

## CABLE RACKS

### EQUIPMENT DESIGN REQUIREMENTS

### COMMON SYSTEMS

#### 1. GENERAL

##### Scope

**1.01** This specification, together with the supplementary information listed herein, covers the equipment design requirements for cable racks.

##### Reasons for Reissue

**1.02** To change paragraphs 1.05, and 4.09 to 4.13 inclusive to apply to spiral and double turns as shown on drawing ED-90843-01 instead of ED-90282-01.

##### Description

##### Straight Sections

**1.03** Cable racks are ladder-like steel structures consisting of two rectangular bar side rails called "stringers" between which are welded on 9" centers, channel shaped cross members known as "straps". Straight sections of cable rack are 9'-8-1/2" long and are made in six different widths.

##### 90° Outside Turns

**1.04** These turns consist of stringers forged to a 1'-0" and 5" radius with straps on close centers and are used to support horizontal to vertical turns of heavy cabling such as power cables. There is a short straight portion at each end to facilitate fastening these turns to straight sections of cable rack. Three standard widths are available. The stringers are drilled to facilitate bolting the turns together side by side to provide for wider cabling. They are not ordinarily used for switchboard cables.

##### Spirals and Double Turns

**1.05** These turns consist of rod stringers of various lengths bent on suitable radii and provided with channel straps which are clamped to the rods

by split eye bolts. 90° and 180° spirals and 90° inside and outside double turns each furnished in three widths, are available. Split eye bolts and saddle clips are provided to fasten the spirals and double turns to straight sections of cable racks.

#### 2. SUPPLEMENTARY INFORMATION

800-600-000—List of General Equipment Requirement Sections

800-614-157—Installation of Cable Racks

801-000-000—Equipment Design and General Equipment Requirements and Engineering Information—Common Systems

#### 3. DRAWINGS

ED-90224-01—Cable Racks—Welded Type Straight Sections

ED-90225-01—Cable Racks—Clamp Assemblies

ED-90843-01—Cable Racks—90° and 180° Spirals and Double Turns

ED-90559-01—Cable Racks—Welded Type—90° Outside Turn—1'-0" and 5" Radii

ED-91127-01—Clamp for Vertical Runs of Power Cables on 1'-0" and 1'-3" Cable Racks

ED-91129-01—Clamp for Vertical Runs of Power Cables on 1'-8" Cable Racks

#### 4. CONSTRUCTION

##### Straight Sections

**4.01 Length:** Straight sections of cable rack shall be made 9'-8-1/2" in length. This length is specified in order to make economical use of commercial stock bars.

**4.02 Widths:** The sections shall be made in widths of 5", 1'-0", 1'-3", 1'-8", 2'-1", and 2'-6" measured from the outside edges of the cable rack stringers. The effective cable piling widths are approximately 1-1/2" less than these widths when cables are fastened with metal clips.

**4.03 Stringers:** The following sizes of hot rolled steel bar shall be used for stringers:

For racks 5", and 1'-0" wide—3/8" x 1-1/2"  
For racks more than 1'-0" wide—3/8" x 2"

**4.04 Straps:** Hot rolled steel channel 1" x 1/2" x 1/8" shall be used for all straps. The straps shall be welded in position as shown on drawing ED-90224-01 care being taken to keep the fillet formed by the welding material from roughening the top surface of the rack where the cables are placed. The first, last, and each alternate intermediate strap of 2'-1" and 2'-6" cable racks shall be reinforced by 1/4" x 1" hot rolled steel bars placed under the center of the straps and welded in position as shown on drawing ED-90224-01.

#### 90° Outside Turns

**4.05 Radius:** The stringers of the 90° outside cable rack turns shall be bent on inside radii of 1'-0" and 5" as shown on drawing ED-90559-01. A straight portion 8-3/4" long shall be provided at both ends of these turns.

**4.06 The standard widths** of 90° outside cable rack turns are 10", 1'-0" and 1'-3" measured from the outside edges of the stringers.

**4.07 Stringers:** Hot rolled steel bar 3/8" x 2" shall be used for the stringers.

**4.08 Straps:** Hot rolled steel channel 1" x 1/2" x 1/8" shall be used for all straps. They

shall be welded in position as shown on drawing ED-90559-01.

#### Spirals and Double Turns

**4.09** The 90° and 180° spirals and the 90° inside and outside double turns shall be of the design shown on drawing ED-90843-01.

**4.10 The standard widths** of the spirals and double turns are 1'-0", 1'-3" and 1'-8".

**4.11 The stringers** shall be 5/8" diameter steel rods.

**4.12 Straps:** Hot rolled steel channel 1" x 1/2" x 1/8" shall be used for all straps. Straps shall be clamped to the rod stringers by means of split eye bolts and 3/8"-16 hexagon nuts.

**4.13 Split eye bolts and saddle clips** shall also be used to clamp the end of the rod stringers of spiral and double turn sections to straight sections of cable racks.

#### Clamps

**4.14** Clamp type details for joining the various sections of cable rack shall be of the design shown on drawing ED-90225-01.

#### Clamps for Vertical Runs of Power Cable

**4.15** Drawings ED-91127-01 and ED-91129-01 cover the design of clamps used for the support of heavy vertical power cable runs.

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