



Client: **Republic of Kenya – Ministry of Energy**

Project Name: **Nanyuki - Isiolo - Meru
Electrification Project**

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Document Title: **OPTICAL GROUND WIRE
DATA SHEET**

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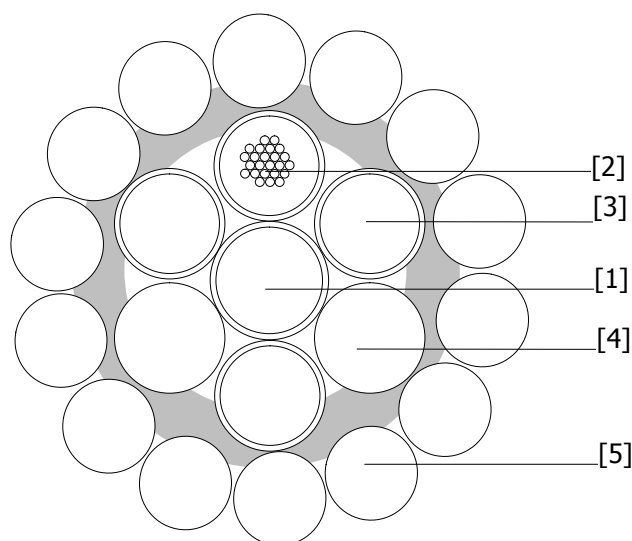
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OPGW 53J52DzG

Ref: 8259

OPTICAL GROUND WIRE with capacity up to 48 optical fibres



Introduction

Features and benefits

This cable has been custom designed to best match with customer requirements from optical, electrical, mechanical, quality and cost point of view, optimizing diameter, weight, breaking load and short circuit capacity.

Cable structure

Optical core

Cables with 48 fibres:

- Without rings: blue, orange, green, brown, slate, white, red, black, yellow, violet, pink, aqua. With 1, 2 and 3 rings: blue, orange, green, brown, slate, white, red, natural, yellow, violet, pink, aqua.

Cable

Central wire:

- 1 aluminium-clad steel of 20.3% IACS
Approximate diameter 3.32 mm. [1]

First armor layer.

- 1 steel tube with 48 optical fibres.
Approximate diameter 3.25 mm. [2]
- 3 aluminium-clad steel of 20.3% IACS wires [3]
- 2 aluminium alloy wires [4]
Approximate diameter 3.27 mm.

Second armor layer.

- 14 aluminium alloy wires.
Approximate diameter 2.72 mm. [5]
- Right lay sense of outer layer (Z)
- Stranded, layer 1 greased with a special grease of high drop point like additional corrosion protection.

Fiber characteristics

See our technical document reference 4377 "SM Light™ optical fibres"

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E. Castillo

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OPTICAL GROUND WIRE with capacity up to 48 optical fibres

Cable characteristics

Mechanical and physical

Approximate cable diameter:	15.3 mm
Approximate cable weight without grease:	516 kg/km
Rated Breaking Strength:	75 kN
Maximum recommended load:	30 kN
Elasticity Modulus*:	84.0 kN/mm ²
Section*:	134 mm ²
Linear expansion thermal coefficient:	18.2x10 ⁻⁶ °C
Minimum bending radius:	
• On pulley blocks (first and last of each reel, span ≥ 600 m or angles > 15°):	400 mm
• On pulley blocks(others):	300 mm
• On tensioner devices:	600 mm
• After clamping (slack cable):	300 mm
Operating temperature range: from -30°C to +70°C	

*for stress-strain calculus

Electrical

Electrical resistance (20°C): 0.32 Ω/km
Short circuit rating from 40°C: 139 kA²s
Short circuit current for 1 s: 12 kA

Routine tests

100% of optical fibers will be measured by OTDR technique before leaving factory.

Reels

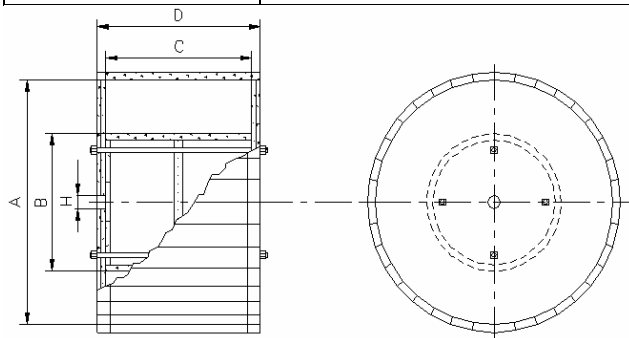
	Type K	Type P
Wheel (A):	1400 mm	2100 mm
Cylinder (B):	710 mm	900 mm
Inside (C):	810 mm	900 mm
Outside (D):	930 mm	1050 mm
Axe (H):	90 mm	105 mm
Weight:		
- empty:	165 kg	360 kg
- full:	1610 kg	3510 Kg
Maximum length:	2800 m	6100 m
Tolerance length of the produced reel: ±3%		

NOTE:

Ordered lengths should include a distribution of lengths, i.e., all reels cannot be ordered at the maximum.

The reel lengths' distribution should be as follows:

Reel lengths	
0 - 2500	More than 10%
2500 - 4500	More than 30%
4500 - 6000	Less than 55%
> 6000	Less than 5%



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