

COMMISSION of ELECTRICITY
Planning and Studies division
Baghdad – IRAQ

Specification NO.	D-4
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Technical Specification
OF
L.V POWER CABLE

REVISION	Year 2001		
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1- SCOPE OF TENDER:

This tender includes for the manufacturing, testing packing shipping delivery ex-works, FOB & C&F of (6.0/1K) (1.2/2kV).

2- GENERAL REQUIREMENTS:

The material shall be of first class quality and designed for continuous satisfactory operation as continuity of supply is of prime importance and to operate satisfactorily under variation of load, voltage and short circuit of other conditions which may occur on the system provided that these variations are within the designed rating of the apparatus.

The material used shall be suitable for the following climate and soil condition.

2-1 Ambient temperature

Highest maximum (in the shade) 55 C for about six hours a day.

Lowest minimum (-10) C.

Maximum yearly average (+30) C.

Maximum daily average (+40) C.

2-2 Sun temperature

Black objects under sunshine attain a temperature of 80C.

2-3 Air humidity

maximum 92% at 40 C

minimum 12%

yearly average 44%

2-4 Altitudes

From sea level up to (1000 m)

3-TECHNICAL REQUIREMENT:

3-1 System Data

a. Nominal voltage	400 Volts
System	3phases, 4 wires with neutral solidly grounded.
Frequency	50 HZ

3-2 Standards

the cable shall be in accordance with the latest issue of the I.E.C (particularly NOS502 & 228).

3-3 Deviations

the tender shall particularly mention in his tender all deviations of his offer from the specification described in these tender documents.

4-GENERAL CABLES CHARACTERISTICS:

4-1 Conductor

Non-compact electrolytic annealed stranded plain circular copper conductor of high conductivity 99-9% purity.

4-2 Insulation

Extruded PVC (polyvinyl chloride) according to I.E.C table.

4-3 Core colours

Coloured for phase identifications (Red, Yellow, blue for phase) and black neutral.

4-4 Filler and Bedding

The four core then laid up with suitable fillers to form a compact circular assembly and bedded with a layer of extruded P.V.C.

4-5 Metallic Armour (for multi-core cables)

The four cores then armoured with double galvanized steel tapes of thickness according to I.E.C clause 12.4.

Each tape layer shall be applied in open helix with the second tape covering the gap left by the first, the gap shall be more than 25% of tape width.

4-6 PVC jacket (st2 table 4 in IEC 502)

Over all extruded PVC sheath water proof grey colour of thickness according to IEC and across section marking of (400 Volts) in the Arabic language should be stamped each one meter cable length and chemically antitermite and pollution. Also name, year of manufacturing, voltage and cross-section in the Arabic language.

4-7 Packing

The required cable length are to be supplied on sea.

Worthy good quality drums of length as specified NO.5 below.

5-TYPES OF CABLES

5-1 Single core cable

50mm²

5-1-2 70 mm²

5-1-3 95mm²

5-1-4 150mm²

5-1-5 240 mm²

For these cables the applicable paragraph are 4.1,4.2 and 4.6 on 250m length drums.

5-2 Four core cables

3x240+120mm²

3x150+70mm²

3x95+50mm²

3x70+35mm²

4x50mm²

4x25mm²

4x50mm²

For these cables, the applicable paragraphs are 4.1,4.2,4.3,4.4,4.5, and 4.6 for the cables from 240mm² to 95mm² on 250m good quality drums for cables from 50mm² to 16mm² on 1000m drums.

6- TECHNICAL INFORMATION:

The tendered is requested to give the following information with the offer:

6-1 Resistance of copper per km of cable.

6-2 Inductance of copper per km of cable.

6-3 Capacitance of copper per km of cable.

6-4 Insulation resistance in M. ohms between core/screen.

6-5 Weight of copper per km of cable.

6-6 Overall weight per km of cable

6-7 Overall diameter of cable

6-8 Type of technical treatment against termite in outer sheath.

7-TESTS

Cable shall be subjected to inspection and tests by our inspectors or international inspectors at any time during manufacturing. The manufacturers shall provide inspectors facilities for any said inspection shall be made at place of manufacturer or at international testing facilities.