

SECTION 26 05 29**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS****PART 1 - DESIGN DIRECTIVES****1.1 DESIGN CRITERIA**

- A. Typical details for trapeze hangers and box supports shall be included in the design drawings. The detail shall indicate the minimum size of components as outlined in the specifications.
- B. All supporting devices and hardware shall be zinc coated or hot dip galvanized.
- C. Materials and methods shall conform as follows:
 - 1. Concrete and solid masonry: Steel or lead sleeve and expansion anchors utilizing a threaded bolt, lag bolt or threaded stud.
 - 2. Hollow Masonry: Adequately sized toggle bolts or hollow wall anchors.
 - 3. Steel Surfaces: Machine screws, bolted clamps or power-driven threaded studs. Power driven nails are not acceptable.
 - 4. Wood Surfaces: Pan head sheet metal screws or lag bolts. Nails shall not be used.
 - 5. Power driven anchors may be used on concrete, brick, block or other masonry surface.
 - 6. Plastic or Rawl type plug anchors shall not be used.
 - 7. Equipment installed on the exterior of a building shall be mounted on a strut system to minimize contact with moisture laden building surfaces. Stainless steel hardware shall be used. Conduit supports shall include a spacer so that the conduit is not in direct and continuous contact with the wall.
 - 8. Strut (U-channel) support systems shall be manufactured from 16-gauge steel and have 9/16-inch holes spaced no more than 8 inches apart. All fittings and accessories shall be compatible and supplied by the same manufacturer.
 - 9. Pipe sleeves used at interior wall penetrations shall be constructed of galvanized sheet metal. The material shall be rolled round and the seam closed by snap lock joint or welded. Material thickness shall be selected from the following table:
 - a. 3-inch and smaller conduits: 20-gauge.
 - b. 4-inch to 6-inch conduits: 16-gauge.
 - 10. Expansion anchors shall be carbon steel wedge or sleeve type.
 - 11. Toggle bolts shall be all steel springhead type.
 - 12. Power driven threaded studs shall be constructed of heat-treated steel designed specifically for the purpose.
 - 13. Electrical support hangers shall be dedicated for the installation of electrical systems only.
 - 14. Electrical systems shall not share supporting structure with that of any other building system.
 - 15. Support systems shall be designed to provide the load that will be placed on them multiplied by a factor of four. In no case shall the difference between the actual load and the rating of the support be less than 200 pounds.

16. All junction boxes shall be supported by the building structure. This support can be provided using a combination of bar hangers, threaded rod and U-channel products.
17. The minimum size of threaded rod shall be 1/4-inch.

PART 2 - PRODUCTS**2.1 NO SPECIAL REQUIREMENTS****PART 3 - EXECUTION****3.1 INSTALLATION**

- A. When installing fasteners in reinforced concrete, ensure that the drilling process does not damage reinforcing steel.
- B. Where racks are installed to support multiple runs of conduit, 25 percent spare capacity shall be provided. The racks shall be located so as to be accessible for future use and expansion of the system.
- C. Wood backboards shall be painted fire-resistant minimum $\frac{3}{4}$ " plywood, size. The backboard shall be sized for future electrical equipment (panelboards, etc.) to fill the wall/area.

END OF SECTION