Junction Boxes Inside Cable Trays

Summary of Content

Junction boxes cannot be placed inside cable trays; they must be mounted externally and remain accessible according to NEC requirements.

NEC Requirements

According to the National Electrical Code (NEC), all wire splices and connections must be enclosed in an approved junction box to ensure safety, accessibility, and protection from physical damage (NEC 314.16, 314.17) . A key requirement is that junction boxes must remain accessible without removing building structures, meaning they cannot be hidden inside cable trays or other enclosures that would prevent inspection or maintenance .

Cable Tray Considerations

Cable trays are designed to support and route cables, not to serve as enclosures for splices or junction boxes. While you can mount a junction box on the side or bottom of a cable tray, placing splices directly inside the tray is generally not allowed except in certain industrial applications under NEC 392.6(J) . This ensures that splices are protected, serviceable, and compliant with box fill and grounding requirements .

Practical Installation Tips

• Mount externally: Attach the junction box to the tray or nearby structure, ensuring it is secure and accessible.

• Use proper fittings: Bring cables into the box with clamps or conduit fittings to prevent abrasion and maintain mechanical protection .

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