ELAND® CABLES

(N)TSCGEWÖU 3.6/6kV and 6/10kV ATB Cable

Eland Product Group: **A7HC**

APPLICATION

Flexible cable for energy supply to heavy mobile equipment such as drag lines, shovels, dredges, drills under extreme mechanical stresses and abrasion during trailing operation in opencast mines. Suitable for indoor and outdoor applications.

CONSTRUCTION

Phase Conductor
Class 5 tinned copper conductor according to VDE 0295 (IEC 60228)[1]

Insulation
Rubber compound Type 3GI3 according to VDE 0207 Part 20

Semi-Conductive Layers
Semi-conductive tape over the conductor and inner and outer semi-conductive rubber layer on the insulation

Earth Conductor
Class 5 tinned copper conductor according to VDE 0295 (IEC 60228)[1]

Central Filler
Semi-conductive compound on a textile polyester support

Inner Sheath
Rubber compound Type Gm1b/5GM5 according to VDE 0207 Part 21

Anti-Torsion Braid
Polyester braid between the inner and outer sheath

Outer Sheath
Abrasion resistant rubber compound Type 5GM5 according to VDE 0207 Part 21

Note
[1]Special construction for higher flexibility

CABLE STANDARDS

Generally to VDE 0250 Part 813, VDE 0295,
BS EN/IEC 60332-1-2, BS EN/IEC 60811-2-1

The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

CHARACTERISTICS

Voltage Rating (Uo/U)
3.6/6kV
6/10kV

Test Voltage
3.6/6kV: 11kV
6/10kV: 17kV

Maximum Short Circuit Temperature
+250°C

Ambient Temperature
Fixed: -40°C to +80°C
Flexed: -25°C to +80°C

Minimum Bending Radius
Fixed: 6 x overall diameter
Flexed: 10 x overall diameter

Maximum Torsional Stress
±25°/m

Maximum Tensile Load[2]
20N/mm²

Sheath Colour
● Yellow

Note
[2]Referred to the total phase conductors cross section

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DIMENSIONS

ELAND PART NO.	VOLTAGE kV	NO. OF CORES (PHASE + EARTH)	NOMINAL CROSS SECTIONAL AREA mm²		CONDUCTOR DIAMETER mm	MINIMUM OVERALL DIAMETER mm	MAXIMUM OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM TENSILE LOAD N
			Phase Conductor	Earth Conductor					
A7HC06KV1025YW	3.6/6	3+3	25	25/3	6.8	39.9	41.6	2390	1500
A7HC06KV1035YW	3.6/6	3+3	35	25/3	7.8	42.9	44.6	2970	2100
A7HC06KV1050YW	3.6/6	3+3	50	25/3	9.4	46	47.7	3600	3000
A7HC06KV1070YW	3.6/6	3+3	70	35/3	11.2	49.8	51.6	4600	4200
A7HC06KV1095YW	3.6/6	3+3	95	50/3	12.7	55.8	57.6	5800	5700
A7HC06KV1120YW	3.6/6	3+3	120	70/3	14.4	59.6	61.4	7070	7200
A7HC06KV1150YW	3.6/6	3+3	150	70/3	16.3	66	68.3	8870	9000
A7HC06KV1185YW	3.6/6	3+3	185	95/3	17.6	67.9	70.2	9980	11100
A7HC10KV1025YW	6/10	3+3	25	25/3	6.8	39.9	42.2	2430	1500
A7HC10KV1035YW	6/10	3+3	35	25/3	7.8	42.9	45.2	3010	2100
A7HC10KV1050YW	6/10	3+3	50	25/3	9.4	46	48.3	3640	3000
A7HC10KV1070YW	6/10	3+3	70	35/3	11.2	49.8	52.2	4640	4200
A7HC10KV1095YW	6/10	3+3	95	50/3	12.7	55.8	58.2	5900	5700
A7HC10KV1120YW	6/10	3+3	120	70/3	14.4	59.6	62.1	7160	7200
A7HC10KV1150YW	6/10	3+3	150	70/3	16.3	66	69	8970	9000
A7HC10KV1185YW	6/10	3+3	185	95/3	17.6	67.9	70.9	10120	11100

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm²	LAYING ON THE FLOOR Amps	FREE IN AIR Amps	REELED						
			1 Layer Amps	2 Layer Amps	3 Layer Amps	4 Layer Amps	5 Layer Amps	6 Layer Amps	7 Layer Amps
25	131	138	105	80	64	55	50	35	29
35	162	170	130	99	79	68	62	44	36
50	202	212	162	123	99	85	77	55	44
70	250	263	200	153	123	105	95	68	55
95	301	316	241	184	147	126	114	81	66
120	352	370	282	215	172	148	134	95	77
150	404	424	323	246	198	170	154	109	89
185	461	484	369	281	226	194	175	124	101

Ambient temperature of 30°C

Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm²	POWER FACTOR			
	0.7	0.8	0.9	1
25	1.29	1.45	1.6	1.71
35	0.95	1.06	1.16	1.23
50	0.69	0.77	0.83	0.87
70	0.51	0.56	0.6	0.61
95	0.41	0.45	0.47	0.47
120	0.34	0.36	0.38	0.36
150	0.29	0.31	0.32	0.29
185	0.25	0.27	0.27	0.24

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UK T 020 7241 8787 | F 020 7241 8700 | sales@elandcables.com | www.elandcables.com
International T +44 20 7241 8740 | F +44 20 7241 8700 | international@elandcables.com

DE-RATING FACTORS

AMBIENT TEMPERATURE	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C
DE-RATING FACTOR	1.15	1.12	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41

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