

# (N)TSCGECECWÖU 3.6/6kV and 6/10kV Cable



Eland Product Group: **A7H**

## APPLICATION

Flexible cable suitable for reeling drums of tunnel boring machines and generally for tunnel applications. Suitable for indoor and outdoor applications.

## CONSTRUCTION

### Phase Conductor

Class 5 tinned copper conductor according to VDE 0295 (IEC 60228)

### 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

### Protective Earth Conductor

Individual copper wire screen

### Control Conductor

Class 5 tinned copper conductor according to VDE 0295 (IEC 60228)

### Central Filler

Semi-conductive compound on a textile polyester support

### Inner Sheath

Rubber compound Type 5GM5 according to VDE 0207 Part 21

### Monitoring Conductor

Copper wire screen over the inner sheath

### Outer Sheath

Rubber compound Type 5GM5 according to VDE 0207 Part 21

## 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 (U<sub>0</sub>/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\*

15N/mm<sup>2</sup>

### Sheath Colour

● Red

### Note

\*Referred to the total phase conductors cross section

## DIMENSIONS

ELAND PART NO.	VOLTAGE kV	NO. OF CORES (PHASE +EARTH +CONTROL+ÜL)	NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>			CONDUCTOR DIAMETER mm	MINIMUM OVERALL DIAMETER mm	MAXIMUM OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM TENSILE LOAD N
			Phase Conductor	Earth Conductor	Control Conductor					
A7H06KV1025RD	3.6/6	3+3+3+ÜL	25	25/3E	2.5ST	6.8	45.4	48.8	3010	1125
A7H06KV1035RD	3.6/6	3+3+3+ÜL	35	25/3E	2.5ST	7.8	46.9	50.4	3390	1575
A7H06KV1050RD	3.6/6	3+3+3+ÜL	50	25/3E	2.5ST	9.4	50	53.6	4050	2250
A7H06KV1070RD	3.6/6	3+3+3+ÜL	70	35/3E	2.5ST	11.2	55.6	59.4	5260	3150
A7H06KV1095RD	3.6/6	3+3+3+ÜL	95	50/3E	2.5ST	12.7	59.9	63.9	6460	4275
A7H06KV1120RD	3.6/6	3+3+3+ÜL	120	70/3E	2.5ST	14.4	64	68.4	7820	5400
A7H06KV1150RD	3.6/6	3+3+3+ÜL	150	70/3E	2.5ST	16.3	70.4	75	9430	6750
A7H10KV1025RD	6/10	3+3+3+ÜL	25	25/3E	2.5ST	6.8	45.4	49.4	3050	1125
A7H10KV1035RD	6/10	3+3+3+ÜL	35	25/3E	2.5ST	7.8	46.9	51	3430	1575
A7H10KV1050RD	6/10	3+3+3+ÜL	50	25/3E	2.5ST	9.4	50	54.2	4090	2250
A7H10KV1070RD	6/10	3+3+3+ÜL	70	35/3E	2.5ST	11.2	55.6	60	5300	3150
A7H10KV1095RD	6/10	3+3+3+ÜL	95	50/3E	2.5ST	12.7	59.9	64.5	6500	4275
A7H10KV1120RD	6/10	3+3+3+ÜL	120	70/3E	2.5ST	14.4	64	69.1	7860	5400
A7H10KV1150RD	6/10	3+3+3+ÜL	150	70/3E	2.5ST	16.3	70.4	75.7	9470	6750

## ELECTRICAL CHARACTERISTICS

### Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	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

Ambient temperature of 30°C

### Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	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

## 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