

Can cables be run in cable trays in Saudi Arabia



Overview

Cable Trays in Saudi Arabia: Standards, Safety & Installation Guide Expert guide to cable tray selection, safety, and SASO/NEC compliance in Saudi Arabia.

Key Takeaways

Yes, cables can be run in cable trays in Saudi Arabia, provided installations comply with SEC, SASO, and IEC standards, with proper material selection, cable segregation, and environmental considerations.

Standards and Compliance

In Saudi Arabia, cable tray installations typically follow a combination of Saudi Electricity Company (SEC) standards, Saudi Standards, Metrology and Quality Organization (SASO), and International Electrotechnical Commission (IEC) standards. Some projects, especially in Aramco or industrial sectors, may also reference IEEE or NEC guidelines. Metallic cable trays must meet NEMA VE-1 or equivalent IEC standards, ensuring mechanical strength, rigidity, and safe load capacity.

Cable Tray Types and Materials

Common cable tray types in Saudi Arabia include: Ladder trays (2-4 mm): Preferred for medium and high-voltage power cables due to superior ventilation, critical in hot climates like Riyadh or Jeddah. Perforated trays (1.5-2 mm): Used for low-voltage and control cables, offering moderate ventilation and support.



Solid bottom trays (1.5–2 mm): Ideal for dusty or sandy environments, common in desert or industrial zones. Materials must withstand high temperatures, dust, and corrosion.

Hot-dip galvanized steel (HDG) is most common, stainless steel is used in coastal areas, and aluminum or FRP may be used for lightweight or corrosive environments.

Installation Practices

Key installation requirements include: Cable fill: Maintain 40–60% fill to allow heat dissipation and future expansion. Support spacing: Typically 1.5–3 meters, with closer spacing for heavy power cables.

Cable segregation: Power cables must be separated from control and signal cables to prevent electromagnetic interference (EMI), either in separate trays or with minimum spacing. Grounding and bonding: Metallic trays must be properly grounded and continuously bonded to avoid signal disturbances and relay malfunctions.

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V and environmental protection: Use UV-resistant cable ties, fire-retardant cables in critical areas, and ensure protection against sand and dust.

Load and Safety Considerations

Cable trays must support the static weight of cables plus a 20% spare, with a safety factor of at least 1.5. Deflection should be limited to a maximum of 12 mm for all span lengths.

Trays are not to be used as walkways.

Summary

Cables can safely be run in cable trays in Saudi Arabia if installations: Follow SEC, SASO, and IEC standards Use appropriate tray types and materials for the environment Maintain proper fill, support, and segregation Ensure grounding, bonding, and environmental protection This approach ensures compliance, safety, and long-term reliability in Saudi Arabia's harsh climate and industrial conditions.

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Cable Tray System

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