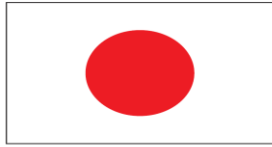
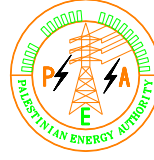


Rehabilitation of Electricity Power Distribution Network in three areas in the Gaza strip (GS)



من الشعب الياباني
From the People of Japan



50
YEARS

Empowered lives. Resilient nations.

Bill of Quantity : Package1 - Lot 3 - Supply of Wires , Cables and M.V Cables Fittings

Bill of Quantity : Package1 - Lot 3

Supply the listed below items (Wires , Cables and M.V Cables Fittings)

Item	Description	Unit	Quantity	Unit Rate (US\$)	Total Cost (US\$)
	<p>The Contract entails supply of the listed below items (22 kV Distribution Line & 0.4 kV Low Voltage Electrical Components)</p> <p>All Materials must Adhere to technical specifications and drawings as per the international standards subject to engineer's approval.</p> <p>All items will be approved through submittal of material approval from substantiated by brochures , factory specifications and sample according to approved material supply schedule.</p>				
D1.	Wires				
D1.1	ACSR 150/25 mm2 Conductor (According German Sizes DIN 48204) , (According to ACSR General Specifications and Technical Guarantees No. ACSR_150)	Km	6		
D1.2	ACSR Wire Rabbit (According BS215 PART 2) , (According to ACSR General Specifications and Technical Guarantees No. ACSR_5)	Km	6		
D1.3	Hard drawn Stranded Copper Conductor 35 mm2 , (According to the Technical Guarantees No. HDC_35)	Km	0.5		
D1.4	Soft drawn Stranded Copper Conductor 35 mm2 , (According to the Technical Guarantees No. SDC_35)	Km	0.5		
D1.5	PVC Insulated Solid Stranded Copper Conductor 70 mm2 , Yellow/Green , (According to the Technical Guarantees No. PVC_70)	Km	0.5		
D1.6	Solid Copper Wire 6mm (25mm2) , (According to the Technical Guarantees No. SC_06)	Km	0.5		
	Total of WiresCarried to the main summary				
D2	L.V Cables				
D2.1	0.6/1 Kv ABC Cable 3*150+1*95+2*25 mm2 AL , (According to ABC Cables General specifications and Technical Guarantees No. ABC_L150)	Km	9		
	Total of L.V CablesCarried to the main summary				
D3	M.V Cables				
D3.1	12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded Conductor 1x120/16 mm2 with LDPE Outer Sheath , (According to M.V Cables General Specifications and Technical Guarantees No. XLPEA_120)	Km	10		

Bill of Quantity : Package1 - Lot 3

Supply the listed below items (Wires , Cables and M.V Cables Fittings)

Item	Description	Unit	Quantity	Unit Rate (US\$)	Total Cost (US\$)
D3.2	12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded Conductor 1x400/35 mm2 with LDPE Outer Sheath , (According to M.V Cables General Specifications and Technical Guarantees No. XLPEA_400)	Km	10.5		
D3.3	12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded Conductor 1x630/35 mm2 with LDPE Outer Sheath , (According to M.V Cables General Specifications and Technical Guarantees No. XLPEA_630)	Km	9.5		
	Total of M.V CablesCarried to the main summary				
D4	M.V Cables Fittings				
D4.1	36 kv Heat Shrinkable Outdoor Termination Kit For 12/20 Kv Single Core Aluminium Conductor (1x120/16mm2) XLPE , (Set for one Phase), with Suitable Mechanical Compression Lugs , (According to M.V Cables Fittings General Specifications and Technical Guarantees No.OT36_120)	No	117		
D4.2	36 kv Heat Shrinkable Outdoor Termination Kit For 12/20 Kv Single Core Conductor (1x400/35mm2) XLPE , (Set for one Phase), with Suitable Mechanical Compression Lugs , (According to M.V Cables Fittings General Specifications and Technical Guarantees No.OT36_400)	No	21		
D4.3	36 kv Heat Shrinkable Outdoor Termination Kit For 12/20 Kv Single Core Conductor (1x630/35mm2) XLPE , (Set for one Phase), with Suitable Mechanical Compression Lugs , (According to M.V Cables Fittings General Specifications and Technical Guarantees No.OT36_630)	No	9		
D4.4	24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x120/16 mm2 , (Set for one Phase) including Bimetallic Mechanical Joints , (According to M.V Cables Fittings General Specifications and Technical Guarantees No.SJ24_120)	No	21		
D4.5	24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x400/35 mm2 , (Set for one Phase) including Bimetallic Mechanical Joints , (According to M.V Cables Fittings General Specifications and Technical Guarantees No.SJ24_400)	No	10		
D4.6	24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x630/35 mm2 , (Set for one Phase) including Bimetallic Mechanical Joints , (According to M.V Cables Fittings General Specifications and Technical Guarantees No.SJ24_630)	No	18		
	Total of M.V Cables FittingsCarried to the main summary				

Bill of Quantity : Package1 - Lot 3

Supply the listed below items (Wires , Cables and M.V Cables Fittings)

Item	Description	Unit	Quantity	Unit Rate (US\$)	Total Cost (US\$)
------	-------------	------	----------	------------------	-------------------

D1	Total of Wires				
D2	Total of L.V Cables				
D3	Total of M.V Cables				
D4	Total of M.V Cables Fittings				
	Transportation of goods to Gaza area (GEDCO Warehouses)				
	Total Total EXCLUDING VAT (US\$)				

NET TOTAL SUM EXCLUDING VAT (in words) :

SIGNED AND SEALED :

AUTHORIZED :

TITLE :

SIGNATURE :

DATE :

	Transportation items:(Optional)	QTY	Total in US\$
1.1	Transportation of goods to Toulkarem area	job	
1.2	Transportation of goods from Toulkarem to Gaza.	job	

Technical Guarantees No. ABC_L150**0.6/1 KV ABC Cable 3x150+1x95+2x25 mm² Aluminium**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Standards		CENELEC HD 626 S1:1996 PART 6 Section E, included in National Standards NFC 33209 and BS 7870- 5			
4	Max. Rated Conductor Temperature at Short Circuit (5 sec. max. duration)	°C	250			
5	Max. Rated Temperature for Permanent Load	°C	90			
6	Voltage					
	a) Rated Voltage	kV	0.6/1			
	b) Max. Service Voltage	kV	1.2			
7	Nominal System Voltage Phase to Phase	kV	0.4			
8	Type		Insulated 3 Phase and 1 Neutral Messenger and 2 Street Lighting Conductor			
9	Phase Conductor Material		Aluminium			
10	Neutral Messenger Conductor Material		Aluminium Alloy			
11	Street Lighting Conductor Material		Aluminium			
12	All Conductors Form		Circular Compacted , Concentric Strand			
	1- Phase Conductor					
	a) Cross Sectional Area	mm ²	150			

Technical Guarantees No. ABC_L150**0.6/1 KV ABC Cable 3x150+1x95+2x25 mm² Aluminium**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
13	b) Number of Cores		3			
	c) Minimum Number of Strands for one Core	No	≥19			
	d) Minimum / Maximum Diameter of Conductor	mm	14.1 / 15			
	e) Insulation Material		Extruded Black Weather-Resistant XLPE			
	f) Insulation Minimum Thickness	mm	1.7			
	g) Min / Max Diameter Over Insulation	mm	shall be filled by manufacturer			
	h) Continuous current carrying capacity per phase (Ambient Temp 30°C , Wind Velocity 0.6 m/s)	A	≥340			
	i) Max. Phase Conductor DC Resistance at 20 °C	Ω/km	0.206			
	j) Marking		Core Identification with Longitudinal Ridges			
14	2- Neutral Messenger Conductor					
	a) Cross Sectional Area	mm ²	95			
	b) Number of Cores		1			
	c) Minimum Number of Strands	No	≥12			
	d) Minimum / Maximum Diameter of Conductor	mm	12/12.9			
	e) Insulation Material		Extruded Black Weather-Resistant XLPE			
	f) Insulation Minimum Thickness	mm	1.6			
	g) Min / Max Diameter Over Insulation	mm	shall be filled by manufacturer			
	h) Max. Phase Conductor DC Resistance at 20 °C	Ω/km	0.343			

Technical Guarantees No. ABC_L150**0.6/1 KV ABC Cable 3x150+1x95+2x25 mm² Aluminium**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
	i) Minimum Breaking load of the messenger conductor	KN	27.5			
	j) Marking		Embedded print, giving : 1- Type of cable 2- Cross-section area of phase, neutral and Street Lighting conductors 3- Beneficiary Name (Gedco) 4- Manufacturer name 5- Nominal voltage and Length 6- Production year			
15	3- Street Lighting Conductor					
	a) Cross Sectional Area	mm ²	25			
	b) Number of Cores		2			
	c) Minimum Number of Strands for one Core	No	≥7			
	d) Minimum Diameter of Conductor	mm	5.9			
	e) Insulation Material		Extruded Black Weather-Resistant XLPE			
	f) Insulation Minimum Thickness	mm	1.3			
	g) Nominal Diameter Over Insulation	mm	shall be filled by manufacturer			
	h) Continuous current carrying capacity per phase (Ambient Temp 30oC , Wind Velocity 0.6 m/s)	A	shall be filled by manufacturer			
	i) Max. Phase Conductor DC Resistance at 20 °C	Ω/km	1.2			

Technical Guarantees No. ABC_L150**0.6/1 KV ABC Cable 3x150+1x95+2x25 mm² Aluminium**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
	j)Marking		Number 1& 2			
16	Approximate Overall Diameter of all cable	mm	shall be filled by manufacturer			
17	Approximate Total Weight of the Complete Cable	kg/km	shall be filled by manufacturer			
18	Drum Material		New Wood			
19	Cable Protection on Drum		Wooden Batten			
20	Drum Dimensions		shall be filled by manufacturer			
21	Cable Length on Drum	m	500			
22	Type Test Certificates/Reports from internationally reputed testing agency		Required			
23	Acceptance & Routine tests witnessed by Beneficiary		Required			

Tenderer's Signature :

Date:

Technical Guarantees No. ACSR_5**ACSR Conductor Rabbit**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Manufacturing Standards		British Sizes BS215 PART2 or EN 50182			
4	Type		Aluminium Conductor Steel Reinforced - (ACSR)			
5	Core Material		Greased Stranded Galvanized Steel Wires			
6	Conductor Material		Stranded Aluminium Wires			
7	Code		ACSR Rabbit			
8	Nominal Cross-Sectional area of ACSR Wire	mm ²	61.7			
9	Number of Steel Core Strands	No.	1			
10	Diameter of Steel Core Strand	mm	3.35			
11	Number of Aluminium Strands	No.	6			
12	Diameter of Aluminium Strand	mm	3.35			
13	Total Overall Diameter of Conductor	mm	10.05			
14	Max. Conductor DC Resistance at 20 °C	Ω/km	0.5426			

Technical Guarantees No. ACSR_5**ACSR Conductor Rabbit**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
15	Breaking Strength	KN	18.3			
16	Min. Current Rating in free Air	Amps	185			
17	Conductor resistance for base temperature 20 C°	ohm/Km	shall be filled by manufacturer			
18	Modulus of Elasticity	kg/mm ²	shall be filled by manufacturer			
19	Coefficient of Thermal Elongation , per °C		shall be filled by manufacturer			
20	Weight of Aluminium Conductors	kg/km	145			
21	Weight of Steel Conductors	kg/km	68.5			
22	Total Weight of the Conductor	kg/km	shall be filled by manufacturer			
23	Drum Material		New Wood			
24	Cable Protection on Drum		Wooden Batten			
25	Drum Dimensions	mm	shall be filled by manufacturer			
26	Conductor Length on Drum	m	2000			
27	Type Test Certificates/Reports from internationally reputed testing agency		Required			
28	Acceptance & Routine tests witnessed by Two Gedco Engineers		Required			

Tenderer's Signature :

Date:

Technical Guarantees No. ACSR_150**ACSR Conductor 150/25 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Manufacturing Standards		German Conductor Sizes DIN48204 or EN 50182			
5	Type		Aluminium Conductor Steel Reinforced - (ACSR)			
6	Core Material		Greased Stranded Galvanized Steel Wires			
7	Conductor Material		Stranded Aluminium Wires			
8	Code		ACSR 150/25			
9	Nominal Cross-Sectional area of ACSR Wire	mm ²	173.1			
10	Number of Steel Core Strands	No.	7			
11	Diameter of Steel Core Strand	mm	2.1			
12	Number of Aluminium Strands	No.	26			
13	Diameter of Aluminium Strand	mm	2.7			
14	Total Overall Diameter of Conductor	mm	17.1			
15	Max. Conductor DC Resistance at 20 °C	Ω/km	0.1939			

Technical Guarantees No. ACSR_150**ACSR Conductor 150/25 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
16	Breaking Strength	KN	55.2			
17	Min. Current Rating in free Air	Amps	470			
18	Conductor resistance for base temperature 20 C°	ohm/Km	shall be filled by manufacturer			
19	Modulus of Elasticity	kg/mm ²	shall be filled by manufacturer			
20	Coefficient of Thermal Elongation , per °C		shall be filled by manufacturer			
21	Weight of Aluminium Conductors	kg/km	410			
22	Weight of Steel Conductors	kg/km	190			
23	Total Weight of the Conductor	kg/km	shall be filled by manufacturer			
24	Drum Material		New Wood			
25	Cable Protection on Drum		Wooden Batten			
26	Drum Dimensions	mm	shall be filled by manufacturer			
27	Conductor Length on Drum	m	2000			
28	Type Test Certificates/Reports from internationally reputed testing agency		Required			
29	Acceptance & Routine tests witnessed by Two Gedco Engineers		Required			

Tenderer's Signature :

Date:

Technical Guarantees No. HDC_35**Hard Drawn Stranded Copper Conductor 35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Manufacturing Standards		BS7884 & DIN 48201			
4	Conductor Material		Copper			
5	Conductor Construction		Hard Drawn Stranded			
6	Nominal Cross-Sectional Area of Conductor	mm ²	35			
7	Number Copper Strands	No.	7			
8	Diameter of Copper Strand	mm	2.5			
9	Overall Diameter of Conductor	mm	7.5			
10	Max. Conductor DC Resistance at 20 °C	Ω/km	0.5337			
11	Minimum Breaking Load	Newton	12860			
12	Current Rating in Free Air	Amps	200			
13	Conductor Geometric Mean radius	mm	shall be filled by manufacturer			
14	Modulus of Elasticity	kg/mm ²	shall be filled by manufacturer			
15	Coefficient of Thermal Elongation , per °C		shall be filled by manufacturer			
16	Conductor Nominal mass per unit Length	kg/km	308			
17	Drum Material		New Wood			

Technical Guarantees No. HDC_35**Hard Drawn Stranded Copper Conductor 35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
18	Cable Protection on Drum		Wooden Batten			
19	Drum Dimensions		shall be filled by manufacturer			
20	Conductor Length on Drum	m	1000			
21	Total mass of Conductor with Drum	Kg	shall be filled by manufacturer			
22	Type Test Certificates/Reports from internationally reputed testing agency		Required			
23	Acceptance & Routine tests witnessed by Beneficiary		Required			

Tenderer's Signature :

Date:

Technical Guarantees No. OT36_120**36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x120/16 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer		Raychem or Equivalent			
2	Country of Origin					
3	Standards		IEC60502 & CENELEC HD629.1 S1			
4	Max. Service Voltage (Um)	kV	36			
5	Outdoor Termination Material , form , Designation		Heat Shrink Tubing and Molded Parts Shall be Flexible, Made from Specially Formulated Cross-Lined Polymeric			
6	Cable and Conductor Type		Single Core Conductor Cable with Copper Wire Shield			
7	Cable Insulation Type / Thickness		XLPE / 5.5 mm			
8	Conductor Cross Sectional Area	mm ²	120			
9	Wire Screen Cross Sectional Area	mm ²	16			
10	Termination Length	mm	530			

Technical Guarantees No. OT36_120**36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x120/16 mm²**

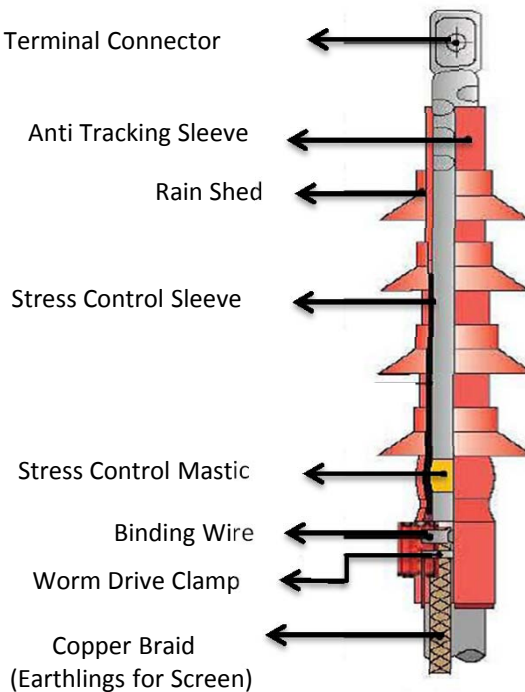
No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
11	Rain Shed Diameter	mm	115			
12	Number of Rain Sheds	No	4			
13	Insulating , Electrical Material and Rain Shed Brittle Temperature	°C	<-40			
14	Impulse withstand Voltage Test 1.2 Micro Second Between Conductor & Screen Grounded	kV	170			
15- Test :						
15.1	All Type tests reports by qualified laboratory according to CENELEC HD 629.1 S1		Required			
15.2	Routine test report		Required			
16	Heat Shrinkable Outdoor Termination Kit Parts					
	Bimetallic Terminal Mechanical Lug with 13 mm Hole and 2 each Shear_Head Bolts (for Aluminium or Copper Conductors)		Required			
	Anti-Tracking Sleeve		Required			
	Rain-Sheds (4each)		Required			
	Stress Control Sleeve		Required			

Technical Guarantees No. OT36_120

36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x120/16 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
	Stress Control Mastic		Required			
	Binding Wire		Required			
	Worm Drive Clamp		Required			
	Copper Braid (Earthlings)		Required			
17	Installation Instruction Documents		Required			

Bimetallic Mechanical Terminal Connector



Bimetallic Mechanical Terminal Connector

Tenderer's Signature :

Date:

Technical Guarantees No. OT36_400**36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x400/35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer		Raychem or Equivalent			
2	Country of Origin					
3	Standards		IEC60502 & CENELEC HD629.1 S1			
4	Max. Service Voltage (Um)	kV	36			
5	Outdoor Termination Material , form , Designation		Heat Shrink Tubing and Molded Parts Shall be Flexible, Made from Specially Formulated Cross-Lined Polymeric			
6	Cable and Conductor Type		Single Core Conductor Cable with Copper Wire Shield			
7	Cable Insulation Type / Thickness		XLPE / 5.5 mm			
8	Conductor Cross Sectional Area	mm ²	400			
9	Wire Screen Cross Sectional Area	mm ²	35			
10	Termination Length	mm	550			

Technical Guarantees No. OT36_400**36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x400/35 mm²**

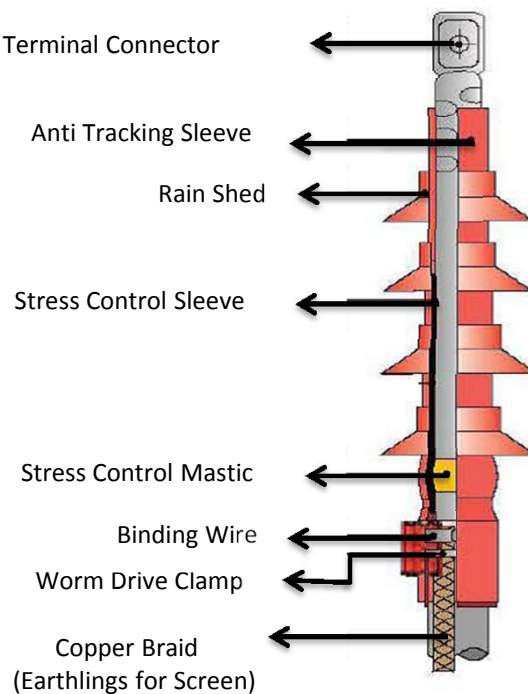
No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
11	Rain Shed Diameter	mm	135			
12	Number of Rain Sheds	No	4			
13	Insulating , Electrical Material and Rain Shed Brittle Temperature	°C	<-40			
14	Impulse withstand Voltage Test 1.2 Micro Second Between Conductor & Screen Grounded	kV	170			
15- Test :						
15.1	All Type tests reports by qualified laboratory according to CENELEC HD 629.1 S1		Required			
15.2	Routine test report		Required			
16	Heat Shrinkable Outdoor Termination Kit Parts					
	Bimetallic Terminal Mechanical Lug with 13 mm Hole and 3 each Shear_Head Bolts (for Aluminium or Copper Conductors)		Required			
	Anti-Tracking Sleeve		Required			
	Rain-Sheds (4each)		Required			
	Stress Control Sleeve		Required			

Technical Guarantees No. OT36_400

36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x400/35 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
	Stress Control Mastic		Required			
	Binding Wire		Required			
	Worm Drive Clamp		Required			
	Copper Braid (Earthlings)		Required			
17	Installation Instruction Documents		Required			

Bimetallic Mechanical Terminal Connector



Bimetallic Mechanical Terminal Connector

Tenderer's Signature :

Date:

Technical Guarantees No. OT36_630**36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x630/35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer		Raychem or Equivalent			
2	Country of Origin					
3	Standards		IEC60502 & CENELEC HD629.1 S1			
4	Max. Service Voltage (Um)	kV	36			
5	Outdoor Termination Material , form , Designation		Heat Shrink Tubing and Molded Parts Shall be Flexible, Made from Specially Formulated Cross-Lined Polymeric			
6	Cable and Conductor Type		Single Core Conductor Cable with Copper Wire Shield			
7	Cable Insulation Type / Thickness		XLPE / 5.5 mm			
8	Conductor Cross Sectional Area	mm ²	630			
9	Wire Screen Cross Sectional Area	mm ²	35			
10	Termination Length	mm	550			

Technical Guarantees No. OT36_630**36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x630/35 mm²**

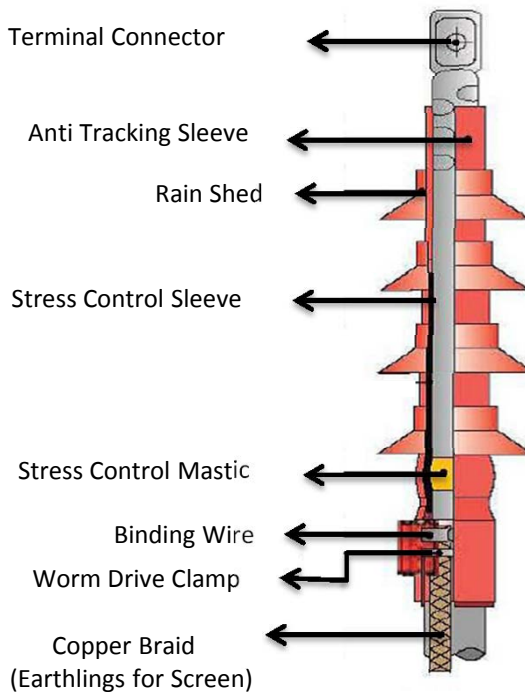
No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
11	Rain Shed Diameter	mm	135			
12	Number of Rain Sheds	No	4			
13	Insulating , Electrical Material and Rain Shed Brittle Temperature	°C	<-40			
14	Impulse withstand Voltage Test 1.2 Micro Second Between Conductor & Screen Grounded	kV	170			
15- Test :						
15.1	All Type tests reports by qualified laboratory according to CENELEC HD 629.1 S1		Required			
15.2	Routine test report		Required			
16	Heat Shrinkable Outdoor Termination Kit Parts					
	Bimetallic Terminal Mechanical Lug with 13 mm Hole and 3 each Shear_Head Bolts (for Aluminium or Copper Conductors)		Required			
	Anti-Tracking Sleeve		Required			
	Rain-Sheds (4each)		Required			
	Stress Control Sleeve		Required			

Technical Guarantees No. OT36_630

36 kv Heat Shrinkable Outdoor Termination Kit for XLPE Cable 1x630/35 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
	Stress Control Mastic		Required			
	Binding Wire		Required			
	Worm Drive Clamp		Required			
	Copper Braid (Earthlings)		Required			
17	Installation Instruction Documents		Required			

Bimetallic Mechanical Terminal Connector



Bimetallic Mechanical Terminal Connector

Tenderer's Signature :

Date:

Technical Guarantees No. PVC_70**PVC Insulated Stranded Compacted Circular Copper Conductor 70 mm² , Yellow/Green**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Manufacturing Standards		IEC 60227 , BS 6004 , HD21.3			
4	Rated Voltage U ₀ /U (U _m)	V	450/750			
5	Test Voltage	V	2500			
6	Conductor Material		Copper			
7	Conductor Construction		Stranded Compacted Circular			
8	Nominal Cross-Sectional Area of Conductor	mm ²	70			
9	Min. No. of Copper Strands	No.	12			
10	Diameter of Copper Strand	mm	shall be filled by manufacturer			
11	Insulation		Yellow/Green Weather-Resistant PVC			
12	Insulation Minimum Thickness	mm	1.4			
13	Overall Diameter	mm	shall be filled by manufacturer			
14	Max. Conductor DC Resistance at 20 °C	Ω/km	0.268			

Technical Guarantees No. PVC_70**PVC Insulated Stranded Compacted Circular Copper Conductor 70 mm² , Yellow/Green**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
15	Current rating based upon continuous operation at 70 °C conductor, 30 °C ambient, wires enclosed in conduit on wall , AC one Phase	A	190			
16	Approximate Total Weight of the Conductor	kg/km	shall be filled by manufacturer			
17	Drum Material		New Wood			
18	Cable Protection on Drum		Wooden Batten			
19	Wire Length on Drum	m	500			
20	Acceptance & Routine tests witnessed by Beneficiary		Required			

Tenderer's Signature :

Date:

Technical Guarantees No. SC_06**Solid Copper Wire 25 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Manufacturing Standards		BS 13601			
4	Conductor Material		Copper			
5	Conductor Construction		Hard Drawn Solid			
6	Nominal Cross-Sectional Area of Conductor	mm ²	25			
7	Conductor Diameter	mm	6			
8	Max. Conductor DC Resistance at 20 °C	Ω/km	shall be filled by manufacturer			
9	Breaking Strength	Newton	shall be filled by manufacturer			
10	Current Rating in Free Air	Amps	shall be filled by manufacturer			
11	Approximate Total Weight of the Conductor	kg/km	shall be filled by manufacturer			
12	Drum Material		New Wood			
13	Cable Protection on Drum		Wooden Batten			
14	Drum Dimensions		shall be filled by manufacturer			
15	Wire Length on Drum	m	500			
16	Acceptance & Routine tests witnessed by Beneficiary		Required			

Technical Guarantees No. SC_06

Solid Copper Wire 25 mm2

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
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Tenderer's Signature :

Date:

Technical Guarantees No. SDC_35**Soft Drawn (Annealed) Stranded Copper Conductor 35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Reference Manufacturing Standards		BS EN 60228			
4	Conductor Material		Copper			
5	Conductor Construction		Soft Drawn (Annealed) Stranded			
6	Nominal Cross-Sectional Area of Conductor	mm ²	35			
7	Number Copper Strands	No.	7			
8	Diameter of Copper Strand	mm	2.52			
9	Overall Diameter of Conductor	mm	7.56			
10	Max. Conductor DC Resistance at 20 °C	Ω/km	0.524			
11	Minimum Breaking Load	Newton	shall be filled by manufacturer			
12	Current Rating in Free Air	Amps	200			
13	Conductor Geometric Mean radius	mm	shall be filled by manufacturer			
14	Conductor Nominal mass per unit Length	kg/km	shall be filled by manufacturer			
15	Drum Material		New Wood			
16	Cable Protection on Drum		Wooden Batten			
17	Drum Dimensions		shall be filled by manufacturer			

Technical Guarantees No. SDC_35

Soft Drawn (Annealed) Stranded Copper Conductor 35 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
18	Conductor Length on Drum	m	500			
19	Total mass of Conductor with Drum	Kg	shall be filled by manufacturer			
20	Type Test Certificates/Reports from internationally reputed testing agency		Required			
21	Acceptance & Routine tests witnessed by Beneficiary		Required			

Tenderer's Signature :

Date:

Technical Guarantees No. SJ24_120

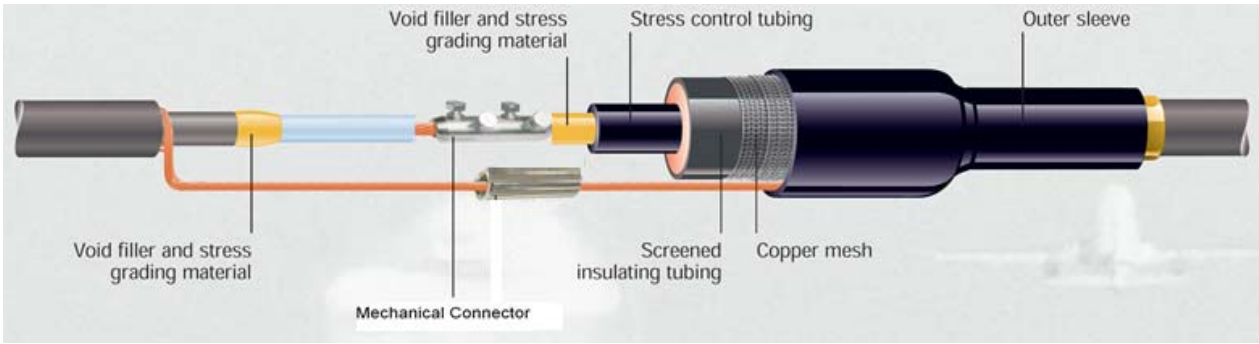
24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x120/16 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer		Raychem or Equivalent			
2	Country of Origin					
3	Standards		HD 629.1 S1 , VDE0276 , VDE0620			
4	Max. Service Voltage (Um)	kV	24			
5	Cable and Conductor Type		12/20 kv Single Core Cable with Copper Wire Shield			
6	Cable Insulation Type		XLPE			
7	Conductor Cross Sectional Area	mm ²	120			
8	Copper Shield Cross Sectional Area	mm ²	16			
9- Test :						
9.1	Below Type tests reports by qualified laboratory according to CENELEC HD 629.1 S1 or IEC 60502-4 :- AC Voltage Withstand Partial Discharge Impulse Voltage Withstand Short Time Current Cyclic Aging DC Voltage Withstand High Voltage Time Shielding		Required			
9.2	Mechanical connectors Test used in joints should pass the requirements in accordance with IEC 61238-1 class A.		Required			
10	Routine test report		Required			
11	Installation Instruction Documents		Required			
	Heat Shrinkable Straight Joint Parts					
	Stress Control Tubing		Required			
	Screened insulating Sleeve		Required			

Technical Guarantees No. SJ24_120

24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x120/16 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
12	Outer Sleeve (Heat Shrink able Conductive Material)		Required			
	Screened Insulating Tubing		Required			
	Filling Mastic		Required			
	24kv Mechanical Connector with Shear-Head Bolts and Central Barrier for AL or CU Conductors (120 mm2)		Required			
	Compression Connector for Copper Shield (16 mm2)		Required			
	Mastic Wrap		Required			
	Copper Mesh		Required			



Tenderer's Signature : Date:

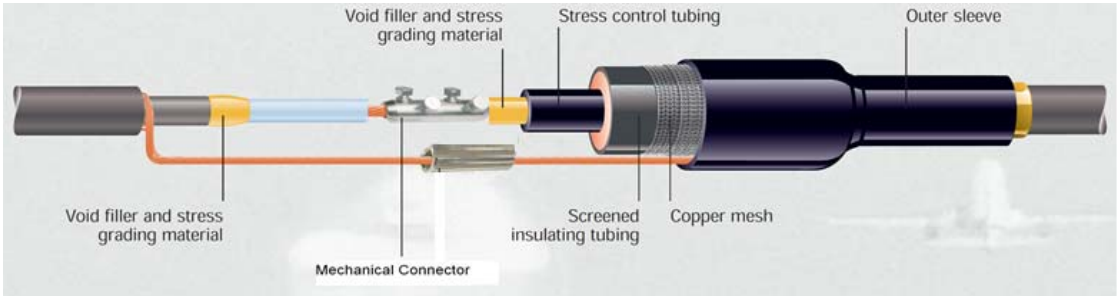
Technical Guarantees No. SJ24_400**24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x400/35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer		Raychem or Equivalent			
2	Country of Origin					
3	Standards		HD 629.1 S1 , VDE0276 , VDE0620			
4	Max. Service Voltage (Um)	kV	24			
5	Cable and Conductor Type		12/20 kv Single Core Cable with Copper Wire Shield			
6	Cable Insulation Type		XLPE			
7	Conductor Cross Sectional Area	mm ²	400			
8	Copper Shield Cross Sectional Area	mm ²	35			
9- Test :						
9.1	Below Type tests reports by qualified laboratory according to CENELEC HD 629.1 S1 or IEC 60502-4 :- AC Voltage Withstand Partial Discharge Impulse Voltage Withstand Short Time Current Cyclic Aging DC Voltage Withstand High Voltage Time Shielding		Required			
9.2	Mechanical connectors Test used in joints should pass the requirements in accordance with IEC 61238-1 class A.		Required			
10	Routine test report		Required			
11	Installation Instruction Documents		Required			
Heat Shrinkable Straight Joint Parts						
	Stress Control Tubing		Required			
	Screened insulating Sleeve		Required			

Technical Guarantees No. SJ24_400

24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x400/35 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
12	Outer Sleeve (Heat Shrink able Conductive Material)		Required			
	Screened Insulating Tubing		Required			
	Filling Mastic		Required			
	24kv Mechanical Connector with Shear-Head Bolts and Central Barrier for AL or CU Conductors (400 mm2)		Required			
	Compression Connector for Copper Shield (35 mm2)		Required			
	Mastic Wrap		Required			
	Copper Mesh		Required			



Tenderer's Signature : Date:

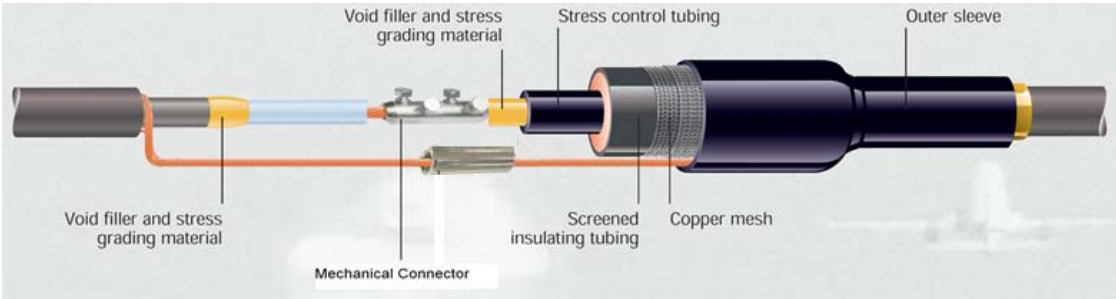
Technical Guarantees No. SJ24_630**24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x630/35 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer		Raychem or Equivalent			
2	Country of Origin					
3	Standards		HD 629.1 S1 , VDE0276 , VDE0620			
4	Max. Service Voltage (Um)	kV	24			
5	Cable and Conductor Type		12/20 kv Single Core Cable with Copper Wire Shield			
6	Cable Insulation Type		XLPE			
7	Conductor Cross Sectional Area	mm ²	630			
8	Copper Shield Cross Sectional Area	mm ²	35			
9- Test :						
9.1	Below Type tests reports by qualified laboratory according to CENELEC HD 629.1 S1 or IEC 60502-4 :- AC Voltage Withstand Partial Discharge Impulse Voltage Withstand Short Time Current Cyclic Aging DC Voltage Withstand High Voltage Time Shielding		Required			
9.2	Mechanical connectors Test used in joints should pass the requirements in accordance with IEC 61238-1 class A.		Required			
10	Routine test report		Required			
11	Installation Instruction Documents		Required			
Heat Shrinkable Straight Joint Parts						

Technical Guarantees No. SJ24_630

24 kv Heat Shrinkable Straight Joint for Single Core XLPE Cable 1x630/35 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
12	Stress Control Tubing		Required			
	Screened insulating Sleeve		Required			
	Outer Sleeve (Heat Shrink able Conductive Material)		Required			
	Screened Insulating Tubing		Required			
	Filling Mastic		Required			
	24kv Mechanical Connector with Shear-Head Bolts and Central Barrier for AL or CU Conductors (630 mm2)		Required			
	Compression Connector for Copper Shield (35 mm2)		Required			
	Mastic Wrap		Required			
	Copper Mesh		Required			



Tenderer's Signature : Date:

Technical Guarantees No. XLPEA_120**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x120 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Design Standards		IEC60502-2 & IEC60228			
4	Test Standards		IEC60230 & IEC60502-2 & IEC60811			
5	Code & Designation		NA2XS(F)2Y , Power Cable with Aluminum Conductors and XLPE Insulation			
6	Climatic Design		- 5°C to 55°C			
7- Rated Voltage						
7.1	Between Conductor and Sheath (U _o)	kV	12			
7.2	Between any Two Conductors (U)	kV	20			
7.3	Max. Service Voltage (U _m)	kV	24			
7.4	System Nominal Voltage	kV	22			
8	Rated Frequency	HZ	50			
9	Impulse withstand Voltage 1,2/50 μs	kV	125			
10- Cable Design						
10.1 Conductor :						
10.1.1	Cross Section	mm ²	120			
10.1.2	Material		Aluminum			
10.1.3	Class and Form		Class2 - Stranded Compacted Circular (filled with swelling powder)			
10.1.4	Minimum / Maximum Diameter	mm	12.8 / 13.5			
10.1.5	Minimum Number of Strands	No	15			

Technical Guarantees No. XLPEA_120**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x120 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.1.6	Weight of Conductor Per Meter	Kg/Km	shall be filled by manufacturer			
10.1.7	Maximum DC Resistance of Conductor at 20°C	Ω/km	0.253			
10.1.8	Max. Rated Temperature for Permanent Load	°C	90			
10.1.9	Max. Rated Temperature for Emergency Loads	°C	105			
10.1.10	Max. Rated Conductor Temperature at Short Circuit (1 sec. max. duration)	°C	250			
10.2 Inner Semi Conductive Layer (Conductor Screen) :						
10.2.1	Material		Triple Extruded Bonded Thermosetting Semi-Conductive Layer			
10.2.2	Thickness at Any Point	mm	0.3			
10.2.3	Max Service Temperature	°C	90			
10.3- XLPE Insulation :						
10.3.1	Material		Triple Extruded Dry Cured (XLPE)			
10.3.2	Nominal Thickness	mm	5.5			
10.3.3	Minimum Thickness at Any Point	mm	4.85			
10.3.4	Diameter Over Insulation	mm	shall be filled by manufacturer			
10.3.5	Max Service Temperature	°C	90			
10.3.6	Weight	Kg/Km	shall be filled by manufacturer			
10.4- Outer Semi Conductive Layer (Insulation Screen) :						

Technical Guarantees No. XLPEA_120**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x120 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.4.1	Material		Triple Extruded Bonded Thermosetting Semi-Conductive Layer			
10.4.2	Thickness at Any Point	mm	0.3			
10.4.3	Max Service Temperature	°C	90			
10.5- Semi-Conductive Water Swelling Tape :						
10.5.1	Material		Semi Conductive Tape			
10.5.2	Thickness at Any Point	mm	0.3			
10.5.3	Max Service Temperature	°C	90			
10.6- Copper Wire Screen (including Equalizing Tape) :						
10.6.1	Material of Wire and Equalizing Tape		Copper			
10.6.2	Minimum Wires Number		shall be filled by manufacturer			
10.6.3	Wire Geometrical Cross Section	mm ²	16			
10.6.4	Equalizing Tape Width	mm	10			
10.6.5	Equalizing Tape Thickness	mm	0.1			
10.7- Separation Sheath (Binder Tape) :						
10.7.1	Material		Water Blocking Tape Non- Conductive			
10.7.2	Thickness	mm	0.2 - 0.3			
10.7.3	Max Service Temperature	°C	90			
10.8- Outer Sheath :						
10.8.1	Material	mm	LDPE ST7 with Chemical Additives			

Technical Guarantees No. XLPEA_120**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x120 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.8.2	Nominal Thickness	mm	2.1			
10.8.3	Minimum Thickness at Any Point	mm	shall be filled by manufacturer			
10.8.4	Max Service Temperature	°C	90			
10.8.5	Color		Black			
10.8.6	Weight	Kg/Km	shall be filled by manufacturer			
10.9- Completed Cable :						
10.9.1	Overall Diameter of the Cable	mm	shall be filled by manufacturer			
10.9.2	Total Weight of the Cable	kg/km	shall be filled by manufacturer			
10.9.3	Minimum Bending Radius	mm	shall be filled by manufacturer			
10.9.4	Sustained Current Rating in Underground Under Below Conditions :					
10.9.4.1	At Flat Laying Arrangement (Buried in 0.7 m Deep in Soil at 20 °C with 1 k.m/w Thermal Resistivity and Load Factor 0.7)	A	319			
10.9.4.2	At Trefoil Laying Arrangement (Buried in 0.7 m Deep in Soil at 20 °C with 1 k.m/w Thermal Resistivity and Load Factor 0.7)	A	285			
11	Maximum Short-Circuit Current of Conductor During 1 sec.	KA	≥11.3			
12- Drum :						
12.1	Method of Cable Delivery		on Drums			
12.2	Length of Cable on Drum	m	1000			

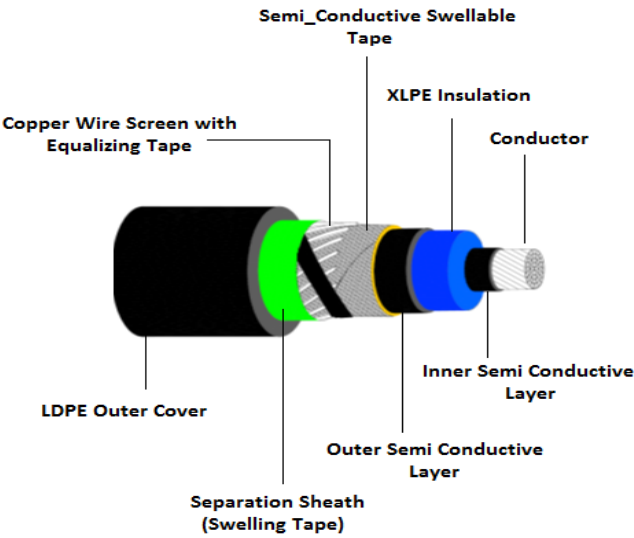
Technical Guarantees No. XLPEA_120**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x120 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
12.3	Drum Material		New Wood			
12.4	Cable Protection on Drum		Wooden Batten			
12.5	Max. Gross Weight of Drum with Cable	kg	shall be filled by manufacturer			
12.6	Dimension of Drum	mm	shall be filled by manufacturer			
13	Permissible Pulling Forces	N	shall be filled by manufacturer			
14- Test :						
14.1	Type Test Certificates /Reports from internationally reputed testing agency		Required			
14.1	Acceptance & Routine tests witnessed by three Engineers		Required			
15	Marking		Hot Stamping, giving :			
			1- Type of cable			
			2- Conductor Cross-section area			
			3- Beneficiary Name (Gedco)			
			4- Manufacturer name			
			5- Nominal voltage			
			6- Length for Each Meter			
			7- Production year			

Technical Guarantees No. XLPEA_120

12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x120 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
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Tenderer's Signature : Date:

Technical Guarantees No. XLPEA_400**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x400 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Design Standards		IEC60502-2 & IEC60228			
4	Test Standards		IEC60230 & IEC60502-2 & IEC60811			
5	Code & Designation		NA2XS(F)2Y , Power Cable with Aluminum Conductors and XLPE Insulation			
6	Climatic Design		- 5°C to 55°C			
7- Rated Voltage						
7.1	Between Conductor and Sheath (U _o)	kV	12			
7.2	Between any Two Conductors (U)	kV	20			
7.3	Max. Service Voltage (U _m)	kV	24			
7.4	System Nominal Voltage	kV	22			
8	Rated Frequency	HZ	50			
9	Impulse withstand Voltage 1,2/50 μs	kV	125			
10- Cable Design						
10.1 Conductor :						
10.1.1	Cross Section	mm ²	400			
10.1.2	Material		Aluminum			
10.1.3	Class and Form		Class2 - Stranded Compacted Circular (filled with swelling powder)			
10.1.4	Minimum / Maximum Diameter	mm	23.1 / 24.6			

Technical Guarantees No. XLPEA_400**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x400 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.1.5	Minimum Number of Strands	No	53			
10.1.6	Weight of Conductor Per Meter	Kg/Km	shall be filled by manufacturer			
10.1.7	Maximum DC Resistance of Conductor at 20°C	Ω/km	0.0778			
10.1.8	Max. Rated Temperature for Permanent Load	°C	90			
10.1.9	Max. Rated Temperature for Emergency Loads	°C	105			
10.1.10	Max. Rated Conductor Temperature at Short Circuit (1 sec. max. duration)	°C	250			
10.2 Inner Semi Conductive Layer (Conductor Screen) :						
10.2.1	Material		Triple Extruded Bonded Thermosetting Semi-Conductive Layer			
10.2.2	Thickness at Any Point	mm	0.3			
10.2.3	Max Service Temperature	°C	90			
10.3- XLPE Insulation :						
10.3.1	Material		Triple Extruded Dry Cured (XLPE)			
10.3.2	Nominal Thickness	mm	5.5			
10.3.3	Minimum Thickness at Any Point	mm	4.85			
10.3.4	Diameter Over Insulation	mm	shall be filled by manufacturer			
10.3.5	Max Service Temperature	°C	90			
10.3.6	Weight	Kg/Km	shall be filled by manufacturer			
10.4- Outer Semi Conductive Layer (Insulation Screen) :						

Technical Guarantees No. XLPEA_400**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x400 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.4.1	Material		Triple Extruded Bonded Thermosetting Semi-Conductive Layer			
10.4.2	Thickness at Any Point	mm	0.3			
10.4.3	Max Service Temperature	°C	90			
10.5- Semi-Conductive Water Swelling Tape :						
10.5.1	Material		Semi Conductive Tape			
10.5.2	Thickness at Any Point	mm	0.3			
10.5.3	Max Service Temperature	°C	90			
10.6- Copper Wire Screen (including Equalizing Tape) :						
10.6.1	Material of Wire and Equalizing Tape		Copper			
10.6.2	Minimum Wires Number		shall be filled by manufacturer			
10.6.3	Wire Geometrical Cross Section	mm ²	35			
10.6.4	Equalizing Tape Width	mm	20			
10.6.5	Equalizing Tape Thickness	mm	0.1			
10.7- Separation Sheath (Binder Tape) :						
10.7.1	Material		Water Blocking Tape Non-Conductive			
10.7.2	Thickness	mm	0.2 - 0.3			
10.7.3	Max Service Temperature	°C	90			
10.8- Outer Sheath :						
10.8.1	Material	mm	LDPE ST7 with Chemical Additives			
10.8.2	Nominal Thickness	mm	2.5			

Technical Guarantees No. XLPEA_400**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x400 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.8.3	Minimum Thickness at Any Point	mm	shall be filled by manufacturer			
10.8.4	Max Service Temperature	°C	90			
10.8.5	Color		Black			
10.8.6	Weight	Kg/Km	shall be filled by manufacturer			
10.9- Completed Cable :						
10.9.1	Overall Diameter of the Cable	mm	shall be filled by manufacturer			
10.9.2	Total Weight of the Cable	kg/km	shall be filled by manufacturer			
10.9.3	Minimum Bending Radius	mm	shall be filled by manufacturer			
10.9.4	Sustained Current Rating in Underground Under Below Conditions :					
10.9.4.1	At Flat Laying Arrangement (Buried in 0.7 m Deep in Soil at 20 °C with 1 k.m/w Thermal Resistivity and Load Factor 0.7)	A	564			
10.9.4.2	At Trefoil Laying Arrangement (Buried in 0.7 m Deep in Soil at 20 °C with 1 k.m/w Thermal Resistivity and Load Factor 0.7)	A	535			
11	Maximum Short-Circuit Current of Conductor During 1 sec.	KA	≥37.6			
12- Drum :						
12.1	Method of Cable Delivery		on Drums			
12.2	Length of Cable on Drum	m	500			
12.3	Drum Material		New Wood			

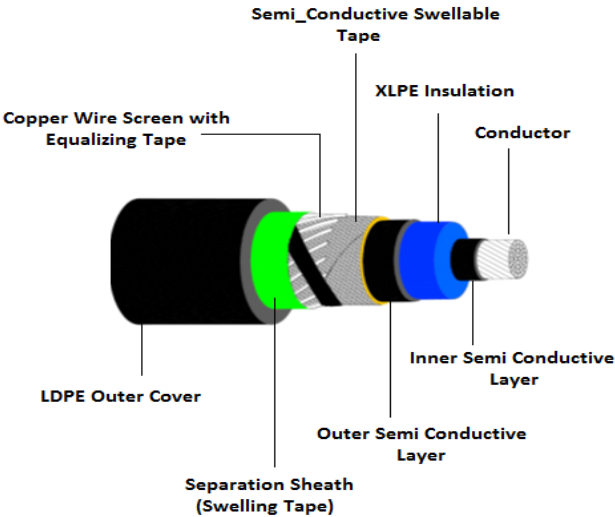
Technical Guarantees No. XLPEA_400**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x400 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
12.4	Cable Protection on Drum		Wooden Batten			
12.5	Max. Gross Weight of Drum with Cable	kg	shall be filled by manufacturer			
12.6	Dimension of Drum	mm	shall be filled by manufacturer			
13	Permissible Pulling Forces	N	shall be filled by manufacturer			
14- Test :						
14.1	Type Test Certificates /Reports from internationally reputed testing agency		Required			
14.2	ptance & Routine tests witnessed by three Engineers		Required			
15	Marking		Hot Stamping, giving :			
			1- Type of cable			
			2- Conductor Cross-section area			
			3- Beneficiary Name (Gedco)			
			4- Manufacturer name			
			5- Nominal voltage			
			6- Length for Each Meter			
			7- Production year			

Technical Guarantees No. XLPEA_400

12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 1x400 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
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Tenderer's Signature :

Date:

Technical Guarantees No. XLPEA_630**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 630 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
1	Name of Manufacturer					
2	Country of Origin					
3	Design Standards		IEC60502-2 & IEC60228			
4	Test Standards		IEC60230 & IEC60502-2 & IEC60811 & IEC 60885			
5	Code & Designation		NA2XS(F)2Y , Power Cable with Aluminum Conductors and XLPE Insulation			
6	Climatic Design		..-5°C to 55°C			
7- Rated Voltage						
7.1	Between Conductor and Sheath (U _o)	kV	12			
7.2	Between any Two Conductors (U)	kV	20			
7.3	Max. Service Voltage (U _m)	kV	24			
7.4	System Nominal Voltage	kV	22			
8	Rated Frequency	HZ	50			
9	Impulse withstand Voltage 1,2/50 μs	kV	125			
10- Cable Design						
10.1 Conductor :						
10.1.1	Cross Section	mm ²	630			
10.1.2	Material		Aluminum			
10.1.3	Class and Form		Class2 - Stranded Compacted Circular (filled with swelling powder)			
10.1.4	Minimum / Maximum Diameter	mm	29.5 / 32.5			

Technical Guarantees No. XLPEA_630**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 630 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.1.5	Minimum Number of Strands	No	53			
10.1.6	Weight of Conductor Per Meter	Kg/Km	shall be filled by manufacturer			
10.1.7	Maximum DC Resistance of Conductor at 20°C	Ω/km	0.0469			
10.1.8	Max. Rated Temperature for Permanent Load	°C	90			
10.1.9	Max. Rated Temperature for Emergency Loads	°C	105			
10.1.10	Max. Rated Conductor Temperature at Short Circuit (1 sec. max. duration)	°C	250			
10.2 Inner Semi Conductive Layer (Conductor Screen) :						
10.2.1	Material		Triple Extruded Bonded Thermosetting Semi-Conductive Layer			
10.2.2	Thickness at Any Point	mm	0.3			
10.2.3	Max Service Temperature	°C	90			
10.3- XLPE Insulation :						
10.3.1	Material		Triple Extruded Dry Cured (XLPE)			
10.3.2	Nominal Thickness	mm	5.5			
10.3.3	Minimum Thickness at Any Point	mm	4.85			
10.3.4	Diameter Over Insulation	mm	shall be filled by manufacturer			
10.3.5	Max Service Temperature	°C	90			
10.3.6	Weight	Kg/Km	shall be filled by manufacturer			
10.4- Outer Semi Conductive Layer (Insulation Screen) :						

Technical Guarantees No. XLPEA_630**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 630 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.4.1	Material		Triple Extruded Bonded Thermosetting Semi-Conductive			
10.4.2	Thickness at Any Point	mm	0.3			
10.4.3	Max Service Temperature	°C	90			
10.5- Semi-Conductive Water Swelling Tape :						
10.5.1	Material		Semi Conductive Tape			
10.5.2	Thickness at Any Point	mm	0.3			
10.5.3	Max Service Temperature	°C	90			
10.6- Copper Wire Screen (including Equalizing Tape) :						
10.6.1	Material of Wire and Equalizing Tape		Copper			
10.6.2	Minimum Wires Number		45			
10.6.3	Wire Geometrical Cross Section	mm ²	35			
10.6.4	Equalizing Tape Width	mm	20			
10.6.5	Equalizing Tape Thickness	mm	0.1			
10.7- Separation Sheath (Binder Tape) :						
10.7.1	Material		Water Blocking Tape Non- Conductive			
10.7.2	Thickness	mm	0.2 - 0.3			
10.7.3	Max Service Temperature	°C	90			
10.8- Outer Sheath :						
10.8.1	Material	mm	LDPE ST7 with Chemical Additives			
10.8.2	Nominal Thickness	mm	2.5			
10.8.3	Minimum Thickness at Any Point	mm	shall be filled by manufacturer			

Technical Guarantees No. XLPEA_630**12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 630 mm²**

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
10.8.4	Max Service Temperature	°C	90			
10.8.5	Color		Black			
10.8.6	Weight	Kg/Km	shall be filled by manufacturer			
10.9- Completed Cable :						
10.9.1	Overall Diameter of the Cable	mm	shall be filled by manufacturer			
10.9.2	Total Weight of the Cable	kg/km	shall be filled by manufacturer			
10.9.3	Minimum Bending Radius	mm	shall be filled by manufacturer			
10.9.4	Sustained Current Rating in Underground Under Below Conditions :					
10.9.4.1	At Flat Laying Arrangement (Buried in 0.7 m Deep in Soil at 20 °C with 1 k.m/w Thermal Resistivity and Load Factor 0.7)	A	730			
10.9.4.2	At Trefoil Laying Arrangement (Buried in 0.7 m Deep in Soil at 20 °C with 1 k.m/w Thermal Resistivity and Load Factor 0.7)	A	701			
11	Maximum Short-Circuit Current of Conductor During 1 sec.	KA	≥59.2			
12- Drum :						
12.1	Method of Cable Delivery		on Drums			
12.2	Length of Cable on Drum	m	500			
12.3	Drum Material		New Wood			
12.4	Cable Protection on Drum		New Wooden Batten			

Technical Guarantees No. XLPEA_630

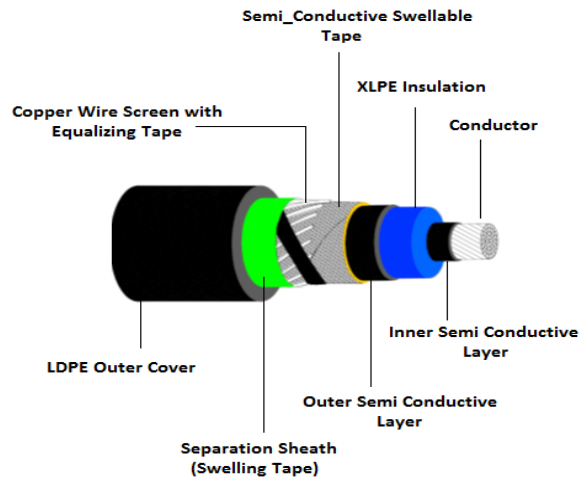
12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded Conductor 630 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
12.5	Max. Gross Weight of Drum with Cable	kg	shall be filled by manufacturer			
12.6	Dimension of Drum	mm	shall be filled by manufacturer			
13	Permissible Pulling Forces	N	shall be filled by manufacturer			
14- Test :						
14.1	Type Test Certificates /Reports from internationally reputed testing agency		Required			
14.2	ptance & Routine tests witnessed by three Engineers		Required			
15	Marking		Hot Stamping, giving :			
			1- Type of cable			
			2- Conductor Cross-section area			
			3- Beneficiary Name (Gedco)			
			4- Manufacturer name			
			5- Nominal voltage			
			6- Length for Each Meter			
			7- Production year			

Technical Guarantees No. XLPEA_630

12/20 kV Single Core Cable with XLPE Insulation and Aluminium Circular Stranded
Conductor 630 mm²

No	Description	Unit	Requirements	Offered Data	Notes, Remarks , Ref to Documentation	Evaluation Committee Comments
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Tenderer's Signature : Date: