# (N)TSCGEWÖU 3.6/6kV and 6/10kV FO Cable


Eland Product Group: A7HF

## APPLICATION

Flexible reeling cable with integrated fibre optic wires for high and extreme mechanical stresses, including torsional stress, deflection into different planes and high reeling speed. Suitable for indoor and outdoor applications.

## CHARACTERISTICS

**Voltage Rating** Uo/U
3.6/6kV
6/10kV

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

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

**Maximum Short Circuit Temperature**
+250°C

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

## CONSTRUCTION

**Phase Conductor**
Class 5 tinned copper

**Insulation**
Rubber compound

**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

**Fibre Optics**
Transmission data kind 50/125 multimode, 62.5/125 multimode, 9/125 singlemode
Rubber compound over the twisted cores

**Central Filler**
Semi-conductive compound on a textile polyester support

**Inner Sheath**
Rubber compound

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

**Outer Sheath**
Rubber compound

**Sheath Colour**
Red

## STANDARDS

VDE 0250 Part 813, VDE 0295, EN 60228

Flame Retardant according to IEC/EN 60332-1-2

## 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 meets the requirements of the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.

## DIMENSIONS

| ELAND PART NO. | VOLTAGE kV | NO. OF CORES (PHASE + EARTH + FIBRE OPTICS) | NOMINAL CROSS SECTIONAL AREA mm² | | CONDUCTOR DIAMETER mm | MINIMUM OVERALL DIAMETER mm | MAXIMUM OVERALL DIAMETER mm | MAXIMUM TENSILE LOAD N | NOMINAL WEIGHT kg/km |
|---|---|---|---|---|---|---|---|---|---|
| | | | Phase Conductor | Earth Conductor | | | | | |
| A7HF06KV1025RD | 3.6/6 | 3 + 2 + FO | 25 | 25/2E | 6.8 | 44.7 | 47.6 | 1500 | 2820 |
| A7HF06KV1035RD | 3.6/6 | 3 + 2 + FO | 35 | 25/2E | 7.8 | 46.6 | 49.5 | 2100 | 3190 |
| A7HF06KV1050RD | 3.6/6 | 3 + 2 + FO | 50 | 25/2E | 9.4 | 49.9 | 52.9 | 3000 | 3990 |
| A7HF06KV1070RD | 3.6/6 | 3 + 2 + FO | 70 | 35/2E | 11.2 | 55.5 | 58.5 | 4200 | 5070 |
| A7HF06KV1095RD | 3.6/6 | 3 + 2 + FO | 95 | 50/2E | 12.7 | 58.9 | 61.9 | 5700 | 5900 |
| A7HF06KV1120RD | 3.6/6 | 3 + 2 + FO | 120 | 70/2E | 14.4 | 64.4 | 68.3 | 7200 | 7490 |
| A7HF06KV1150RD | 3.6/6 | 3 + 2 + FO | 150 | 70/2E | 16.3 | 68.5 | 72.5 | 9000 | 8710 |
| A7HF10KV1025RD | 6/10 | 3 + 2 + FO | 25 | 25/2E | 6.8 | 47.3 | 50.3 | 1500 | 3370 |
| A7HF10KV1035RD | 6/10 | 3 + 2 + FO | 35 | 25/2E | 7.8 | 48.8 | 51.8 | 2100 | 3730 |
| A7HF10KV1050RD | 6/10 | 3 + 2 + FO | 50 | 25/2E | 9.4 | 53.7 | 56.7 | 3000 | 4680 |
| A7HF10KV1070RD | 6/10 | 3 + 2 + FO | 70 | 35/2E | 11.2 | 57.5 | 60.5 | 4200 | 5770 |
| A7HF10KV1095RD | 6/10 | 3 + 2 + FO | 95 | 50/2E | 12.7 | 60.8 | 64.7 | 5700 | 6720 |
| A7HF10KV1120RD | 6/10 | 3 + 2 + FO | 120 | 70/2E | 14.4 | 66.4 | 70.4 | 7200 | 8280 |

## CURRENT CARRYING CAPACITY

| NOMINAL CROSS SECTIONAL AREA mm² | LAYING ON THE FLOOR Amps | FREE IN AIR Amps | REELED Amps | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 Layer | 2 Layer | 3 Layer | 4 Layer | 5 Layer | 6 Layer | 7 Layer |
| 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



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## 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 |

## FIBRE OPTICS

| FIBRE | GRADED INDEX MULTIMODE FIBRE | | | | | STEP INDEX SINGLEMODE FIBRE | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Attenuation at 850nm dB/km | Attenuation at 1300nm dB/km | Bandwidth at 850nm MHz*km | Bandwidth at 1300nm MHz*km | Numerical Aperture | Attenuation at 1310nm dB/km | Attenuation at 1550nm dB/km | Chromatic dispersion at 1285-1300nm ps/nm km | Chromatic dispersion at 1550nm ps/nm km |
| 50/125 | ≤ 2.5 | ≤ 0.7 | ≥ 200 | ≥ 500 | 0.200 ± 0.015 | - | - | - | - |
| 62.5/125 | ≤ 3.0 | ≤ 0.7 | ≥ 200 | ≥ 500 | 0.275 ± 0.015 | - | - | - | - |
| 9/125 | - | - | - | - | - | ≤ 0.35 | ≤ 0.24 | ≤ 3 | ≤ 18 |

## 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 |