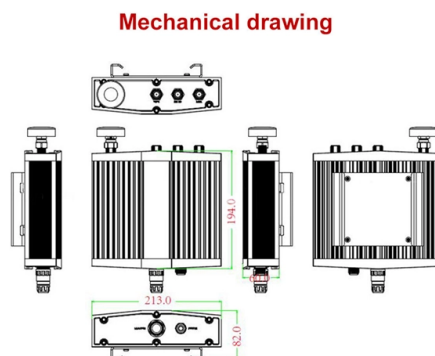


How to secure cables in a sealed cable tray



Overview

Cable tray installed in a hazardous location must contain only those cables that are appropriate for this type of environment as defined in Chapter 5 of the NEC.

Key Takeaways

Cables in a sealed cable tray should be secured using proper banding, clamps, or security kits to prevent movement, maintain spacing, and ensure safety and compliance.

Choose the Right Tray and Cover

Select a cable tray type suitable for your application. Ventilated troughs or solid-bottom trays provide continuous support for cables, while wire mesh trays can be enclosed with covers or security kits for high-security or sensitive installations. Ensure the tray material is compatible with the environment, such as corrosion-resistant aluminum or fiberglass-reinforced plastic for wet or chemical-prone areas.

Restrain Cables Properly

Inside the tray, cables should be bundled and restrained to prevent sagging or movement. Use cable ties, clamps, or banding at regular intervals, typically every 6 to 9 inches for small instrumentation cables, and at the tray rungs or bottom for larger power cables. Bundles should be balanced at the center to distribute weight evenly and avoid stress on the tray or cables.

Maintain Minimum Bend Radius

Ensure that cables exiting or entering the tray respect the minimum bend radius specified by the manufacturer to prevent insulation damage or signal degradation. Avoid sharp bends or tight loops, especially in enclosed trays where space is limited.

Use Security Kits for Enclosed Trays

For wire mesh or high-security trays, consider security kits that convert open trays into fully enclosed, tamper-resistant runs. These kits provide robust protection against unauthorized access and physical interference while maintaining proper cable support.

Follow Standards and Codes

Always comply with NEC Article 392 and relevant local electrical codes. Proper installation includes bonding and grounding, correct cable fill calculations, and ensuring that the tray can support the total cable weight without sagging or deformation. Using manufacturer-approved fasteners and covers ensures long-term durability and safety.

Summary

To secure cables in a sealed cable tray: Select the appropriate tray type and cover for your environment. Bundle and restrain cables using ties, clamps, or banding at recommended intervals. Maintain minimum bend radius to prevent damage.

Use security kits for wire mesh trays in sensitive areas. Follow electrical codes and manufacturer guidelines for installation, bonding, and grounding. This approach ensures mechanical stability, safety, and ease of maintenance for your cable tray system.

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