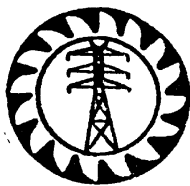


018 -3 : 1996

CEB
STANDARD

**TOOLS FOR ERECTION OF AERIAL
BUNDLED CONDUCTORS ACCESSORIES**



CEYLON ELECTRICITY BOARD
SRI LANKA

Specification

for

**TOOLS FOR ERECTION OF AERIAL BUNDLED
CONDUCTOR AND ACCESSORIES**

CEB Standard 018-3 : 1996

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SPECIFICATION FOR TOOLS FOR ERECTION OF AERIAL BUNDLED CONDUCTORS AND ACCESSORIES

1.0 SCOPE

This specification covers the design, manufacture and testing of Tools required for the erection of Aerial Bundled Conductor (ABC) System.

2.0 SERVICE CONDITIONS

a)	Annual average ambient temperature	-	30°C
b)	Maximum ambient temperature	-	40°C
c)	Maximum relative humidity	-	90%
d)	Environmental condition	-	Humid tropical climate with polluted atmosphere
e)	Operational altitude	-	From M.S.L. to 1900 metres above M.S.L.

3.0 APPLICABLE STANDARDS

The Tools supplied shall be suitable for use in installing Aerial Bundled Conductors (70 x 3+54.6 + 16 mm²) and Accessories conforming to CEB Standard 018-1 and 018- 2: 1996.

4.0 BASIC FEATURES AND REQUIREMENTS

The Tools stated hereunder shall be compatible with the 70 x 3 +54.6 + 16 mm² aerial bundled conductors and accessories conforming to the CEB Standard 018-1 and 18-2 (1996) respectively.

4.1 Hand Operated Hydraulic Press 5 Ton Capacity with Dies

The hydraulic press shall be of hand-operated type, having an output capacity of 5 tons and suitable for making all compression type pre-insulated joints as specified in Clause 6.4.of the CEB Standard 018-2 1996. The press shall be supplied with "H" type head and with a single reversible die suitable for making all joints as described in Clause 6.4 of the CEB Std. 018-2 1996.

The die shall be made of tool steel which shall posses high strength to withstand the mechanical stresses to which the die is subjected in use without damage. The steel part shall be suitably protected against corrosion.

Compression of all pre-insulated sleeves and lugs for phase, neutral messenger and street lamp core shall be achieved by means of using a single reversible "die".

The head shall have 180 deg. revolving with quick opening and closing facilities.

When the compression is completed automatic pressure release shall be achieved with an audible "clik" sound.

The weight of the tool shall not be more than 2kG.

4.2 Plastic Wedge Separator

The wedge separator will be used during stringing the ABC and in installation of piercing type connectors to the individual core of twisted cable.

These separators will be inserted in the twist of the cable so that one particular cable shall be separated. The wedge separator shall be made of good quality hard plastic.

The dielectric strength of material used shall be 3 kV/mm for one minute. Both sides of the wedge shall have large grooves so that it can easily be inserted in the twisted cable.

The top surface shall also have small grooves for the application of manual force.

4.3 Tools for Stainless Steel Strap

The Tools shall be suitable for working with 20 x 0.7mm stainless steel straps. Each set shall include a Strapping Tool (spindle type), Strap Cutter and Strap Folding Tool.

4.4 Stringing Block for Aerial Bundled Conductor

Stringing Block shall be suitable for stringing 70 x 3 + 54.6 + 16 mm² Aerial Bundled Conductors.

The internal diameter of the sheave shall be 80mm approximately and the groove shall be suitable to accommodate the aerial bundled conductors specified above.

The sheave of the block must be made of material which shall not cause deterioration of insulation of the bundled conductors.

Stringing blocks must be supplied with a hook attachment including a safety stopper.

A suitable safety gate shall be provided to avoid the cable coming off the groove during stringing.

The working load of the Stringing Block shall not be less than 800 kgs.

4.5 Open Type Pulling Grip and Swivel

The Open Type Pulling Grip and Swivel shall be suitable for stringing the aerial bundled conductor specified. Each set of pulling grips shall include :

- i) One number Pulling Grip for the twisted bundle made of polypropylene (synthetic) material with a pulling capacity not less than 800 kgs.
- ii) One number Galvanized Steel Pulling Grip for messenger neutral (dia 10 to 13 mm) load 700 kg.
- iii) One number Galvanized Steel Pulling Grip for rope (same as messenger) load 700 kgs.
- iv) One number Swivel for connecting pulling grips of Bundle to rope. Load of swivel shall be 5000 kgs. minimum.

4.6 Split Pulling Grip to pull bundled conductor when ends are not available.

Split Pulling Grip shall consist of double weave split mesh for medium duty cable pulling. It shall be made of polypropylene (synthetic) material with a pulling capacity not less than 800 kgs.

5.0 TESTS

The Tools subjected to the following Type Tests, shall have a proven design.

5.1 Hydraulic Press

- a) Operating Test
- b) Bleeding Test
- c) Movable Arm Backlash Test
- d) Triggering Pressure Test
- e) Suction Test
- f) Discharge Test
- g) Decompression Test
- h) Flow rate Test

5.2 For Plastic Wedge Separator

- a) Die electric withstand Test
(shall withstand 3kV/mm for minute.)

5.3 Stringing Block

- a) Working Load Test
(Shall withstand 800 kg)

5.4 Open Type Pulling Grip and Swivel

- a) Mechanical Loading Test for
 - i) Pulling Grip for twisted bundled made in polypropylene
(Pulling Capacity >800kG)
 - ii) Galvanized Steel Pulling Grip for messenger neutral
(>700kG)
 - iii) Galvanized Steel Pulling grip for rope (>700 kg)
 - iv) Swivel for connecting pulling grips of bundle to
rope(5000kG)

5.5 Type Test Certificates

Certificates of Type Tests performed shall conform to the relevant Standards Specified. The Test Certificates should clearly identify the equipment concerned, showing the manufacturer's identity, Type No. and Basic Technical Parameters.

The test certificates referred to shall be issued by a **recognised independent testing authority acceptable to the purchaser.**

6.0 ADDITIONAL REQUIREMENTS**6.1 Spares**

Spares required for 5 years of trouble free operation shall be supplied with the offer and the bidder shall furnish details of such spares. Cost of spares shall be included in the price of each type of tool.

6.2 Packing

Aerial Bundled Conductor Stringing Tools shall be packed in suitable carrying cases and operating instructions in English shall also be provided together with the tool.

7.0 INFORMATION TO BE SUPPLIED WITH THE OFFER

The Bid shall be accompanied with the following;

- a) English version of Catalogues describing the equipment and indicating the type/model number.
- b) Technical literature (in English) describing the constructional and operational features of the equipment.
- c) Dimensioned drawings of the Tools.
- d) The specifications to which the Tools have been manufactured.
- e) Packing details.
- f) Completed Schedule of particulars as per Annexure A-2.
- g) Type Test Certificates as per Clause 5.0 above

Failure to furnish the above detail and the Sample as per Clause 8.0 will result in the offer being rejected.

8.0 SAMPLE STUDY

One sample of all Tools offered shall accompany the bid to facilitate analysis and evaluation. The sample Tools of the successful Bidder will be retained and set off from the quantity to be supplied and the sample Tools of the unsuccessful bidders will be returned to the respective Bidders once the award is made.

9.0 TECHNICAL LITERATURE AND DRAWINGS

The selected Bidder shall supply all relevant drawings, technical literature, hand books etc.(in English) for each item supplied, in order to facilitate proper installation of Aerial Bundled Conductor System.

10.0 ANNEXURE

A - 2 - Schedule of Particulars

ANNEXURE A - 2

SCHEDULE OF PARTICULARS

1.	Name of the manufacturer	-
2.	Country of manufacture	-
3.	Applicable Standards	-
4.	Description of	
	i) Hydraulic Press	-
	ii) Dies	-
	iii) Plastic Wedge Separator	-
	iv) Stringing Block	-
	v) Pulling Grip and Swivel.	-
	vi) Stainless Steel Strapping Tool Set.	-