ELAND CABLES

RHZ1 (AS) Cable

Eland Product Group: H6I

APPLICATION

Medium voltage power cables for distribution networks and generation units. LSZH outer sheathing makes the cable suitable for internal installation as well as directly in ground, outdoors, and in cable ducts. UV Resistant.

CHARACTERISTICS

Voltage Rating Uo/U (Um)
6/10 (12)kV
8.7/15 (17.5) kV
12/20 (24)kV
18/30 (36)kV

Test Voltage
21kV AC 50Hz (5 mins)
30.45kV AC 50Hz (5 mins)
42kV AC 50Hz (5 mins)
63kV AC 50Hz (5 mins)

Temperature Rating
-20°C to +60°C
Permissible Conductor Operating Temperature: +90°C
Permissible Short Circuit Temperature up to 5 sec: 250°C

Minimum Bending Radius
15 x overall diameter

CONSTRUCTION

Conductor
Class 2 Stranded Copper

Conductor Screen
Semi-conductive material

Insulation
XLPE (Cross-Linked Polyethylene)

Insulation Screen
Semi-conductive material (bonded)

Screen
Copper wires and copper tape

Outer Sheath
LSZH (Low Smoke Zero Halogen)

Sheath Colour
● Red ● Black

STANDARDS

IEC 60502-2, IEC 60228,

Generally to HD620 10E-1

Low Smoke Zero Halogen: IEC 60754-1/2, IEC 61034-2
Flame Retardant: IEC 60332-3-24 Cat C, IEC 60332-1-2
UV Resistant: ISO 4892-3
Abrasion and Tear Resistant: EN 60229-4.1
Impact rated to: AG2 EN 60364-5.51

THE CABLE LAB®

AN ISO/IEC 17025 AND IECEE CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.

SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: www.elandcables.com/company/about-us/esg-sustainability

REGULATORY COMPLIANCE

This cable is compliant with European Regulation EN 50575, the Construction Products Regulation.

Cca

This cable meets the requirements of the Low Voltage Directive 2014/35/EU, the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.

DIMENSIONS 6/10 (12)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²		NOMINAL CONDUCTOR DIAMETER	NUMBER WIRES CONDUCTOR	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS	MINIMUM INSULATION THICKNESS	NOMINAL DIAMETER OVER INSULATION
		Conductor	Screen			INNER	OUTER			
				mm	mm	mm	mm	mm	mm	mm
H6I10KV01500	1	500	35	26.5	61 x 3.29	0.50	0.40	3.40	2.96	34.7
H6I10KV01630	1	630	35	30.2	61 x 3.80	0.50	0.40	3.40	2.96	38.9

NOMINAL CROSS SECTIONAL AREA	NUMBER WIRES SCREEN	DIAMETER TAPE SCREEN	NOMINAL SHEATH THICKNESS	MINIMUM SHEATH THICKNESS	NOMINAL OVERALL DIAMETER	NOMINAL WEIGHT	MAXIMUM SIDEWALL PRESSURE	MAXIMUM PULLING TENSION
mm²	mm	mm	mm	mm	mm	kg/km	N/cm²	N
500	60 x 0.85	1x0.1x15	2.30	1.64	42	5500	2443	25000
630	60 x 0.85	1x0.1x15	2.40	1.72	46	6750	2756	31500

ELECTRICAL CHARACTERISTICS 6/10 (12)KV

NOMINAL CROSS SECTIONAL AREA	CONDUCTOR DC RESISTANCE AT 20°C	CONDUCTOR DC RESISTANCE AT 75°C	CONDUCTOR AC RESISTANCE BY MAX TEMP	CURRENT CARRYING CAPACITY (A)		REACTANCE	CHARGING ADMITTANCE	CAPACITANCE	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC	CONDUCTOR LOSSES IN THE GROUND
				In Ground 20°C	In Air 30°C						
mm²	ohms/km	ohms/km	ohms/km			ohms/km	A/km	uF/km		kA	kW/km
500	0.0366	0.0758	0.0510	743	1006	0.15	0.28	0.54	71.50	7.1	28.2
630	0.0283	0.0420	0.0586	850	1030	0.14	0.25	0.62	90.09	7.1	30.3

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)
Derating factor (air): 1 (Flat formation - touching)

DIMENSIONS 8.7/15 (17.5)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL DIAMETER OF CONDUCTOR mm	INSULATION mm		METALLIC SCREEN mm		NOMINAL OUTER DIAMETER OF CABLE mm	NOMINAL WEIGHT kg/km	MAXIMUM PULLING FORCE kN	MINIMUM BENDING RADIUS m
				Nominal thickness	Nominal diameter over	Nominal cross section mm²	Nominal diameter over mm				
H6I15KV01500	1	500	26.5	4.5	37.2	50	41.3	46.1	5920	25	0.69
H6I15KV01630	1	630	30.3	4.5	41.3	50	45.4	50.3	7290	31.5	0.75

ELECTRICAL CHARACTERISTICS 8.7/15 (17.5)KV

NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm²	MAXIMUM CONDUCTOR DC RESISTANCE AT 20 °C ohm/km	MAXIMUM CONDUCTOR AC RESISTANCE AT 90 °C ohm/km	MAXIMUM METALLIC SCREEN DC RESISTANCE AT 20 °C ohm/km	MAXIMUM METALLIC SCREEN AC RESISTANCE AT 80 °C ohm/km	ELECTRICAL FIELD STRESS kV/mm		RESISTANCE ohm/km	CAPACITANCE µF/km	CAPACITANCE REACTANCE ohm/km	CHARGING CURRENT ohm/km	REACTANCE ohm/km
					Conductor screen	Insulation					
500/50	0.0366	0.0506	0.36	0.44	2.17	1.63	0.49	0.44	7.2	1.21	0.042
630/50	0.0283	0.0412	0.36	0.44	2.13	1.65	0.48	0.50	6.4	1.37	0.040

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NOMINAL CROSS SECTIONAL AREA CONDUCTOR/ METALLIC SCREEN mm²	INDUCTANCE L mH/km			INDUCTANCE REACTANCE XL ohm/mm			IMPEDANCE ohm/km		
	o o o²	ooo³	ooo⁴	o o o²	ooo³	ooo⁴	o o o²	ooo³	ooo⁴
500/50	0.30	0.53	0.48	0.094	0.167	0.152	0.107	0.174	0.160
630/50	0.29	0.51	0.47	0.091	0.160	0.149	0.100	0.166	0.155

2 - Cables in trefoil formation, the distance between cables De
3 - Cables in flat formation (in the ground), the distance between cables De + 70 mm
4 - Cables in flat formation (in the air), the distance between cables 2 x De

CURRENT RATING FOR SINGLE-CORE CABLES-AMPERES

NOMINAL CROSS SECTIONAL AREA mm²	MAXIMUM SHORT CIRCUIT CAPACITY CONDUCTOR kA/sec	MAXIMUM SHORT CIRCUIT CAPACITY SCREEN kA/sec	FLAT FORMATION		TREFOIL FORMATION		FLAT FORMATION		TREFOIL FORMATION	
			CONFIGURATIONS							
			SPP;CB	BOTH-ENDS	SPP;CB	BOTH-ENDS	SPP;CB	BOTH-ENDS	SPP;CB	BOTH-ENDS
			CABLES IN EARTH				CABLES IN AIR			
500/50	71.5	9.8	1088	850	1002	957	1270	1034	1047	1003

SPB - Single Point Bonding; CB - Cross-bonding Both-ends; BE - Both-ends bonding
Laying conditions at trefoil formation are as below:
-Soil thermal resistivity: 1 /2.5 k m/W
-Burial depth: 0.7m
-Ground temperature: 20°C I Ambient temperature: 30°C

DIMENSIONS 12/20 (24)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²		NOMINAL CONDUCTOR DIAMETER	NUMBER WIRES CONDUCTOR	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS	MINIMUM INSULATION THICKNESS	NOMINAL DIAMETER OVER INSULATION
		Conductor	Screen	mm	mm	INNER mm	OUTER mm	mm	mm	mm
H6I20KV01500	1	500	35	26.5	61 x 3.29	0.50	0.40	5.50	4.85	38.7
H6I20KV01630	1	630	35	30.2	61 x 3.80	0.50	0.40	5.50	4.85	42.9

NOMINAL CROSS SECTIONAL AREA mm²	NUMBER WIRES SCREEN mm	DIAMETER TAPE SCREEN mm	NOMINAL SHEATH THICKNESS mm	MINIMUM SHEATH THICKNESS mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM SIDEWALL PRESSURE N/cm²	MAXIMUM PULLING TENSION N
500	60 x 0.85	1x0.1x15	2.40	1.72	48	5750	2299	25000
630	60 x 0.85	1x0.1x15	2.50	1.80	51	7000	2586	31500

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ELECTRICAL CHARACTERISTICS 12/20 (24)KV

NOMINAL CROSS SECTIONAL AREA	CONDUCTOR DC RESISTANCE AT 20°C	CONDUCTOR DC RESISTANCE AT 75°C	CONDUCTOR AC RESISTANCE BY MAX TEMP	CURRENT CARRYING CAPACITY (A)		REACTANCE	CHARGING ADMITTANCE	CAPACITANCE	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC	CONDUCTOR LOSSES IN THE GROUND
mm²	ohms/km	ohms/km	ohms/km	In Ground 20°C	In Air 30°C	ohms/km	A/km	uF/km		kA	kW/km
500	0.0366	0.0758	0.0510	756	1011	0.15	0.28	0.36	71.50	7.1	29.1
630	0.0283	0.0420	0.0586	850	1030	0.15	0.27	0.40	90.09	7.1	30.3

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)
Derating factor (air): 1 (Flat formation - touching)

DIMENSIONS 18/30 (36)KV

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²		NOMINAL CONDUCTOR DIAMETER	NUMBER WIRES CONDUCTOR	NOM. THICKNESS SEMI-CON. LAYER		NOMINAL INSULATION THICKNESS	MINIMUM INSULATION THICKNESS	NOMINAL DIAMETER OVER INSULATION
		Conductor	Screen	mm	mm	INNER mm	OUTER mm	mm	mm	mm
H6I30KV01500	1	500	35	26.5	61 x 3.29	0.50	0.40	8.00	7.10	43.5
H6I30KV01630	1	630	35	30.2	61 x 3.80	0.50	0.40	8.00	7.10	47.7

NOMINAL CROSS SECTIONAL AREA	NUMBER WIRES SCREEN	DIAMETER TAPE SCREEN	NOMINAL SHEATH THICKNESS	MINIMUM SHEATH THICKNESS	NOMINAL OVERALL DIAMETER	NOMINAL WEIGHT	MAXIMUM SIDEWALL PRESSURE	MAXIMUM PULLING TENSION
mm²	mm	mm	mm	mm	mm	kg/km	N/cm²	N
500	60 x 0.85	1x0.1x15	2.60	1.88	51	6000	2151	25000
630	60 x 0.85	1x0.1x15	2.70	1.96	56	7500	2436	31500

ELECTRICAL CHARACTERISTICS 18/30 (36)KV

NOMINAL CROSS SECTIONAL AREA	CONDUCTOR DC RESISTANCE AT 20°C	CONDUCTOR DC RESISTANCE AT 75°C	CONDUCTOR AC RESISTANCE BY MAX TEMP	CURRENT CARRYING CAPACITY (A)		REACTANCE	CHARGING ADMITTANCE	CAPACITANCE	S.C.C CONDUCTOR 1SEC kA	S.C.C SCREEN 1SEC	CONDUCTOR LOSSES IN THE GROUND
mm²	ohms/km	ohms/km	ohms/km	In Ground 20°C	In Air 30°C	ohms/km	A/km	uF/km		kA	kW/km
500	0.0366	0.0758	0.0510	768	1011	0.16	0.30	0.26	71.50	7.1	30.1
630	0.0283	0.0420	0.0586	850	1030	0.16	0.29	0.29	90.09	7.1	30.3

Derating factor (ground): 1 (Soil thermal resistivity: 1km/W, Depth 0.8m, Flat formation - touching)
Derating factor (air): 1 (Flat formation - touching)

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