



Ministry of Industry and Minerals
State Company for Inspection and Engineering Rehabilitation (SIER)
Engineering Insp. & lab Department

محافظة بغداد / قسم الهندسة / شعبة الخدمات / مشروع تاهيل شبكة كهرباء الكرادة محلة (909).

Order No: 471/2023

Tested Item: L.V Cables ($3 \times 150+70$) mm² CU/XLPE/STA/PVC (0.6/1) KV
 Compacted MED CABLES

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	48.2
DIAMETER OF CONDUCTOR FOR 150	mm	13.7 – 15.0	14.2
DIAMETER OF CONDUCTOR FOR 70	mm	9.3 – 10.2	9.9
NOMINAL THICKNESS OF ARMOUR TAPES	mm	0.5	0.45
MIN. THICKNESS OF SHEATH	mm	1.24	2.2
CORE IDENTIFICATION	Color	-----	BLUE, RED ,YELLOW
MIN.THICKNESS OF INSULATION FOR 150	mm	1.16	1.5
CORE IDENTIFICATION	Color	-----	GREEN
MIN.THICKNESS OF INSULATION FOR 70	mm	0.89	0.98
MIN. NUMBER OF WIRES FOR 150	-----	18	19
MIN. NUMBER OF WIRES FOR 70	-----	12	19
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	15.1
MIN. INSULATION ELONGATION AT BREAK	%	200	267
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	17.1
MIN. ELONGATION OF SHEATH	%	150	254
3 – ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 °C FOR 150	Ω/K m	0.124	1.14
MAX. CONDUCTOR D.C RESISTANCE AT 20 °C FOR 70	Ω/K m	0.268	0.216
D.C VOLTAGE TEST	KV	8.5 FOR 3 min	O.K

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60502-1:83/07-28.
 - This report is for the tested sample only.

مختبر قسم الفحص الهندسي والمخبرات
 مراجعة
 المراجعة
 مراجعة

KV
8.5 FOR 3 min
SIER
ENGINEERING
INSPECTION & LABORATORIES



الفاحص
 عمار متولي

Head office: Baghdad –Iraq /Baghdad –Hilla Highway .E-mail: mahed@siei.gov.iq, lab.sier@sieri.gov.iq
 DG Office:+9647810484016.Planing Dep.Head: +9647706084844IP: 91.106.34.21 – SIER@engineering Comp



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محافظة بغداد / قسم الهندسة / شعبة الخدمات / مشروع تاهيل شبكة كهرباء الكرادة محطة (911)

Order No: 470/2023

Tested Item: L.V Cables (4×16) mm² CU/XLPE/STA/PVC (0.6/1) KV Circular
MED CABLES

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

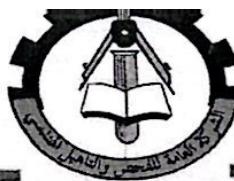
Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	24.4
MAX. DIAMETER OF CONDUCTOR	mm	5.3	4.9
MIN. THICKNESS OF SHEATH	mm	1.24	2.1
CORE IDENTIFICATION	Color	BLUE, RED ,YELLOW & GREEN	
MIN.THICKNESS OF INSULATION	mm	0.53	0.98
NOMINAL THICKNESS OF ARMOUR TAPES	mm	0.2	0.24
THICKNESS OF BEDDING	mm	-----	1.1
MIN. NUMBER OF WIRES	-----	7	7
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	13.1
MIN. INSULATION ELONGATION AT BREAK	%	200	444
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	12.5
MIN. ELONGATION OF SHEATH	%	150	275
3 – ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 °C	Ω/K m	1.15	1.1
D.C VOLTAGE TEST	KV	8.5 FOR 5 min	O.K

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60503-1 & IEC 60228
- This report is for the tested sample only

مدير قسم الفحص الهندسي و المختبرات





Ministry of Industry and Minerals

State Company for Inspection and Engineering Rehabilitation (SIER)
Engineering Insp. & lab Department

محافظة بغداد / قسم الهندسة / شعبة الخدمات / مشروع تاهيل شبكة كهرباء الكرادة محلة (909).

Client: Order No: 471/2023

Tested Item: L.V Cables (4×25) mm² CU/XLPE/STA/PVC (0.6/1) KV Compacted
MED CABLES

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	25.1
DIAMETER OF CONDUCTOR	mm	5.6 - 6.5	6.1
MIN. THICKNESS OF SHEATH	mm	1.24	1.49
CORE IDENTIFICATION	Color	BLUE, RED ,YELLOW & GREEN	
MIN. THICKNESS OF INSULATION	mm	0.71	0.97
THICKNESS OF BEDDING	mm	-----	0.86
MIN. NUMBER OF WIRES	-----	6	7
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	15.2
MIN. INSULATION ELONGATION AT BREAK	%	200	316
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	14.2
MIN. ELONGATION OF SHEATH	%	150	285
3 - ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 °C	Ω/K m	0.702	0.702
D.C VOLTAGE TEST	KV	8.5 KV 5 min.	O.K

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60502-1 & 60228.
- This report is for the tested sample only



وهي تأثير قسم الفحص الهندسي و المختبرات

المراجعة


الفاحص
كارمنزى


ملاحظات

Head office: Baghdad -Iraq /Baghdad -Hilla Highway .E-mail: mahed@siei.gov.iq, lab.sier@sier.gov.iq
DG Office:+9647810484016.Planing Dep.Head: +9647706084844IP: 91.106.34.21 – SIER@engineering Comp

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Order No: 471/2023

Tested Item: L.V Cables (4×16) mm² CU/XLPE/STA/PVC (0.6/1) KV Circular
MED CABLES

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	24.3
MAX. DIAMETER OF CONDUCTOR	mm	5.3	4.85
MIN. THICKNESS OF SHEATH	mm	1.24	2.2
CORE IDENTIFICATION	Color	BLUE, RED ,YELLOW & GREEN	
MIN. THICKNESS OF INSULATION	mm	0.53	0.83
NOMINAL THICKNESS OF ARMOUR TAPES	mm	0.2	0.24
THICKNESS OF BEDDING	mm	-----	0.98
MIN. NUMBER OF WIRES	-----	7	7
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	12.8
MIN. INSULATION ELONGATION AT BREAK	%	200	267
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	13.1
MIN. ELONGATION OF SHEATH	%	150	301
3 - ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 C°	Ω/K m	1.15	1.02
D.C VOLTAGE TEST	KV	8.5 FOR 5 min	O.K

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60502-1 & 60228
- This report is for the tested sample only



ENGINEERING
INSPECTION & LABORATORIES

مدير قسم الفحص الهندسي و المختبرات

م. المحترم

المراجعة

الفاحصل
كار فوزي

Head office: Baghdad -Iraq /Baghdad -Hilla Highway .E-mail: mahed@sier.gov.iq, lab.sier@sier.gov.iq
DG Office:+9647810484016 Planning Dep.Head: +964770608444IP: 91.106.34.21 – SIER@engineering Comp

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Order No: 470/2023

Tested Item: L.V Cables (3x95+50) mm² CU/XLPE/STA/PVC (0.6/1) KV
Compacted MED CABLES

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	40.5
DIAMETER OF CONDUCTOR FOR 95	mm	11.0 - 12.0	11.6
DIAMETER OF CONDUCTOR FOR 50	mm	7.7 - 8.6	8.15
NOMINAL THICKNESS OF ARMOUR TAPES	mm	0.5	0.46
MIN. THICKNESS OF SHEATH	mm	1.24	2.15
CORE IDENTIFICATION	Color	-----	BLUE, RED ,YELLOW
MIN. THICKNESS OF INSULATION FOR 95	mm	-----	0.89
CORE IDENTIFICATION	Color	-----	GREEN
MIN. THICKNESS OF INSULATION FOR 50	mm	0.8	0.94
MIN. NUMBER OF WIRES FOR 95	-----	15	19
MIN. NUMBER OF WIRES FOR 50	-----	6	19
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	13.6
MIN. INSULATION ELONGATION AT BREAK	%	200	204
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	12.9
MIN. ELONGATION OF SHEATH	%	150	171
3 – ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 °C FOR 95	Ω/K m	0.193	0.182
MAX. CONDUCTOR D.C RESISTANCE AT 20 °C FOR 50	Ω/K m	0.387	0.373
D.C VOLTAGE TEST	KV	8.5 FOR 5 min	O.K

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60502-1 & 60228.
- This report is for the tested sample only.



الى جانبها مختبر قسم الفحص الهندسي والمخبرات
Mahmoud Al-Sabri
م. المحترف محمود سالم العبيدي

Head office: Baghdad -Iraq /Baghdad -Hilla Highway .E-mail: mahed@siei.gov.iq, lab.sier@sier.gov.iq
DG Office:+9647810484016 Planning Dep. Head: +9647706084844IP: 91.106.34.21 – SIER@engineering Comp



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Order No: 470/2023

**Tested Item: L.V Cables (3×150+70) mm² CU/XLPE/STA/PVC (0.6/1) KV
Compacted MED CABLES**

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	48.5
DIAMETER OF CONDUCTOR FOR 150	mm	13.7 – 15.0	14.01
DIAMETER OF CONDUCTOR FOR 70	mm	9.3 – 10.2	9.8
NOMINAL THICKNESS OF ARMOUR TAPES	mm	0.5	0.43
MIN. THICKNESS OF SHEATH	mm	1.24	2.41
CORE IDENTIFICATION	Color	-----	BLUE, RED ,YELLOW
MIN.THICKNESS OF INSULATION FOR 150	mm	1.16	1.6
CORE IDENTIFICATION	Color	-----	GREEN
MIN.THICKNESS OF INSULATION FOR 70	mm	0.89	1.01
MIN. NUMBER OF WIRES FOR 150	-----	18	19
MIN. NUMBER OF WIRES FOR 70	-----	12	19
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	12.5
MIN. INSULATION ELONGATION AT BREAK	%	200	571
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	12.5
MIN. ELONGATION OF SHEATH	%	150	262
3 – ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 C° FOR 150	Ω/K m	0.124	1.17
MAX. CONDUCTOR D.C RESISTANCE AT 20 C° FOR 70	Ω/K m	0.268	0.232
D.C VOLTAGE TEST	KV	8.5 FOR 5 min	O.K

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60227-1 & 60228-1
This report is for the tested sample only.

قسم الفحص الهندسي و المختبرات



الفاحص
م.ف.ز

Head office: Baghdad –Iraq /Baghdad –Hilla Highway .E-mail: mahed@siei.gov.iq, lab.sier@sier.gov.iq
DG Office:+9647810484016.Planing Dep.Head: +9647706084844IP: 91.106.34.21 – SIER@engineering Comp



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Order No: 470/2023

Tested Item: L.V Cables (4×25) mm² CU/XLPE/STA/PVC (0.6/1) KV Compacted MED CABLES

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Requirements Of Test	Unit	Specification Limit	Test Result
1- DIMENSION TEST :			
APPROXIMATE OUTSIDE DIAMETER	mm	-----	25.7
DIAMETER OF CONDUCTOR	mm	5.6 – 6.5	5.9
MIN. THICKNESS OF SHEATH	mm	1.24	1.84
CORE IDENTIFICATION	Color	BLUE, RED ,YELLOW & GREEN	
MIN.THICKNESS OF INSULATION	mm	0.71	1.1
THICKNESS OF BEDDING	mm	-----	0.9
MIN. NUMBER OF WIRES	-----	6	7
2- MECHANICAL TEST :			
MIN. INSULATION TENSILE STRENGTH	N / mm ²	12.5	13.3
MIN. INSULATION ELONGATION AT BREAK	%	200	445
MIN. TENSILE STRENGTH OF SHEATH	N / mm ²	12.5	14.02
MIN. ELONGATION OF SHEATH	%	150	287
3 – ELECTRICAL TEST :			
MAX. CONDUCTOR D.C RESISTANCE AT 20 C°	Ω/K m	0.727	0.684
D.C VOLTAGE TEST	KV	8.5 FOR 5 min	O.K

RESULTS: The sample is Acceptable.

- NOTES:**
- The test is according to the standard specification of IEC 60502-1 & 60228.
 - This report is for the tested sample only





Ministry of Industry and Minerals
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Engineering Insp. & lab Department

Client: محافظة بغداد / قسم الهندسة / شعبة الخدمات / مشروع تاهيل شبكة كهرباء الكرادة محلة (911).

Order No: 470/2023

**Tested Item: H.V Cables (3×150) mm² CU/XLPE/STA/PVC (6/10) KV Compacted
MED CABLES**

Address: Baghdad- Iraq

Date of Test: 9/5/2023

Type of Test: Electrician & Physical

Test Report

Specification Requirement	Unit	Specification Limit	Test Result
Sheathing			
Outer Diameter	mm	-----	67.03
Min. Thickness	mm	1.8	2.7
Min. Tensile strength	N/mm ²	12.5	14.2
Min. Elongation at break	%	150	205
Armoring			
Nominal Tape Thickness.	mm	0.5	0.51
Bedding			
Approx. Thickness	mm	-----	-----
Metallic Screen			
Nominal Thickness of Copper Tape	mm	-----	0.13
Nominal Diameter of Copper wire		-----	0.93
Outer Semi-Conductor			
Min. Thickness	mm	-----	0.5
Insulation			
Min. Thickness	mm	2.96	3.5
Min. Tensile strength	N/mm ²	12.5	14.1
Min. Elongation at break	%	200	205
Inner Semi-Conductor			
Min. Thickness	mm	-----	0.5
Conductors			
Outer Diameter	mm	13.7 – 15.0	14.1
Min. No. of wires	----	18	37
Max. D.C. resistances of conductor at 20 C°	Ω/K m	0.124	0.123

RESULTS: The sample is Acceptable.

NOTES: - The test is according to the standard specification of IEC 60529-1 & 60228.
- This report is for the tested sample only.



قسم الفحص المهمسي والمختبرات
جامعة مصر

1000

Head office: Baghdad -Iraq /Baghdad -Hilla Highway .E-mail: mahed@sier.gov.iq, lab.sier@sier.gov.iq
DG Office:+9647810484016.Planing Dep.Head: +9647706084844IP: 91.106.34.21 – SIER@engineering Comp
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