







## SAFETY MATERIALS ANNEX

No	Description	Picture
1	<p><b>Uniforms work clothes:</b>  Colors: Navy Blue Size, Size: 40 to 54,  Weight: 10 (oz) approx. 280gm, Fabric  Blend: 100% Cotton, Fabric Type: Twill,  Pockets: Yes, Sleeve Length: Long  Sleeves, Gender: Unisex, Collar is Top  Stitched, Cuffs Have Sleeve Vent and  Gripper, Closure Sized to be Worn Over,  Clothes Concealed Gripper Front,  Gripper at Lapel, Two Set In Front  Pockets, Two Patch Pockets, Two Breast  Pockets, Rule Pocket, Side Vent  Openings.</p>	
2	<p><b>Safety rainwear ponchos:</b>  Made of .10 mm PVC film that provides  light-duty protection from rain, dust  and wind. Colors: Navy BlueSize, Size:  40 to 54</p>	

## SAFETY MATERIALS ANNEX

3	<p><b>Safety Belts :</b></p> <p>Full body yellow harness (up to 190 kg load capacity) including shoulder rings, hip pad with side rings, Quick-connect buckles, shoulder pads, seat body belt lanyard parks, puddings, latch, harness, adjusters, straps and any other accessories required for full safety size universal fitting type.</p>	
4	<p><b>Hard Hat:</b></p> <p>Safety helmet for electrical use, especially designed to Maximize wearer's comfort, adjustable in 3mm increments, Built-in cushion for optimum ventilation, safety chin strap, weight 0.300kg, standard Euro sizes 53 to 63 color (White : 5 pcs and yellow: 25pcs).</p>	



## SAFETY MATERIALS ANNEX

5	<p><b>Disconnecting hot sticks:</b> Epoxy reinforced fiberglass, lightweight and rugged, Heavy duty telescopic tube design hot stick, six section slightly in different diameter, length: 8 meters, includes standard disconnecting hooks.</p>	
6	<p><b>TEST Fiberglass Hot Stick: Low Tension (0.4KV)Extended</b> Segments: 3, color: yellow, Fiber Type: 100% fiberglass, Fiber Orientation: uni-directional, Matrix Type: Epoxy, Inner Diameter (ID) Tolerance: +/- 0.05mm, Outer Diameter (OD) Tolerance: +/- mm, Length Tolerance: +/- 0.10mm.</p>	

SAFETY MATERIALS ANNEX

7	<p><b>TEST Fiberglass Hot Stick: High Tension (11 KV)</b></p> <p>Segments: 3, color: yellow, Fiber Type: 100% fiberglass, Fiber Orientation: uni-directional, Matrix Type: Epoxy, Inner Diameter (ID) Tolerance: +/- 0.05mm, Outer Diameter (OD) Tolerance: +/- 0.05mm, Length Tolerance: +/- 0.10mm.</p>	
8	<p><b>TEST Fiberglass Hot Stick: High Tension (33KV)</b></p> <p>Segments: 3, color: yellow, Fiber Type: 100% fiberglass, Fiber Orientation: uni-directional, Matrix Type: Epoxy, Inner Diameter (ID) Tolerance: +/- 0.05mm, Outer Diameter (OD) Tolerance: +/- 0.05mm, Length Tolerance: +/- 0.10mm</p>	

## SAFETY MATERIALS ANNEX

<p>9</p>	<p><b>Portable Earthing set: Portable Earthing Set for High Voltage Over head Lines;</b> consists of three copper cables 95mm<sup>2</sup> extra flexible silicone sheath (1.5 m length) with contact clamps suitable for 120/20mm<sup>2</sup> ACSR and one earth copper cables 35mm<sup>2</sup> extra flexible silicone sheath (15 m length) with earth clamps and earth rod, connected together by means of trifurcation connector, insulation stick, plastic case and any other necessary accessories.</p>	
<p>10</p>	<p><b>Safety shoes:</b> Standards Footwear Safety shoes ,safety rubber shoes with stainless steel shanks, size 40-45.</p>	

## SAFETY MATERIALS ANNEX

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**Safety Welding Gloves :**

Gloves unlined welder all leather suitable for hot climate, size (9, 10, 11).



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**Working Leather Gloves:** Protection gloves soft full grain leather working gloves with out cuff.



## SAFETY MATERIALS ANNEX

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**Electrical Protection Gloves :** rubber Gloves (low voltage 220v , high voltage 11 , 33 kV ) used for the Purpose of isolating the workers from the electrical shock



14

**Handling p.v.c Gloves:** Multi-purpose gloves for all kinds of uses, P.v.c dipped gloves fully coated, liquid proof with full protection , material handling.



## SAFETY MATERIALS ANNEX

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**Hand Operated Ratchet Puller:** Zinc plated, corrosion resistance, double ratchet 4 Ton load capacity with conductor pulling grip, suitable for ACSR and AAC conductors.



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**Hydraulic Crimping tool:**  
Hand operated crimping tool for crimping Cable Lugs and connectors up to 400mm<sup>2</sup>, hexagon C-shape crimping, 180 degree rotate, two speed action fast and slow, safety valve for automatic release, fiberglass insulated handles, plastic case, With complete set of Hexagon Crimping Dies.



## SAFETY MATERIALS ANNEX

17	<p><b>Cable Cutter tools 24 "</b>: forged steel with a black -oxide finish for long lift, (steel blade) shear-type hook, 24 inch, heat treated blades up to 400mm<sup>2</sup> copper cable.</p>	
18	<p><b>Cable Cutter tools 16 "</b>: forged steel with a black -oxide finish for long lift, (steel blade) shear-type hook, 16 inch, heat treated blades up to 185 mm<sup>2</sup> copper cable.</p>	

## SAFETY MATERIALS ANNEX

19	<p><b>Fiberglass Extension ladder 9.5m:</b> Working length 9.5m, working load capacity of 300Lb fiberglass Interlocking side rails, Aluminum D rungs, Durable steel shoes with slip resistant rubber pads According to ANSI A14.5- 2000.</p>	
20	<p><b>Fiberglass Extension ladder 7.5m:</b> Working length 7.5m, working load capacity of 300Lb fiberglass Interlocking side rails, Aluminum D rungs, Durable steel shoes with slip resistant rubber pads According to ANSI A14.5- 2000.</p>	

## SAFETY MATERIALS ANNEX

<p style="text-align: center;"><b>21</b></p>	<p><b>DIGITAL LOW RESISTANCE OHMMETERS-</b> Meeger DLRO10X or equivalent; Auto current reversal cancels standing emfs, Protected to 600 V, Automatically detects continuity in potential and current connections, Multiple operating modes including fully automatic, Alpha-numeric keypad for entering test notes, User selectable high and low limits, Printer output and memory.</p>	 <p>The image shows a Meeger DLRO10X digital low resistance ohmmeter. It is a rugged, handheld device with a large LCD screen displaying '154.3 μΩ'. The device has a black and grey body with a carrying handle at the bottom. On the right side, there are several colored test leads (red, black, green, yellow) plugged into ports. The top of the device has a carrying handle and some control buttons.</p>
<p style="text-align: center;"><b>22</b></p>	<p><b>Insulating Test Device :</b> Fluke1550c or equivalent; Large liquid crystal display (LCD), Six preset test voltages: 250 V, 500 V, 1000 V, 2500 V, 5000 V, 10,000 V (1555 only), Programmable test voltages: 250 V to 10,000 V (50/100 V steps), Resistance measurement: 200 kΩ to 2 TΩ, Polarization Index (PI), Dielectric absorption Ratio (DAR), Ramp mode that linearly increases (100 V/s) the applied test voltage, Test timer and storage for test results with user-defined ID tag, Breakdown voltage indication, Rechargeable lead-acid battery, Auto shutoff after 30 minutes of inactivity, Infrared (IR) port for downloading test data, PC software. The price should cover all necessary accessories testing cbles, bags, clamps, charging cable.</p>	 <p>The image shows a Fluke 1550c Insulating Test Device. It is a handheld device with a large LCD screen displaying '5249 V' and '150 GΩ'. The device has a yellow and black body. To the right of the device is a small black box labeled 'FLUKE i3000 FC CONNECTOR'. To the right of the connector is a smartphone displaying the Fluke i3000 FC app interface, which shows test results like '150 GΩ' and '5249 V DC'.</p>

**Note: The above pictures only for Explanation**

Commission of Electricity  
Planning & studies Division  
Baghdad – IRAQ

Specification NO.	<b>D – 57</b>
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# Technical Specification of protective dress 100% cotton

<b>Revision</b>	<b>Year 2002</b>		
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## **Protective address ( 100% cotton )**

**Working over all 100%cotton jump suit for general purpose without steel pieces style , blue color .**

### **Description :**

- 1. over all , 65% polyester and 35%cotton fabric , blue color suit.**
- 2. Turn-down collar, epaulettes,inset sleeves , strip for adjustable cuff closing , double-sliding nylon zipper front fly closing , straight – bottomed legs.**
- 3. Elastic waist back , back gusset pleated at waist .**
- 4. 2 side patch pockets , 2 breast pockets with flap , small patch pocket on left sleeve , ruler pocket on right leg .**
- 5. size small , medium, large.**

**\*Samples are required with offer**

Commission of Electricity  
Planning & studies Division  
Baghdad – IRAQ

Specification NO.	<b>D – 59</b>
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# Technical Specification of polyester and cotton

<b>Revision</b>	<b>Year 2002</b>		
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## **Protective dress ( polyester and cotton )**

**Working overall 65% polyester and 35%cotton drill boiler suit blue color European style.**

### **Description :**

- 1. over all , 65% polyester and 35%cotton fabric , blue color suit.**
- 2. Turn-down collar, epaulettes, inset sleeves , strip for adjustable cuff closing , double-sliding nylon zipper front fly closing , straight – bottomed legs.**
- 3. Elastic waist back , back gusset pleated at waist .**
- 4. 2 side patch pockets , 2 breast pockets with flap , small patch pocket on left sleeve , ruler pocket on right leg .**
- 5. size small , medium, large.**

**\*Samples are required with offer .**

Commission of Electricity  
Planning & studies Division  
Baghdad – IRAQ

( حزام )

Specification NO.	D – 61
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# Technical Specification of Safety line man belt

Revision	Year 2002		
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## **Safety belt for persons.**

### **Description :**

1. **light weight , 100% polyester high tenacity webbing.**
2. **Zinc plated steel lateral anchoring elements .**
3. **Comfortable p.u/cotton padded luman positioning,height of dorsal band =120mm,100%barbour polyester high tenacity sewing.**
4. **Zinc plated adjustable belt fastener.**
5. **3 tool hangers.**
6. **Three stands 100% polyamide rope 16 mm diameter, length 2m ,with aluminum rope adjuster use with carabiner automatic blocking and closure.**
7. **Light alloy / steel carabiner for automatic closure and blocking.**

### **Standards :**

**EN 358**

**EN 362**

### **Samples :**

**\*Samples are required , offers without samples shall be rejected.**

Commission of Electricity  
Planning & studies Division  
Baghdad – IRAQ

<b>Specification NO.</b>	<b>D – 51-B</b>
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# Technical Specification of disconnecting hot sticks

<b>Revision</b>	<b>Year 2002</b>		
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## **Disconnecting hot sticles**

**Disconnecting hot stick up to 45KV**

### **Technical specifications:**

- 1.Heavy duty teles copic tube design hot stick, five or sex section slightly in different diameter, it ' s length may be 8 neters .**
- 2.Made of epoxy reinforced fiberglass, lightweight and rugged.**
- 3.Top section of telescopic hot stick is insulated with polyurethane foam eore.**
- 4.The unversal end fitting of the insulated to pseption accepts awide variety of attachments so that the lineman can disconnect switches, replace end out tubes and reelose, remove pole covers with one tool.**
- 5.Disconnect hook is standard equipment .**
- 6.Telescopic hot stick may be suitable to perform many routine jobs from ground level .**

### **Standards:**

**ASTMF 711  
IEC 855  
NBR 11854**

Commission of Electricity  
Planning & studies Division  
Baghdad – IRAQ

(أحذية)

<b>Specification NO.</b>	<b>D – 55</b>
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# Technical Specification of Safety shoes

<b>Revision</b>	<b>Year 2002</b>		
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**Safety Shoes**

**Safety shoes ,safety rubber shoes with stainless steel shanks .**

### **Technical Description :**

**1/ sole:**

- a. Vulcanized nitrite sole.**
- b. Temp. resistance-30c to +300c<sup>0</sup>**
- c. High resistance to hydrocarbons and oil and all current chemicals.**
- d. Excellent non-slip properties >0.23.**
- e. Insulating out sole >20 kV.**

**2/ anti-stroke steel toe-caps .**

**3/ water proof black grained upper , leather insole., leather lining.**

**4/ size : 40-45**

**5/ fasteners , eyelets or hooks / D rings.**

**6/ lateral ventilation.**

**7/ lace-up shoes.**

### **Standards :**

**EN.345-1 for safety shoes.**

**\* Samples are required with offer.**

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Baghdad – IRAQ

<b>Specification NO.</b>	<b>D-62</b>
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# Technical Specification of welding Gloves

<b>Revision</b>	<b>Year 2002</b>		
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# **WELDING GLOVES**

**Gloves unlined welder all leather suitable for hot climate.**

## **Technical specifications:**

- 1. Gloves unlined, welder, all leather.**
- 2. Thermal resistant 1.2/1.4mm thick.**
- 3. 15 cm cuff ,length 37cm**
- 4. size (9-10-11)**

## **Standards :**

- 1. EN 420**
- 2. EN 388**
- 3. EN 407**

**\* Samples are required with offer.**

Commission of Electricity  
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Baghdad – IRAQ

Specification NO.	<b>D – 64</b>
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# Technical Specification of Working Leather Gloves

<b>Revision</b>	<b>Year 2002</b>		
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## **Working Leather Gloves**

**Protection gloves soft full grain leather working gloves with out cuff**

### **Technical specifications:**

- 1. Soft full grain leather working gloves without cuff.**
- 2. Water proof cowhide.**
- 3. Length 26cm.thickness 0.8/101mm.**
- 4. Shock proof glove.**

### **Standards:**

**EN 420**

**EN 388**

**\* Samples are required with offer.**

Commission of Electricity  
Planning & studies Division  
Baghdad – IRAQ

(كفوف )

<b>Specification NO.</b>	<b>D – 65</b>
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# Technical Specification Of Electrical Protection Gloves

<b>Revision</b>	<b>Year 2002</b>		
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# Specification for rubber gloves

## 1/ scope of the tender :

tenders are invited to submit their offers for the supply of rubber Gloves (low voltage 220v , high voltage 11 , 33 kV ) used for the Purpose of isolating the workers from the electrical shocks.

## 2/ general information:

The gloves recommended in this tender are.

1. Low voltage ( test voltage 1000v) rubber gloves.
2. High voltage ( test voltage 20 kV ) rubber gloves .
3. High voltage ( test voltage 36 kV ) rubber gloves.

## 3/ general requirement:

### 3-1 ambient temp.

highest max ( in the shade)	55 deg.c for about 6 hours aday.
Lowest min -----	-10 deg.c.
Max .yearly average -----	+30 deg.c.
Max .daily average -----	+40 deg.c.

### 3-2 sun temp.

Black object under direct sun Shine may attain attempt of -----	+80 Dec.
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### 3-3 air humidity.

Max -----	92% at 40 dec.
Min -----	12%
Yearly average -----	44%

### 3-4 altitude

from sea level up to	1000m
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## **4/ Technical regiments :**

### **4-1-a system data**

nominal voltage ----	416/240 volts (+4%)(-10%)
short circuit level -----	at 416 volt, according to transformer capacity ( kva)
frequency -----	50HZ
system -----	3-phase,4-wire with neutral solidly eatherd

### **4-1- b medium voltage system (11kv)**

nominal voltage 11kv $\pm$  5%  
highest system voltage = 12kv

### **4-1-c medium voltage (33kv)**

nominal voltage (33kv $\pm$  5%)  
highest system voltage 30 kv

### **4-2standards**

all gloves shall be with the latest issue of the international electro-Technical commission ( I.E.C) specifications,where there specifications are incomplete or not yet puplished,the national standards of tenders country shall be considered subject to our Approval.

EN60-903, ASTM D120, CET903

### **4-3 Deviations**

the tenderer shall particularity mention in his tender all deviations of his offer from the specification described in these tender Documents.

## **5/ general specification**

- 1- rubber gloves made of superior quality natural latex and especically treated to obtain very high electric strength .**

- 2- they are to be mould-dipped to form around a natural hand position and obtain water tightness and durability.
- 3- The gloves must be with rolled edge.
- 4- All gloves shall be dusted with talcum powder as a preservative.
- 5- Lv gloves shall be designed for working in the live parts without need for leather overgloves, and has excellent behaviour to the electric arc in case of contact with living parts .

6-

Class	Test voltage	Voltage of use	Sizes	Thickness
00	2500	500	9 to 11	1.1mm
1	10000	7500	8 to 11	1.5mm
2	20000	17000	9 to 11	2mm
4	40000	36000	10-11	3mm

7- advice is sought on whether h.v gloves can be brought into direct contact with h.v energized parts.

## 6/ TESTS

the tests shall be carried out on our behalf by our inspector ( international inspection bureau ) witnessed by our engineers according to I.E.C standards .

1. individual electrical test for series, tests on aqueous environment for one minute at the voltage of the test corresponding to the glove, leakage current according to standards.
2. Electrical test by type of sample, conditioning by immersion for 16 hours electrical test to 3 min , leakage current according to standards, test to show how they hold under voltage.
3. Mechanical properties, rupture resistance  $\geq 20\text{mpa}$ , rupture elongation 600%, perforation resistance 30n/mm.
4. Ageing test. conditioning for 186h at 70 °C required result :  
 remanence at 400°C  $< 7\%$ .  
 Mechanical properties  $> 80\%$  polyamide and 20% elastance of the initial values.

**5. thermal tests , test for non-spreading of flames : low temperatures test (-40c<sup>0</sup>).**

**7/ samples:**

**samples of gloves shall be submitted with this offer . the offer without samples will be rejected.**

**N.B**

**glove size 9,10,11 are required .**

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Baghdad – IRAQ

Specification NO.	<b>D – 63</b>
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# Technical Specification of Handling p.v.c Gloves

<b>Revision</b>	<b>Year 2002</b>		
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# **Handling p.v.c Gloves**

**P.v.c dipped gloves fully coated, liquid proof with full protection , material handling.**

## **Technical specifications :**

- 1. p.v.c dipped gloves fully coated .**
- 2. Liquid proof. Excellent protection against oils, allcali, saline solutions and acids.**
- 3. Handling of flammable products.**
- 4. Multi-purpose gloves for all kinds of uses.**
- 5. Double coating with non-slip covering.**

## **Standards:**

**EN 338**

**EN 420**

**EN 374**

**\* Samples are required with offer.**

Ministry of Electricity

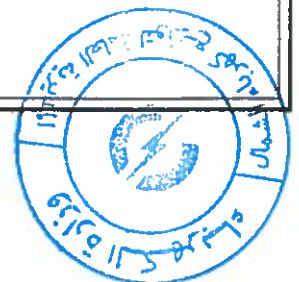
Planning & studies Division

Baghdad – IRAQ

Specification NO.	D – 51
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# Technical Specification of Ladders(Fiber glass)

Revision	Year 2002		
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## **LADERS(FIBER GLASS)**

**Double section rope operated ladders (fiber glass) (2x4.5 mand 2x6m)**

### **Technical Specifications:-**

Extra heavy duty, channel extension, designed for 300Lbs work load, high factor (notless than 4 times of the working load), light weight with-min .rods, contamination and physical defect on the side rails.

Side rails are made from pultruded fiber glass and having approximately equal proportion of glass roving, glass mat and polyster resin.

The ladder rail has a.c dielectric strength of min 40kv/inch suitable for electrical maintenance of 11kv lines.

The extension ladder may slide with channel flange of sliding ladder inter locked with channel flange of lower ladder for better safety,rung locks are gravity type,cast aluminium hooks.

The ladders shall consist of the followings:-

- a.heavy duty steel shoes with thick rubber tread.
- b.Impact resistant , polycarbonate caps on all rail ends.
- c.Outside slide guides.
- d.D-shaped rungs :tempered, serrated Aluminum.
- e. Aluminum plate connection rungs.
- f.Rung locks.
- g.Rope and pulley.

### **N.P**

The ladders to be used on11kv network which consist of I-beam and tublar poles, any accessories to be used with the ladder for the above network to be mentioned.

### **Standards:**

**ANSI A14.5-2000**

### **Tests:**

Tests shall be made according to ANSI 14.5-2000 standards.

**Samples:**

**Samples are required.**

