

JABATAN KERJA RAYA MALAYSIA



UNIT STANDARD, PENGUJIAN & MAKMAL
CAWANGAN KEJURUTERAAN ELEKTRIK

TECHNICAL INFORMATION ON COLUMN & BRACKET
FOR STREET LANTERN

A. COMPANY

1. Name of Company :
2. Address :
.....
.....
3. Telephone No :
4. Faxes No :
5. Validity Date of Registration :
6. Test Certificate No. :
(SIRIM/Internationally
Approved Test Labs)

B. PRODUCT SPECIFICATION

1. Brand Name :
2. Model No :
3. Approval Standard :
4. Type Test Report No :
(SIRIM/Internationally
Approved Test Labs)

Catatan Pejabat
<input type="radio"/> - Lulus
<input type="radio"/> - Kandas

Nota: Please select /tick to the related part/sentence only-

<input type="radio"/> - Lulus
<input type="radio"/> - Kandas

5.0 . **General**

5.1. All column & brackets shall be tapered octagonal or tapered round type Yes No

5.2. Made up of (a) **hot dip galvanised steel interchangeable** Yes No

or
(b) **pre-stressed spun concrete column** Yes No

or
(c) **fibre-glass reinforced material** Yes No

5.3. Comply with the latest edition of **BS 5649(EN 40)** Yes No
or **ANSI C-136.20 & ASTM D4923-89** Yes No

5.3.1 Height of Column.....metres

5.4. **DESIGN LOADING** -Shall design to withstand:

- (i) Load of wind speed up to 35m/sec
 - (ii) Load due weight of column and accessories, luminaires and associated control gear, bracket arms & spigots
 - (iii) Other applied loads
- Yes No

6.0. **FABRICATION- HOT DIP GALVANISHED STEEL COLUMN**

Each column shall be mechanically formed & longitudinally welded by

(a) Continuous automatic gas shielded arc process(M.I.G process) Yes No

Or

(b) Continuous automatic electric resistance welding to BS 5135:84 Yes No

© The section shall be constructed to overlap each other by minimum of 1.5 times the diameter of the immediate lower section(external across face dimension) - Yes No

-Easily assembled on site by using simple tool without employing welding Yes No

Note: Shall provide a mark on the finished column sections indicating the minimum overlapping position times the external across -face dimension

6.2 FABRICATION -Pre-Stressed Spun Concrete Column

(i) Pre-Stressed Concrete Wires And Reinforcement Yes No O

(ii) All steel reinforcement shall have a concrete cover not less than 9 mm Yes No O

(ii) Pre Stressed concrete column shall also comply to
BS 607:PT 2.1970 Yes No O

(iii) Moulds used shall be sufficiently rigid for withstand pre -stressing forces-

(iv) The quality of concrete & curing process shall has the compressive strength of the concrete at 28 days in age is greater than 49.0N/mm² in accordance with test stipulated in JIS A 1132 & JIS A 1108 Yes No O

6.3 FABRICATION- REINFORCED COLUMNS

(i) Type 1 Yes No O

(ii) Type 2 Yes No O

7.0 -MATERIALS-

7.1 Hot Dip Galvanised Steel Column

7.1.1 Column & Door -

- Steel to BS EN 10025 Grade Fe 510C Yes No O or

- BS EN 10025 Fe 430C Yes No O or

-BS 1387 :85 / JIS G3452 :78 Yes No

7.1.2 -Bracket Arm & Spigot-

- Steel to BS EN 10025 Fe 430C Yes No O or

- BS 1387 :85 / JIS G3452 :78

7.1.3- Base Flange-

-Steel to BS EN 10025 Fe360A Yes No O

7.1.4 -Base Plate

-Steel to BS EN 10025 Fe360A Yes No O

7.2- Materials - Pre -Stressed Spun Concrete Column-

7.2.1 - Column-

- (a) Concrete grade 50(50 N/mm²)
 - (b) P.C Wire shall conform to JIS G 3536
 - (c) N.T Wire & reinforcement bar shall conform to JIS G 3532
 - (d) Spiral wire shall conform to JIS G 3532
- Yes No O

7.2.2 - Door & spigot-

- (a) Steel to BS EN 10025 Grade Fe 510C or
 - (b) BS EN 10025 Fe 430C or
 - (c) BS 1387 :85 or
 - (d) JIS G 3452:78
- Yes No O

7.2.3 -Bracket Arm-

- (a) Steel to BS EN10025 Fe 430C or
 - (b) BS 1387 :85 or
 - (c) JIS G 3452:78
- Yes No O

7.2.4 - Base Plate-

- (a) Steel to BS EN10025 Fe 360 A- Yes No O

7.3 Materials -Fibre -Reinforced Column-

7.3.0- Type 1

7.3.1 -Column and Door -

- (a) Fibres Mat & thermoplastic polyester resin combination- Yes No O

7.3.2- Bracket Arm & Spigot-

- (a) Bracket arm-seamless steel with polyurethane coating-
 - (b) Spigot -galvanised-
- Yes No O

7.3.3 -Base Flange-

- (a) Galvanised Steel - Yes No O

7.3.4- Pigment Of Colour-

- (a) Shall guaranteed for at least 25 years of use- Yes No O

7.3.4 - Electrical Properties-(Type 1)

- (a) Surface Resistivity - DIN 53482- $10^{13} \Omega$
- (b) Resistivity - DIN 53482- $10^{15} \Omega$
- (c) Creep resistance VDE 030 DIN 53480 KA3c
- (d) Dielectric Strength VDE 0303 DIN 53481 about 30 kV/mm
- (e) Insulation Class II
 Yes No

7.3.5 - Flame Retardance Properties -(Type 1)

- (a) Similar to that type 2 composite column- Yes No

7.3.6 -Mechanical Properties-(Type1)

- (a) Tensile strength DIN 53455 - 2.500 kp/cm²
- (b) Flex elongation DIN 53455 - 7 %
- (c) Flexural strength DIN 53452 - 1.700kp/cm²
- (d) Flex E -modulus DIN 53452 - 70.00 kp/cm²
- (e) Impact Strength DIN 53453 -50 kp/cm²
- (f) Heat Distortion temperature DIN 53458 -above maximum of standard

Yes No

7.4.0 - Type 2-(Fibre -Reinforce Column)

7.4.1 - Column & Door-

- (a) E- glass roving & epoxy resin matrix .The door may also fabricted from aluminium or galvanised steel - Yes No

7.4.2 -Bracket Arm & Spigot-

- (a) Bracket -Same materials as column or galvanised steel-- Yes No
- (b) Spigot/tenon- Aluminium- -- Yes No

7.4.3 - Base Flange-

- (a) Galvanised Steel- Yes No

7.4.5- Flame Resistance-

- (a) Shall be accordance with ASTM D635 - Yes No
- (b) Materials shall be non-conductive - Yes No
- (c) Other toxic materials ,if trace shall always Within the OSHA limits- Yes No

8.0 -Protection Against Corrosion-

8.1.0 -Hot Dip Galvanised Steel Column-

- (a) Shall protected against corrosion ,internally and externally in accordance with **BS 729:1971 or ASTM Standard A123**
- (b) The minimum average weight of the zinc coating shall be **460 g/m²** for any individual test area
- (c) The planted section of the column shall be factory –coated with bitumin using hot dipping process conforming to **AASHTO M 190**
-Yes No O

8.2.0 - Pre-Stressed Spun Concrete Column

- (a) All exposed metal parts shall be protected against corrosion-Yes No O

8.3.0 -Fibreglass Reinforced Column-

- (a) Shall not erode,rot /corrode and deteriorate in the tropical climate and shall be finished in UV-resistant surface- Yes No O
- (b) Finished Column shall be smooth - Yes No O
- (c) A range of color finished shall be available with no color fading over time- Yes No O

9.0 Dors, Door Openings & Opening for Wiring to Decorative Signs/Light

- (a) A hinged weather- proof flush –type or overlapping door , hinged on the upper side with provision to hold the fully opened(180° from the closed position) hinged door in place
- (b) Shall provided complete with anti –vandal locking device over the door opening –
- (c) An opening of **16mm²** diameter complete with rubber plug shall be provided on the column at a height of **5.6m** above the finished ground for wiring to decorative lighting/signs.
Yes No O

10.0- Baseboard-

- (a) A piece of galvanised steel base board shall be included in the base compartment for cable termination- Yes No O

11.0-Earthing Terminal-

As state in LS-20-

12.0-Service Slot-

- (a) For the planted type column ,the service slot shall be the same side & vertically below servis door-
- (b) For the flange mounted type, the cable entry shall through the flange plate having a hole of suitable diameter & suitable duct for cable entry also provided at the concrete base .

Yes No O

13.0 – Flange And Anti –Sink Base Columns-For

- 13.1.1**
- (a)- Hot Dip Galvanised Steel Column-
 - (b) Pre- Stressed Concrete Column
 - (c) Fibreglas Reinforced Column-Type 1 & Type 2-

- refer to LS -20.....
- bolts and nut mounting the flanged shall be supplied by manufacturer

14.0 Others :

.....

.....

.....

.....

.....
Sayadengan ini mengakui keterangan yang
diberikan oleh saya bagi pihak Syarikat adalah betul & benar.

Cop Syarikat:

.....

Tarikh:.....

.....

.....

.....
ULASAN:(Untuk Diisi oleh Pejabat JKR sahaja)

.....
.....
.....
.....
.....

*NOTA:

Untuk diisikan seperti berikut:

⊙ - LULUS

⊗ - KANDAS