

**WATER SUPPLIES DEPARTMENT**  
**STANDARD SPECIFICATION E-30-11**  
**CABLE TRAYS AND ACCESSORIES**

1. CABLE TRAYS

1.1 Material

Materials shall be new and free from imperfections and corresponding parts shall be interchangeable.

Cable trays shall be made of stainless steel complying with BS EN 10088-2 of Grade 316. Stainless steel fixing bolts and nuts complying with BS EN 10088-2 of Grade 316 shall also be supplied.

1.2 Construction

Cable trays shall be of 2400mm nominal length.

The tray perforation (bed slot) shall be 20 x 7.5mm clearance holes for cable fixing. The sides of trays shall be 180° return flanged for rigidity and minimizing damage to cable sheath and injury to personnel while handling.

1.3 Dimensions and Loading Capacity

Cable tray dimensions and loading capacity shall be as follows :-

Nominal Tray Width (mm)	Minimum Tray Dimensions		Minimum loading kg/m to produce 6 mm deflection at 2000mm supports
	Thickness	Height of flange	
100/150	1.5mm	50mm	30
225/300	1.5mm	50mm	50
450/600	2.0mm	50mm	90

1.4 Cable Tray Auxiliaries

Cable tray auxiliaries such as bends, tees, crossovers and reducers shall be of the same design, material and manufacturer as the cable trays. These auxiliaries shall be from the standard range of product of the manufacturer.

Each length of cable tray shall be supplied with a set of joining pieces, bolts and nuts for fixing at one end with an adjacent length of cable tray.

When fitting bends, tees, crossovers or reducers into cable trays, couplers shall be used.

### 1.5 Packing and Shipping

Cable trays and fittings shall be packed in wooden crates. Trays of different width and tray fittings (reducers, joints etc.) shall be separately packed. Apart from any climatic conditions which may be experienced in transit or at site, the method of protection and packing shall be suitable for withstanding rough handling and long periods of outdoor storage in a tropical climate.

Each packing shall be clearly stencilled with reference number and the full details and weight of content thereon. Each case shall be clearly marked so that it can be identified with the relevant advice note.

## 2. CABLE TRAY MOUNTING CHANNELS, SUPPORTS AND ACCESSORIES

### 2.1 Mounting Channels and Accessories

Channels for cable tray mounting shall be formed from stainless steel complying with BS EN 10088-2 of Grade 316. The minimum thickness of stainless steel shall be 2.5mm. The dimension of mounting channel shall be 41 x 41mm nominal with distance between lips of 21mm and an axial loading safety factor of 2.5.

Stainless steel spring-loaded nuts, hexagonal headed bolts, springs and washers complying with BS EN 10088-2 of Grade 316 shall be supplied with the mounting channels such that slots in the heads of the nut shall engage with the lips of the channel. Stainless steel nuts, bolts and washers shall be of thread size M6, M8, M10 and M12.

### 2.2 Cantilever Arms and Support Brackets

Cantilever arms shall be formed from stainless steel complying with BS EN 10088-2 of Grade 316. The minimum thickness of stainless steel shall be 2.5mm. It shall be suitable for being secured to channel sections by a single nut and bolt and provided with a tongue which protrudes and locates in the channel.

Cantilever arms shall comply with the following :-

Nominal Cable Tray Width (mm)	Nominal weight of Cantilever (kg)	Nominal Safe Uniformly Distributed Load, $W_1$ (kg)	Maximum Deflection due to $W_1$ (mm)
150	0.75	570	0.15
300	1.2	285	0.60
450	1.6	190	1.35
600	2.1	140	2.35
750	2.6	110	3.70

Channel angle support brackets shall be formed from stainless steel complying with BS EN 10088-2 of Grade 316 and with M12 bolt holes. The nominal size shall preferably be 41 x 56mm and with minimum thickness of 5mm.

### 3. TECHNICAL INFORMATION

The following technical information shall be submitted for assessment upon request by the Purchaser :-

- a. Reports of works tests conducted by manufacturer as a means of quality assurance.
- b. Type tests reports on physical properties (including tensile strength, elongation, yield stress) and deflection on loading.
- c. Catalogues of cable trays showing the following design features :-
  - (i) Bed slot size and layout in relation to the ends and sides of tray.
  - (ii) Tray thickness, unit weight and loading capacity.
  - (iii) Curve of load (kg/m) versus deflection (mm).
  - (iv) Details of accessory fittings such as bends, tees, crossovers and reducers.
  - (v) Recommended joining procedures of two section of cable trays, support spacing and details of fixing bolts and nuts.
- d. Catalogues of cable tray mounting channels, cantilever arms and accessories.