Cable Bracing:** Works in tension and requires two opposing brace assemblies at each location. It is ideal for long cable tray runs and allows controlled sway during seismic events .

- **Rigid Bracing:** Works in both tension and compression, requiring one brace assembly per location. Suitable for shorter drop lengths or where cable trays are close to structural supports .

- **Hybrid Systems:** Some installations combine cable and rigid bracing to optimize energy dissipation and multi-directional load resistance .

#### Installation Guidelines

- **Lateral (Transverse) Braces:** Installed perpendicular to the cable tray to resist side-to-side motion.
- **Longitudinal Braces:** Installed parallel to the tray to prevent forward/backward displacement.
- **Rod Stiffeners:** Used to maintain system rigidity and prevent buckling under seismic loads .
- **Spacing:** Typically, braces are installed at intervals of every 30 feet or less, depending on tray size and seismic zone .
- **Attachment:** Use threaded rods, clamps, or pre-drilled tabs to secure trays to structural members or concrete decks. Tools like KwikWire clamps allow tool-less installation and visual verification of correct wire size .

#### Practical Considerations

- **Energy Dissipation:** High-grade galvanized steel or aluminum alloy components absorb seismic energy, reducing lateral displacement by 40-60% .
- **Controlled Movement:** Articulated joints or sliding bases allow trays to sway without concentrating stress at a single point.
- **Multi-Directional Load Capacity:** Advanced bracing systems, such as X-shaped K-Braces, provide 360° restraint, crucial for hospitals, data centers, or industrial facilities .
- **Retrofit Applications:** Seismic bracing kits can be applied to existing cable tray systems without major structural modifications, making them suitable for upgrades in older buildings .

#### Case Studies and Benefits

- Facilities with seismic-rated cable trays maintain operational power and communications during earthquakes, minimizing downtime and economic losses .

- Properly braced systems reduce cascading failures of mechanical, electrical, and plumbing systems, enhancing safety and post-disaster recovery. By following these design principles, selecting appropriate bracing types, and adhering to installation guidelines, cable tray systems in Thailand can achieve effective seismic resilience, protecting both infrastructure and personnel.

## Article Content

### How Cable Trays and Seismic Bracing Systems Mitigate Earthquake

As manufacturers of cable trays, seismic brackets, and light steel keels, we recognize that integrating purpose-built

### Design and Installation Manual for Seismic Bracing of Cable Trays

Overview of a cable tray seismic bracing load path from tray rail to structure. This guide serves EPC engineers, MEP

### Cable Tray leh Seismic Bracing System hmanga Lirnghing chhianatna ...

He thuziak hian tunlai seismic bracing technology te hnathawh dan leh engvangin nge lirnghing hlauhawmna hmuna an hman dan

### How Cable Trays and Seismic Bracing Reduce Earthquake Damage

As manufacturers of Cable Trays, seismic brackets, and light steel keels, we recognize that integrating purpose-built seismic support

### SEISMIC BRACING OF A DISTRIBUTED CABLE TRAY SYSTEM

The cable trays have diagonal bracing between layers of cable trays in the longitudinal direction using proprietary steel members and

### Seismic cable bracing solution brochure

Tested by an independent lab and stamped by a Professional Engineer, the seismic cable kits are designed to brace non-structural

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More particularly, it relates to a seismic device of a cable tray, a conduit tube, and a bus duct support that effectively absorbs shock

### Performance-based optimum seismic design of cable tray system

The seismic performance levels of cable tray systems are presented according to current seismic design codes. A

### Understanding the Seismic Resistance of Cable Trays

This article discusses the importance of seismic resistance for cable trays, detailing when seismic braces are

Seismic Cable Tray Bracing: Code & Site Load Design

Seismic cable tray bracing design guide covering code compliance, site load factors, anchorage checks, and practical

Seismic analysis and design of electrical cable trays and support ...

The design aspects of electrical cable trays and support systems are discussed from the seismic and structural

Seismic Bracing Systems for Cable Trays Catalog

Explore seismic bracing solutions for cable trays. Catalog details wire rope/cable systems, specs, design for earthquake protection.

Performance-based optimum seismic design of cable tray system

A performance-based optimum seismic design procedure for cable tray systems is given and verified by three studied

How Cable Trays and Seismic Bracing Reduce Earthquake Damage

In April 2024, a magnitude 7.4 earthquake struck Hualien, Taiwan, causing widespread infrastructure damage and economic losses.

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Industrial | Commercial | Data Centers Your Cable Management Solutions Submitting Seismic Details for

Understanding Seismic Support for Electrical Installations

Explore the essential guidelines for seismic support in electrical installations, focusing on cable trays and their critical role in ensuring

Seismic Proof Systems

This typically includes: pipe and duct bracing, fan coil unit bracing, cable tray bracing, floor mounted components, light fitting details.

Seismic Bracing Kit | Seismic Bracing | Wire and Cable Hangers | Wire ...

Features Kit contains items needed for seismic bracing long cable tray runs. Each kit contains: (4) 11" cables with mounting eyelets

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