How to calculate horizontal cable trays

Article Overview

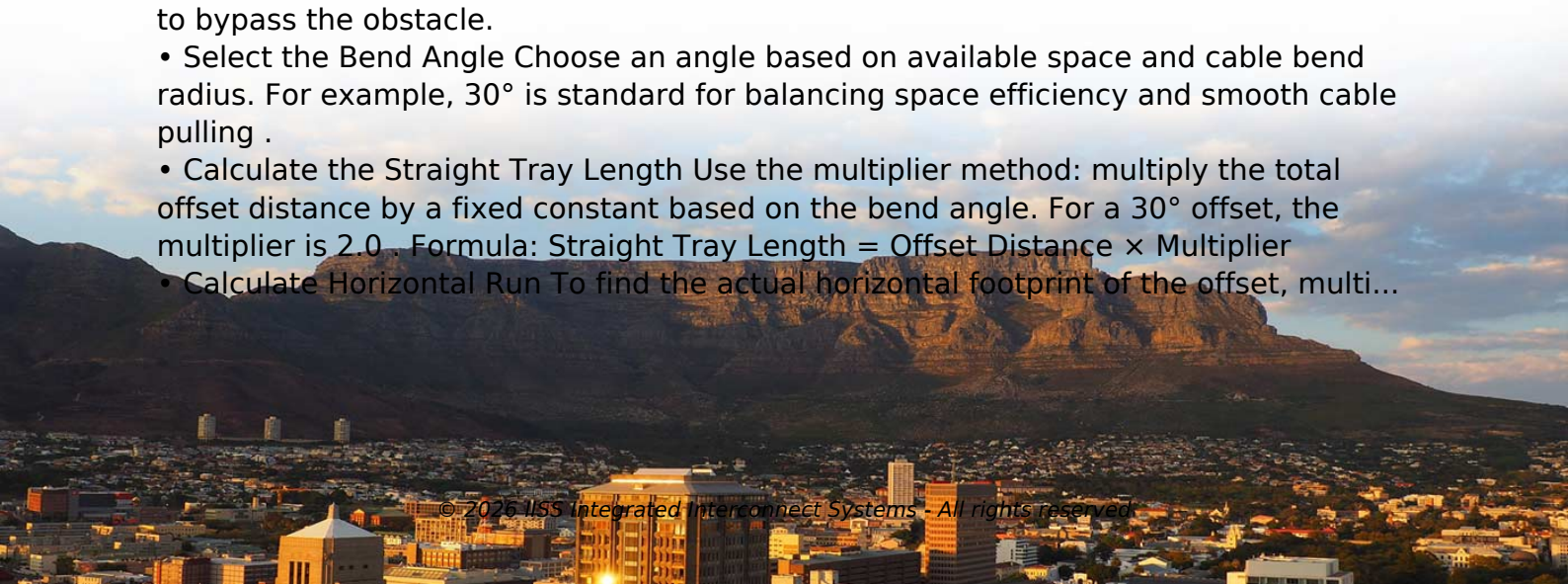
Calculating horizontal cable trays involves determining the horizontal run, straight tray lengths, and offset angles using trigonometry and standard multipliers to ensure proper cable routing and compliance with installation standards.

Understanding Cable Tray Offsets

A cable tray offset is a planned change in the tray's path to bypass obstacles such as HVAC ducts, pipes, or structural columns while maintaining continuous cable flow . Horizontal offsets are common when the tray must shift sideways without changing elevation. The key parameters are:

• Offset distance: The lateral distance the tray must move horizontally.
• Bend angle: The angle of the tray bend, commonly 15°, 22.5°, 30°, or 45°.
• Straight tray length: The length of the tray section connecting two bends.

Step-by-Step Calculation
• Determine the Offset Distance Measure the horizontal distance the tray must cover to bypass the obstacle.
• Select the Bend Angle Choose an angle based on available space and cable bend radius. For example, 30° is standard for balancing space efficiency and smooth cable pulling .
• Calculate the Straight Tray Length Use the multiplier method: multiply the total offset distance by a fixed constant based on the bend angle. For a 30° offset, the multiplier is 2.0 . Formula: Straight Tray Length = Offset Distance × Multiplier
• Calculate Horizontal Run To find the actual horizontal footprint of the offset, multi...



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For more information, pricing, or custom solutions, please contact us:

Website: https://www.iiss.co.za
Email: sales@iiss.co.za
Phone: +27 63 174 2895
Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg, 2196, South Africa

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